

## Global Financial Recovery and the Stability of Africa Emerging Stock Markets

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### Abstract

This study investigates the impact of the global financial recovery on the stability condition of Africa emerging stock markets by employing the normality statistics and trends analyses and the use of the panel quantile regression technique to achieve this objective under daily all-share-indices covering the series range of 04/06/2008-05/05/2011; spanning 3-year period of 729 data sets and betting on the hypothesis that the global financial recovery guarantees the stability condition of Africa emerging stock markets. Our findings suggest that this hypothesis should be rejected as it could be fathomed that most emerging Africa stock markets are unstable not due solely to the effect of global financial crisis but in addition to the presence of some institutional and structural rigidities inherent in the typical African economies. Therefore, it could be right to infer that the global financial recovery (which largely exhibits "U" shape behaviour from recession), and by extension, the normality of global stock, is only a necessary but not sufficient condition to satisfy the stability condition of emerging stock markets, at least, in the context of Africa economies.

**Key Words:** Business fluctuations; Stock Market; Financial Crisis; Regression.

### I. Introduction

The global financial crisis began in the United States of America and the United Kingdom when the global credit market came to a standstill in July 2007 (Avgouleas, 2008). The crisis, brewing for a while, really started to show its effects in the middle of 2008. Around the world, stock markets have fallen and large financial institutions have collapsed or been bought out, and governments in even the wealthiest nations have had to come up with rescue packages to bail out their financial systems (Adamu, 2010). Following this, it seems that the panic on the capital market which caused a decrease of the stock market indices has been stopped. However, uncertainty of world economic development is still very high. Research in this field has shown that the world economy is in the "U" shaped recession and that recovery will last for 18 months. On the other hand, some economists claim that the world is in the long term "L" shaped recession (Vulic, 2010); suggesting a long span of time before recovery will finally come the way of global economy and therefore implying that the recovery cannot really be predicted, despite massive resources and giant efforts deposed towards this downturn. More so, Standard & Poor, an international rating agency, had in its report rated Nigeria's economy, like many other emerging economies, as having slipped from "stable" to "negative" condition (Blackfriars, 2009). One of the kernels of this study is to investigate whether this negative condition still lingers on both on the respective country's perspective and on a continental scale.

More importantly, the stability of prices in asset markets is clearly a central issue in economics. From a system point of view, markets inevitably entail the feedback of information in the form of price signals and, like all feedback systems, may exhibit unstable behavior. Under varying circumstances, we might expect convergence to some fundamental value, more or less regular oscillations, chaotic oscillations, sharp rises or falls followed by crashes or recoveries, and so on. Many writers have studied the effects of trading institutions, trader behavior, and feedback signals on such complex dynamic behavior, but the general problem remains poorly understood. A classic dialogue about this issue can be seen, for example, in the views of Friedman (1953) who argues that rational profit-seeking trading will always tend to stabilize a free market, and a long succession of others (see for example Baumol 1957 and de Long et al. 1990) who present models and accompanying arguments supporting the idea that speculating traders who seek to maximize their profit can in some natural circumstances destabilize a market. Identifying which part of the two extremes does the African stock market pitch its tent, following the recent global financial crisis and its attendant recovery strategies, efforts and policy programmes, is of paramount importance here. Admittedly, the crises in both the United State of America and the United Kingdom, due to sub-prime of mortgage commitments, have raised concerns about the adequate functioning and the stability of the financial system, and in particular the capital markets. This has triggered a large literature on contagion which attempts to measure and explain the spread of financial crisis or shocks across markets (see Tella, Yinusa and

Ayinde, 2011). On the contrary, the literature on financial stability is relatively scarce compared to the contagion literature even though the topics are closely linked to each other. In view of this, country-specific shocks or idiosyncratic shocks have been analysed extensively in the contagion literature while no particular attention has been paid to the role of systemic shocks. However, we will also argue that systematic shocks can be contagion if the propagation mechanism increases in extreme market conditions. In essence, all systematic shocks are potentially behavioural but behavioural shocks are rarely systemic and in the interest of this study, we are betting on the hypothesis that the recovery from global financial crisis guarantees the stability of the Africa emerging stock markets.

Nevertheless, there is no common definition of ‘financial stability’ which resembles the situation at the time of the Asian crisis when there was no standard definition for ‘contagion’ (Baur and Schulze, 2007). Most of the contributions define financial stability in a broad sense, that is, these definitions include the entire financial system and its linkages to the real sector while the very few that focuses on the stock market are extremely country-specific. In contrast, this paper aims to analyze financial stability in stock markets on a continental shelf; thereby advocating, though still narrow definition of financial stability but of cross-country analyses. The study contributes to the literature by proposing a definition of financial market stability and an econometric testing framework. The framework tests the impact of systematic and systemic shocks on financial markets and can assess whether the whole continent of Africa exhibits financial market stability or not. Table 1 portrays a picture of the emerging stock markets in the context of global stock markets. Investigating the truism of U-shaped global recovery proposition or the prevalence of the L-shaped recovery hypothesis along the thread of idiosyncratic or systemic shock is one of the germane thrusts of this study as we probe into the global sphere and the emerging African stock markets to ascertain if the recovery continuum has been completely cycled or still in progress. This will largely form the premise upon which we conduct the stability of the emerging African stock markets; and as well account for the proportional effect(s) of the global financial crisis recovery. This position is informed by the fact that systemic risk, financial instability or disorder entails heightened risk of financial crisis (Davis, 2009). Aside from this introduction part, this paper is further divided into five other sections. Section II focuses on the conceptual theoretical issues, section III hinges on the aspect of literature review, section IV concentrates on the methodology aspect while section V affects the model estimations and empirical findings. Section VI, which is the concluding part, addresses the conclusion and recommendation of policy suggestions.

## **II. Conceptual and Theoretical Issues**

Broadly speaking, business cycles are those fluctuations which recur in aggregate economic activity with a certain degree of regularity following the pendulum-like oscillations. According to Mitchell (1927) who did pioneering work in this field, “business cycles are a type of fluctuations found in the aggregate economic activity of nations that organize their work mainly in business enterprise. A cycle consists of expansion occurring at about the same time in many economic activities followed by similarly general recessions, contractions and revivals which merge with the expansion phase of the next cycle; this sequence of change is recurrent but not periodic” More so, Lucas (1977) as contained in Kydland and Prescott (1990:2) defined business cycle as the statistical properties of the co-movements of deviations from the trend of various economic aggregates with those of real output. Kydland and Prescott (1982) described business cycles as recurrent nature of events. These definitions underscore the recurrence of upturns and downturns around the trend of macroeconomic aggregates. However, in accordance to Keynes’ (1936) description, business cycle is characterized by the alternating expansion and contractionary wavy movements in aggregate business activity and there is some regularity in respect of the duration and time sequence of the upward and downward movements of business cycle. More so, he posited, business cycle is characterized by the presence of crisis; that is, the peak and trough turning points are asymmetrical, with the peak having pointed steep bends on either side while the trough has gently upward sloping sides. In short, business cycle refers to the wave-like movements of the economy caused by outside impulses operating upon the economy.

Nonetheless, Burns and Mitchell (1957) in another version posited that a normal business cycle consists of four closely inter-related phases of revival, expansion, recession and contraction. The peak and trough represent the critical mark-off points in the cycle. From this standpoint, the greater part of the cycle can be divided into the expansion phase which extends from the trough to the peak. In the neighbourhood of the peak and trough, there are the upper and lower turning points of relatively short duration designated as revival and recession. Additionally, Schumpeter (1954) suggests that a business cycle represents wave-like deviations in business activity from the equilibrium or trade line. To him, there are equilibrium points and equilibrium areas which cluster around these equilibrium points. Schumpeter’s (1954) analysis involves four-phase cycle consisting of prosperity, recession, depression and recovery. He opined that the business cycle is divided into two parts – the upper half and the lower half. The upper half of the cycle above the trend or equilibrium line is divided into

prosperity and recession while the lower half of the cycle below the trend line is divided into depression and recovery.

On the other hand, there are many definitions of financial stability as there are many scholars in this field and the simple fact that financial stability, in itself, lacks precise definition makes the concept of stock market stability, a more complex one. Moreover, financial stability is understood to apply to both institutions and markets and by extension, financial stability can be viewed directly (both from the perspective of institutions and markets) and indirectly (from the standpoint of financial instability) (see Batra, 2002). Stability in the financial markets means the absence of price movements that cause wider economic damage. Price movement in a system should reflect changes in economic fundamentals. When prices in financial markets move by amounts that are much greater than can be accounted for by fundamentals, they have the potential to result in resource misallocation with damaging economic consequences. In furtherance of this definitional issue from an indirect standpoint and in the view of the new institutionalist economics, stability is thematized as the stability of institutional arrangements and as ably put by North (1997): "A basic function of institutions is to provide stability and continuity by dampening the effects of relative price changes" (North 1997: 6). Institutions are understood as rules and norms, created by people and which serve to circumvent social and communicative uncertainty (Goodin 1998: 22-23). A particular challenge to the explanatory power of institutional theory in economics is posed by economic development: while institutions create stability, they also at the same time are changeable (Erlei, Leschke and Sauerland 1999). Institutional change can contribute to the perception of stability by actors. Thus, important questions concerning how to understand economic development and stability must be posed in relation to the problem of how institutional change can be designed as continual change and which factors are meaning for this.

Additionally, the concept through its "mirror image" approach – i.e. by defining financial market instability suggest that information asymmetry has long been recognized as a source of failure in financial markets. Theoretical literature has attempted to explain the institutional structure of financial markets by recognizing that this structure has evolved to reduce the asymmetric information problems of adverse selection and moral hazard. From this perspective, the underlying rationale for financial intermediaries is that they have the ability and the economic incentive to address the problems of asymmetric information. Calvo (1995), Mishkin (1996) and many others have recently applied the seminal contribution of Stiglitz and Weiss (1981) to define crises.

*"Financial instability occurs when shocks to the financial system interfere with information flows so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities. Indeed if the financial instability is severe enough, it can lead to almost a complete breakdown in the functioning of financial markets, a situation which is then classified as a financial crisis."* (Mishkin, 1999).

Furthermore, "key markets", in the context of financial stability, include the money, foreign exchange government securities, corporate bond markets, equity and derivative markets, the emerging stock markets in Africa are the issues of concern here. Owing to the broad linkages of capital markets with investment decisions and economic development, they have a greater potential impact on other macroeconomic variables than do developments in markets for goods and services. Financial markets impact through wealth effects as financial asset prices change, changes in the expected returns on saving and investment or through a more generalized impact on consumer and business confidence. In addition, the capacity for contagion is also greater in the stock markets because of extensive mutual links (see Olowe, 2009).

### III. Review of Literature

Mizuta, Steiglitz and Lirov (undated) were the first, to the best of our knowledge, who investigated the effects of price signal choices on market stability using agent-based, microscopic simulations; their results show that the average-bid price signal,  $P_0$ , stabilizes the market price effectively, and stable resource allocation was approached as well, all without predictive traders. Mizuta et al. (undated) posited that what was perhaps counter-intuitive was that supplying the agents with the weighted average,  $P_1$ , neither increases stability nor improves resource allocation, but in fact achieves little improvement over using the closing price. Moreover, their findings showed that the inversely weighted average,  $P_2$ , yields the greatest improvement in stability and resource allocation. In whole, their results suggested stabilization strategies for any applications that use agent-based technology such as market-based distributed resource allocation or automated e-commerce on the internet. Also, Evstigneev, Hens and Hoppe (2003) studied the performance of portfolio rules in incomplete markets for long-lived assets with endogenous prices. Evstigneev et al. (2003) derived both the necessary and sufficient conditions for evolutionary stability of portfolio rules when (relative) dividend pay offs form a stationarity markov process. These local stability conditions, to their findings, led to a unique evolutionary stable strategy for which an explicit representation was given. More so, Stefanescu, Ungureanu and Stefanescu (2004) used the Hicks model to verify the stability and equilibrium into stock market system. With the presumption that the stability and equilibrium of the stock market system constitutes a permanent preoccupation of the management system; in that the stock

market manager is often interested in obtaining certain stability and a real equilibrium of the market which he organizes in the purpose of making transactions with financial assets, Stefanescu et al. (2004) modeled the activity of the stock market system with the help of certain general models of stability and economic equilibrium as evidenced in the Hicks' (1957) model.

Besides, Baur and Schulze (2007) analysed the impact of systematic and systemic shocks in developed and emerging market stock indices in normal and extreme market conditions and empirically, they found that the impact of systemic risk is significantly larger in extreme market conditions than in normal conditions in emerging markets. More so, Caccioli, Marsili and Vivo (2009) carried out a study on eroding market stability by proliferation of financial instruments. They contrasted the Arbitrage Pricing Theory (APT), the theoretical basis for the development of financial instruments, with a dynamic picture of an interacting market, in a simple setting. Caccioli et al. (2009) found out that in the simple market of interacting traders, the proliferation of financial instruments erodes systemic stability and it drove the market to a critical state characterized by large susceptibility, strong fluctuations and enhanced correlations, among risks. Their findings suggest that the hypothesis of Arbitrage Pricing Theory (APT) may not be compatible with a stable market dynamics. As such, market stability acquires the properties of a common good, which suggests the appropriate measures should introduce in derivative markets, to preserve stability.

#### IV. Methodological Framework

In a first step, one has to obtain a proxy for 'shocks to the financial system' as defined by the IMF (IMF, 2003). We use a systematic risk component such Dow Jones Average of the United State of America being an index for global stock market index and as a proxy for 'shocks to stock markets all over the world' since systematic shocks cover several countries and not only one. This systematic risk component is denoted as GR. In order to circumvent a priori definitions of normal and extreme market situations, we employ a quantile regression model that provides estimates of the effect of innovations in systematic risks or systematic shocks on financial markets in any condition represented by the conditional quantiles of the return of the market under investigation. The model, a la Baur and Schulze (2007), can be specified as follows:

$$sAE_{it}^* = \alpha_i + \beta_i GC_{it}^* + \gamma_{it}, \text{Qr}(\tau | GR_{it}^*) = \alpha_i(\tau) + \beta_i(\tau) GC_{it}^* \dots\dots\dots(1)$$

Where;  $sAE_{it}$  is the market return at period t for emerging African economies,  $GC^*$  denotes the systematic shock as described above and  $\gamma_{it}$  represents the idiosyncratic shock of market i at time t.  $\text{Qr}(\tau | sAE_{it}^*)$  denotes the  $\tau$ -th conditional quantile of  $GR_{it}$ , assumed to be linearly dependent on  $sAE_{it}^*$ . The model is estimated with the quantile regression method and can thus assess the impact of  $sAE_{it}^*$  on different conditional quantiles of GR, that is, different market conditions (see Koenker and Bassett, 1978 or Buchinsky, 1998 for an introduction to quantile regression). If  $\beta_i$  is stable, that is, constant over all quantiles, a fundamental condition of financial market stability is fulfilled. On the contrary, if  $\beta_i$  increase for lower quantiles, the market under investigation is more exposed to shocks originating from the financial system in negative market conditions than in its normal state. The latter implies that there is an amplification of systematic shocks on the financial market and therefore no financial market stability. It is noteworthy that an ordinary least squares (OLS) regression only provides an estimate for the conditional mean but not for different quantiles. Thus, OLS cannot be used to analyze whether systematic shocks exhibit a constant or a varying impact on individual markets (Baur and Schulze, 2007).

#### V. Model Estimations and Empirical Findings.

##### V.1 Data Sources and Normality Test

The data employed for this research work are primarily the daily stock market index of the selected African countries, viz. the Nigeria Stock Index (NSI), the Johannesburg Stock Index (JSI) and the Cairo Stock Index (CSI). It is coupled with the Dow Jones Index (DJI) for the U. S. while following the works of Abraham (2010); the data for the African Stock Index is an average value for the three surrogate countries of Cairo, Johannesburg and Nigeria Stock Indices. These data are extracted from the respective countries' official websites such as [www.nigerianstockexchange.com](http://www.nigerianstockexchange.com), [www.jse.co.za](http://www.jse.co.za), [www.case.com](http://www.case.com), [www.nyse.com](http://www.nyse.com) and [www.djaverages.com](http://www.djaverages.com) for the Dow Jones Industrial Averages (DJIA). Also, to facilitate the trends analysis of this work, data are sourced from the World Development Indicator (WDI, 2010). The reason for the choice of these three markets as the surrogate for the emerging market in Africa is precedent on some empirical studies (see Tella, 2009; Tella et. al; 2011). The statistics of logs of nominal and real market indexes will be obtained. The mean of nominal market index will be compared to that of real market index. In addition, the Jaque-Bera statistics will also be juxtaposed with the assumption of normal distribution in both nominal and real indexes. The number of observations is  $T = 729$  and table presents several descriptive statistics for the daily three-year time series.

<Insert Table 2 about here>

The table presents the mean, standard deviation, skewness, kurtosis and the jarque-bera statistics for the index return series of emerging African countries. The column with the tabulated standard deviations shows that there is considerable variation in the risk of the markets and indices. The highest variation can be seen in the global index



followed by that of Nigerian and Egypt with the lowest standard deviation in South Africa. The skewness is minimal for the global index (-0.27) and maximal for the aggregate Africa stock index (+1.98) and the kurtosis is most pronounced for aggregate Africa index, Nigeria and Egypt indices while those of South Africa (Johannesburg) and global stocks show almost normal peakedness distribution; minding the benchmark of 3.0 Kurtosis for a normal series. However, for the trio stock indices of Africa, Nigeria and Egypt; the leptokurtosis nature (due to very large kurtosis) of their series reflected the fact that these markets were characterized by very frequent medium or large changes. These changes occurred with greater frequency than what was predicted by the normal distribution. The remaining columns illustrating the Jarque-bera statistics and its probability of significance follow the same trend of the kurtosis and it further lend credence to the peakedness or otherwise of the distributions.

## V.2 Test for Global Financial Recovery

Testing for the recovery of the global and emerging African stock markets from the global financial crisis could be better depicted by graphical trends of Charts 1 through 2.

<Insert Charts 1 and 2 about here>

From the graphical trends, it becomes more obvious that even though the global stock market has barely recovered from the global financial crisis, the same cannot be said of the aggregate emerging African stocks as well as for the individual surrogate African economies; except for that of the South African (Johannesburg) stock market. The Nigerian stock market is the worst hit of these three African emerging stock markets during this period of global financial crisis (see Chart 2 below) and its effect strongly impacted on the sluggish nature at which the aggregate African stock markets is able to recover from the effect of the global financial crisis (see Chart 1 below). Specifically, the graphical trends for both the aggregate African and the Nigerian stock market indices portend varying cyclical behaviour with more or less regular oscillations, chaotic oscillations, sharp rises or falls followed by crashes while recoveries still remain at the lowest ebb.

## V.3 Test for Stock Market Stability.

This section begins by presenting the estimation results for the emerging African stock markets and the varying proportion of systematic shocks onto these markets. The systematic shocks that are used for the analysis is same for all the markets. Chart 3 presents the coefficients estimates for the emerging African economies while Table 3 represents the graphical illustrations for the said coefficients with Table 4 displaying the test of equality of coefficients along different market conditions (different quantiles).

<Insert Chart 3 about here>

Chart 3 shows the coefficient estimates for the systematic shock on the index of the stock markets under investigation. The graph illustrates that most emerging African economies exhibit a large wave of instability and oscillations along the extreme conditional lower and higher quantiles and even in the middle quantiles, except for the South African market which appears relatively stable in nature and exhibits a relatively u-shape pattern across the quantiles. This differential impact of the systematic shock on the South African market and other surrogate stock market of African economies are not surprising as it could be surmised that the Johannesburg stock market has a relatively mature market and exhibit a pattern more similar to emerging developed markets than to emerging markets while those of the other stock markets in Africa such as the Nigeria stock market, the Cairo stock market (which are good representation of a host of other African stock markets) are true to type; emerging and developing. Additionally, Table 3 reports the associated coefficient estimates with t-statistics, p-values and R-squared for a subset of these countries. The table contains the estimation results for Nigeria, South Africa (Johannesburg), Egypt (Cairo) and that of the aggregate Africa market which all exhibit cyclical and strong oscillating pattern, except for the South African market which is relatively u-shaped across the lower and higher quantiles.

<Insert Table 3 about here>

Furthermore, estimates for test statistics, which addresses the equality of the Coefficients along different quantiles (that is, different market condition), were obtained. This is to further strengthen the stationarity condition of these stock markets for the respective surrogates of African economy. The null hypothesis of stock market stability is rejected across the emerging Africa stock markets, except that of the Johannesburg (South Africa). Therefore, only could largely conclude that emerging stock markets in Africa are unstable, except the Johannesburg stock exchange. All markets exhibit cyclical trend across the quantiles but sharply pronounced in the Nigerian stock market and the aggregate African stock.

<Insert Table 4 about here>

Also, Chart 4 below presents the average goodness-of-fit measure (pseudo R-squared) for all types or regions of markets across 99 quantiles which expresses the recovery-stability relationship between the emerging African economies and the systematic or systemic shocks as depicted by the global stock index. The chart shows that the R-squared value increases for all emerging markets in the lower and upper quantiles compared to intermediate quantiles (but not exactly at the median point). More so, the increase is more pronounced in the upper quantiles

than in the lower quantiles. The Johannesburg market does not exhibit such a pronounced u-shape pattern since in the extreme higher quantiles, the numbers even decreases. The findings are evidence for an increasing importance of systematic shocks for emerging African markets and a constant or decreasing importance the South African market. For the latter group, idiosyncratic shocks tend to play a bigger role in periods of market turmoil.

**<Insert Chart 4 about here>**

In addressing the conditional densities of these stock indices, Chart 5-9 would suffice. It is evidence from these normality graphs that only the global and Johannesburg stock indices are back to normal since at the extreme values of these indices, the curves lie on the 45 degree for these two markets while those of the aggregate Africa, Nigeria and Egypt markets depart widely from normality. These trends largely support the estimates earlier analysed.

**<Insert Charts 5-9 about here>**

The charts show the differential impact on the conditional distribution for extreme systematic shocks (systemic shocks) and normal systematic shocks. If there are no differences in the propagation, the points should lie on a straight 45 degree line through the origin. If the points are skewed to the left or to the right, systemic shocks tend to be propagated differently than normal systematic shocks (Baur and Schulze, 2007). The quantile plots show that both the global and Johannesburg stock markets do exhibit relative normality as well as recovery back to equilibrium from exposure to systemic and systematic shocks of the global financial crisis while emerging markets of Africa in general, and Nigeria and Egypt specifically exhibit a larger exposure to shocks and a wide departure from the straight 45 degree line, hence, asymmetrical from normality. This study largely agrees with Baur and Schulze (2007), who in their study, found that the impact of systemic risk is significantly larger in extreme market conditions than in normal conditions in emerging markets.

## **VI. Conclusion and Recommendation.**

Stemming from the above analyses, it is evident that the hypothesis that the global financial recovery guarantees the stability of stock markets should be rejected, at least in the African economy context. This is so in that the recovery of the global stock from the global financial crisis could not assist the Africa emerging stock markets from instability, cyclical trends and serious oscillations; except for that of the Johannesburg stock market which behaves not typical to other emerging Africa stock markets but more of developed market. In this sense, it could be fathomed that most emerging Africa stock markets are unstable not due solely to the effect of global financial crisis but probably in addition to the presence of some institutional and structural rigidities coupled with the problem of rent-seeking inherent in the typical African economies; since this recovery period from the global financial crisis cannot even guarantee stability in these markets; except for the Johannesburg market (which was even efficient during the global crisis – see Tella et. al; 2011). Therefore, it could be right to infer that the global financial recovery, and by extension, the normality of global stock, is only a necessary but not sufficient condition to satisfy the stability condition of emerging stock markets. Consequent upon this, the following policy suggestions are recommended to assist the stability of Africa emerging stock markets viz; good governance, sound corporate governance, stable macroeconomic policies and complete oversight function.

(1) The government of African countries should institutionalised good governance. Good governance is essential to ensure that the value of law prevails and that transparency and accountability are the bedrock of public administration. Excessive government interpretation in economic management creates a fertile ground for corruption and rent seeking tendencies. A well-focused administration is geared towards reducing bottlenecks on the operational path of investing in infrastructural facilities and generates adequate impetus for the reduction of insider trading and shareholders' exploitation.

(2) Secondly, stable macroeconomic policies should frequently be observed. Volatile macroeconomic policies as well as the pricing system, instability in the policies and programmes of government are substantial indicator of an unfulfilled demand as well as under-productivity in the economy. As a result, it is important that sound macroeconomic, sectoral and structural policies are applied to improve internal balance, ensure external sector variability and stimulate the productivity base and industrial sector of the African economy. The need for macroeconomic stability is to reduce budgetary imbalances through reduction in the size and role of government and greater reliance on the private sector development financing.

(3) Additionally, corporate governance is the key policy goals and deliberate efforts at ensuring that those shouldered with the responsibility of managing the organisation's resources (i.e the board of directors) are doing it to the best interest of the owners of the business (i.e the shareholders). The case where a single individual or a collection of individuals cart away the corporate wealth to enrich themselves and favour cronies and families at the detriment of the corporate existence, expansion and survival is no longer acceptable. This is evident in the series of financial reforms sprawling across the whole continent of Africa; in addressing social and economic ills towards transparency and accountability where sanctions are adequately melted out to erring helmsmen of various financial institutions and stock exchanges.

(4) Oversight functions should be instituted and adequately implemented by regulatory bodies. This will strengthen strong regulatory framework and corroborate the advantages enjoyed from sound corporate governance and good governance issues.

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## Appendix 1: Tables Presentation. Source: MSCI Global Market Accessibility Review (2011)

**Table 1: Summary of Assessment Table (Number of Countries)**

Indicators	Developed Markets			*Emerging Markets			Frontier Markets			Standalone Markets		
	++	+	-/?	++	+	-/?	++	+	-/?	++	+	-/?
Indices Sign												
Market Regulations	24	-	-	9	12	-	13	10	2	1	4	2
Information Flow	22	2	-	6	12	3	11	5	9	1	4	2
Clearing & Settlement	22	2	-	5	10	6	4	6	15	-	-	7
Trading	24	-	-	16	5	-	11	6	8	1	-	6
Transferability	23	-	1	6	9	6	7	6	12	-	2	5
Competitive Landscape	24	-	-	17	2	2	12	-	1	1	-	1
Stability of Institutional Framework	24	-	-	4	14	3	-	20	5	-	6	1

**Note:** ++: no issues; +: no major issues, improvements possible; -/? : improvements needed/extend to be assessed. \*Emerging markets has South Africa only from Africa.



**Table 2: Descriptive Statistics: Series cover June 2008 to May, 2011**

Market	African	Nigeria	South Africa	Egypt	Global
Mean	12513.56	28261.73	5331.779	3947.165	10292.34
Median	11556.55	25149.59	5397.926	3964.390	10430.79
Maximum	23817.61	58520.74	6561.254	7001.150	12646.22
Minimum	3291.92	3000.890	3613.276	2259.200	7552.290
Std. Dev.	2978.11	8695.423	698.9997	718.9561	1111.285
Skewness	1.92895	1.750305	-0.32082	0.863919	-0.27434
Kurtosis	6.025289	5.124641	2.619516	5.493319	2.32489
Jarque-Bera	588.3436	411.5237	13.65685	225.8339	18.57387
Probability	0.000	0.000	0.001083	0.000	0.000093

**Table 3: Quantile Regression Results for Emerging African Economies**

	Nigeria				South Africa				Egypt				Africa			
	Coef f	t- stat	p- valu e	R- square d	Coef f	t- stat	p- valu e	R- square d	Coef f	t- stat	p- valu e	R- square d	Coef f	t- stat	p- valu e	R- square d
<b>Q1</b>	0.77	1.76	0.80	0.057	0.287	15.2	0.00	0.199	0.17	15.2	0.00	0.183	0.671	1.73	0.08	0.261
<b>b1</b>	1262	2.68	0.07		1021.	5.38	0		0	6.50	0		2186	0.55	3	
<b>C</b>	4				4		0.00		734.		0.00				0.58	
							0		2		0				1	
<b>Q2</b>	0.42	1.04	0.30	0.067	0.575	15.5	0.00	0.243	0.16	9.52	0.00	0.182	0.664	1.34	0.18	0.287
<b>b1</b>	1	3.95	0		-1646	0	0		7	4.40	0		2324.	0.46	1	
<b>C</b>	1642		0.00			-	0.00		780.		0.00		4		0.64	
	6		0			4.15	0		4		0				6	
<b>Q5</b>	0.67	15.3	0.00	0.073	0.527	10.1	0.00	0.310	0.15	5.87	0.00	0.177	0.765	18.0	0.00	0.291
<b>b1</b>	0	31.5	0		-1647	0	0		7	3.50	0		2033.	6	0	
<b>C</b>	1452		0.00			-	0.09		944.		0.00		1	4.69	0.00	
	4		0			1.67	6		2		1				0	
<b>Q10</b>	1.08	25.5	0.00	0.081	0.497	9.79	0.00	0.353	0.19	3.24	0.00	0.149	0.765	18.0	0.00	0.291
<b>b1</b>	6	24.8	0		-	-	0		1	1.36	1		2033.	6	0	
<b>C</b>	1115		0.00		342.5	0.64	0.52		802.		0.17		1	4.69	0.00	
	5		0			2			6		5				0	
<b>Q50</b>	0.65	7.16	0.00	0.017	0.534	45.4	0.00	0.521	0.38	22.3	0.00	0.214	0.546	18.8	0.00	0.050
<b>b1</b>	3	19.4	0		-	-	0		6	-	0		5649	18.9	0	
<b>C</b>	1818		0.00		56.84	0.46	0.64		-	0.44	0.65				0.00	
	6		0			6			77.6		8				0	
<b>Q90</b>	6.02	16.6	0.00	0.280	0.568	76.4	0.00	0.588	0.64	31.4	0.00	0.376	2.409	19.0	0.00	0.311
<b>b1</b>	3	6	0		-	9	0		9	8	0		-7639	7	0	
<b>C</b>	-18.3	-	0.00		152.2	-	0.00		-	-	0.00			-	0.00	
		4.95	0			1.95	5		1923	9.26	0			5.88	0	
<b>Q95</b>	6.24	18.3	0.00	0.300	0.555	44.2	0.00	0.562	0.77	18.9	0.00	0.464	2.217	13.2	0.00	0.302
<b>b1</b>	2	5	0		39.49	7	0		7	4	0		-4790	8	0	
<b>C</b>	-	-	0.00			0.30	0.76		-	-	0.00			-	0.00	
	1797	5.15	0			5			2913	7.07	0			2.80	5	
<b>Q98</b>	5.84	11.9	0.00	0.300	0.561	41.0	0.00	0.538	0.79	25.9	0.00	0.524	2.30	12.7	0.00	0.285
<b>b1</b>	5	1	0		49.92	7	0		9	6	0		-4559	9	0	
<b>C</b>	-	-	0.00			0.35	0.72		-	-	0.00			-	0.01	
	1193	2.38	0			9			2989	9.64	0			2.47	4	
<b>Q99</b>	5.21	17.9	0.00	0.293	0.544	73.1	0.00	0.530	0.81	55.7	0.00	0.566	2.112	19.4	0.00	0.283
<b>b1</b>	9	1	0		259.0	2	0		7	5	0		-1931	1	0	
<b>C</b>	-	-	0.16		4	3.35	0.00		-	-	0.00			-	0.08	
	4311	1.40	2			1			3074	22.0	0			1.75	1	

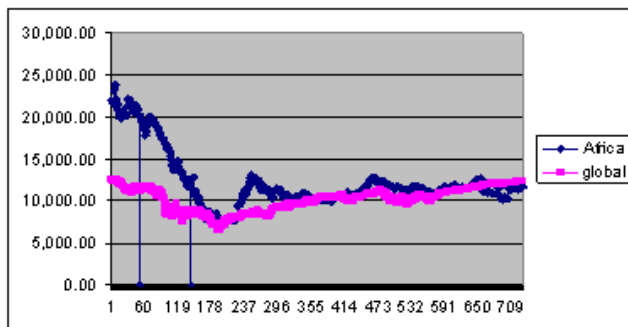
Source: STATA Output

**Table 4: Test for Stock Market Stability**

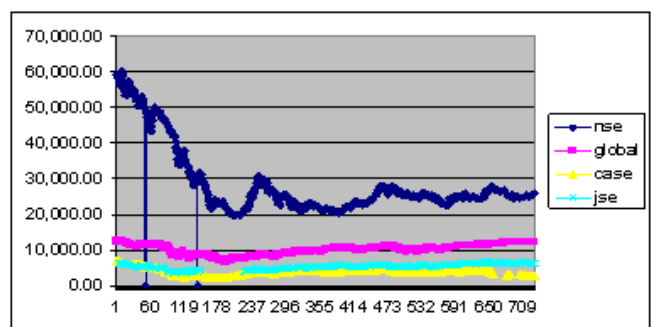
Emerging African Mkts	Joint test								
Systematic shock: Global	q1=q5=q10=q50		q1=q50		q5=q50		q10=q50		Stock Market Stability
	F(5, 4227)	Prob>F	F(5, 4227)	Prob>F	F(5, 4227)	Prob>F	F(5, 4227)	Prob>F	
Africa	1.759	0.090	1.942	0.077	3.110	0.025	2.888	0.041	NO
Nigeria	1.867	0.112	2.051	0.051	2.712	0.058	2.011	0.076	NO
South Africa	0.624	0.671	0.611	0.720	0.552	0.781	0.691	0.633	YES
Egypt	1.661	0.091	1.699	0.087	0.876	0.620	2.459	0.070	NO

Source: STATA Output

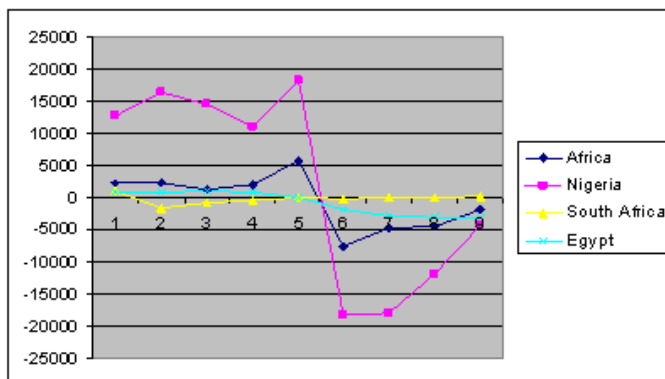
**Chart 1: Recovery Trends of Global and African Stocks from Global Financial Crisis.**



**Chart 2: Recovery Trends of Global Market and Emerging African economies' Stocks from Global Financial Crisis.**

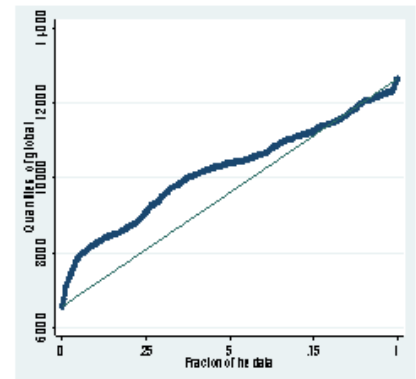


**Chart 3: Stock Market Stability for Emerging African Markets.**

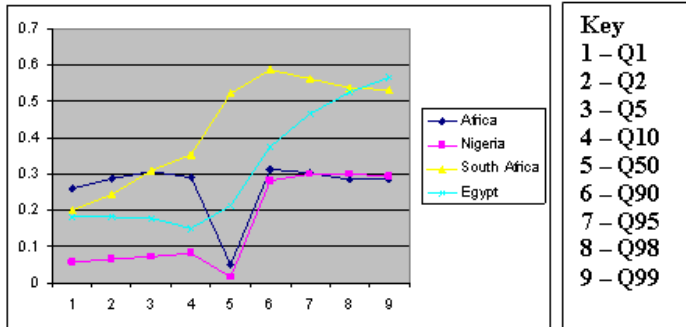


**Key**  
 1 - Q1  
 2 - Q2  
 3 - Q5  
 4 - Q10  
 5 - Q50  
 6 - Q90  
 7 - Q95  
 8 - Q98  
 9 - Q99

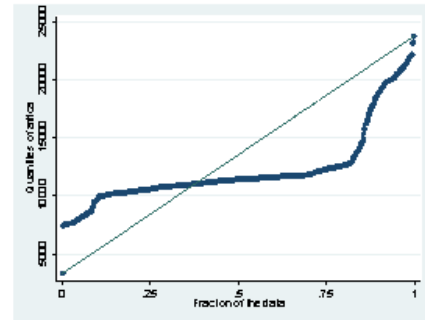
**Chart 5: Global Stock Market**



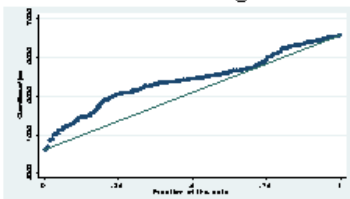
**Chart 4: Recovery – Stability Quantile Trend.**  
 Quantile Regression Graph – Depicting the Impact of Global Financial Recovery on the Stock Market Stability of Emerging African Economies.



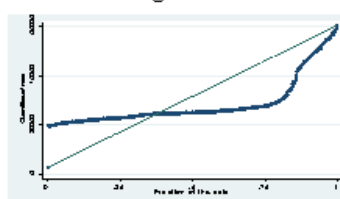
**Chart 6: Africa Stock Market**



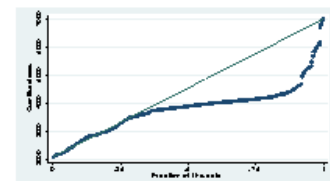
**Chart 7: Johannesburg Stock Market**



**Chart 8: Nigeria Stock Market**



**Chart 9: Cairo Stock Market**



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