European Journal of Management and Marketing Studies
ISSN: 2501 - 9988
ISSN-L: 2501 - 9988
Available on-line at: http://www.oapub.org/soc

doi: 10.5281/zenodo.3668345 Volume 5 | Issue 1 | 2020

SOLVENCY CONTROLLING AND RETURN ON ASSET OF INDUSTRIAL ORGANIZATIONS IN NIGERIA

Akpan, Aniefiok Udoh[1i],
Ahakiri, Francis Idiege[2],
Ebaye, Theresa Mbony[2]
[1]PhD, Department of Accounting,
Faculty of Management Sciences,
University of Calabar,
Calabar, Nigeria
[2]Department of Accounting,
Faculty of Management Sciences,
University of Calabar,
Calabar, Nigeria

Abstract:
The study focused on solvency controlling and return on asset of industrial organizations in Nigeria. The purpose was to assess how credit management influence return on asset of the organizations that were considered. Data were collected from published financial reports of these organizations. Data collected were analyzed using multiple regression model. Results of the analysis revealed that solvency controlling did not affect return on asset significantly; and insolvents' turnover has insignificant though positive effect on return on asset of the studied organizations. Based on the findings, the major recommendation was that of industrial organizations in Nigeria should institute active and proficient credit policy that can take into consideration credit worthiness of clienteles which would in turn influence their return on asset.

JEL: L10; L16; G10

Keywords: solvency controlling, return on asset, industrial organizations, financial management, profitability

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 business. When a firm sells its products or services and does not receive cash for it, the

[i] Correspondence: email aniefiokakpan3058@gmail.com, ahakirifrancis.1@gmail.com

firm is said to have granted trade credit to its customers. Selling on credit leads to debt which the firm is expected to collect in future. Accounts receivables are executed by generating an invoice which is delivered to the customer, who in turn pays within and with the agreed terms. The accounts receivables are one of the largest assets of a business enterprise comprising approximately 15 percent to 20 per cent of the total assets are typical manufacturing firm. 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 favorable terms. As long as there is competition in the industry, selling on credit becomes inevitable.

A business might lose its customers to competitors if it does not extend credit to them. 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 debts. The management of receivable is practical a problem to some business. 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; Asuquo, Ejabu, Bogbo, Atu, & Adejoupe, 2018; Dunn, 2009; Asuquo, Effiong & Tiesieh, 2012).

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 that the amount of trade debtors cannot be fully realized.

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. Again, a good and sound liquidity management results in sound capital budgeting, which consequentially enhances the value of a firm. 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 in capital structure and tax liability arrangement, 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 cause illiquidity is the 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 and overall capital structure and / or financing options or arrangements, areas which are usually neglected in times of favorable business conditions, in both national and international dealings (Asuquo & Ejabu, 2018; Asuquo, Effiong & Tiesieh, 2012; Uwah & Asuquo, 2016; Pass & Pike, 1984).

Due to the speed in which technology is changing and the dynamics in business caused by changed in their internal and external environment, the ways in which business are conducted today differ significantly from years past. Hence, information technology aids fraud control and prevention which facilitated effective credit and financial management (Asuquo, 2012). 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 receivable efficiently and effectively, thus, maximizing their cash inflows. 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 firms in Nigeria. The efficient and effective performance of Nigeria's financial institution required for improved economic well-being of the business appear not to be manifesting. This is evident in Soyade (1998) when he observed that the mobility of Nigeria's financial institutions to adequately satisfy the credit characteristics constitute a binding constant 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 three aggravating factors is observed. They are high interest rates practiced in financial institutions; high rate of inflation which influences how business income and financial position of organization is measured (Asuquo, Fadenipo, Ogbeche & Ahonkhai, 2017) 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 uncertainly. In addition, high interest rate negatively affects the net asset or net worth of any business entity be it national or multinational enterprises (Salawu, 2007 & Asuquo, 2012).

1.1 Statement of the problem

Generally, the failure rate of credit management on the return on asset of industrial organizations in Nigeria is very high due to: high rate of bad debts as some corporations take advantages of the credit that is extended to them and finding themselves not capable of paying the debt later. The poor level of trade credit management is reflected in the liquidity and profitability position of the firm. There is lack of experienced staff or officers to tackle onerous and vital duties of managing debts. Also, there are inadequate training opportunities for key treasury or supporting staff.

1.2 Objective of the study

The main objective of this study was to appraise the effect of credit management on the profitability of manufacturing firm. The specific objectives of this study were as follows: To examine the effect of solvency controlling on return on asset of industrial organizations; and to examine the effect of debtors' turnover on return on asset of industrial organizations.

1.3 Research questions

- To what extent does solvency controlling affect return on asset of industrial organizations?
- To what extent does debtor's turnover affect return on asset of industrial organizations?

2. Literature review & theoretical framework

2.1.1 Transactions cost theory (Schwartzin, 1974)

The 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 Peterson & Rajan (2014) as follows: information acquisition, controlling the buyer and salvaging value form 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, frequency and the amount of the buyer's orders give suppliers an idea of the clients' situation: the buyer's rejection of discounts for earl 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.

2.1.2 Portfolio theory (Markowitz, 1959)

Since the 1980's, 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 using credit derivatives to transfer risk efficiently and productivity indicators have been adapted. (Kairu, 2009). The combination of these developments has vastly accelerated progress in managing credit risk a portfolio concert.

Traditionally, organizations have taken an asset-by-asset approach to credit risk management; if it involves foreign transactions, the credit risk management is aligned to foreign exchange rate risk exposure and the resulting performance or exchange gains/losses. While each company's method varies, in general this approach involves periodically evaluating the quality of credit exposures, foreign exchange rate risk exposures and performance indicators, 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 as well as, foreign exchange rate risk exposure and performance evaluation scheme. This system enables management to identify changes in individual credits, or portfolio trends 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. 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 is 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 corrected creditors (Richardson, 2002; Asuquo & Arzizeh, 2012; Mason & Roger, 1998).

2.1.3 Information theory (Weick, 1989)

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 & Mullineux (2005), borrowers' attributes assessed through qualitative models can be assigned numbers with the sum of the values compared to a threshold. These techniques minimize 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. Bridge (1998), in his conclusion assert 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; and foreign exchange rate risk exposure and performance assessment scheme for foreign transactions (Asuquo & Arzizeh, 2012), best suit credit management of a manufacturing firms because it has supplier-client relationship, on which the supplier is the manufacturing firm, granting the credit while the client is the customers or the debtors of the business. This theory has the factor 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.

2.2 Concept of trade credit

Pandey (2002), saw trade credit as a short-term source of finance. He also said that, it is the credit that a customer gets from a supplier of goods in the normal course of a business. Therefore, it is mostly an informal arrangement between the supplier and the buyer as no legal document is signed. Pandey (2002), pointed out that trade credit may also take the form of bills payable. This happens when the buyer signs a bill- a negotiable instrument to obtain trade credit of which in his balance sheet, it appears as bill is a formal acknowledgement of an obligation to repay an outstanding amount. To supplier, any trade credit granted to a customer appears as account receivable, sundry debtors, bills receivable depending on the one that is applicable.

The main objective of trade credit is providing effective means of reducing default in collection of accounts in order to help management ascertain the profitability of a company. Thus, this collection processes involves qualifying the extension of credit to a customer, monitors the receptions and lodging of payments on outstanding invoices, the initiation of collection procedures and the resolution of disputes or queries regarding charges on a customer invoice. Many companies have been moving towards an organizational integration of the information requires of credit control. These activities, which in the past existed as individual's operation, operation's upon gathering all sums from debtors are centralized on companies in the hand of a single manager due to the desire for greater effectiveness.

2.2.1 Credit management

An efficient credit management system reduces the amount of capital tied up with debtors and minimizes bad debts. Peter (2005), conceived that there is a positive correlation between credit management and profitability. Good credit management is vital to business cash flow ensuring effective business operations. It 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 receivable or book debts which the firm is expected to collect in the near future.

The book debts or receivable arising out of the credit has three characteristics: Firstly, it involves an element of risk which should be carefully analyzed. Cash sales are totally riskless, but not the credit sales at 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 sales, while the seller expects an equivalent value to be received later on. Third, it implies futurity. The cash payment of goods or services received by the buyer will be made by him in a future period. The customers from whom receivables or book debts have to be collected in the future are called trade debtor or simply as debtors and represent the firm's claim or asset. (Romanvorthy, 2014).

Philip (2010), cited four basic things business must strive for effective credit management. These are: 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.

As suggested by Michael & Steve (1997), good credit management is all about customers' satisfaction and profit. They assert 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 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.

2.3 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. It may be regarded as a relative term measurable in terms of profit and its relationship with other elements that can directly influence the profit

Corporate profitability is a measure of the amount by which a company's revenues exceed 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 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; Asuquo, Effiong & Tiesieh, 2012). 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 investments (ROI), return on equity (ROE), earnings per share (EPS), dividend per share (DPS), dividend pay-out rate (DPR), dividend yield (DY), and earning yield (EY), price-earnings ratio (P/E), market value to book value ratio (MV/BV), and Tobins Q (T-Q). Profitability and management efficiently are usually taken to be positively associated such that poor current profitability may threaten current management efficiency and poor management may threaten profitability. It is related to the goal of shareholders' wealth maximization, and investment in current assets is an aspect of corporate finance and it as the capacity of influencing how profitable a firm is (Uwah & Asuquo, 2016; Asuquo, Effiong & Tiesieh, 2012; Asuquo, 2011).

2.4 Reasons for granting credit

Firms may grant credit to their customers for various reasons which include but not limited to the following: When there is a lot of competition in an industry, a firm may grant its customers credit so as to attract them for patronage; the nature of the business may demand that goods be sold on credit instead of cash. For instance: some industrial product may be sold on credit than in cash; most times, the status of the customer may require granting him some credit. Status here implies the size and credibility of the customer firm. Big firms who buy in bulk may not afford to pay for all the purchase at once; and at times, when a firm wants to establish a long term relationship with a customer (buyer) such a firm may decide to grant credit to the customer.

Credit sales can also act as mulcting tools where by a firm that launched a new product can decide to use credit to push the product into the market.

In making analysis of trade credit so many factors have to be taken into consideration: the market size has to be considered; the quality of product that is being sold; the economic condition at the moment of sale; and the intensity of competition in the industry. All these are necessary because it has been found that the volume of credit sales is a function of the firm's total sales and the percentage of credit sales to total sales. The nation of business and the industry norms greatly influence the percentage of credit sales to total sales of a firm. However, a financial manager can only influence the volume of credit sales, collection period and investment in trade credit by altering the firm's credit policy.

2.5 Financial Reporting Standards Requirements for Credit Transactions, Setting Credit Policy and Regulation

Financial reporting standards required certain disclosures on credit transactions in terms of trade receivables and payables as these business variables majorly affect the reported corporate performance and financial reporting practices of the business entity for the year(s) in consideration (Asuquo, 2013). The term credit policy may mean different things to different people. But according to the chamber dictionary, it simply refers to the laid down rules and procedures which a firm have chosen to guide her in the granting of credit to her customers. However, according to Enarke (1989), he identified three decision credit policy variables which a firm must adopt so as to make a good policy arrangement. They include:

2.5.1 Credit standards

These are the criteria which a firm follows in selecting customers for the purpose of credit extension. A firm may adapt tight credit standard whereby it sells mostly on cash and may extend credit to only a few reliable customers. This will help such a firm to minimize bad debts losses but will limit its expansion on sales. Also, when a firm adopts a loose credit standard it will expand sales but may not minimize bad debt losses and administration costs.

2.5.2 Credit terms

These are those stipulations which a firm adopts as conditions under which the customer can buy on credit. It includes: The Credit Period: This is the length of time for which the credit is extended to the customer. It is generally stated in terms of a net date. For instance, if a firm's credit terms are net 45, a customer is expected to repay his credit obligation within a maximum of 45days; and the Cash Discount: This is a reduction in payment offered to customer(s) to reduce him to pay his credit obligation within a specified period which will be earlier than the normal credit period. It is a tool which a firm uses to increase sales and also accelerate collection of debts from customers.

2.5.3 Collection efforts

There should also be a properly laid down collection policy and procedures which a firm should follow in collecting its dues from customers. When a debt is overdue for collection form a customer, a polite letter should be sent to remind the customer but if he fails to respond, a strong worded letter may follow thereafter, and finally a personal visit may also help if no respond is taken for the firm not to lose everything in a situation where the customer is not financially okay.

2.6 Credit policy goals

Having considered the variables involved in setting a credit policy, a firm has the opportunity of going through the various policies available having known their different implications. A firm may choose to adopt a lenient credit policy. This allows the firm to grant credit to customers whose worthiness cannot be ascertained. The firm adopts liberal terms and standards such as longer period of credit, granting credit to customers with stably financial position etc. Firm that adopts a stringent credit policy sells on credit to only selected customers who possess proven credit worthiness and also who are financially stable.

2.6.1 Optimal credit policy and optimal capital structure

In practice, there has always existed a trade-off between opportunity cost contributions as a result of a firm mot extending credit on cost of administration otherwise called carrying costs and bad debts loose. For a firm to strike a balance between the two, it must reach optimal credit policies that can optimal capital combination. More so, optimal credit policy is one which maximizes the firm's value. He opined that the firm's value is maximized only when the incremental or marginal rate of return of an investment is equal to the incremental or marginal cost of funds used to finance the investment. Furthermore, the original goal of the firm's credit policy is to maximize the value of the firm (Pandey, 2005; Asuquo, 2011; Uwah & Asuquo, 2016).

2.7 Credit of policy variable analysis

Writing on the issue of credit policy variable analysis, Pandey (2002) said that: "*before a financial manager decides to grant credit to customers, he has to consider some variables that are of relevance to be put into analysis in order to achieve the objectives of the firm's credit policy*". These variables go a long way to influence the level of receivables which will accrue to the firm. Some of the variables include:

2.7.1 Credit analysis

In order to make sure that credit would be granted to credit worthy credit customers, credit manager could forensic practice techniques and information technology skills to source for enough information about the customers to enable him differentiate between customers that will not pay, customers that will pay as well as those who had being involved fraudulent practices. This information can be sourced from the following: A financial statement of a customer can be demanded from him/her to enable him analyzed and ascertain his credit worthiness; credit report on customer's payment history with other firms may serve as good source of credit information; banks do provide some information or assistance to their business customers on the credit worthiness of some firms; and the selling firm can also make sure upon the customer payment; the history in the past of the customers is known to determine its credit worthiness in the present (Asuquo, 2012).

2.7.2 Credit scoring

After gathering all relevant information about these customers, the credit or financial manager may decide to grant or not to grant any credit. A common evaluation framework is the Five C's of Credit: capacity, capital, collateral, conditions and character. (http://www.mcmf.net/MCMF_BuyHouseLink2.html): Character: the customer's willingness to settle his/her obligations when they are due has to be into consideration so as to determine their default rate; capacity: this is the ability of the customer to settle his financial obligations when they are fall due. This is determined by analyzing the firms operating cash flows; capital: the financial reserve of a customer goes a long way to tell if he is able to meet his/her credit obligation when they become due; collateral: most times, a firm may pledge an asset in the case of default. Such an asset has to be evaluated to know its' worth in case there was a default; and condition: a credit or financial manager should be able to assess the extent to which a customer's ability to pay is likely to be affected by the prevailing economic decisions.

2.7.3 Collection policy and procedures

A collection is necessary since all customers do not pay their bills the same time. While some customers pay promptly, others are slow payers. Collection efforts should be focused on accelerating collection from slow payers thereby reducing bad debts losses. Pandey (2005) asserts that prompt collection is needed for fast turnover of working capital; thus, keeping collection costs and bad debts within limits and maintaining collection efficiency. A collection policy should lay down a clear-cut collection. Procedures should be followed with tack to avoid losing some customer to other competitors by covering overdue accounts. Firms should start early enough to collect his/her accounts from customers, and it should be known that it is the duty of the firm to remind debtors to pay their due accounts.

Firms often have varying collection procedures for different customers or creditor. Just as they have different policies for different customers. But all these depend mostly on the prevailing economic conditions and credit worthiness of each customer. Nevertheless, a carefully planned collection procedure is essential for consistent treatment of credit accounts. Thus, according to; Ibid (2005), he identified some internal collection procedures such as: prompt action: this is the time frame between sales and payments should not be stretched to avoid growth of accounts receivable. It increases the risk of uncollectable accounts. So, the best time to collect overdue accounts is as soon as it was overdue; and delinquency charges: to hasten the payment of debts on the side of debtors, a certain percentage of the outstanding credit is charged on overdue balances. Here, the firm devises some means that will enable him/her to collect overdue accounts from customers. Some of those procedures as mentioned below are useful: the firm sends a delinquency letter informing the customer of the past-due status of the account; the firm makes telephone calls to the customer involved; most times, the firm may need to employ a collection agency; and finally, the firm may also decide to take a legal action on the customer. In achieving this, care must be taken here not to hasten the customer's insolvency because if the customer's financial status is weak, legal action may lead her to insolvency.

2.8 Monitoring receivables

For a firms' book debt to be collected using which ever chosen policy and procedures, it has to be strictly monitored and controlled. Writing on the objectivity of monitoring receivables upon credit management, Pandey (2002) identified account receivable as; the average collection period and collection experience matrix.

2.8.1 Average collection period

Average collection period measures the average amount of time required to collect an account receivable. It is calculated using the formula below:

$$ACP = \text{Account receivable} / \text{Sales} * 360 \quad (1)$$

where:
ACP = Average Collection Period

If a firm collection period is extended, such that it defers by a numbers in days, with that of the state collection period, it results in delays in cash inflows which automatically impairs the firms liquidity position and increases the chances of bad debt loses.

2.8.2 Collection experience matrix

The two previously shown traditional methods of evaluations receivables have some limitations. They fail to relate receivable to sales of the same period. This makes control difficult and meaningful information about them is would be obtained. However, collection experience matrix makes use of dis-aggregated data for analysis of collection experience. This approach relates receivable to sales of the same period since it uses a matrix to show the sales of a given period in a horizontal order and the associated receivable in a vertical order for instance; factoring.

In credited management, different firms adopt different strategies as long as it will yield a positive result. This pertinent in considering the fact the collection of receivables poses a lot of problems to firms particularly addressed to small scale enterprise. On this note, most firms who seek to avoid all the risks associated with credit collection sell their account receivable to a financial institution whose job is to manage, finance and collect receivables. The sales ledger contains some vital information about each customer of a firm. Such information ranges from total value of sales made to such a customer and the range of payment made by such customer. However, the factor maintains account for the different customer based on the data contained in the sales ledger. It gives clients necessary information and reports about market trends. Also, it makes a systematic analysis of the information regarding clients for proper monitoring and management.

One of the job of factors is to collect the due amount or part of it from the customer. While he is collecting the due book debts, he owes himself the duty of protect against the occurrence of bad debt losses which will affect his collection in case it occurs.

2.9 Conceptual framework

In the literature search it became apparent that there are gaps in the literature including the specific links between credit management and profitability of manufacturing companies in Nigeria. The study focused on the dimensions of credit management and content of profitability.

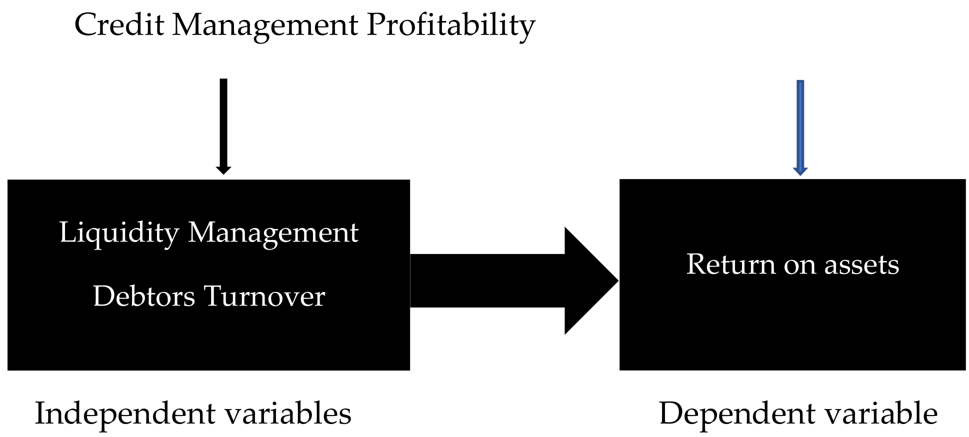

Figure 1: Researcher Diagram

2.9.1 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 shareholders 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 obligations (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 of liquidity to meet its short-term compulsions. A study of liquidity is of major importance to both its close relationship with day-to-day operations of a business (Bhunia, 2010). 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.

2.9.2 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. It 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 according to Berry and Jarvis (2006) for determining the optimal amount of account receivables are as follows: the trade-off between the securing of sales and profits and the amount of opportunity cost and administrative costs of the increasing accounts 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; and the investment in debt collection management. Accounts receivables measure the unpaid claims a firm has over its customers at a given time. It usually comes in the form of operating line of credit and is mainly due within a relatively short time period (up to a year). The volume of accounts receivables indicates firms' 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 & Pindado (2012), for example, suggested 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 parts 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. Demirgus-kunt and Marksomovic (2011), present evidence that in countries such as France, Germany, and Italy accounts receivable exceed a quarter of firms' total assets while Rajan & Zingales (1995) find that 18% of the total assets of U. S. firm consist of receivables. Accounts receivables management is a crucial field of corporate finance because of its effects on a firm's profitability, risk and consequently on the firm's value.

2.9.3 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-profits 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 to use its assets and creative accounting reporting to generate earnings (Khatab, Masood, Zaman, Saleem & Saeed, 2001; Asuquo, 2011). Investopia (2013) provides that ROA for public companies can vary substantially and will be highly dependent on the industry. This is why when using ROA in 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 types of financing are used to fund the operations of the company. The higher the ROA number the better for a company because the company is earning more money on less investment.

Management's most important job is to make wise choice 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 profit with little investment through creative accounting and financial reporting. Also earning management using creative accounting approach leads to high return on asset. ROA gives an idea as to how efficient and creative management is at using its assets to generate earnings (Khatab et al., 2011; Asuquo, 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.

2.10 Empirical review

The importance of applying good debt 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.

Akoto, Awunyo-victo and Angmor (2013) analyzed the relationship between liquidity management practices and profitability of listed manufacturing firms in Ghana, using panel data methodology and regression analysis; which is similar to standard magnitude variance analysis model which deals with the application of standard magnitude variance in optimal capital structuring/working capital management in business organizations (Asuquo, 2011); the study found a significant negative relationship between profitability and liquidity. Gakure, Onyongo, Cheluget, &Keraro, (2014), studied the relationship between working capital management and performance of 15 manufacturing firms listed at the Nairobi NSE from 2006-2010. Using a regression model, they found that there was a strong negative relationship between firms of the independent variables except the average payment period were not statistically significant through the overall model was statistically significant.

Nyawera, (2013) studied the effect of credit policy on the profitability micro financial institutions in Kenya. The study found there was a relationship between credit policy and 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 collected 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.

3. Research Methodology

3.1 Research design

This study used a cross-sectional design and Ex-post facto to analyze its data. It 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. A time series data was observed using the values of one or more variables over a period of time.

3.2 Population of the study and method of population determination

The population for this study was defined as trends for selected non-financial companies listed on the Nigerian Stocks Exchange (NSE) at 2018. A time series analyses was used as population for this study. A purposive period of twenty years was taken out of which some years are used as samples.

3.3 Sample size and sample determination

The sample size is the portion of the total population which the research used for the study. This study used thirteen years audited annual report of five manufacturing companies (NSE). The technique of sampling used was purposive sampling technique. The technique is applied due to lack of accessibility of required information and data to achieve the objective of the study.

3.4 Model specification

Return on Assets is a function of several factors. However, for the purpose of this study, the model was adopted;

ROA=F (LM and DT)

It is stated econometrically as;

$$ROA = b_o + b_1 LM + b_2 DT + Ut \qquad (2)$$

Where
ROA = Return on Assets;
LM = Liquidity Management;
DT = Debtors turnover;
Ut = Stochastic error term.

To test for significance of the relationships of the variables in study, the f-test is necessary so as to know the relative magnitude of the sum of square due to the regression and the error sum of square with their appropriate degrees of freedom. This will be carried out at 5 percent confidence limits.

4.1 Data presentation

Table 4.1: Indicators of credit management and the profitability of selected manufacturing firm in Nigeria for the period

Years	ROA%	LM%	DT%
1	9.2	2.10	35
2	11.2	2.50	24
3	14.5	3.80	40
4	16.3	2.90	38
5	17.8	2.50	46
6	20.6	2.90	58
7	18.9	0.80	25
8	13.6	3.20	13

9	20.3	3.78	62
10	12.0	2.70	38
11	17.7	3.90	39
12	20.6	2.40	47
13	18.9	3.10	29

Source: Annual report of selected manufacturing companies in Nigeria.

Table 4.2: Least square regression result of credit management and profitability of selected manufacturing companies Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	11.325	4.058		2.791	.091
	LM	-.417	1.295	-.090	-.322	.754
	DT	.159	.079	.562	2.006	.073

Predictors: LM= Liquidity Management; and
DT=Debtors Turnover
Dependent variable ROA = Return on Assets
Source: Result of SPSS (version 20).

R = 0.54; R - Square = 0.292;
Adjusted R - Square = 0.151;
Prob F – Statistic = .178

4.2 Data analysis

The secondary data collected for this study were presented in table 4.I. The least square multiple regressions was used for the hypotheses stated in this study via SPSS (Version 21). The result showed on table 4.2.

The Bo (11.325) indicates that if LM and DT are held constant. ROA is subject to vary by 11.325. This account for the influence of other variables not built in the model. b_1 (-.417), is the coefficient of LM and it depicts that a percentage increase in the liquidity management account for 41.7 percent decrease in ROA of the industrial companies in Nigeria. This shows that there is negative relationship between liquidity management and ROA of the industrial companies for the period under study. The b_2(0.159) is the coefficient of DT and it depicts that a percentage increase in the debtor turnover account for 15.9 percent increase in ROA of the industrial companies in Nigeria. This shows that there is positive relationship between debtor turnover and ROA of the industrial companies for the period under study

The correlation coefficient indicated "r" (.70) indicated that there is strong positive relationship amongst the variables under study. The coefficient of determination (R^2) is 0.29 (29 percent). It indicates that the independent variables (LM and DT) capture approximately 29 percent of the total variation (100 percent) in the dependent variable (ROA of the industrial companies in Nigeria). That is, the independent variables (LM and DT) explained 29 percent out of the 100% variation that occur in the dependent variable (ROA of the industrial companies in Nigeria). The remaining percent (i.e. 71 percent) represent the unexplained percentage and could amount for other independent variables not built in the simple regression model. This simple indicates that the regression model poor line of fit.

4.3 Test of hypotheses

There is need to test for significance of the independent variables (LM and DT) and the dependent variable (ROA of the industrial companies in Nigeria). In doing this, a 5 percent level of significance was adopted.

Hypothesis two:

H_0: There is no significant relationship between liquidity management and the return on asset of the industrial organizations in Nigeria.

H_1: There is a significant relationship between liquidity management and the return on asset of industrial organizations in Nigeria.

For hypothesis one, the P-value for liquidity management (0.75) is greater than 5 percent hence the null hypothesis is accepted, and the alternative rejected. It is concluded that there is no significant relationship between liquidity management and the ROA of the manufacturing companies in Nigeria for the period under study.

Hypothesis two:

H_0: There is no significant relationship between debtor's turnover and the return on asset of industrial organizations in Nigeria.

H_1: There is a significant relationship between debtor's turnover and the return on asset of the Industrial organizations in Nigeria.

For hypothesis two, the P-value for debtor's turnover (0.73) is greater than 5% hence the null hypothesis is accepted, and the alternative rejected. Based on this, the null hypothesis is accepted, and the alternative rejected. It is concluded that there is a significant relationship between debtor's turnover and the ROA of the manufacturing companies in Nigeria for the period under study. Furthermore, the p value for f statistics (0.178) was greater than 5% hence there is no significant relationship between credit management and profits manufacturing companies in Nigeria for the period under study.

4.4 Discussion of findings

The empirical analysis shows that liquidity management has a negative and insignificant effect on the return on asset of the industrial organizations in Nigeria.

This means that on the basis of efficient use of liquidity policies to increase its performance, the manufacturing companies has high liquidity ratio thus tied down excessively cash. This contradicts the work of Akoto, Awunyo Viktor & Angmor (2013) studies on liquidity management practice and profitability of listed industrial organizations in Ghana which also found out negative relationship; and that of Asuquo, Effiong & Tiesieh (2012) on the effect of financial management practice on profitability of small and medium enterprises in Nigeria.

The debtor's turnover is positively and insignificant with the return on asset of the industrial organizations in Nigeria. This implication of this is that these companies under study have efficiently managed their account receivables toward increasing its performance. This also means that manufacturing firm with low debtors' turnover performs better than those with high debtors' turnover.

5. Conclusion

The empirical analysis showed that solvency controlling of the industrial organizations in Nigeria was negatively and insignificant with the ROA. Debtor's turnover is positive effect with the ROA of the industrial organizations in Nigeria. This implication of this is that the companies has efficiently managed it account receivables toward increasing its performance. This also means that industrial firm with low debtors' turnover performs better than those with high debtors' turnover.

5.1 Recommendations

Based on the analysis of data and the findings of this research, the following recommendations were made:

1) Industrial organizations in Nigeria should institute active and proficient credit policy that can take into consideration credit worthiness of clienteles which would in turn influence their return
2) They should work hard to achieve a high debtor's turnover. This can be achieved by engaging moderate discount on durations of payment
3) There should be clear and flexible knowledge understanding of the credit policy towards their customer. This will attract the sales revenue to the firm.
4) They should work hard to achieve a high debtor's turnover. This can be achieved by moderate discount on durations of payment.

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