CHAPTER – 2

LITERATURE REVIEW

The review of literature has been divided into three parts based on the different field of literature relevant to our study. We present the important studies here and the other supporting studies have been discussed in the Annexure. We have arranged the papers chronologically.

2.1. Trade-off theory

Modigilani and Miller (1958) were the pioneers to bring the spotlight on capital structure research. Their irrelevance theory, which states that the value of a firm is dependent on their investments and expected earnings rather (is independent of) than on their financing decisions, is one of the seminal papers of capital structure research. Their conclusions are based on certain critical assumptions: No taxes, Perfect capital markets, rational investors, etc., which were further from the real life scenario.

Their subsequent study (Modigilani and Miller, 1963) relaxed the assumptions of no income taxes. This study concluded that the value of a levered firm is equal to the sum of the value of the unlevered firm and the tax benefit afforded by debt capital. This model is referred to as the tradeoff theory, according to which capital structure of firms is determined by the trade-off between the benefits of debt and costs of debt. The benefits of debt primarily being the interest expense saved due to the tax shield on debt and the costs being the probability of bankruptcy and its associated costs.

Titman and Wessels (1988) was among the first studies to empirically examine various capital structure theories developed using data of US firms. The study, in particular examines eight different capital structure determinants' (Collateral value of assets, Non Debt Tax Shield (NDTS), Growth, Industry classification, Size, Volatility, Profitability) impact on the firm's leverage.

They use six different measures of leverage (ratio of short term, long term and convertible debt to Market value and book value of equity). Using manufacturing firm data from the COMPUSTAT database for the years 1974 through 1982 (9 years). The study uses the panel regression model with OLS estimation to find that profitability and uniqueness have a significant and negative relationship with leverage. The study also points out the changes in leverage may be dictated by the transaction costs faced by the firm. This study emphasizes on the transaction costs involved in capital structure change which the basis of speed of adjustment analysis

Rajan and Zingales (1995) were the first paper which tried to point out institutional differences between countries that might impact the generalizability of previous capital structure research which were majorly US centric. The main objective of the paper was to examine whether the capital structure of firms in other countries is influenced by the same factors as that have been known to influence the capital structure of firms in the US. The study looks at the G-7 countries (The United States, Japan, Germany, the UK, Italy, France and Canada). The study uses the Global Vantage database to collect data of non-financial large firms (4,557 firms) from the G-7 nations, the study period is from 1987 through 1991 (5 Years). The following multivariate regression model was used in the study to determine the impact of the variables on leverage.

The study uses tangibility, market to book ratio, Log of sales and Return on asset as independent variables, with leverage as the dependent variable. The study concludes that countries with similar institutional setup have different determinants of leverage (USA and UK) and some countries with different institutional setups have similar determinants of leverage. On the aggregate level, the study concludes that firm leverage and the factors identified in previous researches are similar to across the G7 countries and that institutional differences alone is not able to explain the variation in leverage. The paper suggests even more in-depth analysis to the theoretical underpinnings of the factors of capital structure and the institutional differences impact on Capital structure.

The paper sample was limited to the advanced or developed countries and would have a problem generalizing their results. The paper uses only four independent variables to determine leverage. However, the paper indicates that institutional differences have an impact on the leverage of the firm and that motivates us to explore the same in a developing economy, such as India, where such institutional differences have given rise certain organizational differences which is not found in developed economies. We also adopt the four determinants of capital structure used in this paper in our study.

Graham and Harvey (2001) conducted a first of its kind survey of corporate practices to study and analyze the present practices of the corporation with respect to areas like capital budgeting, cost of capital and capital structure. The paper conducts a survey of US firms with 392 chief financial officers responding to the survey. The study concluded that the corporate practices are very close to many of the corporate finance studies taught in graduate business schools over the years. With respect to capital structure theories, the study finds support that

firms follow a target capital structure and tradeoff there benefits and costs of debt before taking financing decisions. The paper motivates our study to examine whether firms in India actual consider target leverage during their capital structure decisions.

2.2. Business group affiliation

Chang and Choi (1988) were one of the first studies to examine the impact of group affiliation on firm performance. They hypothesized that performance of the group affiliated firm was same as an independent firm. The study used a sample of 182 listed Korean firms, of which 63 were group affiliated and 119 firms were independent. The period of study was 10 years from 1975 to 1984. Using multivariate regression analysis with profit being regressed on control variables like growth in sales, total assets, concentration ratio, diversification index separately for each group. The study finds evidence that highly diversified firms are more profitable than less diversified firms and also conclude that group affiliated firms showed higher economic performance than standalone firms. Their results provide evidence that the higher the diversification, higher is the performance among group affiliated firms. The paper limits its study only to manufacturing firms from Korea. It also limits itself to four independent variables: advertising expense, total assets, sales growth and diversification index to regress on profitability and also fails to provide any reasoning for the same. However, this paper motivates us to examine group affiliation and primarily the level of diversification of group affiliated firms' effect on SOA in a developing economy context.

The study by Khanna and Palepu (2000) is one of the seminal studies that has discussed the reasons for the formation and existence of group affiliation in emerging markets. The paper

empirically examined whether affiliation with a diversified business group in an emerging market creates or destroys firm value. It hypothesized that the affiliation with a diversified business group had no impact on firm performance. Using data of listed Indian firms from the CMIE database, the paper analyses a total of 1309 listed firms of which 655 firms are group affiliated and 654 are standalone firms for the year 1993. Using CMIE's classification of groups and proxy of Tobin's q as a measure for performance, the paper concludes that the firms affiliated to diversified business groups have a higher profitability compared to the standalone firms and less diversified firms. This suggests a positive and significant relationship between group affiliation and profitability and also level of diversification and profitability. The paper uses only firm size, age and industry affiliation other than proxy for group diversification as the independent variables on performance (Tobin's q) of the firm. The paper also fails to test for any endogeneity with the data collected. The paper provides us theoretical support that emerging economies like India having different institutional setup when compared to the advanced western economies. We also adopt the method used by this paper to define group affiliation and also the measure of the defining level of diversification of group affiliated firms.

Booth et al. (2001) is an important study which attempted to study the effect of institutional differences between developed and developing countries on the capital structure of firms. Using the IFC's Database on emerging countries the study examines the capital structure pattern in ten developing countries. The data comprises of the largest 100 publicly traded firms in the respective countries they test the viability of the models developed in the western world in the developing countries. The examination showed that despite very different institutional differences the models are viable in both developed and developing countries.

Molen (2005) examined the presence and the workings of the internal capital markets in Indian business groups. The study compares the investment behavior of group affiliated companies to that of standalone companies. The sample period was from 1997 to 2002 and with 4,176 companies (2,649 Standalone and 1,527 group firms). They found that group affiliated firms have substantial reallocation of funds between affiliated firms than that of standalone firms. The study also found that the efficiency of relocation decreases as the diversity of the firms affiliated to the group increases.

Chakraborty (2012) is an Indian sampled study which investigates the impact of group affiliation on financing decisions of firms. They use a data of 875non financial firms from the 2002-2010.Using GMM estimation method the study found that group affiliated firms tend to use more of equity to reduce risk of bankruptcy on the firm and the group. Further, they conclude that the group affiliated firms tend to reduce their Research and Development and capital investments to service debt. This result was contrary to the existing belief that group affiliation is beneficial to firms.

Fier et al. (2013) is one of the first studies which combined two different streams of literature, i.e. the SOA literature and that of the group affiliation. The study examines whether the internal capital market of group affiliated firms affects the speed at which the firms match to their target capital structure. The paper used a sample of property casualty insurance firms. The study tests two hypotheses first, conglomerated property casualty insurance firms have target leverage ratio and second, the use of internal capital markets is dependent on insurer's deviation from the target capital structure. The study considers US conglomerated property casualty insurers only, whose data is obtained from the National Association of Insurance Commissioners

(NAIC) annual reports. The sample period of the study is from 1996 through 2009 (14 years). The study uses the model used by Flannery and Rangan (2006) and concludes that the sample firms do consider a target leverage ratio and that the use of the internal capital market depends on the deviation from the target leverage. Higher the deviation from the target, the higher is the use of the internal capital markets. The paper limits itself to US insurance companies only. However the paper is the first to attribute internal capital markets of group affiliated firms to have a higher SOA than that of standalone firm and provides our study a basis to test the same in the Indian context where group affiliation is predominant.

2.3. Speed of Adjustment

Flannery and Rangan (2006) was the first paper to discuss and provide a methodology to empirically estimate the optimal capital structure. Prior to this study, other researchers used to consider the industry average as the proxy for target capital structure. This study sets out with two major objectives, one was to provide an empirical method to calculate the optimal capital structure and second to measure the speed at which firms are able to adjust their capital structure to that of the target. The study models the phenomenon using the partial adjustment procedure and the coefficients of which were estimated using both the OLS and GMM techniques.

$$\boldsymbol{MDR_{i,t+1} = \lambda\beta X_{i,t} + (1-\lambda) MDR_{i,t} + \delta_{i,t+1}} \qquad \textbf{(2)}$$

Where $X_{i,t}$ is a set of firm characteristics, $MDR_{i,t}$ is the Market Debt Ratio for year't', λ is the speed of adjustment. They examine 12,919 US firms for a period of 37 years, from 1965 to 2001. The paper uses firm characteristics that determine the capital structure of firms as reported in Rajan and Zingales, 1995; Hovakimian, 2003; Hovakimian et.al, 2001; Fama and French 2002. Those are firm size, tangibility, NDTS, profitability, growth opportunities, and industry median

leverage. The paper found evidence of long run target leverage ratio for firms and in the long run the firms under study cover its gap at an average rate of about 30% every year. The paper's area of study is limited to the US and it is to be tested whether the results hold true in other countries which have different institutional setups giving rise to a completely different organizational setup. This paper provides a measure to calculate the speed of adjustment of capital structure which we are adopting for our study. This study does not talk about the impact of firm characteristics on differential SOA, our study tries to address this. We also adopt the control variables used by this paper in our study.

Cook and Tang (2010) studied the impact of macroeconomic conditions on the speed of adjustment of US firms. Research till then had not studied the effect of economic conditions on the adjustment speed involved in financing decisions. Based on this objective they examined the hypothesis that assumed no impact of economic conditions on SOA. Their sample consists of 1,24,466 firm-year observations of US firms which span 1977 through 2006 (30 years). They use the partial adjustment model used by Flannery and Ragan (2006) to examine the impact of four macroeconomic variables (term spread, default speed, GDP growth rate and dividend policy) on SOA. The coefficients were estimated using the GMM procedure. Their results show positive and significant impact of economic conditions on the speed of adjustment, which means that in a good economic conditions firms move faster towards their target leverage. Hence, macroeconomic conditions have a significant impact on the speed of adjustment. The paper examines the US prospects alone. It motivates us to examine how macroeconomic conditions affect capital structure adjustments in a majorly bank dependent or less developed capital markets like India.

Faulkender et al. (2012) is the first study to examine the effect of cash flows on the speed of adjustment. Studies till the time had analyzed how adjustment costs of capital structure determined the financing decisions and in turn SOA (Byoun, 2008).Earlier studies have ignored to look at how cash inflow would affect SOA. Using data of US firms, sourced from COMPUSTAT for a period from 1965 to 2006 (42 years) and again using the partial adjustment model employed by Flannery and Rangan (2006) they provide evidence to show that there is a positive and significant impact of the increase in cash flows on SOA. This indicates that firms with high cash inflows can overcome adverse adjustment costs and move faster towards its target leverage. This paper motivates our study to examine the impact of firm characteristics like profitability, firm size etc. on SOA of capital structure.

2.4. Research Gaps

I. Most research in the field of speed of adjustment has majorly been conducted in the advanced economic context, especially US (Flannery and Rangan, 2006; Byoun (2008); Cook and Tang, 2010; Flaunkenderet.al. 2012). India being an emerging economy has many institutional differences like legal, financial and regulatory differences. These institutional differences have led to many market imperfections which are not present in the advanced economies (Khanna and Palepu, 2000). Hence, these researches which are based on advanced economic conditions have to be retested in the Indian context to test whether they hold true given these market imperfections. Hence, it is important to test whether Indian firms follow a target leverage given certain institutional differences.

II. Within India, the market imperfections caused due to less developed market conditions have led to the formation of business groups which overcome these market imperfections with a self-established institutional setup. One of the ways to overcome these imperfections is the formation of an internal capital market, which only group affiliated firms have access to (Khanna and Rivkin, 1999; Khanna and Palepu, 2000). Hence, it's imperative to examine whether these group affiliated firms due to their different institutional set up are able to adjust towards their target capital structure faster and thereby have a higher SOA than standalone firms

III. Given these market imperfections which have caused the formation of business groups, certain business groups have diversified into different industries to mitigate risk and to further consolidate their hold and increase their presence in the economy. A firm belonging to a highly diversified firm would have different institutional set up (in terms higher reputation, larger internal capital, better access to government authorities, etc.) than a less diversified firm (Khanna and Palepu, 2000). Therefore it is important to examine whether institutional differences between highly diversified firms and less diversified firms are significant enough to influence the speed of adjustment of their capital structure.

IV. The tradeoff between the tax benefit of debt and the bankruptcy cost of debt gives rise to a target capital structure at which the firm's value is high. The tax benefit of debt is dependent on the sales turnover of the firm which in turn is dependent on the

macroeconomic conditions. Similarly the bankruptcy risk and loss a company makes is also economy dependent (Cook and Tang, 2010). It is logical to examine whether macroeconomic conditions impact the adjustment cost of capital structure and thereby the speed of adjustment. There is no such study conducted in the Indian context;

Firm specific characteristics like profitability (Faulkender et al., 2012), size of firm, listing status and firm's growth opportunities plays an impact role in the determination of the value of the firm. Hence, they may also impact the speed of adjustment of the firms as well. No study has examined this in the Indian context