

Effect of Financial Reforms on Capital Market Development in Nigeria

Idowu, Abiola

Department of Management and Accounting,
Faculty of Management Sciences,
Ladoke Akintola University of Technology,
Ogbomoso, Oyo State, Nigeria.
E-mail: abiola_1007@yahoo.com

Babatunde, M.A.

Accountancy Department
Faculty of Financial Studies
Osun State Polytechnic,
Iree, Osun State, Nigeria.
E-mail: mudathir1432@yahoo.com

ABSTRACT

This study investigated the effect of financial reform on capital market development in Nigeria over the period 1986 to 2010. The study used Ordinary Least Square (OLS) technique to estimate the empirical models of the study. The impact of the capital market reform introduced in 1995 on capital market development was assessed using the Chow-Breaking -point Test. The result revealed that the financial reform of 1995 impacted significantly on the capital market development in Nigeria. However, findings revealed that the variables that represented the development of the banking sector, the activities of the Central Bank and other financial institutions interacted negatively with market capitalization which implies that the activities of those institutions deterred the development of the capital market.

Keywords: Capital Market, Economic Growth, Financial Institution, Central Bank

1. INTRODUCTION

It is a well acknowledged fact that there exist a positive and significant relationship between capital market development and economic growth and development. For instance, Rajan and Zingales (2001) supposed that capital market development stimulate economic growth and therefore excite positive impact on poverty reduction and income distribution. In other word, capital market development translates to economic growth without hindrance. However, the challenge therein lies on how to attain a sustainable capital market development in an emerging economy like Nigeria that work as gate way to a sustainable economic growth and development.

In any case, the most widely acclaimed measure used to stimulate capital market development is reform (financial reform). Therefore, quite a number of studies have been done to ascertain the appropriate package of policy measures that can be piece together under a reform scheme, for the effective development of the capital market. For instance, De la Torre and Schmukler (2007) advocated about four categories of reform:

- reforms aimed at creating the enabling environment for capital markets – such as the strengthening of macroeconomic stability and the enforcement of property rights;
- reforms aimed at enhancing efficiency and market discipline in the entire financial system through greater competition – such as capital account liberalization;

- reforms indirectly supportive of capital market development – such as pension reforms and privatization programmes; and
- capital market specific reforms – such as the development of regulatory and supervisory frame-work and improvement in securities clearance and settlement systems.

Incidentally, Nigeria had implemented virtually all the four categories of reform mentioned above, all to no avail. Prior to 1991 when the Nigerian capital market was deregulated, the market was seen by analysts, observers and researchers as underdeveloped. According to Demirguc-Kunt and Levine (1996), the most developed stock markets in the world are in Japan, the United States, and United Kingdom and the most underdeveloped markets are in Columbia, Venezuela, Nigeria and Zimbabwe. Between 1986 and 1993, market capitalization ratio to Gross Domestic Product (GDP) in Nigeria stood at 0.04%, number of companies listed on the stock exchange was 127, while turnover ratio (i.e. total value of shares traded divided by market capitalization) stood at 0.01 (Demirguc-Kunt and Levine, 1996).

Therefore, this study seeks to assess the effect of financial reform on capital market development in Nigeria to know the reason(s) for the poor performance and probe into the alternative policy options for the effective development of the capital market in Nigeria. In pursuit of this, the study raised some questions; what are the effects of the reforms on the capitalization of the Nigerian capital market? What effect do the reforms have on the liquidity of the market? What effect do the reform measures have on capital formation in Nigeria? How do the reforms affect the concentration of trading in the market?

2. LITERATURE REVIEW

There is argument amongst researchers and economists as to the relevance of the financial system in economic growth and development. The literature is awash with the views of many influential economists like Robinson (1952), Meier and Seers (1984), Lucas (1988), and Stern (1989) who believed that finance plays an in consequential (if any) role in economic growth and development of nations.

A contrary view is however held by another group of researchers and economists to the effect that financial system of a country plays an important role in economic growth. Those that have demonstrated this line of thinking in their research work included Schumpeter (1932), Bagehot (1962), Cameron (1967), Goldsmith (1969), Mckinnon (1973), Shaw (1973) and Ojo (1984).

Building on this line of thinking, Gelb (1989), Ghani (1992), King and Levine (1993a, 1993b) and De Grogorio and Guidotti (1995) demonstrated how measures of banking development are strongly correlated with economic growth in a cross section of countries.

Besides evaluating the general importance of the financial system in economic development, other researchers had stressed empirically the specific role of capital market (stock and bond markets) in economic growth.

Levine and Zervos (1996) believed that stock market development is positively associated with economic growth, although with a caveat that the result of their research should be viewed as suggestive partial correlation that should stimulate further research rather than as conclusive findings. According to them, stock markets may affect economic activity through their liquidity since high return projects require a long-run commitment of capital. However, since investors are generally reluctant to relinquish control of their savings for long periods and without liquid market and other financial arrangements that provide liquidity, less investment may occur in the high-return projects. This was the finding in an earlier study conducted by Hicks (1969). He argued that the industrial revolution was not the consequence of a set of new technological innovation since technological innovation by itself was insufficient to stimulate growth. He maintained that the pre-condition for the implementation of new technologies was the existence of liquid capital markets. Thus,

according to him, the industrial revolution had to wait for the financial revolution before it could occur.

Research findings have also confirmed that capital market development may influence economic growth through risk diversification. Many authors have shown that stock markets provide a vehicle for diversifying risk (Saint Paul, 1992; Devereux and Smith 1994). Risk diversification had been discovered to influence growth through the shifting of investments into higher-return projects. This is because projects with high expected returns tend to be comparatively riskier. Thus, better risk diversification through internationally integrated stock markets will foster investment in projects with very high returns.

In the area of capital formation, it has been argued that large, liquid and efficient capital markets can ease savings mobilization. By mobilizing savings, capital markets enlarge the set of feasible investments projects. Since some worthy projects requires large capital injections and some enjoy economies of scale, capital markets that ease resource mobilization can boost economic efficiency and accelerate long run economic growth.

In their own study, Bencivenga, Smith and Starr (1996), considered empirically how the efficiency of an economy's capital resale or equity market – as measured by the costs of transacting in them – affect the economy's efficiency in producing physical capital and, through this channel, final goods and services. They followed the line of thinking of Hicks (1969) that emphasized the role of equity markets in providing liquidity to holders of long-live and inherently illiquid capital. Their research showed that as the efficiency of an economy's capital markets increases (i.e. as transaction costs fall), the general effect is to cause agents to make longer-term, and more transactions – intensive investments. This results in a higher rate of return on savings and investments as well as a change in their composition.

De la Torre and Schmulker (2007) identified five channels through which financial development can boost economic growth thus:

- Reduction in the cost of acquiring and processing information and as a consequence improvement in resource allocation and economic growth.
- Helping inventors to mitigate the idiosyncratic risk associated with individual projects, firms, industries and so forth by providing mechanism for trading, pooling and diversifying risk. This is because investors typically dislike risk.
- Helping investors to deal with liquidity risk since investors can hold liquid assets (e.g. equities, e.t.c.), and transform them into long term, illiquid investment.
- Improving corporate governance through reduction in monitoring costs and;
- Reducing transaction costs associated with collecting savings from disparate investors thereby increasing savings, exploiting economies of scale and overcoming investment indivisibilities.

Finally, De la Torre and Schmukler (2007) reported Rajan and Zingales (1998) as showing industries that rely relatively more on external financing grow faster than industries that do not rely so heavily on external capital in countries with well-developed financial systems. In the same vein, Demirguc-Kunt and Maksimovic (1998) show that firms in countries with deeper financial systems tend to grow faster than they would be able to if their financing were restricted to internal funds and short-term debts.

3. METHODOLOGY

3.1 THEORETICAL FOUNDATION FOR THE STUDY

The theoretical foundation for this study is based on Calderon-Rossell behavioral structural model of stock market development. In this model economic growth and stock market liquidity are considered as the main determinants of stock market development. Market capitalization is defined as follows:

$$Y = PV \dots\dots\dots(1)$$

Where:

Y -is market capitalization in local currency;
 P -is the number of listed companies in the stock market; and
 V -is the local currency average price of listed companies.

The model can be presented formally as follows:

$$Y = PV = Y(G, T) \dots\dots\dots(2)$$

$$V = V(G, P), P = P(T, V) \dots\dots\dots(3)$$

The exogenous variable G represents per capita GNP in local currency and variable T represents the turnover ratio. The endogenous variables are V , P , and T . The structural equations are then expressed in the following reduced behavioural model:

$$\text{Log}Y = \beta_1 \text{Log}G + \beta_2 \text{Log}T \dots\dots\dots(4)$$

The component of the reduced form model is expressed as follows:

$$\text{Log}V = \alpha_1 \text{Log}G + \alpha_2 \text{Log}T \dots\dots\dots(5)$$

$$\text{Log}P = \omega_1 \text{Log}G + \omega_2 \text{Log}T \dots\dots\dots(6)$$

Equation 4 can be written as:

$$\text{Log}Y = \text{Log}(PV) = \alpha_1 \text{log}G + \alpha_2 \text{log}T + \omega_1 \text{log}G + \omega_2 \text{log}T \dots\dots\dots(7)$$

Factorizing we have:

$$\text{Log}Y = (\alpha_1 + \omega_1) \text{log}G + (\alpha_2 + \omega_2) \text{log}T \dots\dots\dots(8)$$

Where:

$$\beta_1 = \alpha_1 + \omega_1 \dots\dots\dots(9)$$

and

$$\beta_2 = \alpha_2 + \omega_2 \dots\dots\dots(10)$$

Equation 8 shows the impact of economic growth, G , and stock market liquidity, T on stock market development, Y . The model shows that stock market development is the result of the combined effect of economic growth and liquidity on both stock prices and the number of listings.

To examine the validity of this model, Calderon-Rossell used data from 42 countries from the main active stock markets in the world with annual observations from 1980–87. The analysis shows that stock market liquidity and economic growth are important determinants of stock market growth.

3.2 MODIFICATION OF THE MODEL

As we know, both institutional and macroeconomic factors are important in stock market development. Garcia and Liu (1999) showed that macroeconomic factors such as real income, savings rate, financial intermediary development, and stock market liquidity are important determinants of stock market development. Pagano (1993) shows that regulatory and institutional factors may influence the efficient functioning of stock markets. For example, mandatory disclosure of reliable information about firms may enhance investor participation, and regulations that instill investor’s confidence in brokers should encourage investment and trading in the stock market.

Calderon-Rossell was modified model to incorporate other financial and economic variables that might affect stock market development. In particular, we examine the role of income, foreign private investment, credit to the private sector, value traded, turnover ratio, savings rate, and broad money supply ($M2$).

We estimated the following regression:

$$MCAPTL_t = \beta_0 + \beta_1 MCAPTL_{t-1} + \beta_2 RGDP_t + \beta_3 SAVINGS_t + \beta_4 FPI_t + \beta_5 PSCREDIT_t + \beta_6 VTRADED_t + \beta_7 TOVER_t + \beta_8 M2_t + e_t \dots\dots\dots(11)$$

Where: $MCAPTL_t$ is the dependent variable measured as stock market capitalization relative to GDP. The explanatory variables are:

$MCAPTL_{t-1}$ is the lag value of the dependent variable, we include one lag of the dependent

variable as one of the explanatory variables because we believe that stock market development is a dynamic concept.

Income is GDP per capita ($RGDP_t$), as income increases; its cyclical component should have a positive incidence on the size of the stock market. In addition, higher income means better education, better business environment and wealthy citizens. We expect it to have a positive impact on stock market development.

Saving rate ($SAVINGS_t$), the saving rate is calculated as the ratio of gross saving to gross disposable income. Like the banks, stock markets convey saving to investment projects. Usually, the larger the saving rate, the higher the flow of capital to stock markets. We expect a positive effect of the saving rate on the stock market size.

Foreign private Investment (FPI_t) is calculated as the ratio of gross foreign private investment to gross disposable income. As investment rate depends on saving rate, we expect investment to be an important determinant of stock market capitalization.

Credit to private sector ($PSCREDIT_t$). We use the domestic credit to the private sector divided by GDP to account for financial intermediary development. Since both banks and stock markets intermediate savings towards investment projects, they can be either complements or substitutes. Boyd and Smith (1996) suggest that banks and stock markets may behave as complements rather than as substitutes. Empirically, Demirguc-Kunt and Levine (1996a) show that the degree of stock market development is positively related to bank development. Conversely, Garcia (1986) finds that Central Banks activities may generate a negative correlation between bank growth and stock market development.

$M2_t$ is another indicator for bank development; it is the ratio of broad money supply to GDP. This ratio is a measure of the size of the banking sector in relation to the economy as a whole whereas credit to private sector measures the role of financial intermediaries in the provision of long-run financing of investment projects by private corporations.

Stock market liquidity, we measure the stock market liquidity using two indicators. The first variable is the value traded ($VTRADED_t$) which is the ratio of total value traded to GDP and it measures the value of stock transactions relative to the size of the economy. The second variable is the turnover ratio ($TOVER_t$) calculated as the ratio of the total value traded divided by stock market capitalization (It often measures the value of equity transactions relative to the size of the stock exchange). Liquid stock market enables investors to modify their portfolios quickly and cheaply. It facilitates investment projects and makes them less risky (Levine, 1991; Bencivenga et al., 1996). Therefore, we expect liquidity to have a positive impact on stock market capitalization because larger amount of savings are channeled through stock markets. ϵ is the usual white noise

In this study, foreign private investment and capital market liquidity are used to depict capital market reform. Yartey (2008) said that, foreign investment is associated with institutional and regulatory reform, adequate disclosure and listing requirements and fair trading practices. In other word, the direct impact of the capital market reform is best assessed through the aforementioned variables. However, the significance of the change in those variables before and after the reform intervention of 1995 in the capital market was assessed using the Chow-stability test.

3.3 TECHNIQUE FOR DATA ANALYSIS

The empirical models were analyzed using Ordinary Least Square (OLS) technique and the impact of the financial reform was determined using the Chow-Forecast Test of parameter stability and breaking point technique. The breakpoint Chow test sets up the equation separately for each sub-sample and examine whether there are significant differences in the estimated equations. A significant difference indicates a structural change in the relationship.

3. ANALYSIS OF THE EFFECT OF FINANCIAL REFORM ON MARKET CAPITALIZATION

This section of the study presents the analysis and interpretation of result on the effect of financial reform on market capitalization. The result of the analysis is presented below:

Table 4.1: The regression result of the effect of financial reform on market capitalization

Chow Forecast Test: Forecast from 1996 to 2010

F-statistic	5564.322	Prob. F(15,8)	0.0000
Log likelihood ratio	286.8379	Prob. Chi-Square(15)	0.0000

Variables	Coefficients	t-Statistic
C	64.33389	0.135153
SAVINGS	-48.07580	-0.336638
FPI	0.001819	2.593419
PSCREDIT	-9.140682	-0.264598
VTRADED	11.02134	0.277006
TOVER	-0.442361	-0.495438
M2	-0.000265	-0.810068
PCRI	-1.341990	-0.029440
R-squared	0.915168	
Adjusted R-squared	0.840940	
F-statistic	12.32913	
Prob(F-statistic)	0.001020	

*shows significant at 1%, ** significant at 5% and *** significant at 10%.

From table 4.1, the model is good fit with R^2 of 91%, the “F” statistic is significant at one percent level of significance, thus confirming the overall significance of the model. The Durbin-Watson statistic is (1.94) which is very close to the ‘2’ benchmark of autocorrelation test which therefore implies that the analysis is free from autocorrelation problem.

The result revealed a negative and not significant relationship between Savings and Market Capitalization. This result contradicts our a priori expectation. This is because the larger the saving rate, the higher the flow of capital to the stock market, but if the financial intermediation is not proficiently structured, such that it will advance the development of the domestic capital market, savings may impact negatively on the capital market capitalization as observed in this analysis.

The coefficient of Foreign Private Investment is positive (0.001819) and significant at (1%) one percent level. Our a priori expectation is that, we expect investment to be an important determinant of stock market capitalization which the result upholds. The coefficient of credit to the Private Sector is negative (-9.140682) and not significant. The result contradicts our a priori expectation. However, Garcia (1986) argued that the activities of the Central Bank can instigate a negative correlation between bank growth and stock market development. The coefficient of Value Traded is positive (11.02134) but not significant in this analysis. The result supports our a priori expectation, because we expect capital market liquidity rate to have a positive impact on stock market capitalization. According to Levine (1991), liquidity helps investors to facilitate investment projects and make them less risky. In contrast, the coefficient of the turnover ratio is negative and not significant. The coefficients of Money Supply is negative (-0.000265) and that of income is also negative (-1.341990).

The foregoing results revealed among other things that the Nigeria capital market was not functioning well in those years, as some variables that were supposed to enhance the

development of the market are deterring the growth of the market. This proves that the capital market beyond doubt needed a reform intervention at that particular time. The above analysis was carried out with a time series data that span over 1986 to 1995. Coincidentally, there was a capital market reform in 1995, but the activities that were structured into the reform exercise began to take effect from 1996.

However, the main focus of this analysis is to investigate the effect of the financial reform introduced in 1995 on the capital market development. Hence, this study employed Chow-Forecast Test to ascertain whether there was any structural change of significant impact on the dependent variable (market capitalization) with effect from 1996 to date.

From table 4.1, "F" calculated is "5564.322" and the $F_{(15,3)}$ tabulated is 3.29, 'F' calculated is greater than the $F_{(15,3)}$ tabulated. Therefore, we reject the null hypothesis of no structural change to accept the alternative hypothesis that, there was a structural change in the capital market with effect from 1996. The calculated F* statistic is significant at (1%) one percent level which shows that the change is not due to chance and therefore can be attributed to the reform intervention of 1995.

4.1 POLICY IMPLICATIONS

Analysis in this study showed that the financial reform introduced in 1995 had significant impact on the development of the capital market. As reform variable like the Foreign Private Investment and Value Traded in the capital market had significant positive impact over the reform periods. But other decisive variables like the Credit to the Private Sector which we used to account for financial intermediary development did not behave favourably with capital market development. Both banks and stock markets intermediate savings towards investment projects, they can be either complements or substitutes. Boyd and Smith (1996) suggested that banks and stock markets may behave as complements rather than as substitutes. Empirically, Demirguc-Kunt and Levine (1996a) show that the degree of stock market development is positively related to bank development. Conversely, Garcia (1986) finds that Central Banks may generate a negative correlation between bank growth and stock market development. Besides, broad Money Supply which is an indicator for bank development exhibit a negative relationship with capital market development, it measures the size of the banking sector in relation to the economy as a whole while Credit to Private Sector measures the role of financial intermediaries in provision of long-run financing of investment projects by private corporations. So, all the variables that represent the banking sector, the Central Bank and the operation of the capital market itself behave unseemly in our analysis, which revealed the fact that the reform actually impacted significantly on the capital market but the capital market suffered from institutional problems which inhibited the positive impact that the reform would have had on the capital market development. Good quality institutions are important for stock market development because they tend to reduce political risk, enhance regulatory capacity, and support the viability of external finance. In other words, there is need for further reform to restructure more proficiently the activities of the Central Bank, the commercial banks, other financial institutions and the capital market.

4. CONCLUSION

Our analysis revealed that the financial reform impacted significantly on the capital market development in Nigeria. However, we found that the variables that represented the development of the banking sector, the activities of the Central Bank and other financial institutions interacted negatively with the capital market capitalization, which implies that the activities of those institutions deterred the development of the capital market.

We therefore conclude that there should be more comprehensive reform that will restructure the entire financial sector. Although, the past reforms impacted significantly on the capital market development as revealed in this study, but there is need for a far-reaching reform that will enable the financial institutions to discharge their duties as proficiently as possible.

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