



International Journal of Sciences: Basic and Applied Research (IJSBAR)

ISSN 2307-4531
(Print & Online)

<http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>



The Strategic Operations and Consequences of Working Capital Management in the Financial Service Industry

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Abstract

This paper examines the strategic operations and consequences of working capital management in the financial service industry. The aim of this paper is to theoretically derive significant factors related to working capital management which have an influence on profitability and liquidity and test these in a sample of one Nigeria bank, First bank of Nigeria (FBN) operating in Nigeria and one United Kingdom bank, Barclays Bank. The quantitative investigation consists of the statistical analysis – namely comparison of ratios and a correlation analysis of key ratios which are calculated from the financial statements of sampled banks operating in Nigeria and UK with an in-depth analysis of the financial statement of these banks. It is confirmed that working capital management efficiency measured by several ratios is positively related to liquidity in some Banks operating in Nigeria and United Kingdom. The empirical results pay particular attention to the diverse constituents of both cash substitutes and efficiently managing working capital. The implications of the results were also brought out with respect to their possible usefulness for the attainment and maintenance of the Banks' liquidity and targeted profits.

Keywords: *Working Capital, Illiquidity, Ratios, Current Asset, Current Liabilities*

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1. Introduction

Many businesses have been declared bankrupt, some have covered their illiquidity for so long that the situation can no longer be salvaged, illiquidity causes bankruptcy, the question is; would these businesses fail if measures have been put in place to adequately measure and monitor working capital? The key to the survival of any organization is Liquidity, an important determinant of liquidity is cash, cash is usually said to be king, and now, more than ever, businesses need to ensure that a process is put in place to effectively manage cash. Issues relating to current market trends which are largely due to the unforeseen effects of the sub-prime mortgage crisis in Nigeria and the increased attention to working capital and cash flows has led to a renewed focus on effective working capital management and optimized cash management processes. This is certainly the right way to go but other management tools are also needed. At the heart of this approach should be a strategic financial review of all business working capital components.

Cash is incidentally an important component of working capital; Working capital can be defined as the difference between current assets and current liabilities. Working capital thus means net current assets or net current liabilities (if current liabilities exceed current assets). It is the investment a company makes in assets which are in continual use and are turned over many times in a year. However, the main factor attributable to the failure of businesses is poor planning and control of working capital [1]. The import of effectual Working Capital Management is often known (at the latest) during the times of financial distress [2].

Because of the rapid technological and social changes affecting an organization environment, there is a need for strategies to achieve agreed upon goals and objectives, giving a sense of purpose and direction to the organization. The basic objective of this paper are to, (i) analyse the methodologies employed by business to manage working capital (iv) to examine the effects of the availability or non-availability of working capital for businesses in the financial sector.

2. Literature Review

The financial crisis is said to have started in the late of 2007 when liquidity issues were triggered in the Nigeria banking system [3]. This was only one event that was to be followed by a collapse of several large financial institutions. In the periods that followed, banks risk taking especially regarding non performing loans came to light with the disintegration and subsequent bail out of some banks in Nigeria, these happenings brought about the greatest financial crisis [3]. As would be expected, Nigeria had its fair share of these unfortunate events, although large corporations were affected, financial institutions suffered the most hit due to huge credit losses causing banks to seek liquidity from the government. The ripple effect has been tougher credit terms and a large lay-off of staffs. Subsequently, banks and other financial institutions have turned to safer investments which they believe to be more liquid, signaling that cash, once again, is king [3]. Organizations generally now have to seek for diverse ways by which their liquidity and cash flows can be improved, one of which includes a strategic working capital and cash management which had been hitherto neglected in times of favorable business conditions [4].

2.1 Cash Management

Managing cash is becoming ever more sophisticated in the global and electronic age of the new century as financial managers try to squeeze the last naira of profit out of their cash management strategies with the corporate financial manger actively seeks to keep this non earning asset to a minimum. The less cash you have, generally the better off you are, but still you do not want to get caught without cash when you need it. Minimizing cash balances as well as having accurate knowledge of when cash moves into and out of the company can improve overall corporate profitability. These beliefs give rise to rules of conduct (norms) that powerfully shape the conduct of the individuals and groups in the organization and thus distinguish it from other organizations” [5]. Models have been developed which attempt to set cash levels at a point, or within a range, which strikes the best balance. All this models suffer from being over-simplistic and are heavily dependent on the accuracy of the inputs. There is also a danger of managers using them in a mechanical fashion, and neglecting to apply the heavy dose of judgment needed to allow for the less easily quantified variables ignored by the models [6].

Baumol’s model assumes that the firm operates in a steady state environment where it uses cash at a constant rate which is entirely predictable. In the model, the average amount of cash on hand and therefore earning no interest (an opportunity cost) is half of the maximum cash balance. If we denote the maximum cash balance as Z , the average cash is $Z/2$.

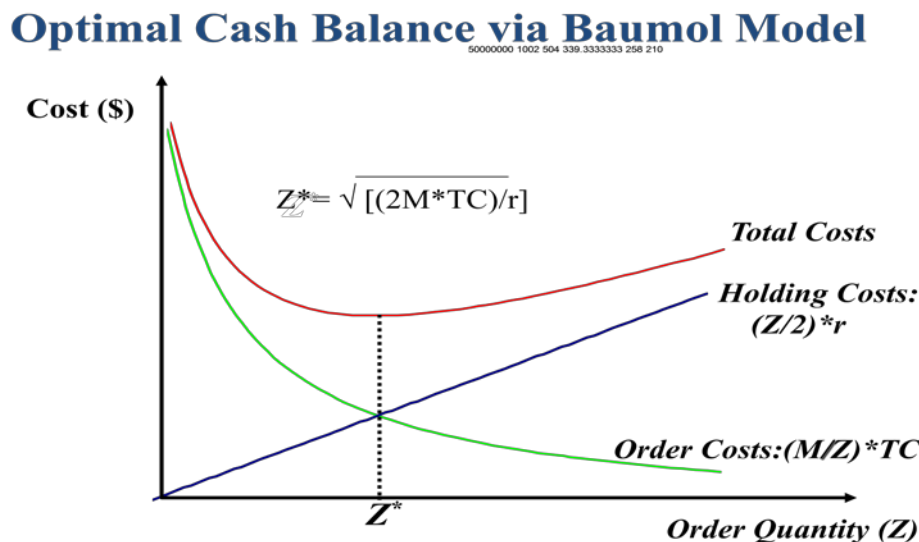


Fig.1.2: Baumol’s Optimal Cash Balance Model. Source: [28]

2.2 Liquidity Management:

The liquidity of an asset means how, quickly it can be transformed into cash. When referring to company liquidity one usually means its ability to meet its current liabilities and is usually measured by different financial ratios (investor words). The acquisition of sufficiently liquid assets to meet obligations, in the case of a bank; these obligations would be to depositors [7].

2.3 Working Capital Policies and Management:

Working capital policies shows measures put in place by organizations to facilitate or monitor the effectiveness of working capital. Organizations should formulate clear cut policies relating to the management of the various components of working capital. Managers are saddled with these responsibilities [8].

Working capital management is important given the effects on the company's profitability and risk, since it involves the trade-off between profitability and risk. In addition, the decisions that are likely to increase profitability tend to raise risk and vice versa [9], based on this analogy, Van Horne and Wachowicz in 2004 explains what seem to be the two basic principles in finance [29]:

- Profitability varies inversely with liquidity, which represents that an increase in liquidity generally reduces profitability.
- Profitability and risk are proportional, which may be explained by the search for higher profitability which normally results in greater risk.

Working capital policies according to the level of investment in working capital:

- Aggressive policy: enterprise prefers to operate with lower stock levels, debtors and cash for a particular level of production and sales. An aggressive policy focuses on increase in profitability through less cash tied up in current assets, which represents an increase in risk since the probability of cash shortages or stock outs is raised.
- Conservative policy: based on the turnover, the company decides for maintaining larger cash balances which can be represented by short-term securities: generous credit terms to customers; and hold higher stock levels. This policy results in a decrease in risk of financial problems or stock deficits, however low profitability is expected.
- Moderate policy: there is a balance between aggressive and conservative approaches, once profitability and risk levels are likely to reduce between the first policies,[8].

3. Review of empirical Literature.

As earlier stated, the concept of working capital management and its effect on varying types of organizations have been subject for discussions for over three decades, studies by [18] researched into how a total absence of working capital management policies in the operations of corporations with special attention to small businesses, over the years however, the concept of working capital is still a subject of debate among researchers.

In relation to corporate liquidity and profitability, studies by Shah and [23] claimed that working capital management dealt with two very crucial aspects of organizations which they concluded and agreed to be liquidity and profitability, as a result, the whole idea of working capital management can be summed up to be an attempt to balance the working capital components in a way to achieve the financial objectives of maximizing the firm and shareholder value [13].

[16], opined that the whole idea of strategically managing an organizations working capital involves a holistic approach and therefore includes all the processes surrounding an organizations resources and operations underlining specifically that superior management of working capital could produce incremental financial returns and lessen a firms liquidity risk, his views were in line with that of [13] who added in their own work that given the size of an organization and restricted access to loans, firms would have no choice but to rely on its own internal financing.

Additionally, researches carried out by [9] were performed in order to examine and make more information available on the relationship between liquidity and profitability and how they are affected by some elements of working capital, the results of their findings cut across different industries, periods and countries and concluding that working capital management did in fact have an effect on this variables.

Finally, the authors in [30] carried out an observation on international working capital management practices of multinational firms in Pakistan, addressing international cash management operations, international sales and foreign exchange activities. They agreed that working capital is the life blood of any organization with a wide variety of importance in running the short term objectives of companies, the concluded by generalizing that firms in Pakistan have indeed shifted their concerns towards cost efficient ways of working capital management with no significant differences when analyzed with respect to different sectors.

4. Materials and Methods

The primary objective of this paper is to critically explore the strategic operations and consequences of working capital management for the financial operations of organizations. This is achieved by developing a similar empirical framework first used by [25] and the subsequent work of [22] and also extending the study by analyzing the trends in the working capital of banks and examined the possible causes for any significant differences between them while focusing exclusively on two banks First bank of Nigeria (FBN) and Barclays bank operating in Nigeria and United Kingdom.

The method of data analysis adopted by this study is analytical. It involves the use of correlation analysis. The correlation analysis as mentioned was carried out with the use of the Statistical Package for Social Sciences (SPSS) because computing correlation manually can be time consuming, may be inaccurate and may amount to a waste of time.

5. Results

This section reveals the interpretation and findings of the data collected in the process of this research, this data have been presented in form of tables, graphs and charts with some analysis. It should be noted that to make raw data useful, it need to be analyzed and interpreted. This is made possible by using the mathematical and statistical relation used in deriving the variables.

There are some variations in the graphs used; this is because pictorial representations were chosen to reveal the appropriate interpretation of data.

Profitability Ratios:

Businesses generally exist with the primary purpose of creating wealth for their owners. Profitability ratios provide an insight to the degree of success in achieving this purpose. They express the profits made (or figures bearing on profit, such as overheads) in relation to the other key figures in the financial statements or to some business resource. The following ratios were used to measure profitability:

Return on capital: This is a measure of how well an organization uses the funds (borrowed or owned) invested in its operations.

Return on shareholders’ funds: This shows how much profit the total financial investment in the company has generated on behalf of the shareholders. The ratio gives an indication of how viable it is for the company to raise further funds for expansion (or to cut borrowings) via rights issues.

Growth in profit before tax: this ratio, which is usually expressed in percentage, measures how well an organization uses its available resources in its business process by expressing the percentage of net sales remaining after subtracting the cost of making and selling a product or service.

Return on assets: This ratio is an indicator as to what return a company is generating on the firm's investments / assets. It is often referred to as ROI and is very important for companies deciding whether or not to initiate a new project.

From figure 1, it can be deduced that there is no consistent trend between the Return on Capital (ROC) for both banks over the five years reviewed, but there seem to be similar changes in the patterns of ROC for both banks, e.g. both banks recorded the highest and lowest levels of ROC in 2007 and 2009 respectively. The relationship between these seeming similarities and whether it can be attributed to working capital changes will be examined via correlation in subsequent paragraphs.

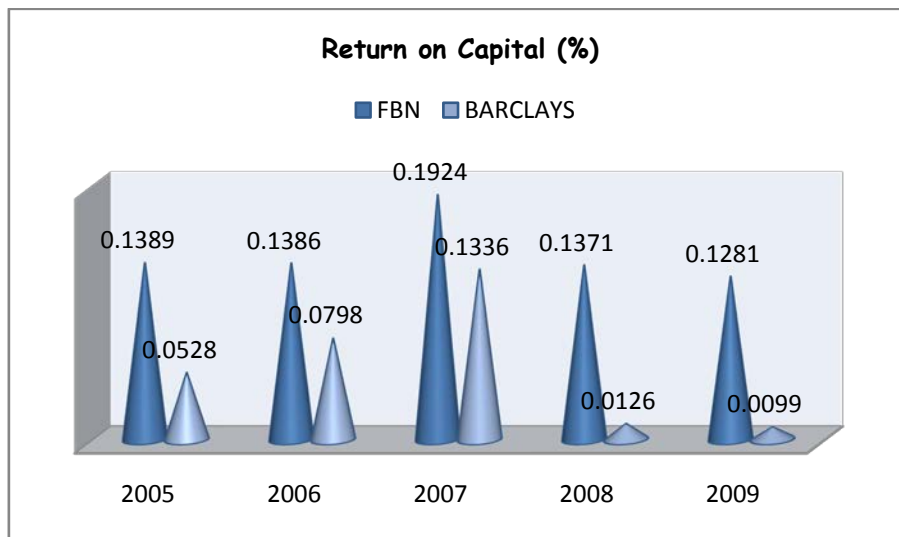


Figure 1: Return on capital

It can be seen from figure 2 that Barclays Return on shareholder Funds (RSH) increased considerably over the years under review. FBN on the other hand had an inconsistent trend with its RSH fluctuating over the period.

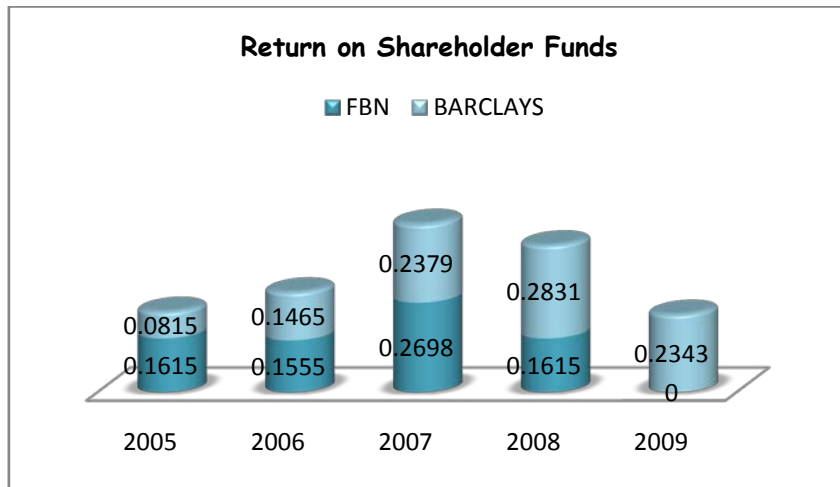


Figure 2: Return on Shareholders' funds

Figure 3 shows that both banks had a considerably stable Return on Assets (ROA) although FBN had an increase between 2005 and 2007, it lost the rhythm and suffered a drop in 2008 and 2009, Barclays on the other hand although suffered a slight repress in 2006, its growth in the following years were consistent. The effect working capital management had on these changes will be examined in the correlation part of this analysis

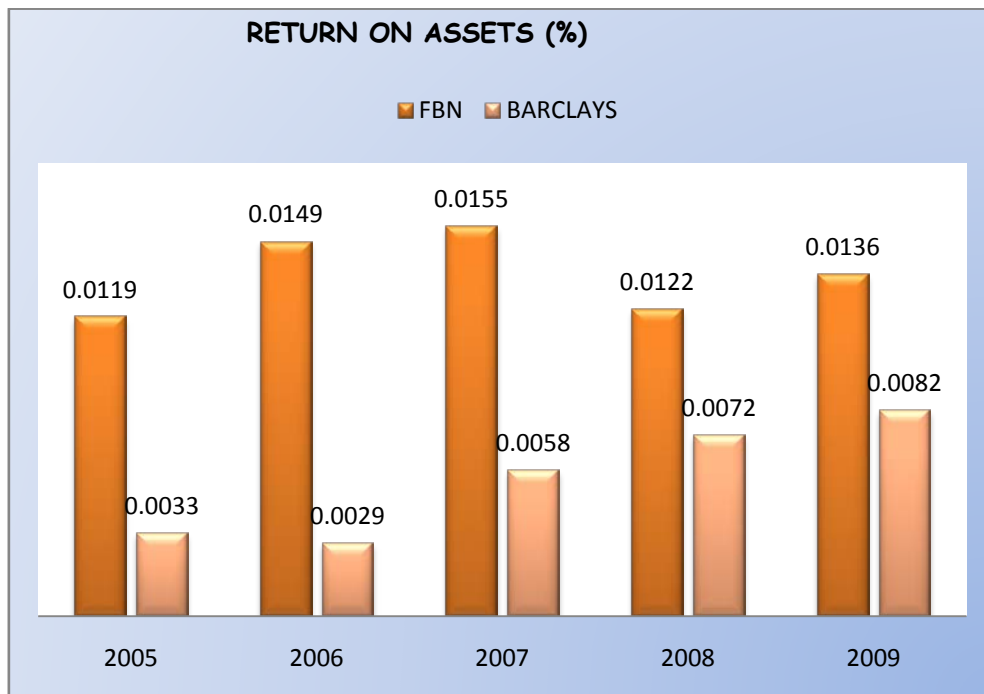
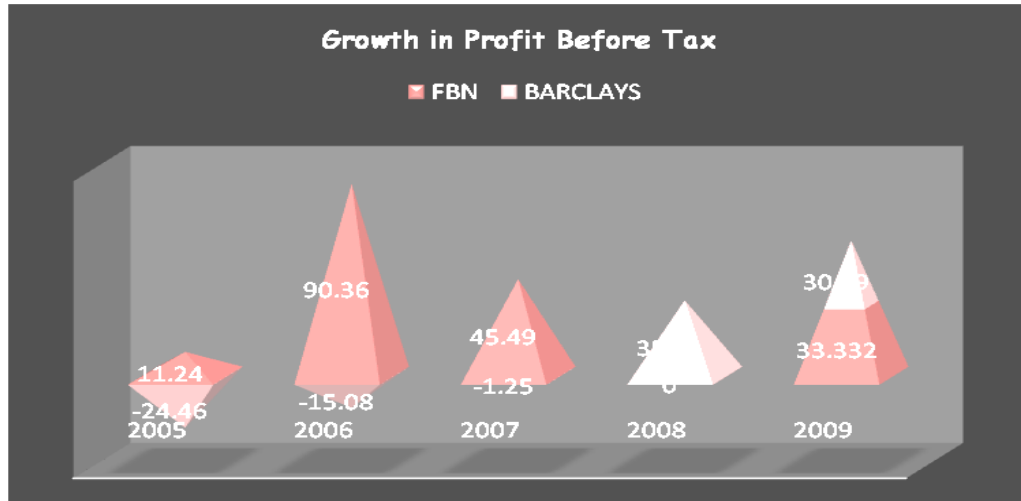


Figure 3: Return on Assets

It can be seen from figure 4 graphical representation that there was a very sharp increase in the Profit Before Tax (PBT) of FBN between 2005 and 2006 with Barclays recording a very low growth rate in its PBT in both years, but while the growth in the PBT of FBN seem to decline afterwards to a level in 2008 where no growth in PBT was recorded at all, Barclays, recovered in 2007 and has experienced a sharp and considerable increase in its PBT subsequent years.



(Figure 4: Growth in Profit Before Tax)

Liquidity Ratios: The availability of sufficient liquid resources is vital to the continued existence of a business because it needs it to meet maturing obligations (that is, debts that must be paid now on the near future). Some liquidity ratios examine the relationship between liquid resources held and creditors (payables) due for payment in the near future.

The following ratios were used to measure profitability:

Acid Test Ratio: also referred to as the quick ratio is very similar to current ratio and solves the liquidation issues mentioned above by excluding inventories from calculation:

Solvency Ratio: this simply measures an organization's ability to fulfill its financial obligations as they become due. Generally speaking, the lower a company's solvency ratio, the greater the probability that the company will default on its debt.

Liquidity Index: this ratio is a guideline showing the number of days in which current assets are removed from cash. The fewer the days removed, the better the entity's liquidity.

Current Ratio: this ratio was developed at the end of the 19th century in order to evaluate the credit-worthiness of the companies [31:71]. In its simplicity it expresses the liquid resources available when current liabilities are met. As the critique towards this measure often goes, it simplifies the protection available for short-term creditors as not all the current assets are easily liquidated but can be tied in the inventory [19:25].

As seen in figure 5, both Banks over the 5 years under review have been considerably solvent, although there are fluctuations in the ratios, the extent to which working capital contributed to these fluctuations will be by correlation later.

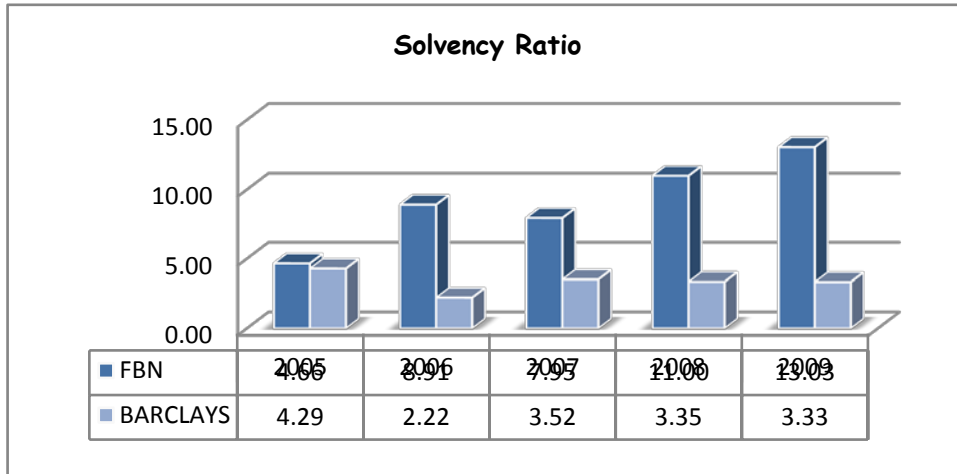


Figure 5: Solvency Ratio

Historically a current ratio of 2.0 has been a norm, meaning that the company has approximately twice as much current assets as coverage for short term creditors and this has been the case over the 5 year under review for FBN, Barclays on the other hand had current ratios below one in 2009 and 2008, before then its current ratios had been healthy for the bank [18], this can be seen in figure 6 .

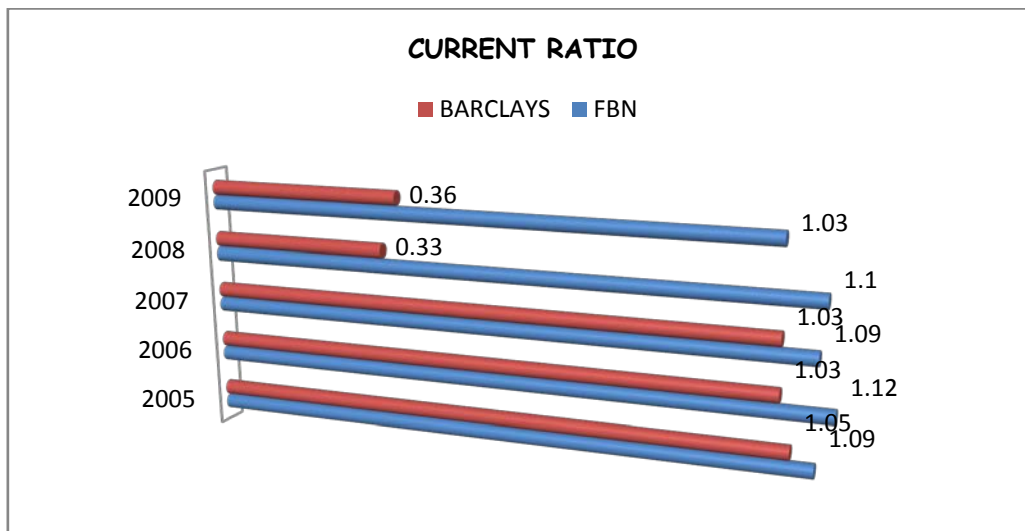


Figure 6: Current Ratio

The Acid test results presented in table 7 are the same with the current ratios analyzed above, Acid test ratios exclude stock, since Banks are basically not into the manufacturing process, they do not keep stock hence the reason for the similitude.

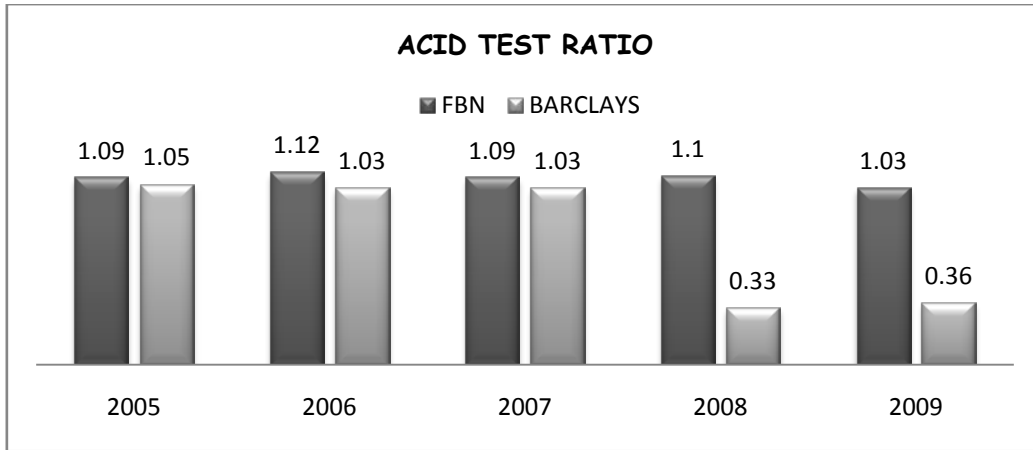


Figure 7: Acid Test Ratio. Source: Researcher's computation

Working Capital Ratios

This ratios, serve as an indicator to know whether a business has sufficient short term assets to meet its short term liabilities. The ratios evaluate an organizations ability to put into perfect use, its available working capital [3]. Working capital ratios attempt to evaluate an organizations ability to collect cash and then pay creditors.

The following ratios were used to measure the level of working capital:

Cash/Deposit Ratio: Simply put, it shows the amount that has been lent out for every additional deposit that banks attract. The remaining cash that has not been lent out has either been kept in the form of government paper or held as cash in their vaults, this is however in consideration of the cash reserve ratio. [15], however noted that the cash/deposit ratio is subject to changes in taxation, government regulations and also changes in the way people make payments, and the main reason that the payment behavior varies is because people want to hide certain activities to avoid taxation and restrictions.

Credit-Deposit (C/D) Ratio: This ratio shows the amount of deposits that has been advanced as credit within the period i.e. the proportion of loan-assets created by banks from the deposits received. The abundant availability of investible funds kept by commercial banks can be identified from their credit- deposit ratio.

Investment/Deposits Ratio: This ratio shows the proportion of deposits that has been invested both in the short and long run. Essentially, it shows the bank's deposits tied up in investments. The higher this ratio, the less liquid the bank will be.

Cash Deposit/Total Deposit Ratio: this shows the relative fraction of total deposit that the bank keeps in cash form.

Borrowing Ratio: This ratio aims to measure the extent to which the banks are financed by external funds. In essence, the ratio looks at total borrowings in relation to the net worth of the bank. The idea is that the relationship between borrowings and the banks contribution should be in balance, with the latter being

significantly higher than former.

As mentioned earlier, the ratio shows the proportion of banks' deposits that has been lent out. From figure 8, Barclays has a seemingly better cash/deposit ratio meaning that it keeps a considerable amount of its deposit as cash in the liquid form over time, the relationship for FBN is almost linear over the 5 year period.

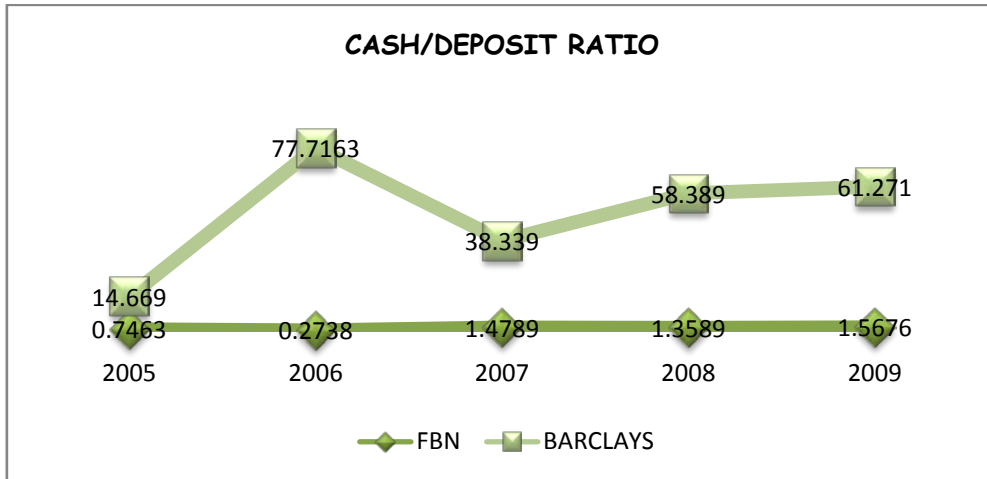


Figure 8: Cash/Deposit Ratio

It can be deduced from figure 9 that both banks have a similar trend for the amount of deposits immediately tied up in investments over the period under review, with a rising trend from 2005 and falling between 2007 and 2008 and then rising again from 2008

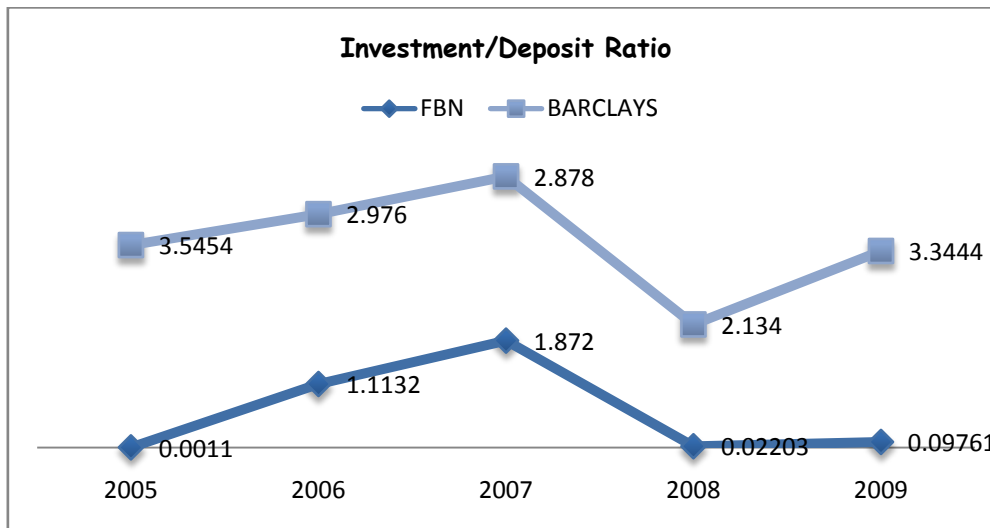


Figure 9: Investment/Deposit Ratio

Over the 5 years reviewed, FBN has higher cash deposit/Total deposit ratio rising over 80% 2006, 2007 and 2009, however, both banks had fluctuating trends over the period with little differences except in 2005 when the

trend changed and Barclays has the highest record of over 80% and FBN the lowest for the 5 year period reviewed.

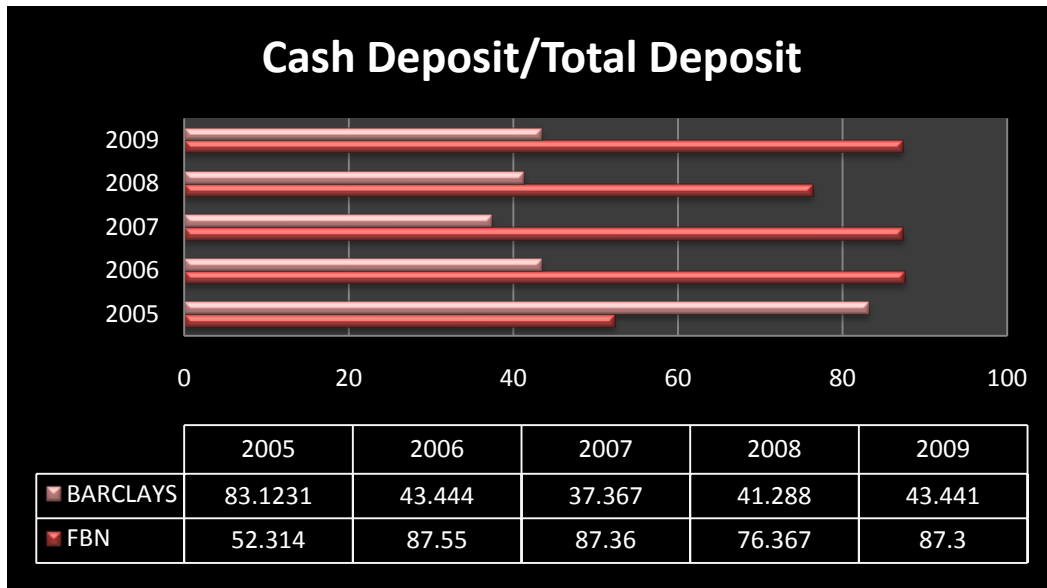


Figure 10: Cash Deposit/Total Deposit

From figure 11, FBN in 2005 had a very high C/D ratio, but volatile returns over the period, but this level dropped considerably in 2006 and started rising again in 2007, while the trend for Barclays has been almost stable at a lower level, this could mean that Barclays monitors this ratio closely.

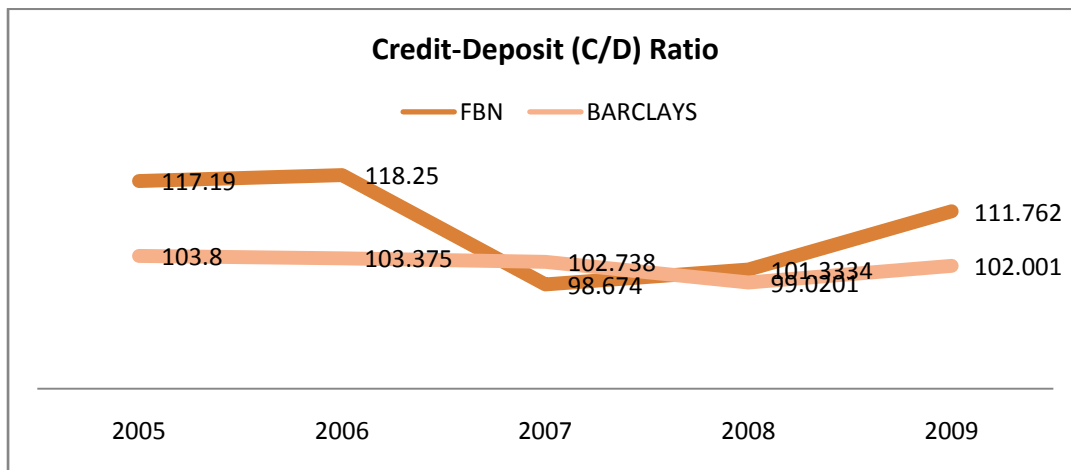


Figure 11: Credit-Deposit (C/D) Ratio

As seen below, the amount borrowed funds employed by FBN in 2005 was very alarming, but it quickly recovered in the 2006 and subsequent years to a considerable level, the reverse was however the case for Barclays, borrowed funds clearly dominated its activities clearly in four of the 5 years reviewed.

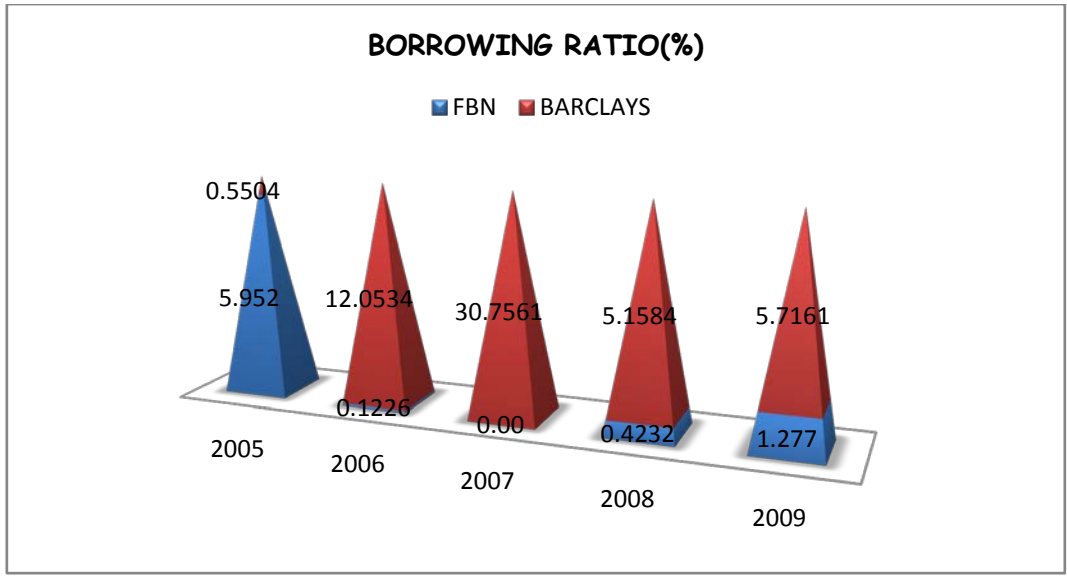


Figure 12: Borrowing Ratio

Correlation Coefficient Analysis

The correlation coefficient calculation is used to measure the significant relationships between variables and the degree of correlation between the variables i.e. the extent to which the two variables “vary together”. Microsoft excel data analysis tool was used to calculate this relationship and the result is provided on an output table called a correlation matrix showing the value of Correlation applied to each possible pair of measurement variables. The value of any correlation coefficient must be between -1 and +1 inclusive. The correlation analysis tool was used to examine each pair of measurement variables to determine whether the two measurement variables tend to move together, table 2.1 below illustrates the results from the Pearson correlation between working capital and profitability and liquidity ratios, this is necessary in other to establish the relationship between the computed ratios and the extent to which they connect or vary from each other as can be seen key ratios themselves are strongly inter-correlated.

Table 1 Pearson’s Correlation Coefficients of the Key Ratios

ROA (%)
Growth in PBT (%)
Return on SHF (%)
ROCE
liquidity Index
Current Ratio
Solvency Ratio (%)
ACID TEST
Cash Deposit/Total Deposit
Investment/Deposits (%)
Credit-Deposit Ratio
CASH/DEPOSIT

CASH/DE POST	1											
Deposit Ratio	-0.379	1										
t/Deposits (%)	0.690	-0.371	1									
otal Deposit	-0.799	0.126	-0.408	1								
ACID TEST	-0.642	0.378	-0.393	0.555	1							
Solvency Ratio (%)	-0.752	0.036	-0.748	0.786	0.437	1						
Current Ratio	-0.643	0.378	-0.393	0.555	1	0.437	1					
liquidity Index	-0.803	0.313	-0.801	0.636	0.695	0.803	0.695	1				
ROCE	-0.717	0.259	-0.574	0.514	0.819	0.570	0.819	0.731	1			
Return on SHF(%)	0.343	-0.249	0.274	-0.487	-0.459	-0.448	-0.459	-0.487	-0.092	1		
Growth in PBT (%)	-0.397	0.345	-0.323	0.342	-0.131	0.397	-0.131	0.103	0.225	0.170	1	
ROA	-0.740	0.288	-0.753	0.606	0.278	0.766	0.278	0.683	0.660	-0.006	0.737	1

(Source: Authors own calculations)

The results of the correlation in table 1 shows a high level of correlation among the ratios, however, when compared to all the other ratios, a strong correlation between credit-deposit ratio and the other ratios does not exist. Liquidity and solvency have a lot in common; in fact they have similar attributes and serve almost the same purpose, hence, the reason for their high positive correlation of 0.803. Multicollinearity or inter correlation can distort the results suggesting lower t-statistics leading misinterpretation of the linear relationship between tested variables [10]. There is a high and positive correlation between ROCE and current ratio and liquidity index; this is because of the direct relationship between liquidity and returns. Working capital ratios show greater correlation with liquidity ratios compared with profitability ratios, this inadvertently means that liquidity does not necessarily mean profitability, for example Cash/Deposit ratio show a level of correlation with all of the liquidity ratios computed, although mostly negative.

There is a high and positive correlation between Cash deposit/Total Deposit ratio with solvency and liquidity index ratios which are both liquidity ratios, both banks should perhaps focus on this aspect of their balance sheet. The high negative correlation of -0.75 between ROA and Investment deposit working capital ratios suggests that the more the banks channels part of its deposits towards investments, the less the ROA will be, hence profitability can be increased by reducing investments, this fact can also be related to the high negative correlation between the said Investment/deposit ratio with the solvency ratio (-0.75) and the Liquidity index (-0.8), the banks should then aim to reviewing their investment strategy. The correlation of -0.323 indicates that there is a negative correlation between investment/deposit ratio and growth in profit before tax. Due to the relatively low absolute value however, it has to be assumed that this correlation is rather weak. The components of the calculated working capital ratios are all variedly related to the liquidity and profitability ratios as the correlation coefficients suggest. Among the subordinate variables, the correlation between cash/deposit and liquidity Index is the strongest with a coefficient of -0.803. The relationship between cash/deposit and the solvency ratio is also negative as the correlation coefficient of -0.752 implies. Once again, profitability Cash-Deposit/Total deposit seems to have the strongest impact on solvency ratio with a positive coefficient of 0.786.

6. Findings

The primary aim of this research was to examine if the strategic working capital management employed by financial services operators can resolve liquidity problems and also improve profitability. According to our findings, in general, banks had to some extent adjusted their working capital strategies during the years under review in order to solve the liquidity problems.

Helpful information on Nigeria Banks liquidity practices during the financial crisis was collected and the importance of Working Capital Management during these difficult times was recognized, as the companies had made adaptations of liquidity strategies and tightened certain practices. Nevertheless, a connection among the change in strategic working capital management and profitability was not established at such degree as was expected. However, the correlation of the relationship between the adaptation of forecasting practices and the increase in the use of short-term investments and Return on Assets (ROA) shows significant statistical evidences suggesting that in a period of financial downturn, banks can achieve returns by investing in short-term securities. Some of the findings of this study support that, a lot of importance was attached to the Working

capital ratio and was found to be a very key ratio, the constant monitoring of which could ultimately result in firms liquidity. Solvency ratios and other liquidity ratios were also key measurement ratios used by banks and external lenders in general, these were also very important. The relationship between profitability and the working capital ratios was very minimal but as observed, Working Capital Management impacts upon several parts of the organization and it can sometimes be very difficult to attempt to segregate a direct impact on company's performance but instead several parts of the organization actually gain from improved strategic working capital management processes.

7. Conclusions

We have observed from the analysis that adopting better working capital policies is beneficial for the companies, even though these benefits may not be completely measurable in quantitative terms, they are seen and can be felt in other ways especially since changes in this area had occurred and are also suggested by theory. Since the organizations studied had working capital policies in place, the policies need not change that much in periods of financial turbulence, in spite of these findings, more knowledge about working capital management and liquidity strategies adopted by banks in difficult times has been gained.

8. Recommendation

In addition to focusing attention on strong risk management processes and customer service, banks need to focus their attention more on improved Strategic Working Capital Management in order to solve the liquidity problems.

Acknowledgement

My Acknowledgement goes to the Almighty God, and the author of the materials that was used for this paper.

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