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REASSESS OF CAPITAL STRUCTURE THEORIES

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ABSTRACT

This study presents a review of major capital structure fiction. Capital structure decision is important for companies because it helps to increase firm value by ensuring that the company has enough resources to carry out planned investments using as much as possible the cheapest cost of capital. It therefore involves choices between the different sources of capital such as debt, equity and hybrid capital. The different sources of finance available to companies are also influenced by the quality and maturity of the financial system and the overall risk of operating in that environment. The paper identified a host of capital structure theories that are key contemplation in the financing structure of firms around the world. This review will help companies in emerging and underdeveloped economies identify the peculiarities in the choosing the appropriate blend of capital.

Keywords: Capital structure, Cash flows, Financial risk, Principles, Theories.

1. INTRODUCTION

This paper presents a review of the creative writing on financing decisions of companies. There are various theoretical dimensions to capital structure theories however our discussion will be focussed on (i) value maximization principles, (ii) capital structure propositions, and (iii) theories of capital structure.

Capital structure can be distinct as a 'Mix of different securities issued by a firm' (Brealey and Myers 2002). Simply vocalizations, capital structure mainly contains two elements, debt and equity. The term capital structure is used to represent the proportionate relationship between debt and equity. Capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. A firm's capital structure is the composition or 'structure' of its liabilities. Gearing Ratio is the proportional of the capital employed by the firm which comes from outside of the business, such as by taking a short term loan. Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

The theory of capital structure always searches for optimal capital structure, which requires a trade-off. Ahmadinia et al. (2012) studied a comprehensive review on different theories and hypothesis in regard with achieving an optimal capital structure. DeAngelo and Rol (2013) discussed a comprehensive analysis of capital structure stability over long horizons.

2. OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

- To know business risk, financial risk and trade-off between these risk.
- To know optimal capital structure.
- To know benefits and costs of debt financing and significance of both debt and equity financing.

3. THE VALAUE OF MAXIMIZATION PRINCIPLES

In general accepted that the foundation of modern financial theory lies in the value maximization principle (Jensen 2002). The value maximization principle states that managers should make all decisions so as to maximize the total long-run market value of the firm. Therefore, the objective of maximizing the total market value of the firm can be substituted by that of maximizing the market value of existing owners' equity.

The long-run value of a firm is determined by the size of the company together with the timing and risk level of expected cash flows generated by the company (Brigham et al. 1999). The risk level of the expected cash flow is reflected in the cost of capital (discount rate) and the timing (time value of money) is taken into account in the discounting process. Therefore, the cost of capital in a firm will depend on many factors that are related to (i) financial, (ii) investment and (iii) dividend payout decisions.

These interdependences are in turn affected by the quality and maturity of the financial system and the overall risk of operating in that environment. However, in underdeveloped economies such as Nigeria, most of the financing sources available to companies are grossly limited. For instance, hybrid capital such as; factoring, convertible bonds and warrants, rarely exists and if they do, they are yet to be fully developed. On the other hand, even in the developed economies where these sources exist, they may not be available for all projects and for all firms. For example, a start-up company can rarely obtain funds through initial public offers, but may be able to attract venture capital or qualify for government grants. In like manner, it could be relatively easy to finance the purchase of new machinery through debt capital but may be difficult to obtain bank loans to carry out research and development activities.

Additionally, companies may have different debt capacity either due to differences in collateral, flexibility and/or risk levels. Indeed, risk is the fundamental factor in financing decisions given that the value of an investment depends on its risk-return characteristics. Risk can impact on all areas of corporate activity because of the uncertainty surrounding the outcome of future events. It can also assume many forms both financial and non-financial. Each category of risk (financial and non-financial), regardless of its underlying characteristics exposes a firm to the possibility of loss and will consequently affect the shareholders' value. Under the value maximization principle, the choice of capital structure affects the return earned by shareholders as well as the business and financial risks incurred by them.

Business risk is the type of risk often associated with business related factors, such as the characteristics of the industry. It is influenced by factors that include variability of sales volume or prices over the business cycle, variability of input costs, the degree of market power and the level of the firm's growth prospects. These factors will potentially affect the revenues, costs and asset operation of firms. Other features that also affect business risk are (i) efficiency and improvement in the manufacturing process (ii) effective advertising (iii) changes in interest rates that influence product demand and (iv) government actions that create uncertainty in companies' operations.

Financial risk is the risk arising from commitments to use expected cash flows to service creditors and taxing authorities. Since creditors stand in line ahead of shareholders, additional risk may result from promises and requirements for payments of interest and principal as part of debt obligation and the tax environment. It thus becomes a source of additional variability in returns to shareholders if the financial structure of the firm contained debt instruments. Therefore, financial risks will include uncertainty about interest rates and a change in interest payments. This may be worrisome for companies that have (i) debt securities with variable rate of interest, (ii) plans to raise more debt in the future and (iii) fear that the taxing authorities may change the existing tax rates.

4. CAPITAL STRUCTURE PROPOSITIONS

There are broadly two schools of thought that gave birth to capital structure theory. The *first* school, acting on the assumptions of a perfect market '*ideal world*', believes that the composition of firms' financing mix does not affect the cost of their capital. Hence, the costs of capital are the same irrespective of the composition, so capital structure would be irrelevant in the valuation of a company. The *second* school believes that the cost of capital is determined by the composition of the capital structure of a firm. The suggestion is that an optimal capital structure will occur at a level where the overall cost of capital is lowest; hence the overall capital structure in a firm would contribute to its market value. For the purpose of this study we concentrate on the first school that argued on the irrelevance of capital structure, in particular the [Modigliani and Miller \(1958\)](#) proposition.

The key members of this school are [Modigliani and Miller \(1958\)](#) who argued that the composition of the capital structure is an irrelevant factor in the market valuation of a firm. They introduce a behavioural dimension into the capital structure debate which is based on seven assumptions. These are *first*, there are no corporate or personal taxes; hence the impact of tax shields associated with debt is the same *second*, there are no bankruptcy costs, therefore the assets of a bankrupt company can be sold at their economic value without incurring any liquidating and legal expenses; this statement eliminates any bias in favour of an unlevered (*firm with zero debt*) firm due to the existence of bankruptcy costs *third*, the firm is allowed to issue and repurchase any amount of debt or equity and these transactions can be executed instantly without any time lag, thus implying that securities are infinitely divisible *fourth*, the composition of capital structure can be changed without any transaction costs like issue expenses and under pricing *fifth*, the firm consistently follows the policy of 100% dividend pay-out, therefore the possible impact of dividend policy on the valuation of the firm is eliminated *sixth*, that all investors in the market have the same expectations (homogenous) of the expected future earnings of all the firms. Consequently, the expected value of the subjective probability distributions of the anticipated future earnings (operating income) is identical for all the investors and *seventh*, the operating earnings of the firm are expected to remain constant for all future periods. Hence there is neither any growth nor decline in expected future earnings. However, these assumptions were later modified and relaxed.

5. CAPITAL STRUCTURE THEORIES

In their paper, [Modigliani and Miller \(1958\)](#) showed the assumptions under which financing decisions do not affect the value of the company, thus completely stating which factors should influence financing decisions. Miller and Modigliani theory is based on several assumptions, such as, perfect and frictionless markets, no transaction costs, no default risk, no taxation, both firms and investors can borrow at the same interest rate. In order to provide a systematic picture of capital structure determinants, [Sander \(2007\)](#) categorized them into three layers. Layer 1 included fundamental factors such as *returns, risk, and value*. Layer 2 comprised classical theories including *tax theory, bankruptcy costs and agency costs* among others, and layer 3 included practical factors, such as *legal regulation, the life cycle of a company, human psychology, market conditions, credit ratings, shareholder preferences and risk management consideration*. However, discussion in this section will concentrate on the classical theories of corporate capital structure which underpinned many of the previous studies in this area. For ease of exposition, these theories will be presented under the following headings: (i) tax theory, (ii) bankruptcy costs, (iii) agency costs, (iv) trade-off theory, (v) signalling theory, (vi) pecking order theory and (vii) asymmetric information theory. Each of these factors will be dealt with in turn.

5.1 The Tax Theory

The tax theory is the first market imperfection to be studied in terms of its impact on corporate capital structure choices. The introduction of a tax element brings complexity to capital structure theory. Hence the assumption of no taxes was relaxed to test the validity of [Modigliani and Miller \(1958\)](#) hypothesis. It was pragmatic that the interest payable on debt is a tax deductible item whereas retained earnings and dividends payable on equity enjoy no such fiscal benefit. Hence, whenever a firm employs debt in its capital structure, it gets a certain tax shield. This makes the amount available for distribution to equity holders to be more in the case of a levered firm than in an unlevered firm. However, the utilization of the tax shield by a firm might be uncertain since the taxable income of the firm may decline or the firm may incur some losses. In such a scenario the firm would part with the benefits of the tax shield. Similarly, the rate of corporate tax might be reduced in the future. This would result in a lesser tax shield or, if the firm is liquidated the tax shield would have no realizable value like other assets. [Mehrotra and Mikkelsen \(2005\)](#) observed that other alternative tax shelters, like leasing, depreciation and investment

allowances could be made available to the firm which would also make the tax shield redundant. The uncertainty associated with tax shield benefits may dilute the value of the tax shield.

The element of uncertainty with regard to the tax shield further leads to the incorporation of the personal tax factor under the assumption that the presence of personal income taxes may reduce the value of the tax shield. This is because capital gains are generally taxed at a lower rate than regular income and if a firm decides to retain the entire earnings, the equity holder would have no tax liability since tax on capital gains is payable only when the security is sold. However, Miller (1977) maintained that capital structure is irrelevant even in the presence of corporate and personal taxes. Hence, changes in the capital structure would have no impact on valuation of the firm. This argument was based on the assumption that, since different investors have different rates of personal income tax, investors who are tax exempt would prefer to invest in debt instruments while investors in the higher tax brackets would prefer equity investments.

Therefore, if the capital market is in a state of disequilibrium, companies will alter their capital structures to align with the tax incidence of the investors. For this reason, supply of debt securities will increase as companies increase the quantum of debt in their capital structure. This will exhaust the capacity of the tax exempt 'clienteles' (investors) to absorb debt and companies will choose to market their debt to investors in the next tax bracket. This process will continue until companies cover the class of investor in the tax bracket that is equal to the corporate tax rate. This implies that the market will reach its equilibrium when the personal tax rate of the investors is equal to the tax rate on corporate income. At this point, it would no longer be possible for the company to increase its valuation by altering its capital structure.

This barney was extended by De Angelo and Masulis (1980) by taking into account the existence of non-identical marginal tax rates among different firms and the impact of tax shield items other than interest expenses. These include some balance sheet items such as depreciation, oil depletion allowances, and investment tax credits that are actually non-cash charges and therefore provide a non-debt tax shield. They predicted that the level of debt in a firm would have a positive relationship with its effective tax rate and negative relationship to the amount of non-debt tax shields available to them. Since then theoretical and empirical work has been done in this area by Graham and Smith (1999), Fan et al. (2003), Booth et al. (2001), Altı (2006) and Delcours (2007).

5.2 Bankruptcy Cost Theory

Bankruptcy cost theory is the assumption of Modigliani and Miller (1958) of a perfect capital market suggests that all the assets of a firm can be sold at their economic value without incurring any liquidating expenses. But in reality this is not so because of the *direct* and *indirect* costs of bankruptcy. Direct costs involve costs such as the payment of lawyers' fees, accountancy fees, management fees and loss of tax credit. On the other hand, indirect costs include among others disposal of assets at uneconomic prices, foregone investment opportunities, loss of sales due to forced reduction in the scale of operation, and uncertainty in customers', suppliers and employees' minds about dealing with the firm. Bankruptcy costs therefore become substantial to the extent that lenders assume the *ex post* bankruptcy costs, but they will pass on *ex ante* bankruptcy costs to the firm in the form of higher cost of debt. In the end, shareholders have to bear the burden of *ex ante* bankruptcy costs and the consequences of lower valuation of the firm. Therefore, a highly indebted company will seem to have greater chances of being bankrupt than a firm with a low level of debt. As observed by Barclay et al. (1999), though direct expenses associated with the administration of the bankruptcy process appear to be quite small relative to the market value of companies, the indirect cost can be substantial.

5.3 Agency Costs Theory

Agency costs theory popularized by Jensen and Meckling (1976) and Myers (1984) suggests that the separation of ownership and control in a modern corporation may lead to array of conflicts from several sources. For instance, the separation of ownership from control in large public corporations may induce conflicts between creditors and the firm and between managers and shareholders. This may pitch the owners (principals) against the management (agents) given that managers as agents are not entitled to 100% of the residual claims resulting from their professional responsibilities and expertise in running the affairs of the business. They, however, bear the entire costs of these activities and, in the event of financial distress or corporate takeovers, they will be the first in the firing line. It is assumed that faced with this situation, managers of corporations may therefore put less effort into value enhancement activities in the firm through sub-optimal investments.

In addition, they may even try to maximize their private gains by lavish perquisites, plush offices, 'empire building' and other inefficiencies. In order to reduce this conflict, the principals can limit the divergence from their interest by establishing appropriate incentives for the agents to limit the aberrant activities. Some of these measures may include the proper use of debt and an offer of incentives such as share purchase options or by devising an Economic Value Added (EVA) reward where a management compensation package would depend on the firm's stock price performance.

Conflicts may also occur between creditors and shareholders, or between shareholders and other stakeholders such as customers, suppliers, employees, and competitors. As suggested by Myers (1977, 1993), conflict between shareholders and creditors may emerge as a result of underinvestment or overinvestment practices by the firm's management. For instance, conflict between existing shareholders and creditors could be magnified if future investment financed with debt yield high returns (higher than the cost of debt). In this scenario, equity holders may benefit more from the profits generated by the firm since they are entitled to all the extra gains. However, if such investment failed completely, debt holders would suffer the losses given the limited liability clause of the equity holders. Either way, equity holders' benefit from investing in risky projects even if they are value decreasing since value decreasing investments may also reduce the value of debt.

The loss in the value of equity from poor investments can be more than offset by the gains in equity value at the expense of the lenders. To protect themselves against expropriation lenders may impose certain restrictions (*protective covenants*) on the firm. Some of these covenants may include restrictions on the level of dividend paid to shareholders, the level of indebtedness in the firm and the disposal of a major asset. This may remain in force until all the debts are repaid and such restrictions could lead to sub-optimal performance of the firm.

Furthermore, lenders do put in place some strong monitoring and corrective mechanisms to enforce the debt covenants. The monitoring and enforcement costs are then passed on to the firms in the form of higher premium on debt. These costs together with the cost of inefficiencies (due to the covenants) add up to the agency costs. As observed by Hill (1998), agency costs may be virtually non-existent at low levels of leverage until they reach a doorsill point. After this point, lenders will start to perceive the firm as significantly risky. This may result in a disproportionate increase in the agency costs due to the need for extensive monitoring. Consequently, the level of agency cost would eventually depend, among other things, on statutory common law and human ingenuity in devising the contract.

5.4 Trade-off Theory

Trade-off theory is one of the two most influential theories of capital structure along with the pecking order financing theory. This theory argues that companies may trade-off the benefits of debt financing, including tax deductibility of interest with the expected costs of

bankruptcy and agency costs of additional debt in the firm. It also suggests that corporate should consider a reasonable debt ratio and tries to achieve this goal in a long term and a firm can benefit greatly by using of debt as a cheap source of financing. Jensen (1986) proposed that extra profit generated by the company 'free cash flow' may entice managers to develop the propensity to expand the scale of the firm's activities, including value decreasing projects. These types of investment will reduce shareholders' value yet increase management status, power and publicity. Therefore, in order to restrain management inclination to invest in projects with little or no returns, shareholders can force the firm to increase their indebtedness by taking on more debt. Thus, by shifting the capital structure towards more debt, the regular payments for debt services will absorb any 'spare' cash held within the company thus minimizing the misuse of shareholders funds. The trade-off theory postulates that companies would balance the potential benefits of debt financing against the costs of bankruptcy risk, and the agency cost of additional debt. According to Graham and Lemmon (1998) the risk of bankruptcy may become the main drawback with debt financing even though high gearing may imply a huge tax shield, yet would correspond to a high cost of financial distress. Hence, a high level of debt in a firm would most probably serve as a control measure and check against excesses of the management. Furthermore, Shyam-Sunder and Myers (1999) suggested that under the trade-off model, leverage will be inversely related with the rate of investment. Similarly, Nolan (2002) argued that the chances of financial distress might be higher for start-up businesses and those with high growth ventures. He observed that such firms are exposed to the risk of erratic cash flow streams since their tangible asset base is low. This suggests that such firms should not rely on having much debt in their capital structure. On the other hand, the theory seems to recommend that firms with a stable income stream and sound asset base may face lower risk of bankruptcy. Therefore, they can apply relatively higher levels of debt in their capital structure if they choose.

5.5 Pecking Order Theory

Pecking order theory is the second most influential capital structure theory after the trade-off proposition. It was developed by Myers and Majluf (1984). They argue that firms follow a specific order of preferences in financing decisions and tend to prefer internal financing by using the retained earnings for external financing of any sort and if they must obtain external finance, they have a preference for debt over equity. Among the benefits of using retained earnings is the assumption that firms can keep away new shareholders, especially if the company has sufficient cash generating ability. If the shareholder and management interest are aligned, they would prefer to jointly benefit from the new investment and would like to avoid the equity issue as much as they can. Using internal funds (retained earnings) would also save the firm from the other inconveniences involved in trying to extract investors' money. These include, among others, the need to provide a formal prospectus and the scrutiny of investors in justifying the need for extra funds. Thus, it is after internal funds are insufficient to finance the proposed investments that companies may resort to external financing.

The pecking order financing theory further argued that, even if firms are confronted with external financing needs, they will choose to rank their financing. They will prefer financing that is less sensitive to information such as the retained earnings, followed by varieties of debt securities including preference shares, convertible instruments, and hybrid financing. According to this theory, the least preferred source of financing is equity issue. Pecking order financing theory, as observed by Shyam-Sunder and Myers (1999) is a corporate financing activity that causes the least inconvenience to the management. In effect, management will often take the financing path of least resistance. However, there are some criticisms of the theory; for example one of the observable implications of the theory is that it does not suggest a well defined target debt/equity ratio which a firm should aim to achieve. Similarly, Bagley et al. (1998) argue that the pecking order theory does not explain how a firm's static trade-off would affect the pecking order behaviour; neither does it specify the barriers that should be set by a firm concerning fluctuations in the debt ratio or the leverage adjustments to be made when certain barriers are reached.

5.6 Asymmetric Information Theory

Asymmetric information theory is the proposition of Modigliani and Miller (1958) seems to suggest homogenous expectations from all classes of investors, but in reality contracting parties have different information. It is generally thought that there are informational asymmetries between borrowers and investors which may affect the financing decisions of companies. The management of firms may have superior information than investors and shareholders concerning the performance and future prospects of their companies. This is because much of their time is spent on analyzing a firm's products markets, strategies and investment opportunities. They thus acquire more timely information about current operating performance and also have greater access to information that is useful in forecasting the short-run earnings of a firm.

Information lop-sidedness may sometimes be used by some people who have insider information and know that there is an above-average probability of certain favourable price movements and use that to trade. Other parties may have insider information regarding the below-average probability of a favourable price move, and may well decide to hold off trading. In this way, the better informed investors will obtain a trading advantage over and above that of an average investor and further worsen the imperfections of financial markets. Therefore capital structures should be designed to ease the inefficiencies of the financial markets that are caused by information asymmetries.

Myers and Majluf (1984) argued that debt could be used to avoid the inefficiencies in a firm's investment decisions which would otherwise result from information asymmetries to the extent that managers know more about their companies' prospects, risk and value than outside investors. The possession of such valuable information may cause the stocks of the firm to be under priced by outside investors. Therefore, if the management objective is to maximize the return to shareholders, the net effect is that new investors will obtain higher capitalized cash flow from this investment than pre-existing shareholders. According to Prasad et al. (2001) and Rock (1986), this may lead to rejection of the project even if it had a positive Net Present Value (NPV). However, some firms may have profitable investment opportunities that are above their retained earnings. Such companies may not wish to give up such prospects; hence they would choose to search for external financing.

5.7 Signalling Theory

As with agency theory, the signalling theory is frequently cited in the capital structure literature. Ross (1977) developed an incentive signalling model which provided a theory for the determination of the financial structure of a firm. The theory argues that, given the presence of information asymmetries between companies and outside investors on the current value of the firm, managers may be confronted by situations in which they would like to communicate this information to the market. Unfortunately, this task is not as easy as it sounds since virtually all managers would like their stock prices to be higher than they are. Therefore simply announcing that their firms are undervalued may not carry much weight as suggested by Rajan and Zingales (1998). Given that the risk of the firm's return is unknown to investors, they are forced to rely on noisy signals such as the firms' level of leverage in order to determine the risk of their investment. Therefore, managers who wish to convey positive information to the market about their firms must identify a credible mechanism to signal this information. The economic theory of information suggests that information disclosed by an obviously biased source, like the management in this case, might be credible only if the costs of communicating false information are large enough to induce managers to

reveal the truth. Among the many potentially effective signalling devices available to managers are changed in their leverage and dividend choices.

Stock markets, particularly in the developed economies, often react when managers announce major corporate decisions. For example, if a company announces a change in its capital expenditure or research and development, investors will draw some inference from this announcement about the profitability of the firm's investment opportunities and adjust the stock price. Similarly, an announcement of an equity offer may sometimes be received by the market as a signal that the firm is overvalued and may thus drive down the price as the company will be perceived as too risky to invest in. On the other hand, debt issue by a firm could prompt investors to think that the stock of the company is under-valued, hence move in to invest. This rush may also raise the share price of the firm.

As a result, Ross (1977) suggested that companies that believe that their shares are undervalued may choose to issue more debt in order to differentiate themselves from the lower valued firms who are overvalued by the market. In response to this, the overvalued (lower) firms could contemplate manipulating their information by also issuing more debt in order to retain the perception of higher value by the market. It is inferred that a firm can change the perception of outside investors and the market at large through unambiguous signals by manipulating its financing decisions either through the issue of equity or through raising more debt unless appropriate sanctions are provided against communicating false information to the market.

Substantiation from our review of literature has shown the importance of capital structure theories in financing decision of companies. It also gives an insight on the key considerations in the financing decision of companies. It also indicates that capital structure determinants of companies may largely depend on factors such as the quality of the business environment, the type of firm (small or large, listed or non-listed).

6. CONCLUSIONS

While as regards to a firm's capital structure, the Modigliani-Miller theorem opened a prose on the basic nature of debt versus equity. The capital structure of a firm is the result of the dealings with various suppliers of finance. In the perfect capital markets world of Modigliani and Miller, the costs of different forms of financing do not fluctuate in parallel and as a result there is no extra expand from opportunistically choosing among them. Nevertheless, financing clearly matters that as a consequence of taxes, differences in information and agency costs. The various theories of capital structure differ in their construal of these factors. Each emphasizes some cost and payback of alternative financing strategies, so they are not designed to be general. According to the standard trade-off theory, taxes and bankruptcy account for the corporate use of debt. According to the standard pecking order theory, adverse selection accounts for the corporate use of debt. Both theories having weak parts, it is not surprising that there is active research on this matter. In the market timing theory, there is no most advantageous capital structure, so market timing decisions amass over time into the capital structure conclusion. From this point of view, the market timing theory appears to have the most explanatory significance.

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