

THE EFFECT OF AGGRESSIVE WORKING CAPITAL MANAGEMENT POLICY ON THE PERFORMANCE OF LISTED COMPANIES IN GHANA

MOSES OPPONG, ALEXANDER OWIREDU & REBECCA DAVIS

Abstract

Working Capital Management is an important part of the financial management activities of companies as it tends to have effect on liquidity and overall profitability of organisations. It is argued in finance literature that an optimal working capital enhances profitability. Traditional studies on working capital management have tried to prove this by examining the effect of working capital management on the profitability of companies. We deviate from this norm by examining the effect of aggressiveness of working capital management policy on the profitability of Ghanaian registered companies. Using the financial statements of 21 Ghana Stock Exchange listed companies covering the period 2006 to 2011, we examined how their return on equity and return on assets were influenced by the aggressiveness of the working capital policy. Data obtained was analysed using regression analysis. Our empirical results show a negative relationship between working capital management policy and the measures of profitability adopted. We conclude that management cannot increase profit by adopting a very aggressive working capital management policy.

Key word: Profitability; Working Capital Management Policy; Aggressive Finance Policy; Aggressive Investment Policy; Cash Conversion Cycle.

INTRODUCTION

Working capital management entails deliberately taking decisions to maintain a balance between two contrary objectives of the ability to maintain liquidity as well as add value to the business. In theory and practice, a high level of current assets creates excess liquidity and impacts negatively on profitability whereas insufficient level of current assets leads to loss of liquidity and consequently interrupts business operations. As the global economy struggles to fully emerge from the devastating effect of the credit crunch, managers of companies have come under immense pressure to create value for shareholders. Where owing to the nature of the business, the entity has to maintain high level of inventories and receivables, working capital can lock up a substantial portion of the company's financial resources. The cost to such an entity would be very high. However, a company can create value and reduce risk of loss of liquidity by carefully managing its level of current assets and liabilities. It would be important to monitor the components of working capital of the organization.

From the viewpoint of the finance function, working capital management may be misconstrued to some extent to be limited to a small activity. It is sometimes believed that working capital management simply involves making sure that an organization is able to finance the difference between the current assets and current liabilities. People who believe in this view would consequently be satisfied for as long as the entity is able to generate adequate cash to pay its current liabilities and when they fall due. Contrary to this view, Uyar (2002) believes that a total approach that covers the company's activities relating to payable, receivables and products is much desirable.

Additional finance research on working capital management has tended to focus on selected components of working capital and their impact on profitability of companies. Conventionally their attempts have been to assess how those variables influence their dependent variables. Uyar (2009),

Bagchi and Khamrui (2012) examined the relationship between working capital management and firm performance. Banomyong (2005), Raheman et al (2010), Bieniasz A and Golas Z (2011) and a host of others have all examined the effect of certain aspects of working capital management on profitability. Sadly, the effect of the working capital management policies on the financial performance of companies has not been extensively explored. A key objective of this research is to find out whether the working capital policies of companies have influence on their performance.

Jose Md L, Lancaster C and Stevens J L (1996) observed that "firms with glowing long-term prospect and healthy bottom-lines do not remain solvent without liquidity management". Some companies adopt an aggressive working capital management policy to address the challenges discussed above. An aggressive working capital policy is the one in which an entity maintains a minimal investment in current assets while it relies extensively on current liabilities. The purpose of an aggressive working capital management policy is to limit an entity's investment in current assets by enhancing the efficiency of their use. The effect is that, the entity will have less money at the bank, less inventory in storage, up-to-date receivables, and possibly supplier's payment period at the maximum limit.

An aggressive working capital management policy may be pursued from two sides: the asset side and the liability side. The asset side involves ensuring that the current asset to total asset ratio is very low. This will ensure that excess liquidity and its attendant costs are avoided. The liability side ensures that the current liability to total assets ratios is high. This may increase value to the business because the company would be able to avoid some costs of finance provided it is able to meet payable periods. Both sides require careful planning and monitoring to sustain that delicate balance.

Contribution to Knowledge

Review of literature on the subject matter reveals that there is no study about the impact of aggressive or conservative working capital management policy on the firm profitability in Ghana. This article contributes to literature on the effect of aggressive working capital management and profitability in several ways. Firstly, it focuses on the Listed

Ghanaian companies. Secondly, the study validates as well as disputes some of the foreign empirical research on the subject matter. In essence, since there are geographical, national as well as industrial dimensions to the applicability of research findings, the authors hope to add value to existing literature.

LITERATURE REVIEW

Nazir and Afza (2009) investigated the relationship of aggressive/conservative working capital policies with the accounting and market measures of profitability of Pakistani firms using a panel data set for the period 1998 – 2005. Weinraub J. H and Visscher S (1998) proxy definition of aggressive working capital policy and aggressive financing policy was used. They found a significantly negative relationship between aggressiveness of working capital policies and accounting measures of profitability. Their conclusion implied that managers could not create value if they adopted aggressive working capital management and funding policies. This finding is at variance with Deloof (2003) but confirmed their findings in earlier studies. Their result was further validated by examining the impact of aggressive working capital management on market measures of profitability as postulated by the Tobin's q model (a classic 1968 statistical measure of the ratio between a physical asset's market value and its replacement value). The results of the Tobin's q were in line with the accounting measures of profitability. They however, stated that investors gave value to firms that were more aggressive in managing their current liabilities.

Barine (2012) examined the effect of improved gross working capital position (arising from improved access to bank finance) on the profitability of 22 Nigerian Listed Firms. His results showed that return on improved working capital position was far less than the cost of capital of those companies sampled. The firms were using short-term financing schemes which were more expensive. He observed

that actual profits of quoted firms in Nigeria was higher but the percentage of operating profit to gross working capital was lower than the cost of working capital. Thus the improved gross working capital position of the quoted firms had not improved their profitability. Barine argued that this was an indication that firms were inefficient in their use of the working capital. One would have expected that since financial institutions tend to have a predominantly different composition of working capital, the researcher would have excluded them from the sample. This was however not the case.

Gill et al (2010) studied the relationship between working capital management and profitability of US firms with the view to establishing the direction of impact; positive or negative. The financial statements of US manufacturing firms for the period 2005 – 2007 were used. They found a significant but negative correlation between accounts receivable period and profitability (measured using gross operating profit). That suggests that management of companies could create shareholder value by reducing accounts receivable periods. They also found a significantly positive correlation between cash conversion cycle and profitability; meaning that firms could create value by increasing the cash conversion cycle. That seems to suggest that operational profitability to a greater extent determines how managers act in terms of account receivable management. Their finding was sector-specific and as such could not be easily generalised to the non-manufacturing sectors. Secondly, the use of book values rather than market values somehow limits the predictive value of their findings.

Uyar (2009) examined the relationship of Cash Conversion Cycle (CCC) with firm size and profitability. The sample size for the study comprised 166 Turkish companies listed on the Istanbul Stock Exchange. Size was measured using Net Sales and Total Assets whereas profitability was measured using Return on Equity (ROE) and Return on Assets (ROA). Using the financial statement for the year 2007, the researcher found a significantly negative correlation between CCC and the variables; firm size and profitability. Two points stand out. Firstly, the larger the firm size, the shorter the CCC; indicating that small firms have a longer CCC. Secondly, he found a significantly negative correlation between the CCC and ROA but an insignificant relationship between CCC and ROE. His conclusion was that, when the CCC is shorter, firms may not need external funding and hence incur lower borrowing costs. The use of a single-period statistics indicates that both micro and macro economic variables could affect the generalisation of their findings.

Abadi and Abadi (2012) examine the determinants of working capital requirements in Palestinian industrial corporations. They tested the effect of 7 variables namely: CCC, Operating cash flow, ROA, Firm size, debt level, economic growth and interest rate on loans. Their findings showed that there was a significantly positive correlation between working capital requirements and the first three variables; meaning an increase in any of the those variables would lead to a significant increase in the working capital of companies sampled. They found that firm size and leverage were significant but negatively related to working capital requirements. They did not find any significant correlation between working capital requirements and economic growth and interest rate. This means that the working capital levels of Palestinian corporations are not affected by economic growth and interest rates. Their findings are mostly consistent with earlier studies by Nazir and Afza (2009). However, some of the findings are at variance with some earlier studies on the subject matter including Narendre, V., Menon, S., & Shwetha, V. (2009) who found that firm size has positive correlation with the working capital in the Indian cement industry.

Filbeck and Krueger (2005) in their studies concluded that working capital varies with economic cycles and are therefore dynamic. Therefore in times of high business volatility, companies tend to use large amounts of working capital but adopt an aggressive approach in times of low volatility. Other studies show that when there are more fluctuations in future cash flows the cash held and short-term investment of a company will increase, so managing operating cash flow will have a significant effect on a company's working capital management. Ranjith's (2008) study on Thai firms.

Al-Mwalla (2012) examined the impact of working capital management on company profitability and value. She measured the profitability of the company using ROA and firm value using Tobin's q. The study found that a conservative working capital investment policy has a positive impact on company profitability and value; while aggressive working financing policy has a negative impact on firm's profitability. A further finding of the study was that leverage has no effect on profitability and value while firm's size, sales growth and economic growth have impact on both profitability and value.

Bieniasz and Golas (2011) assessed the influence of working capital management on the food industry enterprise profitability in Poland and selected Eurozone countries. Their findings were that, in the national food industry, larger firms have shorter cash conversion cycle and higher profitability. Their study also showed that in all the different sizes of companies, there existed a negative correlation between profitability on one hand and inventory cycles, accounts receivable cycles and accounts payable cycles. The implication is that managers can not increase profit by prolonging these cycles.

Singh and Asres (2010) examined the determinants of solvency level of firms and its impact on profitability as well as the relationship between profitability and liquidity of firms. The financial statements used comprised 250 Indian Manufacturing firms for the period 1999 to 2008. The independent variables used in the study included sales, return on assets, current ratio, and cash conversion cycle. Enyi's (2005) formula for the calculation of the working capital requirements of a company was used. Three important findings were

made. First, they found a significant difference in the solvency level of companies in the same industry. This indicates that firms in the same industry may not necessarily follow similar solvency management policies. They also found a statistically strong influence of working capital adequacy on profitability. They therefore concluded that firms

with adequate working capital in relation to their operational size perform better than those without adequate working capital. Additionally, they found that the size of a firm (measured using sales) and cash conversion cycle affects the short term debt needs of a firm.

RESEARCH METHODOLOGY

The purpose of this research is to contribute to a very important aspect of financial management known as working capital management with reference to Ghana. The study will show the effect of aggressive/conservative working capital policy on firm profitability. This section of the research deals with the methodology. We shall discuss the variables included in the study, sampling and the sources of data.

POPULATION, SAMPLING AND DATA

Owing to the relatively small number of quoted companies on the Ghana Stock Exchange (GSE), all companies formed part of the population of the study. Companies in the financial sector were excluded from the study because they are highly regulated and as a result, managers in that industry have little leverage over the working capital structure. Eleven (11) companies were accordingly excluded because of this condition. For any company in the other sector to be included in the sample, it needed to meet further criteria. First, the company must have remained on the GSE and must not have delisted or ceased operations during the six-

year period spanning 2006 to 2011. Secondly, the company's financial statement must be in the public domain; either from the GSE, the Registrar General's Department or at www.annualreportsghana.com. Two companies were removed because they delisted during the period. Another company was excluded from the study because one of its financial statements was not available. In all, fourteen companies were rejected leaving twenty-one qualifying companies (see table 1). Using all the qualifying companies is very relevant as it avoids sampling and its likely problems of bias and subjectivity.

Table 1: Summary of Qualified Sample

Description	No. of Companies
Companies Listed on GSE during the time	35
Less:	
Companies in the financial and regulated sector	11
Companies that delisted	2
Companies whose financial statement was unavailable	1
Total qualifying companies	21

DATA SOURCES

To ensure that the study is appropriately carried out, data required for the study must be readily available, reliable, from the right source and must be legitimately obtainable. Bearing this in mind, the information was obtained from the following sources: The Registrar General's Department's Register of Companies; The Ghana Stock Exchange Fact Book 2010 and The Annual Report Website (www.annualreportsghana.com).

Information on the Registrar General's Department on quoted companies is in the public domain and

could be obtained by all interested parties at a marginal cost. Ghana's Company Code of 1963 Act 179 requires all registered companies in the country to file audited annual financial reports with the Registrar General. One may reasonably expect companies filing their reports would have complied with the provisions and as such make their information reliable. The GSE Fact Book 2010 contains the key financial reports of all quoted companies in the country for the five years ending December 2009. Financial data for 2010 and 2011 was downloaded from the online site identified above.

VARIABLES USED IN THE STUDY

Empirical literature on the relationship between the aggressiveness of working capital policies and their impact on profitability has used various proxies to measure the aggression. This study uses Aggressive Investment Policy (AIP) and Aggressive Finance Policy (AFP), two proxies defined by Wienraub and Visscher (1998).

Aggressive Investment Policy (AIP)

A company may adopt either an aggressive investment policy or a conservative investment policy. The use of an AIP results in a lesser investment in current assets as a proportion of the total assets available to the company, whereas a

conservative working capital policy will result in a higher current asset investment compared to the total assets. When a company's investment in current assets increases compared to the total assets, that company is said to be following a conservative working capital policy. The opposite holds for an aggressive working capital policy. There is no rule as to what proportion of a company's investment in assets must be tied in current assets. However, the level of investment in current assets is theoretically thought to carry risk as well as return. Management of companies have to exercise a choice between those levels bearing in mind the various costs and benefits associated with it. To measure the level of aggression, the following ratio was used.

$$\text{AIP} = \frac{\text{Current Assets (CA)}}{\text{Total Assets (TA)}} \quad \text{where a lower ratio means an aggressive policy}$$

Aggressive Financing Policy (AFP)

Similar to the investment policy, a firm may adopt an Aggressive Financing Policy or a Conservative Financing policy. Financing policy seeks to explain how the current assets of the company is financed. A firm adopting an aggressive financing policy utilises a higher level of current liability and less non-current liabilities. A conservative working capital

relies largely on non-current liabilities. Reliance on larger current liabilities places the short-term liquidity of the organisation at risk especially when the current assets are far less or are not easily convertible into cash. Where the aggression in investment is financed by short-term sources which attract higher costs, the effect of those costs on the

profitability of the company could be very damaging. Therefore managers of companies must strike a delicate balance between profitability and the costs associated with the funding of their

investment in current assets. For the purpose of this study, an aggressive financing policy is calculated using the following ratio:

$$\text{AFP} = \frac{\text{Current Liabilities (CL)}}{\text{Total Assets}}$$

Where a higher ratio means a relatively aggressive financing policy.

PROFITABILITY

Nazir and Afza (2009) examined the effect of aggressive working capital policy on profitability using measures from two perspectives; Accounting perspective and Market perspective. The accounting perspective uses Return on Assets (ROA) whereas the market measures used Tobin's q. This study uses the Return on Equity (ROE) and ROA. These measures of profitability were calculated using the year by year total values stated in the relevant financial statements.

RETURN ON ASSETS (ROA)

Return on assets is a key profitability ratio which measures the amount of profit that a company makes as a percentage of its asset base. The ROA compares net profit after tax to the book values of a company's assets. ROA measurements include all of a company's assets – both those which arise from liabilities to creditors as well as those which arise from contributions by shareholders. The ROA gives users of financial information an idea as to how efficiently management uses company assets to generate profit. A company is profitable if its ROA is

relatively high. Return on assets may also give an indication of the capital intensity of the company. When using ROA as a comparative measure, it is best to compare it against a company's previous ROA figures or the ROA of a similar company.

The ROA is measured using the ratio:

$$\text{ROA} = \frac{\text{Net profit after tax}}{\text{Book Value of Assets}}$$

RETURN ON EQUITY (ROE)

In real sense, ordinary shareholders are the real owners of the company. They assume the highest risk in the company. They rank last for payment of dividend and additionally have very fluctuating dividend mostly dependent on availability of profit and cash. That is to say that whereas management can not refuse payment of dividend to preference shareholders, the same rule does not apply to the ordinary shareholders. The ordinary shareholders

are more interested in the profitability of a company and as such judge the performance of a company on the basis of return on equity capital of the company. Shareholders regard the ROE as the ultimate test of an entity's profitability. The ROE measures the amount of net income available to the ordinary shareholders as a percentage of shareholders equity. It is however not the ultimate measure of the superiority of the financial performance because a

higher ROE may be as a result of a higher gearing which is equally very dangerous. The shareholders equity comprises the issued share capital plus undistributed reserves; whether realized or not. The profit used for the calculation of ROE is the final

profits available to equity shareholders as dividend, therefore the preference dividend and taxes are deducted in order to arrive at such profits. The formula of return on equity capital ratio is:

$$\text{Return on Equity Capital} = \frac{[\text{Net profit after tax} - \text{Preference dividend}]}{\text{Equity share capital}}$$

where a higher ROE only means a higher profit.

STATISTICAL ANALYSIS

Nazir and Afza (2009) assessed the impact of aggressive working capital on company performance by applying the panel data regression analysis. Performance measures used were the ROA and ROE.

THE REGRESSION MODELS:

The study adopted simple linear regression and multiple regression models. Four cases of the models have been looked at in which ROA and ROE were taken as dependent variables. The models were with the help of Statistical Product and Service Solutions (SPSS).

$$ROA = \beta_0 + \beta_i AIP + \varepsilon \dots (1)$$

$$ROE = \beta_0 + \beta_i AFP + \varepsilon \dots (2)$$

$$ROA_i = \beta_0 + \beta_1 AIP_i + \beta_2 AFP_i + \varepsilon \dots (3)$$

$$ROE_i = \beta_0 + \beta_1 AIP_i + \beta_2 AFP_i + \varepsilon \dots (4)$$

$\beta_0 =$ Intercept of the regression line

$\varepsilon =$ Random error

$\beta_i =$ regression coefficient

THE REGRESSION MODELS:

The regression models above have been tested to satisfy the necessary regression model assumptions through the following hypotheses:

Hypothesis 1:

H0: ($\beta_0 = 0$) The model intercept is zero (there is no intercept)

H1: ($\beta_0 \neq 0$) The model intercept is not equal to zero (there exists an intercept)

Hypothesis 2:

H0: ($\beta_1 = 0$) The regression coefficient is zero (No relationship between the dependent and the independent variable)

H1: ($\beta_1 \neq 0$) The regression coefficient is not zero (There is a relationship between the dependent and the independent variable)

In table 1 below, the intercepts are all negative values. Testing the hypothesis at a 5% (0.05) significance level, we reject the null hypothesis that the intercepts are zero for the two models. As a rule of thumb, when the p-value is less than the significant level, we reject the null hypothesis. Therefore, it is concluded at 5% significance level that there exist intercepts for each model.

Considering table 1 again reveals that the p-values for the coefficients are less than the significance level of 5%. This leads to the conclusion that the null hypothesis is rejected at 5% significance level that there is no relationship between the dependent and independent variables.

Overall Fit of the Regression Model

The p-value from the Analysis of Variance (ANOVA) is used to check the overall fitness of the model to the data. A smaller p-value (i.e. lower than the significant level) indicates that the model is significant. The p-value for the ANOVA is lower, thus confirming significance of the models.

ANALYSIS

Table 1: Simple Linear Regression Analysis of Performance Measures and Working Capital Investment / Financing Policy

	ROA	ROE	ROA	ROE
Variables	AIP	AIP	AFP	AFP
Intercept (β_0)	-11.556	-38.801	15.587	12.814
Coefficient (β_1)	0.253	0.758	-0.305	-0.296
P-value(β_0)	0.007	0.001	0.000	0.0046
P-value (β_1)	0.001	0.000	0.000	0.002
P-value [ANOVA]	0.001	0.000	0.001	0.002

Simple Linear Regression Models for Aggressive Investment Policy

$$ROA = -11.556 + 0.253AIP \quad \dots (5)$$

$$ROE = -38.801 + 0.758AIP \quad \dots (6)$$

From models (5) and (6), the coefficient of the AIP, that is CA/TA is positive. This indicates a negative relationship between the degree of aggressiveness of investment policy and return on assets and return on equity. As the CA/TA increases, the degree of aggressiveness decreases, the ROA and ROE increase. It is important to note that in this instance, rate of increase in the ROE is higher.

Simple Linear Regression Models for Aggressive Financing Policy

$$ROA = 15.587 - 0.305AFP \quad \dots (7)$$

$$ROE = 12.814 - 0.296AFP \quad \dots (8)$$

From models (7) and (8), the coefficient of the AFP, that is CL/TA is negative. This indicates a negative relationship between the degree of aggressiveness of financing policy and return on assets. As the CL/TA increases, the degree of aggressiveness increases, and return on assets and return on equity decrease.

Multiple Regression Models

Table 2: Multiple Regression Analysis of Performance Measures and Working Capital Investment and Financing Policies

Variables	ROA	ROE
Intercept	0.369	-26.442
Coefficient (AIP)	0.321	0.829
Coefficient (AFP)	-0.319	-0.330
P-value (Intercept)	0.889	0.019
P-value [AIP]	0.000	0.000
P-value [AFP]	0.000	0.000
P-value [ANOVA]	0.000	0.000
Durbin-Watson	1.147	1.545

$$ROA_t = 0.369 + 0.321AIP_t - 0.319AFP_t \quad \dots (9)$$

$$ROE_t = -26.442 + 0.829AIP_t - 0.330AFP_t \quad \dots (10)$$

From model (9) and (10), the coefficient of the AIP, that is CA/TA is positive. This indicates a negative relationship between the degree of aggressiveness of investment policy and return on assets. As the CA/TA increases, the degree of aggressiveness decreases, and return on assets and return on equity increases.

From model (9) and (10), the coefficient of the AFP, that is CL/TA is negative. This indicates a negative relationship between the degree of aggressiveness of financing policy and return on assets and return on equity decrease. As the CL/TA increases, the degree of aggressiveness increases, and return on assets and return on equity decreases.

CONCLUSION

This study investigates the effect of aggressiveness of corporate working capital management policy on their performance using listed companies in Ghana for the six-year period from 2006 to 2011. Regression model was used to examine the effect of aggressive/conservative working capital investment and the financing policies on two measures of profitability; ROA and ROE. The study finds a negative relationship between the two measures of profitability and the two measures of working capital policy adopted in the study. As listed

companies pursue a less aggressive investment policy by increasing its current assets, profitability (measured by ROE and ROA) increases. Again, when companies adopt a less aggressive financing policy by reducing its current liabilities, profitability reduces. Listed companies in Ghana report negative returns if they follow an aggressive working capital policy. Managers can not generate profit by adopting a very aggressive working capital management policy.

REFERENCE

- Abbadi, S. M and Abbadi, R. T. (2010). The Determinants of Working Capital Requirement in Palestinian Industrial Corporation. *International Journal of Economics and Finance*, Vol.5, No.1.
- Abdul, R and Mohamed, N. (2010). Working Capital Management and Profitability-Case Study of Pakistani Firms. *Internal Review of Business Research Papers*, Vol.3 No1, pp.279-300.
- Al-Mwalla, M. (2012). The Impact of Working Capital Management Policies on Firm's Profitability and Value: The Case of Jordan. *International Reserach Journal of Finance and Economics*, 85, 147-153.
- annualreportsghana. (2015, 03 15). annualreportsghana. Retrieved from www.annualreportsghana.com
- Bagchi, B and Khamrui, K. (2012). Relationship between Working Capital Management and Profitability: A Study of Selected FMCG Companies in India. *Business and Economics Journal* 2012, 1-11.
- Banomyong, R. (2005). Measuring the Cash Conversion Cycle in anInternational Supply Chain. *Annual Logistics Research Network (LRN) Conference Proceeding*, Plymouth, UK, 7-9.
- Barine, M. (2012). Working Capital Management efficiency and Corporate Profitability. *Nigeria Journal of Applied Finance & Banking*, Vol.2, No2.
- Bieniasz, A and Golas, Z. (2011). The Influence of Working Capital Management on the Food Industry Enterprises Profitability. *Contemporary Economics*, 5 (4), 68-81.
- Brigham, E. F and Ehrhardt, M. C. (2004). *Financial*

- Management: Theory and Practice. New York: 11th Edition, South-Western College Publishing.
- Carpenter, M. D and Johnson, K. H. (Vol. 18, No.3, p.106). The Association between Working Capital Policy and Operating Risk. *Financial Review*, 1983.
- Deloof, M. (2003). Does Working Capital Management Affect Profit of Belgian Firms. *Journal of Business, Finance and Accounting*, Vol. 30, Nos. 3-4, pp. 573-587.
- Elijelly, A. M. (2004). Liquidity-Profitability Tradeoff: An Empirical Investigation in an Emerging Marke. *International Journal of Commerce and Management*, Vol. 14, No.2, pp.48-61.
- Filbeck, G and Krueger, T. (2005). Industry Related Differences in Working Capital Managemen. *Mid-American Journal of Business*, Vol. 20, No. 2, pp.11-18.
- Gardner, M. J, Mills, D. L and Pope, R. A. (1986). Working Capital Policy and Operating Risk: An Empirical Analysis. *Financial Review*, Vol. 21, No.2,p.31.
- Ghosh, S. K and Maji, S, G. (2004). Working Capital Management Efficiency: A Study on the Indian Cement Industry. *Management Accountant*, Vol.39, No.5, pp.363-372.
- Gill, A., Biger N and Mathur, N. (2010). The Relationship between Working Capital Management and Profitability. *Business and Economics Journal*, Vol. 2010, pp.1-9.
- Gitman, L. A. (2005). *Principles of Managerial Finance*. New York: 11th Edition, Addison Wesley Publishers.
- Gombola, M.J and Ketz, J. E. (1983). Financial Ratio Patterns in Retail and Manufacturing Organisations. *Financial Management*, Vol.12, No.2, pp.45-56.
- Gupta, M. C and Huefner, R. J. (1972). A Cluster Analysis Study of Financial Ratios and Industry Characteristics. *Journal of Accounting Research*, Vol. 10, No.1, pp.77-95.
- Gupta, M. C. (1969). The Effect of Size, Growth and Industry on the Financial Structure of Manufacturing Companies. *Journal of Finance*, Vol. 24, No.3, pp. 517-529.
- Hall, C. (2002). Total Working Capital Management. *AFP Exchange*, Vol. 22, No.6, pp.26-32.
- Harris, A. (2005). Working Capital Management: Difficult, but Rewarding. *Financial Executive*, Vol. 21, No.4, pp.52-53.
- Howorth, C and Westhead, P. (2003). The Focus of Working Capital Manageemnt in Uk Small Firms. *Management Accounting*, Vol.14, No.2, pp.94-111.
- Johnson, C. G. (1970). Ratio Analysis and the Prediction of Firm Failure:Comment. *Journal of Finance*, Vol. 25, No.5, pp.1166-1168.
- Jose, M. L., Lancaster, C and Stevens, J. L. (1996). Corporate Returns and Cash Conversion Cycle. *Journal of Economics and Finance*, Vol.20, No.1, pp.33-46.
- Lamberson, M. (1995). Changes in Working Capital of Small Firms in Relation to Changes in Economic Activity. *Mid-American Journal of Busniess*, Vol.10, No.2, pp.45-50.
- Lazaridis, I and Tryfonidis, D. (2006). Relationship between Working Capital Management and Profitability of Listed Companies in the Stock Exchange. *Journal of Financial Management and Analysis*, Vol.19, No.1, pp.26-35.
- Long, M. S., Malitz, I. B and Ravid, S. A. (1993). Trade Credit, Quality Guarantees, and Product Marketability. *Financial Management*, Vol. 22, No.4, pp117-127.
- Maxwell, C. E, Gitman, L. J and Smith, S. A. M. (1998). Working Capital Management and Financial-service Consumption Prefernces of US and Foreign Firms: A Comparison pf 1979 and 1996 Prefernces. *Financial Practice and Education*, Vol.8, No. 2, pp.46-52.
- Moyer, R. C, McGuigan, J. R and Kretlow, W. J. (2005). *Contemporary Financial Management*. New York: 10th Edition, South-Western College Publishing.
- Narendre, V, Menon, S and Shewtha, V. (2009). Factors Determining Working Capital Management in Cement, Industry. *South Asian Journal of Managemtn*, 15(4), 64-78.
- Nazir, M. S and Afza, T. (2009). Impact of Aggressive Working Capital Management Policy on Firm's Profitability. *The IUP Journal of Applied Finance*, 15 (8), 19-30.
- Pinches, G. E, Mingo, K. A and Caruthers, J. K. (1973). The Stability of Financial Patterns in Industrial Organisations. *Journal of Finance*, Vol. 28, No.3, pp.389-396.
- Pinches, G. E. (1992). *Essentials of Financial*

- Management. New York: 4th Edition, HarperCollins College Publishers.
- Ranjith, B. A. (2008). The Impact of Firms' Capital Expenditure on Working Capital Management: An Empirical Study across Industries in Thailand. *International Management View*, 4(1), 11-24.
- Rehman, A. (2006). Working Capital Management and Profitability: Case of Pakistani Firms. COMSAT's Institute of Information Technology (CIIT), Islamabad, Pakistan.
- Shin, H. H and Soenen, L. (1998). Efficiency of Working Capital and Corporate Profitability. *Financial Practice and Education*, Vol.8, No.2, pp.37-45.
- Singh, K and Asress, F.C. (2010). Determining Working Capital Solvency Level and Its Effect on Profitability in selected Indian Manufacturing Firms. *International Journal of Research in Commerce, Economics & Management*, 1(2), 52-57.
- Smith, K. (1980). Profitability versus Liquidity Tradeoffs in Working Capital Management in Reading on the Management of Working Capital. New York: West Publishing Company, St. Paul.
- Smith, M. B and Begemann, E. (1997). Measuring Association Between working Capital and Return on Investment. *South Africa Journal of Business Management*, Vol.28, No. 1, pp.1-5.
- soenen, L. A. (1993). Cash Conversion Cycle and Corporate Profitability. *Journal of Cash Management*, Vol.13, No. 4, pp.53-58.
- Teruel, P. J. G and Solano, P. M. (2005). Effects of Working Capital Management on SME Profitability. *International Journal of Managerial Finance*, Vol.3, No.2, pp.164-177.
- Uyar, A. (2009). The Relationship of Cash Conversion Cycle with Firm Size and Profitability: An Empirical Investigation in Turkey. *International Research Journal of Finance and Economics*, 24,47-54.
- Van Horne, J.C and Wachowicz, J. M. (2004). *Fundamentals of Financial Management*. New York: 12 Edition, Prentice Hall Publishers.
- Weinraub, H. J and Visscher, S. (1998). Industry Practice Relating to Aggressive Conservative Working Capital Policies. *Journal of Financial and Strategic Decision*, Vol. 11, No.2, pp.11-18.

ABOUT THE AUTHORS

Mr. Moses Oppong

He is a full-time Lecturer at Pentecost University College (PUC), Faculty of Business Administration (FBA) at the Department of Accounting and Finance. He also lectures at PUC Graduate School located in Labone – Accra. Moses is a Professional Accountant, specializing in Financial Management, Compliance and Strategic Planning.

He could be reached on 020 723 3400 and email: mosesopponggh@gmail.com

Mr. Alexander Owiredu

He is a full-time Lecturer at PUC, Faculty of Business Administration (FBA). He is the Acting Head of Department of the Department of Accounting and Finance. He also lectures at PUC Graduate School located in Labone. He specialised in Accounting and Taxation.

He could be reached on 024 370 1922 and email: owiredualex@yahoo.com

Ms. Rebecca Davies

She is a full-time Lecturer at PUC, Faculty of Engineering Science and Computing (FESAC) at the Department of Actuarial Science.

She could be reached on 054 370 8736 and email: rdavis@pentvars.edu.gh