

AN ANALYSIS OF THE INTERRELATIONSHIP AND IMPACT OF
STOCKMARKET, MICRO AND MACROECONOMIC FUNDAMENTALS
ON STOCKPRICING IN NIGERIA

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CERTIFICATION PAGE

This is to certify that this topic óAn Analysis of the Interrelationship and Impact of Stock Market, Micro and Macroeconomic Fundamentals on Stock Pricing in Nigeriaô written by Chukwuma-Agu, Chioma G, with Reg No PG/M.Sc/07/47090 has been approved by the Postgraduate committee as meeting the requirement for the award of Master of Science (M.Sc) in Banking and Finance. The work embodied in this thesis is original and has not been submitted in part or in full for any other diploma or degree of any University.

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DEDICATION

TO THE LOVE OF MY HUSBAND

AND

TO THE LABOURS OF MRS F.N AGWAGU OF BLESSED MEMORY

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Right from the formative to the maturity stage of this thesis, several knees were bent and several hands were on deck. Today, the work is done and this piece owes them acknowledgement.

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Many Thanks.

ABSTRACT

Since the Dutch Tulip Mania of the 1630s, cycles of bubbles and bursts in stock markets have become commonplace across the world, hence, this has gained a reasonable academic attention. However answers as to what causes a particular market crash remains context-specific and in most cases, weakly related to the overall question of what causes stock market crash and how it can be prevented. Consequently, the question of what causes a particular market crash remains context specific which has to be answered for all dips in the stock market. Recently, Nigeria Capital Market took a plunge downwards in March 2008 after more than four years of consistent super performance. As is the case in many other African countries, thus far, explanations are hardly empirics supported. As a result, specific drivers of the markets given the peculiarities of poor capitalization, weak underlying economic base and open capital accounts remain unexamined. This study employs three approaches with two data sources - with two data sources – one primary (analyzed using charts and tables as well as estimates from a censored logit model) and the other secondary (analyzed using error correction model incorporating macroeconomic indicators) to examine the relationship between Nigeria Stock market and economic fundamentals with a view to determining their impact on stock valuation. We estimated two equations. The first equation showed the relationship of a long run all share price index with major indicators in the economy and the second showed a relationship of the actual value of the all share price index with same set (augmented set) of indicators. The results from the two data sources significantly corroborated each other. The findings largely indicate disconnect between economic fundamentals and stock pricing. We explored the implications on the economy and proffered solutions.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1	Background of the study	1
1.2	Statement of the problem	5
1.3	Objectives of the study	7
1.4	Research questions	7
1.5	Research hypotheses	7
1.6	Scope and limitations of the study	8
1.7	Significance of the study	8
	References	10

CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1	Theoretical Review	11
2.1.1	Stock valuation and the theories of Investor Behaviour	11
2.1.2	Macroeconomic Fundamentals and the Stock Market	14
2.2	Empirical review	18
	References	28

CHAPTER 3: RESEARCH METHODOLOGY

3.1	Research Design	32
3.2	The Time Series model	32
3.2.1	Model specification and justification of the variables	32

3.2.2	Analytical Techniques for the Time series Data	33
3.2.3	Nature and sources of secondary data	34
3.3	Survey Data Analysis	34
3.3.1	Data collection instrument, method and coverage	34
3.3.2	Analytical Techniques for the survey Data	35
3.4	Software	36
	References	37
 CHAPTER 4: DATA PRESENTATION AND ANALYSIS		
4.1	Data Presentation	38
4.2	Data Analysis	38
4.2.1	Evidence from primary data	38
4.2.1(b)	Censored Logit Analysis	42
4.2.2	Evidence from secondary data	43
	References	45
 CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS		
5.1	Summary of findings	46
5.2	Conclusion	47
5.3	Recommendations	48
	References	50
	Appendices	51
	Bibliography	68

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The occurrence and existence of bubbles have gained reasonable academic attention (examples include, Froot and Obstfeld, 1992; Allen and Gorton, 1993; Biswanger, 1999; Chen, 1999; Abreu and Brunnermeier, 2003). The existence of stock market bubbles and crashes dates back to the 1600s. The Dutch tulip mania of 1630s, the South Sea bubble of 1719 ñ 1720 and more recently, the internet bubble, which peaked in early 2000, are some notorious cases (Abreu and Brunnermeier, 2003). Time and again, both pundits and market makers have had difficulty correctly foreseeing the direction of the market even in the medium term. For example, when on March 10, 2000, the technology-heavy NASDAQ composite peaked at ¹5,048.62, very few expected what was to follow the next couple of months. Even though such high movements were quite contrary to the trends in the rest of the economy (particularly given that the Federal Reserve had raised interest rates six times over the same period and that the rest of the economy was already beginning to slow down), the fall still caught many analysts and stakeholders unprepared. The bubble burst that followed (generally known as the dot-com bubble crash) wiped out about ²\$5 trillion in market value of technology companies between March 2000 and October 2002. Many other (non-technology) stocks followed in the wave of weak confidence in the market and lost values. A number of reasons have been given for that particular market crash, but as in many other times, such reasons often relate to market-specific occurrences and are weakly related to the overall question of what causes stock market crash and how these can be prevented. Consequently, the question of what causes a particular market crash remains a context-specific one that must be answered for all dips in the market.

Investors sometimes, albeit temporarily, show excessive optimism and pessimism which end in pulling stock prices away from their long term trend levels to extreme points. Just before a major burst, experience has shown, the market will always look so promising and

¹Figure is available at http://en.wikipedia.org/wiki/Dot-com_bubble

²Figure is available at http://en.wikipedia.org/wiki/Dot-com_bubble

attract some late comers who are also somewhat new and inexperienced in the business. Unfortunately, they are the most vulnerable in crisis times. However, even for the more mature investors, there is evidence that following the market is a very demanding job and hardly does anyone ever do a perfect job of correctly predicting its direction. In particular, the cause of bubbles remains a challenge to most analysts, particularly those who are convinced that asset prices ought not to deviate strongly from intrinsic values. While many explanations have been suggested, it has been recently shown that bubbles appear even without uncertainty, speculation, or bounded rationality. For instance, in their work, Froot and Obstfeld (1992) explained several puzzling aspects of the behavior of the United States stock prices by the presence of a specific type of bubble that they termed "intrinsic bubbles". Bubbles are often identified only in retrospect, when a sudden drop in prices appears. Such drop is known as a *crash* or a *bubble burst*. To date, there is no widely accepted theory to explain the occurrence of bubbles or their bursts. Interestingly, bubbles occur even in highly predictable experimental markets, where uncertainty is eliminated and market participants should be able to calculate the intrinsic value of the assets simply by examining the expected stream of dividends. Clearly, the existence of stock market bubbles is at odds with the assumptions of Efficient Market Theory (EMT) which assumes rational investor behaviour. Often, when the phenomenon appears, pundits try to find a rationale. Literatures show that sometimes, people will dismiss concerns about overpriced markets by citing a new economy where the old stock valuation rules may no longer apply. This type of thinking helps to further propagate the bubble whereby everyone is investing.

Economic bubbles are generally considered to have a negative impact on the economy because they tend to cause misallocation of resources into non-optimal uses. In addition, while the crashes which usually follow bubbles are momentous financial events that are fascinating to academics and practitioners, they often destroy large amount of wealth and cause continuing economic malaise. For investors, the fear of a crash is a perpetual source of stress, and the onset of the event itself always ruins the lives of some. Foreign portfolio investments are withdrawn and/or withheld in order to service domestic financial problems; prospects of reduced foreign direct investment are bound to affect investor confidence and the economic health of countries with market crash. In addition, a general credit crunch from lending institutions for businesses requiring short-and-long-term money may also result and a protracted period of risk aversion can simply prolong the downturn in asset price deflation as

was the case of the ³Great Depression in the 1930s for much of the world and the 1990s for Japan.

Not only can the aftermath of a crash devastate the economy of a nation, but its effects can also reverberate beyond its borders and beyond the time of its occurrence. Market reversals and the damage they inflict tend to leave deep-seated memories and emotional scars that are not easily healed with the passage of time. Clearly, crashes (i.e. bubble burst) occur immediately after market tops. The problem now arises as to what perennial parameters should be used to measure the cutting edge of 'boom harvest' to avoid unforeseen future market crash. Osinubi and Amaghionyeodiwe (2002) observed that the securities industry today is characterized by rapid growth and filled with complexities. New instruments such as equity options, stock index futures and a host of other derivatives are being traded throughout the world. The core of all these activities is the stock market. The stock market, widely described as a barometer of any nation's economy, provides the fulcrum for capital market activities and it is a leading indicator of business direction. An active stock market may be relied upon to measure changes in the general economic activities using the stock market index (Obadan, 1998). A robust stock exchange not only promotes economic growth, but predicts it.

Indeed, there are several benefits that follow the existence of a robust capital market in a country. Claessens and Glen (1995) list a number of such benefits, most of which define it as critical in the development process. For example, the market remains a veritable source of long term capital for growing businesses, government social investment among others. A well-managed stock market leads to diversification of investment and the market provides opportunity to domesticate wealth. In other words, the Market is a tool for holding back capital flight. Privatization, regularly used as instrument for increasing the stake and participation of the private sector in the economy, also cardinally depends on the stock market. The successful implementation of the divestiture programs under structural adjustment programmes in many African countries owes large to the growing importance of the stock market..

³Available at <http://history1900s.about.com/od/1900s/p/greatdepression.htm>

Despite the considerable contributions of stock markets to the economy, Adjasi and Yartey (2007) observed that the rapid development of stock markets in Africa does not mean that even the most advanced African stock markets are mature. African stock markets are small, illiquid, with infrastructural bottlenecks and weak regulatory institutions. Even though markets are gradually adopting electronic systems, there are still substantial African stock markets which trade manually and use manual clearing and settlement. Similarly, most markets do not have central depository systems, whilst some markets still have restricted foreign participation. Such bottlenecks slow down trading and induce inactivity.

The Nigeria stock exchange shares in a number of these problems. Specifically, it remained weak for many years after which it experienced some kind of growth but which was not steady. The Exchange, which started as Lagos Stock Exchange in 1960, was renamed òNigeria Stock Exchangeö in 1977. But developments in the market go much earlier than that. The existence of the market can be traced to 1946, when the Ten-year Development Plan (1946-55) local loan ordinance was promulgated (Osinubi and Amaghionyeodiwe 2002). However, after nearly 20 years of formalization and change of name to Nigeria Stock Exchange, the market remained largely rudimentary like other markets in Africa. For ten years from 1986 up to the end of 1996, companies from the stock market raised a cumulative of only N32 billion. In 1996, the value of new issues amounted to N5.8 billion a significant part of which was foreign portfolio investment (Emenuga, 1998). However, following the reemergence of democracy into Nigeria in 1999, the market rebounded significantly. Both awareness and participation in the market soared. Beginning in 2004, the market witnessed unprecedented boom, peaking in 2007 with the banking sector recapitalization that led to massive capital hunt by banks. As banks constitute more than 50 percent of the market, there was massive boom in the market. Unfortunately the boom did not last. By 2008, the US mortgage-induced global crisis hit the Nigerian economy and flattened the little gains made in the market over the 5 years prior to it.

Several authors have given reasons for market fluctuations and crashes in Nigeria and other places (e.g. Anyanwaokoro, 1999). Likewise, many have outlined options for mitigating them. Adjasi and Yartey (2007) for example, believe that macroeconomic stability, well developed banking sector, transparent and accountable institutions, automation, promotion of institutional investors and strengthening regulation and supervision are necessary preconditions for promoting efficient functioning of stock markets in Nigeria and Africa at

large. However, it has to be borne in mind that the market crash was a strong reminder that the magic wand for understanding and solving the problem of bubbles and bursts in markets is yet to be found. It equally was a reminder that no market in the world is immune to crashes and that the so-called rule of new markets that can grow indefinitely does not hold yet for any emerging market. As in other market crashes, it is safe to assume that several factors played together in the Nigerian market crash. But which of these is the chief cause and what is the probable channel of impact is not known. This is partly what this work intends to research into.

1.2 Statement of the problem

Recent events seem to indicate that the Nigerian capital market is in no way exempted from the proven imperfections in financial markets throughout the world. While the market has been growing since the turn of the 21st Century, the banking consolidation seemingly led to a flurry of activities in the market that culminated in sharp increases in the values of a majority of stocks in the Nigerian stock exchange. Stock price movements were strong and investments in the stock market yielded superior returns relative to other channels of investment in the country. It became fashionable to join the investment train. With a growth of about 74.5 percent in 2007, the Nigerian stock market was acclaimed one of the World's fastest growing markets and was an all-investors' toast. Investor confidence was very high and market capitalization peaked at N12.6 trillion as at the first week of March, 2008. Multiple returns, particularly in capital appreciation were reaped by a number of investors and market awareness was at an all time high as at the end of 2007.

However, the trend changed significantly beginning in the second week of March 2008. The market began to slide in both capitalization and all share indices. For instance, market capitalization of the 303 listed equities, which had opened on January 1, 2008, at N10.180 trillion and later appreciated to N12.395 trillion as at March 2008, suffered its highest fall in the 48-year history of the Nigerian Stock Exchange, depreciating by N3.223tn or 32 per cent to N6.957tn by the year end. The all-share index (indexed in 1984 at 100) which had risen to 66,371 as at March 5, 2008, equally dropped drastically by the end of the year. Every indicator in the stock market has continued to slide down (NSE, 2009).

The Nigerian market crash came even before the rest of the world joined in what has now come to be accepted as a global economic recession. While the crash in the price of quoted

shares on the Nigerian Stock Exchange started in March, those of the United States started in August and some other developed countries followed later in October. Even though the US real estate crisis had already set in, there was no clear evidence of strong relationship or that it could be the factor driving the fall of prices in the Nigerian stock market. This indicates that changes in the global economy may not be enough explanation for the challenges that faced the Nigerian capital market and calls for further enquiry into the causes. Nonetheless, the decline that was witnessed in the Nigerian capital market cannot be separated from the worldwide financial crisis that has continued to hit hard on global stocks. Needless to say, this development is worrisome. Investor confidence waned in the market and other economic activities like consumption and investment may have been seriously affected. Already, some structural changes in investment (portfolio readjustments, decrease in overall investments, etc) are already going on and many investors are channeling resources to the money market, real estate and other alternative investment destinations (Obayelu, 2009). Given these trends, some analysts, investors and other stakeholders are already predicting that the market may be headed for a complete crash (Nduwugwe, 2008).

As in many other stock markets under the same circumstances, there have been competing arguments over the cause of the crash. There have also been several explanations ranging from plausible to ridiculous. While some believe the market has always been over-valued and is undergoing self-correction indicating that the reduction in share prices will be permanent, others see the correction as temporary (Nduwugwe, 2008, Nwachukwu, 2009). This difference in perception also arises because of divergent views on what exactly is driving the fall in market value of shares. While it is believed in some quarters that share prices rose faster than both market and other economic fundamentals, some see the Nigerian stock market as not having even grown up to its fundamentals and so still having opportunities for further growth, indicating that the correction is very temporary.

But clearly, very little empirical analyses support most of these explanations. It is evident that there has been little research into the real causes of the challenges facing the Nigerian stock market. There seem to be more opinions than empirical evidence as to the cause of the market changes. On the whole, while the Nigerian stock market has received comparatively less critical research than some of its developed market counterparts, the current crisis in the market has received even far less critical evidence-based assessment. Many years down the line of market booms and bursts, critical assessment of what drives the Nigerian capital

market and the range of roles macroeconomic policies can play to support the market is still weak. The danger in this is that policy positions may not adequately mirror the actual and/or fundamental causes of the problem. In addition, probability of future recurrences is higher if the underlying causes of the problems are not unearthed. This research work sets out to systematically study the market with a view to understanding the different roles of market fundamentals and bubbles in the determination of stock pricing and market movements. The critical measure of market activity used in the study is the all share price index.

1.3 Objectives of the Study

Given the above, the primary objective of this research is to provide empirical evidence on the causes of the recent stock market crisis in Nigeria. Specifically, the study intends to

- ❖ Find out whether the movements in stock prices over the last couple of years (particularly since from 2004) follows fundamentals in the economy or merely reflect speculative (and other) bubbles. In other words, examine the relationship between stock market valuation and macroeconomic fundamentals in the country;
- ❖ Assess the causes of the recent crisis in the Nigerian stock market;
- ❖ Evaluate investor confidence in the market given these recent activities and occurrences.

1.4 Research Questions

Our research questions for this study are as follows:

- ❖ Does valuation of stock prices in the Nigerian stock market adequately reflect the underlying fundamentals of both firms' performance and overall economic activities in the country?
- ❖ What is the root cause(s) of the recent crisis in the Nigerian stock market?
- ❖ To what extent did the recent happenings in the stock market affect investors' confidence?

1.5 Research Hypotheses

William (2006) stated that hypothesis is a specific statement of prediction. It describes in concrete (rather than theoretical) terms what you expect will happen in your study. Our hypotheses for the study are as follows:

- ❖ Nigeria stock market is not driven by economic fundamentals.
- ❖ The recent crisis in the Nigerian stock market is not caused by ill-adjusted stock prices.

- ❖ Investor confidence was not affected by the recent crisis in the Nigerian stock market

1.6 Scope and Limitations of the Study

Scope

The research covers firms quoted on the Nigerian Stock Exchange. Using monthly data from January 2004 through December 2008, this study is primarily concerned with the impact of selected indicators on the movement of prices and will not delve into reverse causality i.e. the impact of the recent crisis on other major macroeconomic variables like inflation, output growth, etc.

Limitations

Impediments to effective empirical studies in Nigeria are:

- ❖ Availability and access to reliable data;
- ❖ Finance;
- ❖ Time.

To circumvent some of the limitations stated above, the following applied:

- ❖ Data disaggregating techniques e.g. interpolation with risk of some level of bias in the estimates.
- ❖ Varying sources of data. However, because of envisaged comparability difficulty under the circumstance, we exercised great care in data evaluation so as to as much as possible ensure thoroughness.
- ❖ We also made attempts to maximize available resources including time to make the final output of this research qualitative.

1.7 Significance of the Study

This study has both academic and practical (policy) significance as follows:

- ❖ Contribution to the literature particularly on the determination of developing countries' stock markets and causes of stock market crises with particular concentration on Nigeria;
- ❖ Strong referral point for further research in the future on the subject matter;
- ❖ Influence policy on the stock market and inform on the relative roles of firm level fundamentals as well as market regulation and macroeconomic management in the determination of market movements;

- ❖ Beneficial to all aspects of the population as it evaluates trends in the market and relate these to important economic goal posts in a meaningful, logical, and empirical way;
- ❖ Investors, policymakers and other stakeholders will find work in this area very useful;
- ❖ Current and relevant to a large array of other audience ñ government and all players in the Nigerian economy ñ for varying purposes.

References

- Abreu, D and Brunnermeier, M. K. (2003), 'Bubbles and Crashes', *Econometrica* 71(1): 173 ñ 204
- Allen F. and Gorton, G. (1993) 'Churning Bubbles', *Review of Economic Studies* 60, 813 ñ 836
- Binswanger, M (1999), *Stock Markets, Speculative Bubbles and Economic Growth*, Cheltenham: Edward Elgar Publishing.
- Chen J. (1999) 'When the bubble is going to burst', *International Journal of Theoretical and Applied Finance*, 2(3): 285 ñ 292
- Froot, K. and Obstfeld, M. (1992), 'Intrinsic Bubbles: the Case of Stock Prices', *NBER Working Paper Series*, w3091: SSRN: !! HYPERLINK "http://ssrn.com/abstract=304858"¶ http://ssrn.com/abstract=304858¹
- Nduwugwe, J. (2008), 'Nigerian Economy may Reel under Financial Crisis', *Third World Network-Africa* (TWN-Af), December.
- Nigeria Stock Exchange, (2009), <http://www.scribd.com/doc/10585651/Nigerian-Stock-Exchange-Official-2008-Review-and-Outlook-for-2009>
- Nwachukwu, I. (2009), 'Global meltdown: Milking benefits from Nigerian economy?', *Economic Watcher*, 25 February, 2009
- Obayelu, A. E. (2009), 'Critical Analysis of Global Financial Crisis and its Impact on Nigeria Capital Market, Investment and Employment of Labor in Nigeria', Monograph, Department of Agricultural Economics, University of Ibadan, Nigeria.
- William M. K. T. (2006), 'Research Methods Knowledge Base', Department of Policy Analysis and Management, Cornell University, New York, <http://www.socialresearchmethods.net>

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The literature review is divided into a review of the theory and a review of the empirical findings on stock market movements and market/macroeconomic fundamentals. A brief review of the Nigerian stock market is also discussed hereunder.

2.1 Theoretical Review

2.1.1. Stock Valuation and the Theories of Investor Behaviour

According to Koller et al (2005), to examine the behavior of the stock market, one must first distinguish between what drives market valuation levels (such as market-value-to-capital ratios) and what drives total return to shareholders (TRS), which are primarily the market fundamentals. They state that market valuation levels are determined by the company's absolute level of long-term performance and growth, that is, expected revenue and earnings growth and return on invested capital (ROIC). TRS is measured by changes in the market valuation of a company over some specific time period and is driven by changes in investor expectations for long-term future returns on capital and growth. Their work showed that the relative market value of a company as measured by the market-value-to-capital ratio is determined by the company's growth and its spread of ROIC over the weighted average cost of capital (WACC).

Okafor (1983) classifies approaches to stock valuation under three broad headings: Fundamental Approach, Technical Approach and Efficient Market Approach/Efficient Market Hypothesis (EMT). The fundamentalists lay emphasis on real variables like dividends, earnings etc. They therefore conduct four major forms of analysis as follows - analysis of general economic conditions, industry analysis, company analysis and financial analysis. The assumptions on which the fundamentalists operate are that every asset has an intrinsic value; the intrinsic value of every security is reflected by its market price and basic economic facts about a firm determine the intrinsic value of securities issued by it. The technicians reject the notion of intrinsic values on securities. Rather they study market conditions in general and price movements in particular. By implication, the technicians rely heavily on the market forces for determination of prices of securities. Dow Theory is perhaps the most popular tool of technical analysis. The theory upholds that all price actions comprise three

contemporaneous movements ñ the primary movement, the secondary movement, and the minor movements. Charting techniques, which involves the use of graphs, and non-charting techniques, which involves other analytical procedures other than charts are other tools used in technical analysis.

The Efficient Market Hypothesis, on the other hand, is a modern development in security valuation. The theory holds that stocks are always in equilibrium and it is impossible for an investor to always ôbeat the marketô. Consequently, the market is said to always be efficient implying that it adjusts to prices quickly and in an unbiased manner after the arrival of important news or surprises. Proponents of this theory are of the view that there are more pundits than there are stocks. There is parity to precision of their assessment as more analysts follow each stock in a given industry. Hence the price of stocks adjusts almost immediately to reflect any new developments.

Generally, there are three forms or levels of market efficiency.

- ❖ The weak form efficiency which holds that prices reflect all past information such as information in last year's annual reports, previous earnings announcements, and other past news.
- ❖ The semi-strong form efficiency which holds that The semi-strong form of efficient market states that all public information, both past and present is reflected in asset prices and
- ❖ The strong form efficiency which holds that prices reflect all public and privately available knowledge including past and current information. Even corporate officers and other insiders cannot earn above average, risk-adjusted profits from buying and selling stock; even their detailed exclusive information already is reflected in current stock prices.

Two major theories dominate thinking on investor behaviour. These are the bandwagon theory and contrary opinion hypothesis. While the former asserts that errors of judgement in stock market transactions will be minimized by an investor who follows the lead market-makers, the latter is based on the assumption that small investors are usually wrong. Okafor (1983) asserts that ômarket-leadsô which originate from odd-lot pressures are more likely to mislead than help the investor. There is an argument that in a discrete-time-finite horizon setting, stock prices cannot deviate from fundamentals unless traders are irrational or myopic. However, Allen and Gorton (1993) differed. They based their study on the assumption that investors hire portfolio managers to invest their wealth for them; the agency problem that

arises between investors and managers because of asymmetric information between them means that asset prices can deviate from their fundamentals and bubbles can exist.

Interestingly, Koller et al (2005) assert that significant deviations from intrinsic value are rare, and markets revert to the economic fundamentals rapidly enough that managers should continue to base their decisions on such fundamental Discounted Cash Flow (DCF) analyses. But they also discovered three key conditions for market deviations from economic fundamentals as follows:-

1. *Irrational investor behavior:* Irrational investors do not process all available information correctly when forming expectations on the stock's future performance. Studies of the investment behavior of professional fund managers and analysts show various forms of such irrationality. For example, individual investors overreact and attach too much importance to recent events and results, so they overprice companies with strong recent performance. Also, individuals are overly conservative in updating expectations, so they under-price stocks that have released positive news on earnings.

2. *Systematic patterns of behavior across different investors.* If individual investors decided to buy or sell without consulting economic fundamentals, the impact on share prices would be limited. Persistent price deviations should occur only when they behave irrationally also in a systematic way (i.e., when large groups of investors share particular patterns of behavior). Behavioral finance theory argues that patterns of overconfidence, overreaction, and overrepresentation are common to many investors, and such groups can be large enough to prevent a company's share price at least for some stocks, some of the time from reflecting underlying economic fundamentals.

3. *Limits to arbitrage in financial markets.* If there are enough rational investors in a market, and there are no barriers to arbitrage, systematic patterns of irrational behavior can be exploited, and they will not have lasting effects on market valuations. In reality, such arbitrage is not always possible. Transaction costs and risks are involved in setting up and running the arbitrage positions. Assume that a company's share price has dramatically increased over the past few months because the company surprised the market with better-than-expected results. Based solely on this strong recent performance, investors might believe this company will continue to exceed market expectations and thus start bidding for shares.

According to behavioral finance theory, many investors will demonstrate this type of myopic behavior, creating upward pressure on the share price. As long as a sufficient number of investors can identify and take short positions against overpricing on the part of these myopic investors, the share price will return to its fundamental level. In practice, however, this may not be the case; the costs, complexity, and risks involved in setting up a short position may be too high for those who invest on economic fundamentals. One example is so-called *noise trader* risk. It is uncertain how long price deviations will persist, and whether they will increase before finally disappearing. If for some reason investors focused on fundamentals abandon their positions before the share price returns to its fundamental value, they would incur a loss.

When the preceding three conditions all apply, behavioral finance predicts that pricing biases in financial markets can be both significant and persistent.

2.1.2. Macroeconomic Fundamentals and the Stock Market

Beside the behaviour of micro private agents in the market, the broad macroeconomic conditions under which a market operates is definitely expected to impact on trends in that market. A number of key macroeconomic fundamentals like overall economic growth, inflation rates, exchange rates, monetary policy and interest rates, government fiscal policy, public indebtedness, taxation policies among others have significant influence on stock movements. Analysts and investors closely watch these variables and their impact on the pricing decisions of stocks. In this section, we review some of the issues in the relationship between such macroeconomic fundamentals and the stock market.

Several works have examined the relationship between stock market and economic growth and there are documented evidences that stock markets can give a boost to economic development and vice versa. The fact that capital, as generated from the stock market is needed for economic growth is not disputable (Soyode, 1990). The stock market is widely described as a leading indicator of any nation's economic direction. More generally, stock markets are seen as enhancing the operations of the domestic financial system in general and the capital market in particular (Kenny and Moss, 1998). When a nation's economy is doing well, its stock market usually mirrors this economic growth. An active stock market may be relied upon to measure changes in the general economic activities using the stock market

index (Obadan, 1998). Savings mobilization and liquidity creation, foreign inflows, and risk diversification, are some of the contributions of stock markets to economic growth.

In principle, the stock market is expected to accelerate economic growth by providing a boost to domestic savings and increasing the quantity and the quality of investment (Singh, 1997). To achieve this, the stock market provides investors with facilities that may better meet their liquidity needs and risk preferences. Better savings mobilization may increase the savings rate (Levine and Zervos, 1998). Stock markets also provide an avenue for growing companies to raise capital at lower cost. In addition, companies in countries with developed stock markets are less dependent on bank financing, which can reduce the risk of a credit crunch. Stock markets therefore are able to positively influence economic growth through encouraging savings amongst individuals and providing avenues for firm financing. Costs of information are also reduced in an efficient stock market. Reducing the costs of acquiring information is expected to facilitate and improve the acquisition of information about investment opportunities and thereby improves resource allocation. Stock prices determined in exchanges and other publicly available information may help investor make better investment decisions and thereby ensure better allocation of funds among corporations and as a result a higher rate of economic growth.

It is widely held that the stock market is a strong indicator of the level of economic activities within a country and that the direction of broad macroeconomic indicators like interest and exchange rates, savings rates and economic growth is picked up by the stock market. In the same vein, the stock market affects these indicators through multiple channels. Osinubi (2001) asserts that securities investment is a veritable medium of transforming savings into economic growth and development. Bencivenga, Smith and Starr (1996) equally insist that the level of economic activities is affected by the stock market through its liquidity-creating ability. It is understandable that profitable investment requires long-term funds. The easy transfer of capital ownership, which liquid equity market provides, facilitates firms' permanent access to capital raised through equity issues. Further to this, increased savings and investment tend to reduce the risk of investment facilitated by stock market and the prospect for long-term economic growth is enhanced. In the same vein, stock markets can affect economic growth when they are internationally integrated through risk diversification. This enables greater economic risk sharing. Because high return projects also tend to be comparatively risky, stock markets that facilitate risk diversification which encourages a shift

to higher-return projects (Obstfeld, 1994). This is to say that altering portfolio ñ a shift in a society's savings to higher-return investments ñ also accelerates growth.

Stock market liquidity is a reliable indicator of future long-term growth. It is expected to reduce the downside risk and costs of investing in projects that do not pay off for a long time. Investors are often reluctant to relinquish control of their savings for long periods except where such investments allow them to acquire an assetò equityò and to convert it to cash quickly and easily or alter their portfolios as they wish. Equally, firms enjoy unrestricted access to funds raised through equity issues. By facilitating longer-term, more profitable investments, liquid equity markets improve the allocation of capital and enhance prospects for long-term economic growth. Further, by making investment less risky and more profitable, stock market liquidity can also lead to more investment. Put succinctly, investors will come if they can leave.

However, there are alternative views about the effect of liquidity on long-term economic growth. Yartey and Adjasi (2007) pointed out the ambiguity of theories in explaining the exact impacts of greater stock market liquidity on economic growth. Some analysts argue that very liquid markets may negatively influence corporate governance thereby encouraging investor myopia. Since displeased investors can easily sell their shares, liquid markets may weaken investors' commitment and reduce incentives to exert corporate control by overseeing managers and monitoring firm performance and potential. In other words, instant stock market liquidity may discourage investors from having long-term commitment with firms whose shares they own and therefore create potential corporate governance problem with serious implications for economic growth (Bhide, 1993). According to this view, enhanced stock market liquidity may actually hurt economic growth.

Demirgüç-Kunt and Levine (1996) also observed that there are some channels through which liquidity can deter growth: Firstly, savings rate may be reduced, this happens when there are increasing returns on investment through income and substitution effect. As savings rate falls and with the existence of externality attached to capital accumulation, greater stock market liquidity could slow down economic growth. Secondly, reducing uncertainty associated with investment may impact on savings rate, but the extent and the direction remain ambiguous. This is because it is a function of the degree of risk-averseness of economic agents. Thirdly, effective corporate governance often touted as an advantage of liquidity of stock market may

be adversely affected. The ease with which equity can be disposed off may weaken investors' commitment and serve as a disincentive to corporate control and vigilance on the part of investors thereby negating their role of monitoring firm's performance. This often culminates in stalling economic growth.

Binswanger (1999) argued that stock market prices do not accurately reflect the underlying fundamentals when speculative bubbles emerge in the market. Under such situations, prices of stock are no longer driven by macroeconomic fundamentals and they tend towards irrational behavior. This irrationality is expected to adversely affect the real sector of the economy as it is in danger of becoming the by-product of a casino. They also point out that the actual operation of the pricing and takeover mechanism in well functioning stock markets lead to short term perceptions and lower rates of long term investment. It also generates perverse incentives, rewarding managers for their success in financial engineering rather than creating new wealth through organic growth (Singh, 1997). This is because prices react very quickly to a variety of information influencing expectations on financial markets. Therefore, prices on the stock market tend to be highly volatile and enable profits within short periods. Moreover, because the stock market undervalues long-term investment, managers are not encouraged to undertake long-term investments since their activities are judged by the performance of a company's financial assets, which may harm long run prospects of companies (Binswanger, 1999).

Whatever the arguments on stock market relationship with economic activities though, history seems to indicate that stock markets emerge as economies grow, become more diversified, complex and interlinked. Emergence of the stock market signals a movement away from rudimentary resource allocation to improved signals for economic growth. In fact, low economic development levels seem to be a strong reason why stock markets are not strong in many African countries. It has been argued that stock markets might not perform efficiently in developing countries and that it may not be feasible for African markets to promote stock markets given the huge costs relative to their weak economic base and poor financial structures (Singh, 1999). Weak regulatory institutions and greater macroeconomic volatility further exacerbate the inefficiency of stock markets in developing countries especially sub-Saharan African economies. The higher degree of price volatility on stock markets in developing countries reduces the efficiency of the price signals in allocating

investment resources. These serious limitations of the stock market have led many analysts to question the importance of the system in promoting economic growth in African countries.

2. Empirical Review

Empirical research into the relationship between firm fundamentals, macroeconomic indicators and stock pricing is a long one and several works have made significant inroads into trying to understand these links. This section reviews a few of these works.

Tripathi (2008) examined the relationship between four company fundamental variables (viz. market capitalization, book equity to market equity ratio, price earnings ratio and debt equity ratio) and equity returns in the Indian stock market using monthly price data of a sample of 455 companies forming part of S&P CNX 500 Index over the period June 1997 to June 2007. The results was that market capitalization and price earnings ratio have statistically significant negative relationship with equity returns while book equity to market equity ratio and debt equity ratio have statistically significant positive relationship with equity returns in India. The study further investigated whether the inclusion of any one or more of these fundamental variables can better explain cross sectional variations in equity returns in India than the single factor CAPM. The author used a model stated as Davis Fama and French (2000) methodology and found that Fama-French three factor model (based on market risk premium, size premium and value premium) explains cross sectional variations in equity returns in India in a much better way than the single factor CAPM. These results have important implications for market efficiency, asset pricing and market microstructure issues in Indian stock market.

On the relationship between stock market and macroeconomic indicators, a number of studies have been conducted and with only minor variations in statistical significance and direction of influence, the outcomes have largely mirrored positive relationship. Claessens et.al (2006) use panel data to study how local stock market development and internationalization—listing, trading, and capital raising in international exchanges—are related to economic fundamentals. According to their findings, higher-income economies with sounder macro policies, more efficient legal systems, greater openness, and higher growth opportunities have more developed local markets. Importantly, these fundamentals also relate to internationalization, and actually more so, since the better the fundamentals, the higher the ratio of internationalization to local market activity. They also found that greater domestic stock

market development is associated with subsequent higher internationalization. These findings are not consistent with firms internationalizing to escape poor domestic environments, but rather with better country fundamentals allowing firms to internationalize and with countries with more developed stock markets experiencing more internationalization. With liquidity agglomeration, better fundamentals might further accelerate internationalization, with potential negative effects on domestic markets, as others have already argued.

On the other hand, Koller et al (2005) try to verify that markets reflect economic fundamentals by estimating the intrinsic valuation level for the U.S. stock market as a whole as well as UK stock market based on economic fundamentals, using an equity DCF valuation model over a 40-year period. According to them, their two-stage model was to accommodate both the long-term economic fundamentals and short-term fluctuations in key value drivers. They agreed that markets can sometimes be off, but such situations do not last. Sooner or later the market will revert to fundamental levels. Three important conclusions can be adduced from their work as follows: the stock markets in the United States and the United Kingdom have been fairly priced and have oscillated around their intrinsic price-to-earnings ratios. The intrinsic P/E ratio was typically near 15, with the exception of the high inflation years of the late 1970s and early 1980s, when it was closer to 10. Second, the late 1970s and late 1990s did indeed produce significant deviations from intrinsic value. In the late 1970s, as investors were obsessed with high short-term inflation rates, the market was probably valued too conservatively. Based on long-term real GDP growth and returns on equity, the stock market should not have dropped to a P/E level of 7. The other obvious deviation occurred in the late 1990s, when the market valuation rose to a P/E ratio near 25. Such a level for the 12-month forward-looking P/E ratio could not be justified by a long-term real GDP growth of 3 percent and returns on equity of 12 to 15 percent. Finally, when such deviations occurred, the stock market corrected itself within a few years to its intrinsic valuation level. Thus, although market valuations can apparently be wrong from time to time even for the stock market as a whole, market valuations return to values justified by economic fundamentals.

More specifically on the relationship between stock market and economic growth, Muellbauer and Nunziata (2001) use econometric models to examine the influence of stock market price index among other variables on the US GDP for 1955 - 2000. In their work they found out that a sustained fall in share prices, leads to lower spending and lower income growth, which in turn, lowers growth expectations and further lowers share prices. According

to them, the fall in the stock market at the end of 2000, higher oil prices, higher inflation, tighter loan standards, the rise in interest rates between 1999 and 2000, the high level of the trade deficit, the high level of the output gap and the high level of the real exchange rate all have negative implications for growth in 2001. Levine and Zervos (1998) find a positive and significant correlation between stock market development and long run growth. However, due to the seeming empirical limitations (their study relied on a cross-sectional approach and showed inability to sort country-specific effects), Mohtadi and Argawal (2001) re-examined the long-run impact of stock markets on economic growth using dynamic panel data. Their argument was that the Levine and Zervos use of a cross-sectional approach limits the potential robustness of their findings with respect to country specific effects and time related effects. However, with a time series cross section for 21 emerging countries from 1977-1997, the results of Mohtadi and Argawal did not differ from that of Levine and Zervos. The results still suggest a positive relationship between several indicators of the stock market development and long-run growth.

Likewise, within the context of a dynamic general equilibrium framework of information asymmetries, endogenous contract choice and capital accumulation, Capasso (2003) further studied the linkages between stock market development and economic growth. The analysis is based on a model of optimal capital structure, developed by Bolton and Freixas (2000), in which firms design optimal securities to finance risky investment projects. The empirical evidence shows clearly that stock market activity is closely related to real activity, with firms having a greater preference towards issuing equity (rather than debt) as capital accumulation proceeds. In other words, the optimal capital structure of firms depends fundamentally on the level of economic development. According to the author, to appreciate the link between financial markets and growth, it is necessary to depart from the fiction of a perfectly functioning representative agent paradigm and to move towards a framework based on market imperfections where the Modigliani-Miller theorem fails to hold.

Cochrane (1994) examined the cause of variation between GDP growth and stock returns using the conventional VAR identification approach. In his analysis, he showed that substantial amount of variation is due to transitory shocks. He defines the transitory shock from two perspectives - in relation to the consumption/GDP ratio and in relation to the dividend/price ratio. Transitory shock to consumption ñ GDP ratio is a shock to GDP holding

consumption constant so that the shock does not affect consumption contemporaneously. The facts that the consumption/GDP ratio does not forecast consumption growth and that consumption is nearly a random walk drive this definition. Similarly, he defines transitory shocks to the dividend-price system as shocks to stock prices holding dividends constant so that the shock does not affect dividends contemporaneously. The facts that the dividend/price ratio may not forecast dividend growth and that dividend is nearly a random walk can justify this definition. However, Gonzalo, et al. (2007) criticized the earlier work of Cochrane (1994). Following the common trend of King, et al. (1991) known as King, Plosser, Stock and Watson (KPSW), they showed that Cochrane's results depended on the assumption of weak ergogeneity of one of the variables with respect to the cointegration vector. Given the assumption, both approaches agree otherwise Cochrane's transitory shocks would not totally be transitory. In addition Gonzalo et al (2007) find that shocks could also be permanent. Their results showed that the permanent components of GDP and stock prices are much larger than those estimates of Cochrane (1994) although substantial (but much smaller than in Cochrane, 1994) variations in GDP growth and stock returns are attributed to transitory shocks.

For research done on the African continent, evidence does not seem to point to the sort of very strong impacts and relationship between output growth and the stock market. For example, Yartey and Adjasi (2007) study the effect of stock markets on economic growth using three stock market indicators – market capitalization relative to GDP, value of shares traded relative to GDP, and the turnover ratio (value traded/market capitalization). Their work followed Levine and Zervos (1998) modeling and estimation framework and the Arellano and Bond (1991) Difference Generalized Method of Moments dynamic instrumental variable modeling approach. The ratio of market capitalization to GDP indicator showed stock market development does not have a significant effect on economic growth; the total value of shares relative to GDP indicator showed that stock market development plays a significantly positive role in economic growth alongside investment and past growth levels; value added/market capitalization indicator stock markets do not significantly affect economic growth even though a significant effect of turnover ratio on economic growth would also reaffirm the effect of stock markets in growth due to the absence of a price effect in this indicator. The authors used Sargan and serial correlation tests to check the robustness and validity of the Difference GMM estimation. From the empirical analysis, the significant stock market driver of economic growth in Africa is the ratio of value of shares traded to GDP.

Works on Nigeria are also available. Nyong (1997) attempted to develop an aggregate index of capital market development and use it to determine its relationship with long-run economic growth in Nigeria. The study employed a time series data from 1970 to 1994. For measures of capital market development the ratio of market capitalization to GDP (in percentage), the ratio of total value of transactions on the main stock exchange to GDP (in percentage), the value of equities transaction relative to GDP and listings were used. The four measures were combined into one overall composite index of capital market development using principal component analysis. A measure of financial market depth (which is the ratio of broad money to stock of money to GDP) was also included as control. The result of the study was that capital market development is negatively and significantly correlated with long-run growth in Nigeria. The result also showed that there exists bi-directional causality between capital market development and economic growth. Equally, Osinubi and Amaghionyeodiwe (2003) assessed the relationship between stock market development and long-run economic growth in Nigeria for the period 1980 to 2000. The study used secondary data while four models of multiple regressions were specified. The regression results, which were obtained using the Ordinary Least Square (OLS), show that measures of stock market development statistically have no significant effect on economic growth in Nigeria during the period 1980 to 2000. The major implication of the findings is that if the Nigerian Stock Market is to significantly contribute to rapid economic growth, policies must be fashioned out to eliminate those factors that blur the effectiveness of the vehicle or transmission mechanism through which stock market activities influence economic growth. These findings seem to confirm that weak economic base and institutions compromise the relationship between macroeconomic indicators and activities in the stock market.

Philips (1978) reviewed the portfolio theory and selection by explaining the Markowitz' Mean-Expected Return (E-V) criterion. According to her, she chose Markowitz algorithm because Nigerian Stock market, though young, would make an interesting comparison with an ideal market index. Using monthly prices and dividends of all equity-listed stocks in the Nigerian Stock Exchange from January 1965 to December 1974, she found that the change in GDP responded to the change in the Nigerian Stock Exchange (NSE) market index and therefore concluded that the index reflects the economic trend in the country over the period studied.

Anyafu (1982) did not totally agree with Philips (1978). Some of the weaknesses the former identified were:

Ç NIDB A & B had been withdrawn from the NSE. Hence Philips work on NSE was already out-of-tune;

Ç Small sample of 15 securities was certainly unrepresentative of the market;

Ç Inherent weaknesses of Dow-Jones Industrial Average (DJIA) upon which her analysis was based affected her result. NSE like DJIA usually underestimated the importance of growth stocks over a long-term period given a constantly adjusted divisor arising from stock splits and bonus issues. Interestingly, Anyafu stated that she acknowledged the weaknesses. Further, this study proffered for the Nigerian situation an index modeled after New York Stock Exchange Composite index (or S&P index) instead DJIA.

Using the run test for randomness, Nweze (2002) finds that the structure of share prices is not purely random at 95% level of confidence. His findings differ significantly from that of some earlier researchers who concluded that the pattern exhibited was purely random in nature. Nweze used hypothesis testing on 50 quoted companies between 1990 and 2000 and found that 76% showed no randomness.

Numerous empirical studies such as Jaffe and Mandelker (1976), Nelson (1976), and Fama and Schwert (1977) establish that inflation has a negative short-run effect on stock returns but few studies report a positive, long-run Fisher effect for stock returns. Campbell and Vuolteenaho (2003) used the loglinear dynamic valuation framework of Campbell and Shiller (1988), since this framework, unlike the simple Gordon model, allows for time-varying discount rates and dividend growth rates. The Gordon model (1) has the limitation that the expected returns and expected growth must be constant. They found that high inflation is positively correlated with rationally expected long-run real dividend growth; inflation is almost uncorrelated with the subjective risk premium. However, inflation is highly correlated with mispricing, supporting the Modigliani-Cohn (1979) view that investors form subjective growth forecasts by extrapolating past nominal growth rates without adjusting for changes in inflation. Domian, Gilster, and Louton (1996) used the change in monthly Treasury bill rates and stock returns to show the relationship between stock prices and inflation. Their sample covers the United States from 1952 to 1992. Their findings supports popular results: Stock returns are significantly negatively related to changes in Treasury bill yields.

Related studies on the impact of inflation include Schwert (1981), which analyzes the reaction of stock prices to new information about inflation. Based on daily returns to the Standard and Poor's (S&P) composite portfolio from 1953-78, his work shows that the stock market reacts negatively to the announcement of unexpected inflation in the Consumer Price Index (C.P.I.), approximately one month after the price data are collected by the Bureau of Labour Statistics although the magnitude of the reaction is small. Using stock price and goods price data from six industrial countries, Kolari and Anari (2001) tried to show differential impacts of changes in price levels on equity prices in both the short and long run. Their findings show that long-run Fisher elasticity of stock prices with respect to goods prices exceed unity and are in the range of 1.04 to 1.65, which tend to support the Fisher effect. They also found that the time path of the response of stock prices to a shock in goods prices exhibits an initial negative response which turns positive over longer horizons. These results help to reconcile previous short-run and long-run empirical evidence on stock returns and inflation. Also, they reveal that stock prices have a long memory with respect to inflation shocks, such that investors should expect stocks to be a good inflation hedge over a long holding period.

A number of other studies have also worked on other macro indicators with mixed findings. For example, Das (2005) shows there are evidence that stock prices and interest rates possess a common trend in many of the countries he studied with the exception of India. However, there is strong evidence of common cycles for the other countries. These findings provide support to the view that although bond markets and stock markets in these countries are linked, this may not be through a common trend, but through a common cyclical pattern. From the policy point of view, being linked through a common cyclical pattern provides the advantage of better forecasting or decomposition of stock price change affected by bank interest rate change. Haastrecht et al (2009) dealt with the pricing of stock, foreign exchange and inflation options under stochastic interest rates and volatility. They considered a generic foreign exchange framework for the pricing of foreign exchange (FX), inflation and stock options. Moreover they allowed for a general correlation structure between the drivers of the volatility, the inflation index, the domestic (nominal) and the foreign (real) rates. Having the flexibility to correlate the underlying FX/Inflation/Stock index with both stochastic volatility and stochastic interest rates yields a realistic model, which is of practical importance for the pricing and hedging of options with a long-term exposure. They derive explicit option pricing formulas for various securities, like vanilla call/put options, forward starting options,

inflation-indexed swaps and inflation caps/floors. Finally, they test the numerical quality of this approximation and consider a calibration example to FX market data.

Acknowledging the large body of evidence which indicates that macroeconomic and financial variables are dynamically interrelated, Hess (2003) tries to assess the extent of such interrelationship in the Swiss economy. The study analyzed the impacts of macroeconomic shocks on various sector indices of the Swiss Stock Market using a Vector error correction model (VECM). The VECM tried to disentangle local and foreign as well as macroeconomic and financial effects. He found that sector sub indices diverge to an important extent in their sensitivity to news about fundamental variables. On the other hand, Kent and Lowe (1997) build a model that assumes that asset-price bubbles arise exogenously, and that they pop with some exogenous probability. They then assume that there is some probability that an increase in interest rates might increase the chances of stock prices returning to their fundamental level. They also assume that inflation is directly related to the extent to which stock prices are above fundamental levels. Given these assumptions, and the objective of keeping inflation within targets, they derive optimal interest rate policies. These policies imply that a bubble will result in interest rates being set at a higher-than-neutral rate, and show that this rate will be lower the more efficient interest rates are in eliminating bubbles. The clear challenge presented by this work though is that of how to substantiate the very strong assumptions made by the authors.

Lastly, Billmeier and Massa (2009) assess the macroeconomic determinants of stock market capitalization in a panel of 17 emerging markets in the Middle East and Central Asia, including both oil-rich countries and economies without sizeable natural resource wealth. In addition to traditional variables, they included an institutional variable and remittances among the regressors. They found that (i) both institutions and remittances have a positive and significant impact on market capitalization; and (ii) both regressors matter, especially in countries without significant hydrocarbon sectors; whereas (iii) in resource-rich countries, stock market capitalization is mainly driven by the oil price.

A clear message from these reviewed works is that there is some relationship between the stock market and both firm-level and macroeconomic fundamentals. Arguments definitely exist as to the direction of such impacts, whether from the stock market to the rest of the economy, from the rest of the economy to the stock market or bi-directional. There are also

arguments as to the size of the impacts whatever the direction assumed or observed. For countries with weak capital markets, low level of economic activity etc, the direction and size of impacts could be unclear. The fact that results from different works and on different countries differ in both size of estimates and broad policy implications makes a fundamental case for context-specific research on the subject matter on each country to be able to derive policy lessons. As can be seen from the review, there is a case about developing countries that hangs in the air i.e. that the relationship could be weak for poor countries. But exactly how weak it can be depends on the level of development of the stock market. Since the early 1980s, the Nigerian stock market has been active and capitalization has continued to increase persistently. It has also suffered a major shock. But it is not known how these affect the broad macro economy or how various indicators in the economy contribute to its growth or to the shock and what implications these have for policies to manage the stock exchange. There is need for some empirical estimates in this respect.

A. Macroeconomic Stability

A stable macroeconomic environment is crucial for the development of the stock market. Macroeconomic volatility worsens the problem of informational asymmetries and becomes a source of vulnerability to the financial system. Low and predictable rates of inflation are more likely to contribute to stock market development and economic growth. Both domestic and foreign investors will be unwilling to invest in the stock market where there are expectations of high inflation. Garcia and Liu (1999) find that sound macroeconomic environments and sufficiently high income levels—GDP per capita, domestic savings, and domestic investments—are important determinants of stock market development in emerging markets.

B. Banking Sector Development

The development of the banking sector is important for stock market development in Africa. At the early stages of its establishment the stock market is a complement rather than substitute for the banking sector. Developing the financial intermediary sector can promote stock market development. Many East Asian countries are successful examples. Support services from the banking system contribute significantly to the development of the stock market. Consequently, liquid inter-bank markets, largely supported by an efficient banking system, are important for the development of the stock market. Conversely a weak-banking system can constrain the development of the stock market.

C. Automation

Automation is also expected to help reduce the costs and inefficiencies in African stock markets and increase trading activity and liquidity. Automation helps to speed up operations and activities of exchanges and reduces cost associated with manual systems. In addition, automation makes it easier to extend trading days and hours due to less cumbersome procedures. Automated trading also eliminates the need for trade intermediation since investors can log onto systems to monitor markets and also trade on markets, thus bypassing the use of brokers.

D. Promote Institutional Investors

The involvement of institutional investors in African exchanges must be pursued vigorously. Institutional investors often are at the forefront in promoting efficient market practices and financial innovation. They typically favor greater transparency and market integrity in both primary and secondary markets, seek lower transaction cost, and encourage efficient trading and settlement facilities. Pension Funds, insurance houses and other institutional investors can therefore act as a countervailing force to commercial and investment banks as well as other market intermediaries, forcing them to be more competitive and efficient. Indeed African exchanges stand to gain from increasing the involvement of institutional investors on stock exchanges.

E. Strengthen Regulation and Supervision

Regulation and supervision of the financial system play a great role in determining both its stability and the extent of services provided. Regulation and supervision are typically aimed at the protection of investors from the potentially opportunistic behaviour of insiders. Investor protection helps solve agency problems and information asymmetry arising from inside information. This helps in making optimal decisions, increasing access to external finance and resulting in productive investment and eventually higher firm growth (La Porta, Lopezde-Silanes and Shleifer, 2003). There is the need for a well structured and clear rule of law, within an efficient judicial system, which allows for contract repudiation and expropriation risk in this regard. However, Vittas (1990) noted that the real challenge is the shortage of experienced supervisors and the absence of a strong tradition favoring compliance with the rules and discouraging regulatory forbearance.

References

- Allen, F and G Gorton (1993) 'Churning Bubbles', *Review of Economic Studies* 60: 813 ñ 836
- Anyafu, M. O (1982) 'An Empirical Analysis of Share Price Behavior in the Nigerian Capital Market 1971 ñ 1981' Unpublished M.Sc Dissertation Report submitted to the Department of Accounting, Ahmadu Bello University, Zaria Nigeria.
- Anyanwaokoro M (1999) *Theory and Policy of Money and Banking*; Enugu: Hossana publications
- Arellano, M and Bond, S. (1991), 'Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations', *Review of Economic Studies*, 58: 277-97.
- Atje, R. and Jovanovic, B. (1993), 'Stock Markets and Development', *European Economic Review*, 37, 632-640.
- Bencivenga, V. R., Smith, B. D., and Starr, R. M. (1996): 'Equity Markets, Transaction Costs, and Capital Accumulations: An Illustration'. *The World Bank Review* 10(2):241-265.
- Bhide, A (1993): 'The Hidden Costs of Stock Market Liquidity', *Journal of Financial Economics* 34: 31-51.
- Billmeier, A and Massa, I. (2009) "What drives stock market development in emerging markets ñ institutions, remittances or natural resources?", *Emerging Markets Review* 10(1): 23 ñ 35
- Binswanger, M (1999) *Stock Markets, Speculative Bubbles and Economic Growth*; Cheltenham: Edward Elgar Publishing.
- Bolton, P. and Freixas, X. (2000), 'Equity, Bonds and Bank Debt: Capital Structure and Financial Market Equilibrium under Asymmetric Information', *Journal of Political Economy*, 208(2): 324-351.
- Campbell, J. Y. and Shiller, R. J. (1988), 'The dividend-price ratio and expectations of future dividends and discount factors', *Review of Financial Studies*, 1: 195 ñ 228.
- Campbell J.Y and Vuolteenaho, T. (2003) 'Inflation Illusion and Stock Prices' *American Economic Review*, 94
- Capasso S (2003) 'Stock Market Development and Economic Growth: A matter of informational problems' *The University of Manchester Discussion paper Series*, Centre for Growth and Business Cycle Research, School of Economic Studies <http://www.ses.man.ac.uk/cgbcrc/discussi.htm>

- Claessens, S., and Glen, J. (1995), "Stock Price Behaviour in emerging Stock Markets." Paper presented at the World Bank Conference on Portfolio Flows to Developing Countries, Washington, D.C. September 9 ñ 10.
- Claessens S, Klingebiel D, and Schmukler S. L (2006) "Stock market development and internationalization: Do economic fundamentals spur both similarly?" *Journal of Empirical Finance*, 13 (3): 316 ñ 350
- Cochrane, J. H. (1994), "Permanent and Transitory Components of GNP and Stock Prices", *Quarterly Journal of Economics*, 107: 241 ñ 265.
- Das A (2005) "Do stock prices and interest rates possess a common trend?", *Louvain Economic Review*, 71(4) Public Policy Institute Georgetown University, Washington, D.C.
- Demirgüç-Kunt, A. and R. Levine (1996), "Stock Market Development and Financial Intermediaries: Stylized Facts", *World Bank Economic Review*, 10(2): 291 ñ 321
- Domian, D., Gilster J, and Louton D. (1996) "Expected Inflation, Interest Rates, and Stock Returns." *The Financial Review* 31: 809 ñ 30.
- Emenuga, C., (1998), "The Nigerian Capital Market and Nigeria's Economic Performance," Paper presented at the seminar organized by the Nigerian Economic Society, at Nigerian Institute of International Affairs, Lagos. 21st January.
- Fama, E. and Schwert G (1977) "Asset Returns and Inflation", *Journal of Financial Economics*, 5: 115 ñ 46.
- Garcia, F. V and Liu, L. (1999), "Macroeconomic Determinants of Stock Market Development," *Journal of Applied Economics*, 2 (1): 29 ñ 59.
- Gonzalo J., Lee T., and Yang W. (2007) "Permanent and Transitory Components of GDP and Stock Prices: Further Analysis", *Macroeconomics and Finance in Emerging Market Economies*, 1(1): 155 -170: Available at www.informaworld.com/smpp/content
- Haastrecht, A and Pelsser, A (2009) "Generic pricing of FX, inflation and stock options under stochastic interest rates and stochastic volatility"
- Hess, M. (2003) "Sector-Specific Impacts of Macroeconomic Fundamentals on the Swiss Stock Market" *Financial Markets and Portfolio Management*, 17 (2): 234 ñ 245.
- Jaffe, J. and Mandelker, G. (1976) "The "Fisher Effect" for Risky Assets: An Empirical Investigation." *The Journal of Finance*, 31: 447ñ58.
- Kent, C. and Lowe, P. (1997), "Asset-Price Bubbles and Monetary Policy", *Reserve Bank of Australia Working Paper*, 9709.

- Kenny, C. and Moss, T. D. (1998), 'Stock Markets in Africa: Emerging Lions or White Elephants?' *World Development*, 26: 829 ñ 43.
- King, R. G., Plosser, C. I.; Stock, J. H. and Watson, M. W. (1991), 'Stochastic Trends and Economic Fluctuations', *American Economic Review*, 81: 819 ñ 40.
- Kolari, J.W. and Anari, A. (2001) 'Stock Prices and Inflation', *Journal of Financial Research*, 24(4)
- Koller, T.; Goedhart, M.; Wessels, D.; Thomas E. and Copeland, T. E. (2005), *Valuation – Measuring and Managing the Value of Companies* (4th edition) New York: John Wiley and sons Inc.
- La Porta, R., Lopez-de-Silanes, F. and Andrei Shleifer, A. (2003), 'What Works in Securities Laws?' *NBER Working Paper* 9882, National Bureau of Economic Research
- Levine, R. and Zervos, S. (1998), 'Stock Markets, Banks and Economic Growth', *American Economic Review*, 88: 537 ñ 557.
- Modigliani, F. and Cohn, R. (1979), 'Inflation, rational valuation, and the Market', *Financial Analysts' Journal*.
- Mohtadi, H. and Agarwal, S. (2001) 'Stock Market Development and Economic Growth: Evidence from Developing Countries'
- Muellbauer J. and Nunziata, (2001) 'Credit, the Stock Market and Oil: Forecasting U.S. GDP', Research Report submitted to Nuffield College, University of Oxford, England, with support from the Economic and Social Research Council.
- Nelson, C. (1976), 'Inflation and Rates of Return on Common Stock' *The Journal of Finance* 31: 471ñ83
- Nweze, A. (2002), 'The Relation of the Structure of Equity Share Prices to Historical, Expectational and Industrial Variables: The Nigerian Experience' Unpublished Phd Thesis submitted to the Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria.
- Nyong, M. O. (1997), 'Capital Market Development and Long-run Economic Growth: Theory, Evidence and Analysis' *First Bank Review*, December: 13-38.
- Obadan, M. I. (1998), 'Capital Market and Nigeria's Economic Development' A Presidential Address presented at a one day Seminar of the Nigeria Economic Society held at the Institute of International Affairs, Lagos, January 21st.
- Obstfeld, Maurice (1994): 'Risk-taking, Global Diversification, and Growth' *American Economic Review* 84(5): 1310 ñ 29.

Okafor F. O (1983) "Investment Decisions: Evaluation of projects and securities" London: Cassell.

Osinubi S. T (2001) "Does Stock Market Promote Economic Growth in Nigeria?", Submission II for Inaugural International Conference on Bu: Available at <http://sta.uwi.edu/conferences/financeconference/conference%20papers/session%>

Osinubi S. T and Amaghionyeodiwe A. L (2002) "Stock Market Development and Long-Run Growth in Nigeria", *Journal of African Business*, 4(3). Available at <http://www.haworthpress.com/store/product.asp?sku=J156>,

Phillips T (1978) "A Stock Market Index for the Nigerian Stock Exchange", *CBN Economic and Financial Review*, 16(2): 51 - 71.

Schwert W.G (1981) "The Adjustment of Stock Prices to Information about Inflation", *Journal of Finance*, 36(3): 15-29

Singh, Ajit, 1997, "Financial Liberalization, Stock Markets, and Economic Development", *The Economic Journal*, 107: 771-782.

Singh, Ajit, 1999, "Should Africa Promote Stock Market Capitalism?" *Journal of International Development*, 11: 343-365

Soyode, A. (1990): "The Role of capital in Economic Development", *Security Market Journal Nigeria*, 6

Tripathi Vanita (2008) "Company fundamentals and Equity returns in India", A Paper presented at the 21st Australasian Finance and Banking Conference. Available at SSRN: <http://ssrn.com/abstract=1247717>

Vittas, Dimitri, 1998, "Institutional Investors and Securities Markets: Which Comes First?" *World Bank Working Paper* 2032, Washington: The World Bank.

Yartey Charles A. and Adjasi Charles K., 2007, "Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges" *IMF Working Paper* WP/07/209

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

Research design provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project -- the samples or groups, measures, treatments or programs, and methods of assignment -- work together to try to address the central research questions (William, 2006). According to Onwumere (2005), a research design is a kind of blueprint that guides the researcher in his or her investigation and analysis. A researcher needs this layout in order to adopt a scientific approach in identifying and solving problems.

Given its overall aim, this study employed both econometric analysis of time series and survey data. The methodology therefore combined primary and secondary data. To this end, a questionnaire, administered on a select number of market operators, regulators, employees of quoted firms, investors and other stakeholders, was used to elicit information on the causes and impacts of the fall in key market indices. The results from time series model complemented the survey. The data shall consist of monthly variables between the period 2004 and 2008.

3.2 The Time Series Model

3.2.1 Model Specification and Justification of the Variables

Yomere and Agbonifoh (1999) defined a model as a simplified view of reality designed to enable us describe the essence and interrelationships within the system or phenomenon it depicts. Onwura (1998) asserted that time series data measures a particular variable during successive time periods or at different dates which could be monthly, yearly, bi-annually or longer which observations are usually successive and equally spaced in time. These views support the suitability of time series model in this study.

Given the above, the final model can be mathematically represented as follows:

$$ASPI = ASPI(Y, INF, PLR, PF, REM, OECD, SMK)$$

Where:

ASPI = All share price index, proxy for Stock pricing;

YN = Non-oil income;

MLR = Maximum lending rate;

M₂ = Money supply;

GEXP = Government expenditure;

CPS = Credit to private sector;

NER = Nominal exchange rate;

RER = Real exchange rate;

NOS = Number of securities;

TBR = Treasury bills rate;

REM = Remittances;

Functionally, the model is given as:

$$ASPI = C + \alpha Y \pm \beta INF \pm \chi PLR + \delta PF + \phi REM + \eta OECD + \gamma SMK + \mu$$

All variables are as earlier defined; $\alpha, \beta, \chi, \delta, \phi, \eta, \gamma$ are coefficients while μ is a randomly distributed error term.

Note that the choice of ASPI as a proxy for stock pricing is based on two considerations. First, it is a ratio and therefore already in standard measurement that requires no further conversion. Second, more than any other variable, it has the capacity of capturing trends in all stock prices simultaneously. Given that each price movement that reflects in the ASPI is in ratio of the original price, the ASPI equally gives a weighted average of the prices and of other activities relating to trading in the market.

3.2.2 Analytical Techniques for the Time Series Data

This study used an error correction model to evaluate the nature and size of the long run relationship between the ASPI and select fundamentals. The introduction of the error correction factor (ECF) was intended to show the rate of adjustment back to equilibrium given a shock to the relationship among the variables.

$$ASPI = C + \alpha Y \pm \beta INF \pm \chi PLR + \delta PF + \phi REM + \eta OECD + \gamma SMK - ECF + \mu$$

All variables are as earlier defined. ECF is the error correction factor.

Two equations feature in this estimation. The first equation uses a derived value of the ASPI obtained by estimating a single equation of the relationship of the index with broad macroeconomic fundamentals of the economy, indicated as ASPIGEN. The value of the ASPI that is consistent with the long term value of these determinants is taken as its fundamental value. Deviations from this value were thereafter regarded as bubbles or irregular movements in the real value of the ASPI. Identified fundamentals include output, money supply, inflation and interest rates. Then the second equation: the fundamental value of the ASPI (ASPIGEN) was put back into an equation of a broader set of determinants and the results compared to a regular error correction function of the deflated ASPI using identified indicators. Factors that affected the normal ASPI but did not affect the fundamental ASPI were considered to have temporary impacts and so may not matter in the long run determination of ASPI. For both equations, the estimation technique remained general-to-specific in order to capture economy-specific relevant factors that may ordinarily not appear in a theory-constrained model. The results from the two were compared.

Unit root and cointegration tests were conducted on both the derived and actual ASPI. Interestingly, the unit root test results indicated that while the actual ASPI (in real terms) is stationary at order 2, the derived variable is stationary at order 1 indicating more stability in the real value of the derived (fundamental) value. Both sets of variables were cointegrated with the specified determinants.

3.2.3 Nature and Sources of Secondary Data

Secondary data was sourced from published materials of the Central Bank of Nigeria and the Nigeria Stock Exchange. In particular, the Central Bank monetary survey results, which contain monthly data on important monetary indicators was used to obtain data on major macroeconomic indicators while time series of the all-share price indices was obtained directly from publications of the Nigeria Stock Exchange.

3.3 Survey Data Analysis

3.3.1 Data Collection Instrument, Method and Coverage

Tuckman (1972) stated that through questionnaire and interviews, survey research makes it possible to measure what a person knows (knowledge or information), what a person likes and dislikes (values and preferences), and what a person thinks (attitude and beliefs).

The questionnaire is structured to more effectively capture micro issues like balance sheet of the quoted firms, profitability and dividend sharing policies of the firms as well as selected issues in regulation of the stock market. The questionnaire is divided into three sections. Section one, with eight questions, deals with introductory issues and personal information of the respondent. Among other things, the first part aims to elicit information on the confidence level in the market among stakeholders given recent trends in stock prices. Section two, with ten questions, deals in greater details with micro issues of firm profitability, dividend policies, management capabilities and the balance sheet size of quoted firms, relating these to the pricing of stocks in the market. Section three, with twelve questions, covers issues of regulation and broad macroeconomic environment under which the stock market operates. Most of the questions aim to find out stakeholders' views on the contributions of both the regulatory framework and the direction of the rest of the macro economy on the stock market. In all, there are 30 questions in the questionnaire.

The questionnaire was administered primarily in Lagos to stakeholders in the Nigerian capital market. Such stakeholders include regulators, bankers, independent investors, stock brokers, managers and employees of quoted firms.

3.3.2 Analytical Techniques for the Survey Data

The principal objective here is to find out the extent to which each of the factors listed in the questionnaire determines prices and activities in the stock market. Consequently, the causative factors shall be grouped depending on the responses obtained and analyzed using standard statistical tools like tables, charts, as well as measures of central tendencies and dispersion. However, to effectively capture causality, a dichotomous binary estimator shall be used. Four variants of such dichotomous binary estimators generally come in handy in modeling vector qualitative variables ñ the Linear Probability Model [LPM], the Logit model, the Probit (Normit) model and the Tobit model. Among all four, the Logit model is known to be superior to the other three as an analytical technique. The LPM has structural deficiencies while the Tobit and Probit models are computationally unattractive (Gujarati, 1995). Therefore, analysis in this work shall be limited to the use of the Logit model. The probability

function of a causality for price movements under the Logit model by any of the factors listed by respondents (represented here with an omnibus term (Pr) could be obtained as:

$$P(\text{Pr}) = E(\text{Pr} = 1/\{Xi\} = 1/1 + e^{-(a_i')}$$

Where:

- P = Probability of causality;
- Pr = Dependent variable (in this case price movement);
- E = Expected value;
- Xi = Vector of explanatory variables;
- E = Binary operator.

To ease interpretation and ensure consistency in the estimation, the original data obtained via likert scale responses will be converted to two groups of variables i.e. positive and negative. For responses where there are two sets of possible responses, they will be grouped as related. For example "strong" and "very strong" will be grouped as positive with a value of 1 while "weak" and "very weak" will be grouped as negative with a value of 0 and classified as not being strong enough to merit policy attention. A linear regression will then be used to estimate the relative impact of the different variables on stock prices.

3.4 Software

E-Views software was used to analyze the time series data while analysis of primary data was done with SPSS.

References

- Gujarati, D. N. (1995), *Basic Econometrics (3rd Edition)*, New York: McGraw Hill, Inc.
- Onwumere J. U. J (2005) *Business and Economic Research Methods*, Enugu: Don-Vinton Ltd.
- Onwura E. A (1998), *Introduction to Academic Research Methods*, Enugu: Gostak Printing and Publishing ltd.
- Tuckman, B. W (1972), *Conducting Educational Research*, New York: Harcourt Brace Jovanovich inc.
- William M. K Trochin (2006), "Research Methods Knowledge Base" Department of Policy Analysis and Management, Cornell University, New York. Available at <http://www.socialresearchmethods.net>
- Yomere, G. O and Agbonifoh, B. A. (1999), *Research Methodology*, Benin City: Centre Piece Consultants Nigeria Ltd.

Chapter Four

Data Presentation and Analysis

Raw data could be unbelievably useful but only potentially so. In their original form, they do not provide sufficient and meaningful information. According to Onwumere, 2005, we start making meaning out of data immediately they are arranged in one form or the other and tabular presentations offer us such opportunity. Charts, graphs and textual write-ups are all forms of data analysis (Onodugo, Ugwuonah and Ebinne, 2010).

4.1 Data Presentation

Included as appendix, the data utilized in this study are presented using tables and charts. According to Adamu and Johnson, (2004), the purpose of tabulation is to condense and thereby facilitate comparison of data. They also added that diagrams, like statistical tables, are designed not only to catch the eye but also to convey information. Onwumere, 2005 puts it this way: diagrams are necessary in research reporting especially when trying to make the relevant data easy for comprehension and for elegance.

4.2 Data Analysis

Test of Hypothesis

Hypothesis testing is the crux of every research exercise. To buttress this, Onodugo, Ugwuonah and Ebinne (2010) stated that a major plank for effective discussion of research findings is the answering of research questions and testing of hypothesis. Note however, that in empirical works of this sort, hypothesis testing is usually adopted whereas research questions are normally used in theoretical works as researcher's focal guide. And to test a hypothesis, it has to be stated in both null and alternative forms (Onwumere, 2005). It is the null hypothesis that is either accepted or rejected.

4.2.1 Evidence from Primary data

As notified in chapter 3, this work elicited responses from stakeholders (most of who were imperiled in the stock market crash) as to the nature and causes of the crash in stock prices with particular emphasis on market fundamentals, regulatory institutions and structure of pricing in the market. To buttress this, question 6 of the questionnaire sought to ascertain the status of our respondents. Their responses showed that 76% majority stakeholders were

affected by the stock market crash. This may largely authenticate their views on the happenings around the stock market thereby making the findings of this study reliable. Figure 1 in the appendix showed the results. Moreover, all three hypotheses under study were tested in line with the responses from the survey. Stated hereunder are the hypotheses as well as the survey results.

Hypothesis one

H₀: The stock market is not driven by economic fundamentals.

H_a: The stock market is driven by economic fundamentals.

Question:

Was the Nigeria stock market dipping a price adjustment to reflect major firms' fundamentals or a reflection of a more fundamental problem of a bigger economy?

Response:

Only 1% believed it was just about price adjustment, 25% were emphatic that it had nothing to do with adjustment whereas 74% felt it was beyond mere price adjustment (see appendix fig 2).

Following this, a number of micro/firm level fundamentals were selected and respondents were requested to relate them to share prices between 2004 and early 2008. Five indicators chosen include:

- ❖ Management standards and practices in the quoted firms;
- ❖ Size of posted profits of the firms;
- ❖ Regularity of dividend payouts by the firms;
- ❖ The size of dividend paid to investors in the firms;
- ❖ Structure and size of balance sheet of quoted firms.

Question:

Did the regularity of dividend payout match the high prices of quoted stocks as seen over the period 2004 ñ 2008?

Response:

As shown on fig 3, 78% said that prices were not matched by regularity of dividend payout by quoted firms. Only a few firms in the banking sector and food/confectionaries consistently paid dividends and/or had script issues on a regular basis.

The response on dividend regularity largely mirrors responses on the other micro variables. For example, as shown on fig 4, against 32%, a majority of 68% believe that posted profits were weaker than stock prices. It is believed by 73% that amounts paid out as dividend were too small compared to stock prices (fig 5). Also, 53% indicated that even management standards and practices in these firms were much weaker than comparable prices of the firms on the exchange (fig 6). It was only on the balance sheet of quoted companies that sentiments were a bit favorable as up to 56% believed firm balance sheets were healthy enough to warrant the stock prices (fig 7).

Respondents did not altogether exonerate the macroeconomic environment (fundamentals) from the happenings in the stock market. For example fig 8 showed that nearly 86% believe that stock prices equally tried to reflect inflationary trends in the economy and that macroeconomic instability arising from fluctuations in prices were partly responsible for the price rise and subsequent collapse. Another 70% linked the surge in stock prices between 2004 and 2008 to the relatively high growth of the economy within the same period in some way (fig 9). However, when it comes to whether such big events as the change in government (which occurred just about 9 months before the beginning of the collapse in prices) had impact on the market, many thought otherwise. Figure 10 indicates that only about 36 percent could make the link. The rest believe the negative movements in the market had little or nothing to do with the change in government.

Hypothesis two

H₀: The Nigeria stock market crisis was not caused by ill-adjusted stock prices.

H_a: The Nigeria stock market crisis was caused by ill-adjusted stock prices.

Questions:

Do you think that firms in Nigeria engage in price setting?

A follow-up question was assuming yes was the answer to whether Nigerian firms engage in price setting, could price setting have been a reason for the fall in stock prices?

Responses:

The results are as indicated in figs 11 and 12. About 66% of the respondents answered in the affirmative.

It is important to note here that the question of price setting is a critical one in the market given the market trends since 2003 where share price appreciation became phenomenal. In fact, according to Agu, (2008), Nigeria stood as the toast of investors over the period with lots of portfolio funds flowing into the economy for stock investment. What then could be driving the market upshots? Majority of the respondents ñ stakeholders and market makers alike ñ admit that price setting was quite significant in the market.

The survey also tried to elicit information on broad perception of respondents on the governance structure in the market. It specifically asked whether respondents thought there were enough safeguards in the market to regulate the system. Figure 13 summarizes the responses on this. About 89% of the respondents made it clear there are not enough safeguards in the system to regulate it ñ another way of saying market regulation is extremely weak in the Nigeria Stock Exchange.

Hypothesis three

H₀: Investor confidence was not affected by the recent crisis in the Nigeria stock market.

H_a: Investor confidence was affected by the recent crisis in the Nigeria stock market.

Question:

To what extent has your confidence in the market been dampened by the recent events?

Response:

Up to 71% respondents were not sure of making future investments in the Nigeria stock market.. Figure 14 captures how such losses affected confidence level in the market. Even though future price increase may still attract many back into the market, the responses reflect impact of the fall in prices on investors' sentiments as well as the level of care investors may apply in future dealings on the market. Evidently, confidence in the market dampened.

Beyond questions on the cause(s) and impact of Nigeria stock market crash, we attempted to elicit information on what could bring about a market rebound.

Question:

Kindly rate the possible contributions of the following factors in bringing about the market rebound in the order 1 ñ 8 (1 is the most important while 8 is the least important)

- ❖ Improved market regulation
- ❖ Improved management of quoted firms
- ❖ Improved profitability of quoted firms
- ❖ Lower and more stable inflation rates
- ❖ Improved economic growth
- ❖ Improvement in credit availability to investors by commercial banks
- ❖ Improvement in macro governance by the present administration
- ❖ Global economic upturn

Response:

To analyze the responses, we group the eight factors under four broad classifications and take the numbers that picked them as either first or second most important and present the chart in figure 15 (see appendix). Global economic upturn featured as a factor that would ultimately help the market rebound with a total of 23 respondents either indicating it as first or second. Following that with total of 39 responses are micro indices of improved firm profitability and greater availability of credit to investors. Macroeconomic issues of economic growth and inflation control closely come next with 40 responses. But the overwhelming majority sees improved governance (both market and policy) as the key to possible market rebound.

4.2.1(b) Censored Logit Analysis

Using a censored logit model, we equally tried to undertake an econometric analysis of some of the responses from the survey. Here focus was based on the main hypothesis ñ hypothesis one:

H₀: The stock market is not driven by economic fundamentals.

H_a: The stock market is driven by economic fundamentals.

To regress, we chose Availability of Safeguards in the Market for the dependent variable. The reason for this choice is simple. We do not have any direct question that ascertained whether stock prices fell or not. And in our view, responses on the question of availability of safeguards well reflect the relative price fall in the market. The independent variables include:

- ❖ Existence of price setting behavior (PRICESET);
- ❖ Extent pricing setting affected the market (PRICING);
- ❖ Management standards and practices (MGTSP);
- ❖ Size of firms' posted profits (POSPRFIT);
- ❖ Regularity of dividend payments (REGDIV);
- ❖ Dividend amounts (DIVAMT);
- ❖ Balance sheet of quoted firms (BSHT);
- ❖ Regulatory capacity of Nigeria Stock Exchange/Security and Exchange Commission (NSEREQ).

Table 1 displays the results. As shown in the table, four factors more than others were critically associated with the view on lack of safeguards in the market. These include price setting behaviour of firms, poor management standards and practices in the quoted firms, irregularity of dividend payment and weakness in the regulatory capacity of Nigeria Stock Exchange as well as Securities and Exchange Commission. Other factors like amount shared as dividend, posted profits and balance sheet of the firms were less important, again confirming the trends observed in the statistical analyses.

4.2.2 Evidence from Secondary data

To complement the views from the survey, this part of analysis examines the relationship between stock pricing and macroeconomic fundamentals. It is important to note that concern here is again based on the examination of hypothesis one. So the hypothesis is re-stated thus:

Hypothesis one

H₀: The stock market is not driven by economic fundamentals.

H_a: The stock market is driven by economic fundamentals.

Given the above, the model for regression is represented as follows:

$$ASPI = f(YN, MLR, M2, GEXP, CPS, NER, RER, NOS, TBR, REM)$$

Where:

ASPI = All share price index, proxy for Stock pricing;

YN = Non-oil income;

MLR = Maximum lending rate;

M₂ = Money supply;

GEXP = Government expenditure;

CPS = Credit to private sector;

NER = Nominal exchange rate;

RER = Real exchange rate;

NOS = Number of securities;

TBR = Treasury bills rate;

REM = Remittances.

Table 2 displays the estimation results. From the table, the long-run, real value of ASPI (shown by the results of the ASPIGEN equation (row 2 in the table) are determined by almost a different set of variables from the actual values. For the long run values (ASPIGEN), key determinants include the lending rate, money supply and credit to the private sector. The real exchange rate and number of listed securities were marginally significant at 7 % each. This implies that key determinants of the long run value of the ASPI are mainly absolute price and monetary variables with the exception of the real exchange rate, which is a relative price and the number of listed securities.

However, further analysis of the factors that determined actual values of the dependent variable showed remittances and nominal exchange rate. Most of the variables identified in the long run equation disappeared in significance with many of them unable to enter the model at more than 20% probability. Credit to the private sector was the only variable that remained fairly significant, though not as significant as remittances and nominal exchange rate. In effect, uncertain flows in remittances and changes in the nominal exchange rate have been part of the factors causing shifts of the market prices of stocks away from their fundamentals. Most of the other major variables in the economy were weakly related to the ASPI. These findings fairly corroborate the view obtained from stakeholders in the survey about the weak relationship between stock pricing and macroeconomic fundamentals.

References

- Adamu, S. O. and Tinuke, J. (2004), *Statistics for Beginners*, Ibadan: Evans Brothers (Nigeria Publishers) Ltd.
- Agu, C. (2008), 'Foreign Direct Investment in Nigeria: Policies, Prospects and Challenges' A Background Paper prepared for South and Eastern African Trade Negotiations Institute with Support from the United Nations Development Programme.
- Onodugo, V.A, Ugwuonah, G. E. and Ebinne, E. S. (2010), *Social Science Research: Principles, Methods and Applications*, Enugu: El'Demak Publishers.
- Onwumere J. U. J (2005) *Business and Economic Research Methods*, Enugu: Don-Vinton Ltd

Chapter Five

Summary of Findings, Conclusion and Recommendation

5.1 Summary of Findings

Objective One

To examine if between 2004 and 2008, stock prices followed economic fundamentals or merely reflected bubbles

Findings

Following the results obtained from the primary and secondary data analyses (see chapter 4), the null hypothesis was accepted and the alternative hypothesis rejected.

The above conclusion partly agrees with that of some earlier researchers. Biswanger (1999) stated that stock market prices do not accurately reflect underlying fundamentals when speculative bubbles emerge in the market; weak economic base and institutions compromise the relationship between macroeconomic indicators and activities in the stock market (Osinubi and Amaghionyeodiwe, 2003); whereas this study largely showed that fundamentals did not drive stock prices, Nweze (2002) stated that earnings have more impact on share prices than dividends.

Implications

That stock prices cannot be related to such basic indicators as profitability and dividend policy has far-reaching implications such as:

- ❖ Removal of the most important leverage available to genuine investors for evaluating alternative investment options in quoted firms;
- ❖ Possibility of sick firms to hide behind bloated stock prices to wreck havoc on corporate Nigeria;
- ❖ Creation of room for arbitrageurs and other rent-seekers to manipulate prices and reap bumper benefits that end up hurting all genuine participants in the market.

Objective Two

To assess the cause(s) of the recent crisis in the Nigeria Stock market

Finding

Majority of the respondents (66%) admitted that price setting was the explanation for the market up-shots experienced during the period under review. As a result, the null hypothesis was rejected.

Objective Three

To evaluate investor confidence in the market given these recent activities and occurrence

Finding

Up to 71% respondents were not sure of making future investments in the Nigeria stock market. Based on this, the null hypothesis was rejected.

Implications

Even though future price increase may still attract many back into the market, the response reveals more than just the obvious. Some effects could be implied and/or incidental such as:

- ❖ Skepticism in future dealings on the Market;
- ❖ Impending misallocation of resources into non-optimal uses;
- ❖ Destruction of large amount of wealth and continuing economic malaise;
- ❖ Reduced or withdrawal of foreign direct investment;
- ❖ General credit crunch from lending institutions;
- ❖ Protracted period of risk aversion which could prolong the downturn in asset price deflation.

5.2 Conclusion

The basic aim of this work is to relate trends in the Nigerian stock market to basic micro and macroeconomic fundamentals and draw lessons from there. Using quarterly data within an error correction model, we showed that the all-share price index (a broad indicator of market price trends) is not strongly related to most economic fundamentals. Turning back to the outcome from a survey, we showed that this is partly because regulatory framework for the market is relatively weak and therefore prices did not reflect broad fundamentals. Firms and individuals ostensibly took advantage of such regulatory weaknesses to exploit loopholes and

further private objectives. Consequently, prices were higher than even already sound firm fundamentals. The collapse that ensued led to huge losses by several investors and led to significant loss in confidence in the market. So both assessments confirm there is a problem with the market. But we equally tried to indicate that the problem is not only and wholly regulatory; there are other challenges particularly in respect of the nature of capital account as well as the domestic macroeconomic environment.

5.3 Recommendations

It is widely held that the stock market is a strong indicator of the level of economic activities within a country. In fact, Obadan (1998) asserts that an active stock market may be relied upon to measure changes in the general economic activities using the stock market index. But where the stock market gets out of touch with the economy, it is obviously not serving this purpose well and may well be on its way to an unsustainable growth path. Osinubi and Amaghionyeodiwe (2003) clearly stated that a weak economic base and institutions compromise the relationship between economic fundamentals and activities in the stock market. This study shows that Nigeria Stock market is not strongly driven by most economic fundamentals ñ micro and macro alike. It is also clear from the work that the regulatory framework of the Market falls short of the 'desirable'. NSE and SEC were shown to lack capacities (or maybe the will) to effectively run the market. Such weaknesses, the sources of which could not be obtained in the course of the survey, seem to be so obvious that key players in the market exploit them.

It is against this backdrop that the following recommendations come in handy to help check loopholes and weaknesses in the stock market, at firm-level, and larger economy. They are:

- ❖ Developing economies, and in this case Nigerian economy, will do well to attend to the need for an overhaul of the regulatory framework of the market evidenced in improved governance (both market and policy) as the key to possible market rebound;
- ❖ A sustained proactive policy reform and management would well serve;
- ❖ It may be necessary to put measures on ground for monitoring quoted firms' activities with particular emphasis on price setting and related practices. This measure might serve the purpose of ensuring that only healthy firms remain on the trading floor of NSE thereby restoring already waning investor confidence;

- ❖ Further research into what specifically may be wrong with the “safeguard mechanisms” in the market and how such can be corrected could also be a good consideration;
- ❖ Responsible parties should also consider routine check on the relationship between stock market growth and the rest of economic performance. This is a possible issue because from this study, it was observed that while the Nigerian stock market grew fast, the rest of the non-oil economy was comatose. So the stock growth was neither supported by nor did it support other aspects of the economy as should be the case. A simple test could have easily identified such disconnect and some attempts made through policy to bind the two more closely. That way, extreme shocks to the market could have been avoided.

References

- Binswanger, M. (1999) *Stock Markets, Speculative Bubbles and Economic Growth*, Cheltenham: Edward Elgar Publishing.
- Nweze, A. (2002) 'The Relation of the Structure of Equity Share Prices to Historical, Expectational and Industrial Variables: The Nigerian Experience' An Unpublished Phd Thesis submitted to the Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria.
- Obadan, M. I. (1998) 'Capital Market and Nigeria's Economic Development' A Presidential Address presented at a one-day Seminar organized by the Nigeria Economic Society at the Institute of International Affairs, Lagos, January 21st.
- Osinubi, S. T. and Amaghionyeodiwe, A. L. (2002) 'Stock Market Development and Long-Run Growth in Nigeria', *Journal of African Business*, 4(3). Available at <http://www.haworthpress.com/store/product.asp?sku=J156>,

APPENDIX

1. CHARTS AND TABLES

FIG 1: DID YOU SUFFER ANY LOSS?

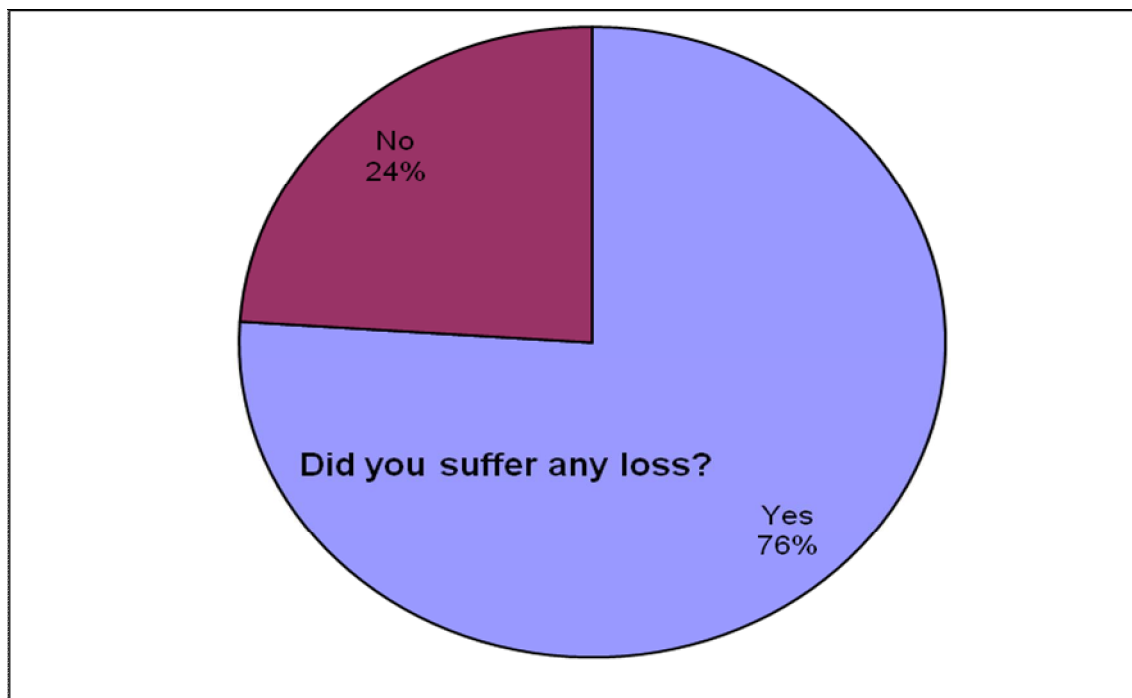


Fig 2: Does the fall in Prices Reflect Adjustment or more...?

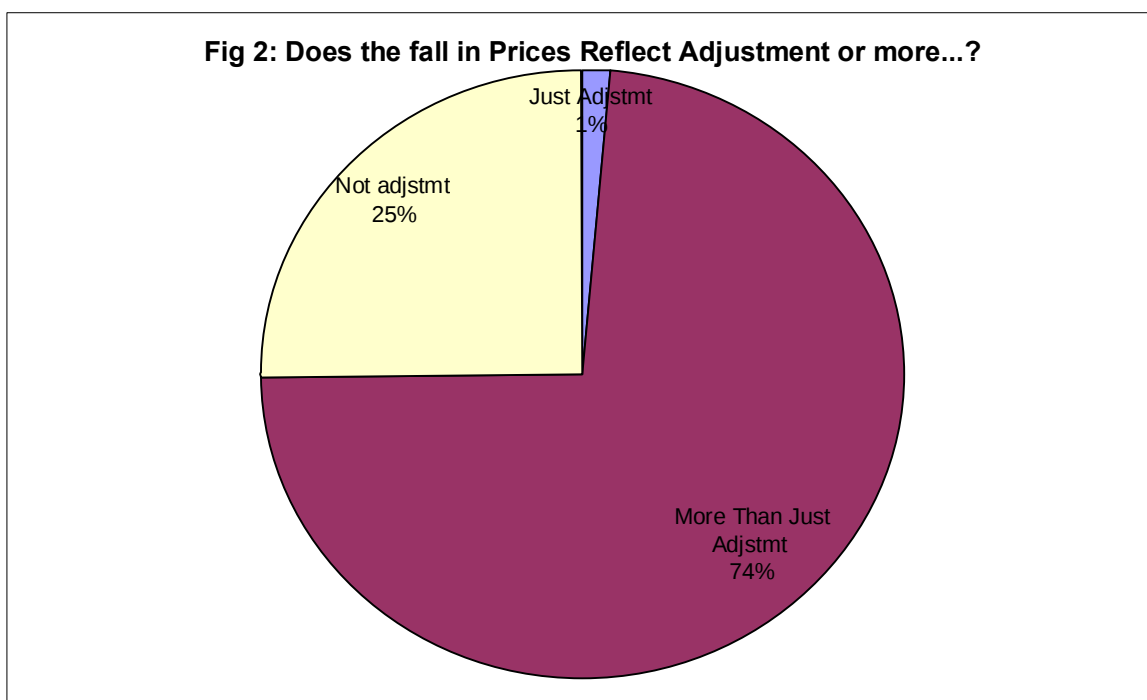


Fig 3: Compare Div Regularity to Boom Prices

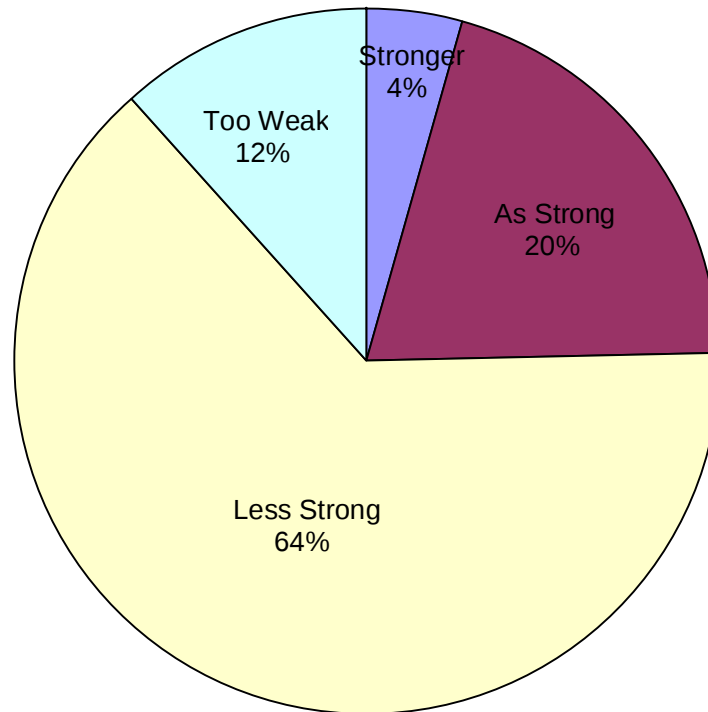


fig 4: Does posted profit match stock prices?



Fig 5: Compare dividend amount to boom prices

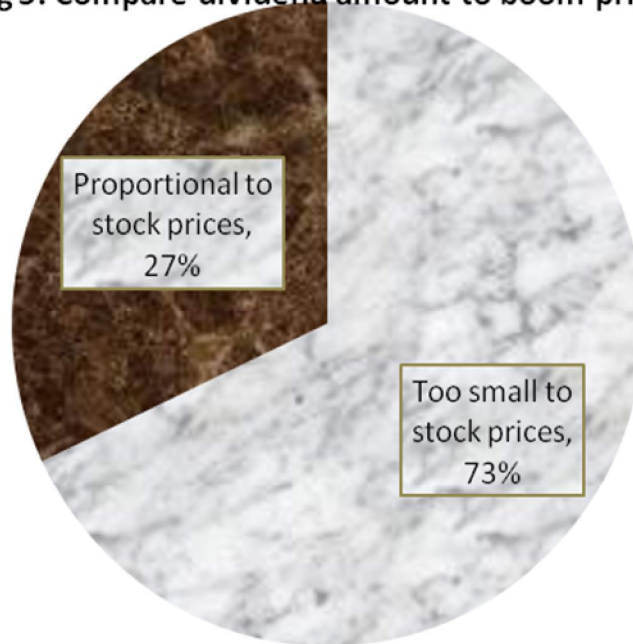


Fig 6: Does management standards and practices relate to boom prices



Fig 7: Do quoted firms' balance sheets match boom prices?

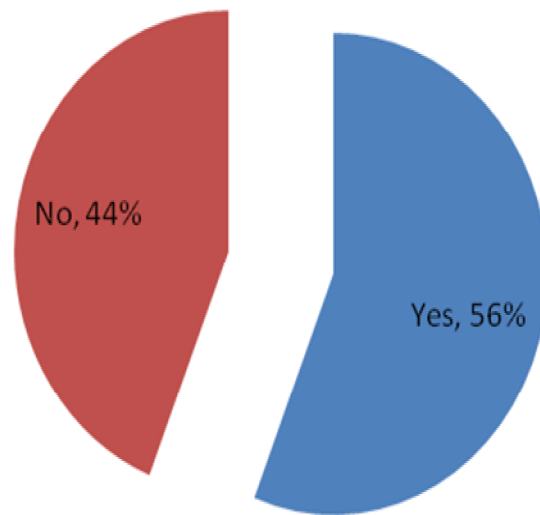


Fig 8:

Does Inflation Affect Stock Prices?

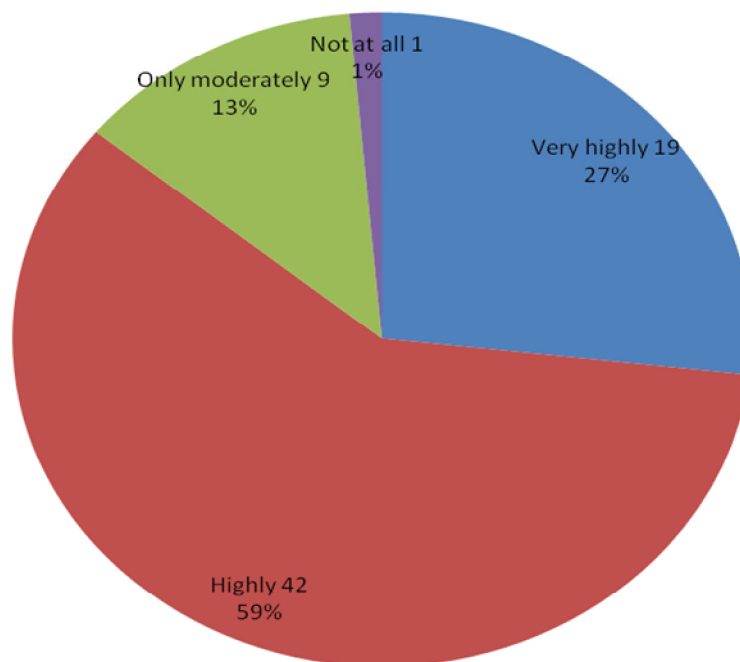


Fig 9: Does GDP growth match boom prices?

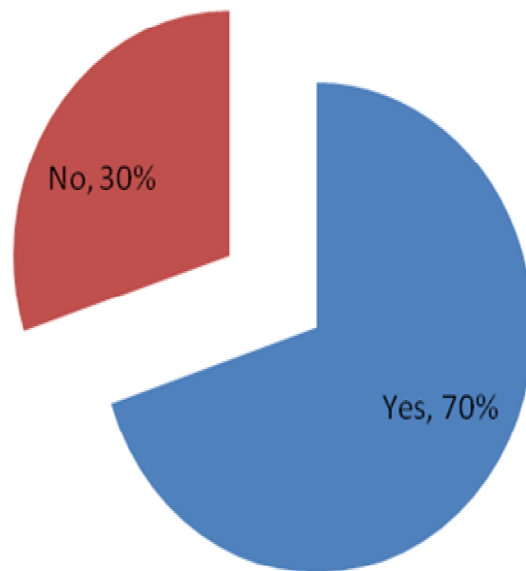


Fig 10: Did change in govt impact stock price?

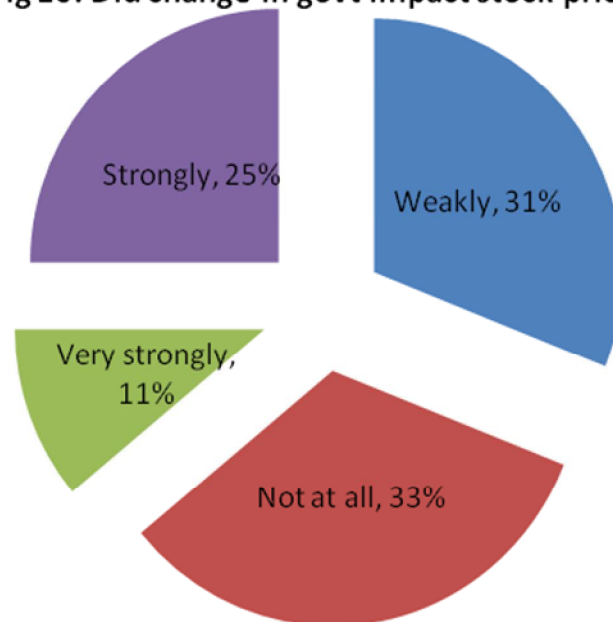


Fig 11:

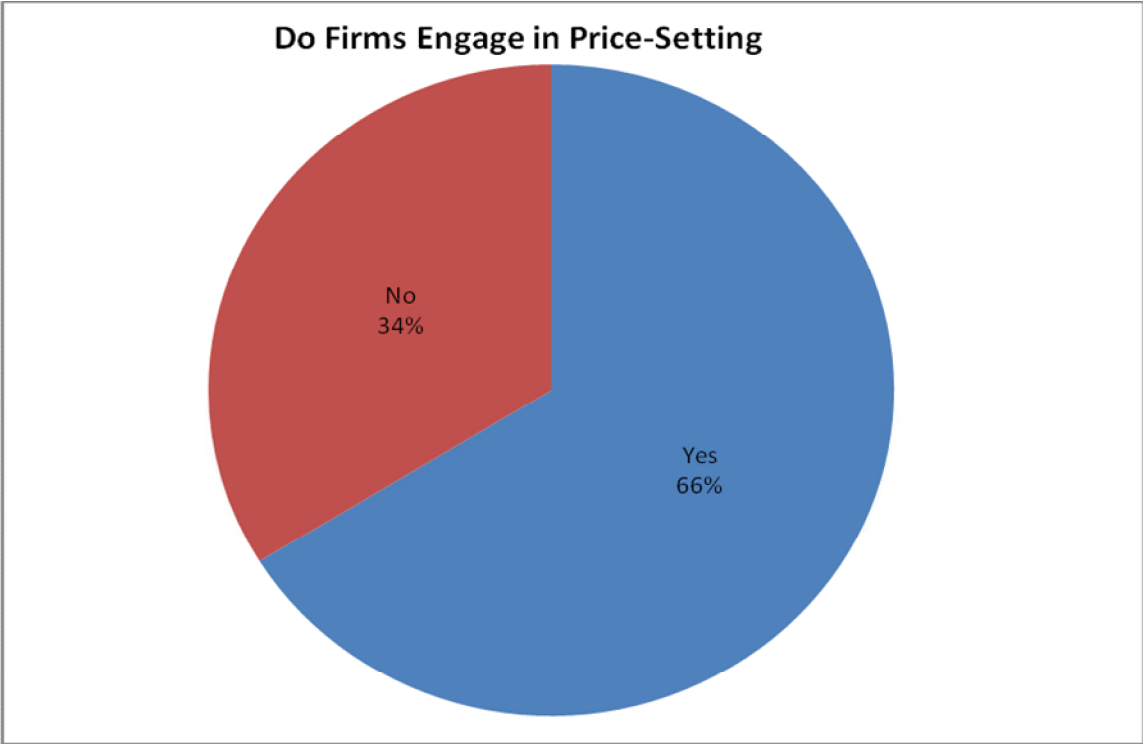


Fig 12: Is Price Setting Part of the Reason for the fall?

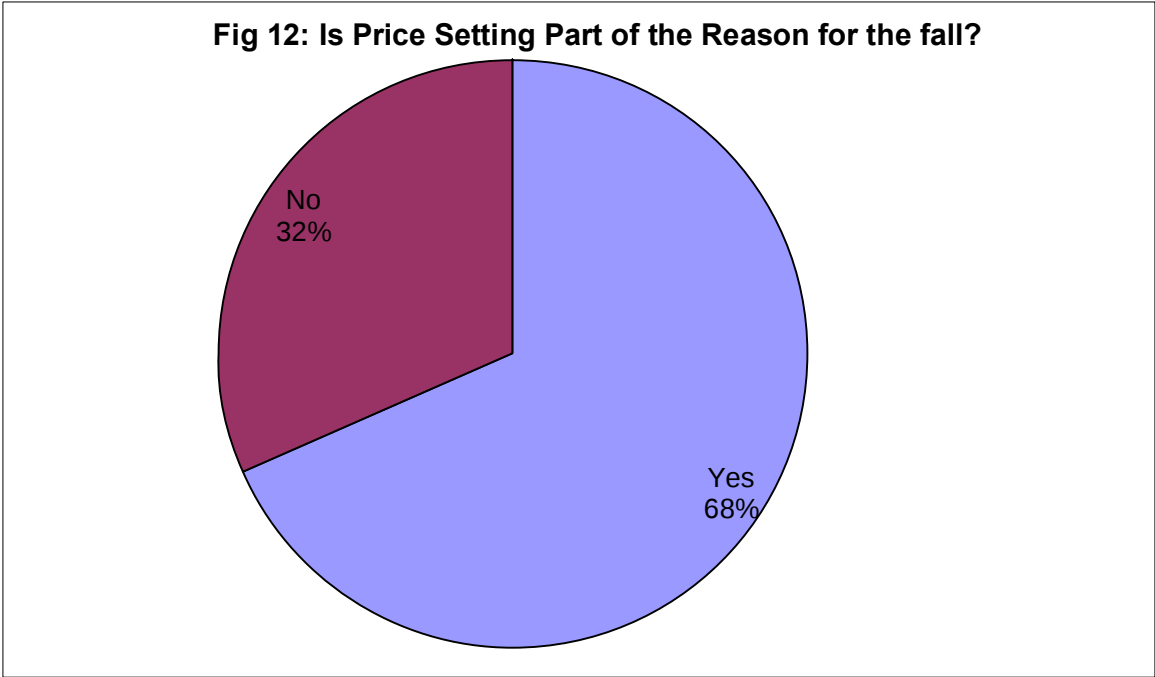


Fig 13: Are There Enough Safeguards to Regulate the System?

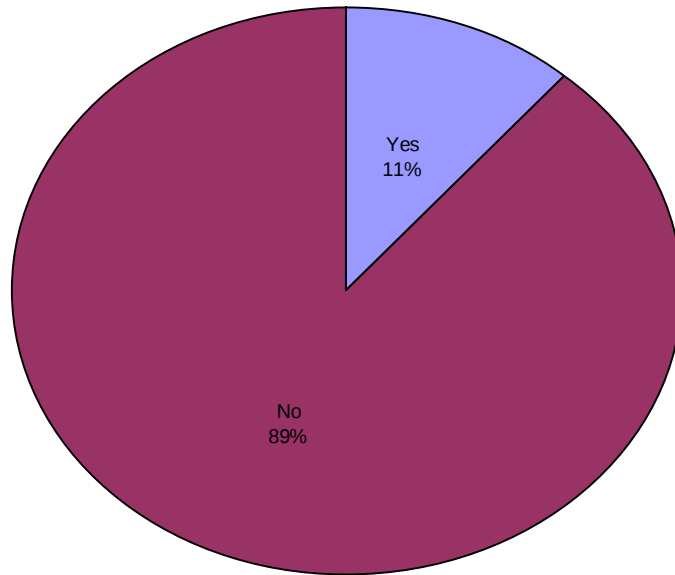


Fig 14: Is your confidence in the market dampened?

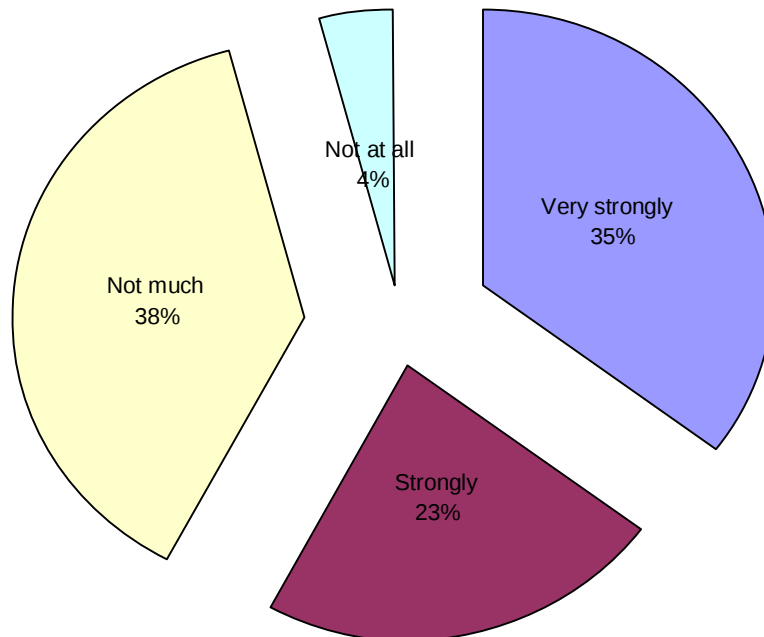


FIG 15:

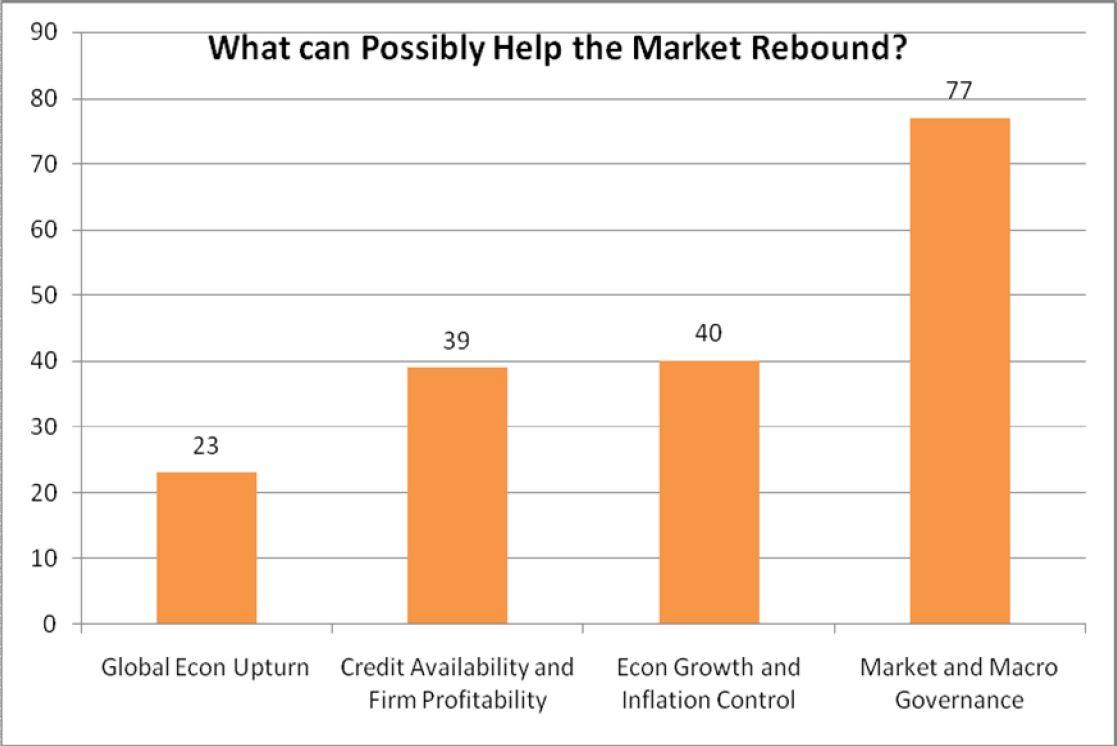


Table 1: A Censored Logit Model of Availability of Safeguard in the Market

Dependent Variable: SAFGUAD				
Method: ML - Censored Logistic (Quadratic hill climbing)				
Date: 06/25/09 Time: 06:54				
Sample: 1 71				
Included observations: 55				
Left censoring (value) at zero				
Convergence achieved after 5 iterations				
Covariance matrix computed using second derivatives				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
PRICESET	-0.278458	0.154629	-1.800817	0.0717
PRICING	0.325267	0.105670	3.078152	0.0021
MGTSPT	0.238693	0.076329	3.127153	0.0018
POSPRFT	-0.055053	0.078129	-0.704649	0.4810
REGDIV	0.255620	0.077805	3.285374	0.0010
DIVAMT	0.082132	0.060035	1.368073	0.1713
BSHT	-0.027629	0.062402	-0.442763	0.6579
NSEREQ	0.188753	0.056225	3.357127	0.0008
	Error Distribution			
SCALE:C(9)	0.193212	0.022484	8.593357	0.0000
Mean dependent var	1.890909	S.D. dependent var		0.314627
S.E. of regression	0.425980	Akaike info criterion		1.115112
Sum squared resid	8.528582	Schwarz criterion		1.443585
Log likelihood	-21.66559	Hannan-Quinn criter.		1.242135
Avg. log likelihood	-0.393920			
Left censored obs	0	Right censored obs		0
Uncensored obs	55	Total obs		55

Table 2: Modelling Fundamental and Actual Values of the All Share Price Index

Model	Actual ASPI		Fundamental ASPI
MLR			-1.95373 (-3.27)
M2			2.127017 (4.74)
GEXP			0.839622 (1.03)
CPS	0.242951 (1.85)		1.498225 (2.48)
NER	-0.20283 (-2.37)		-0.63842 (-1.66)
RER			-1.11737 (-1.84)
NOS	1.553487 (1.43)		9.148427 (1.86)
YN	1.04379 (1.28)		
TBR	-0.08642 (-1.14)		
REM	0.173315 (2.06) Lag 1 0.130422 (1.68) Lag 4 0.076146 (1.09)		
RESID	-8.48E-05 (-3.77)		-0.00088 (-4.21)
R ²	0.314		0.607
DW	2.6		2.3

APPENDIX

2. SURVEY INSTRUMENT

An Analysis of Interrelationship and Impact of Stock Market, Micro and Macroeconomic Fundamentals on Stock pricing in Nigeria

Semi-Structure Questionnaire for Stakeholders in the Nigeria Capital Market

Introduction

Dear Sir/Madam,

Beginning March 2008, the Nigeria stock market witnessed massive and consistent drop in value of major quoted shares. Nigeria's fall came some clear five months ahead of the fall in stock markets of other major industrial and developing countries, which started in August of the same year. Up till now, it is not clear that much technical assessment of the trends in the market has been conducted. We are therefore conducting research to examine the underlying causes of the stock market crash and their implications on the economy. We are eliciting responses from key operators and stakeholders in the stock market. The exercise is purely for academic research purposes and all responses shall be treated with utmost confidence. We therefore humbly solicit your cooperation and support. Thank you very much in anticipation.

Sincerely,

Chioma Chukwuma-Agu

Department of Banking and Finance

University of Nigeria, Enugu Campus

Section 1: Background Information

1. Name (Optional) -----

2. Contact Details (Optional)
 - a. Phone
 - b. Email

3. Which activity sector does your firm belong to?
 - a. Stock Broking Firm
 - b. Banker
 - c. Quoted Company
 - d. Other Investor
 - e. Regulator (Nigeria Stock Exchange or Securities and Exchange Commission)
 - f. Government official
 - g. Others (Pls Specify) -----

4. What is your status in the firm?
 - a. Employer
 - b. Senior Management Employee
 - c. Mid/lower-Level Employee

5. Do you have investments in the stock market?
 - a. Yes
 - b. No

6. Did you suffer any loss on account of the recent fall in the prices of quoted firms on the Nigeria Stock Exchange?
 - a. Yes
 - b. No

7. To what extent has your confidence in the market been dampened by recent events
 - a. Very strongly
 - b. Strongly
 - c. Not much

- d. Not at all
- 8. Relative to other assets, will you continue to invest a significant proportion of your portfolio in the stock market
 - a. Very Strongly
 - b. Strongly
 - c. Not much
 - d. Not at all

Section II: Firm Fundamentals and Quoted Prices

- 9. Do you think that the managements of firms in Nigeria are strong enough to warrant the sort of confidence seen in the market over the period 2003 through 2007?
 - a. As strong as the prices reflected
 - b. Stronger than the prices reflected
 - c. Weaker than the prices reflected
- 10. If weaker than the prices reflected, do you think investors understanding of the management weaknesses contributed to the fall in stock prices?
 - a. Yes
 - b. No
 - c. No opinion
- 11. Do you think that profits posted by Nigerian firms were high enough to match the prices of quoted firms in the Nigerian Stock Exchange over the period 2003 through 2007?
 - a. Profits were more than enough match for the stock prices
 - b. Profits were just enough to warrant the prices and confidence in those firms
 - c. Profits were lower than the prices of stocks of most firms
- 12. Do you think that the regularity of dividend payout warrant the rush in investment in quoted firms as seen over the period 2003 through 2007?
 - a. Dividend payouts were regular for most firms and should have warranted higher prices of the quoted stocks
 - b. Dividend payouts were regular and was just enough for the prices of firms on the stock exchange
 - c. Dividend payouts were irregular for most firms and should have warranted much lower prices for quoted firms
- 13. Do you think the amounts paid out as dividend by companies quoted on the Nigeria Stock Exchange are commensurate with the prices at which investors were willing to buy

stocks their stocks over the period 2003 through 2007?

- a. Amounts paid out by majority of the firms as dividends were relatively high to warrant even higher stock prices than were witnessed over the period 2003 to 2007
- b. Amounts paid as dividend by most quoted companies were just enough to match the prices of the firms
- c. Amounts paid as dividend by most quoted companies were too small and did not warrant the sort of prices quoted on these firms's shares

14. Do you think that the balance sheets of quoted firms were strong enough to warrant the investments being made in those companies over the period 2003 to 2007?

- a. Balance sheet was stronger than prices
- b. Balance sheet was just as strong as prices
- c. Balance sheet were too weak to warrant the prices offered on the stocks

15. Do you think that the fall in stock prices simply reflected an adjustment to reflect major fundamentals of quoted firms or that it reflects a more fundamental problem of the bigger economy?

- a. It reflected purely an adjustment and nothing more
- b. It reflected an adjustment. However, a lull in the bigger domestic and global macroeconomy also contributed to the fall in prices
- c. It has nothing to do with adjustment but everything to do with bigger challenges facing domestic and world economy

16. Can you give an overall rating of quoted firms in the Nigerian stock market

- a. Extremely sound
- b. Moderately Sound
- c. Sound
- d. Moderately Weak
- e. Extremely Weak

17. Do you think that firms in Nigeria engage in price setting?

- a. Yes
- b. No
- c. No idea

18. If yes to question above, do you think this price setting is one of the reasons for the fall in the market?

- a. Yes

- b. No
- c. No idea

Section III: Regulation, Macroeconomic Management and the Stock Market

19. Do you think there are enough safeguards in the regulatory system to ensure that price setting among quoted firms is completely removed?

- a. Yes
- b. No
- c. No idea

20. How will you rate the diversification of the Nigerian Stock market in terms of the sector coverage of quoted firms? (i.e. whether all sectors of the economy are ADEQUATELY represented in the market)

- a. More than adequate
- b. Adequate
- c. Inadequate
- d. Grossly inadequate

21. To what extent do you think inflation affects prices of quoted firms in the Nigeria stock market

- a. Very highly
- b. Highly
- c. Only moderately
- d. Not at all

22. Do you think that macroeconomic instability arising from high inflation could have been one of the major reasons that contributed to the fall in stock prices?

- a. Strongly agree
- b. Agree
- c. Disagree
- d. Strongly disagree

23. The Nigerian economy has been observed to grow consistently above 5 percent between 2003 and 2008. Do you think this was one of the major reasons for the surge in share prices over the period?

- a. Yes
- b. No

c. No idea

24. The Central Bank of Nigeria was once quoted as contributing to the problems through its policies on lending and margin facilities by commercial banks. To what extent do you think this was a factor in contributing to the market crash

a. Very highly

b. Highly

c. Moderately

d. Not at all

25. Do you think that regulation capacity and processes of the NSE and SEC meet minimum standards to ensure stable and profitable stock exchange?

a. Very adequate

b. Adequate

c. Inadequate

d. Very inadequate

26. The fall in the market started some months after the swearing in of a new government. Do you think that poor confidence in the new government was part of the reasons for the fall in stock prices?

a. Very strongly

b. Strong

c. Weak

d. Very weak

e. Strongly disagree

27. Overall, kindly rate the following factors in order of importance in contributing to the boom in the market between 2004 and 2007 beginning from 1 through 7

a. High Economic Growth

b. Improved macroeconomic management and governance by Federal and state Governments

c. Strong regulation of the market by the Nigeria Stock Exchange and the Securities and Exchange Commission

d. High credit availability from banks

e. Banking sector consolidation and effective monetary policy by the Central Bank

f. Effective management and high profitability of quoted companies

g. Overly strong and unfounded investor optimism and high risk trading

h. Strong global economic growth

28. Overall, can you rate the contributions of the following factors in the order of contribution to the fall in prices of stocks beginning with 1 for the most important and 7 for the least important?

- a. Poor profitability of quoted firms
- b. Poor management of quoted firms
- c. Weak regulation of the market by the NSE and SEC
- d. Credit and monetary policies of the Central Bank of Nigeria
- e. Macroeconomic stability ñ high inflation, low output growth and government fiscal policies
- f. Political changes and improvement in macroeconomic governance by the Yarădua administration
- g. Improved lending by commercial banks
- h. Global economic downturn

29. In your view, will the market rebound in the near future ñ say before the end of 2010?

- a. Yes
- b. No

30. If yes, kindly rate the possible contributions of the following factors in bringing about the market rebound in the order 1 ñ 8 (1 is the most important while 8 is the least important)

- a. Improved market regulation
- b. Improved management of quoted firms
- c. Improved profitability of quoted firms
- d. Lower and more stable inflation rates
- e. Improved economic growth
- f. Improvement in credit availability to investors by commercial banks
- g. Improvement in macro governance by the present administration
- h. Global economic upturn

BIBLIOGRAPHY

- Abreu, D and Brunnermeier, M. K. (2003), 'Bubbles and Crashes', *Econometrica* 71(1): 173 ñ 204
- Adamu, S. O. and Tinuke, J. (2004), *Statistics for Beginners*, Ibadan: Evans Brothers (Nig Publishers) Ltd.
- Agu, C. (2008), 'Foreign Direct Investment in Nigeria: Policies, Prospects and Challenges' A Background Paper prepared for South and Eastern African Trade Negotiations Institute with Support from the United Nations Development Programme.
- Allen F. and Gorton, G. (1993) 'Churning Bubbles', *Review of Economic Studies* 60, 813 ñ 836
- Allen, F and G Gorton (1993) 'Churning Bubbles', *Review of Economic Studies* 60: 813 ñ 836
- Anyafu, M. O (1982) 'An Empirical Analysis of Share Price Behavior in the Nigerian Capital Market 1971 ñ 1981' Unpublished M.Sc Dissertation Report submitted to the Department of Accounting, Ahmadu Bello University, Zaria Nigeria.
- Anyanwaokoro M (1999) *Theory and Policy of Money and Banking*; Enugu: Hossana publications
- Arellano, M and Bond, S. (1991), 'Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations', *Review of Economic Studies*, 58: 277-97.
- Atje, R. and Jovanovic, B. (1993), 'Stock Markets and Development', *European Economic Review*, 37, 632-640.
- Bencivenga, V. R., Smith, B. D., and Starr, R. M. (1996): 'Equity Markets, Transaction Costs, and Capital Accumulations: An Illustration', *The World Bank Review* 10(2):241-265.
- Bhide, A (1993): 'The Hidden Costs of Stock Market Liquidity', *Journal of Financial Economics* 34: 31-51.
- Billmeier, A and Massa, I. (2009) "What drives stock market development in emerging markets ñ institutions, remittances or natural resources?", *Emerging Markets Review* 10(1): 23 ñ 35
- Binswanger, M (1999) *Stock Markets, Speculative Bubbles and Economic Growth*; Cheltenham: Edward Elgar Publishing.
- Binswanger, M (1999), *Stock Markets, Speculative Bubbles and Economic Growth*, Cheltenham: Edward Elgar Publishing.
- Binswanger, M. (1999) *Stock Markets, Speculative Bubbles and Economic Growth*, Cheltenham: Edward Elgar Publishing.

- Bolton, P. and Freixas, X. (2000), 'Equity, Bonds and Bank Debt: Capital Structure and Financial Market Equilibrium under Asymmetric Information', *Journal of Political Economy*, 208(2): 324-351.
- Campbell J.Y and Vuolteenaho, T. (2003) 'Inflation Illusion and Stock Prices' *American Economic Review*, 94
- Campbell, J. Y. and Shiller, R. J. (1988), 'The dividend-price ratio and expectations of future dividends and discount factors', *Review of Financial Studies*, 1: 195 ñ 228.
- Capasso S (2003) 'Stock Market Development and Economic Growth: A matter of informational problems' *The University of Manchester Discussion paper Series*, Centre for Growth and Business Cycle Research, School of Economic Studies <http://www.ses.man.ac.uk/cgbcr/discussi.htm>
- Chen J. (1999) 'When the bubble is going to burst' *International Journal of Theoretical and Applied Finance*, 2(3): 285 ñ 292
- Claessens S, Klingebiel D, and Schmukler S. L (2006) 'Stock market development and internationalization: Do economic fundamentals spur both similarly?' *Journal of Empirical Finance*, 13 (3): 316 ñ 350
- Claessens, S., and Glen, J. (1995), 'Stock Price Behaviour in emerging Stock Markets.' Paper presented at the World Bank Conference on Portfolio Flows to Developing Countries, Washington, D.C. September 9 ñ 10.
- Cochrane, J. H. (1994), 'Permanent and Transitory Components of GNP and Stock Prices', *Quarterly Journal of Economics*, 107: 241 ñ 265.
- Das A (2005) 'Do stock prices and interest rates possess a common trend?', *Louvain Economic Review*, 71(4) Public Policy Institute Georgetown University, Washington, D.C.
- Demirgüç-Kunt, A. and R. Levine (1996), 'Stock Market Development and Financial Intermediaries: Stylized Facts', *World Bank Economic Review*, 10(2): 291 ñ 321
- Domian, D., Gilster J, and Louton D. (1996) 'Expected Inflation, Interest Rates, and Stock Returns.' *The Financial Review* 31: 809 ñ 30.
- Emenuga, C., (1998), 'The Nigerian Capital Market and Nigeria's Economic Performance,' Paper presented at the seminar organized by the Nigerian Economic Society, at Nigerian Institute of International Affairs, Lagos. 21st January.
- Fama, E. and Schwert G (1977) 'Asset Returns and Inflation', *Journal of Financial Economics*, 5: 115 ñ 46.
- Froot, K. and Obstfeld, M. (1992), 'Intrinsic Bubbles: the Case of Stock Prices', *NBER Working Paper Series*, w3091: SSRN: [!! HYPERLINK "http://ssrn.com/abstract=304858"](http://ssrn.com/abstract=304858)

- Garcia, F. V and Liu, L. (1999), 'Macroeconomic Determinants of Stock Market Development', *Journal of Applied Economics*, 2 (1): 29 ñ 59.
- Gonzalo J., Lee T., and Yang W. (2007) 'Permanent and Transitory Components of GDP and Stock Prices: Further Analysis', *Macroeconomics and Finance in Emerging Market Economies*, 1(1): 155 -170: Available at www.informaworld.com/smpp/content
- Gujarati, D. N. (1995), *Basic Econometrics (3rd Edition)*, New York: McGraw Hill, Inc.
- Haastrecht, A and Pelsser, A (2009) 'Generic pricing of FX, inflation and stock options under stochastic interest rates and stochastic volatility'
- Hess, M. (2003) 'Sector-Specific Impacts of Macroeconomic Fundamentals on the Swiss Stock Market' *Financial Markets and Portfolio Management*, 17 (2): 234 ñ 245.
- Jaffe, J. and Mandelker, G. (1976) 'The 'Fisher Effect' for Risky Assets: An Empirical Investigation.' *The Journal of Finance*, 31: 447ñ58.
- Kenny, C. and Moss, T. D. (1998), 'Stock Markets in Africa: Emerging Lions or White Elephants?' *World Development*, 26: 829 ñ 43.
- Kent, C. and Lowe, P. (1997), 'Asset-Price Bubbles and Monetary Policy', *Reserve Bank of Australia Working Paper*, 9709.
- King, R. G., Plosser, C. I.; Stock, J. H. and Watson, M. W. (1991), 'Stochastic Trends and Economic Fluctuations', *American Economic Review*, 81: 819 ñ 40.
- Kolari, J.W. and Anari, A. (2001) 'Stock Prices and Inflation', *Journal of Financial Research*, 24(4)
- Koller, T.; Goedhart, M.; Wessels, D.; Thomas E. and Copeland, T. E. (2005), *Valuation – Measuring and Managing the Value of Companies* (4th edition) New York: John Wiley and sons Inc.
- La Porta, R., Lopez-de-Silanes, F. and Andrei Shleifer, A. (2003), 'What Works in Securities Laws?' *NBER Working Paper* 9882, National Bureau of Economic Research
- Levine, R. and Zervos, S. (1998), 'Stock Markets, Banks and Economic Growth', *American Economic Review*, 88: 537 ñ 557.
- Modigliani, F. and Cohn, R. (1979), 'Inflation, rational valuation, and the Market', *Financial Analysts' Journal*.
- Mohtadi, H. and Agarwal, S. (2001) 'Stock Market Development and Economic Growth: Evidence from Developing Countries'
- Muellbauer J. and Nunziata, (2001) 'Credit, the Stock Market and Oil: Forecasting U.S. GDP', Research Report submitted to Nuffield College, University of Oxford, England, with support from the Economic and Social Research Council.

- Nduwugwe, J. (2008), 'Nigerian Economy may Reel under Financial Crisis', *Third World Network-Africa* (TWN-Af), December.
- Nelson, C. (1976), 'Inflation and Rates of Return on Common Stock', *The Journal of Finance* 31: 471-483
- Nigeria Stock Exchange, (2009), <http://www.scribd.com/doc/10585651/Nigerian-Stock-Exchange-Official-2008-Review-and-Outlook-for-2009>
- Nwachukwu, I. (2009), 'Global meltdown: Milking benefits from Nigerian economy?', *Economic Watcher*, 25 February, 2009
- Nweze, A. (2002) 'The Relation of the Structure of Equity Share Prices to Historical, Expectational and Industrial Variables: The Nigerian Experience' An Unpublished Phd Thesis submitted to the Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria.
- Nweze, A. (2002), 'The Relation of the Structure of Equity Share Prices to Historical, Expectational and Industrial Variables: The Nigerian Experience' Unpublished Phd Thesis submitted to the Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria.
- Nyong, M. O. (1997), 'Capital Market Development and Long-run Economic Growth: Theory, Evidence and Analysis' First Bank Review, December: 13-38.
- Obadan, M. I. (1998) 'Capital Market and Nigeria's Economic Development' A Presidential Address presented at a one-day Seminar organized by the Nigeria Economic Society at the Institute of International Affairs, Lagos, January 21st.
- Obadan, M. I. (1998), 'Capital Market and Nigeria's Economic Development' A Presidential Address presented at a one day Seminar of the Nigeria Economic Society held at the Institute of International Affairs, Lagos, January 21st.
- Obayelu, A. E, (2009), 'Critical Analysis of Global Financial Crisis and its Impact on Nigeria Capital Market, Investment and Employment of Labor in Nigeria', Monograph, Department of Agricultural Economics, University of Ibadan, Nigeria.
- Obstfeld, Maurice (1994): 'Risk-taking, Global Diversification, and Growth' *American Economic Review* 84(5): 1310 - 29.
- Okafor F. O (1983) 'Investment Decisions: Evaluation of projects and securities' London: Cassell.
- Onodugo, V.A, Ugwuonah, G. E. and Ebinne, E. S. (2010), *Social Science Research: Principles, Methods and Applications*, Enugu: El'Demak Publishers.
- Onwumere J. U. J (2005) *Business and Economic Research Methods*, Enugu: Don-Vinton Ltd.
- Onwumere J. U. J (2005) *Business and Economic Research Methods*, Enugu: Don-Vinton Ltd

Yartey Charles A. and Adjasi Charles K., 2007, "Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges" *IMF Working Paper* WP/07/209

Yomere, G. O and Agbonifoh, B. A. (1999), *Research Methodology*, Benin City: Centre Piece Consultants Nigeria Ltd.