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The Impact of Working Capital Management on Firm Profitability: Emprical Evidence from Indian Listed Firms

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Working Capital Policy- A Study of Indian Firms

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Abstract
Different enterprises will require varying amounts of working capital depending on the nature of the company like industry characteristics, size, age operating cycle, general economic conditions etc. These factors must be taken into account when developing working capital management policy for a business. Three strategies are used by businesses to manage their working capital: conservative, aggressive, and moderates. The present study is an attempt to understand and explore the working capital policies of Indian listed firms on the basis of the primary industry of their operation. Specific objectives of the present study are to explore the difference in the current ratio, acid test ratio, and cash ratio, which are proxies for the working capital policy of companies on the basis of their primary industry of operation. The study concludes that overall, the Indian top listed companies are good at managing their working capital. However, the ANOVA analysis indicates that the mean values of Current ratio and acid test ratios of companies from different industry sectors varies in a significant manner. However, the companies from different industries do not have variations in their cash ratios in statistically significant manner.

Keywords
Working Capital, Working Capital policy, Industry comparison

I. Introduction

All businesses irrespective of their industry or structural characteristics are concerned with the decisions of financing their assets and operations. Working capital management is related with the short-term financial needs of businesses. Despite being a significant component in the financial success of the firm the working capital management has been studied least by the researchers. Working capital management's goal is to make sure the company can cover its operating costs and continue to be in a position to pay short-term debts as and when they become due. Working capital mismanagement could result in a liquidity crisis, decreased profitability, and a threat to the company's ability to continue as a going concern.

Three strategies are used by businesses to manage their working capital: conservative, aggressive, and moderate (Van Horne &Wachowicz, 2009). When using a conservative strategy, a company will often rely on long-term sources of funding for operations and only turn to short-term ones in an emergency. The aggressive strategy, on the other hand, involves having fewer current assets overall, such as cash, inventories, and trade receivables as a percentage of total assets. Between the aggressive and conservative tactics is a moderate approach. With the recommendation that short-term sources of financing be used to finance fluctuating current assets, a moderate approach distinguishes between fluctuating current assets and permanent current assets. Similarly, permanent current assets should be financed through long-term sources of capital (Brigham & Houston, 2021).

Different enterprises will require varying amounts of working capital depending on the nature of the company like industry characteristics, size, age operating cycle, general economic conditions etc. These factors must be taken into account when developing working capital management policy for a business. Manufacturing companies, for instance,

must make significant investments in components and replacement parts, but grocery stores must maintain sizable inventories of products for resale but have little trade receivables. However, businesses may concentrate on boosting sales by giving their clients trade credit. This can improve stock turnover, but it might also generate cash flow issues because some accounts receivable might take longer to resolve. On the other side, when credit sales are rising, a business may also need to use credit to finance its operations, which will result in rising accounts payable. A business won't run out of goods if they have enough inventory. However, this could result in additional storage costs as well as some merchandise going bad or becoming stolen. In addition, if a company takes longer to pay its creditors, it could impact its credit rating and cause suppliers to withhold their goods in addition to tying capital in the form of surplus inventories. As a result, it's crucial to maintain a specific level of accounts payable, accounts receivable, and inventory turnover, which can be improved by effective monitoring.

In this context, it implies that working capital management plays a significant role in the success of a business concern. Overall working capital management and policy may also vary on the basis of various firm characteristics. The liquidity ratios-current ratio, acid test ratio and cash ratio- are primary indicators of the working capital policy of a company. Higher the level of these ratios more conservative is the company's working capital policy (Afza&Nazir, 2008; Madushanka&Jathurika, 2018). The lower ratios represent aggressive WC policy andmoderate ratios will show hedging approach. The present study uses liquidity ratios-current ratio, acid test ratio and cash ratio- as proxies of the working capital policy followed by Indian companies. The present study is an attempt to understand and explore the working capital policies of Indian listed firms on the basis of the primary industry of their operation. Specific objectives of the present study are as follows:

- To explore the difference in the current ratio of companies on the basis of their primary industry of operation.
- To explore the difference in the acid test ratio of companies on the basis of their primary industry of operation.
- To explore the difference in the cash ratio of companies on the basis of their primary industry of operation.

Specific hypotheses to be tested are presented below:

H1: The companies from different industries do not have variations in their current ratios.
H2: The companies from different industries do not have variations in their acid test ratios.
H3: The companies from different industries do not have variations in their cash ratios.

The overall objective of this paper is to explore the variations in the working capital policies of the companies operating in different industries. The paper is organized as follows. Section 1 is the introduction. Section 2 reviewed the existing literature relating to working capital policy. Section 3 presents the research methodology, and Section 4 discusses the key findings from and concludes the paper.

II. Literature Review

Working capital management is presumed to be important to the broader company strategy of maximising shareholder value. The level and composition of current assets, as well as the amount and sources of short-term financing, must be determined in order to maximise shareholders' value (Afrifa, 2015). ALShubiri (2011) points those businesses that effectively manage their working capital are more likely to respond promptly during unanticipated economic developments. As a result, businesses must constantly keep an eye on their inventories, accounts receivable, and payments. Ghosh and Maji (2004) in 1992–1993, and again in 2001–2002, examined how effectively Indian cement companies managed their working capital. Instead of utilising certain conventional working capital management ratios,indices were constructed to quantify the efficiency of working capital, performance utilisation, and overall efficiency. This study investigated how quickly the objective level of efficiency might be reached by setting industry norms as the individual firms' target efficiency levels. The results showed that the performance of Indian cement companies during that time was poor.

Baker et al. (2017) investigated the working capital management (WCM) strategies used by Indian companies listed on the National Stock Exchange. The authors collected information from 110 financial managers using a questionnaire, and then utilised a variety of statistical methods to check for statistical significance. Evidence suggested that most firms (54.5%) adopt a moderate strategy for financing their operations, which entails a compromise between liquidity and profitability. Respondents frequently employ an informal strategy for WCM and prioritise receivables management as its most crucial element. Respondents primarily take

into account the cash conversion cycle and net working capital when it comes to WCM monitoring and financial measurements. For effective inventory management, Indian businesses frequently employ centralised cash management and significantly rely on material requirement planning (MRP) and enterprise resource planning (ERP) systems.

Bhatia and Srivastava (2016) studied the impact of working capital management on profitability of the companies from emerging economies. The study finds a negative relationship between working capital management and firm performance. The study emphasized on need to manage working capital more efficiently to enhance profitability of the companies. Similar findings were also noted by Chalmers et al. (2020) in their study using various elements of working capital management and profitability.

Panda et al. (2021) explored the connection between SME profitability and working capital management. The researchers used feasible Generalized Least Square (FGLS) regression models are used to examine the effects of macroeconomic impulses on company profitability through effective working capital management in the case of Indian small and medium-sized firms from 2010 to 2017. The study concluded that inventories and account payables have a positive link with SME profitability while inventories and account receivables have a negative relationship. It suggests that by increasing the days of accounts payable, converting credit sales to cash as quickly as feasible, and using a cautious approach to inventory management, business managers can enhance the profitability of SME. The main macroeconomic factors that affect SME profitability are changes in economic growth and commercial bank advances to small-scale companies.

Other studies explored various dimensions of working capital management and firm profitability. It has been argued that the operating cash flow can affect working capital in two ways (Chiou et al., 2006). Firms with shorter cash conversion cycle manage their working capital better as compared to firms with longer cash conversion cycle (AlShattarat et al., 2010; Kwenda, 2014; Mansoori& Muhammad, 2012; Palombini& Nakamura, 2012; Rimo&Panbunyuen, 2010). Some studies have also supported the view that increase in growth opportunities available with a firm reduces their working capital requirements (Gill, 2011; Hill et al., 2010; Narender et al., 2008; Tarkom, 2022). Firms witnessing an increasing sales growth attempts to improve working capital management by increasing efficiency of collection of account receivables and bargaining of better credit and payment terms from their vendors (Valipour et al., 2012). Some studies from the literature also indicate that increasing availability of growth opportunities leads to a shrink in the cash conversion cycle (Aktas et al., 2015; Baños-Caballero et al., 2013; Chauhan & Banerjee, 2017; Hill et al., 2010; Rimo&Panbunyuen, 2010). Past studies have indicated that generally firms with a higher performance keep their working capital requirements at lower levels as compared to firms with lower financial performance (Narender et al., 2008). Many studies have indicated a positive relationship between working capital requirements and firm performance (Abbadi&Abbadi, 2013; Chiou et al., 2006; Narender et al., 2008; Nazir&Afza, 2009; Rehman et al., 2017). Firm size has also found to affect the working capital management of the companies (Chiou et al., 2006; Moss & Stine, 1993; Uyar, 2009; Wasiuzzaman&Arumugam, 2013). Dalci et al. (2019) observed that the financial leverage moderates the relationship between working capital and profitability. Few studies have reported a negative relationship between financial leverage and working capital requirements (Abbadi&Abbadi, 2013; Nazir&Afza, 2009; Rehman et al., 2017).

Literature also points a link between industry characteristics and its working capital requirements. The reason for the same is that all industries have their own typical cash conversion cycle resulting in varied working capital requirements. For example, companies like wheat and paddy processing are needed to acquire raw material during season to be processed for whole of the year. Companies which are not in a position to arrange sufficient raw material find it difficult to operate throughout the year resulting in lower operational efficiencies and profits. Level of cash, inventory of raw material and finished goods, availability of credit, cash collection cycle, seasonality of operations etc. vary widely for firms from one industry to another (Ali, 2011; Baños-Caballero et al., 2013; Gill, 2011; Hawawini etal., 1986; Kieschnick et al., 2006; Nazir&Afza, 2009; Rimo&Panbunyuen, 2010; Weinraub&Visscher, 1998).

III. Research Methodology

For the purpose of present study, the authors have taken NIFTY-100 companies as the population. NIFTY-100 is the one of the broad-based market indices. Nifty 100 represents top 100 Indian companies based on full market capitalisation. The index measures the performance

of companies with large market capitalization. However, it was observed that the set contains companies for which working capital management does not work in the traditional sense like banking companies. For some companies the data could not be obtained. Banking companies, companies in financial services sector and companies for which the reliable data could not be obtained were deleted from the sample. Companies in few industry segments were put together in a single sector as the number of companies in each industry segment were too low. This was done for Construction, Construction Material and Realty industry sector. The study uses the data from Centre for Monitoring of Indian Economy (CMIE) database Prowess. The duration of the study was the financial year 2020-21. Thus, the study is quantitative and descriptive in nature.

Sample Description

Research sample consisted of 78 companies representing top companies listed on National Stock Exchange (NSE). The NSE categorised all companies in NIFTY 100 in 17 industry segments. But the final research sample contains only thirteen industry samples. The reason for the same is deletion of banking and financial services companies from the sample as the working capital data for banking and financial services companies is not calculated in traditional manner as is done for manufacturing, trading, and services companies. Further three industry sectors- Construction, Construction material, and Realty was merged into one group because of the reason that each industry sector was represented by either one or two companies and nature of three sectors is quite similar. Finally, the sample contains 78 companies from thirteen industry sectors. A maximum of eleven companies represented Fast moving consumer goods sector followed by Healthcare and Automobile and Auto Components sector each getting represented by 8 companies. Lowest number of companies were represented from Services and Telecommunication sectors with two companies from each. Thus, the sample is a fair representation of all major industry sectors of Indian economy. The distribution of companies for different industry sectors is also presented in the Figure below.

Data Analysis

As stated above the objective of this study is to explore and understand the differences in the working capital policies adopted by Indian listed companies from various industry sectors. As in the earlier literature, the study uses liquidity ratios- Current Ratio, Acid test Ratio, and Cash ratio- as a proxy to the working capital policy of the company. Current ratio is an indicator of company's capacity to meet its short-term obligations. Current Ratio is calculated by dividing current assets and current liabilities. If the ratio is less than 1, it means that the company has more debts due in the next year or less than it does in cash or other short-term assets that are anticipated to be converted to cash in the next year or less. Although various circumstances can negatively impact the current ratio in a strong corporation, a current ratio of less than 1.00 may sound frightening. The acid-test ratio (ATR), usually referred to as the Quick ratio, determines how well current assets can cover current obligations to determine a company's liquidity. Only the most liquid current assets that can be converted to cash in 90 days or less are used for calculating the quick ratio. By adding together cash and equivalents, accounts receivables, and marketable investments, then dividing the total by current liabilities, one can determine the quick ratio. Companies should ideally have a ratio of 1.0 or above, which indicates that the company has sufficient liquid assets to pay all short-term debts or invoices. Other aspects, such as how quickly a business collects its accounts receivable, when it buys assets, and how baddebt allowances are handled, might affect the acid-test ratio. High acid-test ratios may exist for some organisations, which is not necessarily a bad thing but rather suggests that they have a lot of cash on hand. Cash Ratio is a measure of a company's liquidity. It particularly determines the proportion of current liabilities to total cash and cash equivalents held by a company. The indicator assesses a company's capacity to pay off its short-term debt with cash or resources that can be converted into cash quickly, including readily tradable securities. Because it only considers holdings of cash or cash equivalents—leaving other assets, such as accounts receivable—out of the equation—the cash ratio is typically a more cautious assessment of a company's capacity to pay its debts and obligations than other liquidity ratios. Cash ratio for a company is calculated as: Cash + Cash Equivalents / Current Liabilities is the cash ratio. A corporation has more current liabilities than cash and cash equivalents if its cash ratio is less than 1. It denotes a lack of available funds to settle short-term debt. A corporation has more cash and cash equivalents than current obligations if its cash ratio is greater than 1. The business can pay off all short-term debt in this scenario and still have money left over.

To meet the stated research objectives for the present paper the authors used One way ANOVA as a statistical tool to find out in case a statistically significant difference in the mean of above ratios exists for companies from different industry segments. One way ANOVA is a method to test null hypothesis that two-or-more population means are equal. The result of the one-way ANOVA test for three ratios which are the proxies for the working capital policy are presented in the section below.

Descriptive statistics for current ratios of companies is presented in the Table 2. The table indicates that mean value of current ratio for all industry sectors is above 1. The average of the current ratio for all companies is reported as 2.3, which is a healthy indicator for the industry. If the ratio is less than 1, it means that the company has more debts due in the next year or less than it does in cash or other short-term assets that are anticipated to be converted to cash in the next year or less. Generally, a current ratio of less than 1.00 is not a healthy indicator for any company. As far as individual industry segments are concerned for industry sectors like 'Automobile and Auto Components', 'Metals and Mining', 'Oil Gas & Consumable Fuels', 'Power', and 'Services' indicated a minimum value of less than 1.00. Thus, it can be concluded that overall, the industry is in a comfortable condition in terms of Current Ratio. But still few companies in the research sample are not in a comfortable position and need to improve their working capital policy.

A one-way ANOVA was conducted to determine the effect of industry sector on current ratio. Output of one-way ANOVA for current ratios of the sample companies is presented in the Table 3. The results indicate a significant effect, [$F(12, 65) = 2.515$, $p = .009$]. The comparison revealed significant difference between current ratios for companies from different industry sectors. Therefore, the null hypothesis that 'The companies from different industries do not have variations in their current ratios' is not supported.

Descriptive statistics for acid test ratios of companies is presented in the Table 4. The table indicates that mean value of acid test ratio for all industry sectors is above 1 except Metals & Mining, Oil Gas & Consumable Fuels, and Power. The average of the current ratio for all companies is reported as 1.85, which is a healthy indicator for the industry. Companies should ideally have an acid test ratio of 1.0 or above, which indicates that the company has sufficient liquid assets to pay all short-term debts or invoices. Generally, an acid test ratio of less than 1.00 is not a healthy indicator for any company. As far as individual industry segments are concerned the acid test ratio for individual company is indicated less than 1.00 for all industries except Information Technology and Services sector. Thus, it can be concluded that overall, the industry is in a comfortable condition in terms of Acid test Ratio. But still few companies in the research sample are not in a comfortable position and need to improve their working capital policy.

The comparison revealed significant difference between acid test ratios for companies from different industry sectors. Therefore, the null hypothesis that 'The companies from different industries do not have variations in their acid test ratios' is not supported.

Descriptive statistics for cash ratios of companies is presented in the Table 6. The table indicates that mean value of cash ratio for all industry sectors is less than 1. The average of the cash ratio for all companies is reported as 0.329, which is not a very comfortable level for the industry.

Thus, it can be concluded that overall, the industry is in a comfortable condition in terms of Cash ratio. But still few companies in the research sample are not in a comfortable position and need to improve their working capital policy.

A one-way ANOVA was conducted to determine the effect of industry sector on cash ratio. Output of one-way ANOVA for cash ratios of the sample companies is presented in the Table 7. The results indicate a significant effect, [$F(12, 65) = 2.157$, $p = .025$]. The comparison revealed that there is not a significant difference between cash ratios for companies from different industry sectors. Therefore, the researcher fails to reject the null hypothesis that 'The companies from different industries do not have variations in their cash ratios'.

IV. Conclusion

Different enterprises will require varying amounts of working capital depending on the nature of the company like industry characteristics, size, age operating cycle, general economic conditions etc. These factors must be taken into account when developing working capital management policy for a business. Three strategies are used by businesses to manage their working capital: conservative, aggressive, and moderates. The present study is an attempt to understand and explore the working capital policies of Indian listed firms on the basis of the primary industry of their operation. Specific objectives of the present study are to explore the

difference in the current ratio, acid test ratio, and cash ratio, which are proxies for the workingcapital policy of companies on the basis of their primary industry of operation. The study concludes that overall, the Indian top listed companies are good at managing their working capital. However, the ANOVA analysis indicates that the mean values of Current ratio and acid test ratios of companies from different industry sectors varies in a significant manner. However, the companies from different industries do not have variations in their cash ratios in statistically significant manner. Thus, it can be concluded that companies from different industry sectors vary in terms of their working capital management policy. Findings of the study is expected to help working capital managers in understanding the nature of working capital and design strategies for better managing working capital at their organizations.

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