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Financial Structure of Nigerian Quoted Firms: A Test of Agency Cost Theory

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Abstract: This study examines financial structure on the perceptive of agency cost theory in order to ascertain its impact on the maximization of shareholders' earnings. A total of 43 non-financial firms over a 12 year period (2001-2012) were randomly selected for the study. The panel data were subjected to pool ordinary least square, fixed effects and random effects regression model to test the hypotheses of the study. The results show that there is a negative and significant impact of financial structure (proxied by total term ratio, long term debt ratio and short term debt ratio) on return on asset. The employment of return on equity as alternative measure of firm performance depicted the implication of asset substitution effect as noted by agency cost theory. The study therefore concludes that debt is valuable in reducing the agency costs of equity in professionally managed firm but at the same time debt is costly as it increase the agency cost of debt.

Key words: Employment, significant, performance, valuable, agency

INTRODUCTION

Financial structure is financing decision undertaken by a firm on the course of funding its corporate investment. This entails the combination of debt and equity capital to finance firm's assets. The impact of financial structure on performance of a firm has been ambiguous due to extensive debate from diverse perceptions. The core argument among scholars is in two fold irrelevance and relevance theories of financial structure. Irrelevance theory with the assumptions of no taxes, rational investors, perfect competition, absence of bankruptcy costs and market efficiency predicts firm performance to be independent of its financing decision (Modigliani and Miller, 1958). This led to Modigliani and Miller argument that "in a world of sure returns, the distinction between debt and equity funds reduces largely to one of the terminology". Thus whether a firm is financed by debt or by equity, market value of any firm is independent of its financial structure. On the other hand, relevance theories that predict firm performance to be dependent of its financing decision with imperfect capital markets assumptions that exist in reality were modeled by trade-off theory, pecking order theory, agency cost theory, signalling theory, market timing theory, neutral mutation hypothesis, among other theories (Myers and Mauflis, 1984; Myers, 1984; Ross, 1977; Jensen and Meckling, 1976; Leland and Pyle, 1977; Kim *et al*., 1977; Fama, 1980; Fama and French, 1998).

The underlining argument of traditional (relevance) theories of financial structure is underscored on frictionless nature of MM theorem that holds the theory incomplete (Ross, 1977) points. If MM theory is complete and thought to be correct, then capital structure is indeterminate or random in actuality and this a somewhat inhibiting basis on which to develop an explanation of financial structure. One possible approach to the problem is to modify the MM theory to take account of the structural features of the real world". Ross (1977) stressed further that since interest payment on debt are deductable in computing corporate income tax the value of the firm should rise with the substitution of debt for equity financing. Therefore, high profitability could be associated with high target debt ratio which may arise for a number of reasons such as potentially higher tax savings from debt, lower probability of bankruptcy and potentially higher overinvestment and other things equal (Hovakimian *et al*., 2004).

The separation of ownership and control in a professionally managed firm as assumed by agency cost theory may result in managers exerting insufficient work effort indulging in perquisites, choosing inputs or outputs

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that suit their own preferences or otherwise failing to maximize firm value (Jensen and Meckling, 1976). Consequently, the agency costs of outside ownership equal the lost value from professional managers maximizing their own utility, rather than the value of the firm. Theoretical body of knowledge suggests that the choice of financial structure may help mitigate these agency costs. Debt finance act as a controlling tool to restrict the opportunistic behaviour for personal gain by managers. It reduces the free cash flows with the firm by paying fixed interest payments and forces managers to avoid negative investments and work in the interest of shareholders. But if an investment yields large returns, shareholders capture most of the gain. If, however, the investment fails, debt holders bear the consequences. As a result, shareholders may benefit from investing in very risky projects, even if they are value-decreasing "asset substitution effect" (Jensen and Meckling, 1976). Apparently when leverage becomes relatively high, further increases generate significant agency costs of outside debt including higher expected costs of bankruptcy or financial distress, arising from conflicts between bondholders and shareholders. Also at high leverage the value of shareholders may not be enhanced when restrictive covenants included in debt financing agreements limit the ability of firms to fully harness the potentials of the firm's resources.

Firm maximize their values by maximizing the use of debt. Most firm external debt capital is bank loan imposing extra burdens at very exorbitant costs on the firm due to the prevailing high rate of interest for bank loans ranging between 15.88 and 25.91% for prime lending rate and maximum lending rate respectively. Also with their short term nature mismatch of funds becomes the outcome. All these are as a result of underdeveloped debt markets that fail to ensure adequate corporate bond issues, market liquidity and efficient market. This financing means may lead to very risky projects as payment of interest and repayment of principal may fall due when the proceeds (cash inflow) from the investment are not readily available. In view of these, there is mixed empirical evidence on the few studies examining the impact of financial structure on the performance of a firm in Nigeria. Therefore, with the highlighted assumptions of agency cost theory, it is imperative to determine the financial structure impact on firm performance. Test of the agency theory typically regress measures of financial structure on firm performance indicators and some control variables.

Literature review: Leverage ratios are suitable quantitative measures of firms' financial structure. These are portion of firm assets financed with any type of fixed-charge financing such as debt or leases. Thus, leverage is a tool if prudentially employed increase earnings potential of the residual owners. Goldsmith and Lipsey (1963), contend that leverage ratio is a measure of potential, rather than actual, capital gain. Therefore, leverage ratio suggest the effects of possible changes in price-pointing out which groups might be vulnerable to or favoured by price changes of various type. Leverage ratio indicates the firm's risk exposure in meeting debt service charges. A high leveraged firm faces a higher risk that its equity capital can be wiped out when outcomes from its exposure to risky assets are unfavourable. Higher leverage magnifies market risk as leverage firm may be forced to sell assets in order to reduce exposure under adverse market conditions. Thus, firm that is heavily financed by debt offers creditors less protection in the event of bankruptcy.

Irrelevance theory: According to Modigliani and Miller (1958) argued that under very restrictive assumptions of perfect capital markets, investors homogenous expectations, symmetric information and no bankruptcy cost, financial structure does not determine performance of a firm. The theory argued that "the market value of any firm is independent of its financing decision and is given by capitalizing its expected return and average cost of capital to any firm is completely independent of its financing decision and is equal to the capitalization rate of a pure stream of its class". The unrealistic nature of MM propositions coupled with their subsequent work in 1961 and 1963 triggered controversial arguments. This however, spawned the interest of many scholars who looked at diverse dimension to examine the effects of less restrictive assumptions on the relationship between financial structure and value of a firm (Eriotis *et al*., 2007). Subsequent research of Miller (1977), presented a new challenge by pointing that under certain conditions, the tax shield benefit of debt financing at the firm level is exactly offset by the tax disadvantage of debt from personal income tax. Modigliani and Miller theorems however, assumed that investors and firms have equal access to financial markets which allows for homemade leverage (Brealey and Myers, 1996). As argued, investors can create any leverage they wanted but not offered or the investors can get rid of any leverage that the firm took on but was not wanted. Hence, firms leverage decisions do not influence its' value (Afrasiabi and Ahmadinia, 2011). The advocates of Modigliani and Miller (1958) theorem have provided empirical evidence that capital structure is insignificant (for example, Adelegan, 2007; Pratheepkanth, 2011) amongst others.

Most recently held theories with their varying predictions are evident in the world of imperfect capital

markets where internal and external capital is not perfectly substituted. Thus, relevance theories suggest that many factors such as tax effects, agency effects, bankruptcy costs, signalling effects, market timing and asymmetric information influence financing decisions and in turn the value of the firm (Jensen and Meckling, 1976; Myers and Mauflis, 1984; Myers, 1984; Ross, 1977; Leland and Pyle, 1977; Kim *et al*., 1977; Fama, 1980; Fama and French, 1998). Specifically, these theories that have been advanced to explain the financial structure of firms include the pecking order theory, tradeoff theory, the agency cost theory, signalling hypothesis, market timing hypothesis, neutral mutation hypothesis, among other. Although, various schools of thought emphasize on different elements, it is probably fair to say that a consensus is emerging.

According to Myers (1984) "static trade off theory is a situation in which a firm set a target-to-value ratio and gradually moves towards it". The theory viewed financial structure of a firm by adding various imperfections including taxes, cost of financial distress and agency costs but retains the assumptions of market efficiency. And thus suggest that firm target leverage is driven by three competing forces such as tax benefits, bankruptcy cost and agency costs (Huang and Ritter, 2005). In the static trade-off theory the value of the levered and unlevered firm is not the same (Awan *et al*., 2011). The theory holds that a firm borrows to the point where the marginal value of tax shields on additional debt immediately offset the increase in the present value of bankruptcy cost (Bauer, 2004). Bunn and Young (2004) noted that the theory is on the view that in choosing financial structure, firms seek to balance the benefits of debt against the potential costs of financial distress that is made more likely at high debt levels. Trade off theory assumed not to be static is dynamic trade-off theory. But dynamic trade-off theory is not as popular as static trade-off theory leading to many authors categorizing the two theories as one (trade-off theory). Ju postulate that dynamic trade-off theory corresponds with traditional trade-off approach in the pursuit of an optimum capital structure but not static. They assert that factors affecting financial structure are tax shields and bankruptcy costs. Optimal capital structure is the point at which the financing costs and the Weighted Average Cost of Capital (WACC) are minimized, there by maximizing returns (Onaolapo and Kajola, 2010). In other words, this theory argues that firms chose capital structure base on the attributes that determine the costs and benefits associated with debt ratio which can be maintain or revert to predetermine debt to equity ratio that maximizes firm value and/or minimized risk of default (Kasozi and Ngwenya, 2010).

Traditional views of financial structure have taken different dimension with priority to internal funding. According to Shahjahanpour *et al*. (2010) pecking order theory was first observed by by Myers (1984) working on agency theory by Jensen and Meckling (1976) and also by Myers and Majluf (1984), working on information asymmetry. In Myers, contrast to the static trade-off theory with a competing popular story based on a financing pecking order, firms prefer internal finance and if external finance is required, firms issue less risk debt and equity as a last resort. This theory is looking at the least cost of financing mix, as it argues that firms do not try to reach the "optimal" capital structure, as the trade-off theory claims because firms employ least resistance and least costly financing mix (Kasozi and Ngwenya, 2010). Zambuto *et al*. (2011) report that this theory argues that information asymmetry problem between insiders and outsider of a firm lead to increases in the cost of external capital. Brounen *et al*. (2006) contends that the degree of asymmetric information determines the relative costs of each source of finance. As they stressed further, firms that adopt this pecking order of finance do not have a target debt ratio because the ordering determines their choice of issuance of new capital. Moreover, the more severe the asymmetric information, the more riskier the investment for investors, invariably the higher the price of the security (Octavia and Brown, 2010). Hence with the presence of asymmetric information, a firm is better financed by internally generated funds than external funds.

Agency cost theory was first incorporated in financial structure argument in the research of Jensen and Meckling (1976) this was as a result of agency relationship between the principal (shareholders) and agent (manager) when there is separation of ownership and control. This theoretical literature argues that agency costs arise because of interests of the principal and agent resulting from personal utility maximization does not align (Kim *et al*., 2006; Shoaib, 2011). Eisenhardt asserts that agency theory is directed at the ubiquitous agency relationship in which one party (the principal) delegates work to another (the agent) who performs that work. Agency costs of outside ownership equal the lost value from professional managers maximizing their own utility rather than the value of the firm due to separation of ownership and control.

Conflict of interest between managers and shareholders can take a variety of forms. In their model, managers receive private benefits from investment which relatively increase with the projects' NPV and apparently optimal for manager to invest. Therefore, agency cost discretion depends on the allocation of control rights within the firm. The focus of the theory is on

determining the most efficient contract governing the principal-agent relationship given assumptions about (e.g., self-interest, bounded rationality, risk aversion), organization (e.g., Goal conflict among members) and information (e.g., information is a commodity which can be purchased). The domain of agency theory is relationships that mirror the basic agency structure of a principal and an agent who are engaged in cooperative behavior but have differing goals and differing attitudes toward risk. The theory advocate that when the contract between the principal and agent is outcome based, the agent is more likely to behave in the interests of the principal and also when the principal has information to verify agent behaviour, the agent is more likely to behave in the interests of the principal. Thus, the focus of the principal-agent literature is on determining the optimal contract behaviour versus outcome between the principal and the agent. That is the trade-off between the cost of measuring behaviour and the cost of measuring outcomes and transferring risk to the agent.

The last two theories considered the information the policy decision of the firm may convey to the market. Signalling hypothesis incorporates this information dissemination and inference of the outsider. This argues that different levels of information between insiders and outsiders are such that insider behaviour passes information about firm value to outsiders. He posits that this theory predicts that a change infirm's financing mix contains information about stock value. In the study of Ross (1977) and Leland and Pyle (1977), managers (insider) possess the true information of firm's returns but investors (outsiders) do not. Molinari *et al.* (2009) noted that problems of asymmetric information might raise the cost of external finance and lead to credit rationing. In this case, the ability to generate cash flow becomes important for financing investment. Suhaila and Wan Mahmood (2008) and Brounen *et al.* (2006) shed light that if managers decide to issue more debt, outsiders interpret it as a signal of high future cash flows and management confidence towards firm's future prospect. Suhaila and Wan Mahmood (2008) contributed further that issue of new equity is signal of management lack of confidence towards firm's future prospect. Due to asymmetric information investor tend to undervalue new equity issuance which increase the attractiveness of debt relative to equity finance (Bunn and Young, 2004). Awan posit that issuance of equity instead of debt financing for new projects, investors will interpret the signal negatively. Therefore, since managers have superior information about the firm than investors, they might issue equity when it is overpriced.

Neutral mutation hypothesis is not well established in literature when compared with other extensively investigated theories in this field of study. This argues that sometime firm employs financing decisions that cannot be predicted and also doesn't have any significant effect on the firm value. Therefore, firm has undefined pattern or habit that can influence the value of a firm. Myers (1984) posits that firm manager who identifies these habits and adopts them to predict financing behavior would not be explaining anything important (meaningful). Thus, neutral mutation ideal is important as a warning. Myers (1984) noted reasons for not embracing neutral mutation as a strict null hypothesis makes the game of research too tough to play, if a firm can identify costs that explain firms financing behaviour that can yield optimal returns.

Market timing theory argues that firms issues equity when their market performance is high (Hovakimian *et al.*, 2004). Thus, if conditions on markets are unfavorable, firms rarely go to the market and there is possibility to delay investments. This is supported by a body of knowledge that asserts that firm delay issuing securities due to expectation of growth opportunities. Apparently, firms that mostly issue securities at peak (growth) period is expected to obtain this funds at low price resulting to high expected rate of return. Hence, financial structure only depends on equity market returns and conditions on the bond markets and a target financial structure does not exist (Getzmann *et al.*, 2010). Afrasiabi and Ahmadinia (2011) posit that market timing theory of financial structure argues that issuance of equity by the firm are timed in such a way that when the stock prices are perceived to be overvalued, they in turn issue new equity and buy back when they are undervalued. They further stressed that fluctuations in stock prices affect firm's capital structure. And also the theory assumes economic agents (managers) to be rational and irrational. Managers issue equity when they believe their cost is irrationally low and repurchase equity when they believe their cost is irrationally high. Thus, manager does not predict stock returns but they believe they can time the market. Thus, most of the arguments of relevancy theories are held on risks and returns inherent in employment of each financing mix available to the firm. Conventionally, the primary aim of financial structure decisions via., employment of equity and debt is to maximize the market value of a firm at minimal overall cost of capital (Khrawish and Khraiwesh, 2010). Hence, utilization of different levels of debt and equity in the firm's financial structure is one of the firm-specific strategies used by managers in the search for improved performance.

Adelegan (2007) found negative insignificant relations between values and leverage in pooled regression and negative significant relations between debt and change in leverage in the small-size sample. The

finding is in line with Miller (1977) hypothesis that debt has no net tax benefit because personal income taxes on interest affect the corporate tax savings. Examining capital structure and financial performance of selected business companies in Colombo Stock Exchange Pratheepkanth (2011) confirmed insignificant negative relationship between capital structure and financial performance. Another study based on empirical research on the effects of capital structure change on security prices in USA by Masulis (1980) revealed that stock price changes have the same qualitative relationship to announced leverage changes regardless of the direction of the change. The relationship between capital structure and performance for a sample of Indian firms, found significant and inverse relationship between debt equity ratio and corporate performance. Many empirical studies using panel data regression estimation confirmed the inverse relations between capital structure and firm performance (Schiantarelli and Sembenelli, 1997; Ebaid, 2009; Adelegan, 2007; Zeitun and Tian, 2007; Cheng and Tzeng, 2011; Onaolapo and Kajola, 2010; Uremadu and Efobi, 2012; Azhagaiah and Gavoury, 2011; Ahmad *et al*., 2012).

Investigating the impact of capital structure on performance of Nigerian firm by Onaolapo and Kajola (2010), debt ratio as a measure for capital structure was found to be negatively and significantly related to two measures of firm performance (ROA and ROE). Studying the impact of capital structure and liquidity on corporate returns in Nigeria by Uremadu and Efobi (2012), the study covered 10 manufacturing firms for period of 2002-2006. Using OLS regression estimate the study established that high corporate income tax regimes combined with high inflation rates in Nigeria business environment may not have enabled firms to optimize use of long term debts to maximize profitability. The researchers posit that increasing proportion of long term debts compared to equity in the capital structure of Nigeria firms will contribute to increases in corporate profits of companies. Also it was noted that increasing proportion of both short term debts and long term debts on the overall liability of the firm reduces corporate profitability. The study however, showed that log linear analysis of the value of long term debts assumed a negative but the result were found inconsistent with the prediction made earlier by the researchers. Hence, the implication of this according to the authors is that either inadequate long term debts were mobilized by corporate entities in Nigeria or serious distortions may have existed in the economic and financial systems of the economy within the period covered.

Cheng and Tzeng (2011) studying leverage and efficiency of Taiwan Manufacturing firms from 2000-2009, employed technical efficiency instead of financial accounting measure and found that leverage is negatively related to technical efficiency in all industries but more significantly in Textile industry. Also using pooled ordinary least square regression to study the relationship between capital decisions and firm performance, Khan (2012) applied 36 engineering Sector firms in Pakistani listed on the Karachi Stock Exchange (KSE) during the period 2003-2009. He however observed that financial leveraged measured by Short Term Debt to Total Assets (STDTA) and Total Debt to Total Assets (TDTA) has a significantly negative relationship with the firm performance measured by Return on Assets (ROA), Gross profit Margin (GM) and Tobin's Q. But the relationship between financial leverage and firm performance measured by the Return on Equity (ROE) is negatively insignificant. The researcher further concludes that firms in the engineering sector of Pakistan are largely dependent on short term debt but debts are attached with strong covenants which affect the performance of the firm. The impact of financial structure on firm's performance in chemical sector of Pakistan by Amjed revealed significant negative relationship between leverage and firms' performance. Specifically, the results revealed that long term debt of the industry is significantly low in turn portray significant negative relationship with the financial performance of the firm.

On the other head, San and Heng (2011), Margaritis and Psillaki (2010), Adeyemi and Oboh (2011), Chowdhury and Chowdhury (2010), Abu-Rub (2012) and Skoljak and Luo (2012) provide empirical support for the body of theoretical literature that argue capital structure to be positively related to firm performance. Margaritis and Psillaki (2010) studied capital structure, equity ownership and firm performance using a sample of French firms from low and high growth industries which documented that higher leverage ratio is associated with improved efficiency over the entire range of observed data. Consistent with prior empirical evidence, Abu-Rub (2012) investigated capital structure and firm performance using panel data procedure for a sample of 28 listed companies in Palestinian Stock Exchange over the period of 2006-2010. The study showed that return on equity, return on assets, earnings per share, market value of equity to the book value of equity and Tobin's Q as a measure of firm performance is positively related to capital structure measured by short term debt, long term debt and total debt to total assets and total debt to total equity at very significant level. Similarly, Dare and Sola employing panel data regression analysis of Nigerian Petroleum Industry found significant positive relationship between leverage ratio and corporate performance and suggest the need for petroleum industry in Nigeria to improve on their leverage ratio.

Also in conformity with relevance theory, Zuraidah studying capital structure effect on performance of Malaysian firms employed ROA and ROE as performance measure while Short Term Debt (STD), Long Term Debt (LTD) and Total Debt (TD) as capital structures. The study covering 58 firms from 2005-2010 showed that only STD and TD have significant relationship with ROA while ROE has significant relationship on each debt level. However, model estimation for lagged variables revealed that non of lagged values for STD, LTD and TD has significant relationship with performance. Likewise Modigliani and Miller (1958) examined the relationship between financial structure and firms performance in firms traded on the Tehran Stock Exchange, the study revealed significant relationship between financial structure and ROA as performance measure but insignificant relationship was found between financial structure and ROE as performance measure.

Theoretical frameworks:

- H_1: total debt ratio has positive and significant impact on firm performance

Agency theory is most relevant in situations in which contracting problems are difficult. The choice of financial structure may help mitigate these agency costs. Masulis (1980) posits that when manager own less stake in a firm, agency costs increase relatively to optimal monitoring of managerial decisions and the level of perquisite consumption by manager. He opined that agency cost model predicts that financial structure of a firm affects management incentives to make particular firm related decisions. Almazan and Molina (2005) stressed that for agency conflict to shapes a firm's financial structure will depend on the manager's attributes and on the firm's ability to reduce managerial influence. Long and Malitz (1985) opine, "firm's unobservable growth opportunities reduce the effectiveness of bond covenants, the only way in which owners of a firm with a high proportion of intangible investment opportunities can control the agency cost of debt is by limiting the amount of risk debt outstanding". As the total debt ratio increase, so do firm's fixed interest charges, if the total debt ratio becomes too high the cash flow the firm generates during economic recessions may not be sufficient to meet the interest payment. In the spirit of Fama and French (1998), profitable firms with strong growth opportunities and thus high market value can avoid agency problems by choosing lower leverage. Thus, high leverage increases agency problem, firm needs to balance the cost and benefit of debt because negative information in debt about profitability overwhelms any tax (or other) benefits of debt. Shahjahanpour *et al.* (2010) contributed that firm maximize their values by maximizing the use of debt. Other researchers like Manos and Ah-Hen (2003) contend that each firm has an optimal debt ratio that maximizes firm's value, although, this level varies between firms. Firms are expected to set their financial structure in such a way that the potential conflicts of interest between managers and shareholders and/or shareholders and debt holders are minimized and there in turn increase in potential earnings of the firm (Sayilgan *et al.*, 2006).

- H_2: long term debt ratio has positive and significant influence on firm performance

Manos and Ah-Hen (2003) pointed that agency consideration assume debt is valuable in reducing the agency costs of equity but at the same time debt is costly as it increase the agency cost of debt. While Ahmed *et al.* (2010) assert that shareholders of a firm incur agency cost in attempt to discourage self-interest of the managers by means of monitoring and control actions. High leverage ratio reduces the agency costs of outside equity and increases firm value by constraining or encouraging managers to act more in the interests of shareholders (Berger and di Patti, 2002). Moreover, the given incentives to the firm will benefit shareholders at the expense of debt-holders. Thus, debt-holders need to restrict and monitor the firm's behaviour. The use of debt finance which is linked to assets of the firm creates a problem for the firm because management may not want to run the risk of having conflicts with debt holders. Hence, costly monitoring devices of contractual covenants are incorporated into debt agreements to protect the debt-holders, it should increase the cost of capital offered to the firm. And also firms with riskier returns will have lower leverage ratio even when there are no bankruptcy costs. In this end long term debt places multi-year, fixed financial obligations on the firms and market liberalization at the country level decreases the use of long term debt and debt maturity shifts to short term (Lucey and Zhang, 2011).

- H_3: short term debt ratio has positive and significant impact on firm performance

In the study of Suhaila and Wan Mahmood (2008), agency cost arises due to conflict of interest between shareholders and managers or between shareholders and bondholders. Brounen *et al.* (2006) and Octavia and Brown (2010) postulate that agency problem between shareholders and bondholder arise due to asset substitution in which shareholders prefer high risk

projects because they can fully benefit from high earnings while bondholders that have a fixed claim prefer low risk projects. The adjustment of leverage ratio to attain optimal financial structure may lead to high agency cost if not rationally employed. As documented, the optimal financial structure decision has to do with balancing the trade-off between the benefit of debt and agency costs arising from mitigating the agency cost of managerial discretion against the agency cost of debt arising from "asset substitution effect" (Shahjahanpour *et al*., 2010). Also high leverage ratio increases the bankruptcy cost and agency cost of the firm as well rises and it is through this argument that agency costs can be incorporated into the financial structure decision (Kim *et al*., 2006). The occurrence of this is prone to default as payment of interest and repayment of principal may fall due when the proceeds (cash flow) from the investment are not readily available. This therefore will result to conflict between shareholders and bondholders and there in turn increases in the bankruptcy cost and agency cost of the firm as well rises. Khan (2012) noted that short term debts are attached with strong covenants which affect the performance of the firm. Lucey and Zhang (2011) assert that in emerging market firms invariably obtain additional debt finance owing to credit market integration but primarily at short maturities. They stressed further that the main reasons for high proportion of short debt is that the weak financial and legal institution in developing countries will force creditors to use short term debt to monitor and discipline borrows behaviour. Titman and Wessels (1988) contend that theories have different empirical implications in regard to different types of debt instruments. The employment of short term instrument if not optimally employed result to mismatch of funds by a firm.

MATERIALS AND METHODS

Data collection: The data employed in this study were generated from Nigeria Stock Exchange factbook and annual reports and statement of accounts of quoted firms in Nigeria. This is annualized panel data covering the period 2000-2012 for cross section of 43 firms from different sectorial classifications. The choice of 43 firms was based on the availability of data. Accordingly, firms that had problems with NSE and SEC as well as those that ceased operation within the period of study were excluded. The items of interest in the financial statement are assets, liabilities, shareholders' funds and earnings for each financial year.

Description of variables: Variables employed in this study have been determined according to the approach used by the previous studies as reviewed and how far data will be available for measurement purposes. The data employed are accounting (book value) measures of leverage ratio and firm performance. Miller (1977) contends that book value measures might give better insight to corporate capital structure objectives than market value measures of leverage which is highly sensitive to changes in the level of stock prices. The study employed Return on Assets (ROA) and Return on Equity (ROE) as firm performance measure while Total Debt Ratio (TDR), Long Term Debt Ratio (LTDR) and Short Term Debt Ratio (STDR) were employed as financial structure measures.

Return on Asset has been employed by many researchers as performance indicator (Ujunwa, 2012; Zeitun and Tian, 2007; Onaolapo and Kajola, 2010; San and Heng, 2011; Azhagaiah and Gavoury, 2011; Zeitun, 2009; Khan, 2012). This is derived by dividing profit before interest and tax with total assets of the company. Ujunwa (2012) and Onaolapo and Kajola (2010) posits that ROA can be viewed as a measure of management efficiency in utilizing all the assets under its control which ultimately belong to shareholders irrespective of its source of financing. This is a widely accepted measure of financial performance which is expected to respond positively to financial structure. That is:

$$\text{ROA} = \frac{\text{Profit before interest and tax}}{\text{Total asset}}$$

Return on equity as accounting measures has been adopted by numerous empirical studies as a proxy for firm performance (Zeitun and Tian, 2007; Kajola, 2008; Skopljak and Luo, 2012; Onaolapo and Kajola, 2010; San and Heng, 2011; Zeitun, 2009; Khan, 2012). ROE is a measure of how well a company has used the capital from its shareholders to generate profits and this is derived by dividing profit before interest and tax with share holders' funds. That is:

$$\text{ROE} = \frac{\text{Profit before interest and tax}}{\text{Shareholders' funds}}$$

The independent variables are financial structure proxied by Total Debt Ratio (TDR), Long Term Debt Ratio (LTDR) and Short Term Debt Ratio (STDR). TDR measures the proportion of a firm's total assets that is financed with creditors' funds. As used here, the term debt encompasses all short-term liabilities and long-term

liabilities. Researchers adopted this variable from many scholars, it is measured as the ratio of total debt to total assets (Kasozi and Ngwenya, 2010; Onaolapo and Kajola, 2010; Zeitun and Tian, 2007; San and Heng, 2011; Awan *et al*., 2011; Bauer, 2004; Chen, 2004; Gaud *et al*., 2005; Khrawish and Khraiwesh, 2010; Khan, 2012; Azhagaiah and Gavoury, 2011). That is:

$$\text{Total debt ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

LTDR is an obligation having a maturity more than one year from the date it was issued. The adoption of this proxy variable as a measure of financial structure has been applied by many researchers (Chen, 2004; Timan and Wessels, 1988; Zeitun and Tian, 2007; San and Heng, 2011; Long and Malitz, 1985). It is measured as the ratio of long term debt to total assets That is:

$$\text{LTDR} = \frac{\text{Long term debt}}{\text{Total assets}}$$

STDR constitutes short term liabilities accrued to the firm. This is debt obligation of the firm payable within 1 year. This measure of leverage ratio has been employed by numerous researchers such as Titman and Wessels (1988), Zeitun and Tian (2007), Long and Malitz (1985) and Khan (2012). Short term debt ratio is measured as short term debt divided by total assets. That is:

$$\text{STDR} = \frac{\text{Short term debt}}{\text{Total assets}}$$

Control variables employed in the study are firm characteristics which are intrinsic factors which impact on firm performance. These are firm size and firm age. The size of a firm determines economies of scale enjoyed by the firm. Larger firms that have a greater variety of capabilities can utilize the high leverage ratio efficiently with relative positive returns (Titman and Wessels, 1988). Several authors have suggested that performance of a firm is related to firm size. Zeitun and Tian (2007), Majumdar and Chhibber (1999), Cheng and Tzeng (2011), Onaolapo and Kajola (2010), Zeitun (2009), Pratomo and Ismail (2006) and Khan (2012) provide empirical evidence that the size of a firm appear to determine a larger proportion of firms' performance. The size of a firm is measured by natural logarithm of total assets (Zeitun and Tian, 2007; Onaolapo and Kajola, 2010). Firm age as one of the firm characteristics that determine the performance of a firm is measured as the log of number of years since inception to the date of observation. Majumdar and Chhibber (1999) Zeitun (2009), Onaolapo and Kajola (2010) employed this measures as intrinsic factors that impact on the performance of a firm. The researcher predicts firm's age to have positive and significant impact on firm's performance.

Technique for analysis: Due to study of this nature this study employed cross sectional time series (panel) data to determine the outcome of theoretical framework. Therefore, pooled Ordinary Least Square (OLS), Fixed Effects and Random Effects regression models were adopted as the technique for analysis. Thus allows us to take into account the unobservable and constant heterogeneity that is the specific features and time invariant effect of the dataset. These measures has been employed by notable studies such as the research of Majumdar and Chhibber (1999), Zeitun and Tian (2007) and Onaolapo and Kajola (2010) in the examination of panel study of this nature. Ujunwa (2012) opines 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 and Random Effects models), the adoption of Hausman test will be essential.

Model specification: The models shown below are formulated from theoretical framework underscore in the previous section. We estimate Eq. 1 and 2 as depict below to examine the hypothesis that total debt ratio have positive and significant impact on firm performance:

$$\text{ROA} = \alpha_{it} + \beta_1 \text{TDR}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{AGE}_{it} \quad (1)$$

$$\text{ROE} = \alpha_{it} + \beta_1 \text{TDR}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{AGE}_{it} \quad (2)$$

In the observation of the hypothesis that long term debt ratio has positive and significant influence on firm performance researches estimate Eq. 3 and 4 as show below:

$$\text{ROA} = \alpha_{it} + \beta_1 \text{LTDR}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{AGE}_{it} \quad (3)$$

$$\text{ROE} = \alpha_{it} + \beta_1 \text{LTDR}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{AGE}_{it} \quad (4)$$

Reaserchers estimate Eq. 5 and 6 to ascertain the result of the hypothesis that short term debt ratio has positive and significant impact on firm performance:

Table 1: Summary descriptive statistics of the employed variables, 2001-2012

Variables	Mean	SD	Min.	Median	Max.	Skewness	Kurtosis	Prob.
ROA	0.121	0.129	-0.583	0.114	0.669	-0.208	7.453	0.000
ROE	0.469	3.252	-10.220	0.299	70.640	19.391	422.354	0.000
TDR	0.647	0.325	0.051	0.609	3.069	3.352	22.668	0.000
LTDR	0.146	0.142	0.000	0.101	1.008	2.000	8.731	0.000
STDR	0.501	0.297	0.012	0.440	2.573	2.806	17.263	0.000
SIZE	21.131	2.780	13.267	21.635	25.762	-0.839	3.245	0.000
AGE	3.769	0.332	2.303	3.829	4.489	-1.190	5.076	0.000

$$ROA = \alpha_{it} + \beta_1 STDR_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} \quad (5)$$

$$ROE = \alpha_{it} + \beta_1 STDR_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} \quad (6)$$

Data analysis: The mean of ROA for the sample firms is 0.121 this indicates that for every N 100 worth of total assets of the firms, mere N 12.10 was earned as profit before interest and tax. Thus implies that Nigerian quoted firms using this accounting measure of firm performance have a very low performance rate (Table 1). The lower returns on ROA may have also been affected by firm's leverage ratio. For example, the TDR recorded a mean of 64.70% which implies that little depletion in assets of Nigerian quoted firms will affect bond holders funds since owners stake in the firm cover only 35.30% of the firm's assets and thus contributing to high agency cost and reorganization cost reflecting low returns. The average value of 0.469 for ROE showed that for every N1 worth shareholders' fund employed by the sample firms, N 0. 469 was earned as profit before interest and tax. As highlighted earlier, the mean of TDR with the value of 0.647 showed that the sample firms are high levered. LTDR having lower mean value of 14.60% compare to STDR value of 50.10% confirmed high cost of debt finance incurred by the sample firms due to refinancing cost to undertake their long term investment need. Firm size showed the mean value of 21.131 and firm age recorded average value of 3.769. The evidence and inference obtained so far is well revealed by the median, maximum, minimum, standard deviation, skewness and kurtosis as shown in Table 2. Overall the results obtained from the descriptive statistics revealed significant outcome as confirmed with $p<0.05$ in all the indicators.

Table 3 represents the results of correlation matrix for the variables are reported in order to examine the correlation between the dependents and explanatory variables. The results show that there is a negative relationship between ROA and financial structure measures (TDR, LTDR and STDR). This implies that financial structure does not improve firm performance using this measure of performance due to high leverage ratio of our panel data with average value of 64.70% attributing to high cost of debt capital making sample firms vulnerable to agency problem. On the other hand,

Table 2: Pearson correlation matrix

Variables	ROA	ROE	TDR	LTDR	STDR	Size	Age
ROA	1						
ROE	0.132**	1					
TDR	-0.220**	0.040	1				
LTDR	-0.073*	0.187**	0.388**	1			
STDR	-0.197**	-0.044	0.899**	-0.023	1		
SIZE	0.184**	0.039	0.019	-0.027	0.048	1	
AGE	0.039	-0.025	-0.018	-0.120**	0.030	0.066	1

**Correlation is significant at the 0.01 level (1-tailed) and *correlation is significant at the 0.05 level (1-tailed)

Table 3: Regression results for ROA

Hypothesis	Coefficient	SE	t-stat	p-values	R^2
H_1					
Constant	-0.038**	0.011	-3.356	0.001	0.084
TDR	-0.089**	0.003	-34.799	0.000	
Size	0.009**	0.000	28.962	0.000	
Age	0.009**	0.003	3.475	0.001	
H_2					
Constant	-0.076**	0.012	-6.551	0.000	0.039
LTDR	-0.060**	0.006	-9.976	0.000	
Size	0.008**	0.000	27.389	0.000	
Age	0.007**	0.003	2.848	0.004	
H_3					
Constant	-0.070**	0.011	-6.237	0.000	0.077
STDR	-0.090**	0.003	-32.028	0.000	
Size	0.009**	0.000	29.594	0.000	
Age	0.013**	0.003	4.989	0.000	

**Significant at 1% level

positive relationship was revealed between ROA and firm characteristics measures (firm size and age) but firm age was found to be insignificantly related. Apparently, using ROE as alternative measure of firm performance were found to be positively correlated with TDR, LDTR and firm size while ROE were negatively correlated with STDR and firm age. Among all, it was only LTDR that indicated significant relationship with ROE other variables recorded insignificant results using both 1 and 5% significant levels. The results obtained for STDR may be attributed to mismatch of funds by firms agents (managers) which is considered to be detrimental to shareholders earnings. This is also an indication of asset substitution effect contributing to bankruptcy cost and agency cost of debt. Meanwhile, the above correlation results for the relationship between financial structure and firm performance agree with previous studies including Khan (2012), San and Heng (2011), Onaolapo and Kajola (2010) and Ebaid (2009) among others. It is however, inconsistent with the findings of Mojtaba and Shahoo and Zuraidah among others:

ROA = - 0.038-0.089TDR+0.009SIZE+0.009AGE

The negative coefficient of TDR (-0.089) indicates that total debt of the sample firms impact negatively and significantly on the performance. The control variables introduced in the study indicates that while firm size had positive and significant impact on firm performance, firm age also had positive and significant impact on performance of Nigerian quoted firms within the period under review. As also revealed by the coefficient of determination (R^2) which is the measure of the proportion of variation in the dependent variable explained by the regression model. The R^2 of 0.084 indicates that 8.40% of the variation in the dependent variable (ROA) was explained by the explanatory variables as showed in Table 4 while the remaining 91.60% change in firm performance is attributed to other factors not specified in the regression model. This is very consistent with existing propositions that Nigerian debt market is underdeveloped most firms external debt finance is majorly short term finance, imposing extra burdens at very exorbitant costs on the firms. The adjustment of leverage ratio to attain optimal financial structure may lead to high agency cost if not rationally employed. As documented, the optimal financial structure decision has to do with balancing the trade-off between the benefit of debt and agency costs arising from mitigating the agency cost of managerial discretion against the agency cost of debt arising from "asset substitution effect" (Octavia and Brown, 2010; Shahjahanpour *et al*., 2010). This is in line with the argument that high leverage increases agency problem, firm needs to balance the cost and benefit of debt because negative information in debt about profitability overwhelms any tax (or other) benefits of debt (Fama and French, 1998). Also high leverage ratio increases the bankruptcy cost and agency cost of the firm will as well rises. This is in support of the view that firm maximizes their values by maximizing the use of debt (Shahajahanpour *et al*., 2010):

Table 4: Regression results for ROE

Hypothesis	Coefficient	SE	t-stat	p-values	R^2
H_1					
Constant	0.218	0.294	0.743	0.457	0.004000
TDR	0.387**	0.067	5.755	0.000	
Size	0.046**	0.007	5.907	0.000	
Age	-0.260**	0.066	-3.948	0.000	
H_2					
Constant	-1.076**	0.293	-3.670	0.000	0.037000
LTDR	4.287**	0.152	28.160	0.000	
Size	0.052**	0.008	6.665	0.000	
Age	-0.046	0.066	-0.697	0.486	
H_3					
Constant	0.631*	0.291	2.168	0.030	0.004324
STDR	-0.501**	0.074	-6.821	0.000	
Size	0.050**	0.008	6.334	0.000	
Age	-0.256**	0.066	-3.881	0.000	

**Significant at 1% level and *significant at 5% level

ROE = 0.218+0.387TDR+0.046SIZE-0.260AGE

Testing from the standpoint of Return on Equity (ROE) as alternative measure of firm performance as expected the study revealed that total debt ratio had positive and significant impact on ROE. This outcome also compare favorably with the findings of Ebaid (2009). It is also consistent with cost-benefit argument of trade-off theory and tax shield benefit found by Miller (1977) to contribute to incremental value of shareholders' earnings when debt capital is employed. Employing firm characteristics as control variables in the panel data study, firm size was found to have positive and significant contribution to firm earnings while firm age contribute negatively to firm earnings within the period of study. The coefficient of determination interpreting the goodness of the fit of regression model as specified in the study showed R^2 of 0.004 which implies that 0.4% of the variation in ROA was explained by the explanatory variables as depicted in Table 4. This however, established insignificant figure therein the remaining 99.6% variation is as a result of other factors not included in the regression estimation.

ROA = -0.076-0.060LTDR+0.008SIZE+0.007AGE

The coefficient of LTD R revealed unexpected results on the direction but expected on the magnitude. This is an indication that long term debt ratio of Nigerian quoted firms contributed negatively and significantly to firm performance within the period under review. The control variables introduced indicates that firm size had positive and significant impact on firm performance and firm age also had positive and significant impact on performance of Nigerian quoted firms within the period under review. The coefficient of determination which measures the goodness of fit of the regression model as revealed by R^2 in Table 3 above indicates that 3.90% of the variations observed in the dependent variable were explained by variations in explanatory variables. This is relatively tiny, indicating that the remaining 96.19% variation in ROA is attributed other factors not included in the regression mode. Accordingly, the study concludes that long term debt ratio have negative and significant impact on firm performance. Manos and Ah-Hen (2003) pointed that agency consideration assume debt is valuable in reducing the agency costs of equity but at the same time debt is costly as it increase the agency cost of debt. Thus, high

leverage increases agency problem, firm needs to balance the cost and benefit of debt because negative information in debt about profitability overwhelms any tax (or other) benefits of debt (Fama and French, 1998).

ROE = -1.076+4.287LTDR+0.052SIZE-0.046AGE

The coefficient of LTDR (4.287) shows that long term debt ratio resulted to positive and significant impact on firm performance within the period of study. The outcome is consistent with our prediction and priori findings. Examining the impact of firm characteristics on its performance, the study ascertained that firm size brought about increase in performance of our panel data. On the other hand, age of our sample firms had negative and insignificant impact on firm performance within the period under review. The outcome is in support of the proposition that high leverage ratio reduces the agency costs of outside equity and increases firm value by constraining or encouraging managers act more in the interests of shareholders. The coefficient of determination (R^2) explaining the fitness of our regression estimation shown in Table 4 established that 3.70% of the variation in our dependent variable was as a result of regression model. Therefore, the remaining 96.30% variation in firm performance is attributed to other factors which were not considered in the formulated model.

ROA = -0.070-0.090STDR+0.009SIZE+0.013AGE

The negative coefficient of STDR (-0.090) is inconsistent as expected as depict in Table 3. The results established that short term debt of Nigerian quoted firms contributed negatively and significantly to the firm performance within the period of study. As observed from the results of the regression model, the control variables introduced indicates that firm size and firm age had positive and significant impact on firm performance within the period under review. The coefficient of determination which measures the goodness of fit of the model as revealed by R^2 indicates that 7.70% of the variations observed in the dependent variable were explained by variations in the regression model as specified in Table 3. Apparently, the remaining 92.30% variation in ROA was as a result of other factors not considered in the regression model. The study thus deduced that short term debt ratio have negative and significant impact on firm performance attributed to high short term debt and mismatch of fund. Apparently when leverage becomes relatively high, further increases generate significant agency costs of outside debt including higher expected costs of bankruptcy or financial distress, arising from conflicts between bondholders and shareholders (Jensen and Meckling, 1976). Also at high leverage the value of shareholders may not be enhanced when restrictive covenants included in debt financing agreements limit the ability of firms to fully harness the potentials of the firm's resources. Thus firm can only maximize their values by maximizing the use of debt.

ROE = -0.631-0.501STDR+0.050SIZE-256AGE

This panel data study adopted ROE as an alternative measure of firm performance to ascertain the impact of short term debt ratio on the performance of Nigerian quoted firms. The coefficient of STDR with value of -0.501 revealed short term debt of Nigerian quoted firms contributed negatively and significantly to firm performance within the period under review. In view of this, the negative and significant contribution documented between short term debt and return on equity is consistent with the findings of Amjed and Zuraidah. This finding supported the argument that costly monitoring devices of contractual covenants are incorporated into debt agreements to protect the debt-holders which increases the cost of capital offered to the firm. Apparently, the negative effect is an implication of under developed debt market where major debt financing of most Nigerian quoted firms are short term in nature placing high burden and cost on the firm, thereby decreasing returns on their equity capital. Incorporating firm characteristics as control variables that effects firm performance in our model estimation the coefficient of firm size with the value of 0.050 revealed positive and significant impact on ROE while the coefficient of firm age with the value of -0.256 revealed negative and significant impact on ROE within the period of study.

CONCLUSION

The ultimate goal of the firm is to ensure optimal employment of capital which in turn triggers long run value maximization of owners' equity. Agent (s) of the firm is left with financial structure decision and other corporate financing decisions that most be align to attain "value maximization". These decisions are very crucial one in transitory economies peculiar to Nigeria. Also couple with the prevailing underdeveloped debt market and numerous intrinsic market risks that hinder optimal mix of debt and equity termed "financial structure". The agency cost of a firm when agent (s) of professionally managed firm align agency cost of equity and debt to ensure optimal realization of shareholders earnings has been significantly verified in the study.

To this end, the implication of performance of Nigerian quoted firms as a result of financial structure (total debt ratio, long term debt ratio and short term debt ratio) has established significant results, thus being consistent with agency cost theory. This confirmed that Nigerian quoted firms borrows to point where the marginal value of tax shields benefits on additional debt could not offset the incremental cost of debt capital thereby contributing negatively to firms earning. And also the findings of the study are in line with other previous empirical studies as already highlighted. The implication revealed that value maximization firm in Nigeria needs to maintain financial structure that tax benefits of debt overwhelmed bankruptcy cost and agency cost associated with debt.

Meanwhile, the results obtained with the employment of ROE as an alternative measure of firm performance recorded positive and significant results for TDR and LTDR. On the other hand, STDR with the mean of 50.10% (half of the sample firms total assets) revealed negative and significant results consistent with the outcome as Researches observed on ROA using the three measures of leverage ratios. The implication here is that at the short run, leverage ratio of the sample firms will contribute negatively to the performance of a firm due to implications of maturity structure of debt finance of the sampled firms leading to deterioration of shareholders earnings. In addition, the sign on short term debt ratio is an indication of mismatch of funds as well as high cost burden of short term finance on quoted firms attributed to underdeveloped security market living no option but bank loans at high interest rate. Manos and Ah-Hen (2003) assert that debt is valuable in reducing the agency costs of equity but at the same time debt is costly as it increase the agency cost of debt. At the long run this effect will result to asset substitution effect due to diversion of debt-holders capital to undertake high risk investment for the benefit of owners of the firm. In view of this, the regression results provide strong supports for high agency cost of Nigerian quoted firms due to high leverage ratio (more especially short term debt) which exposes the firms to higher expected costs of bankruptcy or financial distress, arising from the conflicts between debt-holders and shareholders (Jensen and Meckling, 1976). The evidence and deduction is line with the argument that high leverage increases agency problem (Fama and French, 1998). Adjustment of leverage ratio to attain optimal financial structure may lead to high agency cost if not rationally employed, thus there is need to balance the trade-off between the benefit of debt and agency cost arising from mitigating the agency cost of managerial discretion against the agency cost of debt arising from asset substitution effect (Octavia and Brown, 2010; Shahjahanpour *et al*., 2010). Appendix 1 show firm and sector.

APPENDIX

Appendix 1: Firms and sectors

Sample Firms	Sector
Okomu Oil Palm Co. Plc	Agriculture/agro-allied
Presco Plc	Agriculture/agro-allied
Rt Brisco Plc.	Automobile&tyre
Guinness Nig. Plc.	Breweries
International Breweries Plc	Breweries
Nigerian Breweries. Plc	Breweries
Cement Co. Of North Nig. Plc.	Building Materials
Nigerian Ropes Plc.	Building Materials
Wa Portland Comp. Plc.	Building Materials
Berger Paints Nigeria Plc.	Chemical and paints
Cap Plc.	Chemical and paints
Dn Meyer Plc.	Chemical and paints
Trans-nationwide Exp. Plc.	Commercial/services
Ncr (Nigeria) Plc.	Computer and Office Equipment
Tripple Gee and comp. Plc.	Computer and Office Equipment
A.g Leventis Nig Plc.	Conglomerates
Chellarams Plc.	Conglomerates
John Holt Plc.	Conglomerates
Pz Cussons Nig. Plc.	Conglomerates
Scoa Nig. Plc.	Conglomerates
Uac Plc.	Conglomerates
Unilever Nig. Plc.	Conglomerates
Julius Berger Nig. Plc.	Construction
Smart Products Nig. Plc	Emerging Markets
Cutix Plc	Engineering Technology
7-up Bottling Co. Plc.	Food/beverages and tobacco
Cadbury Nig. Plc.	Food/beverages and tobacco
Flour Mills Nig. Plc.	Food/beverages and tobacco
Nestle Nig Plc.	Food/beverages and tobacco
Evans Medical Plc.	Healthcare
Glaxo Smithkline Cons.	Healthcare
May and baker Nig. Plc.	Healthcare
Morison Indust. Plc.	Healthcare
Pharm-deko Plc.	Healthcare
Aluminium Extrus. Ind Plc.	Industrial/domestic Product
First Alumin. Nig. Plc.	Industrial/domestic Product
Vitafoam Nig. Plc.	Industrial/domestic Product
Vono Products Plc.	Industrial/domestic Product
Beta Glass Co. Plc.	Packaging
Greif Nig. Plc.	Packaging
Mobil Oil Nig. Plc.	Petroleum(marketing)
Total Nig Plc	Petroleum(marketing)
Academy Press	Printing and publishing

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