CHAPTER I

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Section I: Introduction

Capital structure is one of the most important issues in corporate finance. Several theories have been put forward on this subject. The landmark study of Modigliani and Miller (1958) showed that the value of the firm is independent of its capital, if certain conditions are met. Internal and external finance are perfect substitutes and all investors have equal access to the capital markets, which operates in perfect conditions without issuing costs, bankruptcy cost, taxes or costs of asymmetric information. However, the other modern corporate finance theories have established that capital structure of the firm does matter (Ross, 1977, Myers, 1984, Titman and Wessels, 1988, Brealy and Myers, 1991 and Rajan and Ziangales, 1995). The objective of a firm is to maximize its overall market value, which it can accomplish by issuing securities in combination, which maximizes its overall market value.

Amongst the several theories advanced to explain capital structure of firms, the Static Trade-off Theory and Pecking Order Theory are the most used theories on corporate leverage. The Trade-off presumes that firms set up a target debt ratio and try to achieve it. This target would be a (trade-off between the cost and the benefit of debt, that is, bankruptcy cost against tax benefits. This theory balances the tax advantages of borrowing against the cost of financial distress. The criticism received by the static trade off theory was that it failed to explain the observed corporate behavior particularly as witnessed by the stock market reaction to
increase or decrease in leverage which have led to an increase and decrease respectively in the stock prices.

As an alternative to the trade off model, the pecking order hypothesis of corporate leverage was put forward by Myers (1984) and Myers and Majluf (1984) The model was based on asymmetric information problem. The existence of asymmetric information between a company's insiders and outsiders affect the choice between internal and external finance and between new issue of debt and equity. It proposes that in raising finance, managers follow a pecking order in which Internal funds are preferred first followed by debt, hybrid securities and then, as a last resort, a new issue of ordinary shares.

As an addition to the pecking order hypothesis, various other signaling models of capital structure have been developed which suggest that managers use leverage to signal firm prospects to poorly informed outside investors who believe these signals because they are prohibitively costly for weak firms to mimic. (Chen, 2004). In accordance with this theory, the best-informed agents may send out signs about the company to lesser-informed agents. Since managers are better informed about the company's profitability than outside investors, they may alter the capital structure in order to provide signs to the investors to relook their estimates about the company's profitability and risk (Ross 1977). Increasing debt in the capital structure suggests that the company enjoys superior position in terms of profitability and thus sends a positive signal to the market.

The relationship between industry membership and capital structure has received considerable attention. The industry in which a firm operates is likely to have a significant effect on its capital structure. Studies in the past have identified
variables like profitability, size of the firm, tangibility of assets, growth, tax shield, liquidity and business risk as the determinants of capital structure.

However majority of these studies have been confined to the United States and other developed countries, with little work done for developing countries cases. Empirical evidences from the latter are expected to supplement the existing literature, given the fact that such economies have different institutional structures and have specificities of their own as far as the financial markets and the economy in general are concerned. Moreover, these economies have undergone a substantial transformation during the previous decade as witnessed by the move towards privatization/free market, coupled with the widening and deepening of various financial markets; including the capital market.

Need and Significance of the study

This objective of the study was to understand whether factors determining capital structure of developed countries apply to developing economy of India. The study is expected to shed light on how liquidity conditions, company size, growth opportunities, tax shield effects, and the composition of the company’s assets affect the choice of debt equity ratios of Indian companies operating in different industries of the Indian economy. For this research, we studied a sample of 824 companies spread over 10 industries for a period of 11 years. This study is undertaken to provide greater insights into the validity of various mainstreams of capital structure theories.
Scope and Limitation of the study

The current study aims to investigate whether there is any inter-differences in capital structure of Indian firms and also investigate if the main capital structure theories – pecking order, trade off, agency and signaling theories – can explain the determinants of debt of Indian companies. The study will cover the following objectives:

- To understand the prevalent capital structure of Indian companies in different industries.
- To understand if the leverage decisions differ across industries in India.
- A comparison with the existing studies on the developed nations.
- To provide empirical evidence to the capital structure literature on the Pecking Order theory and the Trade off theory and Agency Theoretic Framework, in the context of an emerging market like India.
Section II: Review of Literature

There are three major theories in the Corporate Finance literature, namely, Trade-off theory, Agency Cost theory and Pecking-Order theory that highlight different determinants of corporate capital structure. Underlying these theories are the assumptions of the irrelevance theorem of Miller and Modigliani.

Modigliani and Miller Irrelevance Proposition: -

In complete and perfect capital markets, research has shown that total firm value is independent of its capital structure. An optimal capital structure does not exist when capital markets are perfect. Taxes and other market imperfections are essential to building or proving a positive theory of capital structure. Changes in capital structure benefit only stockholders and then if and only if the value of the firm increases. An expropriation of wealth from the bondholders would in a rational expectations equilibrium be expected by the bondholders, and the stockholders would ultimately carry the costs of the expropriation. Miller and Modigliani (1958) wrote the seminal article in this field of research, using an arbitrage argument. If a firm can change its market value by a pure financial operation, the investors in the firm can take actions that replicate the resulting debt position of the firm. These transactions would merely change the weights of a portfolio and should, in a perfect capital market, give zero profit. If the market were efficient enough to eliminate the profits for the investors, any profit for the firm would be eliminated too. Modigliani and Miller in their original articles Miller and Modigliani (1958) and Miller and Modigliani (1958) assume several strict constraints.

1. First, the capital market is frictionless (i.e without transaction costs)
2. Individuals can borrow and lend at risk free rate of interest
3. All firms are in the same risk class.
4. No growth is allowed since all cash flows are perpetuities.
5. Firms issue only two types of claims, risk free debt and risky equity. *All bonds (including any debts issued by households for the purpose of carrying stocks) are assumed to yield a constant income per unit of time, and the income is regarded as certain by all traders regardless of the issuer"* Miller and Modigliani (1958b)
6. Bankruptcy cost is associated with debt
7. Firms do not have to pay any tax
8. Corporate Insiders and Outsiders have the same information (no signalling opportunity exists)
9. There is no agency cost. Managers are loyal stewards of owners and always maximize stockholders’ wealth. Copeland and Weston (1988)

Later, others such as *Stiglitz (1974) and Merton (1990)* have removed the assumption of risk class. *Myers (1984)* said that lifting these restrictions, one at a time, start possible causes for the capital structure puzzle. The theoretical models of capital structure in a world in which capital markets are not perfect relates capital structure to several measurable and non-measurable attributes of a firm. The irrelevance proposition provides conditions under which the capital structure of a firm is irrelevant to total firm value. Turning the irrelevance proposition around, the proposition also tells us which factors that may be the causes of corporate capital structure. The assumptions giving irrelevance as a result may cause relevance if they are broken. The question is, do they, and if so to what extent? And what if several imperfections exist simultaneously?

The subsequent writers on capital structure relaxed above mentioned assumptions 6 – 9 and have developed the following theoretical models of capital structure: (i) **Static Trade Off Theory (STT)** (ii) **Pecking Order Hypothesis (POH)** or **Asymmetric Information Model (AIT)** (iii) **Agency Theory** (iv) Models
based on product market Interactions (v) Models based on corporate control.

The MM Proposition 1

Assume perfect capital markets and no taxes on corporate income. An equilibrium in the capital market requires that the value of the firm, \( V_t \), should be independent of the proportions of debt and equity in the firm's capital structure.

\[
V_t = VB_t + VE_t \quad (1)
\]

Let \( V \) be the total market value of the firm debt and equity.

\( VB = \) market value debt
\( VE = \) market value equity

The Trade-off Theory

Jensen (1986) argues that debt is an efficient means by which to reduce the agency costs associated with equity. Klaus and Litzenberger show that with the tax advantages of debt, optimal capital structure includes debt financing. Ross (1977) and Leland and Pyle (1977) argue that debt can be valuable as a device for signaling firm value. The three main hypotheses that are used to explain differences in capital structure between companies are the transaction-cost hypothesis, the asymmetric information hypothesis and the tax hypothesis.

According to Harris and Raviv (1991), leverage increases with fixed assets, non-debt tax shields, investment opportunities, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability and uniqueness of the product. This theory claims that a firm’s optimal debt ratio is determined by a trade-off between the losses and gains of borrowing, holding the firm’s assets and investment plans constant. The firm substitutes debt for equity,
or equity for debt until the value of the firm is maximized. The gain of debt is primarily the tax-shelter effect, which arises when paid interest on debt is deductible on the profit and loss account. The costs of debt are mainly direct and indirect bankruptcy costs. The original static trade-off theory is actually a sub theory of the general theory of capital structure because there are only two assumptions that are broken here, the no tax incentive assumption and the no bankruptcy cost assumption. In the more general tradeoff theory several other arguments are used for why firms might try to adjust their capital structure to some target. Leverage also depends on restrictions in the debt-contracts, takeover possibilities and the reputation of management. *Harris and Raviv (1991)* have proposed a negative correlation between debt and monitoring costs. *Diamond (1989)* suggests that vintage firms with a long history of credits will have relatively low default probability and lower agency costs using debt financing than newly established firms. A common factor for all these firm characteristics are that they are proxies meant to measure some form of costs related to a principal-agent problem. There may simultaneously be several principal-agent problems between the different classes of securities in the firm or between stockholders and managers in the firm. This multiplicity of problems can easily confuse the analyst and lend an air of incomprehensibility to the field of corporate finance. A construction of a positive theory of debt financing, builds on arguments on the advantages and disadvantages of debt. First, debt is a factor of the ownership structure that disciplines managers. Limiting control to a few agents that control the common stock, while the rest of the capital is raised through bond sale, can reduce agency cost of management. Second, debt is a useful signaling device, used to inform investors a message of the firm’s degree of excellence. Third, debt can also reduce excessive consumption of perquisites because creditors demand annual payments on the outstanding loans. Debt also has its disadvantages. First, there is the problem of agency cost of debt that includes risk substitution and under
investment. Second, debt also increases bankruptcy possibility by increasing the financial risk of the firm

**The Pecking Order Theory**

According to the pecking order theory, the firms will prefer internal financing. The firms prefers internal to external financing, and debt to equity if the firm issues securities. In the pure pecking order theory, the firms have no well-defined debt-to-value ratio. There is a distinction between internal and external equity. Several authors have been given credit for introducing signaling as an argument in the discussion of debt's explanatory factors. *Ross (1977), Leland and Pyle (1977)* and *Myers and Majluf (1984)* are often quoted as the seminal articles in this branch of the literature. The basic intuition of Ross model follows from the observation that managers are penalized for bankruptcy on the one hand and rewarded for any rise in the value of the security on the other. The main practical implication of Ross model is a positive association between leverage and the value of the firm. *Leyland and Pyle (1977)* have argued that the promoter stake can be used as a signal of quality. They show that good firms will be more leveraged in equilibrium. The second approach is designed to mitigate the inefficiencies in the firms' investment decisions that are caused by the information asymmetry. This branch of literature starts with *Myers and Majluf (1984)*.

*Myers (1984)* tested the two main theories of capital structure i.e. the Static Trade Off Theory (STT) and the Pecking Order Theory (POT)

1. A static tradeoff framework, in which the firm is viewed as setting a target debt-to-value ratio and gradually moving towards it, in much the same way that a firm adjusts dividends to move towards a target payout ratio.
2. An old-fashioned pecking order framework, in which the firm prefers internal to external financing, and debt to equity if it issues securities. In the pure pecking order theory, the firm has no well-defined target debt-to-value ratio.

The paper contrasts the "static tradeoff" and "pecking order" theories of capital structure choice by corporations. In the static tradeoff theory, optimal capital structure is reached when the tax advantage to borrowing is balanced, at the margin, by costs of financial distress. In the pecking order theory, firms prefer internal to external funds, and debt to equity if external funds are needed. Thus the debt ratio reflects the cumulative requirement for external financing. Pecking order behavior follows from simple asymmetric information models. The paper closes with a review of empirical evidence relevant to the two theories.

*Myers and Majluf (1984)* describe the preference like this: The firms prefer internal financing; they target dividends given investment opportunities, then chose debt and finally raise external equity. The pecking order was traditionally explained by transaction and issuing costs. Retained earnings involve few transaction costs and issuing debt incurs lower transaction costs than equity issues. Debt financing also involves a tax - reduction if the firm has a taxable profit. Myers and Majluf (1984) invoked asymmetric information to give a theoretical explanation for the pecking order phenomena. The signaling model leads to a pecking order concept of capital structure, where retained earnings are preferred to debt and debt is preferred to new equity. The signaling model showed that only low profit type firms would issue equity in a separating equilibrium. Rational investors foresee this and demand a discount in Initial Public Offerings (IPO). This discount is a cost of raising equity that will be borne by the internal stockholders. Debt signals to the capital market that the issuing firm is a high performance firm.
Much of the support for the pecking order comes from event studies. In these studies, it is found that firms that issue equity have share price drops on the order of 3 percent. It is also found that firms that issue debt have abnormal returns that are not distinguishable from zero. This adverse selection result is often interpreted as supporting *Myers and Majluf (1984)*. *Brennan and Kraus (1987)* showed that adverse selection by itself does not imply a pecking order. Event studies are at best indirect tests of the pecking order.

Controlled experimental evidence also provides some support for the *Myers and Majluf (1984)* theory. When experimental subjects were placed in a setting that matched the theory, *Cadsby, Frank and Maksimovic (1990)* found the predicted equilibrium behavior. However, when the environment was enriched by the addition of a signaling opportunity, *Cadsby, Frank and Maksimovic (1998)* found much greater complexity of behavior. Experiments test what happens in particular well-controlled settings. They do not show which setting better mirrors the US economy in general.

A prominent quantitative test of the pecking order theory is by *Shyam-Sunder and Myers (1999)*. They tested the pecking order model of corporate leverage against a standard target adjustment model of leverage. They found that the pecking order theory is an excellent first-order approximation of actual corporate financing behavior for the 157 firms in their sample. Tests of the standard target adjustment model were shown to lack the power to reject, even when false. The same tests show that the target adjustment model accounts for less of the variation in the data than does the pecking order theory. These findings are attractive since the pecking order is offered as a parsimonious empirical model of corporate leverage that is descriptively reasonable. These finding are theoretically challenging since they interpret the target adjustment framework as nesting many different
static tradeoff models. Thus many different models are being rejected simultaneously in favor of the pecking order theory. There is a need for a simple theoretical structure that successfully accounts for the available information about corporate financing, and Shyam-Sunder and Myers (1999) reported that the pecking order theory provides such a structure.

Chirinko and Singha (2000) questioned Shyam-Sunder and Myers (1999) testing methods. According to Shyam-Sunder and Myers, the pecking order model predicts that a regression of change in debt on financial deficit should yield a coefficient of one. Chirinko and Singha show that for an empirically relevant amount of equity issue, the coefficients can be significantly smaller than one even when firms follow a financing hierarchy consistent with the pecking order model. They also show that regression coefficient on deficit can be close to one even when firms do not follow pecking order theory. Finally, they show that Shyam-Sunder and Myers test can result in incorrect inferences that the financing pattern is consistent with pecking order model even in a situation where debt and equity are always issued in fixed proportions. They, therefore, argue that alternative testing methods are needed.

Fama and French (2000) have tested some of the qualitative predictions of the pecking order theory against the qualitative predictions of the tradeoff model. They find that more profitable firms are less levered. This is consistent with the pecking order. Fama and French (2000) also find that firms with greater investment opportunities are less levered as predicted by the tradeoff theory. Jung, Kim, and Stulz (1996) studied major new bond issues and primary stock offerings by American firms from 1977 to 1984. They considered agency, market timing and pecking order theories to account for the security issuing decision. Some firms were found to issue equity when the pecking order would predict the issue of debt.
A number of researchers study incremental financing decisions as a function of firm characteristics. The standard target adjustment model is associated with Taggart (1977), Marsh (1982) and Jalilvand and Harris (1984). Marsh (1982) used ten-year averages in his study of U.K. firms and found that firms with high leverage relative to the target are more likely to issue equity. Jalilvand and Harris (1984) estimated a partial adjustment model for firms that had complete records for 1963-1978. Firms with low levels of long-term debt tended to issue more debt. They assumed that the long-term average debt level was the target. Fischer, Heinkel and Zechner (1989) found that firms with low bankruptcy costs allow more variation in their leverage ratios.

A. Asymmetric Information (Signalling) Problem

Asymmetric information between old and new investors, and managers and investors incite to signaling games where the amount of debt, and the timing of new issues is viewed as a signal of the performance of the firm. Akerlof (1970) introduced an adverse selection argument, that explains why prices of used cars drops significantly compared to new cars. The seller of a used car will usually have more information about the true performance of the car than the prospective buyer. The buyer's best guess would be the average performance of cars in the market. The buyer, when offered a car, expects the performance of the car to be below average, otherwise the car would not have been offered to the market. Consequently, the price of used cars decline and the only cars offered for sale are the cars not well made and maintained. The buyers require a discount to compensate for the possibility that they might purchase an Akerlof lemon. Earlier there used to be a tendency that cars built on Mondays for some obscure reason had more problems than other cars. The focus on quality control may have put this problem to an end, but still some cars seem to endure longer than others. The
heart of the matter is that the seller is aware of the upcoming reparations and problems, but the buyer is not. A recent trend in Norway to overcome this problem is to require a complete check of the car by an authorized workshop before buying. The workshop produces a status report on the technical condition of the car, which serves as a signal of performance of the car to prospecting buyers. This signal reduces the asymmetric information in this market. Analogously, the only firms for sale, in the market for corporate control, are those with below average excellence. The firm’s will, according to the adverse selection argument only issue new equity when the stock is overpriced. Issuing debt can be a signal to the capital market that the firm is in fact an excellent firm and that the management is not afraid to borrow money. The bankruptcy possibility is supposedly not large enough to let extensive borrowing bring about the current management’s control of the firm. The idea underlying the signaling models is that stockholders or managers signal private information to the security market in order to correct the market’s perception of excellence.

**Agency Theory**

The agency theory, developed by *Jenson and Meckling (1976)*, considers the modern corporate firm as a complex of agency relationships in which one group (the principals) deploy the other group (agents) to perform tasks on their behalf, providing some decision-making authority to the latter. If the parties involved in the agency relationships are opportunists, then it is hard to believe that the decisions taken by the agents would be optimal. The principal, knowing that monitoring is costly, can limit it by setting up proper incentive schemes for the agents. Jenson and Meckling identify two types of conflicts: Conflicts between shareholders and managers, and the conflicts between debt holders and equity holders. Conflicts between shareholders and managers arise because managers
hold less than 100% of the residual claim. Consequently they do not capture the entire gain from their profit enhancement activities, but they do bear the entire cost of these activities. Conflicts between debt holders and equity holders arise because the debt contracts give equity holders an incentive to invest sub-optimally. More specifically, the debt contracts provide that if an investment yields large returns, well above the face value of the debt, equity holders capture most of the gain. If, however, the investment fails, because of limited liability, it is the debt holders who bear the consequences. As a result, equity holders may benefit from "going for break" i.e. investing in very risky projects even if they are value decreasing. Such investments result in a decrease in the value of the debt.

**Product/input market theory**

The product/input market theory explains two issues, namely, the linkage between financial structure and product market strategy, and the linkage between the input market and the financial structure. Several contributors have studied the first issue by modeling the relationship between capital structure and observable industry characteristics such as demand and supply conditions and the extent of competition. The early contributors of this model are Brander and Lewis (1986). They have shown that the oligopolists have a tendency to increase business risk by adopting a more aggressive product market strategy supported by a positive debt level. The result in this model is driven by the fact that due to limited liability, equity holders of leveraged firms receive pay-off only in good conditions. Given the assumption that the marginal product is higher in good conditions, the leverage creates an incentive to produce more. Glazer (1989) shows that when the long-run considerations are taken into account, the firms have an incentive to issue long-term debt.
The second approach to the capital structure determination is to identify product or input market characteristics that interact in a significant way with the debt level. The examples included here are customers' need for a particular product or services, the need for workers to invest in firm specific human capital, product quality and the bargaining power of workers or other suppliers. Titman (1984) first argued that the liquidation or financial distress imposes a substantial cost on the users of the product. Therefore, customers might be interested in the financial position of a company if they pay for a product or service that is durable in nature. Warranties on new cars, and technical services for computer equipment fall in this category. Thus, more debt in company's financial structure often gives a negative signal in the product market and impairs its competitive edge. As a result, highly indebted companies are likely to experience financial difficulties, which might lead to bankruptcy. This implies that the firm's operating income crucially depends upon the firms' capital structure. Allen (1985) also focuses on bankruptcy costs emanating from the product market. He points out that firms in financial distress may postpone investments, thus giving an advantage to their competitors. Sarig (1988) argued that firms whose workers have easily transferable skills should have more debt. Maksimovic and Titman (1991) have argued that the firms, that produce products that are unique or require service, and the firms for which a reputation for producing high quality products is important, may be expected to have less debt, other things being equal.

Model Based on Corporate Control

Because of the increase in importance of takeover activities in the 1980s, some researchers have examined the linkages between the issue of corporate control and capital structure. This field of research has grown from the strong belief that the distribution of financial claim and distribution of votes can affect the value of a
firm. *Harris and Raviv (1988)*, and *Slutz (1990)* have shown a link between managerial control of voting rights and the firm's capital structure. They have suggested that the optimal capital structure is determined by the strategic role of the debt in providing the manager with the crucial resource to *acquire* the voting rights, particularly when the managers are liquidity-constrained to buy enough of the votes in large firms. Thus, the incumbent managers may use the capital structure as an "antitakeover device" by exploiting the fact that common stock carries voting rights bill debt does not. For a given rupee of investment in shares, the managerial control over voting rights increases with the increase in the amount of debt or other non-voting securities like preferred stock in the firm’s capital structure.

**Free Cash Flow Problem**

*Debt creation, without retention of the proceeds of the issue, enables managers to effectively bond their promise to pay out future cash flows. Thus debt can be an effective substitute for dividends, something not generally recognized in the corporate finance literature. Jensen (1986)*

The argument of the free cash flow and the role of debt to control opportunistic management is due to *Jensen (1986)*. Debt reduces management opportunity to spend excess cash flow in non-profitable investments. Management has less control over the firm’s cash flows since these cash flows have to be used to repay creditors. *Jensen and Meckling (1976)* have argued that managerial incentives to allocate the firm’s resources to their private benefit are larger when the firm is mainly equity financed. The "free cash flow" term is the amount by which a firm’s operating cash flow exceeds what can be profitably reinvested in its basic business and the emphasis is here on the word profitably. Conflicts of interest between stockholders and managers over payout policies are especially severe when the
organization generates substantial free cash flow. So, there is a dark side to the financial slack. Too much of it may encourage managers to take it easy, expand their perks, or empire-build with cash that should be paid back to stockholders. The problem is to motivate managers to disgorge the cash rather than investing it below the cost of capital or wasting it in organizational inefficiencies.

Jensen (1986) validates his stories by referring to the empirical literature on debt for common stock exchanges that leads to stock price increases. This evidence is, however, also credited for the potential signalling effect of debt. The evidence from the leveraged buy out and going private transactions is that many of the benefits in an LBO seem to be due to the control function of debt. The conclusion of this theory is that Jensen claim that by strapping the management to the mast i.e. make them pay out fixed amounts of money to the investors each year, the agency cost of free-cash flow can be reduced.

Narayan Sapar and Jijo Lukos (2003) in their study presents empirical evidence on the determinants of the capital structure of non-financial firms in India based on firm specific data. A comparative analysis is done for pre-liberalization and post-liberalization periods. The study period and sample firms for pre-liberalization period are 1990-1992 and 498, respectively. The same for post-liberalization period are 1997-1999 and 1411. Empirical results imply that tax effect and signaling effect play a role in financing decisions where as agency costs effect financing decision of big business houses and foreign firms. It is also revealed that size of the firm and business risk became significant factors influencing the capital structure during post-liberalization period.

Kostas Koufopoulos (2007) considers project financing when the project quality is private information of the manager and, given its inherent quality, the project
viability depends on the manager exerting unobservable effort. They show that capital structure matters even though managerial contracts are optimally designed. The paper provides an explanation of why good firms issue both debt and underpriced equity (even if the bankruptcy and agency costs of debt are zero). Finally, they show that the optimal financial contract can be implemented by a combination of debt and equity. Their results have a number of testable implications.

Stein Frydenberg (2004) in his paper Theory of capital structure provides a review of the central theoretical literature. The most important arguments for what could determine capital structure is the pecking order theory and the static trade off theory. These two theories are reviewed, but neither of them provides a complete description of the situation and why some firms prefer equity and others debt under different circumstances. The paper is ended by a summary where the option price paradigm is proposed as a comprehensible model that can augment most partial arguments. The capital structure and corporate finance literature is filled with different models, but few, if any give a complete picture.

Baker and Wurgler (2001) in their paper Market Timing and capital structure review that it is well known that firms are more likely to issue equity when their market values are high, relative to book and past market values, and to repurchase equity when their market values are low. We document that the resulting effects on capital structure are very persistent. As a consequence, current capital structure is strongly related to past market values. The results suggest the theory that capital structure is the cumulative outcome of past attempts to time the equity market.

Robert and Susan (2008), provide an overview of the current state of capital structure theory. One perspective on capital structure choice is to view it as posing
trade-offs among five elements: (1) the tax benefits of financing, (2) the explicit costs of financial distress, (3) the agency costs of debt (including an array of indirect costs linked to financial distress), (4) the agency costs of equity, and (5) the signaling effect of security issuance. The first two elements reflect the "modern, traditional" balancing theory of capital structure. The third and fourth build on agency theory and imperfect information and emphasize the individual incentives of decision makers. The fifth element recognizes that the very act of issuing a security can convey new information to investors when there is imperfect information. While newer theories provide a rich array of insights into aspects of financial policy beyond how much debt the firm should undertake, the downside is that at present there is no overarching synthesis of these theories. As a result, practical application requires careful identification of how these particular theories are relevant to the business, the markets, and the situation at hand.

**Francisco and Jose (2003)** in their paper explore two of the most relevant theories that explain financial policy in small and medium enterprises (SMEs): pecking order theory and trade-off theory. Panel data methodology is used to test the empirical hypotheses over a sample of 6482 Spanish SMEs during the five-year period 1994-1998. The results suggest that both theoretical approaches contribute to explain capital structure in SMEs. However, while we find evidence that SMEs attempt to achieve a target or optimum leverage (trade-off model), there is less support for the view that SMEs adjust their leverage level to their financing requirements (pecking order model).

**Narayan and Jijo (2003)** in their study presents empirical evidence on the determinants of the capital structure of non-financial firms in India based on firm specific data. A comparative analysis is done for pre-liberalization and post-liberalization periods. The study period and sample firms for pre-liberalization
period are 1990-1992 and 498, respectively. The same for post-liberalization period are 1997-1999 and 1411. Empirical results imply that tax effect and signaling effect play a role in financing decisions whereas agency costs effect financing decision of big business houses and foreign firms. It is also revealed that size of the firm and business risk became significant factors influencing the capital structure during post-liberalization period.

Robert, Antonio and Hudson (2007) test the pecking order propositions, through a new methodology, applied to a sample of companies listed at São Paulo stock exchange, in the period 1998-2005. The adherence is different by sub period, being smaller between 2002 and 2005. But, when the companies are grouped according to size, profitability and growth, it is noticed that the support to the theory, in general, disappears as the companies are more lucrative and of larger size. These results contradict previous studies in Brazil on the pecking order theory and they are in line with recent literature statements about the methodological flaws and the validity of the pecking order as theory able to explain the firm's capital structure.

Ram and Reddy (1998) empirically examine the existing theories on the determinants of corporate capital structure and their maturity; and attempts to develop and test a new theory on capital structure for large manufacturing firms in developing economies such as India. For, the different empirical and managerial implications about different periods of debt instruments, they analyze measures of short-term and long-term debt rather than only an aggregate measure of total debt. The study also analyses the empirical implications of liberalization of Indian economy, on the determinants of capital structure of the firm. Some of the results were found contrary to the classical financial theory.
Murray and Vidhan (2009) show that the literature has misinterpreted the evidence as a result of the wide-spread use of familiar, but inappropriate, empirical methods. They make four main points. They show that highly profitable firms do actually tend to issue debt and repurchase equity. The least profitable firms tend to reduce debt and issue equity. These facts are empirically very robust. Firm size plays an important mediating role in this relationship that gets hidden when leverage ratios are used. Large firms tend to be more active in the public debt markets, while small firms tend to be relatively more active in the equity markets. The type of empirical work that is appropriate depends on the model to be tested. They present a simple static trade-off agency-based model of capital structure. According to the model, the appropriate test structure is a pair of regressions: one explaining debt, and the other explaining equity. They find the model’s predictions perform rather well. Profits are not properly exogenous according to the model. Empirically, bad market conditions have a particularly strong impact on small and low-profit firms. Larger and more profitable firms are less strongly affected by market conditions. Contrary to what is usually believed, the empirical evidence on profits and capital structure seems easy to interpret from the perspective of the static trade-off theory.

Mallikarjunappa, Carmelita (2007) attempts to test the important determinants of the capital structure of companies. Taking profitability, collateral value of assets, growth, debt service capacity, size, tax rate, non-debt tax shield, liquidity, uniqueness, and business risk as the determinants and the Debt-Equity Ratio (DER) as the dependent variable, multiple regression model is used for the pooled data of pharmaceutical companies in India. The period of study is from 1993 to 2002. The results indicate that the regression is a good fit and the independent variables together determine the capital structure of companies. Further, the results show that profitability, collateral value of assets, growth, size, tax rate and
uniqueness do not have significant coefficients and therefore, are not the significant determinants of the capital structure of companies. The coefficients of the variables, debt service capacity, non-debt tax shield, liquidity and business risk are significant and, therefore, these variables are the important determinants of the capital structure of pharmaceutical companies in India.

**Bwembya Chikolwa (2009)**, using panel data methodology, the determinants of capital structure in 34 Australia listed property trusts (A-REITs) are investigated for the period 2003-2008. Empirical results reveal that profitability, growth opportunity, and operational risk are negatively related to leverage while size is positively related. Tangibility is found to be insignificant and property sector effects are inconsistent in various models. Furthermore, industry specific factors of stapled management structure and international operations have significant negative signs, showing that A-REITs with these features should have lower gearing levels. The signs of the determinants show that both pecking order theory and the trade-off theory are at work in explaining the capital structure of A-REITs, although more evidence exists to validate the latter theory. The study also shows that A-REITs issued more public debt than seasoned equity issues at a ratio of 1:1.2 from 2000-2008.

**Murray and Goyal (2000)** tested the pecking order theory of corporate leverage against the static tradeoff theory of corporate leverage, using a broad cross-section of US firms over the period 1980-1998. A derivation of the conditional target adjustment framework is provided as a better empirical test of mean reversion. None of the predictions of the pecking order theory hold in the data. As predicted by the static tradeoff theory, robust evidence of mean reversion in leverage is found. This is true both unconditionally and conditionally on financial factors. Leverage is more persistent at lower levels than at higher levels. When debt
matures, it is not replaced dollar for dollar by new debt and so leverage declines. Large firms increase their debt in order to support the payment of dividends. By contrast, small firms reduce their debt while they pay dividends.
Determinants of Capital Structure

*Table 1* below presents a summary of the results that have applied capital structure theories in the analysis of determinants of debt.

<table>
<thead>
<tr>
<th>Table 1.1: Determinants of Capital Structure as per theories</th>
<th>Theoretical Predicted Effect</th>
<th>Empirical Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profitability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Defined as pre-tax profits divided by total assets</em></td>
<td>a) <strong>Positive Effect</strong> by</td>
<td>Kester (1986);</td>
</tr>
<tr>
<td></td>
<td>Trade-off theory and</td>
<td>Friend and Lang</td>
</tr>
<tr>
<td></td>
<td>Signaling Theory</td>
<td>(1988); Titman</td>
</tr>
<tr>
<td></td>
<td>b) <strong>Negative Effect</strong> by</td>
<td>and Wessels (1988)</td>
</tr>
<tr>
<td></td>
<td>Pecking Order Theory</td>
<td>Rajan and Zingales (1995); Wald (1999); Booth et al. (2001); Deesomsak, Paudyal and Pescetto (2004)</td>
</tr>
<tr>
<td><strong>Tangibility</strong></td>
<td>a) <strong>Positive Effect</strong> by</td>
<td>Marsh (1982);</td>
</tr>
<tr>
<td><em>Defined as net fixed assets divided by total assets</em></td>
<td>Agency Theory, Trade-off</td>
<td>Friend and Lang</td>
</tr>
<tr>
<td></td>
<td>Theory and Pecking Order</td>
<td>(1988); Harris</td>
</tr>
<tr>
<td></td>
<td>Theory</td>
<td>and Raviv (1991); Rajan and Zingales (1995); Hirota (1999); Wald (1999); Bevan and Danbolt (2002); Deesomsak, Paudyal and Pescetto (2004); Booth et al Maksimov (2004); Chen (2004)</td>
</tr>
<tr>
<td>Size</td>
<td>Defined as Natural Logarithm of sales</td>
<td>a) <strong>Positive Effect</strong> by Trade off theory and Signaling Theory</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Growth</td>
<td>Defined as growth of total assets</td>
<td>a) <strong>Positive Effect</strong> by Pecking Order Theory and Signaling Theory</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Defined as ratio of current assets to current liabilities</td>
<td>a) <strong>Negative Effect</strong> by Pecking Order Theory</td>
</tr>
</tbody>
</table>