

WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF LISTED COMPANIES IN NIGERIA ¹

Abstract

Working capital constitutes a substantial component of the total assets and liabilities of many organisations. Expectedly therefore, the way in which it is managed will have a significant impact on profitability of the company concerned. It is for this reason that a large number of business failures in the past were attributed to the inability of financial managers to plan and control the working capital of their respective firms. These managerial inadequacies are still manifesting in organisations today in the form of high bad debts, over/under stocking, cash crises among others with their concomitant effect on their operational performance. This paper was set out to empirically investigate the predictable power of working capital management on profitability of listed companies in Nigeria. A cross sectional survey design was adopted using 50 firm-year observations extracted from the annual report and accounts of 25 non-financial quoted companies selected judgmentally covering 2005-2006. The Ordinary Least Square Regression analysis was employed in the analyses of data guided by a simple multiple regression model. From the results obtained, it was found that the combine practicable power of working capital components on profitability is significant. The result also revealed that all the working capital components, namely; inventory conversion period (ICP), debtor's collection period (DCP) and creditor's payment period (CPP) affect profitability, albeit only DCP has a significant effect, thus demonstrating the importance of the different components of working capital in the determination of profit. On the basis of these findings, we recommend among others that, managers and indeed organisations should concentrate on the proper management of each working capital components and keep them at optimal levels, as this will go a long way to enhance profitability and create value for their companies.

Key Words: Working Capital Management, Profitability, working capital components, Nigeria.

1.0 Introduction

The primary objectives of corporate organisations are still financial, of which profit maximisation is chief (Damilola, 2007:20, KPMG, 2005). This leading position of profit is attended for many reasons including the fact that profit is the basis for evaluating all the financial decisions of a firm and also the most appropriate measure of corporate performance under competitive market conditions among others (Pandey, 2005:4). However, the volume of profit a firm can generate is a function of several factors, within and outside the control of the organisation. Among these factors or determinants of profits is the composition of assets and liabilities in the balance sheet as well as the quality of decisions made in this respect.

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Interestingly, working capital (current assets and current liabilities) constitutes a substantial component of the total assets and total liabilities of many organisations (Raheman & Nasr, 2007:279; Deloof, 2000) and hence the impact of its management on profitability cannot be ignored. This places a demand on the financial manager to effectively and efficiently manage this component.

Unfortunately, a large number of business failures in the past had been blamed on the inability of financial managers to plan and control the working capital of their respective firms (Smith, 1973:50). These reported inadequacies among financial managers are still manifesting today in many organisations in the form of high bad debts, high inventory cost, etc, which adversely affect their operating performance. These trends arouse some questions such as; to what extent does working capital management and its components affect profitability?

In this paper, working capital management and profitability of listed companies in Nigeria is empirically examined, with the objective of determining the extent to which working capital management affects profitability. The paper is anchored on the proposition that 'working capital management has no significant effect on the profitability of listed companies in Nigeria'.

It is believed that the result findings of this paper will enable firms in Nigeria to decide on the working capital level that is optimal (optimal mix of working capital component), with a view to maximising returns and shareholders' wealth without undermining other objectives of the company.

2.0 LITERATURE REVIEW

Since Smith (1973) attributed large business failures which occurred during his time to working capital mismanagement, the subject has elicited considerable interest among scholars and researchers and generated several studies from different viewpoints and in different environments (Raheman and Nasr, 2007). The following paragraphs explore some of these works, as background to the empirical investigation which follows thereafter.

2.1 Profitability as an objective of a firm

A firm has several objectives but 'profit maximization' is said to be paramount among these (Damilola, 2007:20; Raheman and Nasr, 2007). Because 'profit maximisation' as a concept suffers some inherent limitations, some would rather substitute it with 'wealth maximisation'. It is nevertheless true that profit is a tool for efficient resource allocation because it is the most appropriate measure of corporate performance under competitive market conditions (Pandey, 2005:8). This was further supported by KPMG working capital management survey of European companies (2005), when they empirically found out that "the primary concerns of corporates are still financial objectives, such as sales and **profit**".

Conceptually, profit connotes the excess of revenue generated by a firm over its associated cost for an accounting period. Operationally, the term profit is imprecise, as many variants exist. The term profit could refer to profit before tax, profit after tax, gross profit, net profit, profit per share, return on assets, among other variants (Damilola, 2007:21-22; Pandey, 2005:8). This imprecision has often posed decisional challenges to researchers who must select an appropriate variant to proxy profitability.

However, the most commonly used variants as appropriate measure of profitability include Gross Operating Profit (GOP), Net Operating Profit (NOP) and Return on Assets (ROA) (Deloof 2003; Teruel & Solano, 2006; Lazaridis & Tryfonidis, 2005; Raheman and Nasr, 2007. This paper adopts ROA as measure of profit.

2.2 Nature and Strategies of Corporate Working Management

Working capital has been defined as a margin or buffer or a safety cushion for meeting obligations within the ordinary operating cycle of the business (AARB No. 43 in Enyi, 2005; Eljelly, 2004), better still the current assets and current liabilities items available for the day to day running of an organisation (Damilola, 2007:744). The **current assets** components of working capital “are assets which can be converted into cash within an accounting year” and consist majorly of cash, debtors (accounts receivables or book debts), short term securities, bills receivable and stock (inventories). **Currents liabilities** components are those claims of outsiders which are expected to mature for payment within an accounting year and consist of creditors or accounts payable, bills payable and outstanding expenses (Pandey (2005:579). It is the administration of both current assets and current liabilities components that is referred to as working capital management (Uremadu, 2004:45). This definition is favoured in this paper, since it suggests a more neutral position and yet is robust enough giving equal or about equal importance to the currents assets and currents liabilities.

It should be noted that, it is the management of each component of working capital (inventory, receivables and payables etc) that translates into the consolidated concept. Therefore, for proper management of working capital components, a firm must consciously formulate policies or principles relating to each component. According to Damilola (2007:747) “the operational management of working capital is so important, that a firm will need to formulate clear and appropriate policies concerning the various components of working capital”. Such policies should cover the management of stock or inventories, receivables, payables, cash and other short term investments in order to minimise the possibilities of grungy decisions due to urgency. This is because ‘time’ and ‘money’ have been identified as the two dimensions in the management of the components of working capital, or putting it more bluntly, “when it comes to managing working capital, time is money” (PlanWare 2008).

A firm can usually adopt one of three types of working capital policies; namely *aggressive policy or strategy*; *Conservative policy* and *Moderate policy* (Chakraborty, 2006:212-213; Damilola 2007:748). An **aggressive policy** connotes a situation where a firm maintains low level of stock, accounts receivables and minimal amount of cash and marketable securities for a given level of turnover. Such a firm will maintain current assets that are just enough to meet current liabilities with no cushion for the variations in working capital needs. It is also described as the “lean and mean” policy (Van-Horne & Wachowicz 2005:204,205). This is because at the lowest level of current assets, the policy will lead to the highest profitability but the least liquidity with its associated risk of insolvency (Weinraub & Visscher, 1998; Chakraborty, 2006:212)

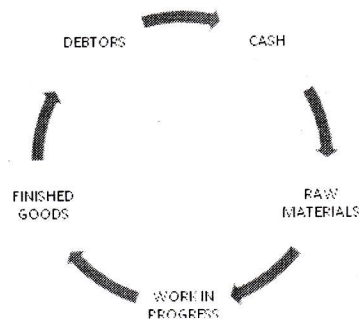
On the other hand, **conservative** or a **liberal** policy is that which allows the carrying of large amount of current asset components relative to a given level of sales (Van-Horn & Wachowicz, 2005:204,205; Damilola, 2007:748). Such a policy will warrant, large cash balances, short term securities, liberal or generous credit terms to customers as well as high level of inventories. The

implication of this “is the financial equivalent of wearing a belt and suspenders”. That means that a conservative policy prepares a firm for almost any conceivable current assets need and therefore guaranteeing higher liquidity for a firm but with the least profitability compared to the aggressive policy. It is for this reason that conservativeness is sometimes equated to liquidity, while aggressiveness is equated to profitability and high risk (Weinraub & Visscher, 1998)

The third policy that a firm could adopt is the **moderate** policy; this is a hybrid or middle of the road strategy that attempts to strike a balance or middle path between the aggressive and conservative policies. It emphasises moderate investment in current assets, with the expectation of moderate profitability and hence moderate risk exposure (Chakraborty, 2006:213)

However, it has been opined that although, the working capital strategies of a firm can be categorised into the three methods discussed above, there are no absolute bench marks for such distinctions. Yet the categorisations are useful for analysing the ways in which individual companies approach the operational problem of working capital management (Damilola, 2007:749). Besides, the type of working capital strategy adopted by a firm is a major determinant to the length of the working capital cycle. **Working capital cycle or operating cycle** is “the length of time it takes to acquire inventory of raw materials, convert them to finished products, sell them and collect cash from sales”. It is about the total time it takes to convert inventory procured into cash, thus indicating the financial implication of the type of working capital policy adopted by the firm. Generally, an aggressive policy will have shorter cycle than a liberal policy, while a moderate policy will be somewhere between the other two policies.

Fig. 2.2 Working capital cycle.



Source: Akinsulire, (2006:372)

2.3 Does Working Capital Management (WCM) Affect Profitability

The essence of management at any level and function is to achieve the corporate objectives of the firm concerned. Expectedly therefore, effective working capital management should enhance the achievement of certain operational, tactical and even strategic objectives of the organisation.

The organisation's Chief Financial Officers (CFOs) devote so much time and effort in the management of working capital for the purpose of minimising the time between outflows and inflows of cash (cash conversion cycle), while simultaneously optimising process costs and process quality (KPMG, 2005; Anand & Gupta, 2002). The period from when you spend money to when you get money is undoubtedly the single most important period to optimize for any business. This

period is technically called the cash conversion period (CCP) and is mostly adopted as the comprehensive measure of WCM. The question is to what extent does this financial managers' function affect profitability?

In answering this question, at least two view points can be identified. Namely, the traditional belief that a short CCP favours profitability and the contrary belief that longer cash CCP can lead to improved profitability (Shin and Soenen, 1998). However, most of the findings and conclusions support the traditional belief

For instance, Shin & Soenen (1998) studied a large sample of 58,985 firms for a period of twenty years and found a strong negative relationship between what they called the net trade cycle and corporate profitability of listed companies in America, and opined that, managers can increase the value of their shareholder wealth by reducing the cash conversion period to a reasonable minimum. Similar conclusions were reached by Yunq-Janq (2002), Deloof (2003), Eljelly (2004), Teruel & Salano, (2004), and (Akella 2006:11) in studies carried out in Japan, Belgian, Saudi Arabia, Spain and India respectively.

Furthermore, Lazaridiss & Tryfonidis (2005), studying a sample of 131 listed Athens firms for the period 2001-2004, found a strong negative relationship between profitability and cash conversion cycle (CCC) and advised that managers can create profits for their companies by handling correctly the cash conversion cycle and keeping each component of CCC at optimal level. This was an improved conclusion, since mere shortening of the CCC may lead to loss of valuable customers leading to loss of sales, thus translating to loss of profit. In line with the above KPMG (2005) asserted that a reduction in the CCC releases liquidity and impacts directly on the company's financial position as well as the company's returns. More so, Raheman & Nasr (2007), studying a sample of 94 Pakistani firms found a strong negative relationship between the components of working capital and profitability, indicating that as the cash conversion cycle increases it will lead to decreasing profitability. Sadlovska & Viswanathan, (2007) pushed this assertion further in their survey which revealed that the best performing companies have CCC that is about 5-6 times shorter than that of the average and low performing ones.

In support of the foregoing, it is reported that poor management of working capital contributed to the bankruptcy of Kmart, having faced an additional \$198.3 millions per year in financing expenses, while on the other hand firms like Dell Corporation, Wal-Mart and Oando Plc attribute their enhanced value to their working capital management (Shin & Soenen, 1998; Kieschnick, LaPlante & Moussawi, 2006; Deutsche Securities Limited, 2007). Oando Plc for instance, is reported to have recorded an astronomical 42% increased in its operating profit from \$29.77m in 2006 to \$42.35m in 2007 due to efficient working capital management.

Conversely, a number of arguments can also be filtered in favour of a direct and positive relationship between a longer cash conversion cycle and profitability. For instance, (Shin & Soenen, 1998) argued that a firm can have larger sales with a generous credit policy, which extends the cash cycle. In this case, the longer cash conversion cycle may result in higher profitability. Also, Deloof (2003) asserts that, a longer cash conversion cycle might increase profitability because it leads to higher sales. The above arguments support the findings of Lyroudi & Lazaridis (2000) who studied this relationship among the food industry in Greece and found a positive and significant relationship between the CCC and profitability (measured by ROI and NPM). This result indicates that a longer cash conversion cycle can improve company's profits.

But does increase in sales necessarily lead to increase in profit? Lavelly (1996) thinks the answer to this question is No, when he asserts that "...high sales volume doesn't necessarily equate to high profitability", and argued that a firm losing money each time it sells cannot make it up in volume. Also, corporate profitability might also decrease with the cash conversion cycle, if the costs of higher investment in working capital rise faster than the benefits of holding more inventories or granting more trade credit to customers. Although, these two sources abandoned this belief after their empirical investigation revealed the contrary, yet, the sense in their arguments requires further examination.

3.0 The Methodology of the Study

In this study we adopted a Survey design. A sample size of 25 non-financial companies was selected among quoted companies in the Nigeria Stock Exchange using judgmental sampling technique based on the researcher's knowledge of the population and the attributes relating to the objectives. The data used in this work were extracted from the annual reports and accounts of sampled companies covering two years (2005 & 2006) and transformed into the specific attributes of our variables for the number of years the research covers. Excel software helped us to transform the variables into a format suitable for analysis, after which the Statistical Package for Social Science (SPSS) was utilized for data analysis. A multiple regression (ordinary least square) technique was adopted.

3.1 Variables Operationalisation

In this study profitability proxied by return on assets (ROA) is our dependent variable while working capital management measured by the working capital components ICP (Inventory Conversion Period), DCP (Debtors Collection Period) and CPP (Creditors Payment Period) is our independent variable. ROA is a measure of the overall effectiveness of the firm in generating profit with available assets (Van-Horne & Wachowicz, 2005:154) It is equivalent to return on investment (ROI), but more appropriate measure of the operating efficiency of a firm (Pandey, 2005:531). The independent variables are computed as follows

$$\begin{aligned}
 \text{ICP} &= \frac{\text{Average stock}}{\text{Cost of sales per annum}} \times \frac{365}{1} \\
 \text{DCP} &= \frac{\text{Average Debtor}}{\text{Credit sales}} \times \frac{365}{1} \\
 \text{CPP} &= \frac{\text{Average Creditors}}{\text{Credit purchases}} \times \frac{365}{1}
 \end{aligned}$$

3.2 Model Specification

The analyses was guided by the following linear models

$$ROA = \beta_0 + \beta_1 ICP + \beta_2 DCP + \beta_3 CPP + \beta_4 NLS + \varepsilon$$

Where, ROA is return on assets (our measure of profitability), ICP is the inventory conversion period, DCP is the debtors collection period, CPP, creditors payment period. NLS connotes the

natural logarithm of sales, it is included in the model as a control variable to measure company

size. β_0 is the intercept of the regression and β_1 , β_2 , and β_3 are the coefficients of the

regression, while ε is the error term capturing other explanatory variables not explicitly included in

the model

4.0 Data Presentation, Analysis and Hypothesis Testing

The data for this study representing the independent variables ICP, DCP, CPP and the control variable NLS were collected for 25 companies for two years (2005-2006) and pooled together to make 50 firm-year observations. The rationale for the pooling of the data was because time was not a factor in this study. The tables of data used are included in the appendix to this study.

4.1 Data Analysis: Multiple Regression Analysis

Multiple regression analysis is used to investigate the predictable power of the independent variables (working capital management components) on the dependent variable (corporate profitability). The analysis was however guided by the specified model, which is recalled below:

$$ROA = \beta_0 + \beta_1 ICP + \beta_2 DCP + \beta_2 CPP + \beta_4 NLS + \varepsilon$$

The summary of the regression result are presented in tables 1, 2 and 3;

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553 ^a	.306	.244	.10356

a. Predictors: (Constant), NLS, ICP, CPP,

b. Dependent Variable: ROA

Table 2:

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.213	4	.053	4.957	.002 ^a
Residual	.483	45	.011		
Total	.696	49			

a. Predictors: (Constant), NLS, ICP, CPP, DCP

b. Dependent Variable: ROA

Table 3: Coefficient of Multiple Regression

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	.009	.149		.062	.951
ICP	9.686E-5	.000	.035	.272	.787
DCP	-.002	.001	-.392	-2.216	.032
CPP	.000	.000	-.121	-.742	.462
NLS	.008	.008	.142	1.020	.313

a. Dependent Variable: ROA

From the result presented above, it is only debtors collection period (DCP) that has a significant individual effect on the ROA with a standardised coefficient of -0.392 and a p-value of 0.032 which is significant at 5% level. However, the negative sign indicates that DCP and ROA move in opposite directions. Other standardised coefficients are 0.035 and -0.121, for ICP and CPP respectively with their respective p-values standing at 0.787 and 0.462 which are not significant at 1%, 5% and 10% levels, signalling the fact that decreases or increases in the inventory days and creditors days do not significantly affect profitability. The control variable NLS (company size) also shows a positive but insignificant effect on profit.

Further, the combined predictable power of the model or the adjusted coefficient of multiple determinations ($Adj.R^2$) indicates that about 24.4% of the changes in ROA are explained by the independent variables. Besides, the specification of this model is considered fair as signaled by the F value of 4.957 which is significant at $\alpha = 1\%$.

4.2 Hypothesis Testing

This study was anchored on one principal hypothesis that 'working capital management, measured by its components (ICP, DCP, and CPP) has no significant effect on the profitability of listed companies in Nigeria'. The regression result indicates that only one of the components of working capital management (DCP) has a significant effect on ROA. However the combined effect of the independent variables of 24.4% on the dependent variable is respectable.

Beside, the ANOVA table shows an F-value of 4.957, which is significant at 5% level of significance. More so, when we compare the calculated F value with the critical value of 2.78, the calculated F is higher. On the strength of the above result, the null hypothesis is abandoned in favour of the alternative hypothesis. Hence, it is concluded that working capital management has a significant impact on profitability of listed companies in Nigeria.

5.0 Conclusion and Recommendations

5.1 Conclusion

Working capital constitutes a substantial component of the total assets and liabilities of many organisations. Expectedly therefore, the way in which working capital is managed will have a significant impact on profitability. This paper set out to empirically establish the predictable power of working capital management on profitability of listed companies in Nigeria. After a theoretical exploration of some relevant literature as well as empirical examination of 50 firm-year observations, the paper found that all the components of WCM affect profitability at varying levels of significance with DCP having the highest and significant impact. Also the paper revealed that the combined effect of the components of working capital management has a relatively significant predictable power on profitability.

These findings are supportive of the finding of most of the literature reviewed, especially those of Akella, (2006) and Reheman & Nasr (2007), thus, emphasising the fact that the value generation role of working capital management should not be undermined by any organisation, as managers can create value for their companies by proper handling of each component of working capital and keeping them at optimal levels.

5.2 Recommendations

On the premises of the revelations from this study we make the following recommendations;

- i. Organisations, whether small, medium or large should consciously formulate policies geared towards effective management of working capital, in view of its inherent value-adding role.
- ii. Financial Managers should pay attention to the management of each component of working capital as the adverse effect of one could asphyxiate the positive effect of the other components.

5.3 Suggestions for Further Study

In view of the delimitations and limitations that constrained this study, a number of issues which might possibly influence the outcome of the investigation were not explored. In view of this, it is suggested that further studies which would capture all non-financial companies listed on the Nigerian Stock Exchange or segregate these studies on industry basis, should be attempted. The number of control variables could also be increased for a more robust model.

References

Books

- Akella, S. (2006). *Working Capital Management in India*. In Gopala K.M.G.(2006) (ed). Toward Better Working Capital Management. Punjagutta, the Icfai University Press
- Akinsulire, O. (2006). *Financial Management* (4th Ed). Lagos, El-Toda Ventures Ltd.
- Chakraborty, P.K. (2006). *Working Capital Management: A Case Study of Cadila Health Care Ltd*. In Gopala K.M.G.(2006) (ed). Toward Better Working Capital Management. Punjagutta, the Icfai University Press
- Damilola, D.A. (2007). *Corporate Finance: Issues, Investigations, Innovations & Applications*, (2nd Ed) Lagos, High Rise Publications
- Pandey, I.M. (2005). *Financial Management* (9th Ed) New Delhi, Vikas Publishing House PVT Ltd
- Uremadu, S.O. (2004). *Financial Management: Concepts, Analysis and Applications*. Enugu, Precision Publishers Limited.
- Van Horne, J.C.and Wachowicz, J.M. (2005). *Fundamentals of Financial Management*. (12th Ed) Harlow, Practice Hall Journals
- Anand, M & Gupta, C.P. (2002) *Working Capital Performance of Corporate India: An Empirical Survey for the Year 2000-2001*. Management and Accounting Research. Retrieved on 20/09/2008 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=621103&rec=1&srcabs=894865
- Deloof, M. (2003). "Does Working Capital Management Affect Profitability of Belgian Firms?" *Journal of Business Finance and Accounting*, 30(3) & (4). Retrieved 15/03/08 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=415364
- Eljelly, A.M.A. (2004). "Liquidity-Profitability Trade off: An empirical investigation in an emerging market". *International Journal of Commerce and Management*. 14(2) 48-61.
- Enyi, P.E. (2005). "How Useful Is the Return on Capital Employed As a Performance Indicator?". *AJMS Vol 1* .Retrieved on 15/03/08 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=753124
- Lavelly, R. (1996) "Can You Profit From Improved Inventory Control?" *AutoInc. Magazine*, 44(3). Retrieved on 29/09/08 from <http://www.asashop.org/autoinc/march/invntctr.htm>
- Raheman, A., & Nasr, M. (2007), "Working Capital Management and Profitability - Case of Pakistani Firms". *International Review of Business Research Papers*, 3(1), 279-300. Retrieved on 15/6/2008 from <http://www.bizresearchpapers.com/Paper%2019.pdf>
- Shin, H.H and L. Seonen, (1998) "Efficiency of Working Capital and corporate profitability". *Fianancial Practice and Education* 8 (2), 37-45. Retrieved on 15/03/08 from <http://web.ebscohost.com/ehost/pdf?vid=1&hid=12&sid=452caf58-0cb2-4912-af4e-f1050a54eaa2%40sessionmgr7>
- Smith, K.V. (1973). "State of the Art of Working Capital Management" *Financial Management: 2* (3) 50-55. Retrieved on 19/03/2008 from <http://links.jstor.org/sici?sici=0046-3892%28197323%292%3A3%3C50%3ASOTAOW%3E2.0.CO%3B2-0>
- Weinraub, H.J & Visscher, S. (1998). "Industry Practice Relating to Aggressive-Conservative Working Capital Policies". *Journal of Financial and Strategic Decisions* 11(2) Pg 11-18 Retrieved on 20/10/08 from <http://www.studyfinance.com/jfsd/pdf/v11n2/weinraub.pdf>.

Yunq-Janq, W. (2002). "Liquidity Management, Operating Performance and Corporate Value: Evidence from Japan and Taiwan" *Journal of Multinational Financial Management* 12(2) p159. Retrieved on 20/09/08 from <http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=7755112&site=ehost-live>

Others

- Byrnes, J. (2003) "Dell Manages Profitability, Not Inventory". *Working Knowledge for Business Leaders*: A publication of Harvard Business School. Retrieved on 20/09/08 from <http://hbswk.hbs.edu/archive/3497.html>
- Deutsche Securities Limited (2007) "Oando Plc unaudited results for the 9 months ended 30 September, 2007". Retrieved on 20/10/08 from http://www.oandopl.com/pdf/Oando_SENS_Q3_07.pdf
- Kieschnick, R., LaPlante, M. & Moussawi, R (2006). "Corporate Working Capital Management: Determinants and Consequences". Retrieved on 20/03/08 from http://www.fma.org/SLC/Papers/cwcmf_fma.pdf
- KPMG, (2005). "Working Capital Management Survey: How European Companies Manage their Working Capital". *KPMG International*. Retrieved on 15/03/08 from http://www.ch/library/pdf/kpmg_survey_working_capital_management_e.pdf
- Lazaridis, I. & Tryfonidis, D. (2005). "The Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange". Retrieved on 20/09/08 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=931591
- Lyroutdi K. & Lazaridis J. (2000). "The Cash Conversion Cycle And Liquidity Analysis of the Food Industry in Greece" Retrieved on 04/10/2008 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=236175
- Plan Ware (2008). "Managing Working Capital." Retrieved on 03/11/08 from <http://www.planware.org/workingcapital.htm#5>
- Sadlovska, V & Viswanathan, N (2007) "Working Capital Optimisation: Improving Performance with Innovations and New Technologies in Inventory Management and Supply Chain Finance". Aberdeen Group Inc. Retrieved on 08/10/08 from www.aberdeen.com
- Teruel, P.J.G & Solano, P.M. (2004) "Effect of Working Capital Management on SME Profitability".