A COMPARATIVE ANALYSIS OF WORKING CAPITAL MANAGEMENT BETWEEN PHARMACEUTICAL AND TEXTILE INDUSTRIES IN BANGLADESH

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Certificate from Supervisor

This is to certify that the thesis entitled "A COMPARATIVE ANALYSIS OF WORKING CAPITAL MANAGEMENT BETWEEN PHARMACEUTICAL AND TEXTILE INDUSTRIES IN BANGLADESH" submitted by NAZMUN NAHAR SHANTA for the award of the degree of M. Phil was done under my supervision and guidance. I certify that the works is original and has not submitted for the award of any degree or diploma. The thesis represents entirely an independent work on the part of the candidate, no portion of thesis is a reproduction from any other sources, published or unpublished without proper acknowledgement.

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ABSTRACT

This research is an endeavor to understand and identify the impact of working capital management on firm performance. The present study puts an effort to understand the impact of working capital management on profitability of some Pharmaceutical and Textile firms. This study argues that firm performance is directly affected by the efficient working capital management in the organization.

Prior studies have analyzed the impact of working capital components on profitability, thus neglecting the other important variables like aggressive financing policy, aggressive investment policy, liquidity, etc. Therefore, the present study contributes to the existing literature by analyzing the impact of working capital components and working capital policies on the profitability of the sample firms. Average Collection Period, Average Inventories Days, Average payable Period and Cash Conversion Cycle have been used to measure working capital components. Aggressive investment policy and aggressive financing policy have been used to measure working capital policies.

The main objective of the present study is to evaluate the comparative analysis of Working Capital Management between Pharmaceutical and Textile industries in some selected companies with emphasizing to examine the trends in working capital in different Pharmaceutical and Textile industries of Bangladesh, and to investigate the effects of working capital components on profitability of Pharmaceutical and Textile industries of Bangladesh. This study mainly followed a quantitative research method. Data were collected from annual reports of selected pharmaceuticals and textile firms in Bangladesh. Total 32 (Thirty Two) sample of 10 (ten) pharmaceuticals and 22 (Twenty two) textile pharms were considered among the top performer and data availability of the firms (Around 40% of DSE listed firms) for five years data for the period from 1st July 2013 to 30th June 2018. Collected data were analyzed by using SPSS, Eviews, and Microsoft Excel. Before data analysis 16 models were put forwards and hypothesis were developed. The present study unifies panel regression techniques to calibrate the efficacy of independent Variables (working capital components and working capital policy) on dependent variable (profitability) of pharmaceuticals firms and textile firms in Bangladesh.

Thus, this study unified the regression models for finding the impact of independent variables on dependent variable.

The overall finding revealed that sample firms adopt aggressive financing policy. The study fulfills the objective by investigating the relationship between the working capital components and profitability of the firm. This study finally conclude that pharmaceuticals sector is much more efficient than textile sector in working capital management in Bangladesh.

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ACRONYMS

ACP= Average Collection Period

AFP= Aggressive Financing Policy

AIP= Aggressive Investment Policy

APP= Average Payable Period

BTMA= Bangladesh Textile Mills Association

CA= Current Assets

CCC= Cash Conversion Cycle

CL= Current Liability

CR= Current Ratio

CSE= Chittagong Stock Exchange

CTL= Cash to Total Liability

DSE= Dhaka Stock Exchange

EPZ= Export Processing Zone

EPB= Export promotion Bureau

EU= European Union

FDR= Fixed Deposit Receipt

GDP= Gross Domestic Products

GWCTR= Gross Working Turnover Ratio

ICR= Interest Coverage Ratio

MNC= Multinational Company

NPM= Net Profit Margin

NWCM= Net Working capital Management

NWCT= Net Working capital Turnover

OLS= Ordinary Least square

ROA= Return on Assets

ROE= Return on Equity

ROI= Return on Investment

RMG= Ready-made Garments

SME= Small and Medium Enterprise

TA= Total Asset

WCM= Working Capital Management

WCR= Working Capital Ratio

WTO= World Trade Organization

CHAPTER –ONE

INTRODUCTION

CHAPTER0 –ONE
INTRODUCTION

1.0 Introduction

Working capital management is an integral part of the financial management of a company for maintaining the corporate performance of any firm. It denotes to all managerial decisions and actions that ordinarily influence the size and effectiveness of the working capital within organization. Again, it is concerned with the determination of the appropriate levels of the current assets and their use, as well as the most effective choice of working capital sources. So, it is cleared that working capital management has become a very important part of a firm's financial management. Because, its management not only affects the survival of firm but also the performance of firm dependent on how effectively and efficiently working capital is utilized in the firm's operations. Thus, it is very much important to see that how working capital management policies affect the corporate performance of firms. Conventionally, organization was considered Working Capital management as a means to maintain sufficient cash to meet the claims of current maturity of creditors. However, the concept of working capital management has changed and now a days it also includes management of all current assets including cash, marketable securities, accounts receivable, inventory as well as the current liabilities. Therefore, the level of Working Capital must be properly determined and allocated to various segments as well as effectively controlled and regularly reviewed by the organization in order to take adequate and efficient flow of working capital for running the business. One of the prime goals of the firms for number of years was maintaining liquidity and they strive to maintain higher liquidity to safeguard against risk of uncertain default. Organization focus on this issue mainly, as the financial viability of firms was associated with their liquidity. Sooner or later, it was fingered out by firms that maintaining high liquidity affects the profitability of firm in an adverse

manner. As a result, most of the assets of the firm were retained in the current form i.e. cash, marketable securities, receivables and inventory which could be used for investment in long term assets to generate revenue. Furthermore, maintain higher profitability and liquidity, both are important goals for any firm and to relinquish one goal at the cost of other can create severe problems for the firm. As profitability must be required for the survival of the firm, it is considered as a long-term goal for any firm whereas liquidity is relatively short-term goal which needs to be addressed to protect the firm from bankruptcy. Working capital management efficiency and its significance has been emphasized by a number of researchers such as (Uyar, 2009; Samiloglu and Demirgunes, 2008; Vishnani and Shah, 2007; Teruel and Solano, 2007, Lazaridis and Tryfonidis, 2006; Padachi, 2006; Deloof, 2003; Wang, 2002; Shin and Soenen, 1998; Smith and Begemann, 1997; and Jose et al., 1996).

Again, many short-term activities have effects on long-term financial decisions management should concerns about working management capital. Company have taken effective short-term financial strategy, for allowing a company to plan ahead with the confidence that its short-term concerns are being handled properly. Perhaps unlike other areas of finance, short-term finance has more qualitative features, making each company's case somewhat different from another's. This unique nature, combined with the short time frame associated with this aspect of finance, makes short-term finance a dynamic and challenging activity. Factually, the major goal of WC management is to ensure that a firm is able to continue its operations and that it has sufficient ability to satisfy both maturing short-term debt and upcoming operational expenses. Besides, proper management of working capital is essential to a company's fundamental financial health and operational success as a business which includes managing inventories, accounts receivable and payable, and cash. Corporate management must be concerned

about the ability to utilize working capital management to maintain a solid balance between growth, profitability and liquidity. Moreover, working capital management covers a wide range of activities, most of which are focused on or involve the company's cash levels. Competing uses for the company's cash, which is often a scarce resource, create the need for an efficient method of handling the short-term financing of company activities.

As, the primary function of working capital management is to make sure that the companies should always maintain sufficient cash flow to improve and meet its short-term operating cost and short-term obligations. For improving overall performance, minimize risk and well prepare for uncertainty at this time it is a prerequisite for firm to know about the determinants of WC and the appropriate intensity of WC (Harris, 2005). The aim of supervision is to maintain the optimum balance of all components of WC, so it is extremely necessary for companies to keep an eye on overall trends in order to find out areas that require more rapid management. There are different methods and strategies are applied to effectively control each component of WC in order to achieve liquidity. There are different theoretical developments and empirical issues have been drawn for managing WC. But this crucial thing business have no unified rule that can determine the optimal level of working capital. The role of working capital should be highly emphasized from the viewpoint of developing country like Bangladesh. Nevertheless, in financial market, Bangladesh is characterized by low level of capital market development and inefficiency. In this state, it is hardly possible to have the desired funds to maintain the liquidity of business by collecting the funds when it required as well as investing funds.

Textile and Pharmaceutical Industry in our country is a profitable sector. It is due to the reason that the firms in the industries are very competitive and have gained efficiency in managing its resources competently. The impact of overall working capital policy on profitability in these industries is proved to be significant. A positive correlation has been found in the mathematical model (Chowdhury and Amin, 2007) between current asset management and financial performance of Pharmaceutical firms. Thus, it is evident that for the overall performance of pharmaceuticals industry, working capital plays a vital role. However, the sample firms in the pharmaceuticals industry have been efficient in managing Cash, Account Receivables and Payables. For this industry, maintaining large volume of Inventory doesn't reflect inefficient management (Chowdhury and Amin, 2007).

Again, the acquaintance and understanding of efficient Working Capital Management performances of textile industry is currently not sufficient and numerous firms have gone into insolvency over the years as a consequence of running a shortfall cash flow from operations. For this reason, working capital management is important for textile industries and that is the reason researchers undertaken various studies to know the liquidity position of companies. The liquidity and credibility position of the companies as sufficient liquidity is necessary and must be achieved and maintained to provide the fund again to pay off obligations (Swarnkar el al., 2013). For measuring the efficiency of WC management & liquidity management, secondary data collected for listed firms for the period of 2008-2012 and ratio analysis is used as a tool. A comparative study performed on co-operative sector by using working capital management and ratio analysis, t-test and operating cycle analysis (Singh and Bansal, 2010). Their evaluation concluded that both sectors should concentrate on their liquidity and current assets

utilization and concentrates working capital management techniques, implementation, profitability measures so on.

In the present-day in the context of Bangladesh perspective, both in Textile and Pharmaceuticals industry working capital needs special emphasis. As day by day capital cost is rising and scarcity of funds make difficult to operate business in these industries, the importance of WC is considered a key aspect of solvency. It has been widely accepted that the profitability of a business concern likely depends upon the manner in which its WC is managed. The inefficient management of WC not only reduces profitability but ultimately may also lead a concern to financial crisis. So, if it is done improperly, the results can be disastrous for the company. On the other hand, proper management of WC leads to a material savings and ensures financial returns at the optimum level even on the minimum level of capital employed. We also know that both excessive and inadequate WC is harmful for a firm. Excessive WC leads to un-remunerative use of scarce funds. Finally, it can be said that the aspect of WC management is a critical one so it is needed to ensure that the use of WC in a company must be done effectively and efficiently, that the company will stay solvent and remain in business. Because Textile and pharmaceutical industry play a significant role in the economic growth of Bangladesh.

In a nutshell, it will be shown in this paper that WC management has a special application and need a thorough investigation regarding WC practice in the textile and pharmaceutical industry of Bangladesh. For this reason, an attempt has, therefore, been made to undertake an in-depth study on, WC management scenario in Bangladeshi firms in textile and pharmaceutical industry. After all these, it is practically experienced by many analysts or even investors that their remains a disparity between literature and

pragmatic world, especially when it comes to developing countries. This study is expected to provide the investors of Bangladesh with a view about the working capital performance of firms they invest with and relate the expected profitability from their investment.

1.1 Statement of the Problem

A vibrant issue in corporate finance, working capital management of firm has grown decisive consideration in the recent period. The Several theoretical as well as empirical researches have demonstrated that working capital management (WCM) have unswervingly influences liquidity, risk and profitability of a firm and eventually have a say, it influences in value of the firms. It has also been noticed that problematic conditions in both cases of excessive or inadequate working capital positions. Fixed capital investment generates production capacity of a firm whereas working capital facilitates utilizing such capacity. Various studies have shown that financial manager spend a lot time to tackle the working capital problems to get maximum benefit (Pandey, 2007). Although, working capital management is crucial for all firms not withstanding of their size, nature and type. But it is not more imperative for all types of firm. Different types of empirical research carried out in different countries on working capital management is concerned with manufacturing industries while studies relating to textile and pharmaceuticals industry are scanty. In Bangladesh, a large number of Pharmaceutical and Textile industries are suffering insufficient amount of working capital which is one of the most important reasons for not developing our economy as par the expected rate. The amount of working capital in Pharmaceutical and Textile sector business activities is still insufficient because of socio-cultural, political, economical, national and international financial policy barriers. Most of the cases, different companies under Pharmaceutical and Textile sectors are not collecting sufficient fund from the financial

markets and institutions to develop their business or sometime not getting significant policy support from government and related legislative bodies. A large number of countries have made important progress and achievement by involving working capital management systems in Pharmaceutical and Textile sectors. But in Bangladesh collecting and utilizing of working capital for improving the performance of Pharmaceutical and Textile sector is a vast national challenge.

Several questions are therefore to be addressed. What is the size of working capital in pharmaceuticals and textile industries in Bangladesh? Is the existing level of working capital sufficient for income generation and meeting operational expenses? Is there any acceleration / deceleration in the movement of working capital? Efficient management of various components of working capital is necessary to ensure smooth running of a firm. Sufficient amount of working capital is required for sustaining the desired level of operating income. Inadequate working capital impairs a firm's liquidity, while profitability is hampered by excessive working capital. Yadav (1986) establishes that ineffective management of working capital is one of the important factors that trigger industrial sickness. Accordingly, an attempt is made in this study to examine Whether Pharmaceutical and Textile sector in Bangladesh are efficiently managing their working capital. Again, it is very important to know if there any association between efficient management of working capital and profitability as well as value addition in these sector. Does efficient working capital management increase/decrease profitability? Is value addition responsive to efficient working capital management and which sector more efficient in managing working capital? Therefore, the present study entitled *"*A Comparative Analysis of Working Capital Management between Pharmaceutical and Textile industries in Bangladesh" has been shadowed in view of limited research work and the importance of the selected industries considering economy of Bangladesh.

1.2 Objectives of the Study

The main objective of the study is to evaluate the working capital management of Pharmaceutical and Textile industries in Bangladesh.

The specific objectives of this study are as follows:

1. To examine the trends of working capital in different Pharmaceutical and Textile industries of Bangladesh.
2. To investigate the effects of working capital components on profitability of the Pharmaceutical and Textile industries in Bangladesh.
3. To investigate the effects of working capital policy on profitability of the Pharmaceutical and Textile industries of Bangladesh.
4. To provide valuable suggestions for efficient management of working capital to enhance the profitability of Pharmaceutical and Textile industries in Bangladesh.

1.3 Rationale of the Study

After going through the comprehensive review of both theoretical as well as empirical literature it has been found that most of the studies have been concentrated in developed countries whereas in developing economies like Bangladesh, the research work on the subject matter is in the discrete form. Most of the researchers have focused on the effect of working capital management on profitability of large firms. On the other hand, textile and pharmaceuticals industry which are considered as foundation of economic development of the bangladesh but has given an insignificant attention. In addition, most of the studies have focused on traditional working capital components, while as working capital policies and liquidity which are other important determinants have not been taken into consideration. Apart from these observations, the researchers have not come across any study that predominantly focused on working capital management and profitability

of Bangladeshi firm. Therefore, the present studies are trying to fill the gap by focusing on textile and pharmaceuticals industry in Bangladesh and by taking into consideration working capital component, working capital policy, liquidity, profitability and value addition.

1.4 Structure of the Thesis

The structure of the thesis presented in following structures:

1st Chapter: Introduction

This chapter presents introductory issues like statement of the problem, objectives of the study, rationale of the study, and limitations of the study, plan of the study.

2nd Chapter: Literature Review

This chapter attempts to review the relevant literatures of this selected topic.

3rd Chapter: Research Methodology

This chapter illustrates the methods which were used to conduct this research. Sampling design, sources of data, description of primary data and secondary data, statistical tools and techniques, charting, graph etc. will be presented in this chapter.

4th Chapter: Overview of Pharmaceutical and Textile sector

This chapter presents the historical background, products and services, scenario, competitive position, competitive advantages, challenges of different companies under Pharmaceutical and Textile Industry of Bangladesh.

5th Chapter: Result and Discussions

In this chapter, all collected data were analyzed by using different statistical tools and techniques in consultation with supervisor and statistician.

6th Chapter: Findings, Conclusion and Future Research Directions

This chapter organized the findings to the study after analyzing the collected data and drawn concluding summary and recommend policies and strategies for implications.

CHAPTER –TWO
LITERATURE REVIEW

CHAPTER –TWO

LITERATURE REVIEW

2.1 Introduction

There are different types of problems are regularly facing by different organization relate to financial management, the problem of working capital management has probably been recognized as the most decisive one. It is because of the fact that working capital always helps a business concern to gain robustness and life strength. Working capital management may be defined as the management of a firm's liquid assets such as cash, marketable securities, accounts receivables, inventories and accounts payables. Usually, the existing literature is surveyed while conducting a research to help the researcher in concluding out the gaps in the research studies so far made in the anxious research area and finding the paths for the research in the same area. The present chapter inspecting the studies relating with the Working Capital management, its components, policies as well as liquidity in connection with profitability of the firms carried out for classifying the research gaps. The discussion made in this chapter is divided into five parts. In the first part, studies connected with the working capital management are presented while the second part of the study is connected with the effects of working capital components on profitability. The third part contains the effects of working capital policies on profitability. The fourth part is for liquidity management on profitability of the firms. The fifth part sheds light on the study related with textile and pharmaceuticals Industry. Later on, the research gap and conclusions have been discussed.

2.2 Working Capital

In broad sense, working capital is a financial metric which represents operating liquidity available to a business, organization or other entity, including governmental

entities. Working capital is considered a part of operating capital, along with fixed assets such as plant and equipment. Again, gross working capital is equal to current assets. Generally, working capital is calculated as current assets minus current liabilities. If any company's has current assets which are less than current liabilities, it means it has working capital deficiency, also called a working capital deficit. However, a company can be endowed with assets and profitability but may fall short of liquidity if its assets cannot be readily converted into cash. Furthermore, positive working capital is required to ensure that a firm is able to continue its operations and that it has sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses. The management of working capital involves managing inventories, accounts receivable and payable, and cash for fulfilling the day-to-day operations. Simply put, working capital measures a company's liquidity, efficiency, and overall health..

Additionally, the adequacy of a company's working capital depends on the industry in which it competes, its relationship with its customers and suppliers, and other factors such as the following:

- The types of current assets and how quickly they can be converted to cash. For instance, marketable securities can be converted to cash much faster than inventory.

- The nature of the company's sales and how customers pay. If a company has very consistent sales via the Internet and its customers pay with credit cards at the time, they place the order, a small amount of working capital may be sufficient. However, another company in an industry where the credit terms are net 60 days will need a greater amount of working capital.

- Having an approved credit line with no borrowing allows a company to operate comfortably with a small amount of working capital.

In short, there is more to working capital than simply subtracting current liabilities from current assets.

In many cases these calculations are the same and are derived from company cash plus accounts receivable plus inventories, less accounts payable and less accrued expenses. If a company has substantial positive working capital, then it should have the potential to invest and grow. If a company's current assets do not exceed its current liabilities, then it may have trouble growing or paying back creditors, or even go bankrupt.

- A company has negative working capital If the ratio of current assets to liabilities is less than one.
- Positive working capital indicates that a company can fund its current operations and invest in future activities and growth.
- High working capital isn't always a good thing. It might indicate that the business has too much inventory or is not investing its excess cash

2.3 Component of Working Capital

As working capital is the difference between a company's current assets, such as cash, accounts receivable and inventories of raw materials and finished goods, and its current liabilities, such as accounts payable. Net operating working capital is a measured by the following components includes: -

i. **Cash Management:** Cash is one of the important components of current assets. It is found as a term cash under the current assets in the balance sheet. This is the most liquid of funds and very essential for every business to maintain the smooth

operations of their business. Sufficient amount of cash should be present with the company to fill any unexpected gaps in the production and sales cycle.

ii. **Receivables Management:** The term receivable is defined as any claim for money owed to the firm from customers arising from sale of goods or services in normal course of business. The account receivable is the amount of money receivable from clients arises due to credit sales by the company in the normal course of business. Account receivables also found on the company's balance sheet under the current assets.

The important point is that they are classified as assets but in real, they are not available for usage until realized in more liquid form. This is an important component of working capital management and should be efficiently manage to improves the financial health of the company's operations.

iii. **Inventory Management:** Stock or Inventory are the goods, which purchased by company with a view to resell in the market and earn profits. The turnover of inventory determines how the successful the business is.

iv. **Accounts Payable Management:** Accounts payable are the obligation upon company to pay off its debt due from its creditors, and suppliers. Accounts payable comes under the head of current liabilities and one of the major components of working capital management. it can be managing through negotiations with creditors to extend the payment period. Like the management of account receivable and inventory, accounts payable management is also a key component in managing working capital. If the company fails to get a longer period for its short-term debts while its own collection period is slightly longer as compared, then there is a chance that shortage of cash may arises. Which may

lead to financial crises. So, it can be added that companies should have managed their accounts payable in a way that average days of payable outstanding should be less than average collection period of the company so that company will continue its operations without any problem.

2.4 Working Capital Management

Working capital management (WCM) is the combination of all management decisions and actions that generally affect the size and efficiency of the working capital. It involves the most effective choice of working capital sources as well as the determination of the appropriate levels of the current assets and their use. It focuses attention to the managing of the current assets, current liability and their relationships that exist between them. In other words, working capital management refers to as the management of a firm's liquid assets. For instance, the cash, short-term marketable securities, accounts receivables, inventories, prepaid advances, accrued revenues and so on.

The working capital is the trading capital to meet up the short-term financial requirements of a business enterprise. The elements of working capital do not retain in business for longer than a year. The money invested in it alters its form and substance, while conducting the normal course of business activities. The necessity for maintaining an adequate amount of working capital can hardly be questioned. It can be compared with the circulation of blood. Just as blood circulation is essential in human body to maintain life, the flow of working capital funds is very essential to maintain the business as well. If there is insufficient working capital, the business can hardly prosper and survive. Working capital shortage is generally acknowledged as a major cause for the failure of small businesses in many developed and developing countries (Raheman and Nasr, 2007).

The success and sustainability of a firm depends ultimately, on its ability to generate cash receipts in excess of disbursements. The cash flow problems in small firms are worsened by poor financial management and particularly, the lack of planning cash requirements (Haque et al, 2014).

Thus, WCM is most important part of the decision taken by management that influences the Profitability of firm directly. On the other side, net working Capital (NWC) is the excessive amount of Current Assets (CA) over Current Liability (CL) of a firm (Haque et al, 2014). WCM is the tool through which you meet the short-term debts that fall due and it is the operating requirement which must be maintained (Mohamad and Saad, 2010).

2.5 Research Works Focusing on Working Capital Management

Several studies are found those worked on the elements of working capital management and their effect on organization's performance. In this part of discussion above mentioned studies are shortly nailed:

A study conducted on 98 Pakistani firms enlisted in Karachi Stock Exchange (KSE). Net Operating Income was used as a dependent variable, which was explored with the elements of cash conversion cycle (CCC), CCC itself and liquidity ratio. Firm size, debt ratio and ratio of financial assets to total assets were used to control the research model. In analysis part the researchers did Pooled Regression and General Least Squares Regression with cross section weights. The result depicts- maintaining excessive liquidity and debt financing bring negative performance in Pakistani firms. At the same time farm size was found to have positive impact on firm's performance (Raheman and Nasr, 2007).

Another study investigated the financial information of 31 local manufacturing farms with five years data from Sri Lanka. Current Ratio, Quick Ratio and Liquid Ratio were

used as independent variables where Net Profit Ratio, Return on Capital Employed and Return on Equity were used as dependent variables. The research found that the liquidity ratios have negative or very small correlation with the profitability ratios for the selected firms (Niresh, 2012). Similar study was done on banking sector of Sri Lanka by Amirthalingam and Meerajancy (2015) and found the identical result- insignificant correlation between liquidity and profitability in Sri Lankan banks. Like the previously discussed Raheman and Nasr' study (2007) - this research also found liquidity affects profitability negatively.

Another empirical study conducted on 1712 firms (879 small manufacturing and 833 retail firms) was focused on cash conversion cycle's relationship with liquidity, invested capital and firm's performance. It showed that firms having shorter cash conversion cycle invest less money, perform effectively and maintain more liquidity (Ebben and Johnson, 2011).

The research conducted on five-year data of 19 small and medium firms of UK divulged that accounts payable and receivable management have importance on profitability determination while inventory and cash conversion cycle (CCC) management are found having no impact on profitability (Tauringana and Afrifa, 2013).

To investigate how corporate profitability is affected by liquidity management in companies listed in Nigerian Stock Exchange- a research over five-year data of 12 companies have been conducted. The descriptive statistics of the exploration shows average collection period for the selected Nigerian companies is 251 days when average payment period is 318 days- means the firms can hold the cash in a better way. And it takes 673 days to convert raw materials to cash (CCC) - it affects the performance badly and 41% of the companies can settle more than 50% of their liabilities from the day to

day operation. The researchers proposed to decrease the cash conversion cycle (CCC) to raise profitability level (Owolabi et al., 2012).

Based on 204 manufacturing firms of Pakistan different working capital indicators significance on company performance revealed that cash conversion cycle, net trade cycle and inventory turnover in days affect performance of firms (Raheman et al., 2010a; Raheman et al., 2010b).

Companies with shorter cash conversion cycle meet their working capital needs from the current return- therefore do not need equity financing in Turkey (Uyar, 2009). This research also found that large farms in Turkey have shorter CCC period than smaller farms.

2.6 Research Works on Similar Topics in Context of Bangladesh

Though the working capital management and small enterprise sector of many countries has nailed in good way by many researchers- very few explorations are found in perspective of Bangladesh. This section will discuss some of these studies below:

Companies in Bangladesh maintain larger inventory followed by accounts receivables and cash. At the same time accounts receivable is declining and it also takes long time to be realized- found in a study over 5 years data of 38 companies under Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) (Haque et al., 2014). The operating sector-based study shows the cement and food industry have raised their current assets to total assets significantly that indicates inadequate performance in these two sectors duo to adequate liquidity (Chowdhury and Amin, 2007). An increasing trend of current asset is found from 2004 to 2008 in the investigation. The pharmaceutical sector is found overwhelmed with liquid money than any other sector. The textile sector is seen maintaining high credit sales followed by engineering sector- means high accounts receivables to total assets. In case of inventory management leather industry

maintains high inventory followed by food and engineering. Therefore, it can be said that big manufacturing firms of the country have lacking in their overall capital management.

Several challenges faced by small and medium enterprises in Bangladesh- have been found in a desk research. These drawbacks are resource's scarcity, high employee turnover, lack of modern technology, poor physical structure, financial limitations, ambiguity in management of information system, lack of entrepreneurial and management skills and research, lack of ethics, cheaper foreign goods, bureaucracy and low government initiative to promote the sector (Ahmed and Chowdhury, 2009).

A research has been conducted on working capital effect on profitability of cement industries of Bangladesh. The study took return on assets (ROA), net profit margin (NPM), and interest coverage ratio (ICR) as dependent variable. The exploratory variables were, quick ratio, cash to current liability, cash to sales, cash conversion cycle (CCC) and its elements. The descriptive statistics of the study depicted negative relationship between profitability and liquidity ratios- means more profitable companies take less time to convert raw materials into cash money. Cash to current liabilities and cash to sales showed very positive relationship with profitability ratios- means profitable firms generate required cash from their general operations (Quayyum, 2011).

A study on SMEs success factors in the firms in Khulna city of Bangladesh shows that- planning, distribution channel, management skills, customer service, technology and government support and capital management have strong impact on SMEs success (Uddin and Bose, 2013).

Another study examined that the working capital management efficiency of the textile companies of Pakistan for the period of 2004 to 2009. This study also has tested the pace of accomplishing the target level of efficiency by an individual firm during the period of that study. The overall performance of textile industry was satisfactory, on the contrary

the performance of individual firms fluctuated very much during the considered time duration (Ahmed et.al, 2012).

Another study where WCM have been evaluated in the selected companies of the Pharmaceutical business of Dhaka Stock Exchange from 2000-2003. They also examine the practices and policies regarding management of cash; assess the morality, methods and skill of inventory, management of receivable and payable. But they do not check the economic and political impacts on the WCM. The study found a competitive scenario of the pharmaceutical industry which are operated in Bangladesh. This firms are competently deal with their investment criteria and liquidity preferences (Chowdhury and Amin, 2007). A different empirical study analyzes the effect of WCM on firm's profitability. The result shown that accounts receivables period, inventory period and leverage (FDR) affect negatively; growth (in sales) affects positively but the CCC, size and FFAR have no significant effect on firm's profitability by using multiple regression models are used for this analysis (Hossain and Kabir, 2015). Another study evaluated the relationship between WC and profitability of Indian pharmaceutical companies. It pointed out two different thought on the relationship between WC and profitability of Indian pharmaceutical companies. Firstly, it found that the WC is not a factor of improving profitability and there may be a negative relationship between them, at the same time it has a positive response also. Investment in WC is acting as a very important role to improve corporate profitability, and except there is a least level of investment of WC, output and sales cannot be sustained in real, the insufficiency of WC would go on fixed asset out of order (Chakraborty, 2008).

Again, another study has concluded the overall performance of the textile sector was adversely affected by crisis through analysis of income statement, debt payment ability, management and inventory sales, receivables, productivity, fixed assets so on (Channar

and ram, 2011). Another research studied on productivity and financial efficiency of textile industry which focused on industry's current position and its performance. The study suggests that the management should try for increasing their production, minimizing the cost and operating expenses, exercise proper control on liquidity position, reducing the use of power, fuel, borrowing funds, overheads, interest burden and many others (Zala, 2010).

2.7 Effects of Working Capital on Organizational Performance

2.7.1 Effects of Working Capital Components on Profitability

A company's working capital reflects the results of a host of company activities, including cash, inventory, accounts receivable, accounts payable, the portion of debt due within one year, and other short-term accounts for doing the tasks related to inventory management, debt management, revenue collection, and payments to creditors.

Most of the time liquidity and profitability of a business depends upon how efficiently a company using its working capital. Thus, to maintain sustainable profitability and eradicate the possibility of liquidity crisis, optimum amount of current assets and current liabilities should be determined. Majority of the firms maintain a large amount of cash investment in working capital, as well as substantial amounts of short-term payables to ensure consistent supply to working capital. It is assumed that the management of working capital will have a considerable effect on the profitability of firms.

There have been several researches conducted to find out the relationship between working capital components and profitability. A study stated that managers can increase profitability by managing working capital efficiently, where the technique of shortening receivable conversion period and inventory conversion period used by manager. The

study focused on the effect of economic sector on relationship between working capital management and profitability (Mansoori and Muhammad, 2012). Besides, another study suggested that gross operating profit can be increased by shortening the average collection period of accounts receivables and cash conversion cycle (Vural et. al, 2012). A study highlighted the impact of the working capital components on the firms' profitability in the textile sector of Pakistan and recommends that by designing and implementing effective policies regarding working capital, the firm's profitability can be enhanced (Tahir and Anuar, 2016). Again, an empirical study exposed that profitability can be increased through gross operating profit, and the cash conversion cycle. Moreover, the researcher suggested that managers can play indispensable role in terms of creating profits for their companies by appropriately managing the cash conversion cycle, protecting each different elements of working capital such as: accounts receivables, accounts payables, inventory etc. and maintaining these elements to an optimum level (Lazaridis and Tryfonidis, 2006). Another study identified extremely positive significant relationship between the variables of Inventories in days and Average Payable Period with profitability. He has suggested to the selected firms to reduce their collection period and try to increase delay for the payment to the creditors (Mathuva, 2015). Another study found the accounts payable period in days, inventory turnover in days, cash conversion cycle, net trade cycle, cash turnover ratio, current assets to total assets ratio and current ratio have a positive relationship with the firms' profitability (Tahir and Anuar, 2016). Another study revealed that average days of inventories, average collection period and cash conversion period are positively correlated with a firm's profitability but the average payment period are negatively correlated, which discovered that working capital management and profitability is positively correlated in Bangladeshi Textiles Companies (Asaduzzaman and Chowdhury, 2014). Again, another

study explored that firm's operating cycle and CCC are both decreased but failed to show positive relationship between profitability and efficient management of working capital (Anand and Malhotra, 2007). It has been explored as well that there is a relationship between higher receivables, levels of inventory and lower profitability. This study revealed that profitability will be increased if there is an efficient working capital management (Padachi, 2006). It is indicated that each working capital component affected the company's level of profitability at varying rates, but there have been found negative impact/effects when they pooled together (Owolabi and Alu, 2012). Some researchers also revealed that all the components of working capital management affect profitability at varying levels of significance with debtor's collection period having the highest and significant impact" which is negative (Ben-Caleb, 2009; Falope and Ajilore , 2009).

It also has been explored that Net Working Capital has strong and positive relationship with Profitability while Number of Days Account Receivable and Inventory Turnover in Days have weak positive relationship with Profitability (Qazi et al, 2011). But, Financial Assets to Total Assets, Debt to Equity Ratio and Current Ratio on the other hand have weak negative correlation with Profitability. Therefore, they shown positive movement of working capital on the profitability of firms. Previously, it has been indicated that through proper working capital management the company can increase its profitability. This study will be beneficiary for the Pharmaceutical companies for the effective management of their working capital so that they can multiply their profitability (Agha, 2014).

A positive relation has been found between profitability and cash, accounts receivable and, inventory while there is a negative relationship between profitability and accounts payable. This means that increase in cash, inventory and credit sales will lead to increase

profitability of firm (Muhammad et. al, 2012). A pragmatic connotation between competence of working capital management and corporate profitability. The findings disclosed that lower cash conversion cycle as a measure of working capital management optimistically influences return on assets as a measure of profitability (Hasan et.al, 2011).

On the contrary several studies shown a negative response from the components of WC. Nevertheless, it has been revealed that average collection period in days, net working capital level, current assets to operating income, current assets to sales ratio, current liabilities to total assets has negative impact on return on assets (Tahir and Anuar, 2016). A negative relationship has been found between profitability and cash conversion cycle, number of days accounts receivable, but a positive relationship between profitability and number of days of inventory and average payment period (Makoriand and Jagongo, 2013). Again, a significant negative relationship has been revealed between gross operating income (GOI) and average collection period, closing stocks and accounts payables of firms (Deloof, 2003). He also propounded that there is a negative relationship between accounts payable and profitability. Previous study propounded negative relationship between ACP and profitability, CCC and Profitability (Mathuva, 2015). It is revealed that there exist a significant negative association between working capital variables with firms' performance (Mohamad and Saad, 2010). Leverage as a control variable has a significant negative relationship with firm value and profitability of firms. This means, if the level of leverage is increase, it will lead to lower profitability of the firm as well as the value of the firm (Vural et. al, 2012).

It is suggested that the manager can make value for their shareholders by sinking the number of days accounts receivable and inventories to a realistic level as well (Deloof, 2003). The studies also stated that based on the key findings from this study it had been

concluded that the management of a firm can create value for their shareholders by reducing the average collection period (Makoriand and Jagongo, 2013). The management can also create value for their investors by maintaining a reasonable level of inventories. Different studies examined that the Profitability and Working Capital management of Textiles Industries has a positive relationship. It also discovered that positive relationship exists between Working Capital Management and Profitability, but the textile industry is not showing working capital management efficiency (Rahman, 2011).

One study reliable with the concept that less profitable firms take more times to pay their bills. Different empirical studies suggested to the selected firms to reduce their collection period and try to increase delay for the payment to the creditors (Mathuva, 2015; Deloof, 2003).

2.7.2 Effects of Working Capital Policies on Profitability

Providing the guideline to manage the current assets and current liabilities in such a way that it reduces the risk of default, working capital policy can be best described as a strategy (Brian, 2009). At present working capital management policies on profitability of a company is a major concern. It is felt that there is the need to study working capital management policies on profitability. Orthodoxly, it has been seen that if a company desires to take a greater risk for bigger profits and losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely to result in a reduction of the sales volume, therefore of profitability.

A company should strike a balance between liquidity and profitability. An empirical study made of Indian Consumer Electronics Industry for assessing the impact of working

capital policies & practices on profitability and computing coefficient of correlation and regression analysis between profitability ratio and some key working capital policy indicator ratios (Vishnani and Shah, 2007). A study concluded that the finance executives consider that the proper practices of working capital and financial ratios are very important for the growth and performance of the organization. This study also found that there is positive and significant relationship between these practices and organization performance (Hunjra et.al., 2011). It is recognized that there was significant positive relationship between profitability and the aggressive investment policy (AIP), liquidity and size of the firm and an insignificant positive relationship between leverage and profitability while the aggressive financing policy (AFP) had a significant negative relationship with profitability (Wanguu, 2015).

It is found that the adoption of an aggressive working capital management strategy produced negative profitability in most of the sectors. He shown a strong positive correlation between net current assets ratio and selected measures of profitability. He also recommended that companies would maximize profitability and add value by adopting the conservative working capital management strategy that is investing more in current assets (Toby, 2014). Another study showed that there is significant negative relationship between working capital policies on profitability of the firms (Javid and Zita, 2014). It is also found that there is no significant relationship between profitability and working capital management policy. The result showed that managers can't change the level of profitability by adopting any of the working capital policy i.e. there exist no relationship between working capital policy and profitability. Moreover, profitability is directly associated with days inventory held and days account payables, but it is in inverse relation with days account receivables (Raheman and Nasr, 2007).

2.7.2.1 Aggressive Working Capital Policy

A firm may adopt an aggressive working capital management policy with a low level of current assets as a percentage of total assets because excessive levels of current assets may have a negative effect on the firm's profitability. Whereas a low level of current assets may lead to a lower level of liquidity and stock outs, resulting in difficulties in maintaining smooth operations (Van Horne and Wachowicz, 2004). More aggressive working capital policies are allied with higher return and higher risk while conservative working capital policies are concerned with the lower risk and return (Weinraub and Visscher, 1998; Gardner et. al., 1986). Business success heavily depends on the ability of financial executives to effectively manage receivables, inventory, and payables (Filbeck and Krueger 2005). It is revealed that firms can reduce their financing costs 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 effort are allocated in bringing non-optimal levels of current assets and liabilities back toward optimal levels (Lamberson, 1995).

Again, a company with aggressive working capital policy offers short credit period to customers, holds minimal inventory and has a small amount of cash in hand. This policy increases the risk of default because a company might face a lack of resources to meet the short-term liabilities, but it also gives a high return as the high return is associated with high risk (Vishnani & Shah, 2007).

2.7.2.2 Conservative Working Capital Policy

Use permanent capital for permanent assets and temporary assets. However, it have also discussed conservative working capital management policies and discovered that at ten diverse industry groups to examine the relative relationship between their aggressive or conservative working capital policies. Finally, the result 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 (Weinraub and Visscher, 1998).

2.7.2.3 Hedging or Defensive Working Capital Policy

The term hedging can be said to refer to a process of matching maturities of debt with the maturities of financial needs. According to this approach, the maturity of the sources of funds should match the nature of the assets to be financed. It has been investigated that the assets can be broadly classified into two classes: Those assets which are required in a certain amount for a given level of operation and hence do not vary over time and those assets which fluctuate over time (Al-Sakran, 2001). The hedging/defensive approach suggests that the long-term funds should be used to finance the fixed portion of current assets requirements. Purely temporary requirements, i.e., the seasonal variations over and above the permanent financing needs should be appropriately financed with short-term funds (Myers 1984).

2.8 Working Capital Management of Textile Industry in Bangladesh

The textile industry of Bangladesh is the prime flourished sector for export earnings, which contributes the majority portion of our GDP, where the working capital is positively correlated with the firms' profitability (Asaduzzaman and Chowdhury, 2014) and significantly affect the overall operating activities of the firms of the textile industry of Bangladesh. The Cash Conversion Cycle (CCC), which is the one of the prevalent measurements for assessing the working capital management (WCM), has a significant positive correlation with the liquidity (Ahmed et al. 2017) and profitability of the firm as well (Asaduzzaman and Chowdhury, 2014). In addition, the direct relation between working capital and profitability can make a positive influence on the firms' liquidity

(Thakur and Mukit, 2017). The period of the Cash Conversion cycle needs to be shortened at a reasonable limit for creating value for the customers (Shin and Soenen, 1998).

Moreover, the number of days in inventory as well as the average collection period from the accounts receivables have a positive correlation with the firms' profitability whereas the average payment period to the accounts payables is negatively correlated (Asaduzzaman and Chowdhury, 2014). Researchers suggested that, maintaining higher level of inventory can prevent the firm from the risk of loss from business because of shortage of products, reduce the costs which are associated with supplies along with can assist to continue a stable price. Furthermore, several researchers focused on reducing average collection period, which is also referred as net credit period, to rise profitability, which will allow the investors to decrease their investment in current assets to an optimum level (Islam et al., 2013). As investment in current assets rather than non-current assets, increases the operating cost of a firm that leave negative affect in the profitability (Asaduzzaman and Chowdhury, 2014; Sur and Chakraborty, 2011; Wang, 2002). On the contrary, mismanagement of the working capital of a firm lead to liquidity crisis, which will consequently lower the profitability and credibility of the firm (Siddique *et. al.,* 2009). It is considered by some that the productivity and financial efficiency of the textile firm depends on the current position and its performance of the firm. Similarly, it is mentioned that the firm should try to increase the production, minimize the overall cost including the operating expenses, cost of power, fuel, borrowing funds, overheads, interest burden and so on along with maintaining suitable control on liquidity position (Islam et al. 2013). For this reason, the organization can make an attempt to establish an automated production process, which will help to ensure appropriate utilization of the working capital of the firm.

2.9 Working Capital Management of Pharmaceuticals Industry in Bangladesh

According to a survey in UK, researchers found that the working capital is negatively associated with firm size and positively connected with growth and level of economic activity. On the other hand, insignificant relation of working capital with operating cycle, profitability and leverage are observed from this study (Chowdhury and Amin, 2007). Another research conducted on the Nigerian manufacturing companies recommends that manufacturing firms should reduce the cash conversion cycle to increase their profitability by managing their cash, accounts receivables, inventories and accounts payables (Karim et al., 2017). In contrast, some studies indicated toward a weak and negative correlation between the liquidity and profitability of the. A study conducted in Kenya revealed that gross operating profit was positively correlated with average collection period and average payment period but negatively correlated with cash conversion cycle (Chowdhury and Amin, 2013).

While it is stated by the researchers that the appropriate utilization of the working capital significantly affects the profitability of the firm in developing countries (Sharif and Islam, 2018). For that reason, firms need to stock-up and maintain a minimum inventory level to prevent loss from stock-outs and avoid challenges of sudden lack of secure financing for carrying out regular business activities (Hossain and Kabir, 2015).

Bangladesh, even, is quite established when it comes to the pharmaceuticals industry and some renowned companies are leading this sector to the ultimate success. As per the prior studies, significant level of relationship exists between the profitability and working capital. Thus, it is recommended to forecast the sales and hold enough cash to perform the daily operating activities (Quayyum, 2011). Besides, the working capital

management not only affect the profitability but also the market value of the firm (Sharif and Islam, 2018).

Moreover, though the cash collection cycle and profitability have a significant positive relation (Sharif and Islam, 2018; Gill *et. al.*, 2010; Lazaridis and Tryfonidis, 2006; Lyroudi & Lazaridis, 2000), the average collection period and average payment period in the pharmaceuticals industry in bangladesh are negative, which means the periods are longer than the standard, yet these periods are significant for profitability of the firm (Sharif and Islam, 2018). Recently the managers of the firms that are operating their activities in pharmaceuticals field trying to maintain liquidity to attain higher profitability with a view to maximizing the value of a firm (Chowdhury and Amin,2007).

2.10 Gap in the Literature

The historical works discussed above have focused different areas pertinent to performance and working capital management of pharmaceuticals and textile industry. Majority of those studies focused on the places out of Bangladesh. Some of the studies those are indicated above based on Bangladeshi firms had focus on large manufacturing firms enlisted in the stock exchanges. Some of these papers worked on problems and prospects of pharmaceuticals and textile industry in this country. From here it has become evident that there is gap in the literature. This gap is least focus and specifically on pharmaceuticals and textile industry in Bangladesh. The researcher's view is to know whether the management of current fund management affect the performance of these industries and comparatively which one is better. By studying this specific area working capital's level of impact on financial performance will be determined.

2.11 Conceptual Framework of the Study

A conceptual framework shows the probable way to accomplish a task. Based on the existing literature it has become apparent that the working capital management of pharmaceuticals and textile industry and their financial performance which depends on a number of factors like the firm's management of working capital, liquidity position, the economic environment, government policy, organization's long term asset and liability management, qualification of employees, firm's motive for future etc. However, from reviewing previous works a conceptual model has been developed. The profitability of the firm can be measured by ROA, ROE, ROI and GOI those are depending on the how much sales it generates, the sales depends on the firm's efficiency of producing quality products, on time production, management of payables and firm's view of allowing receivables. All of these elements are related to the profitability of the firms.

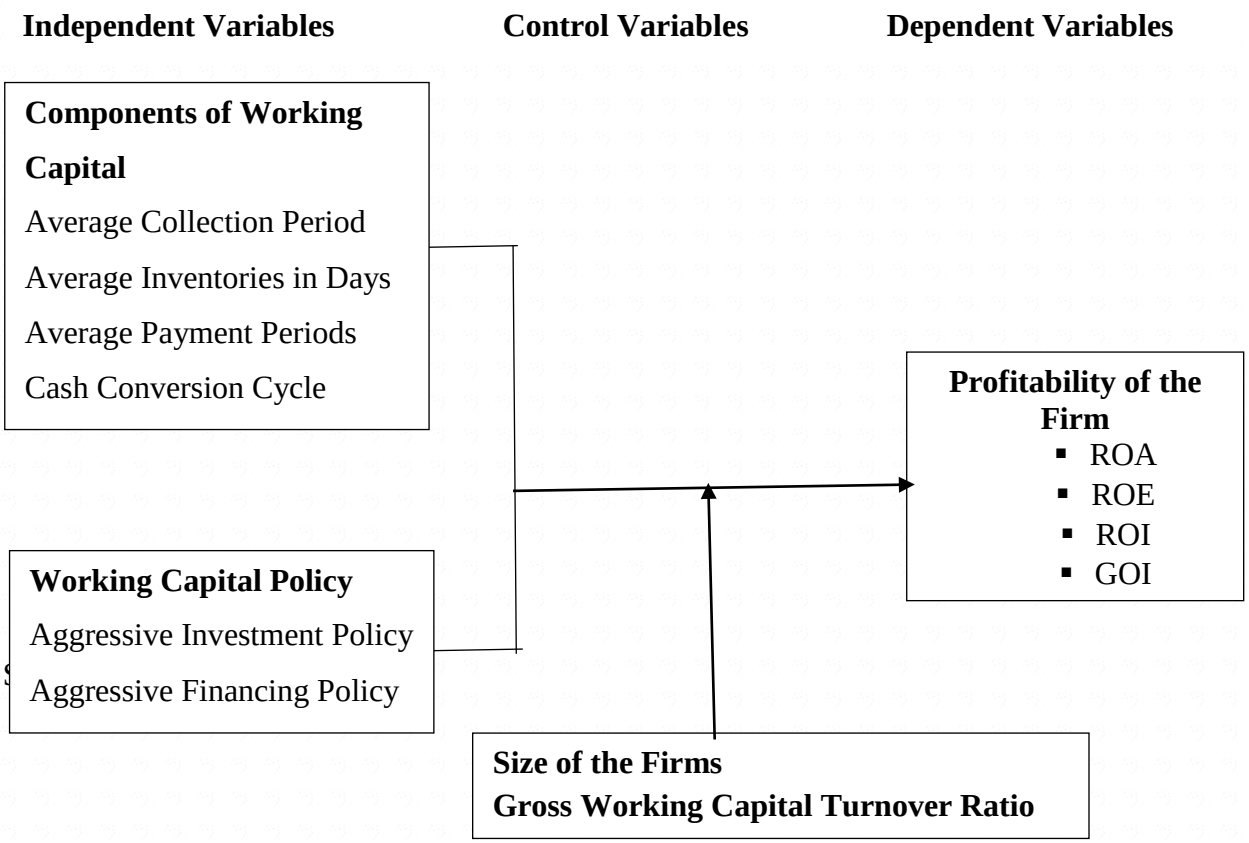


Figure 2.1 Conceptual Framework of the Study

Source: The Author

The above conceptual model explains the relationship among the independent variables, control variables, dependent variables which actually depends on the previous literature. Again the methodology section (3.7 and 3.8) clearly explain the materials and methods based on the conceptual model.

2.12 Summary of the Chapter

In this chapter an overview of the previous works is briefly stated. This research focus in this chapter had focus on failure of small and medium enterprises, funding challenges, performance liquidity management and working capital management. From the study of the literature two hypotheses were developed in this chapter. It also detected the gap in the literature and lastly developed a conceptual framework according to which the exploration took place.

CHAPTER - THREE
RESEARCH METHODOLOGY

CHAPTER - THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter deals with the methodology followed for carrying out the study. The method of sample selection, data and sources of data, framework of analysis, the hypotheses framed and important terms used in the study are discussed here. The chapter is divided into eight sections. Section 3.1 discussed an overview of Methodology; section 3.2 explain the research approach; section 3.3 outlines the justification and choice of methodology; section 3.4 outlines the population and sample design. Section 3.5 describes sampling technique, Section 3.6 sources of data, section 3.7 description of the variables (A detail discussion of dependent variables, independent variables and control variables are covered in this section), section 3.8 describes the hypothesis development; 3.9 A subsequent discussion covers statistical tools in section; and 3.10 conclusion.

3.1 An Overview of Methodology

Research method is a technique for collecting evidence for doing research while methodology is a theory and analysis of how research proceed again, an epistemology is a theory of knowledge (Neuman, 2006). Research is the methodical procedure of collecting and analyzing the data with a view to enhance the sightedness of the prevalence in regard of which the researcher is concerned or smitten. It is a restrained examination or inquiry especially through search for new facts in any branch of knowledge. Therefore, research encompasses defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis (Bryman, 2006).

Every research has a specific objective of finding the facts or search of truth again and again. A systematically method is used by the researcher to solve the problems is known as research methodology. It may be understood as a science of studying how research is done scholarly. Indeed, it is need for the researcher to know not only the research methods or techniques but also the methodology.

Research methodology is the conceptual knowledge of how a research should be done. The typical strategy and outline regarding the expedition are discussed in the methodology. In short it can be said methodology is the science to accomplish the desired result of the research. Research methodology is not dissimilar with research method. If anyone dissect the word methodology, it finds two words- method and ology. Method is the way something is done in real life, when ology is an informal word which means some section of erudition. Therefore, from the above discussion we can say that methodology discusses a number of methods through those an expedition can be done. The researcher has to choose any specific that seem to match the goal of the research. By following a specific method, a researcher selects population, picks the sample, collects data, analyzes and suggests solution.

The research method used in business and social science studies are identical with some little variability. The way of analyzing data in these sectors are also similar in nature. Particularly research methods deal with three steps in the procedure of exploration. Firstly, it deals how data will be collected, secondly it assists in analyzing data and thirdly it cooperates with checking the accuracy of the results obtained. In the following section methods of business research are elucidated briefly:

3.2 Research Approach

3.2.1 Qualitative or Quantitative Research Approach

Qualitative and quantitative research differs in many ways but they complement each

other in many ways, as well. One of the differences between the two styles comes from the data. Soft data, in the form of impressions, words, sentences, photos, symbols, and so forth, dictate different research strategies and data collection techniques than hard data, in the form of numbers. The distinction between qualitative and quantitative research is a methodological issue. The decision to choose a specific methodology should be based on its suitability to answer the research questions (Bryman, 2006). Previous studies asserted that qualitative research emphasizes the process of discovering how the social meaning is constructed and stresses the relationship between the investigator and the topic studied. Conversely, quantitative research is based on the measurement and the analysis of causal relationships between variables. Berger and Luckman (1966) discriminated between qualitative and quantitative research arguing that qualitative research referred to the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things, while quantitative research referred to the measures and counts of things.

Qualitative and quantitative research approaches differ basically in some major areas, including: their analytical objectives; types of questions posed; types of data collection methods used; types of data produced; degree of flexibility in study design (see Table 3.1) indicated that qualitative research is a naturalistic/interpretative approach concerned with understanding the meaning people give to the phenomena within their social setting. They outlined a number of key elements which distinguish the qualitative approach, among these: it is the approach which provides a deeper understanding of the social world; it is based on a small scale sample; it uses interactive data collection methods, i.e. interviews; it allows new issues and concepts to be explored.

Table 3.1: Comparison of quantitative and qualitative research approaches

Criteria	Qualitative Research	Quantitative Research
Purpose	To understand and interpret social interactions.	To test hypotheses, look at cause and impact, and make an estimation.
Group Studied	Smaller and not randomly selected.	Larger and randomly selected.
Variables	Study of the whole, not variables.	Specific variables studied
Type of Data Collected	Words, images, or objects.	Numbers and statistics.
Form of Data Collected	Qualitative data for example open- ended responses, interviews, participant observations, field notes, and reflections.	Quantitative data based on precise measurements using structured and validated data-collection instruments.
Type of Data Analysis	Identify patterns, features, themes.	Identify statistical relationships.
Objectivity and Subjectivity	Subjectivity is expected.	Objectivity is critical.
Role of Researcher	Researcher and their biases may be known to participants in the study, and participant characteristics	Researcher and their biases are not known to participants in the study, and participant

	may be known to the researcher.	characteristics are deliberately hidden from the researcher (double blind studies).
Results	Particular or specialized findings that is less generalize able.	Generalized findings that can be applied to other populations.
Scientific Method	The researcher generates a new hypothesis and theory from the data collected which called exploratory or bottom–up.	The researcher tests the hypothesis and theory with the data which is called confirmatory or top-down.
View of Human Behavior	It includes dynamic, situational, social, and personal human behavior.	It includes regular and predictable human behavior.
Most Common Research Objectives	Explore, discover, and construct.	Describe, explain, and predict.
Focus	Wide-angle lens; examines the breadth and depth of phenomena.	Narrow-angle lens; tests specific hypotheses.
Nature of Observation	Study behavior in a natural environment.	Study behavior under controlled conditions; isolate causal effects.
Nature of Reality	Multiple realities; subjective.	Single reality; objective.

Final Report	Narrative report with contextual description and direct quotations from research participants.	Statistical report with correlations, comparisons of means, and statistical significance of findings.

Source: Johnson and Christensen (2008), p34.

Among the two types of research methods, quantitative research is dominant in the subject areas of business and economics, while areas in social science use both types of research. Any kind of research can head to any of the following approaches: inductive, deductive, positivist and interpretivist approach.

3.2.2 Inductive and Deductive Reasoning

In inductive reasoning the explorer conducts in depth study on his/her selected topic. After accumulating data and analyzing new theory is built. This kind of approach is common in science. On the other hand, in deductive approach the researcher studies the existing theories, matches those theories with the research objectives, tastes the results whether they match with the existing supposition or not.

3.2.3 Positivist and Interpretivist Reasoning

An exploration is considered as positivist if it maintains formal proposition, quantifiable measure of variable, testing of hypothesis and drawing an inference about an incident from the sample of a population. In contrast in an interpretative research approach there is no formal procedure or testing of hypothesis. Bryman (2006), said that the access to actuality will be achieved through the reactions of the social actors and constructions in an interpretative research approach.

3.3 Justification of the Choice of Methodology

The main objective of the study is to find out the impact of working capital management efficiency on organizational performance in the textile and pharmaceuticals industry in Bangladesh. The main focus of the study is to find impact level and making comparison between industries based on the secondary data. Quantitative research method is examined by deductively forming a hypothesis derived from theory. It includes controlled, objective testing and experimentation which ultimately supports or rejects the existing hypotheses that is established for the study. Respectively, each of these steps are standardized to reduce bias when collecting and analyzing data. In quantitative research approach, results are valid, reliable and generalizable to a larger population. Quantitative research is advantageous for quantifying the impacts, effects, influence etc. Thus, such types of study is very much perfect for this study as it measure the impacts of working capital management efficiencies on organizational performance. Again, this study mainly concerned about to test hypotheses and looking at cause & effect rather development of hypothesis which is very practical for this type of research study.

3.4 Population and Sample

Population and Sample Design In this study, population is defined as a case of pharmaceuticals firms and textile firms in Bangladesh which has been chosen for the study. This study built up similar empirical frame work first used by Deloof, (2003). The firms that are listed in Dhaka stock exchange (DSE) in Bangladesh have been taken for the study. There are 65 pharmaceuticals and 110 textile firms listed in DSE. The data have been collected from the annual report of the company published in 2014 to 2018. The other data also collected from different sources and websites i.e. DSE, CSE, and SEC etc.

3.5 Sampling Technique

The purposive sampling technique has been used for the study. This technique is also known by different name such as deliberate sampling, non-probability sampling and judgment sampling. The purposive sampling technique is a kind of that sampling procedure which does not yield any basis for estimating the probability that each item in the population has of being considered in the sample. This sampling technique has been chosen on the basis of following points. Only those pharmaceuticals and textile firms are listed in DSE and full filled following criteria:

i. Only those firms have been considered for the study those published annual report from 2014 to 2018.
ii. Only those firms have been selected for the study which has sufficient data (selected variable for this study to measure working capital management performance)
iii. Finally, the financial statements of selected sample firms were checked for the presence of inconsistency and such firms have been excluded from the sample selection that exhibit unusual sign and copiousness in their accounting data.

By considering above criteria this study will select 10 pharmaceuticals firms and 22 textile firms with the financial data continuously available from 1st July 2013 to 30th June 2018.

A. Selected Pharmaceuticals Firms

S.N.	Name of the Firm
01	Square Pharmaceuticals Ltd.
02	Beximco Pharmaceuticals Ltd.
03	GlaxoSmithKline Bd. Ltd.
04	IbneSina Pharmaceuticals Ltd.
05	Reneta Pharmaceuticals Ltd.

06	ACI Ltd
07	Beacon Pharmaceuticals Ltd.
08	Pharmaids Ltd.
09	Acme Laboratories Ltd
10	Silva Pharmaceuticals Ltd.

B. Selected Textile Firms

1	Al-Haj Textile Mills Limited
2	Anlimayarn Deying Ltd.
3	Apex Spinning & Knitting Mills Limited
4	Desh Garmants Ltd.
5	Envoy Textiles Limited
6	Generation Next Fashions Limited
7	Hamid Fabrics Limited
8	Maksons Spinning Mills Limited
9	Matin Spinning Mills Ltd.
10	Metro Spinning Ltd.
11	Paramount Textile Limited
12	Rahim Textile Mills Ltd.
13	Safko Spinnings Mills Ltd.
14	Saiham Cotton Mills Limited
15	Saiham Textile Mills Ltd.
16	Square Textile Ltd.
17	Stylecraft Limited
18	Shasha Denims Limited
19	Tosrifa Industries Limited
20	Zahintex Industries Limited
21	Regent Textile Mills Limited
22	HR Textile Ltd.

3.6 Sources of Data

This study is based on the secondary data. Secondary data means data that are already furnished by someone and available at different sources. When the researcher or analyst utilizes secondary data, then he has to discover several sources from where he can procure them. Secondary data may either be published or unpublished. Generally, the published data are available in various publications of the organizations, government or database of recognized institutions. It can also be collected through annual reports, publications, magazines, books, newspapers etc. of various organizations connected with business and industry, stock exchanges or banks, etc. In connection with the above statement, this study collected secondary data through various sources for analysis and it is empirically investigated the statistical relationship of working capital components, liquidity and working capital policies with profitability of firms. The secondary data investigation on subject matter has been generally employed in previous studies and it has been accomplished in both developed and developing countries (Kaddumi and Ramadan, 2012; Banos-Caballero et al., 2012 ; Afza and Nazir, 2008; Meszek and Polewski, 2006; and Howorth and Westhead, 2003). Secondary data has been privileged over primary data as the costs allied in obtaining access to it are much lesser than the costs of collecting the information individually (Saunders et al., 2003).

In addition, it is tough to obtain access to the financial information of expected quality and quantity from individual enterprises or industry groups alone through primary sources because of the unwillingness of entrepreneurs to provide such information easily to outsiders. Hence, the researcher has turned to secondary data so as to collect financial information of 32 (Thirty Two) sample of 10(ten) pharmaceuticals and 22 (Twenty two) textile pharms that produce annual reports with sufficient information relate to working capital management for the period from 1st July 2013 to 30th June 2018. In addition,

conducting the study on 5 years 'period would allow us to compare changes over time and it would make the results of panel data more reliable than using the financial data for few years. Collected secondary from different source have been accumulated and structured based on the requirements of the study. By way of attentiveness, before using secondary data, it has also been possessing the characteristics such as reliability, Suitability and Adequacy of data. Annual report of selected firms, report of bureau of statistics and different publications, thesis, Journals, research papers and articles have been accessed to extract the additional information.

3.7 Description of Variables

In this study, the comprised variables are purely rooted on the endorsements set up in prior to theoretical as well as empirical literature and sincere attempt has been made to comprise the prospective factors of working capital that pretend profitability. Even, some variables do not have sufficient endorsement to comprise them for analyses and have been omitted from this study. The variables considered for this study are rooted in previous empirical works of researchers around the world. Three types of variables have been used- dependent variables, independent variables and control variables.

3.7.1 Dependent Variables

Dependent variables are the variables those get affected by other variables. Since the main purpose of this study is to know how much the performance of the pharmaceuticals and textile firms affected by their working capital management, the-s study took profitability indicator as the barometer of firm's performance and this profitability considered as the dependent variable. In this study, Profitability of the firms is depending

on working capital components, working capital policies and liquidity of the firms. This study has selected three dependent variables from profitability.

3.7.1.1 Profitability

Profitability is one of the important financial indicators in measuring the firm's performance. It reveals how much one unit of turnover generates units of benefit. Thus, the present study tries to examine the effects of working capital management on accounting profits of the selected sample firms. Profitability measures are divided into two categories i.e. margins and returns. Measures based on margins ratios (Gross profit margin, operating profit margin, Net profit margin and Cash flow margin) reflect the firm's ability to convert sales into profits at various stages of measurement. While as measures that calculate returns (Return on asset, return on equity, return on capital Employed, Cash return on assets) represent the firm's ability to evaluate the overall competence of the firm to give rise to returns for its shareholders. (Abuzayed, 2012; Deloof, 2003), another author measured profitability by gross operating income which is defined as sales minus cash costs of goods sold divided by total assets (Gill and Mathur, 2010). The net operating income determine as sales minus cost of goods sold minus depreciation and amortization divided by total assets (Mathuva, 2015; Malik and Iqbal, 2012, and Vahid et al, 2012). Considering the previous research works, different substitutes have been exercised to measure profitability by different authors at different time period. Thus, by considering previous study, this study considered three sub indicators of profitability are: ROA, ROE, and ROI.

(i) Return on Assets (ROA)

Return on assets (ROA) is an indicator of profitability of how a firm is proportionate to its total assets. ROA offer an idea as to how efficient management is dealing its assets to stir up earnings. It is calculated by dividing a company's annual net income by its total

assets, return on Asset is displayed as a percentage. In previous studies, ROA calculated by earnings before interest and taxes (EBIT) to total assets (Enqvist et al., 2014; Sharma and Kumar, 2011; Garcia-Teruel and Solano, 2007; Bhaduri, 2002; Rajan and Zingales, 1995 and Kakani, 1999) practiced cash flows to total assets and cash flows to net sales. The former proxy for profitability can be interpreted as return on assets (ROA) which represents the contribution of firm's assets on profitability creation, while as the later can be interpreted as margin of sales which represents the operating activities of the firm followed by (Makori and Jagongo, 2013; Priya and Nimalathasan, 2013; Afza and Nazir, 2009; Samiloglu and Demirgunes, 2008; Garcia-Teruel and Martinez- Solano, 2007). The present study uses ROA (i.e. EBIT divided by total assets) as the measure of profitability

(ii) Return on Equity

ROE i.e. return on Equity measures the firm's profitability by revealing how much earning a company generates with the money shareholders have invested. ROE calculated as Net Income divided by Shareholder's Equity). Sometimes, it is also known as 'Return oneqitycapiatal employed, some cases it is called return on Net Worth' though, it also measures the profitability of a firm by shareholder's equity but limited researches have been found in the subject or content matter. Profitability measured with ROE for working capital policy evidence from (Amiri, 2014; Mwangi, 2014; Puraghajan et al., 2014; Pirashanthini, 2013; Priya and Nimalathasan, 2013; Al-Shubiri, 2010 and Afza and Nazir 2008) and the relationship of Profitability with liquidity propounded by (Khidmat and Rehman, 2014). In this study, ROE has been picked up for the study to examine the impact profitability with specification to ROE on working capital management, working capital policy and liquidity of the study. ROE will be calculated

by Net Income After Taxes divided by total shareholders' equity. The present study uses ROE as the measure of profitability.

(iii) Return on Investment (ROI)

ROI i.e. Return on Investment the firm's profitability by revealing how much earning a company generates with the total investment. **Return on investment** (**ROI**) is performance measure used to evaluate the efficiency of investment. It compares the magnitude and timing of gains from investment directly to the magnitude and timing of investment costs. It is one of most commonly used approaches for evaluating the financial consequences of business investments, decisions, or actions. If an investment has a positive ROI and there are no other opportunities with a higher ROI, then the investment should be undertaken. A higher ROI means that investment gains compare favorably to investment costs. ROI is an important financial metric for asset purchase decisions, for approval and funding decisions for projects and programs of different types, and for traditional investment decisions (for example management of stock portfolios or the use of venture capital).

To calculate return on investment, the benefits (or returns) of an investment are divided by the costs of the investment. The result can be expressed as a percentage or a ratio. Return on Investment (ROI) = (Gains from Investment – Cost of Investment) / Cost of Investment

It should be noted that the definition and formula of return on investment can be modified to suit the circumstances. It all depends on what is included as returns and costs. In case of measuring profitability of a company the following formula can be used to calculate return on investment. Return on Investment = Net profit after interest and tax / Total Assets.

This study considers the above formula for calculating ROI.

iv) Gross Operating Income (GOI):

Gross Operating income (GOI) also called income from operations takes a company's gross income which is equivalent to total revenue minus COGS, and subtracts all operating expenses. A business's operating expenses are costs incurred from normal operating activities and include items such as office supplies and utilities. This study considered GOI as a dependent variable as a proxy of profitability of the firm.

3.7.2 Independent Variables

Independent variables affect dependent variables. This kind of variables explain the dependent variables and therefore they are called predictor or explanatory variables. This study comprises working capital management as the main independent variable and has been analyzed from both aspects or dimensions i.e. cash conversion cycle in terms of dynamic view and liquidity ratios in terms of static view. Generally, maximum studies focused on the individual components of the working capital and only the static measures have been given due consideration. This study nevertheless has integrated the individual components of working capital management and has used both static as well as dynamic measures of working capital management to analyses its effects on profitability of firms. Again, aggressive investment and financing policies has also been considered in this study as other independent alternative measures of working capital management. Therefore, the present study has considered working capital management as vector of Average Collection Period, Average Inventories in days, Average payable period and cash conversion cycle of the firm, for liquidity, working capital ratio or current ratio has been used, for working capital policies, aggressive financing and investment policies have been used. The next section will discuss the description of the independent variables.

(i) Average Collection Period

Average Collection Period (ACP)points out the average number of days that a firm takes to collect payments from its customers. The firm's objective for receivable management is to minimize time-lapse between realization of sales and receipt of payments. The longer the collection period contemplates that the company is more interested to invest in accounts receivable and has adopted a conservative policy. In line with studies like (Nazir and Afza, 2009; Raheman and Nasr, 2007; Deloof 2003; Wang 2002; Jose et al., 1996; Shin and Soenen, 1998). Thus, the present study measures the collection period as per the following method:

$$ACP = (AR / Sales) * 365$$

(ii) Average Inventories in Days

Inventories in days (Inv_days), is a financial measure of a firm's performance that provides investors an idea of how long it takes a firm to turn its inventory (including goods that are a work in progress, if applicable) into sales. Generally, a lower (shorter) Inventories in days, is preferred but it is important to note that the average Inventories in days varies from one industry to another. Inventory period means the number of days, during which stock are held by the company. The longer storage times indicates a bigger investment in inventory for a particular level of operations. This is one of the important measures for working capital management that has also been used in previous studies in the subject matter like (Enqvist et al., 2014; Akinlo 2012; Karaduman et al., 2011; Deloof, 2003). Therefore, Average Inventories in Days, has been calculated as:

$$Inv\_Days = (Inventory / Cost\ of\ Goods\ Sold) * 365$$

(iii) Average Payable Period

Average payable period (APP) appears for the average time taken by a company to pay its suppliers. The amount to be paid to suppliers is often pondered as a source of free credit or less cost of capital by firms. Hence, the higher value indicates that the firms are taking longer time to resolve their financial commitment to their suppliers. If any depletion of this period specifies that the firms have adopted a conservative policy. In line with studies to (Ukaegbu, 2014; Akinlo, 2012; Sharma and Kumar, 2011; Garcia-Teruel and Martinez- Solano, 2007; Dong and Su, 2010; Deloof, 2003). This study has calculated Average Payables Period as per the following:

$$APP = (AP / Purchases) * 365$$

(iv) Cash Conversion Cycle

Cash conversion cycle is calculated by considering the other components of working capital i.e. Average Collection Period, Average Inventories in Days and Average Payable Period. In accordance with the arguments of (Gitman and Forrester, 1977) in theoretical literature that cash conversion cycle is the key factor of working capital management and shorting of the cash conversion cycle increases the profitability of the firm. This is also supported by the empirical studies of (Enqvist et al., 2014; Singhania et al., 2014; Ukaegbu, 2014; Farzinfar and Zahra (2012; Karaduman et al., 2011; Dong and Su, 2010; Falope and Ajilore, 2009; Ramachandran and Janakiraman, 2009; Garcia-Teruel and Martinez- Solano, 2007; Raheman and Nasr, 2007; Deloof, 2003). On opposite to these evidences few of the studies (Panigrahi and Sharma, 2013; Sharma and Kumar, 2011 and Gill et al., 2010) found positive relationship between cash conversion cycle and profitability of the firm. This supposition suggests that longer the cash conversion cycle lesser will

be the profitability of the firm. Therefore, this study measures the cash conversion cycle on the following calculation:

$$\mathbf{CC = (ACP + Inv\_days) - APP}$$

(v) Aggressive Investment Policy

Aggressive investment policy (AIP) measures as (Current Assets to Total Assets). The policy for Working capital pivots on the risk and returns trade off. The higher the risk would be higher the returns and lower the risk would be lower the return. High risk, high return pivots up on working capital investment and financing strategies (Moyer et al., 2011). Aggressive investment policy consequences in smallest amount of investment in current assets against fixed assets. The firm with aggressive investment/ investing policy (AIP) expects to have higher profitability but in the same line, it has to bear higher risk. In line with previous studies, like (Weinraub and Visscher, 1998; Afza and Nazir, 2007; Jose et al., 1996), the degree of aggressiveness of working capital investment policy is assessed by the ratio of total current asset to total assets. The lower IP's rati indicates aggressive investment policy while as, the higher IP's ratio indicates conservative investing policy that means firms invest more in liquid assets as contrast to total assets.

$$AIP = CA / TA$$

(vi) Aggressive Financing Policy

Aggressive Financing policy measures as Current Liabilities to Total Assets. The aggressive financing policy (AFP) employs the higher levels of current liabilities and less long-term debt and it has been evaluated by the ratio of total current liabilities to total assets. This measure has also been used in prior studies like (Amiri, 2014; Mwangi 2014; Usman et al., 2014; Puraghajan et al.,2014; Pirashanthini, 2013; Hussain et al., 2012; Al-Shubiri, 2010; Afza and Nazir, 2007; Afza and Nazir, 2008; Filbeck and

Krueger, 2005). The higher FP's ratio indicates aggressive financing policy acquired by the firms while as, the lower FP's ratio indicates conservative financing policy that is using lower levels of short-term liabilities as against long-term liabilities. For that reason, the present study measures aggressive financing policy as total current liabilities to total assets.

$$AFP = CL / TA$$

3.7.3 Control Variables

A variable employed in an experiment which is kept constant in order to evaluate the relationship between two variables is known as control variable. A control variable is necessary for what is hold on to the same all over the experiment. A control variable is not for primary concern in the experimental consequences. Any change in a control variable in an experiment would disprove the correlation of dependent variables to the independent variable or explanatory variables. In line of the review of literature especially for working capital, the various studies have been made use of the control variables along with the main variables of working capital in connection to have an opposite analysis of working capital management on the profitability of firms i.e. (Garcia- Teruel and Solano, 2007; Lazaridis and Tryfonidis, 2006; Eljelly, 2004; Deelof, 2003; Smith and Begemann, 1997; Lamberson, 1995). The control variables, on the same lines, along with working capital variables has considered size of business (i.e. log of sales) and gross working turnover ratio (GWCTR) have been examined in this present study. One feasible cause for the disputing consequences is that most studies fail to give an explanation to differences in these factors amidst working capital studies and that these factors are likely to be put influences on the consequences. Hence, as per the suggestion by both theoretical as well as empirical literature, the present study

will control for these variables that affect profitability. Thus, the following variables have been included as control variables:

(i) Size of the firms

Size of firm (LOG of SALE)

In accordance with the previous various empirical research works, total assets, total sales, number of employees or value added is repeatedly employed measures of firms' size. It has also been noticed that the revenue or income-based measures has also been employed as proxy for firm size in the previous study. An argument by (Becker- Blease et al., 2010) is that employing total sales or total assets, as a measure of size is significant from the aspect of economies of scale springing up of capital inputs. Thus, the present study has used the log total sales and it is also been employed by different researchers, (Ukaegbu, 2014; Akinlo, 2012; Farzinfar and Arani, 2012; García-Teruel and Martínez-Solano, 2007; Karaduman et al., 2011; Sharma and Kumar, 2011). Technological, the theories of the firm that pivot on economies of scale springing up of capital inputs would argue for employing total sales or total assets as a measure of size because this measure level the variation in the figure over a period of time.

$$Firm\_Size = \log (Sales)$$

(ii) Gross Working Capital Turnover Ratio

Gross working capital turnover ratio (GWCTR) organizes the relationship between Net sales and net working capital. As working capital has direct and adjacent relationship with cost of goods sold. Hence, this ratio provides useful idea of how efficiently or actively working capital is being used. It is also being examined by cost of goods sold

divided by net working capital but this study has examined this ratio on the basis of net sales with working capital in line with the previous study like (Padachi, 2006). The increasing ratio indicates that working capital is more active or it is supporting, comparatively, higher level of production and sales; it is being used more intensively.

GWCTR = Net sales / WC

3.8 Hypothesis Development

The purpose of this study is to examine empirically the effect of working capital management and its components on the profitability of the selected sample of textile and pharmaceuticals firms in Bangladesh. For this intention, the hypotheses have been developed which are rooted on theoretical as well as empirical review of literature on the working capital management of the firms. Previously, very limited studies like (Matadeen and Aukhorjee, 2014; Banos-Caballero, et al., 2012; Sunday, 2011; Agyei-Mensah, 2010; García-Teruel and Martínez-Solano, 2007) have used working capital components along with the control variables in their developed models for working capital to examine their effects on profitability of the selected industries. The present study accordingly builds an attempt to amalgamate all the prospective working capital and control variables which have strong reasons and integrate them in the working capital models. Nevertheless, some variables found unobservable and have not strong proof, that's why, it does not form the part of the model specifications. In spite of that, the following eight directional hypotheses associated with three dependent variables and working capital components have been developed for the empirical analyses. There is no separate model for working capital policy and liquidity developed but in all the models, the variables of working capital policy and liquidity have been kept common and the

rejection or acceptance of a hypothesis is based on significant result of the developed models. The models have been developed based on the following:

3.8.1 Working Capital Components

There are four main components associated with working capital management i.e. accounts receivable, accounts payable, inventory and Cash. The efficient management of working capital is essential for the profitability and overall financial health of any company. Keeping in view of prior empirical and theoretical literature, the following hypothesis appertain to working capital components are developed.

(i) Average Collection Period:

The first hypothesis and sub-hypothesis are developed for the models (Specified in the model's specification sections of this chapter) of Average Collection Period, one of the important components of working capital management which is also known as number of day's accounts receivable or Days Sales Outstanding. Most of the prior empirical studies found a negative relation between Average Collection Period and profitability (i.e. Return on Equity or Return on Assets) of the firms (Ademola, 2014; Enqvist et al., 2014; Singhania et al., 2014; Panigrahi and Sharma, (2013; Vahid et al., 2012; Farzinfa and Zahra, 2012; Karaduman et al., 2011; Dong and Su 2010; Gill et al. 2010; Falope and Ajilore 2009; Garcia-Teruel and Martinez-Solano 2007; Deloof, 2003). It is also reported previously in theoretical literature that excessive level of current assets has a negative effect on firm's profitability. On the other hand, the lower level of current assets assists to lower liquidity, stock-outs and consequence in crisis of retaining smooth operations (Van and Wachowicz, 2001). Some of the previous studies have found a positive relationship between Average Collection Period and profitability of the firms Sharma & Kumar, (2011), (Agha, 2014; Ramachandran and Janakiraman, 2009). From

the forgoing theoretical and empirical proves, a negative relation is anticipated between Average Collection Period and profitability (i.e. Return on Equity or Return on Assets) of the firm. Thus, the hypothesis of negative relationship asserts that firms receive less profit if more credit is granted to customers. Therefore, consistent with the earlier empirical studies and thus following hypothesis is proposed: In this study there are three dependent variables for measuring the profitability of the Firms i.e. Return on Assets, Return on Equity and Return on Investment. For each dependent variable, there is a directional hypothesis proposed and categorized into three sub-hypotheses as a measure of profitability.

Main hypothesis:

H1: There exists negative relationship between profitability and Average Collection Period.

Sub hypotheses:

H1a: There exists negative relationship between Return on Assets and Average Collection Period.

H1b: There exists negative relationship between Return on Equity and Average Collection Period.

H1c: There exists negative relationship between Return on Investment and Average Collection Period.

H1d: There exists negative relationship between Gross Operating Income (GOI) and Average Collection Period.

(ii) Average Inventories in Days:

The second hypothesis and sub-hypotheses are developed for the models (Specified in the models specification sections of this chapter), Average Inventories in Days, is also an important component of Working Capital Management. It is also known as day's Sales Inventories or Number of day's Inventories. It is a financial measure of a company's performance that gives investors an idea of how long it grasps by a firm to turn its inventory (including goods that are a work in progress, if applicable) into sales. Generally, a lower (shorter) Average Inventories in Days are preferred, but it is important to note that the Average Inventories in Days vary from one industry to another. Most of the previous studies have been propounded a negative relationship between Average Inventories in Days and profitability (i.e. Return on Equity and Return on Assets) of the firms (Enqvist et al., 2014; Singhania et al., 2014; Panigrahi and Sharma, 2013; Akinlo, 2012; Vahid et al., 2012; Karaduman et al., 2011; Sharma and kumar, 2011; Dong and Su, 2010; Falope and Ajilore, 2009; Raheman and Nasr, 2007; Garcia-Teruel and Martinez- Solano, 2007; Deloof, 2003). The theoretical literature has also emphasized on the low level of the inventory because of the cost developments in holding the inventory. On the other hand, some empirical studies have propounded a positive relationship between average inventories in days and profitability of the firms, (Agha, 2014; Gill et al., 2010 Farzinfar and Zahra, 2012). Consequently, it is consistent with the theoretical literature and previous empirical studies and thus the following hypotheses are proposed: In this study there are three dependent variables for measuring the profitability of the Firms i.e. Return on Assets, Return on Equity and Return on investment. For each dependent variable, there is a hypothesis proposed and categorized into three sub-hypotheses as a measure of profitability.

Main Hypothesis:

H2: There exists negative relationship between profitability and Average Inventories in Days.

Sub-Hypotheses:

H2a: There exists negative relationship between Return on Assets and Average Inventories in Days.

H2b: There exists negative relationship between Return on Equity and Average Inventories in Days.

H2c: There exists negative relationship between Return on Investment and Average Inventories in Days.

H1d: There exists negative relationship between Gross Operating Income (GOI) and Average Inventories in Days.

(iii) Average Payable Period:

The third hypothesis and sub-hypotheses are developed for the models (Specified in the models specification sections of this chapter), Average Payable Period, is a single working capital component which often deducts to calculate the cash conversion cycle of the firms. The influence of Average Payable Period on profitability is anticipated to be positive in the present study. This is in view with the studies of (Agha, 2014; Singhania et al., 2014; Ukaegbu, 2014; Dong and Su, 2010). The theoretical reviews of literature on working capital also declared that the accounts payable is major short-term source of finance. Furthermore, magnifying the Average Payable Period helps the company to evaluate the standard of the products escort. On another side, keeping in view of argument by (Deloof, 2003) that firm fails to gain the possibility of discount by late payment of accounts payable and found a negative relation between the number of days

accounts payable and profitability of a firm in line with the studies who have also found a negative relationship between average payable period and profitability of the firms (Enqvist et al., 2014; Vahid et al., 2012; Sharma and kumar, 2011; Raheman and Nasr, 2007; Garcia-Teruel and Martinez-Solano, 2007). In accordance with the prior theoretical and empirical study on working capital management, the following hypotheses are suggested for Average Payable Period.

Main Hypothesis:

H3: There exists positive relationship between profitability and Average Payable Period.

Sub-Hypotheses:

H3a: There exists positive relationship between Return on Assets and Average Payable Period.

H3b: There exists positive relationship between Return on Equity and Average Payable Period.

H3c: There exists positive relationship between Return on Investment and Average Payable Period.

H1d: There exists negative relationship between Gross Operating Income (GOI) and Average Payable Period.

(vi) Cash Conversion Cycle:

The fourth and last hypothesis and sub-hypotheses of this study are developed for the models (Specified in the model's specification sections of this chapter) is Cash conversion cycle which is calculated by considering the other components of working capital i.e. Average Collection Period, Average Inventories in Days and Average Payable Period. In accordance with the arguments in theoretical literature that cash conversion cycle is the key factor of working capital management and meagre of the cash conversion

cycle increases the profitability of the firm. This study is also supported by the previous empirical studies by (Enqvist et al., 2014; Singhania et al. (2014; Ukaegbu, 2014; Farzinfar, and Zahra 2012; Karaduman et al., 2011; Dong and Su 2010; Falope and Ajilore 2009; Garcia-Teruel and Martinez-Solano, 2007; Raheman and Nasr, 2007; Deloof, 2003). On the other hand, these proves very few studies (Panigrahi and Sharma, 2013; Gill et al., 2010; Sharma and kumar, 2011) propounded positive relationship between cash conversion cycle and profitability of the firm. This supposition suggests that longer the cash conversion cycle lesser will be the profitability of the firm. Thus, in connection with the previous empirical documentations, the relationship between cash conversion cycle and profitability is anticipated to be negative in the present study. Therefore, following hypothesis is proposed for cash conversion cycle:

Main Hypothesis:

H4: There exists negative relationship between profitability and Cash conversion cycle.

Sub-Hypotheses:

H4a: There exists negative relationship between Return on Assets and Cash conversion cycle.

H4b: There exists negative relationship between Return on Equity and Cash conversion cycle.

H4c: There exists negative relationship between Return on Investment and Cash conversion cycle.

H1d: There exists negative relationship between Gross Operating Income (GOI) and Cash Conversion cycle.

3.9 Statistical Tools

The present study unified multiple regression technique to detect the dynamic relationship of working capital management. Rely on the nature of this study and type of data, panel data analysis has been unified to pick-up impartial results. Panel data are a kind of special pooled data in which the same cross-sectional units are documented over time. Basically, it coincides to data with large numbers of cross-sections, with variables held in single series in stacked form. This study is used Panel data due to its magnification over time series and cross-sectional dataset as the same can control for individual heterogeneity and conquers the problem of omitted or unobservable variable problem (Gujarati, 2003). The data of Time series are mostly hampered with non-stationary issues and heterogeneity problem which is associated with cross section data and often reported in empirical studies. The observations of the time series data adhere natural ordering over time, so the consecutive observations are eventual to demonstrate inter-correlation particularly, if the time interval between consecutive observations is short. The author demonstrated that panel data are more convenient to recognize and measure the effects that are unobservable in pure time series and pure cross-sectional data. Panel data models allow to fabricating and testing more complex behavioral models than purely cross-section or time-series data. Here upon the using of panel data, the degrees of freedom can be enhanced because of greater number of data points, and emerge of collinearity among the explanatory variables can be detracted that accordingly lead to more efficient estimate (Gujarati, 2003). Furthermore, it also supports to detract the problems of endogeneity due to the reflection of specific industry and country effects, reverse causality, and measurement. The panel data can minimize the bias by making data available for several thousand units that might be occur due to concentricity of individuals and or firms into capacious aggregates. As per the concern of the authors

Gujarati and Sangeetha, (2007) Panel data also enables to study the complex behavioral models. Thus, the using of static models which is related to panel data compliances the investigation of problems that cannot be trade with merely by cross-sections or by time-series. In this study, panel data has been determined by pooled OLS, fixed effects and random effects techniques. Most of the earlier empirical studies by different authors at different time period with different companies on working capital management have produced results by applying simple regression analysis, which has been estimated through OLS (Yadav and SB, 2014; Bagchi and Khamrui, 2012; Quayyum, 2011 and Ganesan, 2007). There are also few studies like (Falope and Ajilore, 2009 and Akoto, 2013) that unified panel data analysis without fulfilling the important assumptions of linear regression models. So, the results of such studies are daring on the grounds of breach of the important assumptions of linear regression model that might have impacted the least square estimator. To have the OLS estimates best linear unbiased estimator, the study would like to conquer the limitation of earlier studies by fulfilling the important assumptions of regression techniques.

3.9.1 Panel Regression Technique

The panel data is appraising better to explore and measure the relationships that cannot be explored in pure time series or pure cross-sectional data (Gujarati, 2003). The basic advantage of a panel data keep over a cross section is that it will permit the researcher great variability in model differences in behavior across individuals. Following is the general form of panel regression model: $Y_{it} = \alpha_i + X_{it}\beta + W_{it}$ Whereas Y_{it} = Dependent Variable for cross-sectional units i at time t, whereas i 1…..n and t = 1, ….,T; and α_i is a heterogeneity or individual effect. β is K× 1 and is the it^{th} observation on K explanatory variables.

3.9.1.1 Framework for Data Analysis

Before going into main analysis, the data were accumulated from the annual report of the selected sampled firms. From the collected data different ratios and measurement of dependent and independent variables were processed by MS Excel version 2013. To test the diagnostic terms of the study SPSS version 22 and EViews 9 have used. There are two types of analysis in this exploration are descriptive and quantitative. These two-analysis part has compiled by SPSS version 22. Overview of variables are described by the descriptive statistics. The quantitative part has two parts are correlation and regression part.

3.9.1.2 Model specification

The present study unifies panel regression techniques to calibrate the efficacy of independent Variables (working capital components, working capital policy and liquidity) on dependent variable (profitability) of pharmaceuticals firms and textile firms in Bangladesh. The model has been appraised on the data of 32 companies of a single group having with 160 observations for the time period of 5 years with the financial period from 1stJuly 2013 to 30th June 2018. Thus, this study unified the following regression models:

Model – ROA_1:

$$ROA_{(ACP)} = \beta_0 + \beta_1(ACP) + \beta_2(AIP) + \beta_3(AFP) + \beta_4(\text{Log Sales}) + \beta_5(GWCTR) + \varepsilon$$

Model – ROA_2:

$$ROA_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROA_3:

$$ROA_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROA_4:

$$ROA_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROE_5:

$$ROE_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROE_6:

$$ROE_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROE_7:

$$ROE_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROE_8:

$$ROE_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROI_9:

$$ROI_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$$

Model – ROI_10:

$ROI_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Model – ROI_11:

$ROI_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Model – ROI_12:

$ROI_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Model – GOI_13:

$GOI_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Model – GOI_14:

$GOI_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Model – GOI_15:

$GOI_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Model – GOI_16:

$GOI_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Where,

ROA = Return on Assets (Dependent variables) of selected (10 firms of pharmaceuticals industry and 22 firms of textile industry) at time t; i=5 financial years

ROE = Return on Equity (Dependent variables) of selected (10 firms of pharmaceuticals industry and 22 firms of textile industry) at time t; i=5 financial years

ROI = Return on Investment (Dependent variables) of selected (10 firms of pharmaceuticals industry and 22 firms of textile industry) at time t; i=5 financial years

GOI = Gross Operating Income (Dependent variables) of selected (10 firms of pharmaceuticals industry and 22 firms of textile industry) at time t; i=5 financial years

β_0 = The intercept of equation

βi = Coefficient of Xit variable

Xit = The different independent variables for working capital management of pharmaceuticals and textiles companies

t = Time 1….2….3…4…..n

(ε) = Stochastic error term of firm i at time t.

ACP = Average Collection Period

INV_DAYS = Average Inventories in Days

APP = Average Payable Period

CCC = Cash Conversion Cycle

AIP = Aggressive Investment Policy

AFP = Aggressive Financing Policy

Log sales = Log of Sales revenue

GWCTR = Gross Working Capital Turnover Ratio

3.10 Conclusion

This chapter concluded with finding that the present chapter is the cornerstone of this entire study. It has been ascertained here the research methodology have been employed to analyses the panel data. This chapter has been discussed over here in detail regarding the Population and sample design, sources and means of data, research design and conceptual model of panel data. The next chapter would be ready for the consequences

of the discussed or employed research methodology associated with data type i.e. panel data with 100 observations of a sample of the companies of a two group.

CHAPTER – FOUR: OVERVIEW OF PHARMACEUTICAL INDUSTRY AND TEXTILE INDUSTRY OF BANGLADESH

CHAPTER – FOUR: OVERVIEW OF PHARMACEUTICAL INDUSTRY AND TEXTILE INDUSTRY OF BANGLADESH

The previous chapter described the methodology of the study. This chapter describe the overview of the two industry in Bangladesh's' aspects. This chapter discuss a short summary of the market share, growth, export and problematic scenario of the two industries.

4.1 Overview of Pharmaceutical Industry in Bangladesh

The pharmaceuticals sector is a high technology and knowledge-intensive industry in Bangladesh. The industry has two-tier structure. The industry has two-tier structure. Firstly, the giant firms are accounts for the mainstream of the R&B investment in this industry as well as grasp the majority of patents in their own name. On the contrary, majority number of smaller firms producing the products for mitigating mostly for local markets.

However, the scenario of pharmaceutical industry can be represented in two parts-before the Drug policy ordinance, 1982 and after the drug policy ordinance, 1982. Though there were 177 pharmaceutical companies in the country previously, domestic production is used to be dominated by multinational drug companies that manufactured 75% of total production. 15% of total production manufactured by 25 medium sized national companies. Remaining 10% produced 133 small local based companies. For producing sophisticated essential drugs, multinational companies are fully equipped with modern technology, but they were only engaged, a large extent, in formulation of simple drugs including many useless products. In the intervening time, the unfettered drug market of the country had very little of favorable conditions for pharmaceuticals as the price their products are very high. Therefore, for the monopoly market conditions of this industry lead the local firms in an incompatible situation with these multinational market tycoons.

However, the development of this sector was accelerated, after the promulgation of Drug Control Ordinance - 1982. The key factors for the development of the pharmacists who were working in this sector are the professional knowledge, thoughts and innovative ideas. For the outstanding development of this sector we are exporting medicines to global market including European market and other countries also. Thus, a great change was noticeable in the pharmaceutical industry after the drug policy ordinance of 1982. Not only the total national production of pharmaceuticals has risen by a substantial 63% but also the value of essential drugs made in national factories has gone up to 140% gradually. This sector is also providing 95% of the total medicine requirement of the domestic market demand. Thus, there are 250 national based and 7 multinational based pharmaceutical companies operating in Bangladesh.

4.1.1 Market Share of Pharmaceuticals Industry

With expansion of the industry pharmaceutical Companies are expanding their business with the aim to expand export market in the worldwide. But the establishment number of new industries are few which have hi tech equipment's and professionals which will enhance the strength of this sector for exporting products. There are several sectors on which Bangladesh can be proud of and undoubtedly the pharmaceutical sector is one of these sectors, rather it is the sector, which is the second-largest contributor to the government exchequer. The approximate market size of this sector is about Taka 76,500 million per year with the number of 231 companies in this sector but the it has created 94% of the total requirement of medicines for the local market demand and the rest 6% is imported. The drugs which are imported for the local demands cover with cancer drugs, vaccines for viral diseases, hormones so on. Moreover, Bangladesh Pharmaceutical Industry is now heading towards self-sufficiency in meeting the local demand. As it is the second highest contributor to the national exchequer after garments, and it is the largest white-collar intensive

employment sector of the country. The top 30 to 40 companies dominate almost the entire market; the top 10 hold 70% of domestic market share; and the top two, BEXIMCO and SQUARE, capture over 30% of the market (Chowdhury 2006). The industry structure is relatively concentrated.

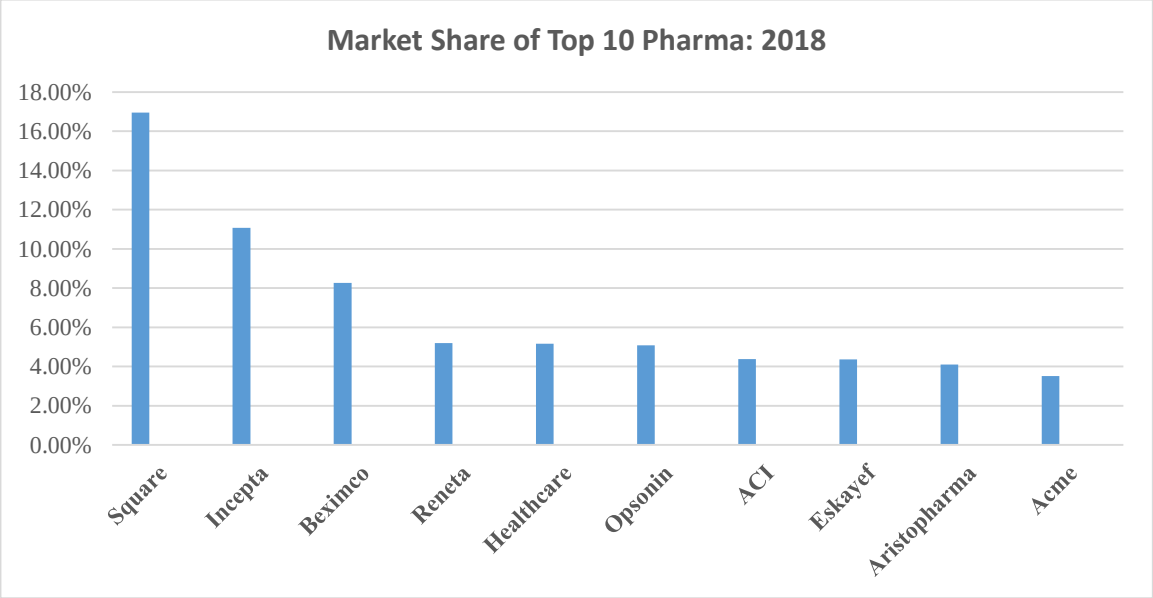


Figure 4.1: Market Share of Top Ten Pharmaceuticals Company

Source: Annual report, Prime Finance Asset Management

The above graph shows that Square pharmaceuticals ltd. has 17% of market share which is the peak market share in this industry. The second highest market share is 11% taking by Incepta. Subsequently, the other which are selected for this study such as, Bexico, Renata, ACI, Acme have 8.10%, 5%, 4.08%, 3.8% market share respectively.

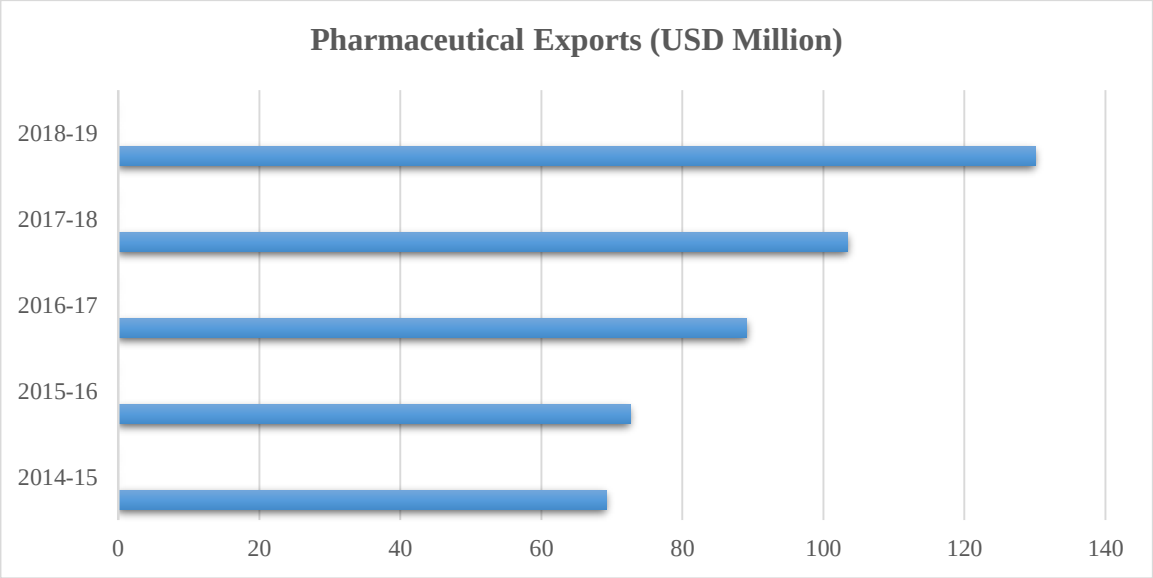
Additionally, total number of generics are registered in Bangladesh about 460. From these 460 generics, 120 are listed as an essential drug list, the rest of 340 generics are in the deregulated category. Again, the total number of brands that are registered in Bangladesh is currently estimated to be 5,300. Structurally, Bangladesh pharmaceutical industry is mainly dominated by domestic manufacturers. The domestic companies are enjoying a market share reaching around 75%, while the MNCs are having a market share of 25%.

4.1.2 Export of Pharmaceuticals Industry

Bangladesh pharmaceutical industry has been taken a newer elevation throughout the last two decades. After meeting the 94% need of local demand we are exporting the medicines into 77 countries which is above beyond. It is the matter great achievement that this sector contributes a lot into the national economy by exporting raw materials and finished goods.

Moreover, it is good news for all of us that Bangladesh is more equipped to enter the Highly Regulated Market of pharmaceuticals industry. Different pharmaceutical companies have already taking initiatives and they are investing to build high tech pharmaceutical industries to expand the business. For the reason of getting the approval from the recognized institution, several renowned companies have already entered the Highly Regulated Market. These firms got the UK MHRA, EU, Philippines, TGA Australia and GCC approval and some are in the process to get the USFDA & UK MHRA approval. This authorization of these companies will be able to export medicine and contract manufacturing agreement for producing the products more.

Figure 4.2: Export of Pharmaceuticals Industry



Source: Export Promotion Bureau

From the graph it is clearly shown that the export of pharmaceutical sector gradually increased from the year 2014 to 2018. It is also observed that in the year 2018-19 Bangladesh pharmaceutical sector earn more than 130 million US Dollar. Followed by, the export of pharmaceutical industry is 100.9 million US Dollar in 2017-18, 90 million US Dollar in 2016-17.

4.1.3 Profit Growth of Pharmaceuticals Industry

Nationally, Bangladeshi pharmaceutical firms generate 82% for meeting the local demand, locally based MNCs account for 13%, and the final 5% is imported. Although 235 pharmaceutical companies are registered in Bangladesh, only about 80 are actively producing drugs. In comparison, the top ten Japanese firms generated approximately 45% of the domestic industry revenue in 2006, while the top ten UK firms generated approximately 53%, and the top ten German firms generated approximately 60% (IMS Health 2006). In 2018, the country's domestic pharmaceutical market size stood at Tk 20,511.8 crore with 15.6% compound annual growth rate (CAGR) for the last five years (Ovi and Mahmud , 2019).

The industry continues its strong research orientation in generic formulation development and has already proven its skills with successful development of specialized, high-tech formulations which are very difficult to imitate.

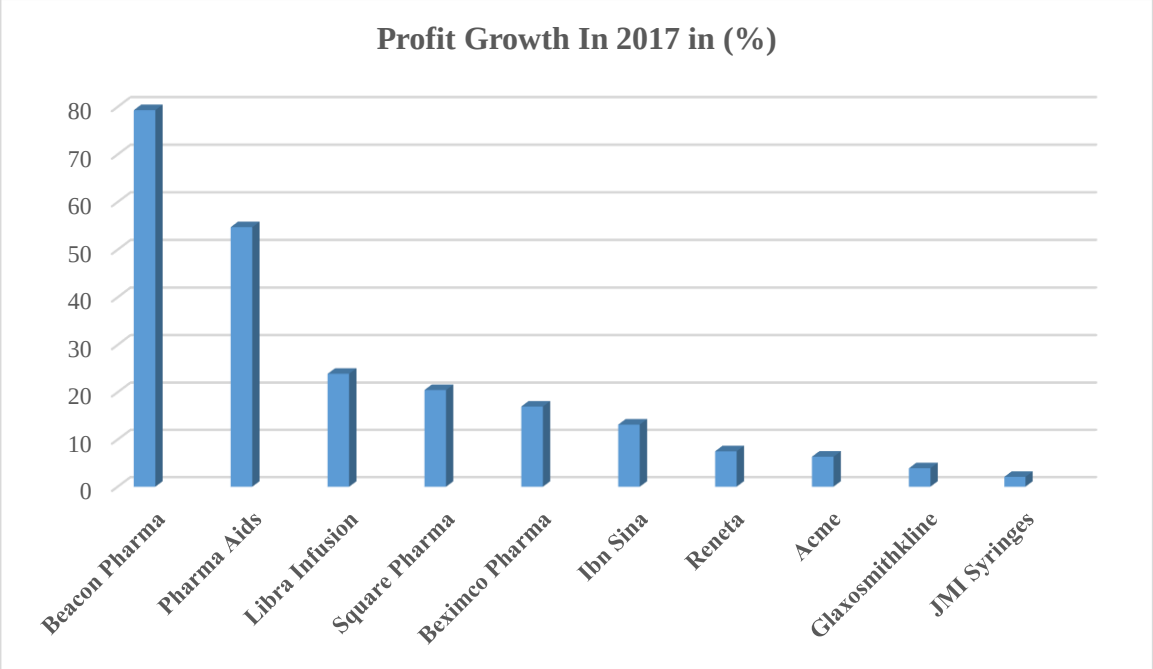


Figure 4.3: Profit Growth of Pharmaceutical Companies

Source: Annual report, Prime Finance Asset Management

The above graph shows the profit growth of pharmaceutical companies in 2017. The higher profit growth shown by Beacon Pharmaceuticals, its profits soar 79.31% year-on-year to Tk 12 crore in 2017, according to (Prime Finance Asset Management). Pharma Aids and Libra Infusions were in second and third positions 54.72% and 23.9% respectively in terms of profit growth. Square, Beximco, and Ibn Sina also logged in double-digit profit growth i.e. 20.46%, 16.97%13.15% respectively in 2017.

In 2010, per capita healthcare expense in Bangladesh was $23, which rose to $37 in 2015, according to World Bank statistics. Bangladesh's pharmaceuticals market doubled between 2012 and 2017. In 2012, the market size stood at Tk 9,390.4 crore and rose to Tk 18,755.6 crore in 2017, according to (IMS Health Care Report 2017). Square earned the highest profit of Tk 1,160.58 crore in 2017, followed by Renata at Tk 288.83 crore, Beximco at Tk 240.9 crore, and Acme Laboratories at Tk 144.31 crore.

At a glance into Bangladesh Pharmaceuticals:

- Domestic market size Tk. 20512 crore.
- Annual growth 15.6%.
- Local company hold 90% market share.
- Multinational hold 10% share.
- 98% demand met locally, 2% with export.
- Contribution to GDP 1.83%.
- 80% firms produce generic drugs.
- 20% manufacture patented drugs.
- Bangladesh exports to 147 countries.

4.2 Overview of Textile Industry in Bangladesh

If we look out the rapid growth of Bangladesh, it can found that the textile and clothing industries provide the single source of growth in Bangladesh's swiftly in making the economy developed. The textile sector was primarily part of the process of import substitution industrialization to replace imports till the liberation war was happened in 1971. But, after the liberation war, Bangladesh implemented export-oriented industrialization mostly by focusing on the textile and clothing industry. In this case the readymade garment (RMG) sector is one of the important sectors for export-oriented industrialization.

At present, Bangladesh's textile industry has been part of the trade versus aid debate issue Bangladesh Garment industry as an open trade regime which is argued as a much more effective form of assistance than foreign aid for the encouragement of the sectors. It is found that global clothing market have benefited entrepreneurs in Bangladesh's ready-made garments (RMG) industry. In 2012 the textile industry accounted for 45% of all industrial

employment in the country yet only contributed 5% of the Bangladesh's total national income.

It is also mentionable that the main textile sector i.e. includes spinning, weaving, printing, dyeing and finishing, plays a vital role as backward-linkage industry of woven and knitwear garments by supplying fabrics and yarns. Currently, the backward-linkage industry supplies around 90 percent raw materials to the knitwear sub-sector and 40% to the woven sub-sector. The rest of the demand is met with imports, mainly from China and India. At present, there are 424 spinning mills, 794 fabrics and 241 dyeing, printing and finishing units under Bangladesh Textile Mills Association (BTMA) with total investment of over 4.5 billion US dollars. Despite huge potential, the primary textile industries could not utilize their full production capacity because of errant power and gas supply, adoption of new technology, underdeveloped infrastructures etc.

4.2.1 Export of Textile Industry

As, Exports of textiles and garments are the principal source of foreign exchange earnings in Bangladesh. Past statistic shows that by 2002 exports of textiles, clothing, and ready-made garments (RMG) accounted for 77% of Bangladesh's total merchandise exports., the World Bank approximated The gross domestic product (GDP) of Bangladesh at US$6.29 billion in 1972, it grew to $173.82 billion by 2014, with $31.2 billion of that generated by exports. Where 82% of this export generated by ready-made garments. The Readymade Garment (RMG) industry of Bangladesh has emerged as a competent garment producer in the world. The World Trade Organization (WTO) declared Bangladesh as the second largest RMG exporter after China. The industry accounts for 81.23 percent of the total export earnings of the country and is a source of livelihood for around 4 million workers, mostly

poor rural women. The export earnings through RMG stood at over US$ 28,000 million in FY2016-17 and people of around 130 countries of the world are the consumers of 'made-in-Bangladesh' knit garments and woven products. Moreover, a more glittering future is waiting for the ready-made garment industry of Bangladesh as perceived from at least facts and figures. A McKinsey report forecast export-value growth of 7 to 9% annually within the next ten years. One of the biggest challenges for the sector is to make the factories safer and ensure better working conditions for millions of garment workers, the industry was also taking on green manufacturing practices.

Table 4.1: Global Market share and Exports of Textile Industry

Name of Country	Global Market Share in (%)	Export Earnings in ($ billion)
China	34.4	158
Bangladesh	6.5	29
Vietnam	5.9	27
India	4.1	18
Turkey	3.3	15
Indonesia	1.8	8
Cambodia	1.6	7

Source: GTA

The above table (Table 4.1) have shown the global market share and the exports earnings of the textile industry across the world including Bangladesh. As Bangladesh is the second largest country in the form of market share and the exports earning after China. China has 34.4% of total market share in textile sectors with 158 billion exports earnings. Therefore, Bangladesh has 6.5% market share with 29 billion US$ of foreign earnings from the textile sectors. In comparison with Bangladesh, Vietnam as well as India have lower market share i.e. 5.9%, 4.1% and exports earnings i.e. 27 billion US$, 18 billion US$ respectively.

However, Bangladesh exports its apparel products in United States, European Union (EU), Canada and other countries of the world. It is the sixth largest apparel supplier to the United States and EU countries per year.

4.2.2 Profit Growth of Textile Industry

The countries lifeline of Ready-Made Garments (RMG) sector is posted 8.76 per cent growth to $ 30.61 billion during the last concluded financial year. Knitwear products earned $ 15.18 billion during the last fiscal, recording 10.40 per cent growth over that the previous fiscal, the Export Promotion Bureau (EPB). The garment owners of the country are continuously investing their factory and upgrading their capacity along with production facility to meet the highest compliance standard according to the guideline of ACCORD & ALLIANCE. The apparel industry has achieved a phenomenal growth due to policy support from the Government, dynamism of the private sector entrepreneurs and extremely hardworking workers who are devoted in this sector since last three decades. However, at present, the mightiest pillar of our economy is under threat and facing unprecedented challenges posed by some unfortunate incidents in the sector. With challenges on one side and huge opportunities for further growth on the other, we are now at a crossroads.

Currently, textile industries comprise a mix of small to large-scale privately and publicly owned companies. This is one of the important sectors in Bangladesh's economy which is accounts for 45 percent of all industrial employment and contributes 5 percent to the total national income. The industry employs nearly 4 million people, mostly woman. Previously, the local market was dependent upon imported goods of China and other countries but now the local industry meets over 90 per cent of domestic demand for ready-made garments. Again, a giant portion about 78% of the country's export earnings come from textiles and apparel.

CHAPTER FIVE:

RESULT AND DISCUSSION

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This chapter has exposed the empirical findings of the working capital management and performance of the pharmaceutical industry and textile industry in Bangladesh. The chapter is divided into six sections. The chapter is arranged as follows: Section 5.1 presents the descriptive statistics analysis. Section 5.2 deals with Pre-Testing Results or assumptions test pertaining to the regression models. Section 5.3 presents findings and discussion of the study.

5.1 Descriptive Analysis

Descriptive statistics are brief descriptive figures that precise a given data set, which can be either a demonstration of the entire population or a sample of it. Descriptive statistics show a complex dataset in a simple way. The mean, median, mode, maximum and minimum value, standard deviation, skewness, kurtosis, variance, and such other data are presented in a tabular way with descriptive statistics. In this study sector-based descriptive statistics are presented. Besides the descriptive data the value of Cronbach's α value is added with both types of descriptive data. These descriptive statistics on overall data is compiled in Eviews 10. The study covered a period of 5 years from 2014 to 2018 in total of 50 observations for pharmaceuticals and 110 observations for textile industry total 160 observations. The descriptive statistics of variables show a high level of consistency as it is apparent from table 5.1 that their mean and median values are perpetual within the maximum and minimum limits as found in other empirical studies. In addition, the relatively low standard deviation of the variables indicates the deviation of actual data from their mean is very less.

Table 5.1 Descriptive Analysis of the Dependent and Independent Variables of the Pharmaceuticals Industry

	Mean	Maximum	Minimum	SD	Skewness
ROA	0.09	0.38	-0.15	0.08	0.69
ROE	0.15	0.39	-0.01	0.1	0.42
ROI	0.22	2.06	0	0.46	2.96
GOI	7972.37	155036	49	2644.49	5.14
ACP	85.23	599.12	0.65	114.56	3.03
INV_DAYS	118.48	433.28	0.85	95.45	1.64
APP	548.57	7787.87	-18.43	143.05	3.54
CCC	-344.86	471.54	-7243.07	176.58	-3.47
AIP	0.51	1.07	0.08	0.24	0.72
AFP	0.42	0.75	0.04	0.19	-0.29
SIZE	3.69	4.61	2.1	0.67	-0.94
GWCTR	6.77	177.88	-19.02	29.68	4.65
Firms 10, the total number of observations 50 for 5 years from 2014-2018					

Sources –Eviews

Table 5.2 Descriptive Analysis of the Dependent and Independent Variables of the Textile Industry

	Mean	Maximum	Minimum	SD	Skewness
ROA	1.15	9.85	0.01	2.11	2.1
ROE	0.08	0.42	0	0.07	2.46
ROI	0.04	0.14	0.01	0.03	1.82
GOI	404.29	2201	17	375.12	1.73
ACP	105.16	316.64	0	78.42	0.65
INV_DAYS	162.05	1024.62	0	144.75	2.7
APP	79.87	593.43	0	108.94	2
CCC	188.34	1228.66	-540.35	234.8	1.12
AIP	0.46	0.81	0.12	0.17	-0.04
AFP	0.38	0.81	0.01	0.18	0.46
SIZE	3.21	4.1	2.26	0.44	-0.41
GWCTR	29.7	3467.79	-163.63	348.42	9.75
Firms 22, total number of observations 110 for 5 years from 2014-2018					

Sources –Eviews output

Note 1:

ROA= Return on Assets, ROE = Returns on Equity, ROI = Return On Investment, GOI = Gross Operating Income ACP= Average Collection Period, INV_DAYS= Average Inventory in Days, APP= Average payable Period, CCC= Cash Conversion Cycle, AIP= Aggressive investing policy, AFP =Aggressive financing Policy, SIZE= Size of the firms, GWCTR = Gross Working Capital Turnover Ratio.

Note 2:

a. A low standard deviation indicates that the data points tend to be close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values.

b. The median is the value separating the higher half of a data sample, a population, or a probability distribution, from the lower half.

Return on Assets

Return on assets (ROA) is an indicator of the profitability of how a firm is proportionate to its total assets. The mean value of return on assets is approximately .09% for Pharmaceuticals and 1.15% for Textiles. The standard deviation of return on assets from its mean is .08% for Pharmaceuticals where the Textile sector has 2.07%. The minimum and the maximum values are -15% and 38% respectively in the Pharmaceutical sector. In the case of Textile sector, the numbers are 0.01% and 9.85%. These figures clearly reflect the deviation of data points incline to be close to the mean or also called the expected value of the set.

(ii) Return on Equity

ROE i.e. return on Equity measures the firm's profitability by revealing how much earning a company generates with the money shareholders have invested. The mean value of return on Equity of the Pharmaceutical sector is approximately .15% of total shareholder's equity while Textile sector has .08%. While the skewness of Pharmaceuticals is .42% and 2.46% for the Textile sector. The standard deviation of return on Equity from its mean is .01% for Pharmaceuticals and the Textile sector has .07% . The minimum and the maximum values are 0% and 42% respectively for the Textiles where -1% and 39% for Pharmaceuticals. These figures clearly reflect the deviation of data points incline to be close to the mean or also called the expected value of the set.

(iii) Return on Investments

The mean of ROI in the Pharmaceutical sector is .22% and .04% in the Textile sector. The Standard deviation is .46% in the Pharmaceutical companies and .03% in the Textile companies. The minimum and maximum values are 0 and 2.06% respectively for the Pharmaceutical sector where .01% and .14% for the Textiles.

(iv) Gross Operating Income

The mean value of GOI is 404 in the Textile sector and 7972 in the Pharmaceutical sector. The standard deviation of GOI is 2644 in the Pharmaceutical sector and 375 in the Textile sector. The maximum and minimum values of GOI are 2201 and 17 in the Textile sector while the values are 155036 and 49 in the Pharmaceutical sector.

(v) Average Collection Period

The mean value of this variable reflects that the Pharmaceuticals receive payment against sales after an average of 85 days with a standard deviation of 114 days and the skewness value of 3.03days. On the other hand, Textiles receive payment against sales after an average of 105 days with a standard deviation of 78 days and a skeness value of .65 days. The minimum time taken by the Textiles to collect cash from customers is 0 days and the maximum time to collect its payment is 316.64 days where the minimum time taken by the Pharmaceuticals is .65 days and the maximum time to collect its payment is 599 days.

(vi) Average Inventories in Days

The mean value of inventories in days reveals that the Pharmaceuticals take on an average of 118.48 days and the Textiles take on an average of 162.05 days to sell their inventories. The data reflect the standard deviation of 95.45 days and a skewness 1.64 days for Pharmaceuticals and 147.75 days and 2.7days for the Textiles. The values of standard deviations show a smaller variance in the data as the value of standard deviation is closer to the mean value. Furthermore, the maximum time taken by the Pharmaceuticals to sell the inventory is 433.28 days as against the minimum time to convert inventory into the sale is 0.85 days. In the case of the Textile sector, minimum time is 0 days and maximum days approximately 1025 days.

(vii) Average Payable Period

The mean value of APP reveals that the Pharmaceuticals wait for an average of 548.57 days to pay its purchase with the standard deviation of 143.05 days and the Textiles wait for an average of 79.87 days to pay its purchase with the standard deviation of 108.94 days. The minimum time taken by the Textiles to pay the accounts payable is 0 days while the

maximum time taken to pay the accounts by the firm is 593.43 days. On the other hand, the minimum time taken by the Pharmaceuticals to pay the accounts payable is -18.43 days while the maximum time taken to pay the accounts by the firm is 7787.87 days. These figures clearly reflect the deviation of data points incline to be close to the mean or also called the expected value of the set.

(viii) Cash Conversion Cycle

The cash conversion cycle is used as a proxy to check the efficiency in working capital management. The mean value of CCC reflects that the Textiles are efficient on an average of 188.34 days to manage their working capital but the mean of the Pharmaceuticals is -344.86 days. The standard deviation of the cash conversion cycle is around 234.8 days with a skewness of 1.12 days for the Textile sector while 176.58 and -3.47 for the Pharmaceuticals. The minimum time of cash conversion period of the Pharmaceuticals is -7243.07 days while the maximum time for the cash conversion cycle is 471.54 days. In addition, the minimum time and maximum time for the Textiles are -540.3 and 1228.66 respectively.

(ix) Aggressive Investment Policy

The aggressive investing policy is measured by the ratio of total current assets to total assets. The lower ratio means a relatively high degree of aggressiveness. It is evident from the above table of descriptive analysis that Pharmaceuticals has a mean value of 51% where the Textiles has 46%. The value of the standard deviation of the Textiles is 0.17% with a skewness of -0.04% while the Pharmaceuticals has 0.24 and 0.72 in standard deviation and median. Moreover, variability in data is not too high because of its mean value is closer to the respective standard deviations.

(x) Aggressive Financing Policy

The ratio of total current liabilities to total assets is used to measure the value of the aggressive financing policy. The higher ratio implies a relatively high degree of aggressiveness. The mean value of the textiles and the Pharmaceutical's aggressive financing policy are 0.38% and 0.42% implying that the firms adopt the conservative financing policy. The standard deviation from the mean is 0.18% with a skewness of 0.46% for the Textiles and for 0.19 and -0.29% for the Pharmaceuticals.

The minimum value of the Pharmaceutical sector is 0.04% while the maximum is 0.75% and 0.01% and 0.81% for the Textiles. The variability in data is normal because the value of the standard deviation is quite closer to the mean value.

(xi) Size of the Firms

Size is used as a control variable and measured by the natural logarithm of sales. The mean and standard deviation values of size in the Pharmaceuticals are 3.69, and 0.67 respectively where 3.21 and 0.44 in the Textiles. The minimum value of the logarithm of sales is 2.1 whilst the maximum value is 4.61 in the Pharmaceutical sector and the Textile sector as a minimum size of 2.26 and the maximum size of 4.1. The variability of data is lower as its standard deviation value is quite lower than its mean value. Therefore, the spread of data is normal.

(xii) Gross Working Capital Turnover Ratio

Gross working capital turnover ratio (GWCTR) organizes the relationship between Net sales and net working capital. As working capital has a direct and adjacent relationship with the cost of goods sold. Hence, this ratio provides useful idea of how efficiently or actively working capital is being used. The mean and standard deviation

values of GWCTR in the Pharmaceutical sector are 6.77 and 29.68 separately and 29.7 and 348.42 in the Textile sector. The minimum value of GWCTR is -163.62 whilst the maximum value is 3467.79 in the textile while -19.02 and 177.88 in the Pharmaceuticals. The variability of data is lower as its standard deviation value is quite lower than its mean value. Therefore, the spread of data is normal.

5.2. PRE-TESTING RESULTS

This study engaged with the ordinary least square (OLS) to ensure the reliability of the result. The assumption tests in this study have been checked through the use of sophisticated statistical software packages i.e. SPSS (version-22), Gretl (version-1.9.32) and E-views 10. For the models of multiple regression analysis, it is obligatory to satisfy the assumptions of regression analysis to obtain balanced results. All the models have been checked for the assumptions of the regression model before interpreting the result. The results of various assumptions of regression models that have been tested are as follows:

5.2.1 Test of Multi-collinearity

In the first order, multi-collinearity has been perceived through the use of correlation matrices. The correlation matrix shown in tables 5.3 and 5.4 imitates the pair-wise correlations between all the combinations of two of the variables. A high correlation coefficient between two variables may specify the existence of collinearity. Before applying the regression analysis technique, the multicollinearity between different dependent variables with independent variables is detected as reported in tables 5.3 and 5.4. This analysis was intended to check the collinearity problems among the variables whether they are correlated or not. If the variables are correlated, regression delivers biased results that

are not precise. The complete results of correlation analysis exposed that only few variables i.e. are highly correlated.

Table 5.3 shows Pearson Correlation Coefficients (Dependent, Independent variables & Control variables) for the Pharmaceuticals

	ROA	ROE	ROI	GOI	ACP	INV_ DAYS	APP	CCC	AIP	AFP	SIZE	GWCTR
ROA	1											
ROE	0.88	1										
ROI	0.57	0.38	1									
GOI	-0.04	-0.04	0.09	1								
ACP	-0.13	-0.19	-0.06	-0.04	1							
INV_DAYS	-0.40	-0.51	-0.30	-0.06	-0.21	1						
APP	-0.19	-0.18	-0.09	0.05	0.73	-0.14	1					
CCC	0.16	0.14	0.07	-0.06	-0.70	0.19	-1.00	1				
AIP	-0.08	0.17	-0.13	0.31	-0.16	-0.04	-0.14	0.13	1			
AFP	-0.58	-0.47	-0.66	0.09	0.01	0.31	0.18	-0.17	0.25	1		
SIZE	-0.02	-0.09	0.22	0.29	-0.15	-0.05	0.23	-0.25	-0.17	0.09	1	
GWCTR	0.49	0.32	0.20	0.00	-0.04	-0.25	-0.05	0.03	0.08	-0.14	-0.02	1

Sources: Eviews

Note:

ROA= Return on Assets, ROE = Returns on Equity, GOI= Gross Operating Income, ACP= Average Collection Period, INV_DAYS= Average Inventory in Days, APP= Average payable Period, CCC= Cash Conversion Cycle, AIP= Aggressive investing policy, AFP =Aggressive financing Policy, SIZE= Size of the firms, GWCTR = Gross Working Capital Turnover Ratio.

The results of the correlation matrix between the descriptive variables in the Pharmaceuticals i.e. ACP and APP are highly correlated and the value is 0.73. Apart from that the values are low, meaning that there are no multi-collinearity problems among the variables in the Pharmaceutical sector.

Table 5.4a shows Pearson Correlation Coefficients (Dependent, Independent variables & Control variables) for the Textiles

	ROA	ROE	ROI	GOI	ACP	INV_ DAYS	APP	CCC	AIP	AFP	SIZE	GWCTR
ROA	1											
ROE	-0.05	1										
ROI	0.12	0.62	1									
GOI	0.00	-0.02	0.24	1								
ACP	0.28	-0.42	-0.14	0.04	1							
INV_ DAYS	0.19	-0.38	-0.32	-0.08	0.487	1						
APP	-0.26	0.23	0.09	-0.13	0.132	-0.23	1					
CCC	0.33	-0.48	-0.29	0.02	0.573	0.89	-0.56	1				
AIP	-0.04	0.24	0.18	-0.09	-0.326	-0.10	0.12	-0.22	1			
AFP	-0.22	0.40	-0.17	-0.20	-0.311	-0.35	0.26	-0.44	0.32	1		
SIZE	0.13	-0.15	0.15	0.54	0.198	-0.11	-0.08	0.03	0.04	-0.06	1	
GWCTR	-0.04	0.05	-0.03	-0.08	0.059	-0.03	0.18	-0.08	0.09	0.12	-0.04	1

Sources: Eviews

Note:

ROA= Return on Assets, ROE = Returns on Equity ROI = Returns on Investment, GOI= Gross Operating Income, ACP= Average Collection Period, INV_DAYS= Average Inventory in Days, APP= Average payable Period, CCC= Cash Conversion Cycle, AIP= Aggressive investing policy, AFP =Aggressive financing Policy, SIZE= Size of the firms, GWCTR = Gross Working Capital Turnover Ratio.

In the case of the Textile sector, the multicollinearity problem does not exist as the correlation coefficient is not above the 0.8.

5.2.2 Result of Heteroskedasticity

Before the estimation of the final models, the assumption of heteroskedasticity has been tested. We used Breush-Pagan-Godfrey test to check the heteroskedasticity in case of both the Pharmaceutical and Textile sectors.

Table 5.4b shows the result of heteroskedasticity for all the models (Pharmaceuticals)

Descriptions	Breusch-Pagan-Godfrey	
	CHI-SQ.	P-VALUES
Model 1	10.29	0.07
Model 2	13.52	0.03
Model 3	4.47	0.48
Model 4	4.33	0.50
Model 5	7.56	0.18
Model 6	19.90	0.01
Model 7	5.44	0.36
Model 8	5.07	0.40
Model 9	14.18	0.03
Model 10	12.26	0.05
Model 11	11.18	0.061
Model 12	12.19	0.056
Model 13	8.96	0.11
Model 14	8.86	0.10
Model 15	10.13	0.07
Model 16	9.97	0.07

Sources: Eviews

As per the criteria of accepting or rejecting Breusch-Pagan-Godfrey's test If the corresponding p-value is less than 0.05 (i.e. less than 5% level of significance) the null hypothesis articulated as homoscedasticity or constant variance is rejected and the alternative hypothesis there is heteroscedasticity is accepted.

The results of Table 5.4 indicate the presence of heteroscedasticity in model 2(ROA-INV), model 6 (ROE-INV), and model 9 as the corresponding P-value in models is less than (0.05). Others model has no heteroscedasticity problem.

Table 5.5 shows the result of heteroskedasticity for all the models (Textiles)

Descriptions	Breusch-Pagan-Godfrey	
	CHI-SQ.	P-VALUES
Model 1	7.41	0.19
Model 2	7.60	0.18
Model 3	3.65	0.60
Model 4	8.84	0.11
Model 5	9.17	0.10
Model 6	10.75	0.05
Model 7	11.37	0.05
Model 8	14.48	0.01
Model 9	7.82	0.16
Model 10	9.39	0.09
Model 11	11.46	0.04
Model 12	14.36	0.01
Model 13	8.92	0.11
Model 14	4.35	0.89
Model 15	5.19	0.39
Model 16	4.11	0.53

Sources: Eviews

In the case of textile firms, there has some heteroskedasticity problem in some cases. Because the characteristics of the firms, as well as the size, are not the same. Nevertheless, most of the models have passed the heteroskedasticity problem.

To sum up, the pharmaceuticals companies are more balanced in the case of data nature than the textile sector.

5.2.3 Autocorrelation results by Durbin-Watson test

It is very essential for the traditional linear regression to be unrestricted from autocorrelation problems else its occurrence would lead to biased standard errors that eventually make t - values and p-values inappropriate. In order to ensure that the error terms (μt) of the population regression function are random or uncorrelated, Durbin- Watson test has been used. The Durbin Watson test has been used to check the autocorrelation problems.

Table 5.6 Shows the Durbin Watson Score for the Pharmaceutical Firms

Descriptions	DW Score
Model 1	1.63
Model 2	1.81
Model 3	1.70
Model 4	1.43
Model 5	1.29
Model 6	1.72
Model 7	1.31
Model 8	1.45
Model 9	0.99
Model 10	1.34
Model 11	0.99
Model 12	0.91
Model 13	2.33
Model 14	2.32
Model 15	1.35
Model 16	1.34

Sources: Eviews

The DW score of the pharmaceutical firms in some models is not near to 2.00, meaning that there have some autocorrelation problems. But in the case of, ROA and ROE, and GOI, there has no serial autocorrelation in the models.

Table 5.7 Shows the Durbin Watson Score for the Textile Firms

Descriptions	DW Score
Model 1	1.29
Model 2	1.27
Model 3	1.13
Model 4	1.18
Model 5	0.97
Model 6	0.90
Model 7	0.99
Model 8	0.92
Model 9	1.08
Model 10	1.21
Model 11	1.01
Model 12	1.06
Model 13	1.36
Model 14	1.33
Model 15	1.25
Model 16	1.27

Sources: Eviews

Durbin Watson's score illustrates that there is no serial autocorrelation among the variables except a few models. The nature of the textile firms is not the same, as a result there might have some serial autocorrelation.

5.3 Regression Results

Eventually, after going through all the parameters of the certain assumptions for the regression analysis, this section empirically investigates whether the factors are determining the working capital management decision in the Pharmaceutical and Textile companies that are consistent with the prior literature. The theoretical and empirical literature on working capital management has suggested various factors that influence the firm's decision. Among various factors of working capital management, some of the factors vary across the firms or across time, though there are also firm and time-varying factors. To ascertain the objective of the research, proxy of theoretical and empirical factors was identified. These factors include firm-specific factors only which are both firm and time-varying factors. The proxy variables incorporated for the hypotheses testing includes dependent, independent and control variables. Profitability is the dependent variable measured by return on assets (ROA), Return on Equity (ROE), and Gross Operating Income (GOI). Independent variables as a measure of working capital management includes Average Collection Period (ACP), Average inventories days (INV_days), Average Payable Period (APP) and Cash Conversion Cycle (CCC) whereas to determine the working capital policy of Company, Aggressive Investment Policy (AIP) and Aggressive Financing Policy (AFP) has been used as independent variables. Apart from the dependent and independent variables, the study used size of the firm i.e.log of sales (SIZE), and Gross Working Capital Turnover Ratio as control variables to test the hypothesis.

Model 1: $ROA_{(ACP)} = \beta_0 + \beta_1(ACP) + \beta_2(AIP) + \beta_3(AFP) + \beta_4(Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Dependent variable: ROA

Table: 5.3.1 Regression Analysis (Pharmaceutical Firms) of model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.136693	0.063575	2.150102	0.0374
ACP	-7.34E-05	8.61E-05	-0.851791	0.3992
AIP	0.024522	0.043708	0.561046	0.5777
AFP	-0.205711	0.071520	-2.876275	0.0063***
SIZE	0.002865	0.006592	0.434552	0.6661
GWCTR	0.001118	0.000325	3.440883	0.0013***

R-squared	0.492335	Mean dependent var	0.081954
Adjusted R-squared	0.426954	S.D. dependent var	0.072818
S.E. of regression	0.064313	Akaike info criterion	-2.678531
Sum squared resid	0.173721	Schwarz criterion	-2.398571
		Hannan-Quinn	
Log-likelihood	68.70401	criteria.	-2.117995
F-statistic	8.215006	Durbin-Watson stat	1.637730
Prob(F-statistic)	0.000092		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The table 5.3.1 and 5.3.2 show the results of OLS models with the dependent variables ROA and it represents the impact of working capital components, working capital policy and liquidity along with control variables on the profitability of the firms. It is found that in the Pharmaceutical companies, Aggressive financing Policy is negative and

significant relationship with ROA where Gross Working Capital Turnover Ratio has positive and significant relationship with return on assets.

On the other hand, in the case of the textile industry, only the Average Collection Period has a positive relationship with ROA. Meaning that the relationship between ACP and ROA varies from variable to variable for both these sectors.

Table: 5.3.2 Regression Analysis (Textile Firms) of model 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.237214	1.637408	0.144872	0.8851
ACP	0.006383	0.002870	2.224065	0.0284**
AIP	0.938113	1.324497	0.708279	0.4804
AFP	-0.711304	1.296092	-0.548807	0.5843
SIZE	-0.008058	0.205057	-0.039295	0.9687
GWCTR	-0.000312	0.000596	-0.523846	0.6015
R-squared	0.190327	Mean dependent var		1.19421
Adjusted R-squared	0.118663	S.D. dependent var		2.98635
S.E. of regression	2.032582	Akaike info criterion		4.82189
Sum squared resid	417.2702	Schwarz criterion		4.01487
Log-likelihood	-225.2319	Hannan-Quinn criteria.		3.93758
F-statistic	3.161798	Durbin-Watson stat		1.294614
Prob(F-statistic)	0.035691			

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 2: $ROA_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROA

Table: 5.3.3 Regression Analysis (Pharmaceutical Firms) of model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.134657	0.061884	2.175943	0.0352
INV_DAYS	-0.000116	0.000107	-1.085588	0.2839
AIP	0.028830	0.042617	0.676494	0.5024
AFP	-0.196360	0.072339	-2.714437	0.0096***
SIZE	0.003457	0.006441	0.536827	0.5942
GWCTR	0.001054	0.000329	3.205705	0.0026***
R-squared	0.487870	Mean dependent var		0.021948
Adjusted R-squared	0.423281	S.D. dependent var		0.092837
S.E. of regression	0.024889	Akaike info criterion		-2.874787
Sum squared resid	0.190585	Schwarz criterion		-2.912827
Log-likelihood	78.96238	Hannan-Quinn criteria.		-2.192840
F-statistic	6.600938	Durbin-Watson stat		1.815561
Prob(F-statistic)	0.000176			

Note: ****,**,* indicates 1%,5%, and 10% significant*

The results of OLS for model 2 shown in table 5.3.3 and 5.3.4, reveals that in the Pharmaceuticals companies, AFP has a negative and significant relationship with ROA where GWCTR has a positive and significant relationship with ROA. In addition, in the Textile industry, INV_DAYS has a positive and significant result with ROA and WCR.

Table: 5.3.4 Regression Analysis (Textile Firms) of model 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.538059	1.728611	-0.311267	0.7562
INV_DAYS	0.003340	0.001527	2.186910	0.0311**
AIP	-0.058865	1.268476	-0.046406	0.9631
AFP	-0.144868	1.372659	-0.105538	0.9162
SIZE	0.145053	0.201859	0.718586	0.4741
GWCTR	-0.000155	0.000592	-0.261535	0.7942

R-squared	0.228980	Mean dependent var	1.168279
Adjusted R-squared	0.137236	S.D. dependent var	2.127813
S.E. of regression	2.924789	Akaike info criterion	4.018472
Sum squared resid	417.992	Schwarz criterion	4.105893
		Hannan-Quinn	
Log-likelihood	-220.9748	criteria.	4.092849
F-statistic	3.084988	Durbin-Watson stat	1.921483
Prob(F-statistic)	0.019849		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 3: $ROA_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROA

Table: 5.3.5 Regression Analysis (Pharmaceutical Firms) of model 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.146400	0.061646	2.374866	0.0226
APP	-4.41E-06	5.96E-06	-0.740211	0.4636
AIP	0.002264	0.043471	0.052091	0.9587
AFP	-0.213745	0.072072	-2.965729	0.0051***
SIZE	0.002613	0.006508	0.401563	0.6902
GWCTR	0.001165	0.000319	3.645967	0.0008***

R-squared	0.579817	Mean dependent var	0.087682
Adjusted R-squared	0.485943	S.D. dependent var	0.083732
S.E. of regression	0.062326	Akaike info criterion	-2.573622
Sum squared resid	0.151495	Schwarz criterion	-2.295351
Log likelihood	65.19331	Hannan-Quinn criter.	-2.469380
F-statistic	7.096514	Durbin-Watson stat	1.703832
Prob(F-statistic)	0.000040		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The results of OLS for model 3 shown in table 5.3.5 and 5.3.6, reveals that in the pharmaceuticals, the coefficient of AFP and ROA is negative and significant. But GWCTR has a positive and significant relationship with ROA. On the contrary, in the textile industry, the coefficient of APP and ROA is negative and significant.

Table: 5.3.6 Regression Analysis (Textile Firms) of model 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.595402	1.603256	0.371370	0.7112
APP	-0.003811	0.001922	-1.983063	0.0502**
AIP	-0.349463	1.277063	-0.273646	0.7849
AFP	-0.294291	1.288874	-0.228332	0.8199
SIZE	0.122729	0.199445	0.615353	0.5397
GWCTR	5.47E-05	0.000586	0.093374	0.9258

R-squared	0.230892	Mean dependent var	1.100867
Adjusted R-squared	0.117682	S.D. dependent var	2.070978
S.E. of regression	1.988914	Akaike info criterion	4.277395
Sum squared resid	387.6663	Schwarz criterion	4.454326
Log-likelihood	-217.5632	Hannan-Quinn criteria.	4.349091
F-statistic	2.409887	Durbin-Watson stat	1.134556
Prob(F-statistic)	0.029373		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 4:$ROA_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROA

Table: 5.3.7 Regression Analysis (Pharmaceutical Firms) of model 4

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.145631	0.062147	2.343331	0.0243
CCC	3.93E-06	5.23E-06	0.630259	0.5322
AIP	0.003433	0.043451	0.079014	0.9374
AFP	-0.215695	0.072038	-2.994196	0.0048***
SIZE	0.002610	0.006556	0.398081	0.6927
GWCTR	0.001168	0.000320	3.648109	0.0008***

R-squared	0.517981	Mean dependent var	0.087682
Adjusted R-squared	0.443824	S.D. dependent var	0.083732
S.E. of regression	0.062445	Akaike info criterion	-2.569805
Sum squared resid	0.152074	Schwarz criterion	-2.291533
		Hannan-Quinn	
Log-likelihood	65.10551	criteria.	-2.465563
F-statistic	6.984937	Durbin-Watson stat	1.396824
Prob(F-statistic)	0.000043		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 4 is shown in table 5.3.7 and 5.3.8, which reveals that in the Pharmaceutical sector, AFP has a negative and strong impact on ROA where GWCTR has a positive and significant. Furthermore, in the Textile sector, both only CCC has a positive and strong impact on ROA.

Table: 5.3.8 Regression Analysis (Textile Firms) of model 4

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.928040	1.597708	-0.580857	0.5627
CCC	0.003029	0.000925	3.274348	0.0015***
AIP	-0.169340	1.238510	-0.136729	0.8915
AFP	0.920410	1.332862	0.690551	0.4915
SIZE	0.135929	0.192750	0.705208	0.4824
GWCTR	-7.04E-05	0.000561	-0.125577	0.9003

R-squared	0.185161	Mean dependent var	1.100867
Adjusted R-squared	0.135273	S.D. dependent var	2.070978
S.E. of regression	1.925817	Akaike info criterion	4.212918
Sum squared resid	363.4595	Schwarz criterion	4.389849
		Hannan-Quinn	
Log-likelihood	-214.1782	criteria.	4.284614
F-statistic	3.711536	Durbin-Watson stat	1.183397
Prob(F-statistic)	0.002286		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 5: $ROE_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROE

Table: 5.3.9 Regression Analysis (Pharmaceutical Firms) of model 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.209574	0.081131	2.583167	0.0134
ACP	-0.000121	0.000110	-1.105095	0.2754
AIP	0.133468	0.055778	2.392859	0.0213**
AFP	-0.297127	0.091270	-3.255486	0.0022***
SIZE	0.002015	0.008412	0.239514	0.8119
GWCTR	0.000704	0.000415	1.697604	0.0970

R-squared	0.434358	Mean dependent var	0.152790
Adjusted R-squared	0.313552	S.D. dependent var	0.096294
S.E. of regression	0.092073	Akaike info criterion	-2.030847
Sum squared resid	0.212912	Schwarz criterion	-1.760587
Log-likelihood	56.05574	Hannan-Quinn criteria.	-1.928310
F-statistic	4.012495	Durbin-Watson stat	1.294945
Prob(F-statistic)	0.002898		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The table 5.3.9 and 5.3.10 shows the results of OLS model 6 with the dependent variable ROE. It is found that in the Pharmaceutical firms, both AFP have a negative and strong impact on ROE but AIP has a strong positive impact on ROE.

In the case of Textiles, it is found that ACP has a negative and significant influence on firms' ROE where the coefficient with AFP is positive and significant.

Table: 5.3.10 Regression Analysis (Textile Firms) of model 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.102640	0.043231	2.374201	0.0195
ACP	-0.000238	7.58E-05	-3.139783	0.0022***
AIP	-0.010678	0.034970	-0.305351	0.7607
AFP	0.174719	0.034220	5.105779	0.0000***
SIZE	-0.008954	0.005414	-1.653917	0.1012
GWCTR	3.58E-06	1.57E-05	0.227150	0.8208

R-squared	0.318267	Mean dependent var	0.077169
Adjusted R-squared	0.251927	S.D. dependent var	0.066662
S.E. of regression	0.055465	Akaike info criterion	-2.949492
Sum squared resid	0.290873	Schwarz criterion	-2.775651
Log-likelihood	165.2216	Hannan-Quinn criteria.	-2.879006
F-statistic	10.98004	Durbin-Watson stat	0.974995
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 6: $ROE_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Table: 5.3.11 Regression Analysis (Pharmaceutical Firms) of model 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.223110	0.074584	2.991398	0.0046
INV_DAYS	-0.000340	0.000129	-2.640527	0.0116***
AIP	0.136015	0.051362	2.648177	0.0114**
AFP	-0.258933	0.087184	-2.969972	0.0049***
SIZE	0.002299	0.007762	0.296124	0.7686
GWCTR	0.000515	0.000396	1.298530	0.2012
R-squared	0.539006	Mean dependent var		0.152790
Adjusted R-squared	0.458864	S.D. dependent var		0.096294
S.E. of regression	0.077104	Akaike info criterion		-2.155771
Sum squared resid	0.249688	Schwarz criterion		-1.885511
Log-likelihood	59.81639	Hannan-Quinn criteria.		-2.053235
F-statistic	5.177851	Durbin-Watson stat		1.716289
Prob(F-statistic)	0.000293			

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of OLS for model 6 is shown in table 5.3.11 and 5.3.12, reveals that in the Pharmaceutical firms, both INV_DAYS and AFP have a negative and strong influence on firms' ROE where AIP has a positive and significant relationship with return on equity.

On the other hand, in the case of the Textile sector, INV_DAYS and SIZE has a negative and significant impact on ROE where both AFP has a positive influence on firms; return on equity.

Table: 5.3.12 Regression Analysis (Textile Firms) of model 6

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.120077	0.046554	2.579285	0.0113
INV_DAYS	-9.54E-05	4.11E-05	-2.319387	0.0224**
AIP	0.025335	0.034162	0.741625	0.4600
AFP	0.163415	0.036968	4.420463	0.0000***
SIZE	-0.014189	0.005436	-2.610021	0.0104**
GWCTR	-2.42E-06	1.59E-05	-0.151559	0.8798

R-squared	0.412513	Mean dependent var	0.077169
Adjusted R-squared	0.384642	S.D. dependent var	0.066662
S.E. of regression	0.064783	Akaike info criterion	-2.908254
Sum squared resid	0.203119	Schwarz criterion	-2.734412
Log-likelihood	146.0457	Hannan-Quinn criteria.	-2.837767
F-statistic	10.572428	Durbin-Watson stat	0.901467
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 7: $ROE_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROE

Table: 5.3.13 Regression Analysis (Pharmaceutical Firms) of model 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.200628	0.081538	2.460550	0.0184
APP	-2.23E-06	7.89E-06	-0.282728	0.7789
AIP	0.125320	0.057499	2.179509	0.0354**
AFP	-0.311163	0.095328	-3.264123	0.0023** *
SIZE	0.002701	0.008608	0.313761	0.7554
GWCTR	0.000801	0.000423	1.894429	0.0656

R-squared	0.412778	Mean dependent var	0.147606
Adjusted R-squared	0.346282	S.D. dependent var	0.096903
S.E. of regression	0.102437	Akaike info criterion	-2.014294
Sum squared resid	0.315039	Schwarz criterion	-1.736022
Log-likelihood	48.02875	Hannan-Quinn criteria.	-1.910051
F-statistic	3.863153	Durbin-Watson stat	1.307013
Prob(F-statistic)	0.004042		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The results of OLS for model 7 shown in table 5.3.13 and 5.3.14, reveal that only AIP and AFP have significant influence with ROE in the pharmaceuticals sector either positive or negative. But, in the case of Textile industry, both AFP have a positive and significant relationship with ROE where SIZE has a negative relationship with ROE.

Table: 5.3.14 Regression Analysis (Textile Firms) of model 7

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.073265	0.044973	1.629090	0.1065
APP	8.90E-05	5.39E-05	1.650559	0.1020
AIP	0.017940	0.035823	0.500808	0.6176
AFP	0.185122	0.036154	5.120367	0.0000***
SIZE	-0.011592	0.005595	-2.072080	0.0409**
GWCTR	-6.90E-06	1.64E-05	-0.419786	0.6756

R-squared	0.291446	Mean dependent var	0.076992
Adjusted R-squared	0.211738	S.D. dependent var	0.067249
S.E. of regression	0.055791	Akaike info criterion	-2.870078
Sum squared resid	0.305035	Schwarz criterion	-2.693147
		Hannan-Quinn	
Log-likelihood	157.6791	criteria.	-2.798382
F-statistic	8.850881	Durbin-Watson stat	0.990658
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 8: $ROE_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROE

Table: 5.3.15 Regression Analysis (Pharmaceutical Firms) of model 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.202522	0.082122	2.466104	0.0182
CCC	5.29E-07	8.24E-06	0.076371	0.9395
AIP	0.127189	0.057418	2.215156	0.0327**
AFP	-0.314337	0.095192	-3.302134	0.0021***
SIZE	0.002410	0.008663	0.278201	0.7823
GWCTR	0.000801	0.000423	1.894709	0.0656

R-squared	0.371586	Mean dependent var	0.147606
Adjusted R-squared	0.274907	S.D. dependent var	0.096903
S.E. of regression	0.082515	Akaike info criterion	-2.012396
Sum squared resid	0.265543	Schwarz criterion	-1.734124
Log-likelihood	53.28510	Hannan-Quinn criteria.	-1.908153
F-statistic	3.843502	Durbin-Watson stat	1.446637
Prob(F-statistic)	0.004171		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 8 is shown in table 5.3.15 and 5.3.16, which reveals that in the Pharmaceutical sector, only AIP and AFP have a significant influence on ROE.

But in the Textile industry, more factors are interlinked with ROE. AFP have a positive and strong impact on firms' ROE where CCC and Size have a negative and strong influence on ROE.

Table: 5.3.16 Regression Analysis (Textile Firms) of model 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.117680	0.044128	2.666811	0.0090
CCC	-9.15E-05	2.56E-05	-3.580000	0.0005***
AIP	0.011901	0.034207	0.347924	0.7286
AFP	0.144599	0.036813	3.927971	0.0002***
SIZE	-0.011816	0.005324	-2.219529	0.0288**
GWCTR	-4.33E-06	1.55E-05	-0.279259	0.7806

R-squared	0.410509	Mean dependent var	0.076992
Adjusted R-squared	0.374418	S.D. dependent var	0.067249
S.E. of regression	0.053190	Akaike info criterion	-2.965565
Sum squared resid	0.277256	Schwarz criterion	-2.788635
		Hannan-Quinn	
Log-likelihood	162.6922	criteria.	-2.893870
F-statistic	11.37421	Durbin-Watson stat	0.917685
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 9: $ROI_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (WCR) + \beta_5 (Log\ Sales) + \beta_6 (GWCTR) + \varepsilon$

Dependent variable: ROI

Table: 5.3.17 Regression Analysis (Pharmaceutical Firms) of model 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.227137	0.119507	-1.900619	0.0642
ACP	-0.000229	0.000162	-1.413022	0.1650
AIP	-0.312681	0.082162	-3.805686	0.0005***
AFP	0.013557	0.134442	0.100838	0.9202
SIZE	0.032373	0.012391	2.612561	0.0124**
GWCTR	0.000813	0.000611	1.330458	0.1905

R-squared	0.934810	Mean dependent var	0.216242
Adjusted R-squared	0.925497	S.D. dependent var	0.442916
S.E. of regression	0.120895	Akaike info criterion	-1.256223
Sum squared resid	0.613856	Schwarz criterion	-0.985963
Log-likelihood	37.77747	Hannan-Quinn criteria.	-1.153687
F-statistic	100.3779	Durbin-Watson stat	0.988384
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 9 is shown in table 5.3.17 and 5.3.18, which reveals that in the Textile industry, only ACP has an impact on firms' return on investment.

But in the Pharmaceutical sector, Size have a positive and significant impact on firms' ROI where AIP is also highly responsible for return on investments.

Table: 5.3.18 Regression Analysis (Textile Firms) of model 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015290	0.019772	0.773316	0.4412
ACP	-9.77E-05	3.49E-05	-2.806974	0.0136**
AIP	0.015415	0.016014	0.962597	0.3382
AFP	-0.016963	0.016340	-1.038140	0.3018
LOG(T_SALES)	0.003294	0.002502	1.316596	0.1911
GWCTR	5.17E-08	7.20E-06	0.007176	0.9943

R-squared	0.264583	Mean dependent var	0.036943
Adjusted R-squared	0.218620	S.D. dependent var	0.027755
S.E. of regression	0.024534	Akaike info criterion	-4.511988
Sum squared resid	0.057783	Schwarz criterion	-4.332929
		Hannan-Quinn	
Log-likelihood	239.3674	criteria.	-4.439463
F-statistic	5.756374	Durbin-Watson stat	1.083441
Prob(F-statistic)	0.000038		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 10: $ROI_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Dependent variable: ROI

Table: 5.3.19 Regression Analysis (Pharmaceutical Firms) of model 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.254163	0.118597	-2.143075	0.0379
INV_DAYS	-0.000180	0.000204	-0.882410	0.3826
AIP	-0.293640	0.081672	-3.595375	0.0008***
AFP	0.014936	0.138633	0.107738	0.9147
SIZE	0.035076	0.012343	2.841814	0.0069***
GWCTR	0.000714	0.000630	1.133809	0.2633

R-squared	0.932954	Mean dependent var	0.216242
Adjusted R-squared	0.923376	S.D. dependent var	0.442916
S.E. of regression	0.122604	Akaike info criterion	-1.228149
Sum squared resid	0.631334	Schwarz criterion	-0.957889
Log-likelihood	37.08966	Hannan-Quinn criteria.	-1.125613
F-statistic	97.40532	Durbin-Watson stat	1.335789
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 10 is shown in table 5.3.19 and 5.3.20, which indicates that in the Pharmaceutical firms, SIZE play a significant role to increase ROI where AIP is accountable for the rapid decrease of ROI.

In the Textile sector, both INV_days have a negative influence on ROI where AFP has a positive and significant relationship with ROI.

Table: 5.3.20 Regression Analysis (Textile Firms) of model 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.035357	0.019892	1.777490	0.0787
INV_DAYS	-6.51E-05	1.77E-05	-3.677274	0.0004***
AIP	0.027035	0.014603	1.851378	0.0672
AFP	-0.034429	0.016557	-2.079474	0.0402**
SIZE	0.001301	0.002336	0.557153	0.5787
GWCTR	-1.40E-06	6.81E-06	-0.205585	0.8376

R-squared	0.331726	Mean dependent var	0.036943
Adjusted R-squared	0.289959	S.D. dependent var	0.027755
S.E. of regression	0.023387	Akaike info criterion	-4.607727
Sum squared resid	0.052508	Schwarz criterion	-4.428668
		Hannan-Quinn	
Log-likelihood	244.2980	criteria.	-4.535202
F-statistic	7.942288	Durbin-Watson stat	1.210804
Prob(F-statistic)	0.000001		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 11: $ROI_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROI

Table: 5.3.21 Regression Analysis (Pharmaceutical Firms) of model 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.253584	0.120432	-2.105628	0.0417
APP	-7.85E-06	1.16E-05	-0.673905	0.5043
AIP	-0.309907	0.084926	-3.649137	0.0008***
AFP	-0.067940	0.140800	-0.482528	0.6321
SIZE	0.038959	0.012713	3.064389	0.0039***
GWCTR	0.000764	0.000624	1.224600	0.2281

R-squared	0.938289	Mean dependent var	0.222985
Adjusted R-squared	0.928795	S.D. dependent var	0.456298
S.E. of regression	0.121760	Akaike info criterion	-1.234268
Sum squared resid	0.578191	Schwarz criterion	-0.955997
		Hannan-Quinn	
Log-likelihood	35.38817	criteria.	-1.130026
F-statistic	98.83004	Durbin-Watson stat	0.986324
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 11 is shown in table 5.3.21 and 5.3.22, which indicates that in the Pharmaceuticals firms', AIP and AFP has a negative and significant impact with return on investments. On the contrary, in the Textile sector, only APP has a positive and significant impact on return on investments. Other indicators have a relationship with ROI but not significant.

Table: 5.3.22 Regression Analysis (Textile Firms) of model 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.006935	0.020073	0.345521	0.7305
APP	5.24E-05	2.41E-05	2.641498	0.0041**
AIP	0.024343	0.015998	1.521580	0.1315
AFP	-0.016110	0.016720	-0.963494	0.3378
LOG(T_SALES)	0.002492	0.002513	0.991655	0.3239
GWCTR	-3.64E-06	7.33E-06	-0.496259	0.6209

R-squared	0.261781	Mean dependent var	0.036991
Adjusted R-squared	0.214154	S.D. dependent var	0.028062
S.E. of regression	0.024876	Akaike info criterion	-4.482378
Sum squared resid	0.057551	Schwarz criterion	-4.300016
		Hannan-Quinn	
Log-likelihood	231.1189	criteria.	-4.408573
F-statistic	5.496486	Durbin-Watson stat	1.011737
Prob(F-statistic)	0.000066		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model 12: $ROI_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent variable: ROI

Table: 5.3.23 Regression Analysis (Pharmaceutical Firms) of model 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.254303	0.121426	-2.094292	0.0428
CCC	6.60E-06	1.22E-05	0.542069	0.5909
AIP	-0.307464	0.084898	-3.621579	0.0008***
AFP	-0.072032	0.140751	-0.511764	0.6117
SIZE	0.038871	0.012810	3.034509	0.0043***
GWCTR	0.000769	0.000625	1.230167	0.2260

R-squared	0.938037	Mean dependent var	0.222985
Adjusted R-squared	0.928505	S.D. dependent var	0.456298
S.E. of regression	0.122008	Akaike info criterion	-1.230197
Sum squared resid	0.580549	Schwarz criterion	-0.951925
Log-likelihood	35.29453	Hannan-Quinn criteria.	-1.125955
F-statistic	98.40206	Durbin-Watson stat	1.062074
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 12 is shown in table 5.3.23 and 5.3.24, which indicates that in the Pharmaceuticals firms', AIP has a negative and significant relationship with return on investments where SIZE shows positive and crucial influence on profitability (ROI).

In the Textile sector, CCC has a negative and significant relationship with ROI where AFP has a negative and significant relationship with return on investments.

Table: 5.3.24 Regression Analysis (Textile Firms) of model 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.028463	0.019318	1.473350	0.1440
CCC	-4.54E-05	1.12E-05	-4.037938	0.0001***
AIP	0.021397	0.014990	1.427370	0.1568
AFP	-0.038448	0.016807	-2.287647	0.0244**
SIZE	0.002538	0.002348	1.080969	0.2825
GWCTR	-2.51E-06	6.78E-06	-0.370809	0.7116

R-squared	0.353703	Mean dependent var	0.036991
Adjusted R-squared	0.312006	S.D. dependent var	0.028062
S.E. of regression	0.023276	Akaike info criterion	-4.615358
Sum squared resid	0.050385	Schwarz criterion	-4.432997
		Hannan-Quinn	
Log-likelihood	237.7679	criteria.	-4.541553
F-statistic	8.482772	Durbin-Watson stat	1.244307
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model – ROI_13:

$GOI_{(ACP)} = \beta_0 + \beta_1 (ACP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent Variable: GOI

Table: 5.3.25 Regression Analysis (Pharmaceutical Firms) of model 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-51725.17	20217.06	-2.558492	0.0141
ACP	14.62844	27.45078	0.532897	0.5968
AIP	33323.05	13023.79	2.558629	0.0141**
AFP	-6014.272	16479.32	-0.364959	0.7169
SIZE	11843.65	4713.329	2.512799	0.0158**
GWCTR	-21.43589	103.5841	-0.206942	0.8370
R-squared	0.208780	Mean dependent var		7910.102
Adjusted R-squared	0.116778	S.D. dependent var		21946.93
S.E. of regression	20625.70	Akaike info criterion		22.82074
Sum squared resid	1.83E+10	Schwarz criterion		23.05239
Log likelihood	-553.1082	Hannan-Quinn criter.		22.90863
F-statistic	2.269291	Durbin-Watson stat		2.331012
Prob(F-statistic)	0.064429			

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 13 is shown in table 5.3.25 and 5.3.26, AIP has a positive and significant relationship with GOI where SIZE also shows a positive and significant relationship with GOI in the Pharmaceutical sector. On the contrary, in the Textile sector, only SIZE has a positive and strong relationship with GOI.

Table: 5.3.26 Regression Analysis (Textile Firms) of model 13

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-835.1779	242.1189	-3.449454	0.0008
ACP	-0.743135	0.424843	-1.749198	0.0833
AIP	-266.7863	191.4699	-1.393359	0.1665
AFP	-348.3970	178.2115	-1.954964	0.0533
SIZE	489.1295	69.37555	7.050460	0.0000***
GWCTR	-0.014297	0.088291	-0.161935	0.8717
R-squared	0.361645	Mean dependent var		405.9722
Adjusted R-squared	0.330353	S.D. dependent var		367.7132
S.E. of regression	300.9069	Akaike info criterion		14.30543
Sum squared resid	9235584.	Schwarz criterion		14.45444
Log likelihood	-766.4933	Hannan-Quinn criter.		14.36585
F-statistic	11.55714	Durbin-Watson stat		1.368530
Prob(F-statistic)	0.000000			

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model – GOI_14:

$GOI_{(Inv\_Days)} = \beta_0 + \beta_1 (Inv\_Days) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Dependent Variable: GOI

Table: 5.3.27 Regression Analysis (Pharmaceutical Firms) of model 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-47461.12	19720.38	-2.406704	0.0205
INV_DAYS	-8.972269	34.48256	-0.260197	0.7960
AIP	31749.73	12878.39	2.465349	0.0178**
AFP	-3852.083	17329.84	-0.222280	0.8251
SIZE	11286.71	4662.044	2.420980	0.0198**
GWCTR	-26.03280	105.6566	-0.246391	0.8066
R-squared	0.204807	Mean dependent var		7910.102
Adjusted R-squared	0.112342	S.D. dependent var		21946.93
S.E. of regression	20677.42	Akaike info criterion		22.82575
Sum squared resid	1.84E+10	Schwarz criterion		23.05740
Log likelihood	-553.2309	Hannan-Quinn criter.		22.91364
F-statistic	2.214981	Durbin-Watson stat		2.330836
Prob(F-statistic)	0.070107			

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 14 is shown in table 5.3.27 and 5.3.28, AIP and SIZE, both have a positive and significant impact on gross operating income in the Pharmaceutical sector. But in the context of Textile companies, only SIZE has a positive impact on firms' performance.

Table: 5.3.28 Regression Analysis (Textile Firms) of model 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-813.9154	258.3604	-3.150310	0.0021
INV_DAYS	-0.208298	0.224004	-0.929888	0.3546
AIP	-165.4492	184.5324	-0.896586	0.3721
AFP	-340.6569	186.6198	-1.825406	0.0709
SIZE	453.2899	69.15072	6.555101	0.0000***
GWCTR	-0.033679	0.088484	-0.380623	0.7043

R-squared	0.348023	Mean dependent var	405.9722
Adjusted R-squared	0.316064	S.D. dependent var	367.7132
S.E. of regression	304.1004	Akaike info criterion	14.32655
Sum squared resid	9432660.	Schwarz criterion	14.47555
Log likelihood	-767.6335	Hannan-Quinn criter.	14.38696
F-statistic	10.88947	Durbin-Watson stat	1.334211
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model – GOI_15:

$GOI_{(App)} = \beta_0 + \beta_1 (APP) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5 (GWCTR) + \varepsilon$

Dependent Variable: GOI

Table: 5.3.29 Regression Analysis (Pharmaceutical Firms) of model 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-52429.48	20666.00	-2.536993	0.0152
APP	0.428432	2.028640	0.211192	0.8338
AIP	36034.23	13912.77	2.590011	0.0133**
AFP	-5133.734	17625.55	-0.291267	0.7724
SIZE	11961.70	4950.548	2.416237	0.0203**
GWCTR	-24.40805	108.2828	-0.225410	0.8228

R-squared	0.220001	Mean dependent var	7972.370
Adjusted R-squared	0.122501	S.D. dependent var	22644.49
S.E. of regression	21212.20	Akaike info criterion	22.88365
Sum squared resid	1.80E+10	Schwarz criterion	23.12217
Log likelihood	-520.3239	Hannan-Quinn criter.	22.97300
F-statistic	2.256427	Durbin-Watson stat	1.347302
Prob(F-statistic)	0.067212		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 15 is shown in table 5.3.29 and 5.3.30, both the AIP and firm SIZE has a positive impact on gross operating income in the pharmaceutical sector. In the Textiles, only SIZE has a positive and significant impact on gross operating income.

Table: 5.3.30 Regression Analysis (Textile Firms) of model 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-887.9978	248.1236	-3.578853	0.0005
APP	-0.153021	0.297641	-0.514112	0.6083
AIP	-145.7297	192.3609	-0.757584	0.4505
AFP	-270.1533	185.5460	-1.455991	0.1486
SIZE	459.8870	70.67035	6.507495	0.0000***
GWCTR	-0.028242	0.090710	-0.311341	0.7562

R-squared	0.339926	Mean dependent var	413.4762
Adjusted R-squared	0.306589	S.D. dependent var	369.9656
S.E. of regression	308.0753	Akaike info criterion	14.35401
Sum squared resid	9396126.	Schwarz criterion	14.50567
Log likelihood	-747.5856	Hannan-Quinn criter.	14.41546
F-statistic	10.19662	Durbin-Watson stat	1.250249
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

Model – GOI_16:

$GOI_{(CCC)} = \beta_0 + \beta_1 (CCC) + \beta_2 (AIP) + \beta_3 (AFP) + \beta_4 (Log\ Sales) + \beta_5(GWCTR) + \varepsilon$

Dependent Variable: GOI

Table: 5.3.31 Regression Analysis (Pharmaceutical Firms) of model 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-52316.30	20801.83	-2.514986	0.0160
CCC	-0.400762	2.117106	-0.189297	0.8508
AIP	35947.21	13883.21	2.589257	0.0133**
AFP	-5003.396	17573.31	-0.284716	0.7773
SIZE	11954.95	4978.994	2.401078	0.0211**
GWCTR	-24.68547	108.2988	-0.227938	0.8209

R-squared	0.219830	Mean dependent var	7972.370
Adjusted R-squared	0.122309	S.D. dependent var	22644.49
S.E. of regression	21214.52	Akaike info criterion	22.88387
Sum squared resid	1.80E+10	Schwarz criterion	23.12239
Log likelihood	-520.3289	Hannan-Quinn criter.	22.97322
F-statistic	2.254182	Durbin-Watson stat	1.348235
Prob(F-statistic)	0.067444		

Note: ****,**,* indicates 1%,5%, and 10% significant*

The result of the OLS for model 16 is shown in table 5.3.31 and 5.3.32, both the AIP and firm SIZE has a positive impact on gross operating income in the pharmaceutical sector. In the Textiles, only SIZE has a positive and significant impact on gross operating income.

Table: 5.3.32 Regression Analysis (Textile Firms) of model 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-834.1188	254.6471	-3.275587	0.0015
CCC	-0.145398	0.146350	-0.993496	0.3229
AIP	-167.3353	192.4660	-0.869428	0.3867
AFP	-369.4139	195.0562	-1.893885	0.0612
SIZE	462.6842	70.25797	6.585505	0.0000
GWCTR	-0.037938	0.089380	-0.424465	0.6721

R-squared	0.344697	Mean dependent var	413.4762
Adjusted R-squared	0.311601	S.D. dependent var	369.9656
S.E. of regression	306.9598	Akaike info criterion	14.34676
Sum squared resid	9328209.	Schwarz criterion	14.49841
Log likelihood	-747.2047	Hannan-Quinn criter.	14.40821
F-statistic	10.41502	Durbin-Watson stat	1.272036
Prob(F-statistic)	0.000000		

Note: ****,**,* indicates 1%,5%, and 10% significant*

CHAPTER – SIX

FINDINGS, CONCLUSION, SUGGESTION AND FUTURE DIRECTIONS

CHAPTER – SIX
FINDINGS, CONCLUSION, SUGGESTION AND FUTURE DIRECTIONS

This chapter is divided into four parts. First section concludes the major findings of the study, second section provides conclusion, afterwards suggestions relating to pharmaceuticals and textile industry in relation to working capital management of Bangladesh and final section deals in future directions for the research.

6.1 Findings of the Study

By analyzing descriptive statistics, it is found that the variation of return on assets (ROA) is high for the Pharmaceutical sector than the Textile sector. The same outcomes are also applicable to the return on equity, average inventory in days, average collection period, Average Payable Period, and Cash Conversion Cycle. It concludes that in the Pharmaceutical sector, the procedure and length are not the same as the Textile sector. Because some top companies are gaining significant competitive advantage over other companies. The nature, size, and procedure of working capital management are not same among Pharmaceutical firms. In the Textiles, standard deviation is close to the average in almost all selected variables, meaning that the market is efficient and all the companies have almost similar nature, size, and procedure.

Befor going to the regression analysis, some pre-test has been tested such as multicollinearity, heteroskedasticity, and autocorrelation. As the nature of the companies are not same as each other, heteroskedasticity occurs in some cases. After going through all these pre-tests of the certain assumptions for the regression analysis, then this study empirically investigates

whether the factors are determining the working capital management decision in the Pharmaceutical and Textile companies.

Regression analysis indicating that if the aggressive financial policy of the Pharmaceutical industry is increasing, the return on assets will be decreased substantially where gross working capital turnover Ratio has positive and significant relationship with return on assets in both the Pharmaceutical and Textile sector, meaning that the higher the working capital, the higher will be returned on assets. In addition, in the Textile industry, inventory days have a strong influence on firms' return on equity and average payback period plays a key role to increase the firms' return on assets. In some cases, it is found that cash conversion has a significant impact on Textile's return on assets but it does not have strong influence on the Pharmaceuticals.

This study also suggests that in the Textile sector, both aggressive financing policy and working capital have a positive and strong impact on ROE, meaning that if the firms of the textiles increase their aggressive financing policy and working capital then their return on equity will also be increased. But average collection period shows negative and significant relationship with return on equity in the Textiles, meaning that the higher the time it will take to collect, the lower will be the return on equity. In the case of Pharmaceutical firms, it is found that average investment policy has a positive and significant influence on firms' ROE where the coefficient with AFP is negative and significant. This result suggests that if the Pharmaceutical companies increase their investment policy, their return on equity will also be increased significantly. But if they increase aggressive financing policy, their return on equity also be declined. Inventory days is also vital for consideration to increase the return on equity in both the Pharmaceutical and Textile sectors because it has a positive and

significant relationship with return on equity. Sometimes company size becomes an important factor for the Textile industry as it has a strong influence on firms' return on equities. The results of OLS also reveal that average investment policy and aggressive financing policy have significant influence with ROE in the pharmaceuticals sector either positive or negative. In the case of return on equity, it can be concluded that both the sectors have different factors by which their return on equity is affected.

From the regression analysis, it is found that in the Pharmaceutical sector, working capital and size have a positive and significant impact on firms' return on investments (ROI) where investment policy is also highly responsible for return on investments. These findings demonstrate that if the Pharmaceutical sector increases its working capital as well as their company size, their return on investments will also be increased. It is also necessary to increase the investment policy effectively to get more return on investments. In the Textile sector, inventory days and working capital have a negative influence on return on investments where aggressive financing policy has a positive and significant relationship with return on investments. The outcomes reveal that If the firm from the textile sector increases their working capital, the return on investments will be decreased which is opposed to the Pharmaceutical companies. In the Textile sector, cash conversion cycle has a negative and significant relationship with return on investments, meaning that the more time the textile sector will take to convert their cash, the lower their return on investments. Overall, as it seen from the reveals that both the Pharmaceutical and Textile sector has lots of variation in case of profitability. The effects of some factors on the profitability are not same as these sectors. Diffeent variables affect these sectors differently. Gross operating income is also taken to measure the impacts. In the Pharmaceutical industry, it is found that both AIP and SIZE has a strong impact on firms

performance. On the other hand, in the context of Textile sector, the results suggest that only firm SIZE has an indispensable impact on firms gross operating income (GOI).

6.2 Conclusion

Finally, the study has come to the end and it has been observed that the financial decision regarding working capital management is very significant for the firms especially for manufacturing industry because of the direct influences between liquidity and profitability. Bangladesh is a developing country and the most manufacturing sector's assets are in the form of current assets and their current liabilities are one of the main sources of external finance. Therefore, the efficient management of working capital is crucial for manufacturing sectors. In the words of Walker, "A firm's profitability is determined in part by the way its working capital is managed." So, keeping in view of the importance of working capital management, the present study puts an effort to understand the impact of working capital management on profitability of some Pharmaceutical and Textile firms. Most of the previous empirical studies have concentrated on working capital management of different manufacturing firms. While few empirical research works have covered working capital management of Pharmaceutical and Textile sector. The dearth of theoretical and empirical evidence on the subject-matter has motivated the researcher to undertake this study. Thus the study contributes to the existing literature by analyzing the impact of working capital management on the performance of these two sectors. In modern conditions of economic development for enterprises in the pharmaceuticals and textile industry the use of working capital is of great importance. Working capital is a sum of funds invested in production operations, which is necessary to support each production cycle. The volume of output is

affected by the presence of certain volumes of working capital, which the enterprise has. Consequently, the topic of using working capital is relevant to modern industrial enterprises, including Pharmaceutical and Textile enterprises

Prior studies have analyzed the impact of working capital components on profitability, thus neglecting the other important variables like aggressive financing policy, aggressive investment policy, liquidity, etc. Therefore, the present study contributes to the existing literature by analyzing the impact of working capital components, working capital policies and liquidity on the profitability of the sample firms. Average Collection Period, Average Inventories Days, Average payable Period and Cash Conversion Cycle have been used to measure working capital components. Aggressive investment policy and aggressive financing policy have been used to measure working capital policies. All the variables incorporated in this study are quantitative in nature while as, qualitative variables like managerial attitude, corporate culture, business strategies, have been neglected in this study thus poses limitation to the present study. Moreover, control variables are also used in econometric models to get better insight into results. The study identifies size i.e. Log of sales and Gross Working Capital Turnover Ratio as firm-specific control variable is used.

To achieve the second objective of the study i.e. to empirically investigate the effects of working capital components on the profitability of Pharmaceutical and Textile companies, the econometric regression of working capital components has been regressed against profitability (ROA,ROE,ROI, and GOI). To test the hypothesis ($H_{1,}H_{5,}H_{9,\text{ and }}H_{13}$), the econometric models' Average Collection Period with Profitability ROA in model 1, ROE in the model 5, ROI in the model 9, and GOI in the model 13 has been run along with other explanatory variables and control variables. The findings revealed a negative and insignificant relationship

between the Average Collection Period and profitability (ROA) in case of the Pharmaceutical sector where Textile sector has positive and significant relationship in model 1. In model 5, again Textile sector has a significant relationship with ROE where the Pharmaceutical sector shows weak influence on ROE. In model 9, both in the Pharmaceutical and Textile sector, ACC has a weak relationship with ROI. In model 13, SIZE has a positive relationship with ROA in both sectors. Overall, it is found that ACC has a significant relationship with ROA and ROE in the Textiles where it has no impact on pharmaceutical firms' profitability.

The result of the hypotheses ($H_{2,}$ $H_{6,}$ $H_{10,}$ and H_{14}) reveals a negative relationship of Average inventory days with the profitability (ROA,ROE,ROI, and GOI) of firms. The finding clearly indicates that the Pharmaceutical firms are failed to maintain good inventory level to meet the market demands (except with ROE) where the Textile firms maintained a good inventory level to meet the market demands (significant with all three profitability indicators).

Testing the hypothesis ($H_{3,}$ $H_{7,}$ $H_{11,}$ and H_{15}) of the study, The relation between Average Payable Period and profitability in both sectors discloses that Average Payable Period does not affect the firms' performance at all, showed insignificant relationship in models.

Furthermore, considering collectively the Average Collection Period and Average Inventories days after reducing Average Payable Period, the cash conversion cycle is computed in the study. In the Textile sector, CCC has a positive and significant relationship with return on assets where it shows negative and strong relationship with return on equity and return on investments. On the other hand, in the case of pharmaceutical firms', CCC has insignificant relationship with return on assets, return onequity, and return on investments.

Overall, The results revealed that Pharmaceutical firms' are less aggressive investment policy. The result of the aggressive investment policies further suggests that these sample

firms can increase their profitability by lowering the ratio of total current assets upon total assets. Lower the ratio of total current assets upon total asset, greater would be the aggressiveness of investing policy. As far as aggressive financing policies are concerned, the variables of AIP and AFP have been kept in all the models and thus some of the hypotheses are significant and some of them are insignificant. The result has been discussed in the previous chapter as per their reports. The overall finding revealed that sample firms adopt aggressive financing policy. The study fulfills the fourth objective by investigating the relationship between the liquidity and profitability of the firm. The variable, GWCTR measures the liquidity position of the sample firms and the result revealed that both the Pharmaceutical and Textile firms' can enhance the profitability by increasing the liquidity of the firms. The finding provides the information that these firms are not maintaining good liquidity position which also supported by a shorter cash conversion cycle of the sample firms. Finally, attaining the last objectives of the study, suggestions for efficient management of working capital are provided in the following section.

6.3 Suggestions

The area of research on working capital management of firms has grown gradually, generally in the context of Pharmaceutical and Textile firms in Bangladesh. However, the evidence regarding the impact of working capital management on profitability derived from the studies carried out in developed economies may not fit the firms in Bangladeshi institutional context due to the variations between different economic and financial orientations, ownership types, geographical areas, industries and temporal periods. Moreover, the limitations of those studies that currently exist and the dearth of literature on subject matter from the Bangladeshi

perspective have provided incentive for this kind of research. Therefore in line with these observations, the current research has been undertaken that has produced a set of results. It has helped to reveal much about the nature of working capital management of Pharmaceutical and Textile firms in Bangladesh. These findings could also be exploited in any situation where prediction of outcome is needed. The result of the present study can also be applied consciously to another similar type of industry.

Pharmaceutical firms are suggested to negotiate with the suppliers for the discount facilities by making early payments. The firms can use amount of discount as a source of short-term finance. It is also suggested to Textile firms to adopt moderate aggressive investment policy to increase the profitability of the firms. This is also confirmed from the results of liquidity variables that revealed firms' profitability can be enhanced by increasing liquidity.

However, both the Textile and Pharmaceuticals must ensure profitability and liquidity trade-off, otherwise too much of cash locked up in working capital affect the firm's profitability and consequently overall value of firms.

It is also suggested that Pharmaceutical firms should adopt aggressive financing policies to enhance profitability. This is confirmed from the results of AFP variable that revealed sample firms mainly depend upon the internal sources of finance because of difficulty in assessing short-term finance. Therefore they are mainly dependent upon the short-term capital. Industries differ by their working capital requirements and these differences are determined by inter-industry heterogeneity in terms of nature, size, assets, inventory, turnover, growth,

risk, etc. Therefore, it is recommended that managers should use the industry's working capital ratio as a benchmark for taking working capital management decisions for firms.

This study also recommends management to devise working capital policies concerning changing the external environment. This requires flexibility in the firm's working capital policies to adapt changes accordingly.

Firm should also require proper cash forecasting by preparing cash budget, which helps to regulate the cash inflows and outflows of the firms. Thus, by managing cash flows, idle fund can be used to fulfil the working capital requirements of the firms.

In order to gain suitable competitive advantage by means of effective and efficient utilization of resources of the firms, the study recommends hiring of professionals managers who would give careful thought to reduce the cash conversion cycle to its minimum. Firms should also require proper cash forecasting by preparing cash budget, which helps to regulate the cash inflows and outflows of the firms. Thus, by managing cash flows, idle funds can be used to fulfill the working capital requirements of the firms.

6.4 Direction for Future Research

Working capital management is important for medicine and dress producing companies as their assets are mostly in the form of current assets and current liabilities. Working capital management is also a source of internal finance for pharmaceuticals and textile industry. The impact of working capital management on all manufacturing companies as well as on the service organization can be examined in the future.

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APPENDIX

Appendix-A

Table A1: Ownership Form of Pharmaceutical Industry

Ownership Form				
Variable	Frequency	Percent	Valid Percent	Cumulative Percent
Private Limited	20	25.0	30.8	30.8
Public Limited	25	31.3	38.5	69.2
Foreign Ownership	20	25.0	30.8	100.0
Total	65	81.3	100.0	

Table A2: Location of the Firm of Pharmaceutical Industry

Location of the Firm				
Variable	Frequency	Percent	Valid Percent	Cumulative Percent
Industrial Area	20	25.1	23.1	23.1
Non-Industrial Area	45	56.3	69.2	92.3
Total	65	81.3	100.0	

Table A3: Category Status of Pharmaceutical Industry

Category Status				
	Frequency	Percent	Valid Percent	Cumulative Percent
A	55	68.8	84.6	84.6
B	5	6.3	7.7	92.3
N	5	6.3	7.7	100.0
Total	65	81.3	100.0	

Table A5: Ownership Form of Textile Industry

Ownership Form				
	Frequency	Percent	Valid Percent	Cumulative Percent
Private Limited	10	7.1	9.1	9.1
Public Limited	100	71.4	90.9	100.0
Total	110	78.6	100.0	

Table A6: Location of the Firm of Textile Industry

Location of the Firm				
	Frequency	Percent	Valid Percent	Cumulative Percent
Industrial Area	80	57.1	72.7	72.7
Non-Industrial Area	30	21.4	27.3	100.0
Total	110	78.6	100.0	

Table A7: Category Status of Textile Industry

Category Status				
	Frequency	Percent	Valid Percent	Cumulative Percent
A	85	60.7	77.3	77.3
B	25	17.9	22.7	100.0
Total	110	78.6	100.0	

Table A8: Force to Practice EARPs of Textile Industry

Force to Practice EARPs				
	Frequency	Percent	Valid Percent	Cumulative Percent
Government Regulation	5	3.6	4.5	4.5
Societal Pressure	15	10.7	13.6	18.2
Organizational Concerns	40	28.6	36.4	54.5
No Practice	50	35.7	45.5	100.0
Total	110	78.6	100.0	

Appendix-B

Table C1: Data Presentation ACI of Pharmaceuticals Ltd.

ACI Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	12395.6	11672.47	10795.23	10469.03	5891.21
NIAT	1317	1244	680	3184	951
EPS	27.33	25.8	15.51	72.72	24.02
ROI (%)	3.69	4.60	3.22	16.45	6.13
ROA (%)	4.03	5.07	3.61	18.71	6.67
ROE (%)	9.21	9.58	5.69	27.18	14.39
GOI	9241	10090	15536	9870	8670
Total Assets	32713	24560	18840	17017	14250
Total Investment	35687.11	27056.09	21106.36	19358.42	15526.51
Total Debt	21387.11	14064.09	9157.36	7643.42	8919.51
Total Shareholder equity	14300	12992	11949	11715	6607
Current Liabilities	20317.4	12887.53	8044.77	6547.97	8358.79
Paid-up Capital	4820	4380	3980	3980	3440

Table C2: Data Presentation of ACMELAB Pharmaceuticals Ltd.

ACMELAB Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	13260.3	20631.96	-56676.8	16277.74	13750.3
NIAT	1426.57	1397.85	1101.27	921.92	893.89
EPS	6.74	6.61	6.55	5.7	5.65
ROI (%)	4.37	4.67	3.81	3.96	4.03
ROA (%)	6.04	4.67	3.81	3.96	4.03
ROE (%)	8.08	8.24	6.73	8.11	8.36
GOI	5876	5460	5230	4980	4350
Total Assets	23624	29947	28890	23260	22180
Total Investment	32624.24	29947.23	28889.71	23259.77	22179.6
Total Debt	14979.21	12990.95	12525.24	11887.14	11487.4
Total Shareholder equity	17645.03	16956.28	16364.47	11372.63	10692.2
Current Liabilities	10363.7	9315.04	85566.79	6982.26	8429.73
Paid-up Capital	2116	2116	2116	2116	1616

Table C3: Data Presentation of Beacon Pharmaceuticals Ltd.

Beacon Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	3575.74	3967.95	3863.93	3611.42	3527.75
NIAT	126.1	103.73	61.4	38.56	24.23
EPS	0.55	0.45	0.27	0.17	0.1
ROI (%)	2.57	2.03	1.22	0.81	0.53
ROA (%)	2.57	2.03	1.22	0.81	0.53
ROE (%)	4.20	3.47	2.04	1.33	0.85
GOI	1833	1567	1430	1320	1007
Total Assets	4908.41	5105.98	5014.6	4738.7	4589.83
Total Investment	4908.41	5105.99	5015.42	4738.7	4589.82
Total Debt	1907.67	2114.68	2012.51	1832.57	1722.44
Total Shareholder equity	3000.74	2991.31	3002.91	2906.13	2867.38
Current Liabilities	1332.67	1138.03	1150.67	1127.28	1062.08
Paid-up Capital	2310	2310	2310	2310	2310

Table C4: Data Presentation of Beximco Pharmaceuticals Ltd

Beximco Pharmaceuticals Ltd					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	108181.3	101989.8	28166.34		24292.77
NIAT	1320.9	1026.21	2948.05		1528.3
EPS	1.55	1.23	7.63		3.96
ROI (%)	1.08	0.86	9.46		5.26
ROA (%)	1.08	0.86	9.46		5.27
ROE (%)	2.08	1.64	12.78		7.28
GOI	8286	7890	7610		6710
Total Assets	122746.3	119961.2	31148.91		29000.52
Total Investment	122746.3	119961.2	31148.91		29070.52
Total Debt	59372.99	57455.92	8089.5		8080.34
Total Shareholder equity	63373.3	62505.28	23059.41		20990.18
Current Liabilities	14565.05	17971.4	2982.57		4707.75
Paid-up Capital	8319.96	7923.76	3862.44		3678.52

Table C5: Data Presentation of GlaskoSmithklin Pharmaceuticals Ltd.

GlaskoSmithklin Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	1103.46	2650.59	2592.11	2653.44	2455.21
NIAT	-635.48	669.3	644.55	831.08	826.79
EPS	-52.75	55.56	53.51	68.99	68.63
ROI (%)	-0.49	10.72	12.06	14.94	16.44
ROA (%)	-14.59	10.72	12.06	14.94	16.44
ROE (%)	-0.51	25.45	24.93	31.92	35.69
GOI	2635	2567	2210	1980	1872
Total Assets	4356.8	6243.82	5342.81	5563.31	5028.32
Total Debt	3102.71	3613.47	2757.01	2959.5	2711.83
Total Investment	128511.7	6243.82	5342.81	5563.3	5028.33
Current Liabilities	3253.34	3593.23	2750.7	2909.87	2573.11
Total Shareholder equity	125409	2630.35	2585.8	2603.8	2316.5
Paid-up Capital	120.46	120.46	120.46	120.46	120.46

Table C6: Data Presentation of IBNSINA Pharmaceuticals Ltd.

IBNSINA Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	1379.2	1428.21	1146.21	1081.12	794.23
NIAT	127.29	178.06	202.81	233.83	452.3
EPS	5.67	7.21	7.85	8.23	5.95
ROI (%)	5.52	2.05	11.72	14.47	37.84
ROA (%)	5.21	8.26	11.72	14.47	37.84
ROE (%)	10.37	16.11	23.33	28.07	66.58
GOI	1892	1650	1540	1341	1190
Total Assets	2441.74	2154.82	1730.96	1615.84	1195.18
Total Debt	1077.72	7589.33	861.52	782.89	515.83
Total Investment	2304.93	8694.29	1730.95	1615.85	1195.17
Current Liabilities	1062.54	726.61	584.75	534.72	400.95
Total Shareholder equity	1227.21	1104.96	869.43	832.96	679.34
Paid-up Capital	284.03	258.21	224.53	224.53	213.84

Table C7: Data Presentation of Silva Pharmaceuticals Ltd.

Silva Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	1801.77	1733.82	1414.68	1017.66	848.97
NIAT	92.99	80.27	74.72	51.96	49.32
EPS	0.93	1.03	1.24	1.06	1.00
ROI (%)	4.65	4.14	5.03	5.11	4.86
ROA (%)	4.65	4.14	4.56	4.21	4.46
ROE (%)	5.44	4.87	6.88	8.36	7.82
GOI	414	397	386	360	334
Total Assets	2001.75	1941.16	1638.89	1234.01	1104.91
Total Debt	291.2	293.37	399.52	394.29	383.97
Total Investment	2001.76	1941.16	1484.89	1016.07	1014.9
Current Liabilities	199.98	207.34	224.21	216.35	255.94
Total Shareholder equity	1710.56	1647.79	1085.37	621.78	630.93
Paid-up Capital	1000	1000	500	120	120

Table C08: Data Presentation of Pharma Aid Pharmaceuticals Ltd.

Pharma Aid Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	192.33	158.3	132.44	116.77	99.1
NIAT	47.01	29.57	24.7	26.81	17.4
EPS	15.07	9.48	7.52	8.16	5.58
ROI (%)	18.11	13.31	11.89	14.29	10.02
ROA (%)	18.11	13.31	11.89	14.29	10.07
ROE (%)	24.78	19.14	18.65	22.96	17.40
GOI	90	67	53	56	49
Total Assets	259.65	222.16	207.67	187.67	172.8
Total Debt	69.92	67.66	75.23	70.9	73.7
Total Investment	259.65	222.19	207.68	187.67	173.7
Current Liabilities	67.32	63.86	75.23	70.9	73.7
Total Shareholder equity	189.73	154.53	132.45	116.77	100
Paid-up Capital	31.2	31.2	31.2	31.2	31.2

Table C09: Data Presentation of Renata Pharmaceuticals Ltd.

Renata Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	16336.36	13707.77	11740.07	10486.56	9279.39
NIAT	3196.96	2612.14	1143.35	2006.64	1710.86
EPS	45.65	37.3	16.33	28.65	24.43
ROI (%)	15.36	14.41	6.86	12.43	11.80
ROA (%)	15.36	14.41	6.82	12.44	11.80
ROE (%)	21.13	20.94	10.95	21.33	22.07
GOI	9346	8761	7676	7009	6540
Total Assets	20811.67	18124.34	16760.35	16133.77	14493.57
Total Debt	5684.52	5649.81	6217.27	6731.92	6742.86
Total Investment	20811.68	18124.35	16660.35	16137.78	14493.57
Current Liabilities	4475.31	4416.57	5020.28	5647.21	5214.18
Total Shareholder equity	15127.16	12474.54	10443.08	9405.86	7750.71
Paid-up Capital	7000.31	608.97	529.54	529.54	441.28

Table C10: Data Presentation of Square Pharmaceuticals Ltd.

Square Pharmaceuticals Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	59072.61	50069.61	40145.79	32781.85	28651.53
NIAT	11606.19	10647.79	10718.12	6869.89	4946.21
EPS	15.72	14.43	17.18	11.02	10.26
ROI (%)	206.08	181.95	143.22	102.84	73.92
ROA (%)	18.94	20.31	25.02	19.44	15.93
ROE (%)	20.07	21.72	28.17	22.02	18.50
GOI	18268	17651	13726	11209	9870
Total Assets	61273.01	52431.05	42836.97	35330.86	31046.07
Total Debt	3431.53	3490.68	4792.37	4131.28	4297.12
Total Investment	5631.93	5852.12	7483.55	6680.29	6691.66
Current Liabilities	2200.4	2361.44	2691.18	2549.01	2394.54
Total Shareholder equity	57816.57	49027.77	38044.96	31201.25	26739.58
Paid-up Capital	7373.91	6859.45	6235.86	5542.99	4819.99

Table C11: Data Presentation of Al-Haj Textile Mills Limited

Al-Haj Textile Mills Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	398.08	398.52	376.17	359.07	342.8
NIAT	9.67	32.00	25.64	19.26	20.45
EPS	0.48	1.58	1.53	1.15	1.68
ROI (%)	1.67	5.78	4.94	3.87	4.21
ROA (%)	1.67	5.78	4.94	3.87	4.21
ROE (%)	3.85	12.78	11.30	9.22	10.83
GOI	17	42	41	41	30
Total Assets	579.62	553.28	519.43	497.75	486.21
Total Debt	328.64	302.81	292.59	288.94	297.38
Total Investment	579.63	553.28	519.43	497.75	486.21
Current Liabilities	181.54	154.76	143.26	138.68	143.41
Total Shareholder equity	250.99	250.47	226.84	208.81	188.83
Paid-up Capital	202.71	184.29	167.53	152.3	126.92

Table C12: Data Presentation of Anlimayarn Deying Ltd.

Anlimayarn Deying Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	230.63	231.13	419.21	433.37	397.45
NIAT	9.85	10.01	19.99	19.53	18.63
EPS	0.55	0.56	1.12	1.09	1.04
ROI (%)	2.31	2.28	4.71	4.30	4.08
ROA (%)	2.31	2.28	4.71	4.30	4.08
ROE (%)	4.99	5.08	9.94	9.03	8.66
GOI	32	32	44	45	47
Total Assets	426.21	439.5	639.21	635.39	635.29
Total Debt	228.67	242.35	223.45	237.89	241.81
Total Investment	426.23	439.5	424.6	454.12	456.87
Current Liabilities	195.58	208.37	220	202.02	237.84
Total Shareholder equity	197.56	197.15	201.15	216.23	215.06
Paid-up Capital	178.68	178.68	178.68	178.68	178.68

Table C13: Data Presentation of Apex Spinning & Knitting Mills Limited

Apex Spinning & Knitting Mills Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	465.54	447.13	437.96	422.18	419.13
NIAT	24.42	23.16	28.77	23.2	18.8
EPS	2.91	2.76	3.42	2.76	2.24
ROI (%)	1.67	1.75	1.97	1.69	1.65
ROA (%)	1.67	1.75	1.97	1.69	1.65
ROE (%)	5.30	5.22	6.63	5.52	4.50
GOI	283	276	265	260	239
Total Assets	1461.94	1325.34	1461.5	1374.27	1136.26
Total Debt	1001.45	882.05	1027.44	954.09	718.35
Total Investment	1461.94	1325.34	1461.5	1374.27	1136.26
Current Liabilities	996.4	878.21	1023.54	952.09	717.13
Total Shareholder equity	460.49	443.29	434.06	420.18	417.91
Paid-up Capital	84	84	84	84	84

Table C14: Data Presentation of Desh Garmants Ltd.

Desh Garmants Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	154.09	100.31	72.32	49.63	41.26
NIAT	28.01	34.46	26.11	8.37	3.55
EPS	4.63	5.7	6.46	2.07	1.05
ROI (%)	7.45	7.33	10.57	3.22	1.66
ROA (%)	7.45	14.42	10.57	3.22	1.66
ROE (%)	22.31	37.23	42.06	24.46	8.60
GOI	78	61	58	52	49
Total Assets	375.76	238.98	247.12	260.11	214.12
Total Debt	250.18	377.66	185.04	225.88	172.86
Total Investment	375.73	470.23	247.12	260.1	214.12
Current Liabilities	221.67	138.67	174.8	210.48	172.86
Total Shareholder equity	125.55	92.57	62.08	34.22	41.26
Paid-up Capital	60.46	52.57	40.44	33.7	33.7

Table C15: Data Presentation of Envoy Textiles Limited

Envoy Textiles Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	10167.18	9833.83	9673.01	7814.36	6592.72
NIAT	329.94	321.18	353.46	571.24	310.93
EPS	2.01	2.05	2.32	3.94	2.21
ROI (%)	1.89	2.00	2.49	4.87	3.03
ROA (%)	1.89	2.00	2.49	4.87	3.03
ROE (%)	5.28	5.33	6.00	9.84	5.76
GOI	1200	1081	987	1034	876
Total Assets	17464.64	16060.34	14213.49	11730.31	10262.56
Total Debt	11213.43	10029.44	8321.3	5925.25	4860.02
Total Investment	17464.63	16060.34	14213.48	11730.31	10262.55
Current Liabilities	7297.46	6226.51	4540.48	3915.95	3669.84
Total Shareholder equity	6251.2	6030.9	5892.18	5805.06	5402.53
Paid-up Capital	1644.46	1566.15	1520.53	1448.13	1405.95

Table C16: Data Presentation of Generation Next Fashions Limited

Generation Next Fashions Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	6303.97	5561.52	5040.73	4951.89	4603.06
NIAT	456.37	241.71	87.1	340.04	497.77
EPS	1.01	0.59	1.14	0.91	1.54
ROI (%)	6.43	3.78	1.44	5.84	9.19
ROA (%)	6.43	3.78	1.44	5.84	9.19
ROE (%)	8.05	4.64	1.76	6.98	10.96
GOI	890	642	460	501	433
Total Assets	7094.13	6397.34	6048.39	5819.77	5413.59
Total Debt	1423.7	1183.28	1092.85	951.34	871.98
Total Investment	7094.14	6397.34	6048.38	5819.77	5413.59
Current Liabilities	790.16	835.82	1007.66	867.88	810.53
Total Shareholder equity	5670.44	5214.06	4955.53	4868.43	4541.61
Paid-up Capital	4499.77	4090.7	3718.82	3718.82	3233.75

Table C17: Data Presentation of Hamid Fabrics Limited

Hamid Fabrics Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	3931.21	3988.83	4054.83	3640.13	2383.7
NIAT	182.84	72.06	92.15	135.57	272.59
EPS	2.01	0.79	1.01	1.8	5.58
ROI (%)	3.51	1.49	1.93	3.09	7.81
ROA (%)	3.51	1.49	1.93	3.09	7.81
ROE (%)	5.10	2.08	2.66	3.95	11.93
GOI	646	530	490	319	240
Total Assets	5206.13	4852.25	4772.97	4382.5	3490.46
Total Debt	1623.36	1385.88	1312.22	950.62	1205.8
Total Investment	5206.12	4852.25	4772.97	4382.49	3490.46
Current Liabilities	1274.92	863.42	718.14	742.37	1106.76
Total Shareholder equity	3582.76	3466.37	3460.75	3431.87	2284.66
Paid-up Capital	910.57	910.57	910.57	867.21	488.38

Table C18: Data Presentation of Maksons Spinning Mills Limited

Maksons Spinning Mills Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	5854.66	6008.3	5776.38	5622.38	4468.06
NIAT	116.43	74.29	88.46	51.72	157.99
EPS	0.49	0.33	0.39	0.28	0.73
ROI (%)	1.20	0.83	1.07	0.71	2.35
ROA (%)	1.20	0.83	1.07	0.71	2.35
ROE (%)	2.56	1.68	2.00	1.19	3.70
GOI	750	659	581	217	189
Total Assets	9674.07	8901.94	8291.57	7247.8	6715.42
Total Debt	5124	4467.15	3868.37	2912.25	2440.73
Total Investment	9674.07	8901.94	8291.56	7247.78	6715.42
Current Liabilities	3819.41	2893.64	2515.19	1625.42	2247.36
Total Shareholder equity	4550.07	4434.79	4423.19	4335.53	4274.69
Paid-up Capital	2382.33	2268.88	2268.88	2268.88	2160.84

Table C19: Data Presentation of Matin Spinning Mills Ltd.

Matin Spinning Mills Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	4815.83	4813.61	4878.07	4264.5	4170.08
NIAT	303	261	294	437	317
EPS	3.1	2.68	3.02	4.49	4.21
ROI (%)	4.51	3.69	4.83	7.64	6.40
ROA (%)	4.51	3.69	4.83	7.64	6.39
ROE (%)	7.12	6.38	7.24	10.86	8.26
GOI	603	442	409	359	302
Total Assets	6722	7076	6092	5718	4959
Total Debt	2469.05	2983.38	2032.23	1694.44	1115.44
Total Investment	6722.05	7076.38	6092.23	5718.44	4955.44
Current Liabilities	1906.17	2262.39	1213.93	1453.5	788.92
Total Shareholder equity	4253	4093	4060	4024	3840
Paid-up Capital	974.9	974.9	974.9	974.9	974.9

Table C20: Data Presentation of Metro Spinning Ltd.

Metro Spinning Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed		1011.9	1014.36	1057.81	1093.4
NIAT		-38.73	11.04	21.85	48.59
EPS		-0.64	0.18	0.36	0.84
ROI (%)		-3.83	1.09	2.07	4.44
ROA (%)		-1.85	0.56	1.12	2.37
ROE (%)		-4.03	1.15	2.15	4.61
GOI		99	175	162	109
Total Assets		2098.81	1978.69	1944.43	2052.03
Total Debt		51.13	50.81	39.8	39.79
Total Investment		1011.9	1014.36	1057.81	1093.41
Current Liabilities		1086.91	964.33	886.62	958.63
Total Shareholder equity		960.77	963.55	1018.01	1053.62
Paid-up Capital		604.89	604.89	604.89	576.08

Table C21: Data Presentation of Paramount Textile Limited

Paramount Textile Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	4659.7	2979.55	2597.52	2375.8	2237.14
NIAT	277.54	224.93	201.69	193.99	186.97
EPS	2.15	1.74	1.84	1.77	2.33
ROI (%)	3.78	1.03	4.19	4.74	5.16
ROA (%)	3.78	4.63	4.19	4.73	5.15
ROE (%)	10.35	8.46	8.59	8.35	8.77
GOI	632	567	509	498	409
Total Assets	7348.78	4856.27	4819.3	4100.6	3631.63
Total Debt	4663.2	19274.21	2464.28	1768.96	1490.18
Total Investment	7344.98	21933.36	4812.99	4093.46	3621.82
Current Liabilities	2689.08	1876.72	2221.78	1724.8	1394.49
Total Shareholder equity	2681.78	2659.15	2348.71	2324.5	2131.64
Paid-up Capital	1290.47	1173.16	1096.41	1096.41	953.4

Table C22: Data Presentation of Rahim Textile Mills Ltd.

Rahim Textile Mills Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	613.39	473.18	289.99	296.4	293.82
NIAT	50.78	44.96	43.33	23.56	23.18
EPS	6.5	6.51	8.92	6.79	8.42
ROI (%)	3.19	4.01	6.61	3.77	3.26
ROA (%)	3.19	4.01	6.61	3.77	3.26
ROE (%)	15.88	16.10	18.49	12.34	12.94
GOI	157	118	109	92	89
Total Assets	1591.88	1119.95	655.51	624.34	710.65
Total Debt	1272.05	840.71	421.23	433.39	531.45
Total Investment	1591.88	1119.95	655.52	624.34	710.65
Current Liabilities	978.49	646.77	365.52	327.94	416.83
Total Shareholder equity	319.83	279.24	234.29	190.95	179.2
Paid-up Capital	78.18	67.98	48.59	34.68	27.53

Table C23: Data Presentation of Safko Spinnings Mills Ltd.

Safko Spinnings Mills Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	982.64	960.41	914.84	868.38	571.54
NIAT	12.2	11.1	18.6	13.96	38.13
EPS	0.42	0.38	0.68	0.51	1.4
ROI (%)	0.79	0.88	1.71	1.39	4.64
ROA (%)	0.79	0.88	1.71	1.39	4.64
ROE (%)	2.30	2.14	3.67	2.78	7.84
GOI	981	914	870	760	709
Total Assets	1542.22	1267.76	1090.17	1002.54	820.92
Total Debt	1012.38	750.12	583.62	500.64	334.41
Total Investment	1542.22	1267.76	1090.16	1002.54	820.93
Current Liabilities	559.58	307.35	175.33	134.16	249.38
Total Shareholder equity	529.84	517.64	506.54	501.9	486.52
Paid-up Capital	291.08	367.62	271.74	271.74	247.03

Table C24: Data Presentation of Saiham Cotton Mills Limited

Saiham Cotton Mills Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	3837.69	3951.37	3961.37	4032.58	3737.17
NIAT	158	158	139	189	200
EPS	1.07	1.06	0.93	1.4	1.48
ROI (%)	2.50	2.73	2.53	3.62	3.96
ROA (%)	2.50	2.73	2.52	3.62	3.96
ROE (%)	4.69	4.65	4.15	5.61	6.12
GOI	304	300	264	283	265
Total Assets	6321.53	5781.82	5516.67	5221.15	5050.3
Total Debt	2953.31	2387.05	2144.15	1851.73	1781.4
Total Investment	6321.31	5782.05	5490.15	5220.73	5049.4
Current Liabilities	2483.84	1830.45	1555.3	1188.57	1313.13
Total Shareholder equity	3368	3395	3346	3369	3268
Paid-up Capital	1488	1488	1488	1352	1352

Table C25: Data Presentation of Saiham Textile Mills Ltd.

Saiham Textile Mills Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	2696.58	2605.46	2698.76	2847.54	3125.05
NIAT	109.1	92.4	76.8	79.7	210.7
EPS	1.21	1.02	0.89	0.92	2.81
ROI (%)	2.20	2.12	1.90	1.79	4.84
ROA (%)	2.20	2.12	1.90	1.79	4.84
ROE (%)	4.47	3.79	3.22	3.46	8.64
GOI	261	230	220	198	219
Total Assets	4964.75	4348.24	4038.97	4448.17	4355.12
Total Debt	2521.31	1908.76	1652.46	2142.46	1915.53
Total Investment	4964.71	4348.26	4038.96	4447.66	4355.03
Current Liabilities	2268.17	1742.78	1340.21	1600.63	1230.07
Total Shareholder equity	2443.4	2439.5	2386.5	2305.2	2439.5
Paid-up Capital	905.6	905.6	862.5	750	750

Table C26: Data Presentation of Square Textile Ltd.

Square Textile Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	7690.4	7569.97	7583.41		6711.8
NIAT	459.47	413.74	1148.3		1189.36
EPS	2.43	2.19	7.02		7.28
ROI (%)	3.98	4.07	12.31		13.70
ROA (%)	3.98	4.06	12.28		13.68
ROE (%)	6.17	5.63	15.64		18.31
GOI	788	788	1109		1150
Total Assets	11558.82	10182.16	9349.92		8693.77
Total Debt	4090.48	2815.46	1990.34		2186.76
Total Investment	11534.89	10160.65	9330.76		8681.05
Current Liabilities	3868.42	2612.19	1766.51		1981.97
Total Shareholder equity	7444.41	7345.19	7340.42		6494.29
Paid-up Capital	1878.59	1789.13	1626.49		1478.62

Table C27: Data Presentation of Stylecraft Limited

Stylecraft Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	513.57	396.27	548.97	503.55	498.41
NIAT	35.8	28.86	10.71	34.4	14.4
EPS	36.16	29.15	19.48	62.57	26.16
ROI (%)	2.74	2.50	0.80	3.35	1.52
ROA (%)	2.74	2.50	0.80	3.39	1.52
ROE (%)	11.49	10.43	7.65	30.53	15.10
GOI	193	168	230	220	223
Total Assets	1305.19	1156.57	1331.36	1014.1	946.9
Total Debt	990.44	877.14	1076.73	821.74	773.64
Total Investment	1305.19	1156.56	1331.35	1026.7	946.87
Current Liabilities	791.62	760.3	782.39	510.55	448.49
Total Shareholder equity	314.75	279.42	254.62	204.96	173.23
Paid-up Capital	9.9	5.5	5.5	5.5	5.5

Table C28: Data Presentation of Shasha Denims Limited

Shasha Denims Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	6743.06	6495.62	9630.02	9129.57	4264.6
NIAT	556	592	563	561	176
EPS	4.64	4.94	4.71	4.68	1.47
ROI (%)	5.66	6.17	6.29	6.46	2.55
ROA (%)	4.60	5.44	5.80	6.09	1.27
ROE (%)	9.36	11.09	11.13	11.74	6.17
GOI	1239	1098	1123	987	1100
Total Assets	12077	10879	9701	9208	13840
Total Debt	3879	4259	3889	3910	4052
Total Investment	9819	9598	8948	8687	6904
Current Liabilities	5333.94	4383.38	70.98	78.43	9575.4
Total Shareholder equity	5940	5339	5059	4777	2852
Paid-up Capital	1196	1128	1128	1128	481

Table C29: Data Presentation of Tosrifa Industries Limited

Tosrifa Industries Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	2817.42	2386.5	2144.05	2169.11	1359.32
NIAT	79.92	83.34	110.89	135.06	113.72
EPS	1.27	1.32	1.76	2.44	2.95
ROI (%)	2.21	2.82	4.53	5.67	7.26
ROA (%)	2.21	2.82	4.53	5.68	6.86
ROE (%)	3.76	3.95	5.28	6.57	9.47
GOI	241	226	210	197	189
Total Assets	3610.38	2955.42	2448.92	2378.08	1657.41
Total Debt	1485.67	847.45	348.48	328.82	366.71
Total Investment	3610.39	2955.41	2448.91	2384.08	1567.41
Current Liabilities	792.96	568.92	304.87	208.97	298.09
Total Shareholder equity	2124.72	2107.96	2100.43	2055.26	1200.7
Paid-up Capital	631.69	631.69	631.69	631.69	631.69

Table C30: Data Presentation of of Zahintex Industries Limited

Zahintex Industries Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	3006.1	2778.74	2265.35	2192.76	1869.08
NIAT	48.79	54.18	92.32	75.78	46.8
EPS	0.6	0.73	1.34	1.21	0.82
ROI (%)	1.28	1.58	2.92	2.45	1.59
ROA (%)	1.28	1.58	2.92	2.45	1.59
ROE (%)	2.39	2.72	4.72	4.03	2.59
GOI	196	254	230	190	181
Total Assets	3811.26	3419.61	3159.22	3087.63	2940.57
Total Debt	1772.81	1429.96	1201.3	1207.46	1136.17
Total Investment	3811.26	3419.62	3159.23	3087.64	2940.56
Current Liabilities	805.16	640.87	893.87	894.87	1071.49
Total Shareholder equity	2038.45	1989.66	1957.93	1880.18	1804.39
Paid-up Capital	818.29	743.9	688.79	626.18	579.25

Table C31: Data Presentation of of Regent Textile Mills Limited

Regent Textile Mills Limited					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	4441.11	4334.13	3624.06		2136.43
NIAT	129.7	137	212.46		148.89
EPS	1.12	1.21	0.73		2.48
ROI (%)	1.95	2.52	4.56		4.66
ROA (%)	1.95	2.52	4.56		4.66
ROE (%)	3.66	3.94	6.16		7.38
GOI	241	227	210		205
Total Assets	6638.15	5433.86	4655.13		3192.37
Total Debt	3092.34	1955.36	1204.41		1175.33
Total Investment	6638.15	5433.83	4655.13		3192.27
Current Liabilities	2197.04	1099.73	1031.07		1055.94
Total Shareholder equity	3545.81	3478.47	3450.72		2016.94
Paid-up Capital	1155	1155	1155		600

Table C32: Data Presentation of HR Textile Ltd.

HR Textile Ltd.					
Variables Name	2018	2017	2016	2015	2014
Capital Employed	583.74	617.6	622.26	558.93	498.41
NIAT	43.09	36.29	46.27	30.89	49.97
EPS	1.7	1.43	1.83	1.22	1.98
ROI (%)	2.65	2.41	3.00	2.38	3.92
ROA (%)	2.65	2.41	3.00	2.29	3.92
ROE (%)	11.09	9.78	12.86	8.74	12.19
GOI	286	441	222	181	197
Total Assets	1624.21	1508.26	1541.98	1350.98	1273.24
Total Debt	1235.5	1137.34	1182.05	941.93	863.46
Total Investment	1624.21	1508.26	1541.98	1295.53	1273.25
Current Liabilities	1040.47	890.66	919.72	792.05	774.83
Total Shareholder equity	388.71	370.92	359.93	353.6	409.79
Paid-up Capital	253	253	253	253	253