Impact of Aggressive Working Capital Management Policy on Firms' Profitability

Mian Sajid Nazir* and Talat Afza**

The present study investigates the traditional relationship between working capital management policies and a firm's profitability. Using the panel data set for the period 1998-2005, the impact of aggressive working capital investment and financing policies has been evaluated using return on assets as well as Tobin's q. Managers can create value if they adopt a conservative approach towards working capital investment and working capital financing policies. The study also finds that investors give weight to the stocks of those firms that adopt an aggressive approach to managing their short-term liabilities.

Introduction

The corporate finance literature has traditionally focused on the study of long-term financial decisions, particularly investments, capital structure, dividends or company valuation decisions. However, short-term assets and liabilities are important components of total assets and need to be carefully analyzed. Management of these short-term assets and liabilities warrants a careful investigation since the working capital management plays an important role in a firm's profitability and risk as well as its value (Smith, 1980). Efficient management of working capital is a fundamental part of the overall corporate strategy in creating the shareholders' value. Firms try to keep an optimal level of working capital that maximizes their value (Deloof, 2003; Howorth and Westhead, 2003 and Afza and Nazir, 2007).

In general, from the perspective of Chief Financial Officer (CFO), working capital management is a simple and straightforward concept of ensuring the ability of the organization to fund the difference between the short-term assets and short-term liabilities (Harris, 2005). However, a 'Total' approach is desired as it can cover all the company's activities relating to vendor, customer and product (Hall, 2002). In practice, working capital management has become one of the most important issues in the organizations where many financial executives are struggling to identify the basic working capital drivers and an appropriate level of working capital (Lamberson, 1995). Consequently, companies can minimize risk and improve the overall performance by understanding the role and drivers of working capital management.

A firm may adopt an aggressive working capital management policy with a low level of current assets as a percentage of total assets, or it may also be used for the financing decisions of the firm in the form of high level of current liabilities as a percentage of total liabilities. Excessive levels of current assets may have a negative effect on the firm's profitability, whereas

* Lecturer, Department of Management Sciences, COMSATS Institute of Information Technology (CIIT), Lahore, Pakistan; and is the corresponding author. E-mail: snazir@ciitlahore.edu.pk

** Dean, Faculty of Business Administration, COMSATS Institute of Information Technology (CIIT), Lahore, Pakistan. E-mail: talatafza@ciitlahore.edu.pk

a low level of current assets may lead to a lower level of liquidity and stockouts, resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2004).

The main objective of working capital management is to maintain an optimal balance between each of the working capital components. Business success heavily depends on the financial executives' ability to effectively manage receivables, inventory, and payables (Filbeck and Krueger, 2005). Firms can reduce their financing costs and/or increase the funds available for expansion projects by minimizing the amount of investment tied up in current assets. Most of the financial managers' time and efforts are allocated towards bringing non-optimal levels of current assets and liabilities back to optimal levels (Lamberson, 1995). An optimal level of working capital would be the one in which a balance is achieved between risk and efficiency. It requires continuous monitoring to maintain proper level in various components of working capital, i.e., cash receivables, inventory and payables, etc.

In general, current assets are considered as one of the important components of total assets of a firm. A firm may be able to reduce the investment in fixed assets by renting or leasing plant and machinery, whereas the same policy cannot be followed for the components of working capital. The high level of current assets may reduce the risk of liquidity associated with the opportunity cost of funds that may have been invested in long-term assets. Though the impact of working capital policies on profitability is highly important, only a few empirical studies have been carried out to examine this relationship. This study investigates the potential relationship of aggressive/conservative policies with the accounting and market measures of profitability of Pakistani firms using a panel data set for the period 1998-2005. The present study is expected to contribute to better understand these policies and their impact on profitability, especially in emerging markets like Pakistan.

Literature Review

Many studies have analyzed the financial ratios as a part of working capital management; however, very few of them have discussed the working capital policies in specific. Gupta (1969) and Gupta and Huefner (1972) examined the differences in financial ratio averages among industries. The conclusion of both the studies was that differences do exist in mean profitability, activity, leverage and liquidity ratios among industry groups. Johnson (1970) extended this work by finding cross-sectional stability of ratio groupings for both retailers and primary manufacturers. Pinches *et al.* (1973) used factor analysis to develop seven classifications of ratios and found that the classifications were stable over the 1951-1969 time period.

Filbeck and Krueger (2005) highlighted the importance of efficient working capital management by analyzing the working capital management policies of 32 non-financial industries in the US. According to their findings, significant differences exist among industries in working capital practices overtime. Moreover, these working capital practices, themselves, change significantly within industries overtime. Similar studies were conducted by Gombola and Ketz (1983), Long *et al.* (1993), Soenen (1993) and Maxwell *et al.* (1998).

However, Weinraub and Visscher (1998) discussed the issue of aggressive and conservative working capital management policies by using quarterly data for the period 1984-93 of the US firms. Their study considered 10 diverse industry groups to examine the relative relationship between their aggressive/conservative working capital policies. Their study concluded that the industries had distinctive and significantly different working capital management policies. Moreover, the relative nature of the working capital management policies exhibited remarkable stability over the 10-year study period. The study also showed a high and significant negative correlation between industry asset and liability policies and found that when relatively aggressive working capital asset policies are followed, they are balanced by relatively conservative working capital financial policies.

In literature, there is a long debate on the risk/return tradeoff among different working capital policies (Pinches, 1991; Brigham and Ehrhardt, 2004; Gitman, 2005 and Moyer *et al*., 2005). More aggressive working capital policies are associated with higher return and risk, while conservative working capital policies are associated with lower risk and return (Gardner *et al*., 1986 and Weinraub and Visscher, 1998). Working capital management is important because of its effects on the firms' profitability and risk, and consequently its value (Smith, 1980). The greater the investment in current assets, the lower the risk, but also the lower the profitability obtained. Contrary to this, Carpenter and Johnson (1983) provided empirical evidence that there is no linear relationship between the level of current assets and revenue systematic risk of the US firms; however, some indications of a possible nonlinear relationship were found, which were not highly statistically significant.

Soenen (1993) investigated the relationship between the net trade cycle as a measure of working capital and return on investment in the US firms. The results of chi-square test indicated a negative relationship between the length of net trade cycle and return on assets. Furthermore, this inverse relationship was found different across industries depending on the type of industry. A significant relationship for about half of the industries studied indicated that results might vary from industry to industry. Another aspect of working capital management has been analyzed by Lamberson (1995) who studied how small firms respond to changes in economic activities by changing their working capital requirements and level of current assets and liabilities. Current ratio, current assets to total assets ratio and inventory to total assets ratio were used as a measure of working capital requirement, while the index of annual average coincident economic indicator was used as a measure of economic activity. Contrary to the expectations, the study found that there is a very small relationship between changes in economic conditions and changes in working capital.

In order to validate the results of Soenen (1993) on a large sample and with a longer time period, Jose *et al*. (1996) examined the relationship between aggressive working capital management and profitability of the US firms using Cash Conversion Cycle (CCC) as a measure of working capital management, where a shorter CCC represents the aggressiveness of working capital management. The results indicated a significant negative relationship between the CCC and profitability, indicating that more aggressive working capital management is associated with higher profitability. Shin and Soenen (1998) concluded that

reducing the level of current assets to a reasonable extent increases a firm's profitability. Similarly, Deloof (2003) analyzed a sample of large Belgian firms for the period 1992-1996 and the results confirmed that Belgian firms can improve their profitability by reducing the number of days accounts receivable are outstanding and reducing inventories. Teruel and Solano (2005) suggested that managers can create value by reducing their firms' number of days' accounts receivable and inventories. Similarly, shortening the CCC also improves the firms' profitability.

In the Pakistani context, Rehman (2006) investigated the impact of working capital management on the profitability of 94 Pakistani firms listed on Islamabad Stock Exchange (ISE) for the period 1999-2004. He studied the impact of the different variables of working capital management, including average collection period, inventory turnover in days, average payment period and CCC on the net operating profitability of firms. He concluded that there is a strong negative relationship between working capital ratios mentioned above and profitability of firms. Furthermore, managers can create a positive value for the shareholders by reducing the CCC up to an optimal level. Similar studies on working capital and profitability include Smith and Begemann (1997), Howorth and Westhead (2003), Eljelly (2004), Ghosh and Maji (2004) and Lazaridis and Tryfonidis (2006).

Afza and Nazir (2007) investigated the relationship between the aggressive and conservative working capital policies for 17 industrial groups and a large sample of 263 public limited companies listed on Karachi Stock Exchange (KSE) using cross-sectional data for the period 1998-2003. Using Analysis of Variance (ANOVA) and Least Significant Difference (LSD) test, the study found significant differences among their working capital investment and financing policies across different industries. Moreover, rank order correlation confirmed that these significant differences were remarkably stable over the six-year study period. Finally, ordinary least regression analysis found a negative relationship between the profitability measures of firms and the degree of aggressiveness of working capital investment and financing policies. The present study further validates the impact of the degree of aggressiveness of working capital policies on market measures of profitability, i.e., Tobin's q using panel data approach.

Research Methodology

Variables Used in the Study

This study uses aggressive investment policy as used by Weinraub and Visscher (1998), who analyzed working capital policies of 126 industrial firms in the US market. Aggressive Investment Policy (AIP) results in minimal level of investment in current assets versus fixed assets. In contrast, a conservative investment policy places a greater proportion of capital in liquid assets with the opportunity cost of less profitability. If the level of current assets increases in proportion to the total assets of the firm, the management is said to be more conservative in managing the current assets of the firm. In order to measure the degree of aggressiveness of working capital investment policy, the following ratio was used:

$$AIP = \frac{\text{Total Current Assets}\,(TCA)}{\text{Total Assets}\,(TA)}$$

where a lower ratio means a relatively aggressive policy.

On the other hand, an Aggressive Financing Policy (AFP) utilizes higher levels of current liabilities and less long-term debt. In contrast, a conservative financing policy uses more long-term debt and capital and less current liabilities. The firms are more aggressive in terms of current liabilities management if they are concentrating on the use of more current liabilities which put their liquidity on risk. The degree of aggressiveness of a financing policy adopted by a firm is measured by working capital financing policy, and the following ratio is used:

$$AFP = \frac{\text{Total Current Liabilities}\,(TCL)}{\text{Total Assets}\,(TA)}$$

where a higher ratio means a relatively aggressive policy.

The impact of working capital policies on the profitability has been analyzed through accounting measures of profitability as well as market measures of profitability, i.e., Return on Assets (ROA) and Tobin's *q*. These variables of return are calculated as:

$$(ROA) = \frac{\text{Net Earnings After Taxes}\,(NEAT)}{\text{Book Value of Assets}\,(BVA)}$$

Tobin's q compares the value of a company given by financial markets with the value of a company's assets. A low q (between 0 and 1) means that the cost to replace a firm's assets is greater than the value of its stock. This implies that the stock is undervalued. Conversely, a high q (greater than 1) implies that a firm's stock is more expensive than the replacement cost of its assets, which implies that the stock is overvalued. It is calculated as:

$$\text{Tobin's q} = \frac{\text{Market Value of Firm}\,(MVF)}{\text{Book Value of Assets}\,(BVA)}$$

where Market Value of Firm (MVF) is the sum of book value of long plus short term and market value of equity. Market value of equity is calculated by multiplying the number of shares outstanding with the current market price of the stock in a particular year.

Control Variables

In working capital literature, various studies have used the control variables along with the main variables of working capital in order to have an apposite analysis of working capital management on the profitability of firms (Lamberson, 1995; Smith and Begemann, 1997; Deelof, 2003; Eljelly, 2004; Teruel and Solano, 2005 and Lazaridis and Tryfonidis, 2006). On the same lines, along with working capital variables, the present study has taken into consideration some control variables relating to firms such as the size of the firm, the growth in its sales, and its financial leverage. The size of the firm (*SIZE*) has been measured by the

logarithm of its total assets, as the original large value of total assets may disturb the analysis. The growth of firm (*GROWTH*) is measured by variation in its annual sales value with reference to previous year's sales [$(Sales_t - Sales_{t-1})/Sales_{t-1}$]. Moreover, the financial leverage (*LVRG*) was taken as the debt to equity ratio of each firm for the whole sample period. Some studies, like Deloof (2003) in his study of large Belgian firms, also considered the ratio of fixed financial assets to total assets as a control variable; however, this variable cannot be included in the present study because of unavailability of data, as most of the firms do not disclose full information in their financial statements. Finally, since good economic conditions tend to be reflected in a firm's profitability (Lamberson, 1995), this phenomenon has been controlled for the evolution of the economic cycle using the *GDPGR* variable, which measures the real annual GDP growth in Pakistan for each of the study year from 1998 to 2005.

Statistical Analysis

The impact of aggressive and conservative working capital policies on the profitability of the firms has been evaluated by applying the panel data regression analysis. The performance variables (*ROA* and Tobin's *q*) as well as the *TCA/TA* and *TCL/TA* along with the control variables were regressed using the SPSS software. The following regression equations are run to estimate the impact of working capital policies on the profitability measures.

$$ROA_i = \alpha + \beta_1(TCA/TA_i) + \beta_2(SIZE_i) + \beta_3(GROWTH_i) + \beta_4(LVRG_i) + \beta_5(GDPGR_i) + \varepsilon \quad \ldots(1)$$

$$\text{Tobin's } q_i = \alpha + \beta_1(TCA/TA_i) + \beta_2(SIZE_i) + \beta_3(GROWTH_i) + \beta_4(LVRG_i) + \beta_5(GDPGR_i) + \varepsilon \quad \ldots(2)$$

and

$$ROA_i = \alpha + \beta_1(TCL/TA_i) + \beta_2(SIZE_i) + \beta_3(GROWTH_i) + \beta_4(LVRG_i) + \beta_5(GDPGR_i) + \varepsilon \quad \ldots(3)$$

$$\text{Tobin's } q_i = \alpha + \beta_1(TCL/TA_i) + \beta_2(SIZE_i) + \beta_3(GROWTH_i) + \beta_4(LVRG_i) + \beta_5(GDPGR_i) + \varepsilon$$

where,

TCA/TA	=	Total current assets to total assets ratio
TCL/TA_i	=	Total current liabilities to total assets ratio
ROA_i	=	Return on assets
Tobin's q_i	=	Value of q
$SIZE_i$	=	Natural log of firm size
$GROWTH_i$	=	Growth of sales

$LVRG_i$ = Financial leverage of firms

$GDPGR_i$ = Real Annual GDP growth rate of Pakistan

α = Intercept; and

ε = Error term of the model

Sample and Data

The sample of the study consists of all non-financial firms listed on the Karachi Stock Exchange (KSE). KSE has divided the non-financial firms into various industrial sectors based on their nature of business. In order to be included in the sample, a firm must be in business for the whole study period. Also, firms should neither have been delisted by the KSE nor merged with any other firm during the whole window period. New incumbents in the market during the study period have also not been included in the sample. Furthermore, firms must have complete data for the period 1998-2005. Firms with negative equity during the study period have also been excluded. Thus, the final sample consists of 204 non-financial firms from 17 various industrial sectors.

This study used annual financial data of 204 non-financial firms for the period 1998-2005. The panel data set was developed for eight years and for the 204 sampled firms which produced 1,632 year-end observations. The required financial data for the purpose of the study was obtained from the respective companies' annual reports and publications of State Bank of Pakistan. The data regarding annual average market prices was collected from the daily quotations of KSE.

Analysis

Table 1 presents the results of regression model in which the impact of working capital investment policy on the performance measurements has been examined. The *F*-values of regression models run are found statistically significant, whereas Durbin-Watson statistics of more than 1.8 indicate less correlation among the independent variables of the regressions models. The *t*-statistics of working capital investment policy is positive and statistically significant at 1% level for Return on Assets and Tobin's q. The positive coefficient of *TCA/TA* indicates a negative relationship between the degree of aggressiveness of investment policy and return on assets. As the *TCA/TA* increases, the degree of aggressiveness decreases, and return on assets increases. Therefore, there is a negative relationship between the relative degree of aggressiveness of working capital investment policies of firms and both performance measures, i.e., ROA and Tobin's q. This similarity in market and accounting returns confirms the notion that investors do not believe in the adoption of aggressive approach in the working capital management, hence, they do not give any additional weight to the firms on KSE.

Table 2 reports regression results for working capital financing policy and the performance measures. The *F*-value of regression models and Durbin-Watson statistics indicate similar results as reported in Table 1. The negative value of β coefficient for *TCL/TA* also points out the negative relationship between the aggressiveness of working capital financing policy and

return on assets. The higher the *TCL/TA* ratio, the more aggressive the financing policy, that yields negative return on assets. However, surprisingly, the relationship between Tobin's q and working capital financing policy has been established as positive and statistically significant. Investors were found giving more weight to the firms which are adopting an aggressive approach towards working capital financing policy and having higher levels of short-term and spontaneous financing on their balance sheets.

Table 1: Regression Analysis of Performance Measures and Working Capital Investment Policy

Variables	ROA		Tobin's q	
	β	*t*-value	β	*t*-value
TCA/TA	0.158	6.506***	0.149	6.156***
SIZE	0.082	3.363***	0.092	3.771***
GROWTH	0.137	3.805	–0.004	–0.104
GDPGR	0.043	1.759*	0.162	6.627***
LVRG	–0.202	–5.606***	0.004	0.101
F-value	17.166***		19.245***	
N	1,632		–	
D-W	1.875		1.948	

Note: *** and * indicate significance levels at 1% and 10% respectively.

Table 2: Regression Analysis of Performance Measures and Working Capital Financing Policy

Variables	ROA		Tobin's q	
	β	*t*-value	β	*t*-value
TCL/TA	–0.171	–6.940***	0.087	3.506***
SIZE	0.064	2.630***	0.087	3.522***
GROWTH	0.116	3.204***	0.011	0.312
GDPGR	0.011	0.440	0.163	6.578***
LVRG	–0.168	–4.628***	–0.013	–0.354
F-value	18.363***		13.946***	
N	1,632		–	
D-W	1.822		1.923	

Note: *** and * indicate significance levels at 1% and 10% respectively.

The control variables used in the regression models are natural log of firm size, sales growth, real GDP growth and the average leverage. All the control variables have their impact on the performance of the firms. Firms' size causes the returns of the firms to be increased and it is found to be statistically significant. Moreover, *GROWTH* and *LVRG* are found to be significantly associated with the book-based returns on assets which confirm the notion that leverage and growth are strongly correlated with the book value-based performance measures (Deloof, 2003 and Eljelly, 2004). Real GDP growth may not affect the returns based on book values; however, investors may react positively to a positive change in the level of economic activity which is in accordance with the findings of Lamberson (1995).

The above results contradict the findings of Gardner *et al.* (1986), Deloof (2003), Eljelly (2004) and Teruel and Solano (2005); however, they are in accordance with Afza and Nazir (2007) and produced a negative relationship between the aggressiveness of working capital policies and accounting measures of profitability. Managers cannot create value if they adopt an aggressive approach towards working capital investment and working capital financing policy. However, if firms adopt aggressive approach in managing their short-term liabilities, investors give more value to those firms. The degree of aggressiveness of working capital policies adopted helps only in creating shareholders' wealth through increased market performance, whereas accounting performance cannot be increased by being aggressive in managing the working capital requirements. The results of this study are somewhat different from those conducted in the developed economies. Pakistan is one of the emerging economies and Pakistani markets are not fully transparent and efficient to fully absorb the impact of information. The study results confirm this state of Pakistani markets.

Conclusion

The present study investigates the relationship between the aggressive/conservative working capital asset management and financing polices and its impact on profitability of 204 Pakistani firms divided into 16 industrial groups by KSE for the period 1998-2005. The impact of aggressive/conservative working capital investment and the financing policies has been examined using panel data regression models between working capital policies and profitability. The study finds a negative relationship between the profitability measures of firms and degree of aggressiveness of working capital investment and financing policies. The firms report negative returns if they follow an aggressive working capital policy. These results were further validated by examining the impact of aggressive working capital policies on market measures of profitability, which was not tested before. The results of Tobin's q were in line of the accounting measures of profitability and produced almost similar results for working capital investment policy. However, investors were found giving more value to those firms that are more aggressive in managing their current liabilities.

The study used a new measure of profitability, i.e., Tobin's q and panel data regression analysis, to investigate the relationship between working capital management and firm returns in Pakistan. The findings of the present study are expected to contribute significantly to finance literature. The results of the present study are in contradiction to those of some

earlier studies on the issue. This phenomenon may be attributed to the inconsistent and volatile economic conditions of Pakistan. The reasons for this contradiction may further be explored in future researches.

The study also suggests some policy implications for the managers and prospective investors in the emerging market of Pakistan. Firms with more aggressive policy towards working capital may not be able to generate more profit. So, as far as the book value performance is concerned, managers cannot generate more returns on assets by following aggressive approach towards short-term assets and liabilities. On the other hand, investors are found giving more value to the firms that adopt an aggressive approach towards working capital financing policies. The market value of firms using high level of current liabilities in their financing is more than the book value. The investors believe that firms with less equity and less long-term loans would be able to perform better than the others. However, there are various other factors like agency problem which may play a pivotal role in such cases, and so these factors may further be explored in future. ⊥

References

1. Afza T and Nazir M S (2007), "Working Capital Management Practices of Firms: Empirical Evidence from Pakistan", in the Proceedings of 9th South Asian Management Forum (SAMF) held on February 24-25, pp. 334-343, North South University, Dhaka, Bangladesh.
2. Brigham E F and Ehrhardt M C (2004), *Financial Management: Theory and Practice*, 11th Edition, South-Western College Publishing, New York.
3. Carpenter M D and Johnson K H (1983), "The Association Between Working Capital Policy and Operating Risk", *Financial Review,* Vol. 18, No. 3, p. 106.
4. Deloof M (2003), "Does Working Capital Management Affect Profitability of Belgian Firms?", *Journal of Business, Finance and Accounting*, Vol. 30, Nos. 3-4, pp. 573-587.
5. Eljelly A M A (2004), "Liquidity-Profitability Tradeoff: An Empirical Investigation in an Emerging Market", *International Journal of Commerce and Management,* Vol. 14, No. 2, pp. 48-61.
6. Filbeck G and Krueger T (2005), "Industry Related Differences in Working Capital Management", *Mid-American Journal of Business,* Vol. 20, No. 2, pp. 11-18.
7. 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. 3, p. 31.
8. 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.
9. Gitman L A (2005), *Principles of Managerial Finance*, 11th Edition, Addison Wesley Publishers, New York.

10. Gombola M J and Ketz J E (1983), "Financial Ratio Patterns in Retail and Manufacturing Organizations", *Financial Management,* Vol. 12, No. 2, pp. 45-56.

11. Gupta M C (1969), "The Effects of Size, Growth and Industry on the Financial Structure of Manufacturing Companies", *Journal of Finance*, Vol. 24, No. 3, pp. 517-529.

12. 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.

13. Hall C (2002), "'Total' Working Capital Management", *AFP Exchange*, Vol. 22, No. 6, pp. 26-32.

14. Harris A (2005), "Working Capital Management: Difficult, but Rewarding", *Financial Executive*, Vol. 21, No. 4, pp. 52-53.

15. Howorth C and Westhead P (2003), "The Focus of Working Capital Management in UK Small Firms", *Management Accounting Research*, Vol. 14, No. 2, pp. 94-111.

16. Johnson C G (1970), "Ratio Analysis and the Prediction of Firm Failure: Comment", *Journal of Finance*, Vol. 25, No. 5, pp. 1166-1168.

17. 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.

18. Lamberson M (1995), "Changes in Working Capital of Small Firms in Relation to Changes in Economic Activity", *Mid-American Journal of Business,* Vol. 10, No. 2, pp. 45-50.

19. Lazaridis I and Tryfonidis D (2006), "Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange", *Journal of Financial Management and Analysis*, Vol. 19, No. 1, pp. 26-35.

20. Long M S, Malitz I B and Ravid S A (1993), "Trade Credit, Quality Guarantees, and Product Marketability", *Financial Management*, Vol. 22, No. 4, pp. 117-127.

21. Maxwell C E, Gitman L J and Smith S A M (1998), "Working Capital Management and Financial-Service Consumption Preferences of US and Foreign Firms: A Comparison of 1979 and 1996 Preferences", *Financial Practice and Education*, Vol. 8, No. 2, pp. 46-52.

22. Moyer R C, McGuigan J R and Kretlow W J (2005), *Contemporary Financial Management*, 10th Edition, South-Western College Publishing, New York.

23. Pinches G E (1992), *Essentials of Financial Management*, 4th Edition, HarperCollins College Publishers, New York.

24. Pinches G E, Mingo K A and Caruthers J K (1973), "The Stability of Financial Patterns in Industrial Organizations", *Journal of Finance*, Vol. 28, No. 3, pp. 389-396.

25. Rehman A (2006), "Working Capital Management and Profitability: Case of Pakistani Firms (Unpublished Dissertation)", COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan.

26. 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.

27. Smith K (1980), *Profitability versus Liquidity Tradeoffs in Working Capital Management, in Readings on the Management of Working Capital*, West Publishing Company, St. Paul, New York.

28. 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.

29. Soenen L A (1993), "Cash Conversion Cycle and Corporate Profitability", *Journal of Cash Management,* Vol. 13, No. 4, pp. 53-58.

30. 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.

31. Van Horne J C and Wachowicz J M (2004), *Fundamentals of Financial Management*, 12th Edition, Prentice Hall Publishers, New York.

32. 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.

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