

DEBT – Equity Mix: The Unresolved Corporate Puzzle

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Abstract: Capital structure is an important element of any business organization. Every concern tries to have optimum capital structure in the view of increasing profitability, reducing overall cost of capital and thereby increasing value. Some authors have propounded theories of capital structure. Subsequently they were supported and criticized by many studies made over a period of time. The present paper has attempted to give important theories of capital structure and presented the studies which had supportive evidences and which have results against the recent theories of capital structure. The paper has presented net income approach, net operating income approach to capital structure, Modigliani and Miller theory of capital structure, Trade-off theory, pecking order theory and Market timing theory of capital structure with its chronological relevance.

Keywords: capital structure, trade-off, market timing, debt and equity

INTRODUCTION

Finance is the life blood of any business organization. It is essential for the smooth and effective functioning of a business. Business concerns require finance not only for their establishment, but also for business operations. Meeting the financial requirements is a continuous process for all business concerns. They need huge amounts of finance for their fixed capital requirements, such as to acquire fixed assets like land, buildings, machinery and so on. They also need finance for temporary purposes and short periods for meeting their day to day operations which is termed as 'working capital'. Managers fulfill their financial needs according to the nature of the requirements. They mobilise finance either from internal or external sources which in turn may be debt or owned capital. In other words, managers issue equity or debt or use internally generated funds (retained earnings). Hence the total capital of any company would be inclusive of both equity and debt capital. The combination of equity and debt in the capital of a company is called 'capital structure'. Shareholders' equity comprises equity shares and retained earnings. Debt capital includes debenture, bonds, public deposits and other long term borrowings. Both these sources of finance, equity and debt, have their own benefits and limitations. Equity capital is permanent in nature and does not have any fixed financial commitment in the sense, dividend is paid out of the profits or accumulated profits of the company but not mandatory. In the case of debt finance, it is contractual in nature requiring mandated periodical interest payments and after the maturity period or when the companies have surplus funds, they are required to repay the loan. Hence debt capital has fixed financial commitments which mean the

companies should pay fixed rate of interest irrespective of their profits.

Whenever a company decides to mobilise funds, it has to decide on their resultant capital structure. Whether the company chooses equity or debt, its capital structure gets altered. When, they raise their funds through equity capital, the proportion of equity capital in their capital structure increases. When they raise funds by issuing debt, the proportion of debt capital increases in the capital structure. Capital structure decision is a critical one since it has its impact on the returns to share holders and the value of the shares. Generally managers choose the source of finance, which gives maximum benefit to the company or its owners. To decide on capital structure, they consider various factors influencing capital structure of a company. Hence capital structure of a company has relationship with financing decisions, cost of capital and other important financial aspects of the company on the basis of it several theories were propounded by various authors over a period of time. These theories were tested subsequently by various researchers during different point of time and in different countries. The literature review summarises some important studies which tested some important theories of capital structure.

LITERATURE REVIEW

Shyam-Sundar L *et al.*[1] in their empirical study tested the traditional capital structure models against pecking order theory of corporate financing. They argued that the pecking order theory was an excellent first order descriptor of corporate financing behavior of matured companies. Hovakimian *et al.*[2]

in their empirical analysis evidenced that the market misvaluations and static trade off theory had significant impact on security issuance choice decisions. Their results were strong when they included market to book ratio as a control variable of security issuance decisions. Frank Bancel *et al.*[3] investigated factors determining capital structure choice of European firms. The study had evidence to support modestly the Trade off theory but had weak support to pecking order theory. Christopher Hennessy and Tony Whited [4] developed a dynamic trade off model. Most of their findings were inconsistent with static trade off theory of capital structure. They also argued that taxation did not have secondary impact on debt decisions and variations in taxation had more power to explain anomalies than the premium. Phillippe Gaud *et al.* [5] examined Trade off theory and Pecking order theory of capital structure. Their main evidence was that neither Trade off theory nor Pecking order theory hold good. Ayobgan Altı [6] investigated capital structure implications of market timing. In the short run, the effect of timing attempts on capital structure is negative. It is also found that hot market firms (firms which issued securities when the market was active) issued more debt than equity immediately following their IPOs than the cold market firms (firms which issued securities when the market was not active) did. He concluded that past security issues have a long lasting effect on capital structure. Armen Hovakimian [7] in his empirical study had strong evidences against the market timing theory of Baker and Wurgler. Silvia Islam and Richard Heaney [8] in their empirical study examined the existence of market timing theory in Australia. The study found evidence for the existence of market timing theory in Australia. Tijs De Bie and Leo De Haan [9] found that the stock price run-ups on capital structure choice were consistent with the market timing theory and pecking order hypothesis, but there was inconsistency with trade off theory. Goknur Umutlu [10] found that the market timing theory was consistent with the study. High market to book ratio was associated with high leverage. Profitable firms with high usage of internal sources associated with less leverage, this evidence supported the consistency of pecking order theory. Jung-Leih Hsiao and Ching-Yu Hsu [11] in their study supported trade off theory of capital structure rather than either market timing theory or pecking order theory of capital structure. Walter Boudry *et al.* [12] tested traditional theories of capital structure such as trade off theory, Pecking order theory and Market Timing theory of capital structure. The study supported market timing theory and trade off theory rather than pecking order theory of capital structure. Ganesamoorthy and Shankar [13] in their study found that market timing is considered as an important determinant for capital issues theoretically. But the results of the study showed that for companies in India its application could not be substantiated. The reasons may be the time lag involved in issue decision, since there have been instances where a public offer being deferred.

Statement of the problem

Optimum capital structure is essential for any form of organization. But determining optimum capital structure is a difficult task. For this purpose the theories of capital structure already been propounded are helpful for the companies. Over the period of the study various theories of capital structure have propounded. But all the theories are not suitable for ever, some theories are applicable for some point of time and some theories are applicable for some countries only. Some standard theories only are accepted worldwide. This paper has presented important and relevant theories of capital structure and it also pointed out some research works which have been made to test the existing theories over the period of time.

Objectives of the Study

- To present the existing theories of capital structure in chronological order.
- To bring out the conclusion of studies made on the results of recent theories of capital structure.

METHODOLOGY

This present paper is descriptive in nature. The researchers collected review from the year 1977 to 2012 and they were classified on the basis of results of the existing theories of capital structure.

Theories of Capital Structure

Net income approach (NI) was the initial theory which attempted to explain capital structure. Latter David Durand developed another theory called Net Operating Income approach to capital structure (NOI). In the year 1958 Franco Modigliani and Merton Miller developed a theory of capital structure and it was the beginning of modern thinking in the line of capital structure. After this theory, many other theories were developed. Among them the Trade-off Theory, Pecking order theory and Market Timing theory are considered as most relevant theories of capital structure. These theories are discussed in the following paragraphs.

Net Income Approach (NI)

This approach to capital structure argued that increasing debt finance in capital structure to the possible extent may minimise weighted average of cost of capital and this increases the market valuation of the equity shares. According to this approach, the cost of equity and cost of debt remain unchanged eventhough market value of debt or equity varies. The net income approach was propounded on the basis of the following assumptions.

- a. The cost of debt is lower than the cost of equity
- b. There are no corporate taxes; and
- c. The risk perception of investors do not change by using debt in capital structure.

Subject to the assumptions of the approach, when firms increase debt in capital structure, its overall cost of capital decreases because the cost of debt is lower than the cost of equity. It leads to increase in firm value. When the firm decreases debt finance in the capital structure, there will be inverse effect. Its overall cost of capital increases due to decreased debt component and firm value goes down. This approach explains the benefits of leverage that is increasing the financial leverage of capital structure subject to the assumptions.

Net Operating Income Approach (NOI)

This approach was propounded by David Durand [14]. According to Net Operating Income approach the overall capitalization rate and the cost of debt remain same in all degrees of financial leverage in capital structure. This approach explains the effect of financial leverage on the firm value in a different angle. Unlike Net Income approach it argues that the changes in capital structure do not affect the firm value (market value of firm). The theory also argues that the overall cost of capital remains constant irrespective of mode of financing. It means whatever the debt-equity ratio, the cost of capital will be same. As per the theory, any capital structure is the optimal capital structure of a firm.

It noted that the firm's market value depends on its net operating income and business risks and not on method of financing (changes in capital structure). Changes in financial leverage change the distribution of income and risk between debt and equity, without affecting the total income and risk which influence the market value of firm. This theory works on the following assumptions.

- a. The market capitalizes the value of the firm as a whole
- b. The business risk remains the same at every level of capital structure and
- c. There are no corporate taxes.

This theory argued that use of debt increases the cost of equity; because increasing debt increases the financial risk of equity shareholders. This increase in cost and risk is off set by the higher returns. But the cost of debt remains same. So it was said that financial mix does not affect firm value.

Modigliani and Miller Theory of Capital Structure (MM theory)

Franco Modigliani and Merton Miller are considered as the modern thinkers of capital structure. They developed a theory of capital structure in their article in 1958, which is identical to Net Operating Income approach. This theory was developed with the assumption of non-existence of corporate taxes and latter they made correction in their existing theory by including corporate taxes and published in the year 1963. Thus there are two approaches of MM theory of capital structure such as,

- a. Theory of irrelevance (absence of corporate taxes) and
- b. Theory of relevance (existence of corporate taxes)

a) Theory of irrelevance

According to this approach, cost of capital and value of firm are not affected by capital structure. In other words, whatever the debt-equity mix, the cost of capital and firm value remain same. In other words, capital structure is irrelevant to firm value.

They argued that the firm value is influenced by net operating income (Earning before interest and taxes) and risk of its assets (business risks). It is because debt is cheaper than equity, when firm increases debt in its capital structure the cost of equity increases due to higher expectations on increased risk. It offsets the advantage of low cost of debt. Even though the cost of equity is affected by financial leverage the overall cost of capital remains same. When the level of debt in capital structure increases beyond certain limit, the cost of debt becomes costlier than equity due to increase of financial risk, at the same time the cost of equity goes down, hence the two costs balance each other and the overall cost of capital remains constant. This approach was based on the following assumptions.

- a. There are no corporate taxes
- b. Perfect market exists
- c. Investors act rationally
- d. The expected earnings of all the firms have identical risk characteristics
- e. There is no transaction cost
- f. All the earnings are distributed as dividend or there is no retained earnings; and
- g. Risk of investors depend on the random variations of expected earnings and the possibility that the actual value of earnings may turn out to be different from their best estimates.

(b) Theory of relevance

M M included corporate taxes in to their theorem and brought out a corrected approach of their theory in their article in 1963. This approach is identical with net income approach. It is popularly known as theory of relevance. According to their second edition of capital structure theory, the capital structure affects cost of capital and value of firm when the corporate taxes existing. When firms use debt in their capital structure the overall cost of capital decreases because the cost of debt is cheaper than cost of equity, hence the market value of firm increases. It happens because the cost of debt is deductible from profit for corporate taxation purpose. It increases financial leverage of equity shareholders.

Even if two firms (levered and unlevered) have equal earnings, the levered firm can have more earnings to its equity shareholders than unlevered firm. So if a firm wants to have optimum capital structure it is preferable to increase debt mix in capital structure.

More studies criticised the MM theory in many ways as the market is not perfect always, the theory assumed that there is no transaction cost, but in reality the transaction costs exist in securities transactions. It led to develop capital structure theories in different angles.

Trade-off Theory of Capital Structure

The trade off theory of capital structure states that a company chooses the quantum of equity and debt finance evaluating the cost and benefit. Here cost refers to dead weight costs of bankruptcy and the benefit is the tax savings by using debt finance in capital structure. This theory grouped the disadvantages of debt finance under financial distress. It arises when the firm is unable to meet its financial obligations to debt holders, which situation may lead a firm to insolvency. The degree of business risk depends on the degree of operating leverage, general economic conditions of the country or world, demand and price variations, intensity of competition and so on. The operating risk is further aggravated, if the firms have high proportion of fixed costs. Matured companies have relatively stable market conditions and hence they are able to have a low operating risk. Similarly firms diversified with unrelated businesses are in better position to face cost of financial distress.

Hence optimal capital structure is determined by trade-off between the tax benefits of debt and bankruptcy risk. This theory was supported and also criticised by various studies[12].

Pecking Order Theory

This approach of capital structure was initially propounded by Donaldson [15]. Later it was modified by Myers and Majluf [16] and Myers [17]. The pecking order theory of capital structure is based on two main assumptions namely (a) managers are better informed than outside investors about the investment opportunities available to the firm; and (b) managers act upon the best interest of existing shareholders. The firm assumption refers to “asymmetric information”. This theory suggests a preferential order of choosing the source of finance when the firm requires finance. The first source of finance preferred by managers is retained earnings (internal source). When it is depleted they move to low risk debt securities then to risky debt finance. They resort to equity issues only when they are not in the position to use neither internal finance nor debt finance. This theory argued that the firms choose equity finance as their last choice in their capital structure due to higher cost involved and also since cost of issuing equity is higher than any other source of

finance. They choose internally generated funds first (retained earnings) because it does not have an issue cost or a time lag.

The theory also implies that the managers avoid signaling adverse information about firms by using internal fund. The profitable firms have lower debt ratios not because of lower target leverage, but because of having more internal finance. Pecking order theory found negative relationship between profitability and debt ratio within an industry. However results of many studies concluded that pecking order does not explain capital structure fully. Some studies are some of the supporters of Pecking order theory of capital structure[1, 11]. Eventhough there are some supportive evidences, some studies did not find supportive evidences to this theory [12].

Market Timing Theory

Baker and Wurgler in their novel study[18], had given a new dynamic of market timing attempts and named it as “Market Timing Theory”. This theory explains the timing attempts of security issues. Managers of firms take capital structure decisions on the basis of the cost of relative securities. They issue either equity or debt securities when cost of the respective security is lower than the other

Market timing refers to timing the issue of securities. This theory suggests that the managers issue equity when the stocks are valued in the market over and above their book value. When the market value of equity is high, its cost of capital would be low and hence they try to grasp this advantage by issuing equity. On the other hand, when the market value of equity is low they prefer debt issue to meet their financial requirements.

They theorised that market timing of equity issues have long lasting effect on capital structure. They also found robust negative association between firm leverage and market-to-book ratio. The study had taken market-to-book ratio as proxy for market timing opportunities. As per the evidences of the study, low levered firms tend to issue equity when their market valuations are high and high levered firms tend to issue debt when their valuations are low. This theory concluded that the past timing attempts of equity market have persistent impact on capital structure. The theory stated that the capital structure is the cumulative outcome of past attempts of market timing.

The market timing theory explains long term relationship of capital structure, which both Trade-off theory and Pecking order theory do not. Several studies have been undertaken on the hypothesis of market timing theory of Baker and Wurgler [8]. Some studies found evidence to support market timing theory in short run only but they did not have evidence in the long

run[9] but some studies had evidences against the market timing theory of capital structure[7].

Some earlier attempts also were made on market timing prior to Baker and Wurgler study. But they did not attempt to propound any theory on capital structure.

CONCLUSION

The paper mainly focused on to present relevant and accepted theories of capital structure. It has also presented various studies made to test the recent theories of capital structure such as trade-off theory, pecking order theory and market timing theory. The results of the attempt indicated that some studies supported a particular theory wholly, some studies supported partially and few results were found evidences against a theory also. It indicated that all theories are not wholly suitable for all the period of time. Hence over the period of time new theories were propounded by the researchers. In the coining of the capital structure theories, the recent one is market timing theory, it stated that capital structure is the cumulative outcome of the past timing attempts of securities. Many studies on market timing theory were found in US and other some developed countries, but very few studies were found in India on market timing theory. Therefore, testing the market timing theory in the Indian context would give some insight into its applicability in Indian equity issues and the relevant of market valuation in equity issues.

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