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Revisiting the Capital Structure Theories with Special Reference to India

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Abstract:

This review scrutinizes the role of different theories of capital structure in decision making regarding the choice of capital for firms. Authors survey the theories of capital structure, starting from the irrelevance theory of Modigliani and Miller, to the relevance ones like trade off, pecking order and the market timing. The paper presents the success and failures of the capital structure theories in developed as well as in developing nations with special focus on India. Literature shows that the two theories trade-off and pecking order have always dominated the capital structure decisions but recent theoretical and empirical work shows that market timing theory is challenging them as the managers are always keen to take advantage of “market timing”. So, an effort is required to develop powerful theoretical models for the market timing theory. Also, the extensive review on capital structure revealed the fact that there is limited work done for India. Hence, there is a need to work in the area of capital structure especially on the market timing theory.

Keywords: Capital Structure, Trade-off theory, Pecking Order Theory, Market Timing Theory

1. Introduction

Capital structure is the way a company finances itself by combining long term debt, short term debt and equity (Ross et al., 2005; Hsiao et al., 2009). Capital structure decisions are important decisions for firms as the firms constantly make investment decisions for their sustenance and growth. The two major sources of financing are— debt and equity, associated with different levels of risk, benefit and control. Equity is a cushion and debt is a sword. Debt is the technical term for borrowing money from an outside source with the promise to return the principal plus the agreed-upon percentage of interest. Debt is relatively a cheap source of finance which has the ability to maintain the ownership of the company and provides interest tax shield advantage. At the same time debt brings with itself risk in the firm and impairs the competitive edge. The second option available is that of equity financing, which involves bringing in capital from investors or partners who in exchange get a share of ownership of the business. It's less risky because one doesn't have to pay it back but the only disadvantage of equity financing is that the investors will be involved in decision making of the firm.

The objective of capital structure decisions is the judicious use of different sources of funds. The choice between debt and equity aims to find the capital structure that will maximize stockholder wealth. Cost of capital has an inverse correlation with the value of firm and it should be as minimum as possible. Firms should choose their sources of finance in such a way that the overall cost of capital is minimum thereby; maximizing the value of the firm. An optimal capital structure enhances the competency of the firm and imparts higher returns to shareholders compared to the return provided by an all equity firm. Therefore it is very important for a firm to know how to obtain the financing.

A lot of heterogeneity has been seen in the observed capital structures of the firms. Researchers in the area through theoretical and empirical means are trying to find answers to the questions like whether the firms should go for debt or equity finance at the time of requirement, how much debt and equity the company should take? Does timing the markets for raising capital play an important role or not? and many more. For this various theories of capital structure have been proposed and tested. Much of the financial literature over the past four decades have revolved around these different theories that try to explain just exactly what does matter in determining capital structure. The study presents a synoptic view on the development done in the area of capital structure decisions, highlighting the success and failure of the capital structure models in developed as well as developing nations. It also shows the directional associations between leverage and firm characteristics. The study focuses on the capital structure decisions of Indian firms, identifies the gaps and suggests the implications of capital structure decisions.

The remainder of this paper is organized as follows. Section II discusses the important theories of capital structure. Section III and IV explains the work done in the area of capital structure in various nations and in India respectively. Section V is for discussion. The last section, Section VI, concludes the main findings.

2. Important Theories of Capital Structure

Capital structure has generated great interest among the financial researchers since Modigliani and Miller (MM) published their work of **Irrelevance Theory** in 1958 (Harris and Raviv, 1991; Myers, 2003). According to them in a perfect market it does not matter what capital structure a company uses to finance its operations. The basic theorem state that in the absence of taxes, bankruptcy costs and asymmetric information, the value of a firm is unaffected by the way it is financed and is determined by their investment decisions. But the real world is quite different from the world explained by the MM model. First and foremost in real world firms do pay taxes and there exists an interest tax shield .i.e. interest paid on debt is reduced from the taxable income of the firm. Thus there is a tax saving which reduces the effective cost of debt for the firm and hence the overall cost of capital. So, in 1963 MM corrected for this assumption and gave the **Relevance Theory**. They said that the value of the levered firm exceeds the value of the unlevered firm because of interest tax shield.

MM Relevance Theory makes it sound as if it is always a good thing when a company increases its proportion of debt relative to equity, but that's not the case. Additional debt is good only up to a certain point because beyond that there is an increase in bankruptcy costs. So, in order to answer how much debt the companies should take, there are more widely accepted theories. **Trade off Theory, Pecking Order Theory and Market Timing Theory** are the three main theories which model the financing behavior of the firms.

Trade off theory (Kraus and Litzenberger, 1973) states that debt is taken up to the level at which the tax benefits of debt are balanced against the bankruptcy costs. A firm that follows the trade-off theory sets a target debt and then gradually moves towards the target. The target is determined by balancing the tax benefits of using debt against costs of financial distress that rise at an increasing rate with the use of debt. In practice, it is very difficult to set a target debt ratio. If the distress risk is low, an increase of debt has a favorable tax effect. Under the trade-off theory, high profits mean that the firms have more debt-servicing capacity and more taxable income to shield and therefore result in a higher debt ratio.

Pecking order theory stems from Myers (1984), it argues that firms prefer internal finance and if external finance is required they issue debt first and then equity as a last resort. The reason as is given by Baskin (1989) is asymmetric information that arises because the managers know more than outside investors about the profitability and prospects of the firm. Information problems are particularly acute with common stock. An announcement of stock issue drives down the stock price because the investors know that firms issue new securities when they are overvalued so they refrain from buying it. Hence, firms prefer to finance their investments by internal funds. There is no well defined target debt level which firms try to achieve. It is based on the assumption that the interests of managers are perfectly aligned with those of shareholders. The pecking order theory explains that the profitable firms generally borrow less because they use retained earnings.

It has been observed that the debt-equity ratio changes with time, with change in government policies like interest rates and availability of debt, etc. So the timing of raising fund is very crucial, if the timing is perfect then the cost will be cheaper. So, a new theory of capital structure was postulated the **Market Timing Theory** which states that at the time of requirement of funds, the firms need to make a comparison between the equity market and debt market. Whichever market looks favorable, the firms raise funds from that market. It does not define an optimal capital structure. The evidence of market timing is found in the works of Taggart (1977), Marsh (1982) etc. These studies tested the timing behavior of firms indirectly. The theory gained importance from the work of Baker & Wurgler in the year 2002. Baker and Wurgler (2002) suggested that the firms issue securities depending on the relative costs; if cost of equity is low relative to the cost of other forms of capital, they are more likely to issue equity. Thus it could be said that if the firms issue equity when their market values are high relative to book and past market values, and repurchase equity when their market values are low then it is in accordance to the Equity Market Timing. In a study by Graham and Harvey (2001), managers admitted trying to time the equity market. Compared to pecking-order and trade-off theory the theoretical part of market timing theory is underdeveloped (Miglo, 2010). There are competitively less studies, which empirically validate the assumptions of the market timing theory (Frank & Goyal, 2004). But still, the Market Timing Theory challenges the Trade-off and Pecking order theories (Huang & Ritter (2004); Bougateg and Chichti (2010) and Panda, Mohapatra & Moharana (2013)).

Based on the theories of capital structure, researchers have identified a number of determinants of capital structure. These determinants have been tested using different econometric models and panel data specifications in many economies. These explorations test for validity of some of the capital structure theories, depending upon how leverage varies with these determinants. In the next section let's have a look at the work done in the area of capital structure internationally.

3. International studies on Capital Structure

Academicians and practitioners find it difficult to find out how a firm decides upon its capital structure. This has led to an upsurge in research on company finance, particularly aiming at understanding how companies finance their activities and why they finance their activities in these specific ways. Starting from the work done on the determinants of capital structure, Miller and Modigliani in 1966 and Masulis in 1980 showed that tax was an important determinant of capital structure and due to tax advantage of debt firms preferred debt. Majority of empirical studies done in developed countries like that of Titman and Wessels (1988) for U.S firms; Rajan and Zingales (1995) across G-7 countries; Nuri (2000) for UK firms; Bevan and Danbolt (2000) for UK companies; Antoniou et al, (2002) for European countries among others found a positive relationship of tangibility and size with leverage and

a negative relation of profitability and growth. The other determinants of capital structure of firms as discussed by various authors are non-debt tax shields (+ve), probability of bankruptcy (-ve) etc.

As the determinants of capital structure play an important role in capital structure decisions so does the theories of capital structure. They try to explain the behavior of the firms towards their sources of finance. Empirical research has found conflicting evidence on the ability of these theories to explain how firms go about their financing decisions. There are the works done by Myers and Majluf (1984), Narayanan (1988) etc. which support the pecking order theory while that of Kane et al. (1984) and Brennan & Schwartz (1984) which support the trade off theory. The first study that empirically tested the trade off and pecking order theories was the work of Shyam-Sunder and Myers (1999) (in Kaya, 2007). Shyam-Sunder and Myers (1999) introduced the test of the pecking order theory of capital structure. They found that pecking order was an excellent descriptor of corporate finance for all firms on the Industrial Compustat that are traded continuously during the 1971-1989 period. Subsequently, many other researchers have used the same methodology to test whether the firms followed pecking order or trade off. Chirinko and Singha (2000) were the first one to criticize Shyam-Sunder and Myers. They indicated that empirical evidence of Shyam-Sunder and Myers evaluated neither the pecking order nor trade off models. Supporting the pecking order theory were the works done by Lemmon and Zender (2002) on all the firms on both the CRSP and Compustat databases for the period 1971-2001; Leary and Roberts (2005) on the firms from Compustat for the years 1984 – 2001; Brounen et al. (2004) for firms in the U.K., Netherlands, Germany and France; Drobetz and Gruninger (2007) on Swiss non-financial firms and Bharath et al. (2009) on U.S firms and there are many more studies supporting the pecking order theory.

The next sets of work done by various authors are the one which support the trade off theory of capital structure. Frank and Goyal (2000) on testing the pecking order theory against the tradeoff theory on U.S firms found robust evidence for trade off theory. Supporting the trade off theory was the work done by Nuri (2000) for UK firms. Adedeji (2002) found a significant positive relationship between new debt issues and internal fund flow deficits on a cross-sectional sample of companies listed on the London Stock Exchange. This was not explained by pecking order hypothesis but was explained by static trade-off theory better. Fama and French (2005) argued that financing decisions of the firms on CRSP and Compustat, from the period 1973 to 2002 seem to violate the predictions of the pecking order model about how often and under what circumstances firms issue equity. Providing strong empirical support for the trade-off theory are the works of Hennessy and Whited (2005) on the firms on compustat; Susmel and Zhao (2008) on the quarterly data of the firms from Compustat from the period 1985: I to 2005: IV; Danis and Retzl (2011) for all the firms available in Compustat between 1990 and 2009; Dang et al. (2012) for UK firms; Elsas and Florysiak (2013) on U.S firms etc. A lot of work has been done on the pecking order and trade off theories.

Next theory is the market timing which shows how firms in the economy decide whether to finance their investment with equity or with debt instruments. A new light on capital structure was shed by the work of Baker and Wurgler in the year 2002. They tested for equity market timing and said that it had a persistent effect on the capital structure of U.S firms. Supporting the equity market timing were the works done by Welch (2004) on U.S firms; Huang & Ritter (2009) for US firms and Bougateg & Chichti (2010) for Tunisia and France etc. They also said that equity market timing had a persistent impact on capital structure of firms. On the other hand works done by Alti (2006) on a sample of all the IPOs between January 1, 1971, and December 31, 1999, reported by the Securities Data Company; Kayhan & Titman (2007) for firms listed in the Compustat Industrial Annual Files at any point between 1960 and 2003; Islam & Heaney (2009) on Australian firms; Guney & Hussain (2010) for UK firms and Russel & Hung (2013) on Chinese firms say that firms follow market timing but did not support the persistent impact of equity market timing. The empirical researches show that market conditions play an important role in capital structure decisions but the durability of the market impact is an open issue.

A lot of work has been done on the capital structure starting from the determinants of capital structure to testing the theories of capital structure in various nations especially developed nations like U.S and U.K. Nonetheless, it has substantially improved our understanding of the factors that influence capital structure. Now let's have a look at the work done on capital structure for Indian firms.

4. Indian Studies on Capital Structure

In Indian context, comparatively few studies have been done so far on capital structure. An early study on capital structure of Indian firms done by Chakraborty in 1977, finds that age, profitability and retained earnings have a negative impact while capital intensity and total assets have a positive impact on the capital structure (leverage). Earlier the managers of Indian firms preferred debt to equity share capital because of low cost of debt due to tax advantage of interest and the long procedures involved in the issue of equity capital as is seen in the work done by Pandey (1984). The work done by Singh and Hamid (1992) on corporate financial patterns in developing countries (including India), shows that corporations in developing countries use external finance to a far greater extent than firms in advanced countries.

Most of the work done on Indian market is on the determinants of capital structure. Works done by Kakani & Reddy (1998) and Rao & Jijo (2002) empirically analyzed the implications of liberalization of Indian economy on the determinants of the capital structure of Indian firms. Both find that Indian firms had more debt in their capital structure during the pre liberalization era. As free pricing of shares could not be done, so firms could not access capital markets for equity freely and hence they opted for debt. Over a passage of time and due to the liberalization of Indian economy, firms have started issuing more of equity. Booth et al. (2001) compared different countries capital structure decisions including India for the period 1980 to 1990. They found an inverse relation of average tax rate, and return on assets with long term debt by equity ratio and a direct relation of Asset tangibility, business risk, size, market-to-book ratio. Business risk did not come as significant variable. Rao & Lukose (2002); Bhayani (2005) & Pathak (2010) find that leverage increases with increase in firm size, tangibility and growth and decreases with profitability and liquidity. Bhate & Dittmar (2008) investigates the determinants of capital structure for listed Indian companies, found that growth

and tangibility are positively related with leverage and profitability and age are negatively related leverage. Ali (2011) show that the variables size, non-debt tax shields and tangibility have a positive relationship with the leverage ratio, while on the contrary, growth and profitability have a negative relationship. Ray (2013) for listed firms in the cement industry of India finds that the asset composition, size and non-debt tax shields have positive relationship whereas age, profitability and asset collateral have significant negative relations with leverage. Whereas the factors such as business risk, flexibility, growth opportunities did not have any significant impact on capital structure of the firms.

Coming to the work done on testing the theories of capital structure, depending upon the sign of the determinants of capital structure, authors have concluded whether the firms followed the trend of trade off or pecking order theory. If variables like profitability and tangibility have an indirect relation with leverage then it is said that firms follow pecking order theory and if it they have a direct relation then they follow trade off theory. Authors like Anand (2002); Farhat, Cotei and Abugri (2006) on using the traditional Shyam-Sunder and Myers equations; Rajagopal(2010) provided evidence that Indian firms followed the pecking order theory whereas works done by Maji & Ghosh (2007) on Indian manufacturing companies favors the Trade-off theory. Only Singh & Kumar (2008) statistically tested that Indian firms follow trade-off theory. Chakraborty (2010) on analyzing the determinants of the capital structure of Indian firms finds that both the pecking order theory and the static trade-off theory seem to explain the Indian firms' decisions. Further Panda & Panigrahi in 2010 analyzed that the dependence of Indian corporate sector on debt as a source of finance has over the years declined particularly since the mid-nineties and supported the pecking order theory of capital structure. Panda, Mohapatra & Moharana (2013) on studying the capital structure decisions of Indian Steel Companies on the basis of a direct relation of profitability; indirect relation of risk and growth with the debt ratio say that the firms follow the trend of trade off theory and not so much of pecking order theory. For the work done on market timing theory the paper, Khanna et al. (2013) studies the impact of market timing for Indian firms with IPO years 1992, 1995 and 2000. The findings revealed that firms with IPO year 1992 and 1995 rely both on the market as well as on their profitability, for their sources of funds and firms with IPO year 2000 relied on their internal strengths more than on market timing. Thus it could be said that the firms significantly time the market but at the same time they strengthen their firm level characteristics. As far as authors' knowledge, besides this work no work has been done for the market timing theory of capital structure for Indian market.

5. Discussion

Tremendous work has been done on the determinants of capital structure and on trade off and pecking order theories. The standard versions of both trade off and pecking order theories have many flaws. The trade off theory's main argument for the use of more debt in a firm's capital structure is the tax advantage of debt. But, in U.S. the corporate income tax did not begin until 1909 (introduced at a 1% rate) and the use of debt contracts by businesses has a much longer history than does the corporate income tax (Frank & Goyal, 2007). Second, the trade off theory suggests a direct relation between profit and debt but there are many works, such as of Myers (1984) and Fama and French (2002) etc. which observe an indirect relation. Third, in practice, it is very difficult to set a target debt ratio. Talking about the pecking order theory, the theory is not able to explain that the firms which have cash in hand actually issue debt. Second, it has also been found that firms routinely issue equity when they should not do so (Fama and French (2005), and Leary and Roberts (2007)). Third, it is based on the assumption that the interests of managers are perfectly aligned with those of shareholders. Jensen and Meckling (1976) argued that the interests of managers are not aligned with those of shareholders; managers tend to waste free cash flow on perquisites and bad investments. Besides these flaws, these theories are also not able to explain the effect of market conditions on the capital structure decisions of the firms. All this could be explained by the market timing theory. The theory states that depending upon whichever market looks more favorable currently, managers will issue that security. The studies of Taggart (1977), Marsh (1982), Jalilvand and Harris (1984), Asquith and Mullins (1986), Baker and Wurgler (2002) etc. reflect that the decisions to issue equity depends on market performance. Thus, the evidence for market condition effects appears to be compatible with fairly market timing model. So, there is a need for a completely new theory as a competitor to the conventional theories.

Further the extensive review on the main theories of capital structure revealed the fact that there is limited work done for developing nations, especially for India. Most of the work done on capital structure focuses on the nations like United States, United Kingdom and other developed nations. The authors find that for India there is a lot of work done on the determinants of capital structure and comparatively less work is done which statistically tests the capital structure theories like trade-off or pecking order theories via the time series hypothesis. Moreover, the authors are unable to find any empirical support for the market timing theory of capital structure for Indian market. So, one needs to study whether the firms in India follow market timing or not.

6. Conclusion

Capital structure decisions are important decisions as they provide useful recommendations for policy direction and management of the firms. Policy makers should place greater emphasis on the facilitation of the finance, as the correct decision would reduce the businesses sensitivity on economic cycles and would help in maximizing the value of the firms. For the last 20 years the trade-off theory and pecking-order theory have been extensively tested. The marginal productivity of research will diminish in future without significant advances in developing new more powerful theoretical models. One such new direction that has emerged is the market timing theory. The market timing theory emerged from a relatively "small" argument in the end of 1970s beginning 1980s to a separate popular theory of capital structure in 2000s. Compared to pecking-order and trade-off theory the theoretical part of this theory is underdeveloped and has less empirical support. So, more effort is required in order to create such models for the capital structure which are comparable to pecking order and trade-off theory. Further, more research on capital structure should be carried out for developing nations like India.

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