

## Liquidity Management and Corporate Profitability: Case Study of Selected Manufacturing Companies Listed on the Nigerian Stock Exchange

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### Abstract

*Liquidity management, especially at the wake of the global financial crisis, has become a major source of concern for business managers as bank loans are becoming too expensive to maintain as a result of tightening of both the local and international financial market and the reluctance of the public to invest in the share of companies sequel to the crash of the capital market. This research work measures the relationship between liquidity management and corporate profitability using data from selected manufacturing companies quoted on the floor of the Nigerian Stock Exchange. The result of the study was obtained using descriptive analysis and the finding shows that liquidity management measured in terms of the companies Credit Policies, Cash Flow Management and Cash Conversion Cycle has significant impact on corporate profitability and it is concluded that managers can increase profitability by putting in place good credit policy, short cash conversion cycle and an effective cash flow management procedures.*

**Key words:** Cash Conversion Cycle, Credit Policy, Liquidity Management, Profitability, Manufacturing Companies



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### INTRODUCTION

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. Liquidity management, in most cases, are considered from the perspective of working capital management as most of the indices used for measuring corporate liquidity are a function of the components of working capital. The importance of liquidity management as it affects corporate profitability in today's business cannot be overemphasized. 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 (Bhunja, 2010). Dilemma in liquidity management is to achieve desired trade off between liquidity and profitability (Raheman et al, 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.

For the purpose of this study liquidity management is viewed from the aspect of company's credit policy, its cash flow management and cash conversion cycle. Liquidity in itself, for the purpose of this research, is measured in terms of current asset ratios, quick ratio and operating cashflow. This research work is hinged on the Schumpeter theory of profitability as stated above.

### REVIEW OF LITERATURE

This chapter reviews various published journals relating to liquidity management and profitability taking into consideration various concepts and theories relating to the research topic.

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## **COMPONENTS OF CORPORATE LIQUIDITY MANAGEMENT**

### **Cashflow Management**

As earlier stated, the survival of any business depends on its ability to meet, either in the short run or in the long-run, and its obligations as they fall due and also take opportunities either in the form of prompt payment of liabilities in order to enjoy discounts and also to finance business expansion. It is important to state at this point that profitability does not always amount to liquidity as such a critical analysis of company's inflow and expected outflow in an accounting period is germane to effective cash management.

Torre (1997) defines treasury (cash) management as a set of techniques that act on the short-term liquidity of a company, and at the same time affect those factors and processes that translate immediately into cash, with the ultimate aim of increasing both the liquidity and profitability of the company. In this sense cash management is the backbone of liquidity management as it affects corporate profitability. Cash in excess of what is required need to be invested in short term securities pending when it is required. The major problem faced by most businesses is the ability to determine the minimum cash level required by the business. Minimum cash level assist management to maintain enough cash to meet its day-to-day operating expenses.

To prevent breaks or gaps in the trading cycle due to lack of cash, administrators must calculate the cash amount best suited to their level of activity, plan the timing of the relevant payments and collections and draw up a policy of investment in assets with high liquidity that can be converted to cash at a low transactional cost to serve as support for the treasury funds maintained by the company (Kamath, 1985; Srinivasan & Kim, 1986). It is therefore essential to establish the right level of disposable assets to short-term financial investments at companies. Holding the wrong amount in cash or cash equivalent may interrupt the normal flow of business activities. Moreover, the wrong safety margin may result in financial difficulties, with firms unable to meet needs that may arise at any given time or unable to take advantage of unexpected investment opportunities. Maintaining a cash surplus thus has a number of advantages. It enables companies to carry on the normal transactions that arise in the course of their activities and avoid any treasury gaps. It also help them cover any unexpected needs for cash by acting as a preventive balance. However, there are also disadvantages in being too conservative, as reflected in the opportunity costs entailed by assets with little or no profitability.

Having liquid assets available constitutes an opportunity cost for a company, as the return on those assets is lower than the return on productive investments, but there may still be transaction costs arising from the sale or purchase of financial assets, and disadvantages in terms of taxation. The particular importance of disposable asset management as a responsibility of the company treasurer should lead companies to conduct an overall analysis of this point, covering management of the collections circuit, cash and payment circuit (Palom & Prat, 1984). This overall analysis should strive to shorten collection periods,

lengthen payment periods and avoid idle resources that do not generate returns (Masson, 1995). Casanovas & Fernández (2001) is of the idea that treasury management is seen as “administration of the treasury circuit”, entailing chiefly the analysis, study and review of the three circuits indicated (payments, collections and cash holding).

However, taking basic treasury principles as their reference, these authors identify and determine more complex techniques, instruments and functions, which they also integrate into treasury management. They mention advanced cash management, which is considered to include the management of short term investments, short-term financing and bank relationships. Therefore, although they stress the essence of treasury management, they analyze and set out more advanced management techniques and tools, which are considered as characteristic of cash management. **Optimal balance here means a position when the cash balance amount is on the most ideal proportion so that the company has the ability to invest the excess cash for a return [profit] and at the same time have sufficient liquidity for future needs.**

**The objective is to minimize the sum of the fixed costs of transactions and the opportunity cost of holding cash balances**

*Insert figure 1 here*

Based on the diagram above, the optimal cash balance is at the point where opportunity cost and transaction cost are equal while the cost of holding the cash is at lowest possible point.

**The optimal level of cash is determined using the following formula:**

$$C^* = \sqrt{\frac{2FT}{i}}$$

Where:

F= the fixed cost of a transaction

T = the total cash needed for the time period involved

i = the interest rate on marketable securities

C\* = cash balance

**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 refers to as collection policy. It is also the guidelines that spell out how to decide which customers are sold on open account, the exact payment terms, the limits set on outstanding balances and how to deal with delinquent accounts.

Businesses, in an attempt to meet up with sales target and competition, adopt various business strategies to maintain good relationship with their customers. One of such strategies is the selling of goods to its customers or rendering services to its clients on credit as such management need to have viable credit policies to enhance the collectability of the credit sales to boost company’s liquidity and to reduce the risk of bad debt.

According to 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 involve 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 ongoing 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, 2002). 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 is not effective. Credit and collection policies encompass 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, 1992).

The credit policy of a company depends on the nature of its business. (Eugene, 1992), 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. However, even though optimal credit policy vary among firms or even for a single firm over time, it is still useful to analyze the effectiveness of the firm's credit policy in an overall aggregate sense.

One major factor that plays a vital role in the management of debt is the credit policy of the business organization. An effective credit policy should increase both liquidity and profitability and reduce the risk of bad debt. A loose credit policy will increase sales and profitability at the expense of liquidity and risk bad debt while a strict credit policy in the other hand will increase liquidity and reduce the risk of bad debt but also reduce sales and profitability. So, businesses should make credit policy at **optimum level** where **profitability** and **liquidity** will be equal. This can be shown graphically as below.

*Insert figure 2 here*

In developing the credit policy of a business, the management of need to be very careful not to be too strict to repel both existing and potential customers and not to be loose to hold bulk of working capital in account receivable that collectability is not feasible. Debtor collections period should be shorter than the date obligation to external parties will fall due.

### **Cash Conversion Cycle (CCC)**

Cash conversion cycle is another measure of corporate liquidity management (Moss & Stine, 1993). It measures the time lag between cash payments for purchase of inventories and collection of receivables from customers. The CCC is used as a comprehensive measure of working capital as it shows the time lag between expenditure for the purchase of raw materials and the collection of sales of finished goods (Padachi, 2006). The Day to day management of firm's short term assets and liabilities plays an important role in the success of the firm. Firms with glowing long term prospects and healthy bottom lines do not remain solvent without good liquidity management (Jose, et al., 1996). The cash conversion cycle is calculated thus:

CCC = Days of Sale Outstanding + No. Of Day in Inventories - Days of Payable Outstanding

In the formula above, the three variables to which CCC is dependent are defined as follows:

$$\text{Days of Sales Outstanding} = \frac{\text{Account Receivables}}{\text{Sales}/365}$$

$$\text{Days of Sales in Inventory} = \frac{\text{Inventories}}{\text{Cost of Sales}/365}$$

$$\text{Days of Payables Outstanding} = \frac{\text{Account Payable}}{\text{Cost of Goods Sold}/365}$$

Cash conversion cycle is likely to be negative as well as positive. A positive result indicates the number of days a company must borrow or tie up capital while awaiting payment from a customer. A negative result indicates the number of days a company has received cash from sales before it must pay its suppliers (Hutchison et al., 2007). Of course the ultimate goal is having low CCC, if possible negative. Because the shorter the CCC, the more efficient the company in managing its cash flow.

From the equation of CCC above, it is seen that a firm can reduce its need for working capital by (Bodie & Merton, 2000):

1. Reducing the amount of time that goods are held in inventory. This can be accomplished by improving the inventory control process or by having suppliers deliver raw materials exactly when they are needed in the production process.
2. Collecting accounts receivable more quickly. Among the methods available to speed up the collection process are improving the efficiency of the collection process, offering discounts to customers who pay faster, and charging interest on accounts that are overdue.

### **FACTORS THAT AFFECT LIQUIDITY REQUIREMENT OF A COMPANY**

The company must maintain adequate amount of liquidity to meet its daily obligations but liquidity in excess of what is adequately required by the firm to finance its operations may be counter-productive. The liquidity requirement of firms differs depending on the circumstances of the company. Pandy (2005) outlines the following as some of the factors that influence the liquidity requirement of a company.

#### **Nature and Size of Business**

The liquidity needs of a firm are basically influenced by the nature of its business. Trading and financial firms generally have a low investment in fixed assets, but require a large investment in working capital. Retail stores, for example, must carry large stocks of a variety of merchandise to satisfy the varied demand of their customers. Some manufacturing businesses like tobacco, and construction firms also have to invest substantially in working capital but only a nominal amount in fixed assets. In contrast, public utilities have a limited need for working capital and have to invest abundantly in fixed assets. Their working capital requirements are nominal because they have cash sales only and they supply services, not products. Thus, the amount of funds tied up with debtors or in stocks is either nil or very small. The working capital needs of most of the manufacturing concerns fall between the two extreme requirements of trading firms and public utilities.

#### **Manufacturing Cycle**

The manufacturing cycle starts with the purchase of raw materials and is completed with the production of finished goods. If the manufacturing cycle involves a longer period the need for working capital will be more, because an extended manufacturing time span means a larger tie-up of funds in inventories. Any delay at any stage of manufacturing process will result in accumulation of work-in-process and will enhance the requirement of working capital. Firms making heavy machinery or other such products, involving long manufacturing cycle, attempt to minimize their investment in inventories (and thereby in working capital) by seeking advance or periodic payments from customers.

#### **Business Fluctuations**

Seasonal and cyclical fluctuations in demand for a product affect the working capital requirement considerably, especially the temporary working capital requirements of the firm. An upward swing in the economy leads to increased sales, resulting in an increase in the firm's investment in inventory and receivables or book debts. On the other hand, a decline in the economy may register a fall in sales and, consequently, a fall in the levels of stocks and book debts. Seasonal fluctuations may also create production problems. Increase in production level may be expensive during peak period. A firm may follow a policy of steady production in all seasons and their quick disposal in peak season. Therefore, financial arrangement for seasonal working capital requirement should be made in advance. The financial plan should be flexible enough to take care of any seasonal fluctuation.

#### **Production Policy/ Just-in-Time**

If a firm follows steady production policy, even when the demand is seasonal, inventory will accumulate during off-season periods and there will be higher inventory costs and risks. If the costs and risks of maintaining a constant production schedule are high, the firm may adopt the policy of varying its production schedule in accordance with the changes in demand. Firms whose physical facilities can be utilized for manufacturing a variety of products can have the advantage of diversified activities. Such firms manufacture their main products during the season and other products during off-season. Thus, production policies may differ from firm to firm, depending upon the circumstances. Accordingly, the need for working capital will also vary.

#### **Turnover of Circulating Capital**

The speed with which the operating cycle completes its round (i.e., cash → raw materials → finished product → accounts receivables → cash) plays a decisive role in influencing the working capital needs.

### **Credit Terms**

The credit policy of the firm affects the size of working capital by influencing the level of book debts. Though the credit terms granted to customers to a great extent depend upon the norms and practices of the industry or trade to which the firm belongs; yet it may endeavor to shape its credit policy within such constraints. A long collection period will generally mean tying of larger funds in book debts. Slack collection procedures may even increase the chances of bad debts.

The working capital requirements of a firm are also affected by credit terms granted by its creditors. A firm enjoying liberal credit terms will need less working capital.

### **Growth and Expansion Activities**

As a company grows, logically, larger amount of working capital will be needed, though it is difficult to state any firm rules regarding the relationship between growth in the volume of a firm's business and its working capital needs. The fact to recognize is that the need for increased working capital funds may precede the growth in business activities, rather than following it. The shift in composition of working capital in a company may be observed with changes in economic circumstances and corporate practices. Growing industries require more working capital than those that are static. This could be measured using the percentage increase in total assets

### **Operating Efficiency**

Operating efficiency means optimum utilization of resources. The firm can minimize its need for working capital by efficiently controlling its operating costs. With increased operating efficiency the use of working capital is improved and pace of cash cycle is accelerated. Better utilization of resources improves profitability and helps in relieving the pressure on working capital. Operating efficiency can be measured using the Total asset to Sale ratios. This measures the percentage of investment in assets that is needed to generate the annual sales level. If the percentage is very high, it probably indicates that a business is not being aggressive in its sales efforts. This can be seen in the table below.

### **Price Level Changes**

Generally, rising price levels requires a higher investment in working capital. With increasing prices the same levels of current assets need enhanced investment. However, firms which can immediately revise prices of their product upwards may not face severe working capital problems in periods of rising levels. The effects of increasing price level may, however, be felt differently by different firms due to variation in individual prices. It is possible that some companies may not be affected by the rising prices, whereas others may be seriously affected by it.

An enterprise needs funds (liquidity) to operate profitably. The working capital of a business reflects the short-term uses of funds. Apart from the investment in the long-term assets such as buildings, plant and equipment, funds are also needed for meeting day to day operating expenses and for amounts held in current assets. Within the time span of one year there is a continuing cycle or turnover of these assets. Cash is used, to acquire stock, which on being sold results in an inflow of cash, either immediately or after a time lag in case the sales are on credit. The rate of turnover of current assets in relation to total sales of a given time period is of critical importance to the total funds employed in those assets.

The amount needed to be invested in current assets is affected by many factors and may fluctuate over a period of time. Manufacturing cycle, production policies, credit terms, growth and expansion needs, and inventory turnover are some of the important factors influencing the determination of working capital.

The management should ensure the adequacy and efficiency in the utilization of working capital in order to maintain a required level of liquidity needed to meet the firm's obligations as at when due. For this purpose various ratios can be periodically computed and compared against the norms established in this regard.

For efficient management of working capital, management of cash is as important as the management of other items of current assets like receivables and inventories. Too little cash may place the firm in an illiquid position, which may force the creditors and other claimants to stop transacting with the firm. Too much cash results in funds lying idle, thereby lowering the overall return on capital employed below the acceptable level. An adequate amount of cash is always needed for meeting any unforeseen contingencies and also liabilities as well as day-to-day operating expenses of the business.

## MEASURES OF CORPORATE LIQUIDITY MANAGEMENT

The liquidity of a company is measured with use of some financial ratios refers to as liquidity ratios. These group of ratios measures the ability of the firms to meet its current obligations (Liabilities). Analysis of liquidity needs the preparation of cash budgets and cashflow statement; but liquidity ratio, by establishing a relationship between cash and other current assets to current obligations, provided a quick measure of liquidity ( Pandy, 2005). The most common ratios, which indicate the extent of liquidity or lack of it, are:

### Debtors Collection Period (DCP)

DCP ratio is calculated by dividing Trade debtors by Turnover and multiply by 365:

$$DCP = \frac{\text{Average Trade Debtors}}{\text{Turnover}} \times 365 \text{ days}$$

This ratio show number of days it takes an organisation to recover it credit sales. The short the period the better for the organisation. Account receivables with longer recoverable period posses the risk of bad debt for the company and also affects liquidity in the short run.

### Creditor Payment Period (CPP)

CPP ratio is calculated by dividing Average Trade Creditors by Cost of Goods Sold and multiply the result by 365.

$$CPP = \frac{\text{Average Trade Creditors}}{\text{Cost of Goods Sold}} \times 365 \text{ days}$$

This ratio show the number of days the company is required to settle it short term obligations. The longer the period the better for the company as it gives the company leverage to recover it receivables. Where the period is shorter than the debtors collection period it exact pressure on the liquidity of the company

### Cash Flow Ratio

An important measure of the overall financial health of a company is the level of cash it generates through normal business operations. As a company operates, cash flows into the business as income and out as expenses. These activities, known as cash flows, are at the heart of all businesses and determine the ability of the company to generate profits and continue its operations (StockResearchPro, 2009)

The formula for the operating cash flow ratio can be written as:

Operating Cash Flow Ratio = Cash Flow from Operations / Current Liabilities

### Cash Conversion Cycle (CCC)

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## PROFITABILITY

Profitability is the ability to make profit from all the business activities of an anorganization, company, firm, or an enterprise. It measures management effeciency in the use of organisational 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. Profitability is the relationship of income to some balance sheet measure which indicates the relative ability to earn income on assets. Irrespective of the fact that profitability is an important aspect of business, it may be faced with

some weakness such window dressing of the financial transactions and the use of different accounting principles.

### MEASURES OF CORPORATE PROFITABILITY

A company should earn profit to survive and grow over a long period of time. Profits are essential, but all management decision should not be profit centered at the expense of the concerns for customers, employees, suppliers or social consequences. Profit is the difference between revenues and expenses over a period of time ( usually one year). Profit is the ultimate 'output' of a company, and it will have no future if it fails to make sufficient profits. The profitability ratios are calculated to measure the operating efficiency of the company. Some the profitability ratios include the following:

#### Return on Investment (ROI)

The term investment may refer to total assets or net assets. The funds employed in net assets is known as capital employed. Net assets equal net fixed assets plus current assets minus current liabilities excluding bank loan. The conventional approach of calculating return on investment is to divide profit after tax (PAT) by investment. Investment refers to pool of funds supplied by shareholders and lenders, while PAT represent residue income of shareholders. The formular of ROI is stated thus:

$$ROI = \frac{PAT}{TOTAL\ ASSETS}$$

#### Return on Equity (ROE)

Common or ordinary shareholders are entitled to the residue profits. The rate of dividend is not fixed; the earnings may be distributed to shareholders or retained in the business. Nevertheless, the net profit after tax represent thier return. A return on shareholder's equity is calculated to see the profitability of owners' investment. The sharehohlders' equity or net worth will include paid up share capital, share premium and reserves and surplus less accumulated losses. Net worth can also be found by subtracting total liabilities from the total assets. The ROI is net profiti after taxes divided by shareholders' equity which is given by net worth.

$$ROE = \frac{\text{Profit after taxes}}{\text{Net worth (Equity)}}$$

#### Return on Assets (ROA)

Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management's ability t earn a return on the firm's resources (assets). The income amount used in this computation is imcome before the deduction of interest expense, since interest is the return to creditors fo the resources that they provide t the firm. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is computed by dividing net income plus interest expense by the company's average investment in asset during the year.

$$ROA = \frac{NET\ INCOME\ AFTER\ TAX + INTEREST\ EXPENSE}{AVERAGE\ TOTAL\ ASSETS\ DURING\ THE\ YEAR}$$

### THEORIES OF LIQUIDITY

#### Trade off Theory Liquidity

Under perfect capital market assumptions holding cash neither creates nor destroys value. The firm can always raise funds from capital markets when funds are needed, there are no transaction costs in raising these funds, and the funds can always be raised at a fair price because the capital markets are assumed to be fully informed about the prospects of the firm.

The trade-off theory suggests that firms target an optimal level of liquidity to balance the benefit and cost of holding cash. The cost of holding cash includes low rate of return of these assets because of liquidity premium and possibly tax disadvantage. The benefit of holding cash are in two fold:

1. The firms save transaction costs to raise funds and does not need to liquidate assets to make payments.
2. The firm can use liquid assets to finance its activities and investment if other source of funding are not available or are extremely expensive.

Jensen (1986) presents agency problem associated with free-cash flow. He suggests that –free cash flow problem can be somehow controlled by increasing the stake of managers in the business or by increasing debt in the capital structure, thereby reducing the amount of “free” cash available to managers.

As theory, the use of trade off model cannot be ignored, as it explains that, firms with high leverage attracts high cost of servicing the debt thereby affecting its profitability and it becomes difficult for them to raise funds through other sources. Holding cash on that point is not only maintained by the smaller firm but also larger firms. So firm size does not matter when the question of bankruptcy interrupt the capital structure decision

### **Pecking Order Theory Liquidity**

The theory emerges as a result of asymmetric information existing in the financial markets, that is, corporate managers often have better information about the health of their companies than outside investors. Apart from the transaction costs of issuing new securities, companies have to accept the information costs arising from asymmetric information. In this way, new securities issued on the financial market could be infra-valued because of informational asymmetries, and this is especially true in the case of new equities.

Myers & Majluf (1984) introduced very influential pecking order theory saying; manager prefers to finance deficit of capital by issuing SAFE security. The theory states that, in the event where retained earnings and other internal source of financing will be low to invest then manager will issue debt and only issue new equity with possibility of issuing junk debt (Financial distress possibility). An important survey of Myers (2003) documented the following findings on the pecking order theory of corporate financing:

1. Firms prefer to use internal source of fund as their first choice.
2. Dividend payout ratio has separate determinants. A change in dividend payout ratio does not facilitate capital expenditure.
3. In the question of external financing, debt issuance is more preferable by the firm than issuance of equity.
4. The firm’s debt ratio shows their requirement of external financing.

A determinant of cash holding from the perspective of pecking order theory has been supported by other researchers more than trade off theory. Sebastian (2010) Examine Dutch firm’s liquidity and solvency and their effect on financial decision. He discover that, corporate liquidity and solvency interact through information, hedging, and leverage channels. The information and hedging channels increase equity-value of firms which helps to pay regular dividend and most importantly reduce volatility in cash flow.

Frank & Goyal (2002) Studied US firms (1971-1998) and came up with evidence that bigger firms are more organized to take decision followed by this theory. Smaller firms were not following this theory and being traded publicly during that time which also supports trade-off theory. As the smaller firms moved away from pecking order theory so, overall average moves further from the pecking order.

Soku (2008) tested US firms (1971-2006) and found different security issues pattern by small, medium and large industry. While testing financial flexibility and capital structure of the firms the author observed that, large mature firms prefer using internal funds and safe debt in order to recharge financial flexibility rather than issuing equity. In case of small firms though they have low leverage, in order to cope with lack of cash at hand, they prefer to issue equity and increase cash holdings. However he ends up with Financial flexibility hypothesis which refers firms hold cash and expect future cash flow, and that characterize their future investment plan and current ability to sort out financial constraints.

Salehi & Bigler (2009) studied performance of Firms at Iran and find it relationship with capital structure. They found that, book value and market value of equity both are measure are often used to determining expected cash flow. For Iranian firms, market value of equity was given more emphasis while considering responsible variable to hold cash. Firms with high profitability and good performance hold less debt. Two important decision has been taken here-MV of equity is an important measurement to see how much cash is at firms hand and good firm may have less debt, though they may have high profitability. So these firms also carry high possible cost offinancial distress. All three major variables also play an important role behind firms; cash holding decision which is another face of capitals structure.

## THEORIES OF PROFITABILITY

Theories are analytical tools for understanding, explaining, and making predictions about a given subject matter. There are various theories with regard to Liquidity management and profitability:

### Clark Theory of Profitability

Clark begins his theory with an analysis of a profit-less economy and taking into account its key features. The profit less economy is compared with a profit-generating economies and significant differences were identified to indicate the causes of profit. This method was adopted by Schumpeter and Knight. The profit-less economy is referred to as 'static state', in which all factors are constant and not subject to change, the market is assumed to be perfect; hence the absence of monopoly and entrepreneurial efforts are rewarded according to management wage levels. There is perfect mobility and flow of all economic units in a frictionless environment; in short all impediments to perfect competition are dissolved.

"The society acts and lives, but does so in a changeless manner" (Siddiqi, 1971). Any change in these factors will produce a tremor in the system but the economy will adjust and settle at new equilibriums. So changes in population and capital will result in corresponding fluctuations in wages and interest rates, the economy will absorb these changes and then settle back to a static state. Similarly, changes in techniques of production will affect output and prices; adoption of the same techniques by other producers will cause a shift in the equilibrium, but once these become ubiquitous the equilibrium will resume. The ability of the economy to endure such changes is due to the competitive equilibrium dynamics of the free market. Competition, remarks Knight, has the "tendency to eliminate profit or loss and bring the value of economic goods to equality with their cost" (Knight, 1921). Real economies as noted by Clark will, however, not buffer such changes instantaneously as there will necessarily be a time lag. It is into this frictional delay that the entrepreneur seeks to enter and make his profit before equilibrium returns and consumes his profit. Profit is hence a transitional phenomenon: "untransformed increments of wages and interest" (Siddiqi, 1971), its temporary nature demands from the entrepreneur a dynamic endeavour to seek out or generate opportunities on which he can capitalize. This process is summed up in Clark's statement that "dynamic forces, then, account today for the existence of an income that static forces will begin to dispose of tomorrow" . ( Siddiqi, 1971). Economies are, however, in constant change, the five variables mentioned by Clark are never static; population and capital are in constant growth, innovation in production and management of resources are continually researched and consumer demands are subject to ever-changing fashions and trends. The entrepreneur thus finds permanence for as long as he can keep ahead of the changes, react before competitors and organize his efforts with sound knowledge of the market. Clark's analysis determines that the essential cause of profit is change. These changes yield a surplus in the market prior to equilibrium and they are the sought-after profits of the entrepreneur.

### Schumpeter Theory of Profitability

Following on the method of Clark, Schumpeter developed the 'circular flow model' in which a profit-less economy is described where perfect competition extinguishes surpluses of monopoly and friction. The analyses of the 'circular flow' economy differ in detail from the 'static state' model of Clark. So departures between an ideally competitive environment and actual economies yield the causes of profit. Schumpeter, however, is far more selective in his approach than Clark. Schumpeter identifies the single notion of innovation as paramount, so that changes based upon innovation are the cause of profit. Gradual changes in population and capital would easily be anticipated by the market and hence present no opportunity for the entrepreneur. Schumpeter goes on to describe five areas in which innovation will lead to profit generation (Siddiqi, 1971):

- (i) Innovations in commodities, either by introducing new products or improving old ones;
- (ii) Innovations in production techniques;
- (iii) Finding new and fertile markets;
- (iv) Locating new resources and raw materials;
- (v) Changes in industrial organization.

The entrepreneur is for Schumpeter an innovator, who by virtue of his innovation is able to break from the competition, acquire a transitory monopoly in which he can accrue profits until his competitors catch up, but, before they do so, he is able to move on to further innovation in new fields. Schumpeter did not

see the entrepreneur's reward as a surplus value but rather as a functional reward linked to his innovative ability (Siddiqi, 1971). The impact of innovation was huge, leading to gales of creative destruction as innovations caused old inventories, ideas, technologies, skills, and equipment to become obsolete. Schumpeter saw the model of perfect competition in which different companies sold similar goods at similar prices produced through similar techniques as immaterial to progress

### **NEED/IMPORTANCE OF THE STUDY**

Lazaridis & Tryfonidi (2006), Reheman & Nasr (2007) and Amarjit, Nahum & Neil (2010) have tested data from Athens stock exchange, Pakistani Firms and American manufacturing firms respectively. This research extends these studies using data on some selected manufacturing companies listed in the Nigerian Stock exchange. This research work contributes to the literature on the relationship between liquidity management and corporate profitability and also focuses on Nigerian firms where only limited research has been conducted on such firms recently.

### **STATEMENT OF THE PROBLEM**

Business financing, especially at the wake of the global financial crisis, has become a major source of concern for business managers as bank loans are becoming too expensive to maintain as a result of tightening of both the local and international financial market and the reluctance of the public to invest in the share of companies sequel to the crash of the capital market. These situations compel business managers to devise various strategies of managing internally generated revenue to enhance their chances of making profit and meeting existing shareholders expectations.

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 there 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 usally neglected in times of favourable business conditions (Pass & Pike 1984). The problems to be addressed by this study is to evaluate the relationship between liquidity management and profitability of some selected manufacturing companies listed in the Nigeria Stock Exchange and probably to determine the optimum level of company's liquidity requirement.

### **OBJECTIVES**

The general objective of the study is to examine the nature of the relationship between liquidity management and corporate profitability of manufacturing companies in Nigeria. This was achieved through the following specific objectives:

1. To determine the extend to which credit policy can affect profitability management in manufacturing companies in Nigeria.
2. To establish the relationship, if any, between cash conversion cycle and corporate profitability.
3. Where there is a relationship, to determine the nature of the relationships between liquidity management and corporate profitability

### **HYPOTHESES**

For the purpose of this research work the following hypothesis is proposed:

Hypothesis 1

H<sub>0</sub>: Credit policy is not significantly related to profitability manufacturing companies in Nigeria.

Hypothesis 2

H<sub>0</sub>: Cashflow management has no significant effect on profitability of manufacturing companies in Nigeria.

Hypothesis 3

H<sub>0</sub>: Cash Conversion Cycle has no significant effect on profitability of manufacturing companies in Nigeria.

## RESEARCH METHEDODOLOGY

In this chapter, the procedure for the selection of sample companies from which generalization was made is discussed. The method of collection and the models used to analyzing data are also presented in this chapter.

A sample of 12 manufacturing companies quoted on the Nigerian Stock Exchange was selected and used to determine the relationship between liquidity management and corporate profitability. The choice of the companies selected for the research was based on availability of information. The study used secondary data extracted from the published financial statement of the selected companies for the period of five years(2005-2009). The liquidity management of a company could be measured in term of it Debtors Collection Period (DCP), Creditors Payment Period (CPP) and Cash Conversion Cycle (CCC). Profitability in the other hand could be measured using the Return on Investment Ratio (ROI), Return on Equity (ROE) and Return on Asset (ROA). Return on Asset, Return on equity and Return on investment are part of the group of ratios called the profitability and efficiency ratio. This class of ratios judge the relative profitability and efficiency of utilization of resources of a business (Damilola, 2007).

## RESULTS AND DISCUSSION

*Insert table 1 here*

The combined descriptive statistics for all the company show a fair liquidity management. The average debtor's collection period of the companies (251 days) is shorter than the average creditor's payment period (318 days). The companies could also settle 211 % of there current liability from the their operating activities. The companies have an average time lag of 673 to turn their investment in raw material to cash. This period seems too long and could have a negative effect on liquidity. On the average the companies Return on Asset is 86%, Return on Equity averaged at 154% while Return on Investment is 73%. This is fair as it represents the industry performance in the period under review.

*Insert table 2 here*

The anaysis also shows that most of the companies selected for this analysis reported good levels of profitability in terms of their return on assets (ROA), return on equity (ROE) and return on investment (ROI).

From the descriptive analysis above, it can be deduce that there exist relationship between ROA, ROE and ROI and the company's DCP, CPP, OCR and CCC . This means that it is possible to drive some causative relationships between them.

## FINDINGS

The results from the analysis of the audited financial statement as presented above is from the sampled twelve manufacturing companies to establish the relationship between the liquidity management in the selected companies and their profitability. Descriptive analysis using the mean and standard deviation was used to determine the extent of liquidity management in the selected companies in terms of their credit policy, which measure by the difference between the number of days it takes the company to recover it account receivables and the number of days under which the company is expected to settle it creditor, their cash flow management, measured by the extend to which the company's cash flow from operating activities can settle it current liabilities and the their cash conversion cycle which measures the time lag between investment in raw material and it converted to cash. The descriptive statistic was also used to determine the level of the profitability in the manufacturing companies listed on the floor of the Nigerian Stock Exchange. Observing the selected companies individually it can seen that except for

companies J, K, and L all the other companies show a good level of liquidity management in terms of the parameters mention which in turn have a positive effect on the profitability of the companies.

### **RECOMMENDATION/SUGGESTIONS**

Profitability is a major factor in the going concern of a business. Managers should strive to achieve a reasonable level of profitability in order to maximize their shareholders wealth. The operating activities of manufacturing companies listed on the floor of the Nigeria Stock Exchange should be such that it could finance a larger percentage of their current liability from its operation. Of all the 12 companies selected for this study only 5 can settle above 50% of the current liability from their operations. The operating cash flow ratio can be used to compare companies across a sector, and to look at changes over time. Generally, a higher ratio is preferred, but as with all liquidity ratios, sector norms and the peculiarities of each business need to be taken into account. The power of cash flow analysis is enhanced by comparing ratio results to industry averages or to at least a select group of comparable organizations. Useful insights can also be developed by reviewing year-to-year trends in the ratios of an organization over time.

Cash conversion cycle measures the time lag it takes company's investment in raw material to be realised. Management should strive to maintain a very low CCC. From the selected companies used for this analysis almost all have a CCC above 50 days. A longer CCC may have negative effect on the liquidity of the companies because cash will be tied in raw material, inventory or account receivable. Managers can create value for their shareholders by reducing the number of days of accounts receivable and inventories to a reasonable minimum. Further more, companies are capable of gaining sustainable competitive advantage by means of effective and efficient utilisation of the resources of the organisation through a careful reduction of the cash conversion cycle to its minimum. In doing so, the profitability of the firm is expected to increase. Therefore, managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables and inventory) to an optimum level.

An effective management of the component of current assets, especially the account receivable and inventory, is also recommended as it will have a positive effect on the liquidity of manufacturing companies in Nigeria.

### **CONCLUSION**

Effective cash optimisation is critical to all organisations, especially in a tough economy. Cash is the lifeblood of organisations. An organisation having a proper set of liquidity management policies and procedures will improve profits, reduce the risk of corporate failure and significantly improve its chances of survival. It also provides a strategic advantage especially in difficult economic times. Effective liquidity management will enable an organisation to derive maximum benefits at minimal cost. (KPMG, 2005)

As early stated, the survival of a business entity depend extensively on its ability to meet its current obligations as they fall due. This study has shown relevance degree of relationship between liquidity management and profitability in the selected manufacturing companies listed on the floor of the Nigerian Stock Exchange. The finding is consistent with the findings of Owolabi, Obiakor and Okwu (2011) investigating liquidity and profitability relationship in business organisation using some selected quoted companies in Nigeria and they concluded that a positive relationship exists between the two variables in processing and manufacturing companies respectively. The finding is also similar to that of Vijaykumar (2011) study the management of corporate liquidity and profitability in Indian auto mobile companies and conclude that Indian auto mobile has been able to achieve high scores on the various component of liquidity management which has a positive impact on its profitability. Managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each different component (accounts receivables, accounts payables and inventory) to an optimum level. Amalendu and Sri (2001) also carried out a similar research on the importance of liquidity management on profitability in steel companies in India using Return on Capital Employment (ROCE) as a measure of profitability and Current Ratio (CR), Liquid Ratio (LR), Absolute Liquid Ratio (ALR), Debt Equity Ratio (DER), Age of Inventory (AOI), Age of Debtors (AOD) and Age of Creditors (AOC) as measures of liquidity and conclude that there is positive relationship between CR, ALR, AOI and AOD and ROCE.

### SCOPE FOR FURTHER RESEARCH

The correlation of liquidity management and profitability is extensive. Thus, it is impossible to exhaustively study the subject in a single report. Consequently, even after this effort, there are still numerous areas that are open for study. In addition, the findings of this study imply areas that need further study.

The scope of this study covers the operations of only 12 manufacturing companies listed in the floor of the Nigerian Stock Exchange for the period of five years. Giving enough time and resources it is possible to attempt to study the entire listed manufacturing companies in Nigeria over a long period of time and using different statistical methods in order to have a more comprehensive result.

The analyses and findings this study show that there are other factors than the independent variables used for this study that affect corporate profitability. Research could be conducted to identify those other factors so as to enhance the profit generating capabilities of the companies.

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**Table. 1: Descriptive statistics of all the selected companies**

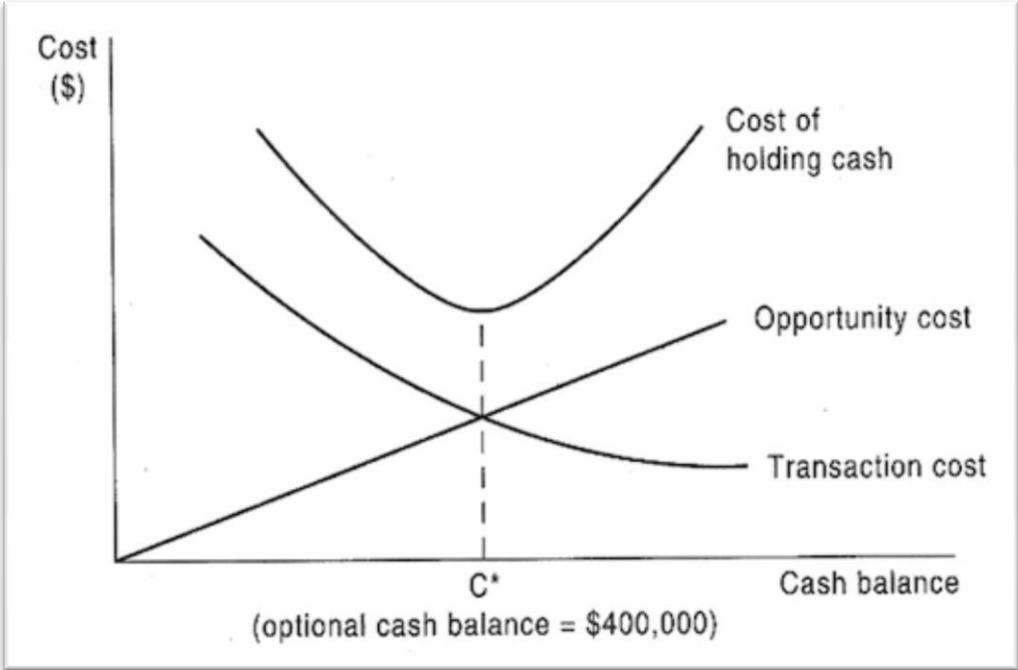
	Count	Mean	Median	Standard Deviation	Standard Error of Mean
Debtor Collection Period	12	250.855000	158.000000	279.551299	80.699509
Creditor Payment Period	12	318.916667	336.000000	124.654766	35.984731
Cash Conversion Cycle	12	673.333333	324.000000	999.813104	288.621182
Operating Cash Flow Ratio	12	2.111625	1.970000	1.885036	.544163
Return on Assets	12	.863117	.773700	.506965	.146348
Return on Equity	12	1.539383	1.175000	1.399545	.404014
Return on Investment	12	.733333	.785000	.517131	.149283

Source- Descriptive statistics result, 2012

**Table. 2: Summary of Companies Liquidity Management and Profitability**

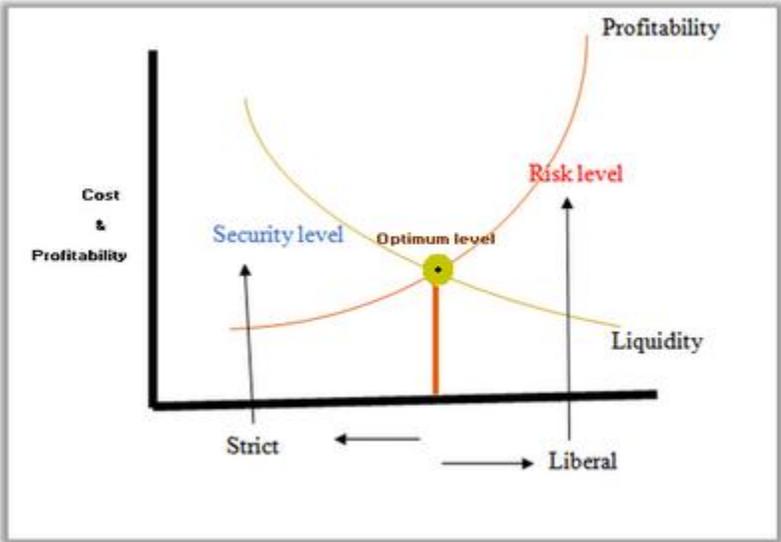
COMPANIES	DCP	DPP	CCC	OCR
A	35 DAYS	76 DAYS	53 DAYS	43%
B	32 Days	70 Days	20 Days	10%
C	31 Days	98 Days	89 Days	68%
D	11 Days	72 Days	66 Days	69%
E	48 Days	53 Days	133 Days	22%
F	16 Days	32 Days	57 Days	78%
G	15 Days	69 Days	52 Days	113%
H	31 Days	31 Days	144 Days	36%
I	24 Days	58 Days	64 Days	10%
J	51 Days	31 Days	64 Days	64%
K	95 Days	65 Days	116 Days	22 %
L	213 Days	109 Days	759 Days	-26 Days

Figure 1 Optimal Cash Balance



Source: AFT(2009), Using-Cash-Models-to-Determine-the-Optimal-Cash-Balance.

Figure 2 Profitability and Liquidity Equilibrium



Source: AFT(2009), Using-Cash-Models-to-Determine-the-Optimal-Cash-Balance.