Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.8, No.10, 2017

The Effects of Credit Management on Profitability of Manufacturing Firm in Nigeria. (A Study of Selected Companies in Nigerian Stock Exchange)

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Abstract
This study examines the effect of credit management on the profitability of manufacturing firm using five quoted firm in Nigeria stock exchange. The intent of the study was to determine whether credit management mechanism: credit policy, liquidity management and debtors' turnover have effect on profitability of manufacturing firm measured by return on assets (ROA). Data was sourced from annual report of selected companies. It provides empirical evidence for five (5) manufacturing firm in Nigeria for a period of 2010 to 2014. In other to achieve this objective data collected was analyse using descriptive statistics and Jarque-Bera statistics to test for normality of variables. Pearson correlation matrix was used to check for multi-co-linearity presence in a model and to explore the relationship between explanatory variable and the dependent variable. The pooled multiple regression is employed to test the hypothesis. The result reveals that credit policy and liquidity management has significant negative relationship to Return on Assets while debtors' turnover has significant positive effect to Return on Assets. The researcher recommended that adequate credit policy must be employ by the sales department of the firm for effective operations.
Keywords: credit policy, firm profitability, liquidity management, debtors' turnover

1. Introduction

Business enterprises today use trade credit as a prominent strategy in the area of marketing and financial management. Thus, trade credit is necessary in the growth of the businesses.

When a firm sells its products or services and does not receive cash for it, the firm is said to have granted trade credit to its customers. Trade credit thus creates accounts receivables which the firm is expected to collect in future (Kungu, Wanjau, Waititu&Gekara, 2014).

Accounts receivables are executed by generating an invoice which is delivered to the customer, who in turn must pay within and with the agreed terms. The accounts receivables are one of the largest assets of a business enterprise comprising approximately 15% to 20% of the total assets of a typical manufacturing firm (Dunn, 2009). Investment in receivables takes a big chunk of organization's assets. These assets are highly vulnerable to bad debts and losses. It is therefore necessary to manage accounts receivables appropriately.

Trade credit is very important to a firm because it helps to protect its sales from being eroded by competitors and also attracts potential customers to buy at favourable terms. As long as there is competition in the industry, selling on credit becomes inevitable. A business will lose its customers to competitors if it does not extend credit to them. Thus, investment in accounts receivables may not be a matter of choice but a matter of survival (Kakuru, 2001). Given that investment in receivables has both benefits and costs; it becomes important to have such a level of investment in receivables at the same time observing the twin objectives of liquidity and profitability.

To remain profitable, businesses must ensure proper management of their receivables (Foulks, 2005). The management of receivables is a practical problem, businesses can find their liquidity under considerable strain if the levels of their accounts receivables are not properly regulated (Samuels & walkers, 1993). Thus management of accounts receivables is important, for without it; receivables will build up to excessive levels leading to declining cash flows. Poor management of receivables will definitely result into bad debts which lowers the business‟ profitability.

The growth in economic activities as currently witnessed in Nigeria; in our present democratic government with its attendant limited financial resources available to the operators of the market has no doubt brought about increase in credit transaction (Ifurueze, 2013). The impact depends on the skill and prowess with which the companies manage their credit sales. Beckan and Richard (1984) have seen that most companies after granting credit sales rely on them as assets without providing adequately for possible. With this situation, the financial statements of such companies obviously will lack true and fair view because of the fact that the amount of trade debtors cannot be fully realized.

In the same vein liquidity problem is not left out when granting credit sales. This arises from over investment in receivables especially when the debtors are of high risk class. A company suffering from liquidity problem implies that the cost of obtaining funds from other sources may be high and a credit sale beyond the optimal level of credit is dangerous. On the other hand, sales level and profitability are reduced as a result of

high or tight credit policy or not granting credit at all.

Liquidity management and profitability are very important issues in the growth and survival of business and the ability to handle the trade-off between the two a source of concern for financial managers. Liquidity management and profitability are very important in the development, survival, sustainability, growth and performance. Profitability does not translate to liquidity in all cases. A company may be profitable without necessarily being liquid. Therefore, liquidity should be managed in order to obtain an optimal level, that is, a level that avoid excess liquidity which may translate to poverty of ideas by management.

Also liquidity level should not fall below minimum requirement as it will lead to the inability of the organization to meet short term obligation that are due.

One of the major reasons that may cause liquidation is illiquidity and inability to make adequate profit. These are some of the basic ingredient of measuring the "going concern" of an establishment. For these reasons companies are developing various strategies to improve their liquidity position. Strategies which can be adapted within the firm to improve liquidity and cash flows concern the management of working capital, areas which are usually neglected in times of favourable business conditions (Pass & Pike, 1984).

Due to the speed in which technology is changing and the dynamics in business caused by changes in their internal and external environment, the ways in which businesses are conducted today differ significantly from yester years. Therefore, for a credit policy to be effective it should not be static (Szabo, 2005 &Ojeka, 2012). Credit policy requires to be reviewed periodically to ensure that the organizations operate in line with the competition.

This will ensure further that sales and credit departments are benefiting. While most companies have their own policies, procedures and guidelines, it is unlikely that any two firms will define them in a similar manner. However, no matter how large or small an organization is and regardless of the differences in their operations or product, the effects of credit policies usually bring about similar consequences. Effects of a credit policy are either good enough to bring growth and profits or bad enough to bring declination and losses. This similarity is as a result of the aim of every manager which is to collect their receivables efficiently and effectively, thus maximizing their cash inflows (Ojeka, 2012).

This is contrary under competitive business environment were survival depends on the volume of turnover (sales) which in turn leads to trade debt accumulation. Here debtors cannot be completely avoided it is therefore the work of the management to initiate policies concerning credit sales so that they will survive in the business environment they find themselves. Meanwhile, the study is to assess the effect of credit management on profitability of manufacturing companies in Nigeria.

The efficient and effective performance of Nigeria's financial institution required for improved economic well-being of the businesses appear not to be manifesting. This is evident in Soyode (1998) when he observed that the mobility of Nigeria's financial institutions to adequately satisfy the credit characteristics constitute a binding constraint on the pace and pattern of firm development in Nigeria.

Credit decision becomes more difficult when the financial conditions of the country where the firm operates are typically uncertain. Specifically, in the Nigerian case, the presence of two aggravating factors is observed. They are the high interest rates practiced in the financial institutions and the instability of the economy. The effects of high interest rates on the firms take various forms. On one side, the rising cost of financing and on the other hand, inhibiting sales, thus resulting in fall in the financial activities, producing a combined effect of aggravating the degree of uncertainty (Salawu, 2007).

Incompetent credit management is also a major problem. It does not protect the vendor from possible losses, and also increase more debt obligations towards the customer that cannot be settled in a timely manner (Ojenike et al 2013).

Pandey (2004), in his study found that bad debt losses arise when the firm is unable to collect its accounts receivable as a problem of credit management. The size of bad debt losses depends on the quality of accounts accepted by the firm. In the words of Uchegbu (2001), it is wise to discourage bad debts by adopting a good credit management.

Therefore, in this study, we examine the more on the effect of credit management practices on firm profitability. The objective of this study in a broad sense is to measure the effect of credit management on profitability of manufacturing firm. The specific objectives of this study are thus as follows: To ascertain the extent in which credit policy affect firm profitability; To examine the effect of liquidity management on firm profitability; To examine the effect of debtors' turnover on firm profitability. The study provides answers to the following questions: To what extent does credit policy affect firm profitability? To what extent does liquidity management affect firm profitability? To what extent does debtor's turnover affect firm profitability?

1.2 Statement of Hypotheses

Following the objectives, the following hypotheses were formulated Hypothesis One:

H_o: credit policy does not have significant effect on firm profitability

H_1: credit policy has significant effect on firm profitability
Hypothesis Two:
H_o: liquidity management does not have significant effect on firm profitability
H_1: liquidity management has significant effects on firm profitability
Hypothesis Three:
H_o: Debtors' turnover does not significantly affect firms' profitability
H_1: debtors' turnover significantly affects firms' profitability

1.3 Significance of Study

Most manufacturing companies have growth and continuity as part of their objective, and such objectives are best realized by an efficient credit management and stock evaluation. This has made it possible for them to gain inherent advantage while minimizing loses involved in their daily operations.

This research project will therefore be of immense advantage or benefit to the management of manufacturing companies, investors and other business organization using credit policy. Hence, the theories and concept contained therein can be infused into their management system.

This research will also contribute to enhance efficiency in the following ways;

Management: This study will help management to forecast the future behaviour and performance of credit behaviour. It will also assist them in identifying approaches, pursuing available opportunities and reducing the probability of high value losses in the market as regards to liquidity risk. A general study of the factors influencing credit management will not only give management a grasp of the underlying nature of the its credit policy but also enable them to access the current state of the economy and formulate expectations about its future course.

Investors: it would assist existing shareholders and potential investors to make appropriate judgments as regards their investments and performance of the companies in which they are stakeholders.

Financial risk management Authority: This group might find the results helpful in avoiding any unexpected market catastrophe, controlling market strategies, improving the credit policy, and assessing the degree to which the policy and practice need to be reformed.

Researchers: they will be able to apply this research to carry out further studies in the same area or related area by serving as a theoretical base for the research to be carried out.

1.4 Scope of Study

This study is entirely cantered on identifying effect of credit management on profitability of manufacturing companies quoted in the Nigerian stock exchange. To this end, time series data covering a period of five (5) years (2010-2014) was adopted. The companies are as follows; PzCusson Nigeria plc, Nestle Nigeria plc, Guinness Nigeria plc, Dangote cement plc and Dangote Sugar plc. In addition, these companies were selected based on the availability of their annual report to enable the researcher to analyse its objective.

2.1 Conceptual Framework

2.1.1 Firm`s Profitability

Profitability is the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It measures management efficiency in the use of organizational resources in adding value to the business. Profitability may be regarded as a relative term measurable in terms of profit and its relation with other elements that can directly influence the profit.

Corporate profitability is a measure of the amount by which a company's revenues exceeds its relevant expenses. It is an evaluation of management's ability to create earnings from revenue-generating bases within an organization. Thus, Management is interested in measuring the operating performance in terms of profitability. Hence, a low profit margin would suggest ineffective management and investors would be hesitant to invest in the firm. Profitability is the ability to make returns from all the business activities of an organization, company, firm, or an enterprise and the concern of every firm lies with its profitability. Profitability shows how efficiently the management can make profit by using all the resources available in the market (Nwaechina 2013). Profitability is also considered as the rate of return on investment and a widely used financial measure of performance. Hence, if there will be an unjustifiable over investment in current assets then this would negatively affect the rate of return on investment. The primary goal of credit management is to control current financial resources of a firm in such a way that a balance is reached between profitability of the firm and risk associated with that profitability (Ifurueze 2013). The greater the risk associated with a business the more profitable it is adjudged and vice-versa. Profitability is determined by the capital structure, size, growth, market discipline, risk and reputation of a firm.

Corporate profitability is measured using ratio analysis. Profitability in relation to sales includes ratios such as gross profit margin (GPM), net profit margin (NPM), operating expense ratio (OER), and so on.

However, profitability in relation to investment, which to a greater extent justifies the efficiency and performance of a firm, includes ratios such as return on investment (ROI), return on equity (ROE), earnings per share (EPS), dividend per share (DPS), dividend pay-out ratio (DPR), dividend yield (DY) and earnings yield (EY), price-earnings ratio (P/E), market value to book value ratio (MV/BV), and Tobin's Q (T-Q). Profitability and management efficiency are usually taken to be positively associated such that poor current profitability may threaten current management efficiency and poor management efficiency may threaten profitability. It is related to the goal of shareholders' wealth maximization, and investment in current assets is made only if an acceptable return is obtained. Therefore, the management of investment in current assets is an aspect of corporate finance and it has the capacity of influencing how profitable a firm is.

2.1.2 Return on assets

Return on Assets (ROA) falls within the domain of performance measures and tracks of a firm ability to generate income based on its assets. The ratio excludes non-operating income and donations. ROA is expected to be positive as a reflection of the profit margin of the manufacturing firm, otherwise it reflects non-profit or loss.

Return on assets is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings (Khatab, Masood, Zaman, Saleem, &Saeed, 2011). Investopia (2013) provides that ROA tells you what earnings where generated from invested capital. ROA for public companies can vary substantially and will be highly dependent on the industry. This is why when using ROA a comparative measure, it is best to compare it against companies previous ROA or the ROA of similar company. The asset of the company is comprised of both debt and equity. Both these types of financing are used to fund the operations of the company. The ROA figures gives investors of how effectively the company is converting the money it has invest into net income. The higher the ROA number the better, because the company is earning more money on less investment. When you really think about it, management's most important job is to make wise choice in allocating its resources. Anybody can make a profit by throwing a ton of money at a problem, but very few managers excel at making large profits with little investment. Accounting performance measures (like ROA) have an advantage because they are backward looking (Jong, Gispert, Kabir, &Renneboog, 2002). ROA gives an idea as to how efficient management is at using its assets to generate earnings (Khatab, Masood, Zaman, Saleem, &Saeed, 2011). It is often computed by dividing Profit after tax by total assets alternatively, it can be calculated by dividing Earnings before Interest and Tax (EBIT) by total assets.

2:1:3 Credit management

An efficient credit management system reduces the amount of capital tied up with debtors and minimizes bad debts Finlay (2009). Peter D. (2005) conceived that there is a positive correlation between credit management and profitability. According to Dina A. (2007), good credit management is vital to business cash flow and ensures business operations.

Good credit management involves optimizing cash flow to ensure stability and provide maximum potential for growth. Credit arises when a firm sells its products or services on credit and does not receive cash immediately. It is an essential marketing tool, acting as a bridge for the movement of goods through production and distribution stages to customers. A firm grants trade credit to protect its sales from the competitors and to attract the potential customers to buy its products at favourable terms. Trade credit creates receivable or book debts which the firm is expected to collect in the near future.

The book debts or receivable arising out of credit has three characteristics: firstly, it involves an element of risk which should be carefully analysed. Cash sales are totally riskless, but not the credit sales as the cash payment are yet to be received.

Secondly, it is based on economic value. To the buyer, the economic value in goods or services passes immediately at the time of sale, while the seller expects an equivalent value to be received later on.

Third, it implies futurity. The cash payment for goods or services received by the buyer will be made by him in a future period. The customers from whom receivable or book debts have to be collected in the future are called trade debtors or simply as debtors and represent the firm's claim or asset. (Ramamoorth,2014, p.183)

Philip K. (2010) cited four basic things businesses must strive for effective credit management: Know who your customers are before you start trading with them.

Agree payment terms before supplying,

Invoice promptly after you have sent the goods; and

Do not be afraid to ask for payment when it is due.

The importance of practicing good credit management cannot be over emphasized. According to Michael (2007), good credit management is an essential component and a fundamental part of the modern commercial strategy. Michael (1997) consented that extending credit to customers is an aid to selling and all staff should be involved. Michael blended sensible control of credit management and customer satisfaction with profitability. According to Steve (1997) of Association of Credit Professionals (ACP) good credit management is all about customer satisfaction and profit. Steve, (1997) agreed with Michael's assertion. Michael contended that

satisfied customers are more likely to pay promptly than buyers who feel they are not getting a good deal.

Indeed, if revenue is the energy that powers company, credit management is the engine that keeps it flowing. The credit management engine acts as a powerhouse, driving revenue and motivation to every part of the company. As credit management engine becomes more refined and efficient, so the company becomes more productive and profitable.

Good credit management should be a proactive task, starting even before the sales begin. Effective credit management will protect and prosper the business with regards to profitability however; the opposite is true if ineffective credit management is practiced. Credit indeed impacts all areas of life and efficient credit management minimizes delinquency and bad debt losses.

2:1:4 Credit Policy

Credit Policy can be viewed as written guidelines that set the terms and conditions for supplying goods on credit, customer qualification criteria, procedure for making collections, and steps to be taken in case of customer delinquency. This term can also be referred to as collection policy. It is also the guidelines that spell out how to decide which goods are sold on open account, the exact payment terms, the limits set on outstanding balances and how to deal with delinquent accounts.

Lawrence (2003), the objective of managing accounts receivable is to collect receivable without losing sales from high-pressure collection techniques. Accomplishing this objective encompasses; credit selection and standard which involve the application of technique for determining which customer should receive credit. This process involves evaluating the customer's creditworthiness and comparing it to the firm's credit standard, its minimum requirements for extending credit to customers and credit monitoring which involves the review of the firm's account receivable to determine whether customers are paying according to the stated credit terms. Slow payments are costly to a firm's investment in account receivable.

Debtor management means the process of decisions relating to the investment in business debtors. In credit selling, it is certain that we have to pay the cost of getting money from debtors and to take some risk of loss due to bad debts. To minimize the loss due to not receiving money from debtors is the main aim of debtor management. Economic conditions and firms credit policies are the chief influence on the level of a firm's account receivable (James, 2012). The trade-off between increase in the market share through credit sales and the collectability of the account receivable affects firm's liquidity and its eventual profitability. A firm may report large profit and still suffer liquidity problem if bulk of its transactions are in account receivable and collection policy in not effective. Credit and collection policies encompasses the quality of accounts accepted, the credit period extended, the cash discount given, certain special terms and the level of collection expenditure. In each case, the credit decision involves a trade-off between the additional profitability and the cost resulting from a change in any of these elements.

Receivable management begins with the decision of whether or not to grant credit.

Where goods are sold on credit, a monitoring system is important, because without it, receivable will built up to excessive levels, cash flow (liquidity) will decline and bad debts will offset the profit on sales. Corrective action is often needed and the only way to know whether the situation is getting out of hand is to set up and then follow a good receivable control system (Eugene, 2012).

Eugene, (2012), states that optimal credit policy, hence the optimal level of accounts receivable, depends on the firm's own unique operating conditions. A firm with excess capacity and low variable production cost should extend credit more liberally and carry a higher level of receivable than a firm operating at full capacity on slim profit margin.

2:1:5 Debtor`s turnover/account receivable

The goal of accounts receivables management is to maximize shareholders' wealth. Receivables are large investments in firm's asset, which are, like capital budgeting projects, measured in terms of their net present values (Emery et al., 2004). Receivables stimulates sales because it allows customers to assess product quality before paying, but on the other hand, debtors involve funds, which have an opportunity cost. The three characteristics of receivables - the element of risk, economic value and futurity explain the basis and the need for efficient management of receivables. According to Berry and Jarvis (2006) a firm setting up a policy for determining the optimal amount of account receivables has to take in account the following:

The trade-off between the securing of sales and profits and the amount of opportunity cost and administrative costs of the increasing account receivables.

The level of risk the firm is prepared to take when extending credit to a customer, because this customer could default when payment is due.

The investment in debt collection management

Accounts receivable measures the unpaid claims a firm has over its customers at a given time, usually comes in the form of operating line of credit and is mainly due within a relatively short time period (up to one year). The volume of accounts receivable indicates firm's supply of trade credit while accounts payable shows its demand of trade credit. The study of accounts receivable and accounts payable during periods of financial crisis is an

important topic, particularly when the global economy is going through a credit shock. During global financial crisis, characterized by high liquidity risk faced by the banks, trade credits may increase, operating as a substitute for credits, or decrease - acting as their complement. Bastos and Pindado (2012), for example, suggest that credit constraints during a financial crisis cause firms holding high levels of accounts receivable to postpone payments to suppliers, which act in the same manner with their suppliers. This gives rise to a trade credit contagion in the supply chain characterized by a cascading effect. The current financial crisis provides economists a unique opportunity to study the role of alternative financial sources during periods of breakdown of institutional financing.

Accounts receivables are one of the most important part of credit management. Receivables often represent large investment in asset and involve significant volume of transactions and decisions. However, there are considerable differences in the level of receivables in firms around the world. Demirgüç-Kunt and Maksimovic (2011) present evidence that in countries such as France, Germany, and Italy accounts receivable exceeds a quarter of firms' total assets, while Rajan and Zingales (1995) find that 18% of the total assets of US firms consists of receivables. Accounts receivable management is a crucial filed of corporate finance because of its effects on a firm's profitability and risk, and consequently on the firm's value.

2:1:6 Liquidity management

Liquidity management is a concept that is receiving serious attention all over the world especially with the current financial situations and the state of the world economy. The concern of business owners and managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase profitability and shareholder's wealth (Owolabi&Ibida, 2012).

The importance of liquidity management as it affects corporate profitability in today's business cannot be over emphasis. The crucial part in managing working capital is required maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation (Eljelly, 2004). Liquidity plays a significant role in the successful functioning of a business firm. A firm should ensure that it does not suffer from lack-of or excess liquidity to meet its short-term compulsions. A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business (Bhunia, 2010). Dilemma in liquidity management is to achieve desired trade between liquidity and profitability (Raheman& Nasr 2007). Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a firm can maintain in order to ensure positive impact on its profitability.

2:2:1 Empirical Framework

The importance of applying good credit management policy has grown over the past decades and many studies have been done to investigate the role and effect of the policy. Studies that have been done in credit management and profitability of a firm have contradictory result as to why firms should practice sound credit management policy. The credit mechanisms are discussed as follows:

2:2:2 Liquidity Management and Firm Profitability

Various studies have been done to determine the relationship between liquidity management and working capital on firms' profitability.

Akoto, Awunyo-Vitor and Angmor (2013) analysed the relationship between liquidity management practices and profitability of listed manufacturing firms in Ghana. Using panel data methodology and regression analysis, the study found a significant negative relationship between profitability and liquidity.

Oladipupo and Okafor (2013) examined the implications of a firm's liquidity management practice on its profitability. Gakure, Onyango, Cheluget, and Keraro (2014) studied the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi NSE from 2006 to 2010. Using a regression model, they found that there was a strong negative relationship between firm's performance and liquidity of the firm. However, the effects of the independent variables except the average payment period were no statistically significant though the overall model was statistically significant.

2:2:3 Credit Policy and Firm Profitability

Though the impact of trade credit policy on profitability and value is practically important in daily business practice, no studies have been carried out to capture this relationship. The only exception is Hill, Kelly, Lockhart, and Washam (2010), who studied the shareholder wealth implications of corporate trade credit policy but for a sample of large US firms. This research contributes to the financial literature in several ways. First, it tested the relation trade credit-profitability for a sample of Spanish SMEs because of their particular institutional setting, which makes Spain a country where trade credit is particularly important. Proof of this is that Spanish firms have one of the longest effective credit periods in Europe (Marotta, 2001), thereby providing an excellent context in which to study the implications of trade credit profitability

Nyawera, (2013) studied the effect of credit policy on the profitability micro financial institutions in Kenya. The study found that there was a relationship between credit policy variables and profitability but the effect was very minimal. Empirical evidence from the study indicated that there was a negative relationship

between credit terms and conditions and collection efforts which increased the profitability of the organizations and also reduced the collection efforts which in turn led to decreasing default rate of the organization hence increasing the financial performance of the deposit taking micro finance institutions. The study also found that the other variables which included credit standards had a positive effect on profitability of micro finance organization. The conclusion was that implementation of a good credit policy in an organization led to increased financial performance.

According to Simonson *et al.,* (2011), sound credit policy would help improve prudential oversight of asset quality, establish a set of minimum standards, and to apply a common language and methodology (assessment of risk, pricing, documentation, securities, authorization, and ethics), for measurement and reporting of non-performing assets.

The credit policy is put in place to strategize a firms lending philosophy and also provide specific procedures and means of monitoring the lending activity. The guiding principle in credit appraisal is to ensure that only those customers who require credit and are able to meet repayment obligations can access credit. Marketing firm engage in the second form of credit rationing to reduce their risks, and increase their profitability.

2:2:4 Debtors Turnover and Firms Profitability

Accounts receivables are one of the most important part of credit management. Receivables often represent large investment in asset and involve significant volume of transactions and decisions. However, there are considerable differences in the level of receivables in firms around the world. Demirgüç-Kunt and Maksimovic (2011) present evidence that in countries such as France, Germany, and Italy accounts receivable exceeds a quarter of firms' total assets.

Understanding the effects of a financial crisis on receivables management is especially important to Nigeria as a transition country. Trade credit is an important source of finance for Nigeria manufacturing firms and, therefore, it can make a strong contribution to firms' profitability and the development of the whole economy

2:3:1 Theoretical Framework

This chapter presents the various definitions of credit management theory theories by different research scholars then reviews the theoretical framework of the study. The transaction theory, portfolio theory and information theory are the main theory used in this study, as the theoretical framework to analyse more on the effect of credit management on firm profitability.

2:3:2 Transactions Costs Theory

First developed by Schwartz (1974), this theory conjectures that suppliers may have an advantage over traditional lenders in checking the real financial situation or the credit worthiness of their clients. Suppliers also have a better ability to monitor and force repayment of the credit. All these superiorities may give suppliers a cost advantage when compared with financial institutions. Three sources of cost advantage were classified by Petersen and Rajan (2014) as follows: information acquisition, controlling the buyer and salvaging value from existing assets. The first source of cost advantage can be explained by the fact that sellers can get information about buyers faster and at lower cost because it is obtained in the normal course of business. That is, the frequency and the amount of the buyer`s orders give suppliers an idea of the client`s situation; the buyer`s rejection of discounts for early payment may serve to alert the supplier of a weakening in the credit-worthiness of the buyer, and sellers usually visit customers more often than financial institutions do.

2:3:2 Portfolio Theory

Since the 1980s, companies have successfully applied modern portfolio theory to market risk. Many companies are now using value at risk models to manage their interest rate and market risk exposures. Unfortunately, however, even though credit risk remains the largest risk facing most companies, the practice of applying modern portfolio theory to credit risk has lagged (Margrabe, 2007). Companies recognize how credit concentrations can adversely impact financial performance. As a result, a number of institutions are actively pursuing quantitative approaches to credit risk measurement. This industry is also making significant progress toward developing tools that measure credit risk in a portfolio context. They are also using credit derivatives to transfer risk efficiently while preserving customer relationships. Portfolio quality ratios and productivity indicators have been adapted. (Kairu 2009). The combination of these developments has vastly accelerated progress in managing credit risk in a portfolio context.

Traditionally, organizations have taken an asset-by-asset approach to credit risk management. While each company’s method varies, in general this approach involves periodically evaluating the quality of credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio’s expected losses. The foundation of the asset-by-asset approach is a sound credit review and internal credit risk rating system. This system enables management to identify changes in individual credits, or portfolio trends in a timely manner. Based on the changes identified, credit identification, credit review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner. While the asset-by-asset approach is a critical component to managing credit risk, it does not

provide a complete view of portfolio credit risk, where the term risk refers to the possibility that actual losses exceed expected losses. Therefore, to gain greater insight into credit risk management, companies increasingly look to complement the asset-by-asset approach with a quantitative portfolio review using a credit model (Mason and Roger, 1998). Companies increasingly attempt to address the inability of the asset-by-asset approach to measure unexpected losses sufficiently by pursuing a portfolio approach. One weakness with the asset-by-asset approach is that it has difficulty identifying and measuring concentration. Concentration risk refers to additional portfolio risk resulting from increased exposure to credit extension, or to a group of correlated creditors (Richardson, 2002).

2:3:4 Information Theory

Derban, Binner and Mullineux (2005) recommended that borrowers should be screened especially by banking institutions in form of credit assessment. Collection of reliable information from prospective borrowers becomes critical in accomplishing effective screening as indicated by symmetric information theory.

Qualitative and quantitative techniques can be used in assessing the borrowers although one major challenge of using qualitative models is their subjective nature. However according to Derban, Binner and Mullineux (2005), borrowers' attributes assessed through qualitative models can be assigned numbers with the sum of the values compared to a threshold. This technique minimizes processing costs, reduces subjective judgments and possible biases. The rating systems will be important if it indicates changes in expected level of credit loan loss. Brown Bridge (1998, pp.173-89) concluded that quantitative models make it possible to numerically establish which factors are important in explaining default risk, evaluating the relative degree of importance of the factors, improving the pricing of default risk, screening out bad loan applicants and calculating any reserve needed to meet expected future loan losses.

In summary, the transaction cost theory best suit credit management of a manufacturing firm because it has supplier-client relationship, on which the supplier is the manufacturing firm granting the credit while the client it the customers or the debtors of the business. This theory has the factors which the creditor will consider before granting credit to its customers which include: the information about the customer`s ability to pay on time, the nature of the firm`s financial statement and it is not costly to operate.

Finally, transaction cost theory encompasses all the attributes of credit management and is therefore chosen as the figure that best describe credit management.

3.0 Research Methodology

This section essentially describes the principles underlying the execution of this research. The methodologies are the various methods and techniques employed by the research in the course of collecting and analysing data with the view of obtaining solutions to problems. It contains the area of study, research design, Population of study, sample size and sampling technique, source of data, Model specification, method of data collection, Method of data analysis.

3.1 Area of Study

This research work studies five non-financial companies listed in Nigerian Stock Exchange which include the following; Conglomerates Industry (Pz Cussons Nigeria Plc. Dangote Sugar Plc. Dangote cement.) Food/Beverage and Tobacco Industry (Nestle Nigeria Plc. Guinness Nigeria Plc.) respectively that has its headquarters located in Lagos south-East Geo-political zone in Nigeria. My choice of choosing these two industries is because their availability of data needed for this research work.

3.2 Research Design

Saunders and Philip (2012), states that research design is general plan of how you will go about answering your research questions, specify the sources from which you intend to collect data and how you propose to analyse them.

This study used a cross-sectional design and Ex-post facto from which it used descriptive analysis to analyse its data. Reasons for choosing this design is because this study made use of secondary data, in cross-section design, values of one or more variables are collected for several sample entities, or units, at the same point in time. In time series data observe the values of one or more variables over a period of time. In panel data the same cross-sectional units (say firm or families or states) is surveyed over time. In short, panel data have space as well as time dimensions (Gujarati, 2003).

3.3 Population of Study

The population for this study is defined as all the non-financial companies listed on the Nigerian Stock Exchange (NSE) at 2016. The total number of listed manufacturing companies as at 2016 from which the sample is drawn is 143.

3.4 Sample Size and Sample Technique

The sample size is the portion of the total population which the researcher used for the study. This study used five years audited annual report of five manufacturing companies listed on the Nigerian Stock Exchange Market (NSEM). The technique of sampling used is the random sampling technique. The Random sampling is applied because of the need to select a sample based on the availability of required information and data to achieve the objective of the study.

3.5 Source of Data and Data Collection

The research employs secondary data. The major source of data is the secondary source which is the data collected from the annual financial reports and accounts of companies, the Nigerian Stock Exchange fact book. The annual reports and accounts are sourced from an internet database addressed to the various companies' website respectively.

Data is collected from already audited annual reports from the year 2010 to 2014 of three manufacturing firms quoted in the Nigerian Stock Exchange (NSE).

3.6 Model Specification

An empirical model is formulated which is based on the use of panel data methodology. This study employs panel data analysis which is cross sectional data analysis because it is the most useful for it.

INDEPENDENT VARIABLE	DEPENDENT VARIABLE
Credit policy	Return on Asset (ROA)
Liquidity management	
Debtors turnover	

3.7 Determination of The Model

The model in its econometric form is shown below;

Y=X

Where;

Y = Dependent variable

X = Independent variable

The general form of the panel data analysis model is specified as:

$Y_{t!} = \alpha 0 + \beta F_{t!} + \mu \ldots$ (1)

Where:

$Y_{t!}$ = dependent variable (firm performance measures)

α0= constant

β = is the coefficient of the explanatory variable (corporate governance mechanisms)

$F_{t!}$ = explanatory variable in the estimation model

μ = error term

FUNCTIONAL FORM

ROA = F (CEPOY, LIQM, DEBTR).

Where;

ROA is the dependent variables.

CEPOY, LIQM and DEBTR are the independent variables.

TESTABLE FORM

$ROA_{t!} = \alpha 0 + \beta_1 CEPOY_{t!} + \beta_2 LIQM_{t!} + \beta_3 DEBTR_{t!} + \mu \ldots$ (1)

It also builds on the models of Kajola (2008) which specifies the model given below:

PERF = β0 + β1BSIZE + β2OWN+ β3CEO + et!

Based on the panel data analysis model, a model is developed which is advancement on Kajola (2008)

Where:

PERF= Dependent variables

B0, B1, B2, B3, = Independent variables

Et = Error form

DEPENDENT VARIABLE

ROAt!: return on asset (profit after tax/ total asset) for company! in time t

INDEPENDENT VARIABLES

CEPOYt!: credit policy (equals 1 if company have a good credit policy and 0 otherwise) for company! in time t.

LIQMt!: liquidity management (Measured using current ratio: current asset/current liability) for company! in time t

DEBTRt!: Debtors turnover (measured using account receivables turnover: net credit sales/ Average account receivables. Average account receivable: account receivable at the beginning + account receivables at the end/ 2)

for company! in time t.

3.8 Method of Data Analysis

The data collected for the research representing credit management and profitability measures is analysed with statistical methods. Tables are used to display data gathered. The data is further analysed using descriptive statistics which describes the mode, median and standard deviation.

The hypotheses are tested using inferential statistics which include the regression tests and the test of correlation. A multiple regression analysis which is estimated with the Ordinary Least Square (OLS) is done to explain the effect of credit management on profitability of manufacturing firm while the test of correlation measures the degree of association of the credit management mechanisms with the profitability measures.

4.0 Data Presentation, Analysis, Interpretation of Results and Discussion of Findings

The main objective of this research work is to investigate the effect of credit management on profitability of manufacturing firm. The chapter focused on data presentation, analysis and interpretation of results likewise discussion of findings. In order to provide answers to the research questions stated in chapter one, test of hypothesis is carried out. The study had two variables which is independent variable and dependent variables. The independent variable consists of the following: Credit policy (CRDP), Liquidity management (LIQMT), Debtors turnover (DEBTR). Dependent variables are thus, Return on assets (ROA),

In the analysis, Descriptive statistics which comprise of mean, standard deviation and Jacque – Berra and Correlation analysis were effectively and efficiently employed as a tool to get a rescannable answer to the objectives in chapter one.

Table 4.1: Descriptive Statistics

VARIABLES	MEAN	MAX	MIN	STD.DEV	JB(P-VALUE
ROA	0.18	0.87	0.07	0.15	0.00*
CRDP	0.72	1.00	0.00	0.46	0.08***
LIQMT	1.37	2.37	0.57	0.57	0.26
DEBTR	0.60	1.47	0.06	0.39	0.42

SOURCE: Researchers computation (2016); note*1%, **5%, ***10%
Levels of significance.

Table 4.1 shows the mean (average) for each of the variables, their maximum value, minimum value, standard deviation and Jacque- bera (JB) statistics (normality test)

The results in table 4.1 provided some insight into the nature of the selected Nigeria quoted manufacturing companies used in this study. Firstly, it was observed on the average over the five (5) year period (2010-2014) covered in this study, the sampled quoted companies were characterized by positive average ROA (0.18).

We also observed that about 72% of our sampled companies have credit policies that must govern their activities.

The table also shows that the average liquidity management value was 2.37 while the minimum value stood at 0.57. This shows that most quoted manufacturing companies in Nigeria have different liquidity management policies, hence the wide variation observed in the table. This wide variation in liquidity management (LIQMT) therefore justify the need for this study as we expect that manufacturing companies with high liquidity management policies will perform better.

Similarly, the same wide variation was also observed in debtors turnover (DEBTR) value which stood at average value (0.60), maximum value (1.47), and minimum value (0.39). This further strengthened our expectation as we expect that those manufacturing companies with low debtors turnover (DEBTR) will perform better. Lastly, in table 4.1, the Jacque-bera (JB) which test for normality distributed at 1% and 10% levels of significance. This means that any variable with other are not likely to distort our conclusion and are therefore reliable for drawing generalization.

4.2 Correlation Analysis

In examining the association among the variables, are employed the Pearson correlation coefficient correlation matrix) and the results are presented in table 4.2, (see appendix 2 for detailed result).

Table 4.2: Pearson Correlation Matrix

	ROA	CRDP	LIQMT	DEBTR
ROA	1.00			
CRDP	0.07	1.00		
LIQMT	0.76	0.15	1.00	
DEBTR	0.41	0.32	0.00	1.00

Source: Research computation (2016).

The use of correlation matrix in most regression analysis is to check for multi co-linearity and to explore the association between each explanatory variable and the dependent variable. Table 4.2 focused on the correlation between firm size (ROA) and the independent variables (CRDP, LIQMT, and DEBTR).

The findings from the correlation matrix table shows that all our independent variables (ROA, CRDP = 0.07; ROA, DEBTR = 0.041) were observed positively and associated with our ROA except LIQMT that is positively and moderately associated with ROA performance at 0.76 (76%). In checking for multi co-linearity, we noticed that no two explanatory variables were perfectly correlated. This means that there is the absence of multi co-linearity problem in our model.

4.3: Testing our formulated Hypothesis

In order to examine the impact relationship between the dependent variable (ROA) and the independent variables (CRDP, LIQMT, and DEBTR) and to also test our formulated hypothesis, we use pooled multiple regression analysis since the data had both time series (2010-2014) and cross- sectional properties (5) and the results are presented in table 4.3 below.

Table 4.3: Pooled Regression Results

VARIABLES	T-STATISTIC	PROBABILITY
e	1.29	0.21
CRDP	-0.36	0.72
LIQMT	-0.43	0.67
DEBTR	2.08	0.04**

R- Squared	0.18
Adjusted R-Squared	0.06
F- Statistic	1.53
Prob(F-Statistic)	0.24

Source: Research computation with E-View 8.0 statistical package: Note *1%, **5%, ***10% significance levels.

In table 4.3, we observed that the R-Squared and Adjusted R-Squared values were 0.18 and 0.06 respectively. This indicates that all the independent variables jointly explain above 18% of what happened in the ROA dependent variable. The F-Statistic value of 1.53 and its P-Value of 0.24 was also observed. In addition to the above, the specific findings from each explanatory are provided as follows:

4.4 Discussion of Findings

Credit policy and firm profitability (CRDP), based on T-statistics value of – 0.36 and P- value of 0.72, was found to have a negative influence on ROA performance of our quoted companies. But this influence was not statistically significant since its P-value was more than 0.10 levels. This result suggests therefore that we should accept our Null Hypothesis one (H01) which states that credit policy does not have significant effect on firm profitability. This means that on the basis of efficient use of credit policies to generate profit or increase companies' profitability, those manufacturing companies with highly compacted credit policies perform poorly when compared with those that have less complicated credit policy. This means companies that attract credit facilities must have an easy understand credit policy and when utilized, such company will attract higher of credit facilities that will in return generate higher profit if adequately utilized but if poorly invested will erode the profit. However, this is not significant.

Liquidity management and firm profitability (LIQMT), based on T-statistic of – 0.43 and P-value of 0.67, was found to have negative effect on the sampled companies ROA profitability. Although, this effect was not statistically significant since its P-value was more than 0.10. This result suggests that we should accept our Null Hypothesis two which states that liquidity management do not affect firm profitability. This means that on the basis of efficient use of liquidity policies to increase performance. Those companies with high liquidity management perform less as LIQMT negatively affect ROA performance. However, this result is not statistically significant.

Debtors turnover and firms' profitability (DEBTR), based on T-value of 2.08 and P-value of 0.04, was found

to have a positive influence on firms' profitability and this influence was statistically significant at 5% level since its P-value was less than 0.05. This result suggests that we should reject our Null Hypothesis three (H03) which states that Debtors turnover do not affect firm profitability to accept the alternate. This means that that manufacturing firm with high debtor turnover performs better than those with low debtors' turnover. The implication of this finding is that companies should work hard to achieve a high debtors' turnover ratio as this impact profitability better

5. Summary of Findings

This study investigates the relationship between credit management and profitability of manufacturing firm using quoted firm in the Nigeria stock exchange. The study shows that there is negative relationship between credit policy and manufacturing firm profitability base on the statistical value of -0.36 and p-value of 0.72. it also shows significant negative relationship between the liquidity management and firms profitability, this may be because the sample manufacturing company belong to different level of activity, it also supports Akoto, awunyo-Viktor and Angmor studies on liquidity management practice and profitability of listed manufacturing firm in Ghana which also found out negative relationship. The debtors' turnover and firms' profitability shows significant positive relationship on the t value of 2.08 and p-value of 0.04.

5.2 Conclusion

This study was set out to explore the controversial effect of credit management on profitability of manufacturing firm using audited annual report of five quoted company in the Nigeria stock exchange for the period of five years under review (2010-2014).

This result reveals that credit policy and liquidity management has no significant relationship with profitability of manufacturing firm while debtors' turnover have significant effect on profitability of manufacturing firm.

The insignificant relationship of credit policy of firm profitability may result from highly complicated credit policy of a firm which the marketing department of the firm found it very hard to adapt.

On basis of liquidity management, those manufacturing firm with high liquidity policies perform less as liquidity management negatively affect the return on asset of the organization (profitability of the firm)

The reason for the significant relationship of debtors' turnover to manufacturing firm profitability could be attributed to high debtor turnover ratio which mean that manufacturing firm should work hard to achieve a high debtor's turnover ratio which will have positive effect of its profitability.

5.3 Recommendation

Base on the analysis of data and the findings of this research, the following recommendation were proffered

To encourage credit facilities in a manufacturing firm the sales department of the firm must have easy to understand credit policy which will encourage the customers or client to accept their credit facilities without being bias and it will in return yield more profit to them. For the growth of any organization there must be a policy (credit policy) which attracts the customers more to the firms' product, thereby the sales department are expected to make a clear and flexible knowledge understanding of the credit policy towards their customers, this will attract the sales revenue to the firm,

The firm should work hard to achieve a high debtor turnover; the firm can achieve this by giving discount to their debtor's base on their durations of payment

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