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DEPARTMENT OF BUSINESS ADMINISTRATION

TOPIC
Working Capital Management And Performance Measures:
A Review of Selected Rural Banks In Kwahu Ridge

BY
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DECLARATION

I do declare that, except for the references to other people’s work which have been cited, this work submitted as a project to the department of Business Administration, Okwahu campus of the Presbyterian University College, Ghana, for the degree of Bsc. Business Administration in Accounting and Finance is the result of my own investigation and has been presented for any degree.

……………………………….. .................................................................

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(STUDENT) (SUPERVISOR)
DEDICATION

This thesis is dedicated to almighty God who has made me who I am today and to my loved wife Alberta Aboagye for supporting me both financial and spiritually. Also to my three lovely children namely Godfred Boafo Yeboah, Morris Wiafe Yeboah and Emmanuel Akye Yeboah.
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The development of this research work has not been an easy task. It took the effort of many individuals to put this project work together. I am therefore grateful to the Lord God Almighty for making my dreams come true. I do appreciate the rural banks in the Kwahu Ridge for the information given to me to make this work a success. I am also thankful to Mr. Ebenezer Agyemang-Badu of the department of Business Administration of the Presbyterian University College who took pains and patience in reading through the manuscript and offering useful suggestions, which were vital in making this work a success.

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To all I say “Bravo” and God richly bless you.
ABSTRACT

Even though a number of studies about Working Capital Management were undertaken in many countries around the world, the understanding about what the effects of working capital management have on the performance ratio is not explicit. To date there has been limited studies examining the banking sector in Ghana. The focus in these previous studies regarding the effects of working capital management on firm profitability is done by also taking in to account that each firm of a certain industry has its own way of managing working capital. The objective of this study is to establish the relationship between working capital management and performance ratio over a period of seven years for rural banks in Kwahu Ridge. The study used panel data set from 2006-2012 for five rural banks. This study will also give some insight how the working capital in the Ghana is managed in order to increase profitability.

The study revealed that firm size, financial debt ratio and net interest income ratio have significant impact on the level of working capital of the rural banks in running day to day affairs. Over the period of study which also comprises of period of global financial crisis, the finding was that working capital of the banks was consistently increased in working capital.

The study therefore, recommends that rural banks should also avoid the habit of getting financial debt without having immediate usage of the fund since the debt come with financial cost to the firm.
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CHAPTER ONE

1.1 Introduction
This chapter summarizes the general introduction of the study which background of the study, statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study, limitations of the study and organization of the study.

1.2 Background of the Study
Over the years there have been numerous articles written about the importance of working capital management regarding the profitability of a firm (Deloof, 2003; Raheman and Nasr, 2007). Various authors have conducted researches in different countries on employing working capital in an optimal way in order to pursue profitability. But some authors still have different findings on how working capital management in terms of cash conversion cycle and its components such as number of day’s inventories, number of day’s accounts receivable and number of days accounts payable are related to the profitability of a firm. Deloof (2003), who conducted his study on Belgian firms, suggests that working capital management has a vital effect on the profitability of a firm. He also states that firms have to make a trade-off between liquidity and profitability. Similarly, Raheman and Nasr (2007) posit that a company has to determine the equilibrium between liquidity and profitability because increasing profits at the expense of the liquidity of the firm can be harmful in terms of insolvency and bankruptcy of the firm. Accordingly, the three components of the cash conversion cycle are each managed in different ways to improve the profitability. This is due to firm specific (industry-wise)
with different characteristics. Each of the researchers that have conducted case studies in different countries found different results on how the profitability of a firm is related to the cash conversion cycle and its three components.

The management of working capital management is a vital component of corporate financial management because it directly affects profitability and liquidity of every organisation not only rural banks irrespective of their size. Working capital simply means the management of the current assets and current liabilities of every organisation. Working capital management has numerous in total organisations but there appear to have a direct significant impact on returns, liquidity and profitability and firms value (Dellof, 2003). An efficient and effective management of working capital has many positive effects in rural banking sector: it speeds payments of short commitments on firms (Peel et. All, 2000); it smooth the progress of owner financing; it working capital as a cause of reducing failure among small firms which rural banks are not exempted (Berryman, 1983); it ensures sound liquidity which is a major problem for many rural banks and can assure long term economic growth and achievement of good profit (Wignaraja and O’Neil, 1999) and it assures acceptable relationship between the component of firms working capital for efficient mix which guarantee capital adequacy (Osisioma, 1997). There exist a great conflict between profitability and liquidity whiles managing the current assets.
1.3 Statement of the Problem
The rural banks constitute, in the banking industry, a segment that is particularly important for the focus on the rural economic activities, human resource development, poverty reduction, inculcating savings habit, credit with education and the likes. The rural banks are then expected to fill this felt need in the rural and communities in the country. However, the solvency of rural banks depends on the how effective and efficient management are able to manage its working capital. Consequently, there appear to be a certain level of working capital requirement, which potentially maximise returns. High surplus funds and generous lending rate may lead to high loan management reaching out. One of the main objectives of working capital management is to ensure that organisation has sufficient and consistent cash flow to fund its activities. This requirement is a major challenges found in rural banks. The rural banks are mandated by the Bank of Ghana to keep certain level of liquidity in order to meet regulatory requirement of Bank of Ghana and to be able to meet customer withdrawals. Working capital management is aimed at sustaining a strong profitability together with sound liquidity which in term leads to strong cash holdings for ensuring effective and efficient customer services. Rural banks in Ghana are currently to hold total reserves amounting to 43% of their deposits liabilities broken down as follows: primary 8%, secondary 30% and ARB Apex bank 5% leaving the rest of 57% of the total deposits of customers as free for lending (BoG, 2010).

The rural banks in Kwahu ridge just like any rural bank in Ghana is faced with same requirement though this has constantly been missed. The rural banks had their fair share of operational problems. The central bank withdrew the licenses of twenty five rural
banks of which most of them were pronounced to be liquidity problems (Asiedu-Mante, 2011).

1.4 **Objectives of the Study**
The general objective of this study is to evaluate on the management of working capital and performance of rural banking in Kwahu Ridge.

The following are the specific objectives of the study:

1. To evaluate the relationship between working capital and performance measures of rural banks in Kwahu Ridge.
2. To examine the trend of working capital for the rural banks in Kwahu Ridge.
3. To make recommendations.

1.5 **Research Questions**
1. What is the relationship between working capital and profitability?

2. What is the trend of working capital of the rural banks in Kwahu Ridge?

1.6 **Justification of the Study**
The output of this research work outlines the working capital management and profitability, the relative importance of group (company investors and banks) and individual (bankers and shareholders). The research provides a useful literature for researchers and professionals who would like to find out the basics working capital management, especially in relation to liquidity and profitability. Moreover, the research
work provides a useful literature for rural banks in Kwahu Ridge. The research also provides significance to non-financial firms.

1.7 Scope of the Study
The research focused on the working capital management and profitability, using rural banks in Kwahu Ridge as a review. Therefore, the scope covers only the rural banks in the Kwahu settings in the Eastern Region of Ghana.

1.8 Limitations of the Study
In view of the limited time and financial constraints, the study could not be extended to all other rural banks in the country. The sourcing of information from the rural banks was quite difficult due to poor record keeping and confidentiality. Gaining access into company was a difficult task for the researcher.

1.9 Organisation of the Study
The study is organised into five chapters. Chapter one outlines the general introduction which covers background of the study, statement of the problem, objectives of the study (both general and specific), research questions that shows the whole study, justification of the study, the scope of the study, limitations of the study, and the organization of the study. Chapter two covers literature review, involving definition of key concepts and discussion of specific topical issues including rural banks and regulatory framework, rural banking in Ghana. The chapter also summarizes the conceptual framework of the study. Chapter three presents the research design, the definition of sample size and
techniques, description of how data was collected. Chapter four presents data analysis, discussion and interpretation. Chapter five presents the summary of findings, recommendations, and conclusion.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction
This chapter covers the review of related literature including definition of key concepts, discussion of specific topical issues, such as rural banking in Ghana and regulatory framework, the concept behind rural banking in Ghana, some challenges facing rural banks in Ghana.

2.2 Theoretical review of the study

Working capital is the fund required to support the expenses of production, sales, distribution and administration required prior to the receipt of the cash from the sale of finished goods. Simply put, it is the kind of short-term capital (circulating capital) required to finance a firm on a day-to-day basis. Choyal, (1991) and Pandy (1991) describe the concept of liquidity and indeed working capital and its importance as “a corporation’s life blood, which flows through the veins, and arteries of the structure.” In essence, working capital engages every part of the structure, gives courage and morale to the brain (management) and muscles (personnel), digest to the best degree, the raw materials used by its constraints and regular flow and returns to the heart (cash flow) for another journey and so on.

In a similar view, Padachi (2006) states, ‘just as the circulation of blood is very necessary in the human body to maintain life, the flow of funds is very necessary to maintain every
business. If it becomes weak, the business can hardly survive. Working capital starvation is generally credited as a major cause of failure.

In effect, working capital has been a key performance indicator and a measure of a company’s financial health for years. For instance, Largey and Stickney (1980) reported that the then-recent bankruptcy of W.T. Grant, a nationwide chain of department stores, should have been anticipated because the corporation had been running a deficit cash flow from operations for 8 of the last 10 years of its corporate life.

Smith (1973) contributing on the importance of working capital attributed most business failures to the inability of financial managers to plan and control properly the current assets and current liabilities of their respective firms. In a related view, Davies (1997) also explained that, of the organisations that fail in the UK, 75-80 per cent is profitable at the time that they do so. He associated the problem with the fact that, the relationship between cash flow and profitability is not fully understood. In effect, working capital is thus highly significant to the survival of any organisation and needs to be managed.

2.3 The management of working capital
The working capital management has been the centre of debate among corporate world over the past decades and still remains a subject under scrutiny. In view of this, it has received countless academic attention and continues to dominate the minds of corporate finance directors. It should however be noted that, the management of working capital goes beyond to include every employee in the umbrella of an organisation.

To help organisation realise the benefits of working capital management, several theorist and academic researchers have attempted to draw conclusion on working capital
management and its relation to corporate performance and growth. Their thought would presumably be helping organisations understand their working capital position, develop a plan to improve its effectiveness and implement smart cash flow management techniques tailored to their particular business (Chris Campbell) and contributing to the theory of working capital.

According to Archer et al (1983), working capital management involves managing the level and mix of current assets and current liabilities. Emery (2004) indicates that working capital management involves all aspects of the administration of current assets and current liabilities. In their study however, Van Horne and Wachowicz (1992), noted that, the administration of current assets and the financing (especially current liabilities) needed to support current assets is the meaning of liquidity management concept.

Accordingly, JPMorgan Fleming Asset Management argued that optimising working capital involves constantly juggling with stock, debtor, cash and creditor levels, each of which itself in a state of flux as a company does a business. Having too much or too little can both be detrimental to the company’s profitability and hence shareholder value. Given its pervasive nature, it is imperative that the board adopts a culture and infrastructure that encourages and rewards employees at all levels and throughout the company. In relation to this, Howe (2006) is of the view that, Sound cash management strategies according to can be the difference between success and failure for a growing business. He argues that the emerging company may have a limited track record, often making outside funds scarce and expensive. Hence, with the aggressive management of
the components of working capital, capital may be accumulated, reducing reliance on outside funds and increasing profitability.

In managing working capital a firm needs to determine a suitable level of investment; then it must decide how to finance its chosen level of working capital; and finally a firm’s managers need to see that their policy on working capital is actually carried out. In other words working capital needs to be managed (Myddelton D. R. 2000)

Brealey and Myers (2006) indicated that, “one cannot successfully tackle the problem of working capital management or short run financial management until there is a theory of liquidity”. They therefore suggested that, the broad question related to liquidity is how a firm should divide its total investment between relatively liquid assets. For instance, as lenders are mostly concerned with the liquid nature of inventory and receivable in the event that net cash flow is sufficient to repay a loan. Conclusively, they are of the view that, measuring liquidity and interpreting its effects on the value of the firm is a primary concern of short run financial management. However, Featherstone (2005) stressed that, *while it is important to seize short-term opportunities to generate cash from better working capital management, it is a mistake to assume that working capital improvement is only about short-term results. A short-term focus may be useful for increasing liquidity, but without a long-term commitment to better working capital management, companies will often see these gains erode over time.*

He therefore stated that, *sustainable working capital improvement requires constant vigilance. Companies that are successful in making improvements last do so because they make substantive changes to their underlying business processes, performance*
measurement programs, and incentive schemes. Working capital becomes an important measure of business performance alongside revenue growth and margin enhancement. Institutionalizing better working capital performance is a good way to ensure lasting improvement and inculcate the “cash culture” that many companies aspire to but few achieve.

The policy of working capital management will therefore be towards minimising those cycles (inventory conversion period and receivables conversion period) which require investment and maximising that payable deferral period which generates finance (Asch and Kaye, 1997). Hence improvement of working capital can release cash which can then be used to reduce debt outstanding, so improving gearing and even the company’s credit rating (JPMorgan Fleming Asset Management, 2004).

Profitability is the relationship between profits and the capital (the “static resources set aside to earn those profits”). Thus, it is the ability of the business to generate wealth, hence assessment for performance. Assessing this involves comparing various measures of profit with various measures of the size of the business. It should however be noted that a company may be highly profitable in an accounting sense, but this is of no use if there is no cash to pay employees and suppliers and no cash to make further investments. Conversely, a company which is making large accounting losses may be generating substantial cash (e.g. early in the 1980s Curtails made substantial accounting losses, yet generated millions of cedis before repaying loans and paying dividends.

Most often, measuring business profitability reveals perhaps the performance of the business. Thus profitability indicates the efficiency or otherwise with which a firm is managed (Banerjee, 2005). Several methods are used to measure profitability. Among
them are gross profit margin, return on capital employed (ROCE), and profit after tax to net worth. Among the three, ROCE is regarded as a critical figure that tells how well management used shareholder money (Cahill, 2003).

When return on capital employed (i.e. taken as fixed assets plus working capital) is used as the measure of profitability, the relation between profitability and liquidity follows from the component of the ratio, (e.g., profitability is calculated by profit over fixed assets plus working capital) that is, other things being equal, with more and more reduction in the amount of working capital, there will be an improvement in the profitability ratio and vice versa.

In a related view, Barrow (2002) stated that, the capital strand of the ROCE calculation has two main branches of its own.

**Sales/Capital on one hand and Sale/Fixed Capital plus Working Capital at the other hand.**

He further noted in his analysis that:

“They are the more dynamic of these branches is working capital, the day-to-day money used to finance the working of the business. It is important to monitor the relationship between sales and the various elements of working capital to see how effectively that capital is being used. But as the working capital is the difference between current assets and current liabilities, it is also important to monitor their relationship, both in total and in their components parts”.

Although many authorities have come to regard some measure of return on capital employed as the most suitable overall indicator of efficiency….. And is being regarded as
the most suitable tool for day to day control purposes, it should however be noted that, it can fluctuate quite erratically against the trend of output and may no way reflect the two principal company’s resources that is, capital and labour (McRae T. W. and Dobbins R. 1977). Hence, McClure (2005) argued that analysing a company’s inventories and receivables is a reliable means of helping to determine whether it is a good investment play or not. Companies stay efficient and competitive by keeping inventory levels down and speeding up collection of what they are owed. Broadly speaking, the smaller number of days, the more efficient a company – inventory is held for less time and less money is tied up in inventory. Instead, money is freed up for the smooth operation of the business. He conclusively stated that, getting behind the scenes at a company means more than simply knowing its earnings per share. Finding out where a firm’s cash is tied up in inventories and receivables can help shed light on its how efficiently it is been managed. Thus a firm which has a longer lead time between production and sale will require a greater investment in working capital.

2.4 Link between working capital management and profitability
Asch and Kaye (1997) in their wheel analogy of the working capital cycle, the fixed asset form the axle (subject to wear and tear) while the spinning on the axle is the investment on working capital. It was stated that, in order to maximise return on capital employed not only do we need to have the minimum amount of capital employed in fixed assets and working capital, but we also need to maximise the return on each revolution of the working capital cycle. This can be achieved by ensuring the relative mark up from cost
and revenue is at maximum; but working capital cycle takes the least possible time thus permitting within a given time period the maximum return.

In the JPMorgan’s Fleming Asset Management (2004) it was noted that, from a cash flow and profitability point of view, an ideal WCC would have negative days, i.e. a cycle where a company receives a longer period of credit from its trade creditors than it gives its trade debtors (including the time taken to convert stock into saleable product) and so is able to pay its trade creditors after receiving payment from its trade debtors.

In view of this many have argued that there exist some degree of interaction between working capital management and corporate performance. Whilst some argue that there is direct relationship in these components, others somehow oppose this view. Consequently, series of thought and research has been shared or done on the concept of working capital management and its corporate performance.

With respect to the effect of working capital management on firm value, Schiff and Leiber (1974), Sartoris and Hill (1983) and Kim Chung (1990) modelled the effects of working capital management on firm value however, no evidence was provided on whether firms actually do maximise their value by their working capital management choices but rather a summary of efficient measure of a firm’s working capital management was clarified.

According to Shin and Soenen (1998), efficient working capital management being an integral component of the overall corporate strategy helps in maximising shareholder value. They however stated that, the impact that working capital will have on a company’s profitability and liquidity is relative to the way working capital is managed. In their study of relation between different accounting profitability measures and net trade
cycles, using correlation and regression analysis, Shin and Soenen (1998) found that, firms that manage their working capital more efficiently, that is in “shorter net trade cycle”, experience higher operating cash flow and are thus more valuable. In effect, it is shown that a strong negative relationship exists between the firm’s net trade cycle and its profitability. Hence, reducing the firm’s net trade cycle to a reasonable minimum is a way of creating shareholder value and must be classified as a major concern among corporate executives.

Deloof (2003), in answering “as to whether working capital management affect profitability” challenged managers to prudently control the working capital as most large company’s invested their cash in working capital. As such the management of working capital will significantly affects the profitability of those firms. Using the correlation and regression tests on a sample of 1009 large Belgian non-financial firms in establishing the relationship between profitability and working capital management, he found a significant negative relationship gross operating income and the components of working capital management (i.e. number of days accounts receivables, inventories and account payable). In that note he suggested that managers can increase profitability by reducing the number of days accounts receivable and inventories. The negative relation between profitability and accounts payable, he suggest, to confirm the fact that less profitable firms wait longer in paying their bills.

2.5 Relationship between Liquidity and Profitability
Eljelly. (2004), in his liquidity-profitability trade off explains that, liquidity management involves marshalling of current assets and liabilities in a manner that eliminates the risk
of inability to meet short-term obligations when due as well as avoiding excessive investments in these assets. In examining the relation between liquidity and profitability, he sampled 29 joint stock companies that represent the major economic sectors in Saudi Arabia during 1996-2000. Using the correlation and regression analysis, the study found that there is a significant and a negative relation between Net Operating Income (NOI) and the liquidity measures such as Current Ratio (CR) and Cash Gap (CG). The current ratio was regarded as the most important liquidity measure that affects profitability. And the degree of impact varies at different levels of liquidity. However, within sectors, the cash gap, as a liquidity measure is found to be more important than CR in affecting profitability. The study also revealed that there is great variation among industries with respect to the significant measure of liquidity. Although certain liquidity levels are desirable and sometimes unavoidable, the study points to the lost profits and the unnecessary costs that are borne by companies as a result of holding excessive liquidity. These losses or costs could be reduced or eliminated by adopting active liquidity management strategies.

In a related point of view, Archer (1969) stated that, usually there is always a negative relationship between liquidity and profitability. But it cannot be denied that unless there is a minimum level of investment in the current assets, which provide a promising vehicle for increasing profitability, output and sales cannot be maintained. Up to a certain level, therefore one is complementary to the other. The maintenance of a solid liquidity position enhances profits, provided the established liquidity level harmonises with the nature of the firm. By keeping his short run position secure by maintaining liquidity, the finance
manager is able to plan for profitability in the long-run. In this sense, liquidity is not competing with profitability; rather it is a means towards the end-profits.

Gentry (1976) hypothesised a relationship between liquidity and profitability as perceived by business managers (see fig below). According to him, the relationship between the two may not be continuously positive but rather has the shape of an inverted tea cup: up to a certain level, increase in liquidity leads to an increase in profitability (points between O and A), beyond that, profitability remains constant with the increase in liquidity up to a certain point.

Finding a relationship between leverage, working capital and capital expenditure, no evidence was found that changes in leverage are associated with those in operating performance. There was no evidence that changes in leverage were associated with working capital and capital expenditure. And a weak evidence of a negative association between changes in managerial ownership and changes in working capital. However, it was revealed that there is a strong evidence of a negative association between changes in non-management insider ownership and both working capital and capital expenditure (Financial Times 1998).

Smith (1973) on liquidity and corporate performance, noted with emphasis regarding the inverse relationship between liquidity and profitability. However according to Jetuah (2006) there is a direct correlation between a company’s net working capital and its sales per day. Simply put, the lower the value for DWC, the less pressure exerted on the company while waiting for profits to materialise. Thus the relationship between the buyers and suppliers played a significant part in a company’s financial health. Top
performing companies often had their suppliers over a barrel, raking in profits, while invoices were outstanding.

Vijayakumar and Venkatachalam (1996) in their study of responsiveness of working capital stated that in order to judge the liquidity position and its impact on profitability, it is necessary to analyse the different working capital ratios. They conclude that there is a high degree of negative correlation between profitability and current ratio (CR).

A slight shift however, on research emphasis in this field of study was observed in the 1980s. Hawawini, Viallet and Vora (1986) in examining the influence of a firm’s industry on its working capital management using data on 1181 firms concluded that there is a substantial industry effect on firm working capital management practices and is stable over time. Largay and Stickney (1980), using cash flow analysis, a departure from using liquidity to test business performance found that liquidity ratios and measures of cash flow from operations were the best predictors of the future success of a business.

However, Casey and Bartczak (1984 &1985) questioned the conclusions of Largay and Stickney (1980) studies. Using a sample of 30 bankrupt firms, with another 30 firms held out of the study for validating purposes, as well as 165 non-bankrupt firms, with an equal number held for validation, they found, standard accounting measures were better for predicting firm bankruptcy than cash flow measures.

Unfortunately, their study did not make into consideration, various sectors; as a result, this study has specifically set out for five different sectors to further understand how efficient working capital to corporate performance is.

The uncompromising report, compiled by Hackett-Rel, highlights the fact that working capital remains a serious problem for businesses, despite their lofty perches in the FTSE
350. Hackett’s survey analysed Europe’s 1000 largest companies and uncovered troubling statistics as it showed some businesses had to spread their resources very thinly over a long period of time, causing major headaches for FDs and their staff (Jetuah, 2006).

In view, for a firm to survive and grow it needs to maintain a fair balance between its liquidity and profitability in the day-to-day running of the business. Though it is evident that firms need to prudently maintain a balanced between liquidity and profitability, there difficulties in managing the risk and return of working capital management and firms performance. Hence managers are left in a dilemma of achieving desired tradeoffs between liquidity and profitability in maximising the value of a firm (Pedachi, 2006). Pedachi however maintains that, a well designed and implemented working capital management should contribute positively to the creation of firm’s value. In examining the trend in working capital management and its impacts on firm’s performance, Pedachi drew a sample of 58 manufacturing firms from a database of registered manufacturing firms operating in diverse activities. Using panel data analysis for the period 1998-2003, the result shows that a high investment in inventories and receivables is associated with lower profitability. In effect, paper and printing industry achieved high scores on the various components of working capital and this has positive impact on its profitability. The treasury manager should ensure that the firm operates sound working capital policies. These policies cover such areas as the levels of cash and nearly cash, and the credit terms granted to customers and agreed with suppliers. The successful implementation of these policies influences the company’s expected future returns and
associated risk, which, in turn, influence shareholder value. Failure to adopt sound working capital policies may jeopardize long-term growth and even corporate survival. For example:

Failure to invest in working capital to expand in a form of granting out loans to customers may result lost of profits.

Failure to maintain current assets that can quickly be turned into cash can affect corporate liquidity, damage the bank’s credit rating and increase borrowing cost.

Poor control over working capital is a major reason for overtrading problems.

In investing in working capital, management should assess the level of liquidity risk it prepared to accept, risk being defined as the possibility that the firm will not be able to meet its financial obligations as they fall due.

Managing working capital involves a trade-off not only between risk and required return, but also between cost that increase and cost that fall with the level of investment.

There are three working capital management policies adopted by companies.

- Aggressive policy
- Conservative policy
- Moderate policy

With an **aggressive working capital policy**, organization holds a minimal level of inventory. Therefore, aggressive policy would minimize costs. But the organization may not be able to respond rapidly to increases in demand because of the low stocks. Companies adopting an aggressive working capital financing policy, finance part of its permanent asset base with short term debt. Because cost of short term debt is generally
less than the cost of long term debt, aggressive working capital policy provides the highest return but it is still very risky.

Source: Kulkarni(2011)

A large inventory is maintained under the conservative policy and therefore the return is lower than under an aggressive policy. In terms of risk and return, a moderate policy falls somewhere between the two extremes. Under a conservative working capital financing policy, the organization’s non-current assets, permanent current assets as well as a part of the fluctuating current assets are financed with permanent financing (equity and long term debt). Therefore the conservative financing policy is the least risky policy but it gives lowest return to the company.
With a moderate working capital financing policy, non-current assets and permanent current assets are financed with permanent finance and only the fluctuating current assets are financed with short term debt.

Source: Kulkarni(2011)
You may be aware that cash, inventories and receivables are all current assets that form part of working capital. But there is a basic difference between cash and inventories on one hand and receivables on the other. Higher level of cash and inventories means a safety buffer and therefore it is a more conservative situation. In the case of receivables, there is no such thing as a safety buffer of receivables. A higher level of receivables generally means that the company extends credit on more liberal terms. Aggressive working capital policy has been identified above as risky. Then lowering inventories and cash would be aggressive but increasing receivables would also be aggressive.

Moussaw, LaPlante, Kieschnick, and Baranchuk (2006) stated “there are models to describe how working capital management practice influence firm value but there are practically no evidence that firms manage their working capital so as to maximise their value. Further, there is little evidence on what factors influence a firm’s management of working capital, particularly whether agency cost issues are concern”.

2.6 Empirical review
In the area of corporate finance working capital plays a vital role. The reason for this is that working capital management directly affects the liquidity and profitability of a company (Raheman and Nasr, 2007). Working capital management is the management of current assets (resources in cash or easily converted into cash) and current liabilities (organizational commitments which soon require cash) (Hill et al., 2010). It is about maintaining an optimal balance between the individual working capital components: receivables, inventory and payables (Nazir and Afza, 2009). Successfully managing these components largely influences the performance of a company (Raheman et al., 2010).
According to Deloof (2003) efficient working capital management, trying to maintain an optimal level of working capital is a fundamental part of maximizing shareholder value. If working capital management is efficient it can ultimately increase the profitability of a company (Raheman and Nasr, 2007). Maximizing profit or shareholder value are the ultimate objectives for a company, however preserving liquidity is important too. A company needs to care about profit for their continuity, but at the same time a company needs to focus on liquidity to prevent insolvency or bankruptcy. This presents a trade-off between these two objectives, focusing on maximizing profits should not be at the cost of liquidity, and calls for effective working capital management (Raheman and Nasr, 2007). Nevertheless, the authors did not reveal what the efficient way of managing working capital is for each sector. The question of the level of efficiency rises because it is not clear what efficiency means for a company. Is it efficient to give more credit to customers and gain more sales or rather reduce the trade receivables in order to prevent a cash gap in the cash conversion cycle? Is it efficient to have higher inventories to prevent stock-out or is it efficient to keep a low level of inventories to prevent cash-lock in working capital? Is it efficient to delay the payment to suppliers or not, keeping in mind that delaying can result in damaging reputation.

According to Hill et al (2010) the optimal level of working capital is the one that ensures a balance between risk and efficiency. This requires a constant monitoring of the working capital components to maintain a suitable level. On the one hand higher sales might be generated with a large inventory and a generous trade credit, since the chance of a stock-out is reduced and customers can assess the quality of a product before paying. On the
other hand large inventories and trade credit keep cash locked up in working capital. The same dilemma counts for accounts payable. Delaying payments presents companies with a possible flexible and inexpensive source of financing, and it offers the possibility to assess the quality of the products bought (Deloof, 2003). Concerning an optimal level of working capital, Hill et al (2010) highlighted the need to consider financial characteristics besides industry affiliation when examining working capital levels for optimality. This author also did not outline what optimal management is.

In a number of studies the cash conversion cycle proves to be a popular measure of working capital management. The longer this cash conversion cycle, the bigger the amount of cash tied up in working capital. This situation can have two outcomes. It can have a positive effect on profitability if a longer cash conversion cycle leads to more sales or, it can have a negative effect on profitability if the cost of the investment in working capital rises faster than the benefits of having a large inventory or generous trade credit (Deloof, 2003).

Numerous researchers have focused on the relationship between profitability and working capital management. Most of these studies support the conclusion that there is a negative relation between profitability and working capital management measures, like the average collection period, inventory turnover in days, and cash conversion cycle. The results for the relationship between profitability and average payment period are inconclusive (BintiMohamad and BintiMohdSaad, 2010; Raheman en Nasr, 2007; Deloof, 2003).

Jose et al. (1996) examined the relationship between profitability and aggressive working capital management in some US companies. With the cash conversion cycle as a measure
for working capital management they found a significant negative relationship between the cash conversion cycle and profitability. More precisely they found that a shorter cash conversion cycle, in other words a more aggressive style of working capital management, leads to a higher profitability.

Shin and Soenen (1998) examined the relationship between efficient working capital management and a firm’s profitability using the net-trade cycle as a measure of working capital management. The relationship was examined using correlation and regression analysis, by different industries. Using a sample of 58,985 firm years covering the period 1975–1994, in all cases, the authors found a strong negative relation between the length of the firm’s net-trade cycle and its profitability. Also, a shorter net-trade cycle was associated with higher risk-adjusted stock returns.

Deloof (2003) investigated a sample of 1,009 Belgian firms and found a significant negative relation between profitability and the individual components of working capital: the number of day’s accounts receivable, inventories and accounts payable. According to Deloof (2003) the negative relation between profitability and the number of day’s accounts receivable and inventories suggest that managers can create shareholder value by reducing the number of days accounts receivable and inventories to an optimal minimum. The negative relation between profitability and accounts payable suggest that companies wait longer to pay their bills if they are less profitable.

Padachi (2006) conducted a study on small Mauritian manufacturing firms, during 1998 to 2003, and found that by lengthening the number of days for accounts payable the profitability can be impaired because of the implicit cost of discount for early payment to
suppliers. When sales are low, firms postpone the payment to creditors in order to survive.

Using return on total assets as measure for profitability, the author found that the number of days in accounts receivable has a significant relation with return on total assets which implies that an increase of accounts receivable with one day will result in a lower profitability. Furthermore, Padachi did not find any significant coefficient between inventories and the profitability.

Lazaridis and Tryfonidis (2007) studied the relationship between profitability and working capital management of listed companies at Athens Stock Exchange. They observed that the shorter the period from production till the sales of the product is, the more profitable the firm will be. According to their research, less profitable firms decrease the number of days in accounts receivable in order to minimize the cash gap in the cash conversion cycle.

Too much inventory in times of low sales will lead to excessive capital usage at the expense of the firm’s profitable operations.

Dong and Su (2010) investigated the relationship between the cash conversion cycle and profitability, measured through gross operating profit. Their research is based on a sample of 130 firms listed companies on the Vietnam stock market between 2006 and 2008. The cash conversion cycle has been split into the number of accounts receivable, number of day’s accounts payable and the number of day’s inventory. With a correlation analysis and a multiple regression analysis in which they controlled the sales, debt ratio and fixed financial assets to total assets they conclude that there is a strong negative
relationship between the number of days accounts receivable, number of days inventories and cash conversion cycle with corporate profitability. There is shown a positive relation between number of day’s accounts payable and profitability. The study claimed that managers can create value for their shareholders by reducing the cash conversion cycle and those more profitable firms wait longer to pay their bills.

Gill (2010) examined 88 firms between 2005 and 2007 in the United States. Their sample was random sampled to be representative to the population. Their research has been controlled by sales, financial debt ratio and fixed financial asset ratio. With their regression analysis, they found that the relationship between cash conversion cycle and profitability is positive, which contradicts to most literature. The relationship between accounts receivables and profitability is negative. For a relationship between profitability and account payable and/or inventory no statistical evidence has been found due to poor results.

Sharma and Kumar (2011) measured the relationship between profitability and cash conversion cycle for firms in India. 263 firms in the Bombay Stock Exchange (BSE) 500 have been analyzed between 2000 and 2008. With control variables sales growth, leverage, current ratio and firm size the profitability is measured with the return on assets. They found a negative relationship between profitability and the number of days in inventory, which indicates that the less time it takes for inventory the more profit can be made due to the fact that more turnovers can be established. For the relationship between cash conversion cycle and profitability has shown to be positive agreeing with Gill (2010).
CHAPTER THREE

METHODOLOGY

3.1 Introduction
This chapter looks at the study design, population and sampling methods, data collection methods, procedure and timeframe, statistical analysis and study instruments.

3.2 Research design
The research design used is quantitative research. Research design is the specific data analysis techniques or methods that the researcher intends to use. The quantitative research design involves the collection and analysis of data, and finding out the answers concerning the current status of the subject. Also, it is a study of variables in their natural setting or under usual circumstances. This comprises observation of facts, formulation of hypothesis, collection and classification of data, interpretation of data, formulation of theories, application of facts and predictions.

This seven years period was considered because it is the most recent and findings are expected to be current. Data will be derived from the annual reports of the selected rural banks in the Kwahu Ridge.

The study looks at the relationship between performance and management of working capital (w.c) and profitability (p) as well as it impact. Therefore, in an attempt to develop a robust model, empirical models will be explored. The researcher used a correlative design to investigate it effect on the performance of rural banks using a time series and cross-sectional data.
3.3 Study population and sampling method
The population of the study is all the rural banks in Kwahu. However, because some management of rural banks does not want to give the data out only five rural banks in Kwahu ridge which their data is available for the study. The census method was also used because of the small size of the population, thus, the sample was done purposively.

3.4 Data collection methods
Secondary data was the main source of information which was used for this particular work. The researcher therefore went to the five rural banks and collected their financial statements for the period 2006 to 2012.

3.5 Study instruments
The sources of data for the study were taken from the annual financial statements of the five rural banks in Kwahu ridge from the period 2006 to 2012. It is from these financial statements that variables used in the study information were generated. The financial statements of the five rural banks were obtained from the selected companies to assist the researcher in the research process.

3.6 Model specification
Since the study seeks to examine working capital and performance measure of Rural Banks in Kwahu ridge over a seven year period, the study uses panel data regression analysis of cross-sectional and time series data. The general models for the study are:
\[ WC_{it} = \beta_0 + \sum \beta_i X_{it} + \epsilon_{it}(\text{Eq. 1}) \]
WC\text{it}: working capital of the bank i at fiscal year t  

β0: The intercept of equation  

βi: Coefficients of X\text{it} variables  

X\text{it}: The different independent variables for profitability of the bank i at fiscal year t  

i: Bank = 1,- 5 firms  

t: Time= 1,2,3,4,5,6,7 years  

ε: The error term  

The researcher transforms the above general least squares models into identified variables it becomes:

WC\text{it} = β0 + β1ROA\text{it} + β2NST\text{it} + β3CAT\text{it} + β4FDR\text{it} + β5SIZ\text{it} + β6CR\text{it} + β6GRO\text{it} + ε\text{it}  

(Eq. 2)

**Table 1: Definition of Variables (Proxies) and Expected Signs**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Expected Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>Working Capital (<strong>Dependent variable</strong>) = working capital of the bank i at the end of fiscal year t i.e current asset-current liability</td>
<td>NA</td>
</tr>
<tr>
<td>ROA</td>
<td>Profitability = The return on total assets of the bank i at the end of fiscal year t i.e profit after tax/total asset</td>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>GRO</td>
<td>Growth in Net-Interest income of bank i at the end of year t. Net interest income-Net interest income_{1,t} / Net interest income_{1,t}</td>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>CR</td>
<td>Current ratio to total asset ratio of the bank i at the end of fiscal year t. current asset/current liability</td>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td><strong>NST</strong></td>
<td>the natural log of net interest income of the bank i at the end of fiscal year t.</td>
<td><strong>Negative</strong></td>
</tr>
<tr>
<td><strong>FDR</strong></td>
<td>Financial debt to total asset ratio of the bank i at the end of fiscal year t.</td>
<td><strong>Negative</strong></td>
</tr>
<tr>
<td><strong>SIZ</strong></td>
<td>the natural log of total asset of bank i at the end of fiscal year t.</td>
<td><strong>Positive</strong></td>
</tr>
</tbody>
</table>

### 3.7 Estimation methods
The Ordinary Least Square (OLS) was the estimator used to estimate the parameters of the model above. The ordinary least squares attained the values of the parameters or coefficients that minimises the sum of the square errors.

To determine whether the effects were fixed and that the validity of using ordinary least square (OLS) was justified, the null hypothesis was tested and a violation of which the general least squares (GLS) would have been used. In this way the researcher would have achieved a more efficient estimator of $\beta$.

### 3.8 Data analyses
Quantitative data was arranged in the form of tables with brief headings to explain what each table represented. This was to make the discussions simple and clear. The tables were used to show the findings of each research. Data gathered from the survey would be analyzed using Strata 12.
3.9 Profile of selected rural banks

3.9.1 Mumuadu Rural Bank Ltd
This bank was established on the 26th of November, 1982 under the companies code 1963 (Act 179), with its head office at Osino.

Mission statement

The mission of Mumuadu Rural Bank Ltd is to promote and finance sustainable micro activities. The bank aims at maximizing profit, earnings per share and market price per share (ie. Shareholders worth). Also to become a well managed Rural Bank in Ghana through a well-motivated workforce; offer tailor-measured products and provide more customer friendly services to its clientele better than its competitors in the banking sector.

Vision

The bank has its vision to be ranked the best or among the best rural banks in Ghana by the year 2015. The branches are in Osino, Begoro, Kyebi, Koforidua, Suhum, Nkawkaw and New Abirem.

3.9.2 Kwahu Rural Bank Ltd
This bank was established in 1980 with its head office at Pepease. It has agencies in Bepong, Tafo, Nkawkaw, Koforidua, New Abirem and Mpraeso.

Mission statement

To provide efficient and effective financial services through mobilization of funds to strengthen the capital base of the bank, ensure efficient banking services to all clients, and good returns to shareholders, other stakeholders, through strong network with well trained and motivated staff.

Vision
The vision of the bank is to be a leading rural bank in micro financing in the country by the year 2015.

3.9.3 Kwahu Praso Rural Bank Ltd
The bank was established in 1982 under the companies code 1963 (ACT 179), with its head office at Kwahu Praso.

Mission statement
To provide efficient and effective financial services through mobilization of funds to strengthen the capital base of the bank, ensure efficient banking services to all clients, and good returns to shareholders, other stakeholders, through strong network with well trained and motivated staff.

Vision
To be among the best financial intermediates, capable of providing good financial services and ensuring good and higher standard of living of the people in the catchment area. The branches are in Kwahu Praso, Kwahu Tafo, Nkawkaw, Nkwantia and Obo, with two mobilization centers at Pra River and Sumenakese.

3.9.4 Odwenanoma Rural Bank Ltd
The bank was established as a limited liability company under the companies code on the 21st December in the village called Kwahu Abetifi in the Kwahu east district of the eastern region and commenced business on the 16th of February 1988. The bank currently has four branches located at Koforidua, Kwahu-Mpraeso in the Kwahu south
district, district and Nkawkaw in the Kwahu west municipality. The shareholders of the bank are mainly residents in the catchment areas of the bank.

**Mission statement**

To provide first class banking and micro-finance services to enhance the living standards of the people in its catchment area and in the Eastern Region in general.

**Vision**

To capture the leadership position in rural banking and become a leading micro financing banking in the Eastern region of the Ghana by the year 2015.

3.9.5 **Afram Rural Bank Ltd**

The bank was incorporated as a company limited by shares on November 12th 1981 under the companies’ code 1963 Act (179) of Ghana. The Bank was issued with a license to operate the Banking Business and was issued with a certificate to commence business on 28th January 1982. The bank is located at Tease in the Kwahu north district of Ghana and operates four agencies at Donkorkrom, Tease, EkyeAmanfrom and Maamekrobo all in the Kwahu north district. Some of their products are susu, current account, saving account, susu banking loan, funeral loan, fixed deposit, western union and others.

**Mission statement**

Afram rural bank has set out the mission:

1. To be the first choice rural bank that mobilizes rural savings for rural investment and financing to improve the standards of living.

2. To fulfil the bank’s corporate social responsibility to the community.
Vision

The vision of the bank is to be a leading rural bank in micro financing in the country by the year 2017
CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction
This chapter covers the statistical analysis and interpretation of regression models between dependent variable (working capital) and independent variables (return on asset, interest income, current asset to total, financial debt to total asset, firm size, current ratio and growth) of rural banks in Kwahu Ridge. Before the regression test was run normality test was conducted to establish whether the data was evenly distributed or not for the study.

4.2 Normality test
Table 2: Shapiro-Wilk normality test

<table>
<thead>
<tr>
<th>Variables</th>
<th>W</th>
<th>V</th>
<th>Z</th>
<th>PROB.&gt;Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>0.89894</td>
<td>2.221</td>
<td>1.598</td>
<td>0.05507</td>
</tr>
<tr>
<td>ROA</td>
<td>0.73505</td>
<td>5.824</td>
<td>3.527</td>
<td>0.00021</td>
</tr>
<tr>
<td>NST</td>
<td>0.97031</td>
<td>0.653</td>
<td>-0.854</td>
<td>0.80355</td>
</tr>
<tr>
<td>CAT</td>
<td>0.89672</td>
<td>2.270</td>
<td>1.641</td>
<td>0.05040</td>
</tr>
<tr>
<td>FDR</td>
<td>0.81654</td>
<td>4.033</td>
<td>2.791</td>
<td>0.00263</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.96095</td>
<td>0.858</td>
<td>-0.306</td>
<td>0.62007</td>
</tr>
<tr>
<td>CR</td>
<td>0.89241</td>
<td>2.365</td>
<td>1.723</td>
<td>0.04245</td>
</tr>
<tr>
<td>GRO</td>
<td>0.86639</td>
<td>2.937</td>
<td>2.156</td>
<td>0.01552</td>
</tr>
</tbody>
</table>
Going further to analyse the data statistically, there was the need to run for normality test to see as so all relevant variables (working capital, return on asset, interest income, current asset to total, financial debt to total asset, firm size, current ratio and growth) used in this study have fulfilled the assumption of normality or not. The natural logarithm was generated for accounting data to reduce the skewness and distribution. From table 2, only interest income and firm size shows no problem in fitting the normal distribution (p > 0.05) while the other variables does present general problems and appears not robust as reported in Shapiro-Wilk which is significant at 5% confidence level (p < 0.05), indicates that the data are significantly different, thus, data used in this study are not normally distributed, hence the null hypothesis is rejected.

### 4.3 Descriptive Statistics

Table 3: Descriptive statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>.550655</td>
<td>.4538691</td>
<td>5.280526</td>
<td>6.594171</td>
</tr>
<tr>
<td>ROA</td>
<td>.0358694</td>
<td>.037986</td>
<td>.0043268</td>
<td>.1631709</td>
</tr>
<tr>
<td>NST</td>
<td>.1577376</td>
<td>.0341771</td>
<td>.0821937</td>
<td>.2255273</td>
</tr>
<tr>
<td>CAT</td>
<td>.2152595</td>
<td>.1110272</td>
<td>.0796873</td>
<td>.4641927</td>
</tr>
<tr>
<td>FDR</td>
<td>.7895132</td>
<td>.1204517</td>
<td>.5444083</td>
<td>.9392933</td>
</tr>
<tr>
<td>SIZE</td>
<td>6.71861</td>
<td>.3537654</td>
<td>6.149432</td>
<td>7.369004</td>
</tr>
<tr>
<td>CR</td>
<td>.266337</td>
<td>.1148976</td>
<td>.1288462</td>
<td>.5089487</td>
</tr>
<tr>
<td>GRO</td>
<td>.3011289</td>
<td>.4089868</td>
<td>-.9295688</td>
<td>1.082835</td>
</tr>
</tbody>
</table>
Descriptive analysis shows the average, and standard deviation of the different variables of interest in the study. It also presents the minimum and maximum values of the variables which help in getting a picture about the maximum and minimum values a variable can achieve. Table 3 presents descriptive statistics for 3 rural banks for a period of seven years from 2006 to 2012. The table 3 above account for the descriptive statistics of the variables used in the study. Averagely working capital management as measures by working capital to total asset was 55.07%, while the return on asset showed an average return of 3.59%. The average net interest to total asset for the period under consideration was 15.77%. The average current asset to total asset accounted for 21.53% with financial debt to total asset ratio ratio to be 78.95%, firm size which was measured by log of the total asset was 671.86%. Current ratio of the firms under consideration showed a average ratio of 26.63% with growth being 30.11%. However, the result suggests that the rural bank in the Kwahu ridge did not deviated from the mean.

4.4 Correlation matrix
Table 4: Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>WC</th>
<th>ROA</th>
<th>NST</th>
<th>CAT</th>
<th>FDR</th>
<th>SIZE</th>
<th>CR</th>
<th>GRO</th>
</tr>
</thead>
<tbody>
<tr>
<td>WC</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.54</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NST</td>
<td>0.37</td>
<td>0.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAT</td>
<td>-0.64</td>
<td>-0.32</td>
<td>-0.39</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDR</td>
<td>-0.60</td>
<td>-0.58</td>
<td>-0.01</td>
<td>0.60</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For quantitative analysis we used two methods. At first, correlation is used to measure the degree of association between different variables under consideration. The study has been able to identify many important variables associated with working capital management and performance measures.

As multiple variables are influencing our problem Pearson’s Correlation analysis is used for data to see the relationship between variables such as those between working capital management and performance measures. If efficient working capital management increases profitability, one should expect a negative relationship between the measures of working capital management and profitability variable. There is a positive relationship between profitability on the one hand and the measures of working capital management on the other hand. Perhaps, this is inconsistent with the view that the time lag between expenditure for purchases of raw material and the collection of sales of finished goods can be too long, and that decreasing this time lag increases profitability.

Further, net interest income to total asset and working capital management was found to be positively correlated at 36.87% point indicating a weak relationship. Current asset to total asset ratio was negatively related to working capital management at 63.80%, suggesting that current asset to total asset and working capital management has a relative strong relationship. Financial debt to total asset ratio and working capital management was found to be negatively related with relative strong relationship at 60.02% point.
Further investigation showed that firm size and working capital management was found to be 85.88% correlated therefore, increase in the size of the firm could cause increase in working capital of the rural banks under consideration. Again, to the dismay of the research, the study observed a negative relationship between current ratio and total asset of the firms at 53.20% level of relationship and finally the growth in interest income showed a positive relationship with working capital at a very weak association at 8.27% level of association.

By analyzing the results we can conclude that if the firm can increase the working capital and then the firm is efficient in managing its working capital by reducing the working capital cycle. This efficiency will lead to the firms’ profitability.

### 4.5 Analysis of variance

Table 5: Source of variation of the model

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>Df</th>
<th>MS</th>
<th>R-squared</th>
<th>Adj R-squared</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>3.46505713</td>
<td>10</td>
<td>0.4950</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>0.036895223</td>
<td>7</td>
<td>0.0037</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.50195236</td>
<td>17</td>
<td>0.2060</td>
<td>0.9895</td>
<td>0.9821</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

In dealing with any regression analysis, it is important to establish the fitness of the model and this can only be found by the use of source of variation. This table 5 provides two sources of variation; regression and residual. The regression sources of variation are the portion of the variation in the dependent variables (working capital management) that
is explained by regression model while the residual variation is what the model could not explain. A model which is reliable will have a higher regression sum of squares than the residual sum of square. From the table 5 the regression source of variation of 3.4651 is higher than the residual source of variation of 0.0369. Thus, the regression model is able to explain larger portion of the variations in the dependent variables (share price) than the residual source of variation.

The table 5 yields R square figure of 0.9895 indicates that, relying on this model will account for 98.95% of the changes in the dependent variable (working capital management). This confirms the good to fitness of the model used in this study.

The overall significance (prob.) of 0.0000 also indicates a significant relationship at 1% level of significance. These results, therefore, provide evidence that the regression model is well fitted and that the working capital management of the rural banks in the Kwahu ridge is significantly influenced by the explanatory variables used in this study.

### 4.6 Regression Analysis

Table 6: Regression analysis

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>t-stat.</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
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<td>-0.51</td>
<td>0.622</td>
</tr>
<tr>
<td>NST</td>
<td>.6903626</td>
<td>0.93</td>
<td>0.073</td>
</tr>
<tr>
<td>CAT</td>
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<td>-1.08</td>
<td>0.304</td>
</tr>
<tr>
<td>FDR</td>
<td>-1.438086</td>
<td>-3.20</td>
<td>0.009</td>
</tr>
<tr>
<td>SIZE</td>
<td>.9936766</td>
<td>17.46</td>
<td>0.000</td>
</tr>
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The study found that there is a positive relationship between working capital and net interest income. Results of this regression is a positive coefficient of 0.6903626 and it is significant at $\alpha = 10\%$ or it is confident at 90% level. Give the result, an increase in net interest income by one currency point is a will cause working capital management to increase by 69.04%. This portrays that there is a direct relationship between interest income and working capital.

For the purpose of identifying the important variables influencing the dependent variable we have used the regression analysis. In panel data regression, time–series and cross-sectional observations are combined and estimated. In other words, several cross-sectional units are observed over a period of time in a panel data setting.

Panel data is more useful in studying the dynamics of adjustment, and is better able to identify and measure effects that are simply not detectable in pure cross-sections or pure time - series data. The study used regression analysis to investigate the impact of working capital management and cost structure on corporate profitability. The determinants of corporate profitability were estimated using pooled least squares method.

A result of the regression indicates that the coefficient of return on asset is negatively -0.2695526 with t-value of -0.51 and is highly insignificant. What it meant is that increase in profitability as measured by return on asset by a currency point would cause working capital...
capital to decrease by 26.96%. This portrays that the increase in return on asset of y firm at time t would decrease the working capital management of y firm at time t.

From table 6 above, current ratio of the rural banks in Kwahu Ridge has positive beta coefficient and can influence a positive change in the working capital management whenever there is an increment in the ratio. This indicates that whenever there is a unit increment in the current ratio, the working capital management will increase by 150.46%.

Since this study used firms drawn result was not statistically significant, it cannot be said that current ratio has impact on working capital of the banks under consideration.

The introduction of growth rate of the firms to the equation revealed the impact to the overall results, thus, on working capital. the study observed a positive relationship between working capital and growth at 5% level of significant or 95% confidence level with coefficient of (0.07181) and t-statistics of (-1.64). Table 6 showed that the growth of the firms accounts for about 7.18% of the changes in the working capital management. This means that whenever there is a unit increment in the growth value of the rural banks in Kwahu Ridge, the working capital management will increase by 7.18%.

Also, the study reveals a negative relationship between financial debt ratio and working capital management where the result showed coefficient of -1.4381 at 1% level of significance. What is means is anytime there is a unit increase in financial debt ratio, working capital management will increase by 143.81% for the rural banks under consideration. The t-test of -3.20 re-affirms the assertion that relationship between financial debt ratio and working capital management is negative.
Besides, the study show a negative t-statistics of (17.46) and coefficient of (0.9937) between working capital management and firm size as measured by total asset, indicating a positive relationship with statistical significant at 1% level of significance or 99% confidence level. What this implies is that firm size can significantly cause changes in working capital management of the banks in the Kwahu Ridge. But given the result any time that financial debt will increase by one currency point (Ghana Cedi) working capital will increase by 99.37%.

The study observed a positive relationship between current asset to total asset ratio and working capital with no statistically insignificant. The coefficient of (-1.8986) and t-value of (-1.08) with statistically insignificant. Thus, the indication is that given an increase in current ratio by one currency point working capital is expected to decrease by 189.86% but current ratio cannot be said to have significant impact on the working management of the rural banks under consideration.

4.7 The trend of working capital
The researcher also used the figure to determine the trend of working capital of the rural banks under consideration.
From the figure 1 above, it could be observed that before the global financial crisis which is 2006 working capital for the firms was GHC 9,390,600 for the rural banks under the consideration of this study. In 2007 the banks working capital were GHC 10,191,209.7. 2007 was the starting point for global financial crisis does making the condition of banking difficult. 2008 saw a significant decrease in working capital from the previous year to GHC 7,542,449.75 and further decrease to GHC6, 956,779.41 in 2009. 2008 and 2009 was the peak of the financial crisis and this was expected because business was not potent enough in the banking sector. In the heat of the global financial crisis banks in the Kwahu ridge continue to make significant amounts as working capital so as to avert any shocks. 2010 show working capital at GHC 10,352,463.6. As the banks continue to make profit so it continues continue to put austerity measures to control the shocks of the crisis in 2011 and 2012 saw a increase in working capital against the previous year. In the
effect, the rural banks under consideration make average yearly working capital were 89.89% of the total assets.
CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction
In the final chapter to this study and it shows the conclusion of the study as recommendations.

5.2 Conclusions
This study investigates how relatively rural banks in Kwahu Ridge can manage their working capital in the most profitable way, during non-crisis periods and during a crisis period and post crisis. Working capital is studied as a whole, but its parts are also studied individually. In this thesis a sample of five rural banks in Kwahu Ridge are used which covered 2006 to 2012.

It was observed that, the model developed was good to fit and the variables used to explain the dependent variable could over 95% of the changes in the dependent variable (working capital).

The method that was used is the GLS regression analysis, in which the return on assets interest income, current asset to total asset, financial debt to total assets, firm size, current ratio, growth are analysed.

The analyses showed that return on assets and working capital management indicates that there is insignificant negative relation between variables. Inferring that profitability of the rural banks does not influence the level of working capital.

It was established that net interest income was a significant positive factor to explaining changes in the working capital of the banks in the Kwahu ridge. How a bank in Kwahu
ridge will have as a working capital is dependent on the net interest income. Rural banks should therefore be interest oriented by give more good faith facility to client with good tract records of loan repayment.

The study revealed that current ratio has insignificant negative relationship with working capital of the rural banks in the Kwahu settings. Current ratio is said to be un-influen
tial variable to have any relevant cause to the changes in the working capital of the firms under consideration.

Besides, the study concludes that the rural banks in Kwahu ridge should try and reduce financial debt borrowing so as reduce cost for servicing this debt thereby improving working capital because the result suggests that a significant negative relationship between working capital and financial debt ratio. When going in for financial debt banks should be careful and make cost implication and how these debts will be service before going in for the facility because financial debt reduces working capital of the banks significantly.

As firm size increase it business operations equally increase which call for more working capital, it is not therefore astonishing to observe a significant positive relationship between working capital and firm size. More working will be required by the banks if the more branches are opened and more business units and lines are added on. This might trigger growth in the rural banking sector in Ghana. This could be the reason for the study to have established a significant positive impact of growth on the working capital of the firm. Since a business growth the more it require more resources to finance the activities of the business growth hence the need for more working capital of the firms.
Furthermore, the study revealed a positive insignificant relationship between working capital and current ratio of the rural banks under consideration in Ghana. Current ratio is not a good indicator to cause any reasonable changes in the working capital of the rural banking sector in Ghana.

5.3 Recommendations
The study recommends prudent management of working capital of the rural banking sector so as to be able to improve performance of the sector because a good working capital management is a factor firm’s success.

The study further recommends that rural banks should also avoid the habit of getting financial debt without having immediate usage of the fund since the debt come with financial cost and risk to the firm.

The study recommends that the rural banks in Ghana should begin to champion more of growth strategies since most markets in the catchment areas of these banks are heavily unexplored.

This research focuses solely on rural banks in Ghana, to truly understand the working capital management, there is the need to examine it for the period during, after and before financial crisis a much broader scope is needed. To increase the validity of this research, studies should include multiple crisis periods with different causes and implications.
REFERENCES


