

A Disaggregated and Comparative Analysis of Working Capital on the Performance of Manufacturing Firms in Nigeria (A Study of Nestle and Cadbury Nigeria PLC)

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Abstract

The study empirically examined working capital on profitability of manufacturing firms in Nigeria. The objective of the study was to examine the effect of working capital components on the performance of manufacturing firms. Desk survey method was used in gathering relevant information. Data were extracted from Annual Report and Account of various years using Nestle and Cadbury Nigeria Plc. Multiple regression of ordinary least square (OLS) model was used to establish the relationship between independent and dependent variables using ROE as proxy. The findings in equation one revealed that account receivable, inventories, account payable and cash had negative effect on Return on Equity in Nestle Nigeria Plc. Equation two showed that, account receivables, inventories and cash had negative relationship on Return on Equity in Cadbury Nigeria Plc. The study recommended that management of Nestle and Cadbury Nigeria Plc should be more efficient in management of working capital and proper management of each working capital components should be kept at optimal levels.

Keywords: Account Payable, Account Receivable, Cash, Inventory, Return on Equity

Introduction

According to Umara, Sabeen and Qaisar, (2009), working capital is what makes business to run effectively and efficiently. Business organizations need to give proper attention to the management of their working capital. It is believed that financial decisions of short term assets and liabilities management also influence the stock price. These decisions are vital because they demonstrate the financial ability of the firm and the market which develops perception about the firm accordingly (Afza & Nazir, 2008). An efficient working capital management might affect the business in an appealing way and might cause a financial distress. Working capital management involves planning and controlling current assets and current liabilities in a manner that eliminates risk of inability to meet due short term obligations on the one hand and avoid excessive investment in these assets on the other hand (Eljelly, 2004). Lamberson (1995) argues that working capital management has become one of the most important issues in organizations, where many financial managers find it difficult to identify the important drivers of working capital and the optimum level of working capital. As a result, companies can minimize risk and improve their overall performance if they can understand the role and determinants of working capital (Singh & Asress, 2011). The relationship between current assets and current liability items is called working capital of the organization. According to Enyi (2011), the going concern ability of an organization is greatly anchored on the continued solvency of that organization. Working capital management is important for creating wealth for shareholders (Amarjit, Nahum and Mathor, 2010). An ideal business needs sufficient resources to keep its going and ensures that such resources are maximally utilized to enhance its profitability and overall performance. It has however been discovered that some methods that managers use in practice to make working capital decisions do not rely on the principles of finance, rather they use poorly constructed models. This, however, makes the managers not to effectively manage the various mix of working capital component which is available to them, and as such, the organization may either be overcapitalized or undercapitalized or worst still, liquidate. A lot of business failure in the past has been blamed on the inability of the financial manager to plan and control the working capital of their respective firms. Those reported inadequacies among financial managers are still in practiced today in many organizations in the form of high bad debts, high inventory costs, unstable exchange rate, high impact costs, fierce competition, security difficulties, poor infrastructure which adversely affect their operating performance. All these constitute the problem of the investment hence, the need to study the effects of working capital management on the profitability of manufacturing firms in Nigeria. The specific objectives are: to examine the effects of working capital components on the performance of Manufacturing firms and ascertain the impact of working capital components on the performance of Manufacturing firms.

Literature review

Resource dependence theory was postulated by Pfeffer and Salanick in 1978. The theory states that when working capital is well managed, then it will be expected that businesses will invest in working capital, finance

working capital, monitor factors that influence working capital, manage cash, accounts receivable, inventory, accounts payable, cash conversion cycle and analyse performance to ensure that assets are utilized effectively and efficiently. This theory postulated that, managers are quite dependent on shareholders because managerial compensation is frequently tied to stock price and investors have a great deal of discretion over where they invest their capital. This theory posits that the firm has dependency on shareholders and it also boost their perceived power.

The concept of working capital is so important to the operation of a business especially businesses in manufacturing sector to the extent that its absence or inadequacy can hamper the growth and survival of such business. In any business, not only in manufacturing firms, cash is required for day to day running of business. For instance, in manufacturing firms, cash is needed to make purchase of raw materials that will be used in production. Some companies make credit sales to boost their profit and also to maintain good relationship with their customers, where there are credit sales, there would be receivables. In some instances, firms may not have adequate cash to make purchase of raw materials. In such situations, firms may purchase their raw materials on credit from their suppliers. Also, firms may take bank overdraft to meet this obligation or other financial obligations in order to keep the company running (Alshubiri, 2011). According to Umara (2009), Sabeen (2009) and Qaiser (2009), it could be inferred that working capital is what is needed for a business to run smoothly its operations. For this reason, it should not be only seen as a financial item in the balance sheet but also as an operational item. The working capital requirement of any manufacturing firm should commensurate with the volume of its operation. In other words, the amount of working capital required in a business should be determined by the volume of its operations. For a business to maximize its profit; its working capital should be a right proportion of its operation; it should just be moderately adequate (Deloof, 2003). According to Gitman (2009), an efficient manager has to ensure the optimum utilization of working capital. Thus, he has to plan his working capital requirements in advance in order to ensure a proper financing mix. A firm has to plan its operations in such a way that it does not become handicapped for lack of necessary working capital nor can it allow too much working capital to circulate.

Working capital components (disaggregated)

Working Capital Management can be narrowed to four important components namely, cash, inventory, Accounts payable and Accounts receivable.

Cash

The purpose of cash management is to determine the optimal level of cash needed for operation and invested in marketable securities, which are suitable for the nature of business operation cycle (Gitman, 2009). The challenge of cash management is to balance the appropriate level of cash and marketable securities that reduce the risk of insufficient fund for operation and opportunity cost of holding excessively high level of these resources. Thus, a company's competency to synchronize cash inflow with cash outflow, by using cash budgeting and forecasting in formulating a cash management strategy is important.

Inventory

Inventory plays an important role to determine the activities in producing, marketing, and purchasing. Since inventory determines the activities in a company, managing it strategically contributes to profitability (Hill and Sartoris, 1992). Supplier selection process and inventory management are reciprocal to enable companies deal with uncertainties of consumer demand. Furthermore, a company's ability to respond to demand is largely dependent on how efficient it manages inventories and how committed its suppliers are to support a company's production lines

Accounts payable

Accounts payable are one of the major sources of unsecured short-term financing (Gitman, 2009; Hill and Sartoris, 1992). Utilizing the value of relationship with payee is a sound objective that should be highlighted as important as having optimal level of inventories. As a consequence, strong alliance between company and its suppliers will strategically improve production lines and strengthen credit record for future expansion.

Accounts receivable

Profits may only be called real profit after the receivables are turned into cash. The management of accounts receivable is largely influenced by the credit policy and collection procedure. A credit policy specifies requirements to value the worthiness of customers and a collection procedure provides guidelines to collect unpaid invoices that will reduce delays in outstanding receivables (Hill and Sartoris, 1992; Richards and Lauglin, 1980). Aligning the receivable management between cash, inventory and payable management is relatively challenging and important, and a stimulus to researcher's studies to integrate the WCM components (Enyi, 2011).

Empirical literature

Many researchers have studied working capital from different perspectives and environments. The following were very interesting and useful for our research: Shin and Soenen (1998) using a sample of 58,985 firm years

covering the period 1975 – 1994, highlighted that efficient working capital management (WCM) was very important for creating value for the shareholders. The way working capital was managed had a significant impact on both profitability and liquidity. The relationship between the length and Net Trading Cycles, corporate profitability and risk adjusted stock return was examined using correlation and regression analysis by industry and capital intensity. They found a strong negative relationship between lengths of the firm's net trading cycle and its profitability. In addition, shorter net trade cycles were associated with higher risk adjusted stock returns. In an effort to investigate the predictive power of working capital management on profitability of listed companies in Nigeria, Egbide (2009) in a cross sectional survey design, used a 50 firm-year observations extracted from the annual reports and accounts of 25 non-financial quoted companies to carry out his work. The period covered 2005-2006. The Ordinary Least Square Regression analysis was employed in the analyses of the data guided by a sample of multiple regression model. From the results obtained, it was found that the combined predictable power of working capital components on profitability is significant. The result also revealed that all the working capital components, namely: Inventory Conversion Period (ICP), Debtor's Collection Period (DCP) and Creditor's Payment Period (CPP) affect profitability, albeit only DCP has a significant effect, thus demonstrating the importance of the different components of working capital in profit determination. On the basis of these findings it was recommended among others that, managers and indeed organizations should concentrate in the proper management of each working capital components and keep at optimal levels, as this will go a long way to enhance profitability and create value for their companies. Deloof (2003) discussed that most firms had a large amount of cash invested in working capital. Using correlation and regression tests, he found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgium firms. It can therefore be expected that the way in which working capital is managed will have a significant impact on profitability of these firms. On the basis of these results, he suggested that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills. Smith and Begemann (1997) emphasized that those who promoted working capital theory shared that profitability and liquidity comprised the salient goals of working capital management. The problem arose because the maximization of the firm's returns could seriously threaten its liquidity, and the pursuit of liquidity had a tendency to dilute returns. This article evaluated the association between traditional and alternative working capital measures and Returns on Investment (ROI), specially in industrial firms listed on the Johannesburg Stock Exchange (JSE). The problem under investigation was to establish whether the more recently developed alternative working capital concepts showed improved association with return on investment to that of traditional working capital ratios or not. Results indicated that there were no significant differences amongst the years with respect to the independent variables. The results of their stepwise regression corroborated that total current liabilities divided by funds flow accounted for most of the variability in Return on Investment (ROI). The statistical test results showed that a traditional working capital leverage ratio, current liabilities divided by funds flow, displayed the greatest association with return on investment. Well known liquidity concepts such as the current and quick ratios registered insignificant associations whilst only one of the newer working capital concepts, the comprehensive liquidity index, indicated significant associations with return on investment. . On a study designed to appraise the relationship between working capital and liquidity position of companies in Nigeria, Etim (2008) adopted the descriptive and explanatory approach to explain the trend of relevant key accounting ratios from the selected companies for the period 2002 – 2006. Coefficient of correlation was the statistical inference used to establish the nature of the relationship between capital and liquidity. The study revealed that there was a linear relationship between working capital and liquidity level. Notwithstanding the position of the correlation of the two variables, almost all the companies under study suffered from inadequacy of liquid assets to meet their short-term financial obligations.

Research methodology

Secondary source of data was collated from the annual reports and statement of accounts of the various companies. Secondary source consists of already existing data used for some other work but were found to be useful in the study. Data were gotten from annual reports and statement of accounts of the various companies, relevant journal and textbooks. To achieve this, the study adopted standard form of the multiple regression which is represented thus;

$$Y = a + b_1X + b_2X + b_3X + b_4X + U$$
$$ROE = f(AR, IV, AP, CA)$$

Where; ‘

$$ROE = \text{Return on Equity}$$
$$AR = \text{Accounts Receivable}$$
$$IV = \text{Inventories}$$

$$\begin{aligned} \text{AP} &= \text{Accounts Payable} \\ \text{CA} &= \text{Cash} \\ \text{ROE} &= \alpha_0 + \alpha_1 \text{AR} + \alpha_2 \text{IV} + \alpha_3 \text{AP} + \alpha_4 \text{CA} + e \end{aligned}$$

Data presentation

The presentation of data on working capital management and profitability of manufacturing firms in Nigeria between 2000 and 2014.

TABLE 1
 (Empirical data of Nestle Nigeria Plc showing the relationship between working capital components and Return on Equity)

YEARS	Return on Equity	Inventory	Account Receivable	Account Payable	Cash
2000	5,727,308	10,221,310	13,323,344	12,285,002	9,966,177
2001	5,728,149	10,221,175	13,322,704	12,284,833	9,967,550
2002	5,378,298	10,221,414	13,323,984	12,285,171	9,964,804
2003	5,842,901	10,220,906	13,321,424	12,284,495	9,970,297
2004	5,326,378	10,221,982	13,326,545	12,285,846	9,959,311
2005	5,432,721	10,219,830	13,316,303	12,283,144	9,981,282
2006	6,325,198	10,224,135	13,336,786	12,288,549	9,937,339
2007	6,329,107	10,215,525	13,295,820	12,277,738	10,025,226
2008	6,739,208	10,232,745	13,377,752	12,299,359	9,849,454
2009	6,470,828	10,198,304	13,213,888	12,256,118	10,201,001
2010	6,742,832	10,267,186	13,541,616	12,342,600	9,497,901
2011	6,701,235	10,129,422	12,886,160	12,169,635	10,904,102
2012	7,702,984	10,404,951	14,197,073	12,515,566	8,091,701
2013	7,556,298	9,853,893	11,575,247	11,823,705	13,716,503
2014	7,618,694	10,956,010	16,818,900	13,207,427	2,466,899

Source: Nestle Nigeria Plc Annual Report and Accounts (Various years).

TABLE 2
 (Empirical data of Cadbury Nigeria Plc showing the relationship between working capital components and Return on Equity)

YEARS	Return on Equity	Inventory	Account Receivable	Account Payable	Cash
2000	2,750,380	2,051,432	3,912,737	4,708,561	13,060,567
2001	2,579,410	2,051,369	3,912,746	4,708,625	13,062,284
2002	2,502,398	2,051,494	3,912,728	4,708,487	13,058,850
2003	2,708,305	2,051,244	3,912,764	4,708,752	13,065,717
2004	2,817,329	2,051,844	3,912,692	4,708,243	13,051,983
2005	2,844,738	2,050,744	3,912,836	4,709,261	13,079,452
2006	2,187,008	2,052,745	3,912,548	4,707,225	13,024,514
2007	2,195,184	2,048,743	3,913,124	4,711,297	13,134,390
2008	2,198,178	2,056,747	3,911,972	4,703,152	12,914,639
2009	2,100,153	2,040,739	3,914,275	4,719,443	13,354,140
2010	2,280,720	2,072,756	3,909,669	4,686,861	12,475,137
2011	2,370,209	2,008,722	3,918,882	4,752,026	14,233,144
2012	2,420,703	2,136,790	3,900,457	4,621,696	10,717,131
2013	2,510,205	1,880,654	3,937,307	4,882,356	17,749,157
2014	1,310,591	2,392,926	3,863,607	4,361,036	3,685,105

Source: Cadbury Nigeria Plc Annual Report and Accounts (Various years).

Data analysis

The regression results of working capital management on profitability of manufacturing firms in Nigeria.

TABLE 1 (Regression Results)

Analysis of data on the relationship between AR, IV, AP, CA and ROE on Nestle Nigeria Plc.

Dependent variable: ROE

Variable	Coefficient	Std. error	t-stat	Prob
C	-5328.566	2005.411	-2.657090	0.0240
AR	-105.5645	38.81125	-2.719945	0.0216
IV	549.8494	312.4925	1.759560	0.1090
AP	-113.7871	248.4002	-0.458080	0.6567
CA	3.652165	1.566911	2.330805	0.0420

$R^2 = 0.576543$ $R^2(\text{adj}) = 0.407160$ SER = 0.096956 DW = 0.602061

F – Stat = 3.403783

This shows that the model fits the data well and has a tight fit. The goodness of fit of the model as indicated by the adjusted R-squared shows a good fit of the model that the model fit the data well. Then a prior expectation about the signs of the parameter estimates are confirmation to economic theory.

TABLE 2 (Regression Results)

Analysis of data on the relationship between AR, IV, AP, CA and ROE on Cadbury Nigeria Plc.

Dependent variable: ROE

Variable	Coefficient	Std. error	t-stat	Prob
C	-774909.6	522822.8	-1.482165	0.1691
AR	52708.46	35464.82	1.486218	0.1681
IV	0.001545	0.001061	1.456207	0.1760
AP	-1848261	1263.037	-1.463346	0.1741
CA	3.148849	3.277384	0.960781	0.3593

$R^2 = 0.780145$ $R^2(\text{adj}) = 0.692204$ SER = 0.104951 DW = 1.182977

F- Stat = 8.871150

The coefficient of multiple determinations (R^2) is 0.780145 and an adjusted R^2 of 0.692204. The later indicates that 69 percent of variations in the observed behaviour of ROE are jointly explained by the independent variables: AR, IV, AP, CA. This shows that, the model fits the data well and has a tight fit. Also, the F-statistic is used to test for the significant of such good or tight fit. The model reports on effectively high F-statistic value of 8.87 when compared with the table value. Using this criterion, AR, IV, AP and CA are statistically insignificant. The goodness of fit of the model as indicated by the adjusted R-squared shows a good fit of the model that the model fits the data well. For the overall significant of the model, the ANOVA on the f-statistic is used. Hence, the model did not occur by chance, it actually confirms that, the model fits the data well. Then a prior expectation about the signs of the parameter estimates are confirmation to economic theory.

Summary of findings

The major findings of the study include:

1. There is a significant relationship between Account Receivables and Return on Equity (ROE) in Nestle Nigeria Plc.
2. There is a significant relationship between Inventories and Return on Equity (ROE) in Nestle Nigeria Plc.
3. There is no significant relationship between Account Payables and Return on Equity (ROE) in Nestle Nigeria Plc.
4. There is a significant relationship between Cash and Return on Equity (ROE) in Nestle Nigeria Plc.
5. There is no significant relationship between Account Receivables and Return on Equity (ROE) in Cadbury Nigeria Plc.
6. There is no significant relationship between Inventories and Return on Equity (ROE) in Cadbury Nigeria Plc.
7. There is no significant relationship between Account Payables and Return on Equity (ROE) in Cadbury Nigeria Plc.
8. There is no significant relationship between Cash and Return on Equity (ROE) in Cadbury Nigeria Plc.

Conclusion

The study portrays working capital management and profitability of manufacturing firms in Nigeria (An empirical investigation of Nestle Nigeria Plc and Cadbury Nigeria Plc). The concern of working capital management is to set optimal level of working capital and managing short-term assets and liabilities of firms within a specified period usually one year. Working capital management involves planning and controlling

current assets and current liabilities in a manner that eliminate risk of inability to meet due short-term obligations. Working capital is an important tool to the operation of a business and cash is needed to make purchase of raw materials that will be used in production. In other words, the amount of working capital required in a business is determined by the volume of its operations. It is concluded that working capital is what makes a business to run effectively and efficiently .

Recommendations

The following recommendations are made:

1. Management of manufacturing firms in Nigeria should be more efficient in the management of working capital by reducing their cash conversion cycle.
2. Government should embark on policies that will encourage stability in the sector so as to increase capacity utilization in the manufacturing sector, so as to reduce the mortality rate of most of the manufacturing firms in Nigeria.
3. Nigerian managers should strike a balance between working capital and profitability; this is an important way of promoting companies that are quoted on stock.
4. Organization should concentrate in the proper management of each working capital components and keep at optimal levels as this will go a long way to enhance profitability and create value for their companies.

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