Determinants of Working Capital Management in Small and Medium Enterprises in Bauchi Metropolis

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Abstract
The main purpose of this study is to determine the working capital management in small and medium enterprises in Bauchi Metropolis. Specifically examining how profitability, sales growth, firm size and leverage affect working capital management. The total population of this study comprised the entire Small and medium enterprises registered with Bauchi Investment Corporation within the period of the study (2013-2017) from which a sample of fifty five was drawn using simple random sampling. Data was collected from annual reports and accounts of the sampled SMEs by the researchers. The study used OLS regression models to analyse the data collected. The main results reflect a negative and significant effect of profitability (ROA) on working capital where a positive and significant relationship between other explanatory variables (size, leverage and sales growth) with working capital was recorded.

Keywords: Working capital, Working Capital Management, Small and Medium Enterprise,

Introduction

Over the years, small and medium enterprises (SMEs) development has emerged as a major economic development and growth strategy aimed at poverty alleviation, wealth and employment creation world over. As a result, different governments world-wide with support from partners have continued to initiate programs towards the strengthening and development of the sector (Okech, 2006). Areas of support include management and technical training, extension services etc, provision of physical structures, provision of loans, marketing and credit facilities (Okech 2006; GoK, 2010). Despite the significant contributions, this sector is faced with threat of failure, statistics indicating that 75% fail within the first few months (Sonia, 2009; Nzyoka, 2011).

The need to maintain effective working capital management within small and medium enterprises remains pivotal to their solvency and liquidity (Pieterson, 2012). Most SMEs do not care about their working capital position, they have only little regard for their working capital position and most do not even have standard credit policy. However, Many do not care about their financial position, they only run into business and they most focus on cash receipt and what their bank position is (Sunday, 2011).

For the development of the enterprises, Banos et al (2010) observed that efficiency in the management of working capital is critical. Banos etal enhance that performance of SMEs as well as their sustainability and competitiveness, They noted that their viability will depend to a greater extent, on the ability of the enterprises to effectively manage receivables, inventory and payables (Bano et al., 2010).assert that the goal of working capital management is to ensure that firm is able to continue its operations and that it has manage its short term obligations when they occur. According to Pieterson (2012), however, most SMEs fail to maintain necessary financial transactions which in the process affect their working capital and eventually encounter cash flow problems.

There often exists a mismatch between cash inflows and cash outflows during operating activities in SMES. To control these cash flows and thereby reduce the potential negative effects on profitability and risk, it is important that working capital management is applied. Why? Because SMEs have more volatile cash flows, are less liquid, are more dependent on short term financing and are faced with higher portions of current assets compared to large companies (Ross, Westfield and Jaffe, 2005).

In Peel and Wilson (1996) emphasised that small and medium enterprises should adopt formal working capital management routines in order to reduce the probability of business closure, as well as to enhance business performance. They contended that managers and entrepreneurs of these enterprises should understand the importance of working capital management for the liquidity, profitability and ultimately the survival of their businesses.

Statement of the Problem

Studies reveal high levels of collapse of the SMEs soon after their establishment with many of these pointing out existence of short term debts (Nzyoka, 2011; Pieterson, 2012). For instance, according to Pierterson (2012) many of these enterprises have problems of managing their working capital partly

attributed to inadequacy in financial management, especially the working capital management. The combination of account receivable management, cash management and account payable strategies were specifically singled out. The need to maintain effective working capital management within small and medium enterprises remains pivotal to solvency and liquidity of SMEs as observed by Kehinde (2010). Kehinde noted that most SMEs have very little concerns for their working capital position with no policy for the management of the same as well as credit issues. He further observed that many do not care about their financial position, they only run business, and that they mainly focus on cash receipt and the bank account position. In the end this has negatively impacted on their subsequent sustainability.

Anita (2012) on the other hand observed that in many SMEs, profits and cash flows are volatile and they are less liquid which affect their viability (Anita, 2012). As noted by Faff (2009) limited attention has been accorded to the understanding the factors affecting the working capital management in small and medium enterprises. A few existing studies have mainly concentrated on larger firms but there is no evidence from small and medium-size enterprises (Chiou et al., 2006). To gain empirical insight into these factors, there was thus need to examine factors affecting management of working capital in small and medium enterprises in Bauchi metropolis.

Objective of the Study

The purpose of this study is to examine the determinants of working capital management in SMEs in Bauchi metropolis.

Hypotheses of the study

This study follows the trend of the existing literature and use Cash Conversion Cycle as a proxy of SMEs' working capital and accordingly hypotheses are formulated thus:

H_1. There is significant relationship between SMEs profitability and working capital.

H_2. There is significant relationship between sales growth and working capital.

H_3. There is significant relationship between leverage and working capital.

H_4: There is significant relationship between SMEs size and working capital.

Trade Receivable Management

Receivables are claims held against customers and others for money, goods or services. For financial statement purposes, receivable are classified as either current (short term) or non-current (long term). Current receivables are expected to be collected within the current operating cycle Receivables are further classified in the balance sheet as either trade or non-trade receivable (Gitman, 2009).

To help maintain a steady cash flow and deal effectively with business credit Sunday, (2011) noted that accounts receivables should be recorded and paid when due. A number of studies have been conducted to examine how accounts receivable management affects working capital management of SMEs.

A study done by Sushma and Bhupesh (2007) also made an affirmation on how putting in place a sound credit policy is likely to ensure that proper debt collection procedures and is therefore pivotal when it comes to efficiency in receivables management hence the performance of the firms. Moreover, Falope and Ajilore (2009) while using a panel data econometrics in a pooled regression, of SMEs in Nigeria. They established a significant negative relationship between net operating profit on one hand and the average collection period (ACP) as well as average payment period (APP).

Accounts Payable Management

Management of payables is an important factor in an SME's working capital management, and a key indicator of overall operational effectiveness. If it's too high, the SME may soon have trouble paying bills on time, leading to costly penalties; if it's too low, the SME could unwisely be paying bills early, rather than enjoying the full grace period and investing any surplus cash into the business. In managing payables, timeliness and accuracy are critical.

They create continuity and consistency, and builds trust with your vendors and stakeholders, while enabling your organization to function properly (Tagoe, 2008).

A research carried out by Sunday (2011), on effective working capital management in small and medium scale enterprises revealed that most SME suffer from the problem of paying all bills/cash outflow from cash earnings which most of the time. He maintains that for most SME's the production and sales cycle is shorter than the average age of accounts payable, creating a scenario where trade debt builds up in an ever increasing manner until a point where the SME cannot pay debts in due date, and eventually collapses (Kehinde, 2011).

Cash Conversion Cycle

A business's operating cycle is simply the number of days its goods are tied up in inventory plus the number of days its sales are tied up in receivables. The cash conversion cycle then is a measure of how efficiently a company operates. But more importantly is a measure of cash creation efficiency in the business (Ternel, 2007). Abel (2008) in his research on the impact of working capital management on cash holding of small and medium enterprises in Sweden, he discovered that efficient working capital management is related to the levels of cash holdings. In the same regard, it was established that cash conversion cycle is the number of days negotiated financing is needed to support the operation cycle of a business.

Cash Conversion Cycle is one of several tools that can help you evaluate management, especially if it is calculated for several consecutive time periods and for several competitors. Decreasing or steady Cash Conversion Cycles are good, while rising ones should motivate you to dig a bit deeper. Cash Conversion Cycle is most effective with retail-type companies, which have inventories that are sold to customers. Consulting businesses, software companies and insurance companies are all examples of companies for whom this metric add little value (Nazir and Afza, 2008).

According to Appuhani (2008), the traditional link between the cash conversion cycle and the firm's profitability is that shortening the cash conversion cycle increases firm's profitability. On the other hand shortening the cash conversion cycle could harm the firm's operations and reduces profitability. This could happen when taking actions to reduce the inventory conversion period, a firm could face inventory shortages; when reducing the receivable collection period a firm could lose its good credit customers; and when lengthening the payable deferral period a firm could harm its own credit reputation. However, identifying optimal level so inventory, receivables, and payables where total holding and opportunities cost are minimized and recalculating the cash conversion cycle according to these optimal points provides more complete and accurate insights into the efficiency of working capital management. In this regard, we suggest an optimal cash conversion cycle as more accurate and comprehensive measure of working capital management (Arbor, 2010).

The Main Determinants of SMEs Working Capital

Elbadry (2018), explores the main determinants of working capital management in the Egyptian SMEs and explains its effect on working capital management. Also, it examines the relation between the main determinants of working capital management and each component of working capital management. Moreover, the paper examines the effect of working capital management and SMEs' profitability and capital structure. The study sample includes data for 138 SMEs working in Egypt and financed by the national bank of Egypt from 2010 to 2013. Data have been collected from SMEs financial statements for four years for each company. OLS regression models have been used to examine the effect of working capital determinants on working capital level measured by Cash Conversion Cycle (CCC). The main results reflect negative and significant effect of SMEs profitability, tangible fixed assets, and leverage on working capital. Also, the industry represents a significant factor in determining the level of working capital in the Egyptian SMEs. The results reflect that the Egyptian SMEs follow an aggressive policy as businesses hold low level working capital which leads to high return and high degree of risk (measured by LEVERAGE).

Dečman and Sever (2012) defined working capital management as "management of quickly cashable assets and current liabilities i.e. short-term financing of current assets". Accordingly, most literature used cash conversion cycle (CCC) as a measurement of working capital (Atseye et al., 2015). CCC deals with the management of accounts receivables, inventories and accounts payables. CCC equals the average collection period plus average age of inventory minus the average payment period (Gitman and Zutter, 2015).

According to S. Banˇos-Caballero et al. (2010) the main determinants of working capital of SMEs are: Capacity to generate internal resources, Leverage, Growth opportunities, Size of the firm, age of the firm, Tangible fixed assets, Return and Industry. Atseye et al. (2015) stated endogenous determinants include size, age, profitability, market share , sales growth, operating risk and operating cash flow and stated exogenous determinants include GDP, interest rate and tax rate. Accordingly, the paper will concentrate on the most common endogenous determinants between literature studies.

Profitability

Theoretically, there is a strong relationship between liquidity and profitability. Most studies concluded that profitability are negatively related to the measurements of working capital measured

by CCC (Lazavridis and Tryfonidis (2006)). Previous studies interpreted the negative relation between company's performance and working capital in many ways. First, the higher the performance of the company the greater the ability to access external finance and accordingly they can invest in more profitable investments. Second, the higher the performance of the company the higher the bargaining power with its suppliers and customers in the market Albadry (2018).

Little evidence concluded positive relation between company's performance and its working capital (Nazir and Afza, 2009). They denied that companies with better performance are less concerned with better working capital management.

Sales Growth

According to Baños-Caballero et al. (2010) sales growth opportunities affects SMEs working capital management. Higher growth rates are related with higher levels of inventories because companies hold more inventories to face the expected growth of sales. Accordingly, CCC will be positively related to growth of sales (Kieschnich et al., 2006).

But, sometimes higher growth opportunities may cause low levels of working capital. SMEs may use more credit purchases as a source of fund to face the expected growth opportunities. Also, SMEs may extend their credit sales to customers to increase sales in low demand periods.

Growth of sales will be calculated as the percentage of change in sales in this paper. Also, we cannot identify the direction of the relation between growth opportunities of sales and CCC. Accordingly, we will follow the results of Baños-Caballero et al. (2010) as they find that firms with high growth opportunities follow aggressive working capital policy.

Leverage

Literature proved that there is a negative relationship between leverage and working capital (Rahman and Nasr, 2007; Baños-Caballero et al., 2010, Abbadi and Abbadi, 2013). The higher degree of leverage reflects a higher degree of risk premium. Also, companies with high levels of leverage tend to invest less in working capital. In this paper we use the ratio of total debt to total equity as a measure of leverage.

Firm Size

There is a direct relationship between firm size and the amount of working capital (Dečman and Sever, 2012). Firm size is positively correlated with working capital value. Ban˜os-Caballero et al., (2010) supported the same idea and justified the positive relation because the cost of funds which are used to invest in working capital decreases with firm size. The smaller the firm size the higher the degree of information asymmetry, information opacity, and less followed by analysts.

Research Methodology

The OLS regression models are the most commonly used models in studying the relationships between the dependent and independent variables (Denham, 2010). Accordingly, in our model we used CCC (as a dependent variable) as a measurement of working capital. Also, we examined the effect of working capital determinants (as independent variables) on every component of the cash conversion cycle which includes: the average collection period, the average age of Inventory and the average payment period. Our model is explained as follows:

$CCC = \alpha + ROA\ \beta 1 + SALESG\ \beta 2 + LEV\ \beta 3 + SIZE\ \beta 4 + \varepsilon$

CCC is a proxy of Working capital measured by cash conversion cycle.

α is the intercept of the model

ROA is a proxy of profitability

SALESG is a proxy of sales growth

LEV is a proxy of leverage

SIZE is a proxy of firm size

ε is the error term.

Table 1: Definitions of dependent and independent variables

Variables	Measurement	Definition
Dependent variable: Cash Conversion Cycle (CCC)	ACP + AAI - APP	A proxy measure of working capital.
Independent Variables: Profitability (ROA)	(Net income/Total assets)	Return on assets
Sales growth (SALESG)	(Sales(t)-Sales(t-1)/Sales(t-1))	The ratio of the increase or the decrease of sales between two years
Leverage (LEV)	(Total debt/total assets)	The ratio of debt to total equity
Firm size (SIZE)	Total Assets	Total assets of the SME.

Adapted from Elbadry (2018)

Sample and Data Collection

In this study we used the data set of the SMEs registered with Small and medium enterprises development agency (SMEDAN) Bauchi and obtain loan from Bauchi Investment Corporation (BIC) within the period of five years (2013-2017). Data for the study was collected from a sample of 55 SMEs in Bauchi from their financial statements obtained from BIC where they obtained loan within the period of the study (2013 to 2017). All financial ratios have been calculated using income statements and balance sheets of SMEs.

Results and Discussions

This section presents and interprets the result obtained from the estimation of the regression model derived from OLS estimation.

Table 2: OLS Regression Results

Variables	(Robust Std Error)	
Dependent Variable: CCC	Coef	t-value
Constant	1.2417*	1.75
SIZE	0.0328***	4.34
SALESG	0.0112**	2.27
ROA	-0.1470**	-2.04
LEV	0.1899***	6.93
R^2	0.6463	
Adjusted R^2	0.6245	
F-statisitics	55.73***	
Mean VIF	1.72	
Test for Heteroskedasticity	0.0000	
Lagrangian multiplier test for random effects	0.7000	

Source: Authors Analysis 2018

Note: ***, ** and * indicate 1%, 5% and 10% significant levels respectively.

Table 1 presents the OLS regression result of the dependent variable CCC with the explanatory variables of the study (SIZE, SALESG, ROA and LEV). The test for heteroskedasticity shows that the error term in the model is heteroskedastic that is non-constant variance with significant p value of 0.0000. Thus, a robust standard error was used to remedy the non-constant variance in the model. Also, to choose between OLS and Random effect result in the model, Lagrangian multiplier test for random effects was carried out and the results reveals that OLS results prevail with non-significant p-value of 0.7000.

The result of the cumulative adjusted R^2 of 0.6245 of the model signifies that 63% of the total variation in working capital of SMEs in Bauchi Nigeria was caused by the combined effects of all the explanatory variables used by the study, while the remaining 27% of the total variation was caused by factors not explained by the model. This indicates that the model is fit and the explanatory variables are properly selected, combined and used; as substantial value of the CCC is accounted for by the variables. This can be confirmed by the value of F- statistics of 55.73 at 1% level of significance. This finding is in line with a priori expectation which indicates that there exist a trade off between working

capital and profitability this is supported by a significant negative coefficient of -.01470 at 0.05 levels of significance.

Leverage in the other hand is found to be positive and significant with CCC. This means that the higher the debts, the more the working capital.

Conclusion

In this study the main determinants of working capital management in the SMEs in Bauchi metropolis were explore. The study makes use of the most common determinants of working capital which have been examined in previous literature. SMEs return on assets, sales growth, leverage and size were found to be the most common used determinants of working capital management in literature.

The study sampled includes 55 SMEs from 2013 to 2017 and all data have been collected from the financial statements of the SMEs. The study used OLS regression models to analyse the data collected. The main results reflect a negative and significant effect of profitability (ROA) on working capital. That means, the higher the rate of return the lower the degree of working capital measure by CCC. Also, the results reflect a positive and significant impact between other explanatory variables (size, leverage and sales growth) and CCC. That means the larger the size of SMEs total asset, debt and sales the higher the value of working capital measured by CCC.

This study is limited to 55 SMEs dealing with Bauchi micro finance bank from 2013 to 2017. The study can be extended to other countries or different time series. SMEs' investors and financial institutions can use the finding of this study as a guidance of determining the suitable level of working capital and in determining the most effective factors of working capital management of the SMEs in Bauchi Metropolis.

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