CHAPTER – III
MATERIALS AND METHODS
3. MATERIALS AND METHODS

3.1. Introduction

Managing the working capital is an important part of short-term financial management. The long-term financial management often receives more attention although many researchers, Jose et al. (1996)217, Deloof (2003)218 have shown that short-term financial management also has a clear effect on the profitability of a firm. Mulins (2004)219 noted that the working capital management can be used to gain competitive advantage. In India the corporate sector seems to have an adequate and satisfactory level of working capital as reflected in their liquidity ratios. The foreign based companies are placed in a better relative to domestic companies. There is a wide inter-industry variation in liquidity ratios and performance of working capital of the corporate enterprises.

3.2. Concepts and Its Importance

The management of working capital is essential for a company to remain liquid, and to meet its short-term obligations. Continuous and efficient management of working capital will make the company more profitable. The company needs to know about the metrics and techniques which are used to manage the working capital in order to meet the competition as well as to maximize profitability. This thesis aims to concentrate on the different metrics and process around the working capital management in various selected sectors and to find out how companies can manage the working capital in a better way. The method used in this study will be quantitative in nature of how the working capital management affects the profitability of manufacturing firms in selected industrial sectors in India. Industry effects with reference to the working capital management will also be addressed.
3.3. Conceptual Framework for the Study

Working Capital Components

Liquidity
- Current Ratio (CR)
- Quick Ratio (QR)

Solvency
- Debt Ratio (DR)
- Firm Size (FS)
- Fixed Assets to Total Assets Ratio (FATAR)

Net Operating Profitability

Dashboard
- Debtors Collection Period (DCP)
- Inventory Turnover Period (ITP)
- Average Payment Period (APP)
- Cash Conversion Cycle (CCC)
3.4. Methods of Data Collection

The purpose of this research is to contribute towards a very important aspect of financial management known as the working capital management with reference to India. The research intends to reveal relationship between the working capital management and its effects on the profitability of 162 manufacturing firms from CMIE prowess Database for a period of 2006 – 2012. This section of the paper discusses the firms and variables included in this study the distribution patterns of data and applied statistical techniques in investigating the relationship between the working capital management and the profitability. This is important as the Indian economy endured the 2008 financial crisis and it’s after effects which drained liquidity out of the system. In addition, to that the annual reports of companies have been used in order to understand the company background and industry type. The study involves both primary and secondary data.

3.4.1. The Secondary Sources

To achieve the above noted objectives, extensive use of libraries was done. This study is based on both the primary and the secondary data. The secondary data were collected through the Government reports, official records, Journals, Books, websites of Internet and financial statements, such as income statements, balance sheets of S&P CNX 500 companies. For the purpose of arriving at meaningful inferences a six year period beginning with 2006-2012 was derived from CMIE Prowess Database listed in NSE. From the top S&P CNX 500 companies 240 units has been shortlisted which had similar business module and the financial information pertaining to income statements, balance sheets, and cash flow statements etc. and also supports the study variables. There are more than 20 sectors which is includes this 240 companies. But all the 20 sectors do not have data for a continuous period of 6 years. Consistency of the data is desirable for the accurate result. Only 162 companies have data for 6 years period. These companies constitutes of 15 sectors. Hence only top 162 out of S&P CNX 500 companies from CMIE Prowess database were considered for the study. The other non-financial firms which lack in data were eliminated from this study.
3.4.1.1. The List of Sectors selected for the study from 162 S&P CNX 500 companies listed in NSE

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Selected 15 Sector</th>
<th>Total Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Automobile</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Electrical Equipment</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Steel and Aluminum</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>Pharmaceutical</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>Cements</td>
<td>13</td>
</tr>
<tr>
<td>6</td>
<td>Consumer Durables</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Engineering</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Textiles</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>Chemicals</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>Tyres</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>Pumps</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>Food</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>Sugar</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>Trading</td>
<td>3</td>
</tr>
<tr>
<td>15</td>
<td>Construction</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>162</strong></td>
</tr>
</tbody>
</table>

3.4.2. The Primary Sources

The primary data was collected from CFO’s of thirty four manufacturing units located in Chennai. These 34 samples of primary data have been derived from the shortlisted companies of S&P CNX 162 companies from the CMIE prowess database. This sample was drawn under the criteria of covering the geographical area of Chennai city. The present study is an empirical investigation of analytical nature including field study. The questionnaire schedule method was adopted to obtain information from CFO’s of selected manufacturing units in Chennai. During the course of field work a lot of inconvenience was faced by researcher. The manufacturing units had an impression that the researcher is trying to extract facts from them. It took a lot of time to convince them by influencing the study has an intention to know the working capital problems of manufacturing units, so as to enable the researchers to solve such problems by suggesting the right ways to overcome it. Most of them were not co-operative, because the CFO’s was not in a position to spare time for any non-business activity, due to their heavy schedule. Because of this the researcher has to visit 3 to 5 times to an individual unit to collect the required data. Further
with the help of questionnaire the researcher was able to identify the perception of the financial officers at manufacturing units about working capital management in Chennai.

3.5. The Methods of Analysis

The present study adopts Systematic Random Sampling method. The reliability and validity test has been performed for the primary data (i.e) Questionnaire survey. The tools such as Descriptive statistics, Ratio analysis, Correlation, Regression, Chi-square has been used to analyze the secondary data.

3.5.1 The Reliability and validity Test

For conducting the reliability test 15 samples were selected for factors like, general identification, the working capital performance and key components of manufacturing units, reminder procedures of manufacturing units, turnover periods, the working capital financing, standards and ethics of manufacturing units with profitability were undertaken. The reliability and validity is checked by Cronbach’s Alpha test. The results of the test are 0.73.

3.5.2 Statistical Tools Used

To analyze the impact of the variables selected for this study, the following tools are used:

- Descriptive Statistics (Mean, Standard deviation)
- Accounting Tools (Ratio Analysis)
- Correlation
- Regression
- Chi-Square

3.5.3. Software Application Used

The software applications used to analyze the data are,

- SPSS (Statistical Package for Social Science) version - 19.0.
References


Books


Reports

Financial Reports Published in the year (2006-2012)

Balance Sheets

Profit & Loss

Income Statement

Cash Flow analysis