CHAPTER – III

RESEARCH METHODOLOGY

Research methodology is a systematic way to solve a problem. This chapter details the related theories and data (primary and secondary) collected to test the set objectives. Based on the theories and selection of variables, the conceptual framework for this study is explained. It also elucidates the relevant statistical tools and methods used to analyze the secondary data collected from various published sources of national and international institutions as well as the primary data collected through opinion survey. This chapter is explained under six heads namely:-

A. Theoretical Background
B. Macro-economic Factors Influenced Indian Cross Border Acquisitions
C. Financial Assessment of the Selected Cross Border Acquisitions
D. Stock Performance due to Acquisition Announcements
E. Employee’s Perception Regarding Implications of Cross Border Acquisitions

The chapter is concluded with the limitations of the study.

A. THEORETICAL BACKGROUND

Literature implies that merger and acquisition motives have triggered far less theoretical efforts than merger and acquisition corollaries. Majority of the researchers agree that the factors influencing merger and acquisition are multifaceted and no single approach can contribute a complete viewpoint. Lubatkin (1983) cited Merger and Acquisition incentives into seven significant theories namely: (i) Process Theory – managers are restricted to information based on which they make irrelevant decisions; (ii) Valuation Theory – bidders have valid information regarding financial stability of the target firm’s than the stock market; (iii) Monopoly Theory – to attain market dominance; (iv) Efficiency Theory – looks at the synergy of operational, financial and management aspects; (v) Raider Theory – focused on the transfer of wealth among the stockholders of the company they are aiming to bid for; (vi) Empire Building Theory - managers intend and execute so as to exploit their own utility rather than maximising shareholder value;
and (vii) **Disturbance Theory** – economic fluctuations cause merger waves. Further Trautwein in 1990, classified these theories into micro and macro level. Except the Disturbance theory, all the other theories are considered to be firm specific (micro level). According to Gort’s (1969), **Disturbance Theory** is one in which the trend in merger and acquisition are influenced by macro-economic disturbances. The economic fluxes cause modifications in individual expectations and thereby increase the general level of improbability. Thus, it can be deduced from this theory that the CBMA activity of a country is based on its macro-economic spectrum. Based on the Disturbance Theory (Lubatkin, 1983; Trautwein, 1990), the country-level factors were analyzed in this study explained in objective 1 (section B of this chapter).

One of the basic objectives for a firm to take up CBMA is value creation. In business language, **Value Creation** is defined as “The performance of actions that increase the worth of goods, services or even a business”. Kristensen (2015) defines it as, “the value gained by stakeholders of the acquirer as a result of merger and acquisition”. Literature on the implications of merger and acquisitions and the market for corporate control for value creation dates back to 1970’s. Bruner (2002) studied and summarized the findings of 130 research papers from 1971 to 2001, and offered four approaches to analyze value creation of a firm during a merger or acquisition. The four approaches include: (i) **Accounting Study Approach**: To examine the reported financial results of acquirers before, and after, acquisitions to see how financial performance has changed. The focus of these studies ranges across net income, return on equity or assets, EPS, leverage, and liquidity of the firm; (ii) **Event Study Approach**: To analyse the abnormal returns to shareholders during announcement of a transaction. These studies are regarded to be progressive on the assumption that the share prices reflect the present value of expected future cash flows to shareholders; (iii) **Surveys of Executives**: This presents a sample of executives with a standardized questionnaire, and aggregate the results to yield generalizations. This yields insights into value creation that may not be known in the stock market. Benefits from the intimate familiarity with the actual success of the acquisition; (iv) **Clinical Study (Case Study) Approach**: This focuses on one transaction or on a small sample in great depth. This is inductive research, by drilling down into detail the factual background of a deal. Kristensen (2015) in his study has also
mentioned these above four approaches behind value creation as an effective theory for empirical examination. The first three approaches were analyzed in this study through the remaining four objectives explained in C, D and E sections in this chapter. The fourth approach is analyzed in detail in Chapter IV.

Conceptual Framework

According to the strategy and international business literature, various authors have indicated some basic determinants of CBMA, which include country-level factors (cultural distance, political uncertainty, host countries market and GDP growth, exchange rate, institutional laws,), industry-level factors (advertising intensity, sales force intensity, technological strength), and firm-level factors (multinational experience, product diversity, firm size, local experience, international strategy and financial resources) (Boateng et al., 2011; Collins et al., 2009; Shimizu et al., 2004). In this study, the researcher has concentrated on country level and firm level factors that influenced the outbound acquisition activity of Indian companies. Based on Disturbance Theory (Lubatkin, 1983; Trautwein, 1990), the country-level factors were analyzed.

The impact of these variables evaluated in the related studies is detailed in table 2.1a and 2.1b.

On the contrary, the link between outward merger and acquisition and home country factors appears to be ambiguous and contentious. Thus, this study attempts to model the relationship between home country specific macro-economic factors and the level of outbound cross border acquisition activities by Indian firms. Though the variables used for the evaluation in this study were selected from various studies describing the link between macro-economic factors and inward FDI discussed above, the selection is restricted to feasibility and reasoning. The macro-economic variables viable for this study are GDP, Domestic Investment, Trade Openess, Government Consumption, Inflation, Exchange Rate, and Interest Rate. As GDP is inclusive of Domestic Investment, Trade Openess, and Government Consumption; the above said variables are excluded during analysis, where GDP is taken as a variable to be analysed. Hence, the variables analysed in this study are GDP, Inflation, Exchange Rate, and Interest Rate. These selected variables are explained further.

(i) GDP

According to Investopedia, Gross Domestic Product (GDP) is “the monetary value of all the finished goods and services produced within a country’s borders in a specific time period. GDP includes all private and public consumption, government outlays, investments, and exports minus imports that occur within a defined territory”. In general terms, GDP is the broad measurement of a country’s overall economic activity. GDP can be calculated using the following formula:

\[ \text{GDP} = C + G + I + NX \]

Where, C is private consumption or consumer spending, G is sum of government spending, I is the sum of all the country’s investment including business capital expenditures and NX is total exports minus total imports of the country. Domestic Investment or Gross Capital Formation is the investment part of GDP. In India, the percentage of the investment made each year out of the total GDP is called Gross Capital Formation. Though there are studies, where, Domestic Investment and GDP are used in the same regression sequence, due to issues of multi-co linearity, the analysis is carried
further either with GDP or Domestic Investment (Boateng et al, 2014). Study by Steiner (1975) and Guerard (1985, 1989) identified positive relation between merger and acquisition and GDP. Some studies found a negative relation between the same (Beckenstein, 1979; Becketti, 1986). The findings from previous research state that, merger and acquisition waves are always influenced by macro-economic factors, especially GDP. Hence, it is necessary to identify the impact of GDP on outbound acquisitions.

(ii) Inflation

The Economic Times defines Inflation as the “percentage change in the value of the Wholesale Price Index (WPI) on a year-on-year basis. It effectively measures the change in the prices of a basket of goods and services in a year”. In India, inflation is calculated by taking the WPI as base. Inflation is calculated as:

\[
\frac{(WPI \text{ in month of current year} - WPI \text{ in same month of previous year})}{WPI \text{ in same month of previous year}} \times 100
\]

McKinnon (1973) in his study mentioned that when inflation is increasing, it is expensive to hold money; hence the net return from investment decreases. High inflation rates in the home country dampens domestic acquisitions by negatively affecting the firm’s q thereby decreasing return on investments and escalating cost of capital. Alternative choice for a firm is to invest in foreign countries where inflation is lesser. Lower inflation rates in the host country comparative to home country will aid boost the ‘q’ ratio of the acquiring firm (Boateng et al., 2014). Hussaini (2011) in his study has found a negative relation between M&A and Inflation. Kamaladevi (2011) and Green (2005) identified positive relation between the same. Hence, it is significant to identify the influence of Inflation on overseas acquisition decision made by Indian companies.

(iii) Exchange Rate

In economic terms, “Exchange Rate is the price of one currency in terms of another currency. It has two components, the domestic currency and a foreign currency, and can be quoted either directly or indirectly. In a direct quotation, the price of a unit of foreign currency is expressed in terms of the domestic currency. In a indirect quotation,
the price of a unit of domestic currency is expressed in terms of the foreign currency”. Vasconcellos and Kish (1996) suggest that the relative strength or weakness of the domestic currency pari-pasu the foreign currency plays a key role in the merger and acquisition decision making process. Exchange rate has impact on the effective price of the transaction, its financing, the cost of managing the acquired firm and the profits to be repatriated to the acquirer firm (Weston et al., 1990). Vijayakumar et al (2010), Babu (2012), Kamaladevi (2011) and Green (2005) in their studies identified positive relation between Exchange rate and FDI. Palit and Nawani (2007); Hussaini (2011); and Sisili and Elango (2013) observed negative relationship between the same. Thus, it is necessary to evaluate the relation between Exchange rate and Cross-border acquisitions made by Indian firms.

(iv) Interest Rate

World Bank defines Interest Rate, as the Lending rate or bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to creditworthiness of borrowers and objectives of financing. Studies that analyzed the impact of home country macro-economic determinants with regard to outward FDI suggest interest rate to be a significant factor, and also implied that reduced rates decrease the cost of financing because of capital profusion (Boateng et al., 2014). Tolentio (2010) argued that, relatively low interest rates are linked with a home country’s capital abundance and forms an important impetus for capital investment outflow abroad to diversify and improve the level of profitability. Beckenstein (1979) found a positive relation between merger and acquisition and interest rate. In contrast, some have found a negative relation between the same (Steiner, 1975; Melicher et al, 1983, Beckettii, 1986). Thus, it is important identify how India’s Interest Rate influences acquisition abroad.

Firm level motives are those advantages for which a company takes up Merger and Acquisition decision. From the review done for this study, the motives identified are: Synergy (Ayoush, 2012); Improved Management, Market Power, Tax benefits and Diversification (De Pamphilis, 2005); Economies of Scope, Economies of Scale, Cross Selling, Augmented Revenue, Improved Market Share, Resource Transfer, Empire
Building, and Manager’s Compensation (Pritchett, 2013); Increase Shareholder Gains, Spread Portfolio, Increase Rationalization, Improve Purchasing Power, Create Internal Capital Markets, Reduce Interest Rates, Obtain Multi Market Contact And Raise Entry Barriers (Motis, 2007).

After detailed discussion of case study on individual acquiring companies in chapter IV, the synergy for which the acquirer’s went for cross border acquisitions are consolidated as firm specific motives. Individual acquirer motives are listed in Appendix D. The various motives derived from this study are listed as follows: Market expansion; Increase in supply; Increase in revenue; Increase in resource base; Possession of outstanding export infrastructure; Technology transfer and up gradation; Rise in production; Decrease in production costs; Sales increase; Brand positioning; and Increase in customer base.

Corresponding to both country level and firm level factors, Indian companies acquire shares of Foreign Companies. The implications of the acquisition decision are felt more by the acquiring firm rather than the home country or the industry. Bruner’s value creation approach is used to examine whether, the success or failure of these deals has high value and vast outcomes for the firms themselves and for its stakeholders (Sudarsanam, 2003). The acquisition decision affects all the departments namely; Finance (Financial Performance measures; Market Performance), Human Resource (Cultural Integration; Employee Retention), Production and Operations (Technology Integration), Sales and Marketing (New Market Opportunities) of the acquiring firm invariably. In this study, the researcher focuses mainly on firm level implications; precisely, Finance and Human Resource. But according to Bruner’s Value Creation Theory, the implication of the acquisition decision on the acquiring company is assessed through Financial Performance, Impact of Acquisition Announcement, and Employee Survey.

Financial assessment measures are common throughout the globe in estimating a firm’s performance which helps to evaluate the strengths and weaknesses in a company’s performance (Daddikar and Shaikh, 2014). Financial evaluation quantifies the position of the acquirer post acquisition in numerical terms. Despite some limitations, accounting ratios are still regarded to be the most suitable and consistent analytical method; Investors
and financial analysts also prefer ratio analysis to assess the financial status of the business entity. From vast literature, the ratios identified are classified under five categories namely: (i) **Profitability ratios** [Return on Capital Employed (Mantravadi and Reddy, 2008; Saboo and Gopi, 2009; Kemal, 2011; Khan, 2011; Sinha and Gupta, 2011; Mahamuni and Jumle, 2012; Daddikar and Shaikh, 2014; Sinha and Singh, 2014), Return on Net Worth (Mantravadi and Reddy, 2008; Saboo and Gopi, 2009; Sinha et al, 2010; Mahamuni and Jumle, 2012; Daddikar and Shaikh, 2014; Sinha and Singh, 2014)], **Gross Profit Margin** (Wang, 2007; Mantravadi and Reddy, 2008; Kemal, 2011; Khan, 2011; Mahamuni and Jumle, 2012; Daddikar and Shaikh, 2014; Sinha and Singh, 2014), **Operating Profit Margin** (Mantravadi and Reddy, 2008; Chen and Lin, 2009; Kemal, 2011; Khan, 2011; Mahamuni and Jumle, 2012), and **Net Profit Margin** (Wang, 2007; Mantravadi and Reddy, 2008; Kemal, 2011; Khan, 2011; Mahamuni and Jumle, 2012; Daddikar and Shaikh, 2014; Sinha and Singh, 2014)]; (ii) **Liquidity ratio** [Current Ratio (Wang, 2007; Chen and Lin, 2009; Saboo and Gopi, 2009; Ransariya, 2010; Sinha et al, 2010; Kemal, 2011; Sinha and Gupta, 2011; Karora and Sahni, 2013; Sharma, 2013; Daddikar and Shaikh, 2014; Moctar and Xiaofang, 2014; Mittal, 2014)]; (iii) **Solvency ratios** [Debt Equity Ratio (Mantravadi and Reddy, 2008; Chen and Lin, 2009; Saboo and Gopi, 2009; Ransariya, 2010; Sinha et al, 2010; Kemal, 2011; Sinha and Gupta, 2011; Mahamuni and Jumle, 2012; Karora and Sahni, 2013; Sharma, 2013; Daddikar and Shaikh, 2014; Sinha and Singh, 2014) and Long-term Debt Equity Ratio (Saboo and Gopi, 2009; Ransariya, 2010; Kemal, 2011)]; (iv) **Debt Coverage ratio** [Interest Cover ratio (Saboo and Gopi, 2009; Kemal, 2011; Sinha and Gupta, 2011; Karora and Sahni, 2013; Daddikar and Shaikh, 2014; Sinha and Singh, 2014)]; and (v) **Management efficiency ratios** [Debtors Turnover Ratio, Fixed Asset Turnover Ratio (Ransariya, 2010), Total Asset Turnover Ratio (Wang, 2007) and Asset Turnover Ratio]. The crux of the above mentioned studies are catalogued in table 2.3 and 2.4. All the above said ratios were considered in this study to learn the financial implication on the acquiring companies.

The synergy hypothesis explains that the reason for the acquisition is only when it is rising the value, which means after the acquisition the value of the combined firm should be more than the value of the pre-merged individual firms (Bradley et al., 1988;
Seth et al., 2000), therefore it is a well-accepted description for acquisitions (Sharma and Ho, 2002). Consequently, the managers of both acquirer and target firms propose to exploit shareholder wealth and would opt for integration only if the outcome is profitable for the shareholders of both (Berkovitch and Narayanan, 1993; Goergen and Renneboog, 2004). Market performance was assessed using the **acquiring company’s stock price reactions to the acquisition announcements** and the results identified the impact of the acquisition on the value of acquirers (Chen and Lin, 2009), which is detailed in section C of chapter V.

In Cross Border Merger or Acquisition, employees are considered as a major stakeholder of the deal and it is a complicated process of organizational change (Humpal, 1971). Usually HR issues are neglected during a deal process, when significance is given to financial and strategic issues (Pikula, 1999); which in turn has led to employee uneasiness and stress to a large extent (Johnson, 1989; Peters and Waterman, 1982; Turner, 1996). Various studies done by Hunt et al., 1987; KMPG, 1997; Ravenscraft and Scherer, 1987 point out that, two-thirds of mergers fail due to lack of concern towards employee interest. Organizational effectiveness greatly depend on the behaviors of employees, thus HRM is an important challenge for all firms going for cross border alliances (Kavitha, 2015). Merger and Acquisition process creates insecurity for employees of both acquirer and target firm; resulting in lower productivity, absenteeism and health related issues (Ivancevich et al., 1987; Schweiger and Denisi, 1991). Various studies done by Hunt et al., 1987; KMPG, 1997; Ravenscraft and Scherer, 1987 point out that the two-thirds of mergers fail due to lack of concern towards employee interest. Since ambiguity, anxiety, uncertainty, and stress lead to mental distress during a merger, job is likely to become agonizing; thus depleting the overall competence of the organization’s citizenship behavior (Bhaskarm et al., 2012). An organized HRM policy and practice helps a company to be successful in financial aspects (Becker et al., 2001). This principle is true for a flourishing organization, be it for firms getting into CBMA or firms in general (Schuler et al., 2004). Hence, it is necessary to explore these human aspects during a deal process. The variables selected for the study are consolidated from the various studies reviewed, which is catalogued in table 2.5; and are classified into two categories namely: **Organizational Changes and Strategic Changes**.
Based on the above discussion, a diagrammatic representation has been framed for this study which is depicted in figure 3.1 given below. The relevant statistical tools and methods used to analyze the selected variables are detailed henceforth in the impending sections (B, C, D, and E) of this chapter.
Figure 3.1. Conceptual Framework Regarding Cross Border Acquisitions Made by Indian Companies

**Factors Influencing**

- **Country Level (Macro-economic)**
  - GDP
  - Interest Rate
  - Inflation
  - Exchange Rate

- **Firm Level**
  - Market expansion
  - Increase in supply
  - Increase in revenue
  - Increase in resource base
  - Possession of outstanding export infrastructure
  - Technology transfer and upgradation
  - Rise in production
  - Decrease in production costs
  - Sales increase
  - Brand positioning
  - Increase in customer base

**FIRM SPECIFIC IMPLICATIONS**

- **FINANCE**
  - **Financial performance**
    - **Profitability ratios** (Return on Capital Employed, Return on Net Worth, Gross Profit Margin, Operating Profit Margin, and Net Profit Margin)
    - **Liquidity ratio** (Current Ratio)
    - **Solvency ratios** (Debt Equity Ratio and Long-term Debt Equity Ratio)
    - **Debt Coverage ratio** (Interest Cover ratio)
  - **Management efficiency ratios** (Debtors Turnover Ratio, Fixed Asset Turnover Ratio, Total Asset Turnover Ratio and Asset Turnover Ratio)

- **HUMAN RESOURCE**
  - **Market performance**
    - Acquirer’s stock price reactions to acquisition announcements

- **ORGANIZATIONAL CHANGES**
  - Work Culture
  - Decision Making Process
  - Redesigning Organization Structure
  - Communication
  - Change in HR Policy, Rules and Regulations
  - People Cost
  - Recruitment, Retention & Attrition of employees
  - Performance Evaluation
  - Infrastructure Facility
  - Technology Upgradation

- **STRATEGIC CHANGES**
  - Consolidation of HR department
  - Organization Expansion
  - Change in Labor Law Agreements
  - Working Hours
  - Post-integration Training
  - Job Satisfaction & Motivation

Indian companies acquiring Shares of Foreign Companies
B. MACRO-ECONOMIC FACTORS INFLUENCED INDIAN CROSS BORDER ACQUISITIONS

To identify the macro economic factors that influenced Indian cross-border acquisitions, multiple regression equation is used. Multiple Regression is a statistical tool used to attain the value of a particular criterion from various other independent or predictor variables. It is the concurrent combination of multiple factors to assess how and to what extent they affect a certain outcome. Though the variables used for the evaluation in this study were selected from various studies describing the link between macro-economic factors and inward FDI, the selection is restricted to feasibility and reasoning. Hence, the macro-economic factors selected are GDP, Inflation, Exchange Rate, and Interest Rate. The variables used for this study and their measurements explained by UNCTAD and World Bank Database from where the data was collected are listed below:

a) Cross Border Acquisition (Dependent Variable) - Outbound Deal Value
   Purchases of companies abroad by home-based Transnational Corporations (-)
   Sales of foreign affiliates of home-based Transnational Corporations (US$ in million).

b) GDP - Sum of gross value assed by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. (in Constant Local Currency Unit, Annual)

c) Inflation - Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. (Annual Percentage)

d) Exchange Rate - Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. (Local Currency Unit per US$, Annual Average)

e) Interest Rate - Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to creditworthiness of borrowers and objectives of financing. (Percentage)
The data was collected for 24 years (1992 - 2015) from World Bank Database and WIR Reports-UNCTAD. The regression equation used for the evaluation is given below.

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + u \]

Where: \( Y \) - Cross Border Acquisition (Dependent Variable); \( X_1 \) - GDP, \( X_2 \) - Inflation, \( X_3 \) - Exchange Rate, and \( X_4 \) - Interest Rate are the independent variables; \( b_1, b_2, b_3 \) and \( b_4 \) are the corresponding co-efficient of the independent variables; \( u \) is the error term.

SPSS 20.0 is the software used to calculate the regression analysis.

C. FINANCIAL ASSESSMENT OF THE SELECTED CROSS BORDER ACQUISITIONS

The methodology used to analyze the financial implication on the acquiring firms post-acquisition numbered as objective 2 and 3 is discussed in this section. It describes the sample used for the same followed by a detailed explanation of the financial aspects taken into consideration. The Indian cross border acquisitions taken for this study are considered to be the biggest deals of their time. The deals selected fall between the time period 2005 and 2009. The major cross-border acquisitions of the country that took place during the US credit crisis (2007) are taken into consideration. These deals belonged to the major sectors in which outward investment was prominent. Out of which, around 20 deals of 5 major sectors such as Energy, Metals and Mining, Services, Food and Beverages and Pharmaceutical were selected for this study. A detailed description of the cases is discussed in Chapter IV.

After an extensive review around 13 ratios were selected comprising of various financial aspects such as profitability, liquidity, solvency, debt coverage and management efficiency. They are:

(i) **Profitability ratios** (Return on Capital Employed, Return on Net Worth, Gross Profit Margin, Operating Profit Margin, and Net Profit Margin) are the criterion to judge the effectiveness of the management. From the owner’s point of view, profits measure the worth of their investment. This ratio
consists of two types, namely rate of return and profit margin ratios. The former indicates the relationship between profit and capital or investment of funds. The later shows the relation between profit and sales. Higher the ratio, the firm is more efficient in using its capital and good in controlling costs.

(ii) **Liquidity ratio** (Current Ratio) indicates the company’s ability to pay for its short term obligations. A business concern will be able to meet its current obligations easily with 2:1 (internationally accepted) ratio.

(iii) **Solvency ratios** (Debt Equity Ratio and Long-term Debt Equity Ratio) express the financial position of the company. Debt equity ratios determine the long term solvency position. Higher ratio indicates that the company is financing its growth using debt which may lead to bankruptcy.

(iv) **Debt Coverage ratio** (Interest Cover ratio) measures the company’s capability to meet interest commitments and also to mobilize funds in future. If the company scores higher debt coverage ratio which means the company has lesser risk and long – term creditor’s position will be better. In other hand if it is low then the company will be burdened by debt expense.

(v) **Management efficiency ratios** (Debtors Turnover Ratio, Fixed Asset Turnover Ratio, Total Asset Turnover Ratio and Asset Turnover Ratio) are popularly known as the turnover ratios, it depicts the briskness with which the business is carried on. Debtor’s turnover ratio quantifies the effectiveness in extending credit and also the collection of debts. Asset turnover ratios indicate efficiency in using assets to generate revenue. Higher the ratios, more the firm is efficient and vice-versa.

The ratios are calculated using standard formulas which are discussed below in table 3.1. The financial and accounting data of the acquiring firms were collected from CMIE- Prowess.
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Ratio</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>Profitability</strong></td>
<td>Return on Capital Employed (ROCE)</td>
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<tr>
<td></td>
<td></td>
<td>(Earnings Before Interest and Tax / Capital Employed )*100</td>
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<td>2.</td>
<td>Return on Net Worth (RONW)</td>
<td>(Net Income / Shareholder's Equity)*100</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Gross Profit Margin (GPM)</strong></td>
<td>(Gross Profit / Net Sales)*100</td>
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<td>4.</td>
<td>Operating Profit Margin (OPM)</td>
<td>(Operating Profit / Net Sales)*100</td>
</tr>
<tr>
<td>5.</td>
<td><strong>Net Profit Margin (NPM)</strong></td>
<td>(Net Profit after tax / Net Sales)*100</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Liquidity</strong></td>
<td>Current Ratio (CR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current Assets / Current Liabilities</td>
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<tr>
<td>7.</td>
<td><strong>Solvency</strong></td>
<td>Debt Equity Ratio (DER)</td>
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<tr>
<td></td>
<td></td>
<td>Total Liabilities / Shareholders Equity</td>
</tr>
<tr>
<td>8.</td>
<td>Long-term Debt Equity Ratio</td>
<td>Long-term debt / (Preferred stock + Common stock)</td>
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<td></td>
<td>(LDER)</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><strong>Debt Coverage</strong></td>
<td>Interest Cover Ratio (IC)</td>
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<td></td>
<td></td>
<td>Earnings Before Interest and Tax / Interest Expense</td>
</tr>
<tr>
<td>10.</td>
<td>Debtors Turnover Ratio (DTR)</td>
<td>Net Credit Sales / Average Accounts Receivable</td>
</tr>
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<td>11.</td>
<td>Fixed Asset Turnover Ratio</td>
<td>Net Sales / Net Property, Plan, and Equipment</td>
</tr>
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<td></td>
<td>(FATR)</td>
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<tr>
<td>12.</td>
<td>Total Asset Turnover Ratio</td>
<td>Net Sales / Total Assets</td>
</tr>
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<td></td>
<td>(TATR)</td>
<td></td>
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<tr>
<td>13.</td>
<td><strong>Asset Turnover Ratio (ATR)</strong></td>
<td>Sales or Revenues / Total Assets</td>
</tr>
</tbody>
</table>

The ratios were calculated for 6 years annually; and a comparison between 3 years before acquisition and 3 years after acquisition (including the year in which the acquisition took place) was done to compare the pre and post performance due to acquisitions. The Wilcoxon Signed Rank Test was applied for the same.

To divulge the status of the firm’s financial efficiency after - acquisition, Independent sample t- test was used. It explains whether the improvement in the firm’s performance is achieved immediately after the acquisition or in the long – run. The first year post acquisition is taken to be the short – run and the next four years are considered to be the long – run time periods. Financial assessments were evaluated in both the dimensions and the results are interpreted separately in Chapter V.

MS EXCEL 2007 and SPSS 20.0 are the softwares used to calculate and analyze the selected financial ratios.
D. STOCK PERFORMANCE DUE TO ACQUISITION ANNOUNCEMENTS

Event study method is used to study stock price effect for short-term to acquisition completion announcements. As abnormal returns are averaged for each event day across firms (where t=0 is the announcement day) and Cumulative Abnormal Returns (CARs) are computed for the window of interest by summing average abnormal returns for the window (Hassan et al., 2007). The fundamental assumption of this method indicates that the market responds instantly for the information and announcements. Therefore the stock prices reflect the effects on events like Merger and Acquisition (MacKinley, 1997; Yesilyurt, 2012).

“Event Studies” were generally used to assess the impact of economic events on the value of the firms. It is used to develop trading strategies in the securities market; theoretically, they are significant in understanding the level of market efficiency (Fernando and Guneratne, 2009). It can be used further to evaluate the impact of policies framed by the companies on firm value one of which is the announcement or completion of a takeover (Agrawal and Mandelker, 1990; Lys and Vincent, 1995; Gregory, 1997; Bruner, 1999). The event study is an important tool in the financial economist's toolkit that can be traced back to the 1930s. Fama, Fisher, Jensen and Roll (1969) popularized the market model and others started adopting later (Sorokina et al., 2013).

The market model along with relevant t-statistics is used to analyze the above mentioned objective. The other models include capital asset pricing model (CAPM) or the arbitrage pricing theory (APT). Based on the economic theories of equivalent the above mentioned models created certain theoretical limitations that are disputed in reality, whereas the market model is free of theoretical limitations (MacKinley, 1997).

In this study, Market model (MacKinley, 1997) is used to determine the reaction of share price to acquisition completion announcements.

\[ R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \]  \hspace{1cm} (1)

Where: \( R_{it} \) = the return on the stock \( i \) on day \( t \), \( \alpha_i \) = the intercept term, \( \beta_i \) = the systematic risk of stock \( i \), \( R_{mt} \) = the return on the market on day \( t \), \( \varepsilon_{it} \) = the error term in the model.
Accordingly, the return generated by the stock in the estimation period (dependent variable) and the return generated by the market during the estimation period (independent variable) has been regressed to estimate the constant return ($\alpha$) and the sensitivity of the stock to the market ($\beta$).

The daily holding period return on stocks is used to measure the return generated by the stock, while the daily return of the SENSEX is used to measure the return generated by the market.

$$R_{it} = \frac{P_{it} - P_{i(t-1)}}{P_{i(t-1)}}$$  \hspace{1cm} (2)

Where: $P_{it} =$Share price of acquiring company’s stock $i$ at day $t$, $P_{i(t-1)} =$Share price of acquiring company’s stock $i$ at day $t-1$.

$$R_{mt} = \frac{SEN_t - SEN_{t-1}}{SEN_{t-1}}$$  \hspace{1cm} (3)

Where: $SEN_t =$SENSEX at day $t$, $SEN_{t-1} =$SENSEX at day $t-1$.

The abnormal return generated by the stock is utilized as the means to measure the response to acquisition announcements while it is computed using the estimated $\alpha$ and $\beta$ terms and the actual return on the market for that particular day.

$$E(R_{it}) = \hat{\alpha}_i + \hat{\beta}_i R_{mt}$$  \hspace{1cm} (4)

Where: $E(R_{it}) =$ expected return on stock $i$ on day $t$, $\hat{\alpha}_i =$ estimated constant return, $\hat{\beta}_i =$ estimated variable return.

Then, the abnormal returns are calculated in respect of each event as follows.

$$AR_{it} = R_{it} - E(R_{it})$$  \hspace{1cm} (5)

Where: $AR_{it} =$abnormal return on stock $i$ on day $t$, $R_{it} =$actual return on acquiring company stock $i$ on day $t$, $E(R_{it}) =$expected return on acquiring company stock $i$ on day $t$. 

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In order to get the representation of all stocks in a subsample, the Average Abnormal Return is used and is computed as follows.

\[
AAR_t = \frac{1}{N} \sum_{i} AR_{it},
\]

(6)

The Cumulative Average Abnormal Return (CAAR_t) for a given period is determined as follows.

\[
CAAR_t = \sum_{i=1}^{T} AAR_i,
\]

(7)

In order to carry out an event study “the event” and “investigation window” should be determined. The event defined for this study is the announcement of acquisition completion. Comprising the event date, investigation window of this study spreads to either side of the event date. Accordingly, the investigation window ranges from \( t_{-30} \) to \( t_{+30} \) (event window of 61 days). The event window captures the impact of the event (MacKinley, 1997) but the length of the estimation period and the window vary according to the study. In this study, the investigation window comprises of 61 days and 5 event windows, which were sorted as follows:

(i) \( W1 - (t_1, t_0, t_{+1}) \)
(ii) \( W2 - (t_{-2}, t_{-1}, t_0, t_{+1}, t_{+2}) \)
(iii) \( W3 - (t_{-5}, ..., t_0, ..., t_{+5}) \)
(iv) \( W4 - (t_{-10}, ..., t_0, ..., t_{+10}) \)
(v) \( W5 - (t_{-30}, ..., t_0, ..., t_{+30}) \)

Where: \( W1, W2, W3, W4, \) and \( W5 \) are the event windows and ‘\( t_0 \)’ identifies the acquisition completion announcement day. To calculate the model, daily share (closing) prices of the companies and the index is collected from Capitaline Database and Yahoo Finance for a period of 61 days equally spread to either side of the event date. BSE SENSEX is the index selected, because it is the standard index used in various studies, half of the acquirers are listed in the index, and their market value is more than half of the total index capitalization.
In this study, one sample t-test is adopted to find significant change in Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) in the event windows. According to Laerd Statistics “The one-sample t-test is used to determine whether a sample comes from a population with a specific mean”. One sample t-test is a statistical procedure often performed for testing the mean value of a distribution. To find out the significant change in AAR and CAAR in the event windows before and after the acquisition announcements, paired t-test is applied. A paired t-test is used to “compare two population means where you have two samples in which observations in one sample can be paired with observations in the other sample” (Shier, 2004).

MS EXCEL 2007 and SPSS 20.0 are the softwares used to calculate and present the results graphically.

E. EMPLOYEE’S PERCEPTION REGARDING IMPLICATIONS OF CROSS BORDER ACQUISITIONS

This section deals with analyzing the employee’s perception about the implications of cross border acquisitions defined as objective 5. It discusses the criteria for industry selection, followed by sample description and methodology used to justify the objective.

Though literature is abundant with studies regarding this concept, only few studies have been done in India that too not industry specific. Software Industry is in the midst of limelight for various reasons, though many studies have been conducted in this industry, the researcher has looked at in a different dimension. The mergers and acquisitions have been rising in this sector ever since 2000, but no research has been able to confine the nub of HR implications post acquisition (Malhotra and Sharma, 2013). Though the HR functions in IT industry is people centric and most affected, their voice is unnoticed (Malhotra and Sharma, 2013). In spite of the popularity of the concept in India, very few studies have been conducted in the IT and ITES industry. As the study is based on the Indian acquisitions, the respondents were from the acquired companies. Though we know there might not be major changes in the acquiring company, still the study is conducted because every company must be open to learn new things from even smaller
companies and acquirers must be willing to improvise good things from their targets. Thus, this study focuses on the impact on the employees of the IT and ITES acquiring companies post-acquisition.

Development of Indian IT sector has its foot imprinted in early 1990s after the major economic reforms. Initially the American companies started to outsource their work to India owing to the skilled low cost work force in the country. Between 1995 and 2000, the industry started to establish by escalating their investments in Research and development and infrastructure and have been considered as an IT product development destination. By 2005, the number of IT firms have increased and moved towards the complex services like product management and became multinational companies with specialized service centers (580 centers in 75 countries in 2012) and started making overseas acquisitions which encouraged the industry to go further from servicing to solutions.

As per NASSCOM's Strategic Review reports, “the global IT products and services related spending reached US$ 1.5 trillion in 2009. There was a decline of 2.9% over 2008. The global hardware market was hit worse than software or service markets as a result of the changing economic outlook, with almost 8% decline during the year. The Indian IT/ITES industry earned revenues of around US$ 73 billion during 2010 and US$ 108 billion in 2013”. By 2014, the total revenue has increased to US$ 118 billion and NASSCOM has coated the Indian IT-BPM industry as resilient, growing and evolving.

TCS, WIPRO, and HCL Technologies are the companies chosen for the study, which are top three IT companies ranked by NASSCOM. Regional preference is Chennai which makes up to 7% of IT- BPM Companies in India.

Simple random sampling technique was used to select respondents. The respondents include senior level employees (HR Group head and Senior delivery managers) and junior level employees (Programmers, Senior programmers and Architects). The population defined for this study is 1, 70, 000 employees among which approximately 28% consists of senior level employees i.e., 47, 300. The sample size is determined using Krejcie and Morgan formula; which says for population more than
75000, the sample size is 384. Out of which senior level employees make up to 108(≈28% of total sample) and junior level employees make up to 276. But the valid response rate sums up to 33.33% of senior level employees (i.e., 36 respondents) and 51.81% of junior level employees (i.e., 143 respondents). The employees taken for study belong to the acquirer companies. The data for this study is collected through questionnaire survey method. The questionnaire used for data collection is given in Appendix A and B.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Variables</th>
<th>Senior level management</th>
<th>Junior level management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Organizational Changes</td>
<td>Corporate culture</td>
<td>Work culture</td>
</tr>
<tr>
<td>2.</td>
<td>Decision making process</td>
<td>Leadership style</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Time taken for taking decision</td>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>HR policy</td>
<td>Career path</td>
<td></td>
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<td>5.</td>
<td>Employee retention</td>
<td>Rules and regulations</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Employee attrition</td>
<td>Termination/ Firing</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Recruitment of employees</td>
<td>Salary</td>
<td></td>
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<tr>
<td>8.</td>
<td>Pay roll</td>
<td>Performance evaluation</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Compensation system</td>
<td>Compensation</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Performance evaluation</td>
<td>Reward system</td>
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<tr>
<td>11.</td>
<td>Infrastructure facility</td>
<td>Pension and benefits</td>
<td></td>
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<tr>
<td>12.</td>
<td>Technology Updation</td>
<td>Work space</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Occupation Health and Safety</td>
<td>Infrastructure facility</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Environment Management System</td>
<td>Technology Updation</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Strategic Changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Change in labor law agreements</td>
<td>Training</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Consolidation of HR department</td>
<td>Working hours</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Expansion of Organization</td>
<td>Job satisfaction</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Financial improvement</td>
<td>Job motivation</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>-</td>
<td>Job atmosphere</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>-</td>
<td>Dress code</td>
<td></td>
</tr>
</tbody>
</table>

Two questionnaires are prepared separately for senior and junior employees and the respondents were asked about their opinion regarding the changes due to acquisition. After explicit reviewing, the variables used in the questionnaire were selected to analyze the experience of the employees after acquisition by their firms. For this study, the variables associated to post-acquisition changes are classified into two categories namely – organizational changes and strategic changes. The variables are listed in table 3.2 above.
separately for senior level employees and junior level employees. In total 18 variables were selected for the former and 21 are selected for the later.

Six open ended questions were asked to the senior level employees pertaining to general information regarding their company and its cross border acquisition. Questions regarding organizational changes are measured on five point likert scale starting with strongly agree to strongly disagree, the weights were allotted based on their importance (Strongly agree – 5, Agree – 4, No Change – 3, Disagree – 2, Strongly Disagree - 1). The Business Dictionary explains Likert scale as “a method used to ascribe the quantitative value to qualitative data, to make it feasible for statistical analysis. A numerical value is assigned to each potential choice and a mean figure for all the response is computed at the end of the evaluation or survey”. The queries related to strategic changes are measured on a nominal scale (Yes/ No). Percentage analysis is carried out to analyze the data with MS EXCEL 2007 software and the results are presented graphically.

Limitations of the Study

- The non availability of data base regarding the number of deals (acquisitions) completed and confidentiality of information by the companies were major constraints of the study.
- The results are confined only to the selected companies, sectors and time period. Thus a generalized view about the cross-border acquisitions cannot be made.
- The survey pertains to Chennai and selected organizations only. Therefore the results may differ in other parts of the country.