
Stock Market Development and Equity Financing: Evidence from Quoted Manufacturing Firms in Nigeria

¹Egileoniso James, ²Adolphus J. Toby and ³L. Lenyie
Department of Banking & Finance, Faculty of Management Sciences
Rivers State University, Port Harcourt

Abstract

This study examined the relationship between stock market development and equity financing of quoted manufacturing firm in Nigeria. Cross sectional data was sourced from financial statement of the quoted manufacturing firms and Central Bank of Nigeria Statistical Bulletin from 1985-2018. Two regression models were formulated to explore the relationship between stock market development and equity financing. Equity financing ratio was used as dependent variables while Market capitalization ratio, Volume of shares retained Volume of share traded, all share index and Market Capitalization were used as independent variables. The study employed Ordinary Least Square Methods of panel co-integration, panel unit root test and granger causality test. After cross examination of the validity of the pooled effect, fixed effect and the random effect, the study accepts the fixed effect model. The study found from model 1 that 45.8 percent of the variation in equity ratio explained by the variables in the equation. while beta coefficient proved that market capitalization ratio have positive but no significant effect on equity ratio while market capitalization ratio have negative and significant effect on equity ratio of the quoted manufacturing firms. model II found that 60.1 percent of the variation in debt ratio explained by the variables in the equation while the beta coefficient proved that all share price index, have positive but no significant effect, market capitalization have positive but no significant effect while value of share traded have negative and no significant effect on debt ratio of the quoted manufacturing firms. From the findings, we conclude that stock market development have significant effect on equity financing of the quoted manufacturing firms. From the findings, stock market development has significant effect on equity financing. We recommend that the capital market regulatory authorities should ensure that Nigeria stock market operate with international best practice and all barriers to inflow of foreign portfolio investment should be discouraged.

Keywords: *Stock Market Development, Equity Financing, Quoted Manufacturing.*

Introduction

The stock market enables organizations to raise medium to long-term finance, particularly for the small and medium scale enterprises. The market enables the individuals, corporate organizations and institutions to invest their surplus funds (Oteh, 2014). The market gives individuals and corporate organizations the opportunity to participate in the creation of wealth (Mobolurin, 2001) via a particular company by investing in such a company. Stock market provides risk management instruments to the investors; this enables them to manage their investments for better returns.

Nigeria has a stock market that is in total of \$121 billion, as at the end of the first quarter in 2018, which is about 18 trillion in terms of market capitalization. The equities market is about 12.9trillion, while the rest of the investments actually belong the bonds market. This implies that, the Nigeria capital is an emerging market compared to stock market of the developed economy and among the fastest growing in Africa (Anyamaobi, 2018). Company financing decisions involve a wide range of policy issues. At the macro level, they have implications for stock market development, interest rate and security price determination, and regulation. At the micro level they have implications for capital structure, corporate governance, and company development (Green et al., 2002).

The indicators of stock market development include turnover ratio, total share of traded ratio, market capitalization ratio, stock market liquidity and stock market openness. Liquidity is the ease and speed with which economic agents can buy and sell securities. With a liquid market, the initial investors do not lose access to their savings for the duration of the investment project because they can easily, quickly, and cheaply, sell their stake in the company. Openness of stock market attracts foreign investors and enhances the development of the capital market.

Signaling Theory suggests that an issuer, through the action of pricing an issue, signals the quality of the Firm. Proponents of signaling theory also argue that security issuers of high quality firms are more likely to set a relatively higher price, while the opposite is expected from low quality firms. The Leland and Pyle (1977) signaling theory effect implies that sales of shares by better informed investors signal that they believe shares are overpriced. Miller and Rock (1985) further add that secondary equity issuance may signal a fall in earnings which may be interpreted negatively by investors resulting in lower stock prices.

The theory of capital structure choice focuses on several determining factors such life-cycle approach, differential taxation of income from different sources, bankruptcy cost/risks, the agency theory, pecking order hypothesis, and signaling theory. Directors who are concerned with a firm's reputation tend to act more prudently and avoid riskier projects in favour of safer projects, even when the latter have not been approved by shareholders, thus reducing debt agency costs (by reducing the "temptation" to gamble at creditors' cost). This perspective has also been seconded within the context of small business (Ang, 1991). There are many studies on the effect of capital market on the economy, however significant proportion of the study focused on the effect of capital market on economic performance and economic growth. Adegiwe, Nwanna and Amala (2015) examined the effect of stock market development on Nigeria's economic growth. Ieoluwa and Omotilewa (2015) examined the impact of stock market liquidity on economic growth of Nigeria between the years 1980 and 2012. Ikiiki and Nzomoi (2013) evaluated stock market development effects on economic growth in Kenya. From the above problems and knowledge gap, this study examined the effect of capital market development on equity financing of quoted firms in Nigeria.

Theoretical Review

Capital Structure Irrelevance Theory

The modern theory of capital structure began with celebrated paper of Modigliani and Miller (1958). They (MM) pointed the direction that such theories must take by showing under what conditions capital structure is irrelevant. Since then, many economists have followed the path they mapped. Theory Modigliani and Miller (1958) proposition concluded that the value of the firm, that is, its stock price, does not depend on the capital structure of the firm. The main idea behind Modigliani and Miller's theory is that, a rational investor can create any capital structure on his/her own through homemade leverage substitution. Capital structure irrelevance" is based on assumptions that include perfect capital markets, homogenous expectations, no taxes, and no transaction costs; all earnings are paid out as dividend. Modigliani and Miller (1963) stated that borrowing will only cause the value of the firm to rise by the amount of the capitalized value of the tax subsidy. The introduction of tax deductibility of interest payments has an implication on the choice of capital structure. Profitability increases, non-debt tax shields reduce and liquidity increases. Modigliani and Miller's capital structure theory is not completely right in its assumption that a firm's value is independent of its capital structure in a perfect capital market (Xiaodong and Birge, 2008).

By borrowing on a personal account at a risk-free rate and buying shares of the unlevered firm investors can create homemade leverage. The other way around, investors can undo undesirable leverage by buying fewer stocks of the levered firm and lending at a risk-free rate. As investors have this opportunity, they are not willing to pay a premium for levered firms over unlevered firms. Hence, the values of two companies, identical in all aspects except their capital structures, should be equal. The second type of capital structure irrelevance is related to multiple equilibrium (Frank & Goyal, 2008). Miller (1977) considers both personal and corporate taxes, which determine the equilibrium level of aggregate corporate debt and, hence, an equilibrium debt-equity ratio for a whole corporate sector. However, Miller's (1977) model does not specify how aggregate quantities are split up among individual firms. Although tax considerations establish an economy-wide leverage ratio, there is a multiple equilibrium which debt is issued by different firms (Frank & Goyal, 2008).

Theory of Financial Sector Development

The theory of financial intermediation was first formalized and popularized in the works of Goldsmith (1969), Shaw (1973) and Mckinnon (1973), who see financial markets (both money and capital markets) playing a pivotal role in economic development, attributing the differences in economic growth across countries to the quantity and quality of services provided by financial institutions. Supporting this view is the result of a research by Nwaogwugwu, (2008) and

Dabwor, (2009) on the Nigerian stock market development and economic growth, the causal linkage. However, this contrasts with Robinson (1952), who argued that financial markets are essentially hand maidens to domestic industry, and respond passively to other factors that produce cross-country differences in growth. Moreover there are general tendency for supply of finance to move along with the demand for it. The same impulse within an economy, which set enterprises on foot, makes owners of wealth, venturesome and when a strong impulse to invest is fettered by lack of finance, devices are invented to release it.

The Robinson school of thought therefore believes that economic growth will bring about the expansion of the financial sector. Goldsmith, (1969) attributed the direct correlation between the level of real per capita GNP and financial development to the positive effect that financial development has on encouraging more efficient use of the capital stock. In addition, the process of growth has feedback effects on financial markets by creating incentives for further financial development. Mckinnon, (1973) in his study argued that there is a complimentary relationship between physical capital and money that is reflected in money demand. This complimentary relationship according to Mckinnon (1973), links the demand for money directly with the process of physical capital accumulation mainly because the conditions of money supply have a first order impact on decision to save and invest. Debt intermediary hypothesis was proposed by Shaw (1973), whereby expanded financial intermediation between the savers and investors resulting from financial liberalisation (higher real interest rates) and development increase the incentive to save and invest, stimulates investments due to an increase supply of credit, and raises the average efficiency of investment. This view stresses the importance of free entry into and competition within the financial markets as prerequisites for successful financial intermediation.

Literature Review

Stock Market Development

According to Okereke (2000) stock market is defined as the section of the financial system that is responsible for efficiency channeling of funds from the surplus to deficit economic limits on a long-term basis. The stock market as an institution is rather a network of specialized financial institution that in various ways bring together suppliers and users of fund. These institutions include Merchant Banks, Stock Broking Firms, Issuing House, Venture Capital Companies, Unit Trust Scheme, the Central Bank, the Securities and Exchange Commission and Stock Exchange which is the hallmark of the Stock Market. Stock Market development is categorized using three main characteristics: traditional, institutional and asset pricing (Demirgüç-Kunt and Levine 1996). Traditional characteristics are concerned with basic growth measures of stock market. These measures include number of listed companies and market capitalization. There are also the Institutional characteristics measures. These Institutional characteristics measures are the regulatory and legal role that may influence functioning of the market, information disclosure and transparency requirements as well as market barriers and trading costs. The Asset Pricing characteristics measures focus on the efficiency of the market especially in relation to the pricing of risk.

Stock market development may influence corporate control. Jensen and Murphy (1990) show that efficient stock markets help mitigate the principal-agent problem. Efficient stock markets make it easier to tie manager compensation to stock prices. This helps align the interests of managers and owners. Furthermore, Laffont and Tirole (1988) and Scharfstein (1988) argued that takeover threats induce managers to maximize the firm's equity price. Thus, well-functioning stock markets that ease corporate takeovers can mitigate the principal-agent problem and promote efficient resource allocation and growth.

Opinion differs on this issue too. Stiglitz (1985) argues that outsiders will be reluctant to take over firms because outsiders generally have worse information about firms than existing owners. Thus, the takeover threat will not be a useful mechanism for exerting corporate control; stock market development, therefore, will not importantly improve corporate control Stiglitz (1985).

Indicators of Stock Market Development

Turnover Ratio

Liquidity is the ease and speed with which economic agents can buy and sell securities. With a liquid market, the initial investors do not lose access to their savings for the duration of the investment project because they can easily, quickly, and cheaply, sell their stake in the company. Thus, more liquid markets could ease investment in long term, potentially more profitable projects, thereby improving the allocation of capital and enhancing prospects for long-term growth. The ratio measures the market liquidity which is usually given as total value of shares traded divided by total value of listed shares or market capitalization. Beck and Levine (2004) prefer this measurement to other measurement of stock market variables. This is because unlike other measures, the numerator and denominator of turnover ratio contain prices. Since traded value can be given more meaning by relating it to the value outstanding volume of shares being considered, turnover ratio is commonly used as a second indicator of liquidity. Turnover ratio gives an indicator of the number of times the outstanding volume of shares changes hands. Turnover ratio equals the value of total shares traded divided by market capitalization.

Total Value of Shares Traded Ratio

Rousseau and Wattle (2000) and Beck and Levine (2004), used this measurement and it is given as the ratio of total value of shares traded to GDP. It measures the degree of trading relative to the size of the economy. Therefore, it reflects stock market liquidity on an economy wide basis.

Market Capitalization Ratio

Stock Market capitalization refers to the total naira market value of a company's outstanding shares. Commonly referred to as market cap is calculated by multiplying a company's shares outstanding by the current market price of one share, the investment community uses this figure to determine a company's size, as opposed to using sales or total asset figures (Osinubi, 2004). In this study, stock market capitalization is measured in relationship to Broad Money Supply which signifies percentage of Broad Money Supply that is invested in the Nigeria capital market. Beck and Levine (2004) have shown that with market capitalization, there is no theory suggesting that mere listing of shares will influence resource allocation and economic growth. Levine and Zervos (1998) also indicate that market capitalization is not a good predictor of economic growth. However, Yartey (2008) differs on this issue and opined that the assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis. For these unsettled discussions, we shall use market capitalization as a ratio of GDP, total value of shares traded ratio and turnover ratio, each at a time to determine the performance of each of them, and avoid multicollinearity in the model since Demiguc-Kunt and Levine (1996) has observed that different measures of stock

Stock Market Concentration

It is possible for stock markets to be large relative to their economies, but still concentrated. That is, only a few companies dominate the given market. Consequently, market concentration may be measured by looking at the share of market capitalization accounted for by the large companies in the market. These large companies are seen by some analysts as being the leading three to five companies in the market (Maunder et al., 1991) Yet, Another commonly used indicator of the degree of stock market concentration is the share of market capitalization accounted for by the ten largest stocks (e.g. International Finance Corporation, S&P).

Concentration adversely affects market development as it hampers market breadth by the concentration of capitalization within a handful of large companies, limiting the range of attractive investment opportunities and thus adversely affecting liquidity in the stock market in question. In addition, having a stock market which is driven by only a few companies could weaken the link between stock prices for non-leading companies and/or their performance and growth prospects. That is to say, the prices of stocks in non-leading companies are affected by market movements of stock prices of leading companies more than their own performance and prospects. This distorts the “signaling” function of stock markets. Market concentration also might encourage speculative activities as investment alternatives are limited and diversification possibilities are limited as well.

The Number of Listed Companies

The number of listed companies is used as a complementary measure of stock market size. The main advantage of this measure is that it is a proxy for the breadth of the stock market and is not subject to stock market fluctuations (Bekaert et al., 2001; Rajan and Zingales, 2003, and Karolyi, (2004). Moreover, it is not tainted by possible mis-measurement of GDP, which often happens in many developing countries. Nevertheless, this measure suffers from two main weaknesses: first, the number of listed companies is too slow-moving to fully capture high frequency changes among listed companies. The number of listed companies can also be affected by corporate restructuring, combining and merging. Second, this measure may allocate a low score to economies whose industrial structure is concentrated in the sense of having only a smaller number of large companies. It can be a noisy measure as concentration only partly reflects limited access to finance (Rajan and Zingales, 2003 and Karolyi, (2004). It is worth highlighting that while marginal differences in the number of listed companies are uninformative, extreme value can be useful.

Stock Market Volatility

Stock prices are supposed to serve as signals for resource allocation. Yet, excessive volatility which does not reflect economic fundamentals would distort the “function of stock market development. However, a certain degree of stock market volatility is unavoidable, even desirable, as stock price movements indicate changing values across economic activities so resources can be better allocated. There are significant implications surrounding stock market volatility, given that it affects incentives to save and to invest. Theoretically, all other things being equal, the more volatile the stock market, the fewer savers will save and hence the less investment there will be. Excessive stock market volatility would lead investors to demand a higher risk premium, increasing the cost of capital which in turn would impede investment and hamper economic growth. In addition, this volatility might lead to a shift of funds to less risky assets which-once-again- will cost companies to pay more for access to capital (Zuliu, 1995, Levine and Zervos, 1996; and Arestis et al., 2001).

Stock market volatility might result from the volatility of underlying economic fundamentals, in particular, the volatility of the real output flow whose present discount value that the stock price is supposed to reflect should matter. Black and Scholes (1973) argue that a higher leverage ratio may induce companies’ managers to undertake riskier projects than they otherwise would. In addition, uncertainty of macroeconomic policies may also result in stock market volatility may also be caused by the arrival of new, unanticipated information that alters expected returns on stocks (Engle and Ng, 1993). In light of the above discussion, one could define a “developed” stock market as “a market that sufficiently large and liquid-relative to the size of its economy-possessing a non-concentrated market capitalization and demonstrating adequate linkage to the performance of the real economic sector”. In worth highlighting that the previous discussion does not cover other important dimensions of stock market development, namely, institutional factors. Yet the status of institutional and all other factors are indeed reflected in the five aspects we have discussed. Finally, it would be possible to establish a stock market development index by elaborating a weighted average comprising market size, liquidity, volatility, linkage to real stock and market concentration. However, the weight to be assigned to each individual factor could be an issue of some contention.

Equity Financing

Floegel (1990) defined equity financing as where by corporations raise money by selling ownership interests (represented by shares of stock) to investors. There are two types of equity issuance, the first is initial public offering, and it occurs when a company "goes public," selling its stock on a major exchange for the first time. The second is called a "seasoned issue," occurring when an established public company sells shares from its supply of authorized but unissued stock. Financial theory suggests that financing by equity presents the most costly means of attracting capital. The decision by a firm’s management to attract funds by issuing equity is undertaken if funds can’t be attracted in any other way or if the shares are overvalued such that the benefits of an issue outweigh the costs (Rad & Tsai, 2006).

Equity financing being a component of capital structure generally aims at strengthening Capital structure and to finance investments opportunities that require large funds which cannot be financed internally, such as expansions or acquisitions (Myers & Majluf, 1984). Therefore announcements of equity should signal good news

to investors since it would be seen that the firm has identified value adding projects to invest in. However as seen in studies of (Ndatimana (2008; Asquith and Mullins, 1986; Eckbo and Marsulis, 1992) equity financing in form of firms announcements are followed by a share price drop which is inconsistent with the efficient market hypothesis (EMH) which advocates that if capital markets are efficient share prices should be correctly priced with no under or overpricing (Fama, 1970). Growth of firms that use proceeds obtained from equity financing is certain if the proceeds are invested in positive NPV projects. Poor investments lead to deterioration of firm performance due to presence of free cash flows or if the proceeds are used to finance debts. Loughran and Ritter (1997) and McLaughlin et al. (1998) posit that, equity financed firms tend to perform poorly in the long run. However these results for mature stock markets cannot be generalized for emerging markets due to institutional differences.

Equity finance refers to the sale of an ownership interest to raise funds for business purposes. In order to grow, any company will face the need for a capital, which it may try to obtain through debt or equity. If the company opts for equity, the owner sells a stake to others. During early growth stages of a company, especially when the company does not have sufficient equity financing can provide capital from investors who are willing to take risks along with the entrepreneur (Berger & Udell, 1998). Similarly, when a company has prospects of explosive growth, it can raise substantial capital through equity financing. Various types of equity financing are available. Equity investors may combine equity with convertible debt or straight debt. This is done either as a form of extended due diligence, or to meet cash flow requirements while limiting dilution of the principal owner's shareholding.

Empirical Review

Guardo and Castriotta (2014) examined three crowd sourcing models: contest, collaborative, and moderated. In an open innovation paradigm, small firms could use internal and external concepts during the innovation development (Guardo & Castriotta, 2014). Explanations for the increased importance of markets for technologies were emerging in various industries while the need for crowd sourcing is evolving (Guardo & Castriotta, 2014). The survey of SBA of 2003 indicated security increase to lenders by 90% (Geho & Frakes, 2013). Elimination of fees encouraged SMEs interest to borrow and banks interest in lending to SMEs (Geho & Frakes, 2013). Access to capital with highly attractive terms and the environment created demand for funds by a small business community (Geho & Frakes, 2013; Krishnan, Nandy, & Puri, 2014). South Africa adopted business incubation as one vehicle for upgrading the SMME sector (Masutha & Rogerson, 2014). Masutha and Rogerson noted that 67% of mainstream SMMEs leaders financed their start-up businesses from private or family savings, while 33% funded through bank credits. Masutha and Rogerson also noted that 90% of the SME entrepreneurs reluctantly joined the incubation program (Masutha and Rogerson, 2014). The World Bank account reported that 15% of the small business in Malawi used bank financing, which was higher than the 10% of firms using bank funding in the Sub-Saharan Africa (Caceres & Caceres, 2015; Mulaga, 2013).

Hoque, Sultana, and Thalil (2016) examined the credit rationing of SMEs in the city of Chittagong, Bangladesh using a sample of 200 SMEs. The Bangladesh government established an SME Foundation (SMEF) in 2007, to support in promoting the financing of SMEs to grow to their full potential (Hoque et al., 2016). The Central Bank of Bangladesh encourages lending to SMEs through a refinancing window for business directly involved in the SME sector (Hoque et al., 2016). The outcome of the study revealed that 89 % of the SMEs obtained loans from microfinance institutions, while 60 % obtained credits from the banks, and 48 % obtained less than desired to obtain (Hoque et al., 2016). Taiwo, Yewande, Edwin, and Benson (2016) explored the roles of microfinance banks on SMEs and the benefit derived from the credit scheme of microfinance banks.

Taiwo et al., (2016) interviewed 1.5 SMEs leaders across Lagos state in Nigeria. They indicated that the recapitalization of microfinance banks in Nigeria would improve the capacity to granting credit to SME for growth and development. Hoque et al., (2016) noted that improving the accessibility of credit facility to SMEs was significant to the development of SMEs in Bangladesh. Erdoğan (2015) examined firm-level determinants of the funding sources and structure of operational funds of Turkish SMEs (Erdoğan, 2015). Erdoğan used a cross sectional data set of 1,278 SMEs for the year 2013. Larger firms and businesses with international standard quality certification had a lower proportion of working capital from internal sources (Erdoğan, 2015).

Adel, Tarek, Affes, and Jarboui (2016) examined VC as a source of financing SMEs in Tunisia. Tunisia created an Investment Company with VC called SICARs. The motivation for VC financing was because new businesses often found it difficult to obtain loans from commercial banks (Abe, 2015; Abdulazeez, Suleiman, & Yahaya, 2016; Adel et al., 2015; Bomyr and Wabo, 2015; Oke & Aluko, 2015).

Popa and Ciobanu (2014) examined the financial factors that affected the functionality and profitability of SMEs in Romania, taking into consideration the financial indicators from 2009 to 2012 on investment capital and profitability. The SMEs contributed significantly to the developments of the SME sector and the economy, which characterized about 99% of all businesses in Romania, provided around 50% of GDP and approximately 65% of employment (Neagu, 2016; Popa and Ciobanu, 2014).

KumarandRao (2015) examined the funding preferences of SMEs and what influences the financing decisions of SMEs in India. The inadequate finance faced by SMEs was a result of demand and supply gap (Kumar & Rao, 2015). There was also a lack of information on the accessibility to sources of finance and the unwillingness of financial institutions to provide SMEs with funding (Kumar & Rao, 2015). Kumar and Rao proposed a conceptual framework that could analyze the financing preferences of SMEs, through incorporating the fundamentals of capital structure theories elements.

Yazdanfar and Öhman (2015) examined the correlation between debt degree and performance among Swedish SMEs. Debt policy influences firm performance, firm value and survival; therefore, SME owners should have an emphasis on finding a reasonable debt level (Yazdanfar & Öhman, 2015). The population sample comprised active unlisted, non-financial limited liability firms with fewer than 200 employees in five industry sectors (Yazdanfar & Öhman, 2015). Trade credit (accounts payable), short-term debt, and long-term debt significantly and negatively affected SMEs' profitability (Yazdanfar & Öhman, 2015). Profitable SMEs were more likely to use equity capital and retained earnings than external funding in line with the pecking order theory (Mulaga, 2013; Yazdanfar & Öhman, 2015).

Moro, Fink, and Maresch (2015) examined the association between reduction in information asymmetry and provision of bank credit to SMEs. Moro et al. (2015) used 828 loan applications of SME managers to examine the relationships between 16 local cooperative banks and SMEs in northern and central Italy. Moro et al., (2015) and Serrasqueiro et al., (2016) noted that decrease in information asymmetry influenced access to credit by SMEs. Moro et al. pointed out that there was a positive relationship between the loan manager's assessment of the amount, quality, completeness, and the period of the receiving information from the SMEs on short-term credit, and the credit obtained by SMEs.

Kraemer-Eis and Passaris (2015) examined the importance of securitization in financing SMEs in Europe. Kraemer-Eis and Passaris (2015) noted that the European securitization market grew progressively in the preceding years until the outburst of the financial crisis in 2008. In the first three-quarters of 2014 overall SME securitization grew in Europe with France having a market share of 29%, UK 19%, the Netherlands 13%, Italy 9%, and Germany 9% (Kraemer-Eis & Passaris, 2015).

Vasilescu (2014) conducted an economic review on financing innovative SMEs in the EU after the financial crises of 2008. The financial crisis increased the financing gap for EU SME's financing (Cowling & Zhang, 2016; Moro et al., 2015; Vasilescu, 2014). Banks tightened lending principles throughout the financial crisis (Cowling & Zhang, 2016; Vasilescu, 2014). The European Commission created a single portal in 2013 termed Horizon 2020 to help alleviate the financial needs of innovative SMEs in the EU (Cowling & Zhang, 2016; Moscalu, 2015; Vasilescu, 2014). Even, though, bank financing was the leading source of capital for European SMEs, access to the bank loans deteriorated in recent years because of the current economic crisis (Jeger, Šarlija, & Bilandžić, 2016; Moro et al., 2015; Moscalu, 2015).

Hong and Zhou (2013) reviewed the policy of collateral provisions including guarantee fee rates, risk consortium; capital assurance requirements and supporting organizations in China. The findings indicated that only under certain conditions can third party's guarantee provisions tackle the financing problems of SMEs

(Hong & Zhou, 2013). The most significant way was the efficient control by collateral agencies, primarily when the agency would benefit from the lending (Hong & Zhou, 2013).

Imad (2015) examined the impact of the leverage on the firms' value utilizing unbalanced pooled Ordinary Least Square (OLS) cross-sectional time series panel data regression approach to all listed companies in Amman Stock Exchange (ASE) during the period 2000-2013 after excluding the financial sector and services sector, due to their own characteristics. F-test was used to test the hypothesis that the changes in the firms' leverage level significantly explain the changes in the firms' value. The results shows that the firms' leverage level affect the firms' value for the Jordanian listed companies included in the sample test, this result inconsistent with the result of Rajan and Zingales (1995) who find inverse association between debt and performance.

Methodology

This study used quasi experimental research design approach for the data analysis. This study covers a population of quoted stock market firms in Nigeria. The total number of quoted stock market firms is 169. Our sample is based on data formulated from quoted manufacturing firms in Nigeria. The researcher used random sampling procedure to select 23 quoted companies. The choice of the 23 quoted manufacturing firms was based on the availability of data and the existence of the firms within the time covered in this study. This study used secondary data sourced from The Central Bank of Nigeria (CBN), Statistical Bulletin, The Nigerian Stock Exchange Factsheet (NSE) (1985-2018).

Model Specification

Based on the objectives of the study, the functional model specified as follows:

$$EF = \alpha + \beta_1 MCR + \beta_2 VOSR + \varepsilon_i \quad (1)$$

$$EF = \alpha + \beta_1 VOST + \beta_2 ASI + \beta_3 MC + \varepsilon_i \quad (2)$$

Where

EF	=	Equity financing
MCR	=	Market capitalization ratio
VOSR	=	Volume of shares retained
VOST	=	Volume of share traded
ASI	=	All share index
MC	=	Market Capitalization
ε_i	=	Error term

Methods of Data Analysis

Ujunwa (2012) opined that coefficient of estimations are reliable when regression parameters do not change over time and do not differ between various cross-sectional units. Therefore, when the regression estimation differ widely between the two models (fixed effects and random effects model), the adoption of Hausman test will be essential. Cross-sectional data over the period from 1985-2018 is used and in line with notable literature, such as the work of Majumdar and Chhibber (1999), Zeitun and Tian (2007), Onaolapo and Kajola (2010). These analytical techniques will enable the researcher attain justifiable and robust result.

Pooled Regression Model (PRM) Is equally known as the constant coefficient model (CCM). It is the simplest among the three models in panel data analysis. However, it disregards the space and the time dimension of the pooled data.

Fixed Effects (FE) Model: In the fixed effect technique, the slope coefficient is constant but the intercept varies across space i.e the intercept in the regression model is allowed to vary across space (individuals). This is as a result of the fact that each cross sectional unit may have some special characteristics.

Random Effect (RE) Model: The RE technique which is equally known as the Error component model (ECM) is an alternative to FE techniques. Basically, the RE estimator assumes that the intercept of an individual unit is a random component that is drawn from a larger population with a constant mean value.

Panel Unit Root Test: Based on the panel data used in the study, the researcher used panel unit roots test to test the validity of the data. Panel unit root involves testing whether a stochastic process is stationary or non-stationary and the order of integration of the individual series under consideration. The tests are to be conducted with and without a deterministic trend (t) for each of the series. For the purpose of this study, the ADF unit root will be adopted and the general form of ADF test to be estimated by the following regression:

$$y_t = \alpha^o + \alpha^{t-1} + \sum_{i=1}^n \alpha \Delta y_i + e^t \tag{3}$$

$$\Delta y_t = \alpha_o + \alpha_1 y_{t-1} + \sum_{i=1}^n \alpha_i \Delta y_i + \delta_t + e^t \tag{4}$$

Where Y is the time series, t is the linear trend, Δ is the first differential operator, α is the random error term.

For the cointegration test, the maximum likelihood test procedure established by Johansen & Juselius (1990) and Johansen (1991) will be used. In the test, if Yt is a vector of n stochastic variable then there exist a P-lag vector auto regression with Guassian errors. Johansen methodology takes its starting point in the vector auto regression (VAR) of order of P given by;

$$y_t = \mu + \Delta y_{t-1} + \dots + \Delta p y_{t-p} + e_t \tag{5}$$

Where yt is an (nX1) vector of variables that are integrated of order commonly denoted (1) and is an e_t (nx1) vector of innovations. In order to determine number of co-integration vectors, Johanson (1989) and Johansen & Juselius (1990) suggested two statistic tests, the first one is the trace test (trace). It tests the null hypothesis that the number of distinct cointegrating vector is less than or equal to q against a general unrestricted alternatives $q=r$ the test calculated as follows:

$$\lambda \text{ trace } (r) = T \sum_{i=R+1}^n (IN 1 - \lambda_i) \tag{6}$$

T is the number of usable observations, and the λ_i is the estimated eigenvalue from the matrix. The second statistical test (λ_{max}) that is, calculated according to the following formula; $\lambda_{max}(r,r+1) T$ in $(1-\lambda_{r+1})$. The test concerns a test of the hull hypothesis that there is r of co-integrating vectors against the alternative that r+1 con-integrating vector.

Granger Causality Test

The test of cointegration ignores the effect of the past values of one variable on the current value of the other variable. The test for Granger causality is performed by estimating equations of the

Following form;

$$\Delta y_t + \alpha_0 + \sum_{i=1}^m \alpha_{1,i} \Delta y_{t-1} \Delta y_{t-i} + \sum_{i=0}^m \alpha_{2,1} \Delta x_{t-1} + \delta ECM_{t-1} + \epsilon_i \tag{7}$$

$$\Delta y_t + \beta_0 + \sum_{i=1}^m \beta_{1,i} \Delta y_{t-i} + \sum_{i=0}^m \beta_{2,i} \Delta y_{t-1} + \lambda ECM_{t-1} + \varepsilon_i \tag{8}$$

Where ε_i and μ are white noise disturbance terms (normally and independently distributed), m is the number of lags necessary to induce white noise in the residuals, and ECM_{t-1} , is the error correction term from the long-run relationship.

Analysis And Discussion Of Findings

Market Capitalization Ratio, Volume of Shares Retained and Equity Financing of Quoted Manufacturing Firms in Nigeria

Table 1: Panel Unit Root Analysis

Method: Series: D(EF,2)	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t*	-16.3527	0.0000	41	747
Im, Pesaran and Shin W-stat	-22.0818	0.0000	41	747
ADF - Fisher Chi-square	613.017	0.0000	41	747
PP - Fisher Chi-square	810.985	0.0000	41	788
Series: D(MCR,2)				
Levin, Lin & Chu t*	-16.6960	0.0000	41	747
Im, Pesaran and Shin W-stat	-22.7084	0.0000	41	747
ADF - Fisher Chi-square	609.446	0.0000	41	747
PP - Fisher Chi-square	1074.06	0.0000	41	788
Series: D(VOSR,2)				
Levin, Lin & Chu t*	-25.2384	0.0000	40	733
Im, Pesaran and Shin W-stat	-30.9174	0.0000	40	733
ADF - Fisher Chi-square	788.526	0.0000	40	733
PP - Fisher Chi-square	845.095	0.0000	40	773

The result of panel unit root test, result shows that of the time series are nonstationary in levels form while the first difference of all the series indicates stationary process. However, some series are not stationary in difference form based on Levin, Lin & Chu criteria, but the other test statistics suggested the stationary behavior of the series. The result further suggested that given set of variables have mixed order of integration and no series is integrated of more than one order. The first generation panel unit root tests confirms that all the variables are non-stationary at level and found to be stationary at I(1) meaning that they are non-stationary at level but stationary at first difference. All the other variables are found to be stationary at level.

Table 2: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MCR	0.029520	0.038731	0.762201	0.4461
VOSR	-6.543730	4.280458	-1.528745	0.1267

C	0.769711	0.122244	6.296536	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.483686	Mean dependent var		0.702810
Adjusted R-squared	0.458703	S.D. dependent var		1.503141
S.E. of regression	1.105904	Akaike info criterion		3.085253
Sum squared resid	1061.584	Schwarz criterion		3.312504
Log likelihood	-1362.333	Hannan-Quinn criter.		3.172014
F-statistic	19.36068	Durbin-Watson stat		0.493155
Prob(F-statistic)	0.000000			
Correlated Random Effects - Hausman Test				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		6.486980	2	0.0084

From the table the probability coefficient of Hausman test 0.0084 and 0.0063 is less than the critical value of 0.05, the study adopt fixed effect model. The results in Table 2 outline the regression results for model 1. The adjusted R-squared indicates that approximately 45.8 percent of the variation in equity ratio explained by the variables in the equation. In addition, the F-statistics show that the overall regression is significant at the 5 percent level, as the P-values are less than 0.05. The beta coefficient proved that market capitalization ratio have positive but no significant effect on equity ratio while market capitalization ratio have negative and significant effect on equity ratio of the quoted manufacturing firms.

Table 3: Presentation of Panel Cointegration

	Statistic	Prob.	Weighted-Statistic	Prob.
Panel v-Statistic	0.116147	0.4538	-2.334002	0.9902
Panel rho-Statistic	-0.724948	0.2342	-5.237630	0.0000
Panel PP-Statistic	-1.677844	0.0467	-7.714840	0.0000
Panel ADF-Statistic	-1.207103	0.1137	-2.809138	0.0025
	Statistic	Prob.		
Group rho-Statistic	-1.374098	0.0847		
Group PP-Statistic	-7.812491	0.0000		
Group ADF-Statistic	-2.332937	0.0098		
Group ADF-Statistic	-2.492224	0.0063		

Source: E-View 9.0

To ascertain if there is long run relationship, we test cointegrated using Pedroni's (1999, 2001, 2004). This is to investigate whether long-run steady state or cointegration exist among the variables and to confirm what Coiteux and Olivier (2000) state that the panel cointegration tests have much higher testing power than conventional cointegration test. Since the variables are found to be integrated in the same order I (1), we continue with the panel cointegration tests proposed by Pedroni (1999, 2004). Cointegrations are carried out for constant and constant plus time trend and the summary of the results of cointegrations analyses are

presented in table 4.7. In constant level, we found that the seven statistics reject null hypothesis of no cointegration at the five percent level of significance for the ADF statistic and group ρ –statistic, while the group –ADF is significant at one percent level.

Table 4: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
MCR does not Granger Cause ER	829	0.50116	0.6060
ER does not Granger Cause MCR		0.15381	0.8575
VOSR does not Granger Cause ER	829	1.67416	0.1881
ER does not Granger Cause VOSR		0.51632	0.5969

Source: E-View 9.0

Granger causality between two variables cannot be interpreted as a real causal relationship but merely shows that one variable can help to predict the other one better (Zouet *al.*, 2010). From table 4.8, the study found that there is no causal relationship that exists among the variables. The no presence of causal relationship among the variables contradicts the a-priori expectation of the results.

Volume of share traded, all share index, Market Capitalization and Equity Financing of Quoted Manufacturing Firms in Nigeria

Table 5: Panel Unit Root Analysis

Method: D(EF)	Statistic	Prob.**	Cross-sections	Obs
Levin, Lin & Chu t*	-13.0482	0.0000	41	710
Im, Pesaran and Shin W-stat	-19.7317	0.0000	41	710
ADF - Fisher Chi-square	533.398	0.0000	41	710
PP - Fisher Chi-square	882.039	0.0000	41	751
Series: D(ASI,2)				
Levin, Lin & Chu t*	-19.7132	0.0000	41	710
Im, Pesaran and Shin W-stat	-24.8912	0.0000	41	710
ADF - Fisher Chi-square	648.865	0.0000	41	710
PP - Fisher Chi-square	865.499	0.0000	41	751
Series: D(MC,2)				
Levin, Lin & Chu t*	-23.4605	0.0000	41	710
Im, Pesaran and Shin W-stat	-28.2432	0.0000	41	710
ADF - Fisher Chi-square	704.119	0.0000	41	710
PP - Fisher Chi-square	940.579	0.0000	41	751
Series: D(VOST,2)				
Levin, Lin & Chu t*	-16.9028	0.0000	41	710
Im, Pesaran and Shin W-stat	-25.8228	0.0000	41	710
ADF - Fisher Chi-square	589.913	0.0000	41	710

PP - Fisher Chi-square	892.992	0.0000	41	751
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Source: E-View 9.0

The result of panel unit root test, result shows that of the time series are nonstationary in levels form while the first difference of all the series indicates stationary process. However, some series are not stationary in difference form based on LLC criteria, but the other test statistics suggested the stationary behavior of the series. The result further suggested that given set of variables have mixed order of integration and no series is integrated of more than one order. The first generation panel unit root tests confirms that all the variables are non-stationary at level and found to be stationary at I(1) meaning that they are non-stationary at level but stationary at first difference. All the other variables are found to be stationary at level.

Table 6: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ASI	0.060872	0.092973	0.654730	0.5128
MC	0.000346	0.000203	1.700427	0.0394
VOST	-5.667506	3.604505	-0.157368	0.8750
C	-0.063367	0.682766	-0.092809	0.9261
Effects Specification				
			S.D.	Rho
Cross-section random			1.081209	0.4176
Idiosyncratic random			1.276753	0.5824
Weighted Statistics				
R-squared	0.804992	Mean dependent var		0.170600
Adjusted R-squared	0.601561	S.D. dependent var		1.283287
S.E. of regression	1.281630	Sum squared resid		1429.042
F-statistic	1.455061	Durbin-Watson stat		1.109548
Prob(F-statistic)	0.225427			
Unweighted Statistics				
R-squared	0.008122	Mean dependent var		0.685343
Sum squared resid	2426.485	Durbin-Watson stat		0.664364
Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		4.202525	3	0.2404

Source: E-View 9.0

From the table the probability coefficient of Hausman test coefficient of 0.664364 and 0.3576 implies that random effect is valid therefore the study adopt random effect model. The results in Table 7 outline the regression results for model 2. The adjusted R-squared indicates that approximately 60.1 percent of the variation in debt ratio explained by the variables in the equation. In addition, the F-statistics show that the overall regression is significant at the 5 percent level, as the P-values

are less than 0.05. The beta coefficient proved that all share price index, have positive but no significant effect, market capitalization have positive but no significant effect while value of share traded have negative and no significant effect on debt ratio of the quoted manufacturing companies.

Table 7: Presentation of Panel Cointegration

	Statistic	Prob.	WeightedStatistic	Prob.
Panel v-Statistic	2.326700	0.0100	0.098356	0.4608
Panel rho-Statistic	-7.005725	0.0000	-0.662108	0.2540
Panel PP-Statistic	-20.21040	0.0000	-4.120366	0.0000
Panel ADF-Statistic	-2.123205	0.0169	-2.345321	0.0095
	Statistic	Prob.		
Group rho-Statistic	2.340463	0.9904		
Group PP-Statistic	-8.579100	0.0000		
Group ADF-Statistic	-1.867078	0.0309		

Source: E-View 9.0

Cointegrations are carried out for constant and constant plus time trend and the summary of the results of cointegrations analyses are presented in table 4.19. In constant level, we found that the seven statistics reject null hypothesis of no cointegration at the five percent level of significance for the ADF statistic and group p –statistic, while the group –ADF is significant at one percent level.

Table 8: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
ASI does not Granger Cause DEBT_RATIO	792	0.00793	0.9921
DEBT_RATIO does not Granger Cause ASI		0.20157	0.8175
MC does not Granger Cause DEBT_RATIO	792	0.91111	0.4025
DEBT_RATIO does not Granger Cause MC		0.38990	0.6773
VOST does not Granger Cause DEBT_RATIO	792	0.11766	0.8890
DEBT_RATIO does not Granger Cause VOST		1.15325	0.3161

Source: E-View 9.0

Granger causality between two variables cannot be interpreted as a real causal relationship but merely shows that one variable can help to predict the other one better (Zou et al., 2010). From table 9, the study found that there is no causal relationship that exists among the variables. The no presence of causal relationship among the variables contradicts the a-priori expectation of the results.

Discussion of Findings

The estimated regression model produced adjusted R² of 0.417657 which implies that 41.7 percent variation on the debt financing of the quoted manufacturing firms can be traced to variation on stock market development indices estimated in the model. The empirical findings from the F-statistics and probability justifies that the model is statistically significant. The estimated model proved that bank capitalization has positive and significant relationship with debt financing of the quoted manufacturing firms.

Empirical findings from the estimated regression results proved that market capitalization have positive but no significant relationship with equity financing of the quoted manufacturing firms. This finding confirm the a-priori expectation of this study as well as reforms carried out of the policy makers aimed at increasing the operational efficiency of the stock market. The positive findings confirm the findings of Kumar and Rao (2015) that there was also a lack of information on the accessibility to sources of finance and the unwillingness of financial institutions to provide SMEs with funding (Kumar & Rao, 2015) and the findings of Moro, Fink, and Maresch (2015) that decrease in information asymmetry influenced access to credit by SMEs and that there was a positive relationship between the loan manager's assessment of the amount, quality, completeness, and the period of the receiving information from the SMEs on short-term credit, and the credit obtained by SMEs. However, findings revealed that there is negative but no significant relationship between value of share retained and equity financing of the quoted manufacturing firms, this contrary to the expectations of the study and contradicts the empirical findings listed above.

The estimated regression model produced adjusted R^2 of 0.601561 which implies that 60.1 percent variation on the equity financing of the quoted manufacturing firms can be traced to variation on stock market development indices estimated in the model. The empirical findings from the F-statistics and probability justifies that the model is statistically significant. The estimated model proved that market capitalization and all share price index have positive and significant relationship with equity financing while volume of share traded have negative but no significant relationship with debt financing of the quoted manufacturing firms.

The positive relationship that exists between the dependent and independent variables confirm the a-priori expectations of the results. The positive effect of the variables confirm the findings of Kraemer-Eis and Passaris (2015), Vasilescu (2014), Hong and Zhou (2013) while the negative relationship between the dependent and independent variables contradicts the findings of Kraemer-Eis and Passaris (2015), Vasilescu (2014) and Hong and Zhou (2013).

Conclusion and Recommendations

Model I proved that 45.8 percent of the variation in equity ratio explained by the variables in the equation. while beta coefficient proved that market capitalization ratio have positive but no significant effect on equity ratio while market capitalization ratio have negative and significant effect on equity ratio of the quoted manufacturing firms. The results in for model II found that 60.1 percent of the variation in debt ratio explained by the variables in the equation while the beta coefficient proved that all share price index, have positive but no significant effect, market capitalization have positive but no significant effect while value of share traded have negative and no significant effect on debt ratio of the quoted manufacturing firms. From the findings, we conclude that stock market development have significant effect on equity financing of the quoted manufacturing firms.

Recommendations

1. The stock market regulatory authorities should ensure that Nigeria stock market operate with international best practice, all barriers to inflow of foreign portfolio investment should be discouraged.
2. Policies should be directed toward increasing the openness of the stock market. In fact Nigeria should, as a matter of urgency, deploy resources towards gathering reliable and accurate information which would facilitate development of comprehensive strategies to manage investment inflows.
3. Orderly market rules should be made and enforced in the stock market, this is because orderly market rules help maintain liquidity and prevent destabilizing market events. Orderly market rules are inclusive of: requirements on dealers to maintain bid and ask quotes at all times on a trading day; price limits for derivatives exchanges; fair credit reporting rules; prohibitions against predatory lending and deposit insurance.

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