CHAPTER 4
RESEARCH METHODOLOGY

This chapter starts its journey with a purpose to give a better understanding of the structure of our thesis and description of the way in which we proceeded with our research. It also gives an idea of how and why we formulated and identified our data, and the choice of the specific hypothesis which illustrate our research topic. We will first start with describing our research strategy and method. Then we will further discuss the quality of the methods we chose. Finally, we explain how we chose and collected data.

4.1 INTRODUCTION

The purpose of this research is to assess the companies experience in attempting to finance its projects with the optimal capital structure, the effect of various determinants on the capital structure taken by different companies in the Industry.

Methodology can be defined as “the analysis of the principles of methods, rules, and postulates employed by a discipline”, “the development of methods, to be applied within a discipline” or “a particular procedure or set of procedures”.

It includes the following concepts as they relate to a particular discipline or field of inquiry:

1. a collection of theories, concepts or ideas;
2. comparative study of different approaches; and

3. critique of the individual methods\textsuperscript{1}.

It refers to more than a simple set of methods; rather it refers to the rationale and the philosophical assumptions that underlie a particular study. D. Slesinger and M. Stephenson in the Encyclopedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art\textsuperscript{2}.”

According to Saunders et al. (2003), the word ‘methodology’ refers to the theory of how research should be undertaken and this is quite distinct from the term ‘methods’ which refers to the tools and techniques used to obtain and analysis data e.g. questionnaires, observation, interviews, statistic and non-statistical analysis techniques.

‘Research’ typically means the way in which data are collected but Walliman\textsuperscript{3} (2001) highlights the ways which the term ‘research’ is often used as a term to get a product or an idea noticed and respected. The term is also wrongly used describe the following instances:

\begin{itemize}
  \item mere collection of facts or information with no clear purpose;
\end{itemize}

\footnotesize\textsuperscript{1} Donald S.Tull and Del I. Hawkins, Marketing research: measurement and method, \textit{Prentice Hall} (January 1993).

\footnotesize\textsuperscript{2} Slesinder D. and Stephenson M., The Encyclopedia of Social Sciences, Vol.IX,Macmillan,1930

\footnotesize\textsuperscript{3}Walliman, N. (2001). Doing your research project.
- Reassembling and reordering facts or information without interpretation and drawing the relevant insights.

‘Research’ is an activity or a series of activities undertaken in order to find out things in systematic way, which ultimately increasing our knowledge, and the word ‘the systematic’ suggests that research is must be grounded on logical relationships and not mere beliefs. Essentially, a research is about systematic collection and interpretation of data towards a clear purpose of finding things out.

Source: http://dept.sccd.ctc.edu/cclib/images/rlc-model-working.jpg
4.2 RESEARCH DESIGN

According to Selltiz Claire “A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.”

In general sense, Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design.

4.2.1 Main objectives of the research

The present study is an empirical investigation conducted with a view

1. To analyze the determinants of the capital structure in a sample of selected FMCG companies for 10 years from 2004-2013, in order to have an overview of the patterns over a decade.

2. To see how MNC firms in FMCG sector raise capital for investments, as the funds for the investments can be raised either internally or externally with the help of raising debt or equity or issuing debt to repurchase equity.

The mixture of quantitative and qualitative approaches is used in this study. The quantitative strategy is the main strategy in the study. The process of research is mentioned as follows:

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1 Claire Selltiz and others, Research Methods in Social Sciences, 1962.
Mark Saunders, Phillip Lewis, and Adrian Thornhill (2003) used the research process which consist of nine steps. In our research, we add the conceptual theories of capital structure between step 1 and step 2.

Step 1: We plan and make clear the research topic. It is written to help us in generating ideas to help you choose a suitable research topic. Once we found a research topic, refine it into one that is achievable. After the idea was generated and refined, we turn this idea to the questions and clear research objectives. This step is in Chapter 1.

Step 2: We look at a number of critical literatures to outline what to include and decided on a series of primary, secondary and tertiary sources of literature available. This step is in Chapter 3.
Step 3: In this step, we wrote the conceptual framework and the formulation of hypotheses through the analysis of the theories of capital structure and previous research. This step is used in Chapter 4.

Step 4: We have been working on the research methodology, research and strategy approach. A clear strategy for research is crucial, because the credibility of the research results and conclusions depend.

Step 5: In stage five, we plan to collect data that deals with different methods of data collection.

Step 6: At this time the data with quantitative and qualitative methods are analyzed and discussed the main approaches discussed quantitatively analyze the data. Step 4, 5 and 6 are applied in chapter 4.

Step 7: In this chapter, we will write the project report and preparing the presentation with the structure, content and style of the final report of the project and related oral presentations. This step is used in Chapter 5.

Step 8: After completing all steps of the research process, we hope that we will be presenting the research report (thesis).

4.3 RESEARCH STRATEGY

The choice of research strategy depends on what kind of questions are to be answered and the problem to be solved. Yin refers to five different research strategies: experiment, survey, archival analysis, histories and case study (Yin 1994). Our thesis is mainly based on the current theoretical debate and existing research regarding the capital structure models, and formulation of the theoretical
hypothesis. We examined earlier studies on the subject, financial magazines, and annual reports. We gathered the basic information about the MNC working in India with only one sector i.e. FMCG sector in general: how they operate, how they are financed and why this company form exists. We conducted a research discussion and analysis using twenty one FMCG companies which are also MNC’s. From the twenty one FMCG companies, few FMCG companies have their head offices in India and rests have their head offices abroad (outside India).

In our research, we use quantitative approach for hypotheses 1 while we used both quantitative and qualitative approach for hypothesis 2. We also compare our findings with the already existing theories about the capital structure in the ways of choosing capital raising methods. The analysis is as follows.

4.3.1 Quantitative Strategy

All research methods, such as the amount and use a combination of approaches or qualitative and quantitative strategies are used in this study. A method of analyzing different levels or units (Tashakkori and Teddlie, 1998) to provide an overview can be nested in another process.

A quantitative approach based on knowledge of the investigator (causal thinking, custom variables and assumptions and issues, measurement and observation and theories used in the test reduction) is one who serves improve post- positivist claims, practices and investigative strategies, such as surveys of work, and statistical data (Creswell, 2003), which collects information on a predetermined tools. Therefore, these hypotheses are treated with the use of quantitative approach:
Hypothesis 1a

H_{0a} “There is no significant and positive relationship between firm’s liquidity and debt ratio as per trade off theory and
There is no significant and negative relationship between the firm’s liquidity and the level of debt as per pecking order theory”.

H_{1a} “There is significant and positive relationship between firm’s liquidity and debt ratio as per trade off theory and
There is significant and negative relationship between the firm’s liquidity and the level of debt as per pecking order theory”.

Hypothesis 1b

H_{0b} “There is no significant and positive relationship between firm’s profitability and debt ratio as per trade off theory and
There is no significant and negative relationship between the firm’s profitability and the level of debt as per pecking order theory”.

H_{1b} “There is significant and positive relationship between firm’s profitability and debt ratio as per trade off theory and
There is significant and negative relationship between the firm’s profitability and the level of debt as per pecking order theory”.

Hypothesis 1c

H_{0c} “There is no significant and positive relationship between firm’s corporate taxes and debt ratios as per trade off theory and pecking order theory”.

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\( H_{1c} \) “There is a significant and positive relationship between firm’s corporate
taxes and debt ratios as per trade off theory and pecking order theory”.

Hypothesis 1d

\( H_{0d} \) “There is no significant and positive relationship between firm’s size and
debt ratio as per trade off theory and
There is no significant and negative relationship between the firm’s size and the
level of debt as per pecking order theory”.

\( H_{1d} \) “There is significant and positive relationship between firm’s size and debt
ratio as per trade off theory and
There is significant and negative relationship between the firm’s size and the level
of debt as per pecking order theory”.

4.3.2 Mixed Strategy (Combination of quantitative and qualitative approach)

To make more in –depth analysis of our result, the combination of quantitative
and qualitative approach is used in the following hypothesis 2.

Hypothesis 2

\( H_{02} \) “MNC’s Firms in the FMCG sector raise capital for investments through
internal sources or external sources”.

\( H_{12} \) “MNC’s Firms in the FMCG sector raise capital for investments through
external (with debt or equity) as well as internal sources”.
4.4 DATA COLLECTION

When we collect data, we can collect primary or secondary data.

4.4.1 Primary Data

Primary data is data gathered for the first time and it is original one.

4.4.2 Secondary Data

Secondary research involves the use of existing data which was collected for the purposes of prior studies, in order to pursue a research interest which is distinct from that of the original work. This may well involve a completely new research question or an alternative perspective on the original question. Thorough analysis of secondary data invariably improves the understanding of a particular problem, leading to the pursuit of a more crisp and robust line of inquiry.

Alas, despite their apparent usefulness, secondary data do suffer from inherent weakness because they might not be updated to reflect the present situation, thus rendering its reliability more than a little suspect. At best, they can only be used as proxies or indirect measures of the problems. They may have also been subjected to manipulation, or a series of errors/bias may have occurred in the data collection process. In any case, they may have been collected for a completely different purpose, so the appropriateness of its usage will inevitably invite scrutiny. The secondary data may have been further undermined by prior amalgamation of data from different sources, and they may not necessarily represent or reveal individual values, beliefs, or reasons that underlie current trends.

Secondary source incorporate various company policies, their publications, news
paper articles, journals, web resources, business magazines, books of accounts, reports, periodicals etc.

In our research, we mostly used secondary data gathered from various sources such as company annual reports, articles, books, previous studies, and internet searches. The main source of information has been the money control database. It provides the financial information for Indian domestic as well as multinational companies. The database contains published financial data as well as stock prices. The database is composed of two parts; Company Analysis and Equity Research. The former contains published accounts data while the latter contains stock market data. The information related to the status of the company, the detail of companies Head office, their addresses and contact numbers are also mentioned in the database. While extracting the data, it was found that many data was missing, ie the data according to the status of the company and the life span of the database was not there. There was a discrepancy among the companies that appeared in company Analysis and those in Equity Research, which made it difficult to extract all the necessary variables. In order to have complete data sample or to make certain clarifications, the hard copies / soft copies of the company’s financial statement were used.

We chose to have our major focus on observations and analysis in our study. The theoretical framework used in the thesis is built up around theories developed by Myers and Majluf (1984). Also there are two different types of methods, qualitative and quantitative. These two methods differ regarding the information observed, that is, how numbers and statistics are used (Holme and Solvang 1997). The main purpose of the qualitative method is to gain a deeper understanding of the problem that is studied, and not to prove the trustworthiness with statistical tools (Holme and Solvang 1997). Statistical methods of measurement are of
decisive importance in the analysis of the gathered quantitative information. If a quantitative research is carried out, statistical generalizations can be made (Holme and Solvang 1997).

For the purpose of our thesis we chose both quantitative and qualitative methods to serve our analysis and research conclusion. In the consideration of the needs of using the same kind of sources, to present a high level of comparability, we decided to base the empirical part of our study on annual reports only. We also considered that the annual report could represent a contemporary source of data since they were written a couple of months after the end of fiscal year. But on the other hand, annual reports can be less objective because they are made by the company management to show the best picture to their potential shareholders. Therefore it is imperative to be aware of the secondary data and look upon it in a critical way. In order to get a more objective conclusion and analysis on our study, we minimized the error by refining the content of the statements, separating facts from opinions, and taking into account all relevant factors. The conclusion and analysis are mainly based on the information abstracted from the annual reports.

When we studied the area of capital structure, we chose the Multinational companies working in India to examine. After having a thorough consideration, we came up with the conclusion that we need to choose only one sector, as MNC has entered almost all the prevailing sectors in India. So, FMCG sector was considered to do the research. After doing the selection for the FMCG sector, now the question arises from which sector of the FMCG Industries , the data has to be taken from or whether to take those companies which have the head offices in India or head offices in other countries i.e. abroad (rest of the world). So, after thorough consideration we came with the decision that the entire different sectors
i.e. household sector, Food and Beverages, Personal Care, Tobacco, pharmaceutical and lighting are to be considered. It means that the complete sector will be under the research. Secondly, we choose both the companies which have head offices in India and abroad. When study was started we found many companies working as FMCG sector under the umbrella of MNC’s. So, after due consideration we came up with the conclusion to consider only twenty one companies in the FMCG industry under the umbrella of MNC’s to illustrate the research topic. We choose one or more than one company under one sector of FMCG industry ,as well as, we decided to take few companies having head offices in India and remaining companies having head offices in the rest part of the world.

4.5 SAMPLING DESIGN AND PROCEDURE

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sampling design is determined before data is collected.

4.5.1 Type of Universe

The universe is sources of financing the assets of the companies of all multinational companies prevailing in India within the FMCG sector.

4.5.2 Sampling Units

Multinational Companies with special reference to FMCG sector listed in BSE and NSE during the period of 2004 till 2013 is the basic scope of the study being undertaken. FMCG sector comprises of business involved in Household Care,
Lighting, Food & Beverage, Personal Care, Pharmaceutical and Tobacco. Thus, as a researcher we take 21 MNC’s firms under FMCG sector as our sample. We aim to cover following organizations as specific scope of the study:

Table 4.1 Name of the selected firms

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<th>S. No</th>
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<td>1.</td>
<td>Britannia Industries</td>
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<td>ITC</td>
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<td>2.</td>
<td>Colgate Palmolive (India)</td>
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<td>Lotte India Corporation</td>
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<td>3.</td>
<td>Dabur</td>
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<td>Emami</td>
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<td>Mcleod Russel (India)</td>
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<td>Gillette India</td>
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<td>8.</td>
<td>Godrej Industries</td>
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<td>Radico Khaitan</td>
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<td>10.</td>
<td>Havells India</td>
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<td>Tata Coffee</td>
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<td>21.</td>
<td>Whirlpool of India</td>
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<td>United Breweries</td>
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4.5.2.1 Britannia Industries.

Britannia Industries is one of the leading multinational companies based in Kolkata, India. The Wadia Group (parent company of Britania) along with Groupe Danone of France has turned Britania to be an international FMCG. The company is operating in the food and beverage sector. Its main products are biscuits, bread, rusk, cakes and dairy products. It was established in 1892. In today’s date it is selling its product across the world. The company’s main brands are Vita Marie Gold, Tiger, Nutri choice, Good day, 50 50, Treat, Bourbon, Nice,
Little Hearts etc. The company earns around 150 million dollars from the sale in U.S and Australia.

4.5.2.2 Colgate Palmolive (India)

Colgate Palmolive is an American multinational company. The company’s corporate offices are situated in Park Avenue in Midtown Manhattan, New York City. The company product line includes the product related to household, personal care and health care such as soaps, detergents and oral hygiene products (including toothpaste and tooth brushes).

4.5.2.3 Dabur

Dabur is an Indian multinational company. It is considered to be fourth largest in the FMCG sector. It is in existence from the past 130 years. Its current sales revenues are more than Rs 7,073 crores. Its market capitalization is of US $ 5 Billion. Dabur operates in key consumer products categories like Hair care, Oral care, Health care, skin care, Home Care, Foods, Medicines and its related products. Dabur is considered as the world leader in auroverda. The products of Dabur are available in more than 60 countries across the world. Its products are mainly famous in SAARC countries, Africa, US, Europe and Russia. In today’s date 30% of the total revenue is generated from the sale across the globe.

4.5.2.4 Emami

Emami Limited is one of the leading and fastest growing personal and healthcare businesses in India, with an enviable portfolio of household brand names such as
BoroPlus, Navratna, Fair and Handsome, Zandu Balm, Mentho Plus Balm and Fast Relief.

Established in 1974, we have a portfolio of over 260 products based on ayurvedic formulations. Its current operations comprise more than 63 countries including GCC, Europe, Africa, CIS countries and the SAARC. Over 100 Emami products are sold every second somewhere around the world. Emami Limited, the flagship company of the Group, recorded a turnover of Rs 1821 crore, 2013-14.

Emami acquired the heritage brand Zandu on the basis of huge business synergy between the two brand portfolios.

4.5.2.5 Gillette India

Gillette is an American multinational company. Gillette is a brand of Men’s safety razors as a part of personal care products. Its corporate office is based in Boston, Massachusetts, United States. It was merged into P & G in 2005. The Gillette Company was founded by King C. Gillette in 1901 as a safety razor manufacturer.

The Gillette Company's assets were incorporated into a P&G unit known internally as "Global Gillette". In July 2007, Global Gillette was dissolved and incorporated into Procter & Gamble's other two main divisions, Procter & Gamble Beauty and Procter & Gamble Household Care. Gillette's brands and products were divided between the two accordingly. However, both the Gillette R&D center in Boston, Massachusetts as well as the Gillette South Boston Manufacturing Center, (known as "Gillette World Shaving Headquarters"), still
exist as functional working locations under the Procter & Gamble-owned Gillette brand name

4.5.2.6 Glaxo Smith Kline Pharmaceutical

GlaxoSmithKline Pharmaceuticals Ltd is also known as GSK Rx India. It started its operation in India in the year 1924. It is one of the oldest pharmaceuticals company in India. The main motive of the company is to improve the quality of life of the people. They are successful in their mission by enabling people to do more, feel better and live longer. The difference in the lives of millions of people is achieved by them by providing them the solutions for the healthcare.

Prescribed medicines and vaccines are the part of the product portfolio of GSK India. Their products include medicines related to anti-infectives, gynecology, diabetes, dermatology, diabetes, oncology, cardiovascular disease and respiratory diseases. The company leads the market in the categories in which it deals in. The company also offers vaccines to prevent hepatitis A, hepatitis B, influenza chickenpox, diphtheria, pertussis, tetanus, rotavirus, cervical cancer and many others.

4.5.2.7 Godrej Industries

Godrej is an Indian multinational company having its headquarter in Mumbai, Maharashtra, India. It is being managed and largely owned by the Godrej family. In 1897, Ardishir Godrej and Pirojsha Godrej lay the foundation of the company. The company have its operations in the different sectors such as real estate, industrial engineering, consumer products, appliances, security furniture and
agricultural products. The company also has its subsidiaries such as Godrej Consumer Products, Godrej Properties and Godrej Agrovet. It also has a private holding company named as Godrej & Boyce. It is the leading manufacturer of edible oils, vanaspati and bakery fats. Its operation is in 60 countries across the world. For the financial year 2012-13, its annual turnover was Rs 1560.52 crores.

4.5.2.8 Godfrey Phillips India Ltd

Godfrey Phillips India Limited is one of the largest cigarette manufacturing companies in India. It is working under the flagship company of the K.K Modi Group. Some of their branded products are Red & White, Four Square, Hawk Eye and Cavanders.

Some of the brands like Jaisalmer, Black Jack and Stellar are exported all over the world, mainly to the Middle East, Africa, South East Asia, East Europe, Australia, and South and Central America. During the last few years, the company has expanded its product range beyond tobacco and cigarettes. The company is also dealing in tea, mouth freshener and confectionery segments. The International Business Division also exports Bulk and Specialty teas to the UK, Ireland, Netherlands, Russia, Azerbaijan, Turkmenistan, Kazakhstan, Singapore, Kenya, Syria, Egypt, Iran, the UAE, Pakistan and Afghanistan, among others.

Godfrey Phillips India is headquartered in Delhi and branch offices in Singapore, UAE and Panama.

4.5.2.9 Havells India

Havells India Limited is one of most important fast moving electrical goods company. The company avails the benefit of desirable market supremacy among

In 2007, the company acquired one of most renowned lighting company Sylvania. Today, Havells is considered as the fourth largest company in the world. Today, Havells owns some of the most prestigious global brands like Havells, Crabtree, Sylvania, Concord, Luminance and Standard. It has 91 branches & representative offices in over 50 countries across the globe. Its 11 state-of-the-art manufacturing plants in India located at Haridwar, Baddi, Noida, Sahibabad, Faridabad, Alwar, Neemrana and 7 world class manufacturing plants located in Europe, Latin America, Africa & China are manufacturing globally acclaimed products, synonymous with excellence and precision in the electrical industry. Same quality products are offered both in Indian and international market.

The company is also in corporate social responsibility activities. For example: the company is offering mid day meal in more than 656 government schools in Alwar district. The company is also offering fresh cooked food to more than 50,000 students in Alwar district. The company has also donated during various natural calamities like the Bihar Flood, Tsunami and Kargil National Relief Fund etc.

The essence of Havells’ success lies in the expertise of its fine team of professionals, strong relationships with associates and the ability to adapt quickly and efficiently, coupled with the vision to always think ahead.
4.5.2.10 HUL

Hindustan Unilever Limited (HUL) one of the India’s largest and oldest fast moving consumer goods company. It is operating in India from the more than 80 years. It has affected soul of more than 70 percent Indians. It has been dealing in more than 35 brands across 20 different categories such as ice creams, detergents, soaps, skin care, shampoos, toothpastes, cosmetic, deodorants, tea, packaged foods, coffee and water purifiers. So, we can say that the company is affecting the life of millions of people in one way or the other. Its collection includes the most important brands like Lux, Lifebuoy, Surf Excel, Rin, Wheel, Fair & Lovely, Pond’s, Vaseline, Lakmé, Dove, Clinic Plus, Sunsilk, Pepsodent, Closeup, Axe, Brooke Bond, Bru, Knorr, Kissan, Kwality Wall’s and Pureit.

More than 16000 employees are associated with the company and it has an annual turnover of Rs 27408 crores in the financial year 2013-14. HUL is the subsidiary of Unilever, which is one of the world’s leading supplier of fast moving consumer goods having operation in more than 100 countries across the globe. 67.25% of the shares in HUL belongs to Unilever and rest of the shares are distributed among the general public and financial institutions.

4.5.2.11 ITC

Indian Tobacco Company also known as ITC is an Indian multinational company, having its headquarter in Kolkata, West Bengal, India. The company deals in five different sectors such as Fast Moving Consumer Goods, Hotels, Paperboards, Paper & Packaging and Agri Business. In the financial year 2012-13, ITC’s annual turnover was 45 billion US dollars. Company has been in scandals
regarding funding of Political Parties to gain monopoly in Indian Cigarette market.

ITC claims that it is the only company in the world of comparable dimensions to be Carbon Positive, Water Positive and Solid Waste Recycling Positive. ITC Limited completed 100 years on 24 August 2010.

4.5.2.12 Lotte India Corporation

Lotte Co., Ltd. is a multinational food and shopping company. It has its headquarters in South Korea and Japan. In June 1948 the company was first established in Tokyo, by Shin Kyuk-Ho. From Tokyo, Lotte expanded into South Korea with the establishment of Lotte Confectionary Co., Ltd in Seoul on April 3, 1967 and eventually grew to become Korea's eighth largest business conglomerate.

Lotte Group consists of over 60 business units across the world and Lotte India Limited is one of them. The company has diversified nature. It deals in candy manufacturing, beverages, hotels, fast food, retail, financial services, heavy chemicals, electronics, IT, construction, publishing, and entertainment. Lotte's major operations are overseen by Shin's family in Japan and South Korea, with additional businesses in China, Thailand, Indonesia, Vietnam, India, USA, Russia, Philippines, Pakistan and Poland (Lotte bought Poland's largest candy company Wedel from Kraft Foods in June 2010). Today, Lotte is the largest confectionery manufacturer in South Korea, and is the third largest in Japan behind Meiji Seika and Ezaki Glico in terms of sales revenue when only the sales of Lotte's confectioneries are counted.
4.5.2.13 Marico

Marico is an Indian multinational company, having its headquarters in Mumbai, Maharashtra, India. It is a consumer good company dealing in health and beauty products. Marico's own manufacturing facilities are located at Goa, Kanjikode, Jalgaon, Pondicherry, Dehradun, Baddi, Paonta Sahib and Daman.

In Bangladesh, Marico operates through Marico Bangladesh Limited, a wholly owned subsidiary. Its Manufacturing facility is located at Shirirchala, near Gazipur.

4.5.2.14 Mcleod Russel (India)

Mcleod Russel is the tea producing company. It is the largest producer of tea across the globe. Their tea estates are in India, Vietnam, Uganda and Rwanda. The company have its buyers in Europe, Middle East and North America. The company has its head office in India and branch offices in United Kingdom, Dubai, Uganda, Kenya, Rwanda and Vietnam.

4.5.2.15 Nestle India

Nestle is a Swiss multinational company operating in the food and beverage sector. Its headquarter is in Vevey, Switzerland. In terms of revenue generation, it is considered as the world largest food company. Nestle include the products such as baby food, bottled water, cereals, tea and coffee, confectionery, ice creams, dairy products, frozen food, pet foods and snacks. It has more than 29 brands across the globe. Its annual sales are above 1 billion Swiss francs which
include the sale of Maggi, Kit Kat, Nescafe and Nespresso. Its operation is in 194 countries across the globe with 447 factories and around 333,000 employees. Nestle was formed in 1905 by the merger of the Anglo Swiss Milk Company. The company grew significantly at the time of First World War and Second World War. Nestle India is producing the internationally famous brands such as Maggi, Nescafe, Milkybar, Kit Kat, Bar one, Milkmaid, Nestea, Nestle milk, Nestle slim milk, Nestle Dahi and Nestle jeera raita.

4.5.2.16 P & GHH

P & G is known as Procter & Gamble Co and P & GHH is known as Procter & Gamble Hygiene and Health Care Co. It is an American multinational company dealing in the consumer goods. It’s headquarter is in downtown Cincinnati, Ohio, United States. This company was founded by William Procter and James Gamble. They both were from United Kingdom. The company deals in various kinds of products such as pet foods, cleaning agents and personal care. Prior to the sale of Pringles to the Kellogg company, its product line also includes foods and beverages. In 2012, it recorded its sale to be $83.68 billions.

4.5.2.17 Radico Khaitan

Radico Khaitan ltd is the Indian multinational company dealing in liquor. The company has its head office in India and branch offices in Kyrgyzstan, United Kingdom, Western Africa and many other parts of the world. Radico Khaitan Ltd. was established in 1943 at Rampur, Uttar Pradesh India as Rampur Distillery & Chemical Company Ltd. Radico Khaitan manufactures and exporter of whisky,
rum, brandy, vodka and gin. Some of the company’s famous brands are 8PM, Crown whisky, whytehall, after dark, Morpheus blue, magic moments etc.

4.5.2.18 Siemens Ltd

Siemens is one of the multinational companies operating in India. The company started its operation in India in the year 1922, with the office in Mumbai, Maharashtra, India. Siemens Ltd has a hold in the area of electrical and electronics engineering. It provided the integrated technology. It operates in the different sectors such as energy, healthcare and infrastructure. The energy sector of the company covers the range from power plants to turbines and in the infrastructure sector; it also contributes towards the building of airports. In the financial year 2012-13, its sales turnover was Rs 113522.6 crores.

4.5.2.19 Tata Coffee

Tata coffee is the one of the largest coffee plantation company across the globe. It is an Indian multinational non alcoholic beverages company started its operation in 1922 and has it’s headquarter in Kolkata, West Bengal India. It is the major producer of tea and second largest manufacturer of tea. The famous brands of the company are Tata Tea, Tetley, Good Earth Teas and JEMCA. The company is selling its products in Canada, United Kingdom, Czech Republic and United States. The company also has tea estates in Sri Lanka. It has 50/50 joint venture with Starbucks coffee company. The company was set up in 1964 as a joint venture with UK based James Finlay and Company to develop value-added tea, Tata Global Beverages has now product and brand presence in 50 countries.
4.5.2.20 United Breweries

United Breweries is an Indian multinational company owned by Vijay mallya. It has it’s headquarter in Bangalore, Karnataka, India. The company’s main business includes beverages, aviation, electrical and chemicals. The company is the India’s largest producer of beer under the Kingfisher brand. Kingfisher Airlines was also launched in India by the company but its operation has been halted after problems that led to its license being revoked. The company has its 79 distilleries and bottling units across the globe. The company is selling its Kingfisher Premium Lager beer in more than 52 countries.

4.5.2.21 Whirlpool of India

Whirlpool is an American multinational company. It has it’s headquarter in Benton Charter Township, Michigan, United States. It is the manufacturer of home appliances. The company has more than 70 manufacturing and technology research centers across the globe.

4.6 VARIABLE MEASUREMENT

The various variables which are tested in our research work are leverage, tax, profitability, liquidity and size for H1, net debt issue, net equity issue, newly retained earnings, and financing deficit for H2. The mentioned research variables can be measured as mentioned below.
4.6.1 Variable of Hypothesis 1

The variables which are included to test hypothesis 1 are total leverage, short – term leverage and long term leverage as dependent variables, where as tax, profitability, liquidity and size are considered as independent variables. The formulas used to describe these variables are mentioned in the following subsection.

4.6.1.1. Leverage

The firm’s leverage can be measured by many different variables. As, all the researchers measure leverage differently but there are shortcomings for every measure of leverage. Pandey (2001) measured leverage in six different ways i.e. firstly by book value and secondly by market value. Under market value he measured leverage as long term debt divided by total assets, short term debt divided by total assets and total debt divided by total assets. Similarly, under book value he measured leverage as long term debt divided by total assets, short term debt divided by total assets and total debt divided by total assets.

Chen and Hammes (2003) measured primarily leverage as ratio of market capital and ratio of book capital, where capital ratio was market capitalization replacing the book equity. He secondary measure leverage as book value of total debt divided by total assets.

In our study, we have taken three debt ratios. These are total leverage, short –term leverage and long-term leverage.
Our measurement of leverage is similar as measured by Rajan and Zingales (1995), Leary and Roberts (2005), and Sbeiti (2010).

\[ TLV = \frac{TD}{TA} \]
\[ STLA = \frac{CL}{TA} \]
\[ LTLA = \frac{TD}{TE} \]

Where,
\[ TLV = \text{Total Leverage} \]
\[ TD = \text{Total Debt} \]
\[ TA = \text{Total Assets} \]
\[ STLA = \text{Short term Leverage} \]
\[ LTLA = \text{Long term Leverage} \]
\[ TE = \text{Total Equity} \]

4.6.1.2. Liquidity

Liquidity can be defined as the amount of cash available in the hand of the firm either to pay off debts or to fund the investments if required. More the liquidity of the firm better it is. Almost all the researchers have measured liquidity in the same manner.

Liu Yuanxin & Ren Jing (2009) measured liquidity as current assets divided by current liabilities. Ahmed Naveed, Zulfqar and Ishfaq (2009) measured liquidity as current assets divided by current liabilities. Shahjahanpour, Ghalambor and Aflatooni also measured the liquidity as other researchers have done. They also measured liquidity as a ratio between current assets and current liabilities.
In our study we measure liquidity as:

**Liquidity = Current assets / Current Liabilities.**

### 4.6.1.3. Profitability

Plays an important role in decisions to gain leverage. Income is proxied by the return on assets. Contribution to the profitability of the company's assets is represented by the creation of ROA. Earning a solid income is a measure of power. The main issue of the shareholders of a company’s income.

Akhtar and Oliver (2006) measured profitability as the average net income divided by total sales.

Wafaa Sbeiti (2010) measured profitability as the operating profit divided by book value of total assets.

Titman and Wessels (1988), measured profitability as operating income divided by total assets (ROA) and Drobenz and Fix (2003) measured profitability as operating income divided by sales.


We measure profitability as:

**Profitability = earnings before interest and taxes divided by total asset.**
4.6.1.4. Tax

Tax is also one of the most important variables to gain leverage. The amount of tax is calculated on the profit earned by the firm. The calculation of tax also depends upon the funding of the investments by debt and/or equity. If the funding is done more by debt then the tax shield is provided to the firm which is not in the case when the investment is financed by the issue of the equity shares. Li-Ju Chen (2010) measured tax variable as tax divided by profit before tax. B. Prahalathan (2010) measured non debt tax shield as earning after interest and tax divided by total assets. Mishra Chandra Sekhar (2011) measured tax as one minus earnings after tax divided by earnings before tax.

In our study we measure tax as:
Tax = tax paid divided by profit before tax.

4.6.1.5. Size

Size of the company offers a measure of agency costs of equity and demand for risk sharing. More features of the business such as the status of debts in the market and limit of their assets are expanded, are attained by the size of the company.

Size is measured as the natural logarithm of net sales by Titman and Wessels (1988) and Drobetz and Fix (2003). Whereas, profitability was measured as the natural logarithm of total turnover by Chen and Hammes (2003) measured firm size as Rajan and Zingales (1995)
Akhtar and Oliver (2006), Leary and Roberts (2005), Francisco Sogorb-Mira y José López-Gracia (2003), and Sbeiti (2010) measured size as the natural logarithm of total assets.

In our research size is measured as:

Size = the natural logarithm of total assets.

4.6.2 Measuring Variables for Hypothesis 2

4.6.2.1. Financing Deficits

The term financial deficit means when the expenditure is more than its earnings. In other words the negative retained earnings is known as financial deficit. Different researchers have given different definition of financial deficit.

According to Bharath, Pasquariello, and Wu (2008) financial deficit is measured by different variables such as dividends, investments, and cash flow. He measured financial deficit separately for each variable. According to Frank and Goyal (2003) financial deficit can be measured as an addition of dividend, net cash outflow plus investment done in a year, where investment means the amount invested in purchasing assets and amount required for working capital to meet the excess demand of cash. According to Bulan and Yan (2009) financial deficit is measured as net equity addition to net debt issue, measure deficit as the financing deficit in period t scaled by total assets at the beginning of period t, financing deficit as net equity plus net debt issues, and capital expenditures as capital expenditures divided by total assets. According to Frank and Goyal (2007) financial deficit is measured as cash dividends plus investments plus change in working capital minus internal cash flow.
Sogorb - Mira and López - Gracia measured financial deficit as amount invested i.e. cash outflow in the form of increase in working capital, purchase of assets, acquiring of other companies and other uses of funds minus all cash inflows in the form of sale of property, equipments, investments or any other assets. According to him cash flows means cash in hand left after deducting interest, taxes and dividend paid.

In our research we follow the method used by Frank and Goyal (2003). In our study all the variables are scaled by total assets. Our study measure financial deficit as follows:

$$\text{Financing Deficit} = \text{DIV} + \text{INV} + \Delta \text{WC} - \text{CF}$$

Where,
DIV = dividend payments,
INV = investment,
$\Delta \text{WC}$ = net change in working capital,
CF = operating cash flow (after interest and taxes).

4.6.2.2. Net Debt Issue

Net debt issue means the amount raised for the investment in assets by way of issuing debentures or borrowing through loan. According to Leary and Roberts (2005) issue of debt can be measured as change in long term and short term debt divided by total assets. They also said that if the change is more than 5% only then only there will be net debt issue. According to Frank and Goyal (2007) net debt issue can be measured as issue of long term debt minus redemption of long
term debt. According to Bulan and Yan (2009) net debt issue can be measured as issue of long term debt minus redemption of long term debt divided by total assets.

Our study follows the way as Siti Rahmi Utami (2012) did in his study. According to our study net debt issue can be measured as follows:

\[
\text{Net debt issue} = \frac{dTA}{TA} - (\text{Net equity issue}) - \frac{dRE}{TA}
\]

Where,
TA is total asset,
dTA is change in total asset,
and dRE is change in retained earnings.

4.6.2.3. Net Equity Issue

Net equity issue means the amount raised for the investment in assets by way of issuing equity shares or by using the retained earnings. Different researchers have different opinion for the calculation of net equity issue. According to Leary and Roberts (2005) net equity issue for t year can be measured as sale of equity share and preference share in the market minus purchase of equity share and preference share from the market. Whereas according to Frank and Goyal (2007) net equity issue can be measured as the sale of equity shares minus the repurchase of equity share. Some of the researchers like Bulan and Yan (2009) scaled the net equity issue by total assets. They measured net equity as sale of equity shares and preference shares minus purchase of equity shares and preference shares divided by total assets.
Our study follows the way as Siti Rahmi Utami (2012) did in his study. According to our study net debt issue can be measured as follows:

Net equity issue = (dEq/TA) - (dRE/TA), and
NRE = dRE/TA

Where,
TA is total asset,
dEq is change in book equity,
NRE is newly retained earnings, and
dRE is change in retained earnings.

4.7 HYPOTHESIS TESTING

Regression model has been used to test hypotheses 1 and 2. To explore the linear relationships between the dependent and independent variables these statistical tools are used in the study. The continuous scale is used to measure the dependent and independent variables. Augmented model is also used to test hypothesis 2.

4.7.1. Hypothesis 1

The objective of testing hypothesis 1 is to examine the influence of tax, profitability, liquidity and size on short-term leverage, long-term leverage and total leverage.

The regression equation for hypotheses 1a, 1b, 1c, 1d is as follows:

\[ Y = a + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 * X_3 + \beta_4 * X_4 + e \]
Where:

\( Y = \) is the value of the dependent variable, Debt ratios (short-term leverage, long-term leverage and total leverage)

\( a = \) is the intercept of the regression line on the Y axis when \( X = 0 \)

\( \beta = \) is the slope of the regression line

\( X_1 = \) Tax

\( X_2 = \) Profitability

\( X_3 = \) Liquidity

\( X_4 = \) Size

4.7.2. Hypothesis 2

The objective of testing hypothesis 2 is to examine how multinational firms in the FMCG sector raise capital for investments externally (with debt, equity, or debt to repurchase equity). Hypothesis 2 was analysed by using the mixed method approach.

4.7.2.1. Quantitative Analysis

For testing hypothesis 2, the independent variable was financing deficit, and net debt issue, net equity issue, and net debt issue to repurchase equity were the dependent variables. Therefore, the steps to analyse the relationship between variables are as follows:
4.7.2.1.1. Measuring the Financing Deficit/Surplus

The financing deficit would be approximated as:

\[ \text{Financing deficit} = \text{DIV} + \text{INV} + \Delta \text{WC} - \text{CF} \]

In which DIV is dividend payments, INV is investment, \( \Delta \text{WC} \) is the net change in working capital, and CF is operating cash flow (after interest and taxes). A positive value of financing deficit indicates a financing deficit and a negative one indicates financing surplus. The financing deficit/surplus in equation is equivalent to the one used in previous studies.

4.7.2.1.2. Testing the Pecking Order Theory

In the research work done by researchers Bulan and Yan (2007), Myers and Majluf (1984) and Myers (1984) and extension of their work by Lucas and McDonald (1990), pecking order theory is based on the assumption that the information is asymmetric between the investors and the managers. The true picture about the value of the firm and the risk involved in the firm is known more to the managers as compare to the investors. If the price of the firm’s equity is underpriced due to the asymmetric information and if the new equity is required by the firm to finance the new project, then the effect of the under pricing may be so harsh that new investors will agree to the largest part of the net present value of the project, through which the existing shareholders will give the net loss.

Thus, managers working in the best interest of current shareholders reject the project. To avoid the problem of under-investment, managers will have to find
money for the new project using a title that is not devalued in the market such as internal funds.

Therefore, the choice among the internal and external funding is being effected by it. The pecking order theory also known as hierarchy theory is able to illustrate why companies tend to rely on internal sources funds and prefer debt as compare to equity when external funding is required. Thus, a company leverage is simply the cumulative results of the company’s attempts to decrease the information asymmetry. Due to the reduction of the assessment that the less informed investors applies to newly issued bonds, which result the company’s to choose internal funds in the form of retained earnings first, then the debt and equity spent to meet their funding needs(Bulan and Yan, 2007)

In this section, we set up a test of the hierarchy theory proposed by Shyam Sunder and Myers (1999) given as below:

\[
\text{Net Debt Issue} = a + b1 \times \text{Deficit} + \varepsilon
\]

When the net debt issue and deficit financing, namely, the internal sources of funds subtracted from the uses of funds,(both scaled by total assets. Such a deficit is funded by issue of debt and/or equity. If businesses follow the pecking order theory, debt variation should monitor changes in one-to-one deficit. Thus, the expected coefficient on the deficit is 1.Frank and Goyal (2003) have shown that this poor performance test for small businesses and better performance for large companies. However, as small businesses are considered to experience a lot from asymmetric information difficulties, so the pecking order theory should be followed by them.
4.7.2.1.3. Testing the Pecking Order and Debt Capacity with an Augmented Model

In Laarni Bulan Zhipeng Yan (2007), as another way of accounting for a company’s debt capacity, Lemmon and Zender (2007) and Agca and Mozumdar (2004) used augmented equation with the deficit-squared:

\[
\text{Net Debt Issue} = a + b1 \times \text{Deficit} + b2 \times \text{Deficit}^2 + \varepsilon
\]

To estimate the equation, Bulan and Yan (2009) is followed. Companies which, according to the hierarchy (pecking order theory) must have a stronger deficit and debt sensitivity that is closer to one. The quadratic specification was used to account capacity constraints requiring debt. This deficit is financed by debt and / or equity. If companies follow the hierarchical order, changes in debt should monitor changes in the deficit one-to-one (Shyam Sunder and Myers, 1999).

If businesses finance their deficit with first place in the debt and issue shares only when it reaches its borrowing capacity, then the net debt is issued a concave function deficit (Chirinko and Singha, 2000) and the coefficient of squared deficit would be negative. The higher the deficit, the more a company to reach its borrowing capacity. In such cases, the sensitivity of the debt deficit should be lower. A negative coefficient on the square term deficit implies that companies are limited by its debt to insufficient capacity and they have to choose the issue of shares. A square deficit coefficient is large in absolute terms described a greater reliance on equity for the largest deficit financing values. If companies are issuing equity as a primarily source and debt as the residual source of funding, then this ratio should be convex and the coefficient on the square term deficit would be
positive. If the debt and equity are issued in fixed proportions, the deficit would have no effect on the net debt issued.

4.7.2.2. Qualitative Analysis

To ensure that our results are robust regression, we also analyze the results using qualitative graphs and table scans.

4.8. REGRESSION ANALYSIS

Regression analysis is one of the most commonly used methods in empirical financial studies. It aims to estimate the average value of one variable on the basis of the fixed values of another variable (single regression analysis) or several variables (multiple regression analysis). Several aspects have to be taken into consideration during the regression analysis, such as: multicolinearity and robustness of the model.

4.8.1. The Multiple Regression Model

In the latter part of the 19th century Francis Balton was the first person to develop the regression analysis. To describe the statistical relations between the different variables the regression analysis is used. Regression analysis is the statistical methodology for predicting the values of one or more variables from a collection of predictor (explanatory) variables.

The format of the single regression equation is as follows:

\[ Y_i = \alpha + \beta_1 X_{i1} \]
Panel data regression differs from a regular time series or cross section in that it combines both in a double subscript on its variables, i.e. $X_{it}$.

$$Y_i = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \ldots + \beta_t X_{it} + \mu_{it} \quad (i)$$

With $i$ denoting a cross-sectional category such as households, individuals, firms, etc., and $t$ denoting time. Thus, $i$ subscript denotes the cross-sectional dimension whereas $t$ denotes the time-series dimension.

$Y_i$ is the dependent variable and $X_{i1}, X_{i2}, \ldots, X_{it}$ are the explanatory variables. $\alpha$ is the constant and $\beta_1, \ldots, \beta_t$ are the slopes of the explanatory variables.

The error terms are assumed to have the properties:

- $E(u_i) = 0$
- $\text{Var}(u_i) = \sigma^2$
- $\text{Cov}(u_i, u_j) = 0$ for $i \neq j$

These relationships state that the error terms are assumed to have a normal distribution with mean 0 and constant variance $\sigma^2$, and that error terms must be independent.

Multiple regression models can be presented as:

$$Y = X \times \beta + \mu \quad (ii)$$

One of the objectives of regression analysis is to develop an equation that will allow the researcher to predict the response for given values of the predictor variables. Thus, it is necessary to fit the model in (ii) to the observed $Y_i$. 
corresponding to the known values $X_{i1}, X_{i2}, \ldots, X_{it}$. That is, the value of the regression coefficient $\beta$ and the error variance $\sigma^2$ consistent with the available data have to be determined

### 4.8.2. Statistical Definitions

The coefficient of determination $r^2$ (two-variable case) or $R^2$ (multiple regression) is a summary measure that tells how well the sample regression line fits the data.

$$R^2 = \frac{\text{ESS}}{\text{TSS}}$$

(ESS- explained sum of squares , TSS - total sum of squares)

Some of the properties of $r$ are as follows:

1. It can be positive or negative.
2. It lies between -1 and +1.
3. It is symmetrical in nature.
4. It is independent of the origin and scale
5. Zero correlation, i.e., $r=0$ does not necessarily imply independence.
6. It is a measure of linear association or linear dependency.

The T-test is a test of significance approach. A test of significance is a procedure by which sample results are used to verify the validity or invalidity of a null hypothesis.

The F-test is a measure of the overall significance of the estimated regression. It is also a test of significance of $R^2$. 

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The Standard Error is simply the standard deviation of the Y values about the estimated regression line and is often used as a summary of the "goodness of fit" of the estimated line.

The Durbin Watson (DW) statistics is the ratio of the sum of squares differences in successive residuals to the RSS (Residual Sum of Squares). It is one of the most frequently used tests for serial correlation. As a rule of thumb, if DW is found to be 2 in an application, one may assume that there is no first order correlation either positive or negative.

Our regression analysis consists of the un-standardised Beta coefficients, the standardised Beta coefficients, analysis of variance (ANOVA), coefficients of determination (R2), descriptive statistics, and regression assumptions of hypotheses 1 and 2.

4.8.3. The Un-standardised Beta Coefficients

A un-standardized beta coefficients (B) is the value of the regression equation to predict the dependent variable on the independent variable. They are called un-standardized coefficients because they are measured in their natural units. Thus, the coefficients can not be compared with each other to determine which is the most influential in the model because they can be measured on different scales.

4.8.4. The Standardised Beta Coefficients

The contribution of each variable in the model is measured by the Standardized beta coefficients. A high value signifies that the change in the unit provide that independent variable has a great effect on the dependent variable. An approximate
idea of the impact of each independent variable on the dependent variable can be estimated with the values of t and sig (p). The variable of great value t absolute and small p-value suggests that a independent variable is forecast to have a major impact on the dependent variable.

When we only have one explanatory variable in our model, then, beta is equivalent to the coefficient of correlation between the predictor and criterion variable. This equivalence is logical, since it is a correlation between two variables.

4.8.5. Analysis of Variance (ANOVA)

Analysis of variance enables an extrapolation of the t test results of two groups to three or more groups. The F statistic is computed for the analysis of variance (ANOVA) to test whether the population means are all the same group or not. When the F-statistic is significant, we conclude that at least one of the population groups means different from the other, but ANOVA does not tell us which groups are different from that. If this is the case, an analysis of multiple comparisons by comparing pairs group will be an adequate answer to this question (Bekiro, 2001).

Statistical significance as described in the statistical analysis models (ANOVA) for companies to achieve statistical significance at the significance value of p <0.05 level (Coakes and Steed, 2003 and Pallant, 2005).
4.8.6 The Coefficient of Determination (R2)

The multiple correlation coefficients (R) are the linear correlation between the model-predicted and the observed values of the dependent variable. The coefficient of determination, or simply R-squared, has its value always between 0 and 1, and is interpreted as the percentage of variation of the response variables explained by the regression line. If there is no linear relation between the dependent and independent variable, R2 is 0 or very small. If all the observations fall on the regression line, R2 is 1. This measure of the goodness of fit of a linear model is also called the coefficient of determination. The sample estimate of R2 tends to be an optimistic estimate of the population value. Adjusted R Square is designed to more closely reflect how well the model fits the population and is usually of interest for models with more than one predictor.

A high value of R2, suggesting that the regression model explains the variation in the dependent variable well, is obviously important if one wishes to use the model for predictive or forecasting purposes. To be sure, a large unexplained variation in the dependent variable will increase the standard error of the coefficients in the model (which are a function of the estimated variance of the noise term), and hence regressions with low values of R2 will often (but by no means always) yield parameter estimates with small t-statistics for any null hypothesis. Because this consequence of a low R2 will be reflected in the t-statistics, however, it does not afford any reason to be concerned about a low R2 per se. R Square (R2) is the square of the measure of correlation and indicates the proportion of the variance in the criterion variable which is accounted for by our model.
4.8.7. Descriptive Statistics

Descriptive statistics describe the value of each variable including mean, minimum, and maximum values.

4.8.8. Regression Assumptions of Hypothesis 1-2

Before evaluating the variable regression coefficients, we must first make several hypothesis about the survey population. They represent an idealization of reality and, as such, they are never likely to be completely satisfied with any real population study (Van Horne, 1998). The following assumptions should not be there in a good regression model.

4.8.8.1. Multicollinearity

Multicollinearity implies that for a set of explanatory variables, there is an exact linear relationship between the population means of the response variable and the values of the explanatory variables (Van Horne, 1998). The objective of collinearity test is to analyze the correlation between the independent variables.

Analysis of correlation matrix and R2 gives us an idea about the multicollinearity in the regression model (Ghozali, 2002)

Collinearity in the regression model can be detected as a test value of R2 and/or analysis of the correlation matrix (Ghozali, 2002). Hair et al (1998) in their study refer that the values of tolerance and VIF are the alternative ways to find out the problem of multicollinearity.
Correlations between Variables

For correlations between variables, strong correlations between independent variables are not required.

The Tolerance and VIF

The tolerance values are a measure of correlation between independent variables and may range between 0 and 1. The strong relationship between the independent variables is considered if the tolerance value is near to zero. It will be the matter of great concern if the very low tolerance value is found between the variables. (Van Horne, 1998). If the tolerance value among the independent variable is found to be less than 0.0001 then SPSS will not include it in the model. However, we may want to set their own criteria and not - perhaps excluding any variable that has a level of less than 0.01 tolerance.

Meanwhile, VIF is another measure of co-linearity (in fact it is the opposite of tolerance), where a strong relationship between the independent variables is represented by the high value.

4.8.8.2. Autocorrelation

Probabilistic the independence of errors is required for autocorrelation. From such an assumption, it can be judged that information on some of the errors does not provide information about other errors. For the time series data such an assumption is often violated. This is because of a property called autocorrelation (Van Horne, 1998).
Autocorrelation test is to analyze in a linear regression model was correlated error problems in period t with an error in period t-1 (front). A method which can be used to identify the auto-correlation is Durbin Watson (DW). DW indicates that there is no autocorrelation in the regression model.

**Durbin Watson (DW) Test Statistic**

Field (2008), Durbin Watson test statistic, a test for the correlation between errors. More specifically, it is tested whether the adjacent residues are correlated. In short, this option is important to test the assumption of independent errors is durable. The test statistic can vary between 0 and 4, with a value of 2 means that the residuals are not correlated. A higher value than 2 shows a negative correlation between adjacent residues, whereas a value below 2 shows a positive correlation. The size of DW statistic depends on the number of predictors in the model, and the number of observations. In conservative rule, Field (2009) suggested that values less than 1 or greater than 3 gave certainly cause concern, however, closer 2 values can still be problematic, depending on the sample and model.

**4.8.8.3. Normally Distributed**

The hypothesis states that the errors are normally distributed. We can see that by the formation of a histogram of the residuals. If the assumption is, then the histogram should be approximately symmetrical, bell-shaped. But if there is an obvious asymmetry, far more than residual, for example, two of the mean differences, or other non-normal property, it indicates a violation of the hypothesis (Van Horne, 1998).
In the graphic histogram and normal PP plot (attached), we conclude that the histogram has the approximately normal distribution model. Meanwhile, normal PP graph shows the points scattered around the diagonal line, and the disclosure follows the diagonal line. Both graphs show that the data corresponds approximately reasonable assumption of normality.

Based on the results of the assumptions described above population, the regression model lacks assumptions of multicollinearity, autocorrelation, and the data are approximately normally distributed. Thus, our regression model is appropriate to use to test the hypothesis 1 and 2.

4.9 SPSS STATISTICAL PACKAGE

As mentioned above, SPSS is the statistical package used in this research.

4.10. THE CREDIBILITY OF RESEARCH FINDINGS

Underpinning the above discussion on multi-method usage has been the issue of the credibility of research findings. This is neatly expressed by Raimond (1993) and Rogers (1961, cited by Raimond, 1993). Reducing the probability of getting the answer wrong means that concentration has to paid to two particular emphases on research design, namely, reliability and validity.

4.10.1 Reliability

The question about reliability is not whether the findings will be found again but whether the results are consistent with the data collected. The goal for the researcher is also to minimize the errors and biases of the study as much as
possible (Merriam 1998). The reliability of our research should be justified by the procedures of gathering materials we followed. Our study group is a very distinguished industry, which differs from other kinds of industries, and the methods applied by each specific company vary from case to case. Our intentions are not to draw a conclusion for the whole industry, but to contribute to a better understanding of how Fast Moving Consumer Goods companies which are also Multinational Companies obtain financing and provide suggestions to specific FMCG companies under different economic situations and financial conditions inter-reacting with the global economy and the consumable (FMCG) market environment in different time periods.

**4.10.2 Validity**

Validity is concerned with whether the findings are really about what they illustrate to be about. Is the relationship between two variables a causal relationship? We minimised the potential lack of validity in the conclusions by analysing the results obtained quantitatively and qualitatively. Even though analysing results obtained quantitatively and qualitatively does not minimise the potential lack of validity, the results obtained should be consistent with each other.

**4.10.3 Generalisability**

Generalisability is sometimes referred to as external validity. A concern we may have in the design of our research is the extent to which your research results are generalisable: that is, whether our findings may be equally applicable to other research settings, such as other organisations.
In this research, the purpose of our research will not be to produce a theory that is generalisable to all populations. Our objective will be simply to try to explain what is happened in Indian Capital Market. Therefore, our results can not be generalised.

4.11. THE LIMITATIONS OF RESEARCH DESIGN

There is no research project without limitations; and there is no research as a perfectly designed study. It is in line with Patton (1990), who noted that “there are no perfect research designs and there are always trade-offs”. Yin (2003) also noted that limitations derived from the conceptual framework and the study’s design. Furthermore, each method, tool or technique has its unique strengths and weaknesses (Smith, 1975). Since all different methods will have different effects, it makes sense if we use different methods to avoid the “method effect”. It will lead us to greater confidence being placed in our conclusions. Therefore, it is quite usual for a single study to combine quantitative and qualitative methods and/or to use primary and secondary data. There are two major advantages to employ multi-methods in the same study. First, different methods can be used for different purpose in a study. The second advantage of applying multi-methods is that it enables triangulation to take place. Triangulation refers to the use of different data collections methods within one study in order to ensure that the data are telling us what we believe they are describing us.

In our research, we had two limitations as follow, the first is regarding to the limitation of data, as sometimes the data are not complete. The second is regarding to the data analysis. Therefore, we used regression and augmented equations and also qualitative analysis to explain the finding of hypotheses.