## DETERMINANTS OF CAPITAL STRUCTURE: A LITERATURE REVIEW

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## Abstract

The financing decision is one of the most important imperative in corporate finance. Financial directors have to grapple with question—what is the optimum level of debt versus equity to employ in order to fund the operations of a firm? The present article seeks to unravel the evolution of capital structure theory from both theoretical and empirical perspectives. The major contending theories of capital structure as well as their predictions are considered. It is demonstrated that there are reliably important firm level attributes that determine the capital structures of firms. The article also compares and contrasts the findings of empirical studies on capital structure that have been conducted in developing countries to those that have been conducted in the developed world. Arguably, developing countries' financial markets lack sophistication and this might curtail the companies from adjusting to their desired target debt ratios. In the final analysis it is demonstrated that the similarities in financing patterns between the developed countries and the emerging markets far outweigh the disparities.

Keywords: Capital Structure, Firm Level, Speed of Adjustment, Debt-to-Equity, Leverage

## **1. INTRODUCTION**

The financing decision is a critical concept in corporate finance. This article purposes to trace the evolution of the capital structure concept from theoretical as well as empirical perspectives. In essence the issues that are discussed in detail are the factors that a company takes into account when making its financing decision. The capital structure theory is firmly founded upon the pioneering work of Modigliani and Miller (1958:268). They posit that in a frictionless efficient markets' world with no taxes or bankruptcy, the value of the firm is invariant to its capital structure. Put in other words, what they meant is that the value of the firm is not influenced by its financing decision, that is, its selection of debt and equity mix. However, what is implausible about their theory is the existence of a "frictionless market". Such a market is only an ideal environment and does not exist. Suffice to say that, the environment that characterises the financial markets is one where the risk of bankruptcy is a reality and also firms have to pay corporate taxes. As such, in the absence of a "frictionless market", the capital structure choices might have an influence on firm value and Modigliani and Millers' (MM) propositions will no longer hold.

Modigliani and Miller (1963:438) later relaxed the proposition of perfect markets and incorporated corporate tax in their models. The rationale for doing so was the realisation that debt is taxdeductible and thus, a firm that utilises debt is bound to enjoy an interest tax shield. As such, as increasingly more debt is used, the market value of the firm would increase by the present value of the interest tax shield. However they would also caution that notwithstanding the existence of a tax advantage for debt financing, does not necessarily mean that corporations should at all times seek to use the maximum possible amount of debt in their capital structures. For one thing, other forms of financing, notably retained earnings, may in some circumstances be cheaper still when the tax status of investors under the personal income tax is taken into account (Modigliani and Miller, 1963:442).

In the real word scenario, their propositions hardly hold and have subsequently been challenged by several scholars. Subsequent departures have proven that such an ideal world does not exist and there are imperfections such as taxes, costs of financial distress and especially regulation in the case of financial institutions (See for instance Smith and Stulz, 1985; Berger et al, 1995; DeMarzo and Duffie, 1995; Miller, 1995; Froot and Stein, 1998). Amongst the early scholars, Robichek and Myers (1966:2) conjecture that, on one hand, in the absence of taxes, the value of the firm will not change for moderate amounts of leverage but will decline with high degrees of leverage, and on the other, in the presence of taxes, an optimal degree of leverage will exist.

Borch (1969:1) demonstrates that the earnings of a firm are represented by a discrete stochastic process, in which the terms can take negative values. As such, earnings can be added to the firm's working capital, or paid out as dividends. If a firm has debt, part of the earnings must be set aside to service the debt. As a consequence, a firm is ruined and has to cease its operations if the working capital becomes negative. This is contrary to the MM irrelevance proposition. In the present article it would be demonstrated that firm specific factors have a direct bearing on their capital structure choices. Furthermore it would be demonstrated that firms seek "optimality" in their financing and will



gravitate towards the attainment of a target capital structure. In this article we made use of the Atlas-ti software to analyse and synthesize the literature review of the extant studies of capital structure that have been conducted during the period 1950-2015.

The rest of this paper is arranged as follows: Section 2 considers the firm level determinants of capital structure. Section 3 reviews the empirical literature on the determinants of capital structure. Section 4 concludes the paper.

# 2. THE FIRM LEVEL DETERMINANTS OF CAPITAL STRUCTURE

There are reliably important firm level determinants that usually turn up in extant literature and have a demonstrable effect on the capital structure choices of firms. In this section we shall consider these firm level determinants with view to providing an insight on what the major theories of capital structure predict about them.

## 2.1. Size

It is expected that as firms grow, they become more profitable and also accumulate more tangible assets along their growth trajectory. As a consequence thereof, it would seem as if such firms will have a lot of free cash flows. The *a priori* expectation from a pecking order theory perspective is that, as firms grow they generate more profits and hence can make use of internal generated resources as opposed to seeking recourse from the debt market. As such, large firms are expected to be lowly geared as opposed to small firms. Contrary to this prediction by the pecking order theory, the expectation from both the trade-off and market timing models is that large firms should be highly levered as compared to small firms by reason of the ensuing debt-interest tax shields they stand to enjoy. Moreover the dictates of the free-cash flow theory is that, the use of debt will mitigate the agency costs brought about by the abundance of free cash flows in large firms. Further, arguably firm size is an inverse proxy of the probability of bankruptcy (Rajan and Zingales, 1995: 1456; Antoniou et al, 2008:64; Frank and Goyal, 2009:8). As such, due to lower information asymmetry, larger firms are likely to have easier access to debt markets and hence be able to borrow at lower cost.

In synch with the above foregoing, the empirical evidence is mixed. Notwithstanding, by and large the scale tilts in favour of the positive association between leverage and firm size prediction. The empirical evidence to support the positive leverage-firm size nexus prediction can be found in Antoniou *et al* (2008:73); Ahmed *et al* (2010:9); Al-Najjar and Hussainey (2011:334); Lim (2012:197); Bartoloni (2013:142), and Lemma and Negash (2014:81) amongst others.

To the contrary, Titman and Wessels (1988:6) lend support to the inverse leverage-firm size relationship. They contend that the cost of issuing debt and equity securities is also related to firm size. In particular, small firms pay much more than large firms to issue new equity and also somewhat more to issue long-term debt. This suggests that small firms may be more leveraged than large firms and may prefer to borrow short term (through bank loans) rather than issue long-term debt because of the lower fixed costs associated with this alternative.

However Rajan and Zingales (1995:1451) aptly observe that the effect of size on equilibrium leverage is more ambiguous. Larger firms tend to be more diversified and fail less often, so size (computed as the logarithm of net sales) may be an inverse proxy for the probability of bankruptcy. If so, size should have a positive impact on the supply of debt. However, size may also be a proxy for the information outside investors have, which should increase their preference for equity relative to debt. This aberrant behaviour of firms is evidenced in Faulkender and Petersen (2006:58). They conjecture that larger firms are less risky and more diversified, and therefore the probability of distress and the expected costs of financial distress are lower. They may also have lower issue costs (owing to economies of scale) which would suggest that they have higher leverage. However in their study they find that larger firms are less levered, and the magnitude of this effect is not small.

To surmise the empirical evidence, it would seem that large firms are more inclined to issue debt as opposed to small firms. Notwithstanding this prediction, it could be conjectured that, capital structure decisions are not cast in stone. As such, the aberration in the behaviour of large firms in crafting their financing policy can be explicable in terms of the abundance of capital structure choices they find themselves with.

## 2.2. Asset tangibility

As companies grow, they accumulate more and more tangible assets. Tangible assets, such as property, plant, and equipment, are easier for outsiders to value than intangibles, such as the value of goodwill from an acquisition-this lowers expected distress costs (Frank and Goyal, 2009:9). Further, according to Rajan and Zingales (1995: 1451) if a large fraction of a firm's assets are tangible, then assets should serve as collateral, diminishing the risk of the lender suffering the agency costs of debt (like risk shifting). Assets should also retain more value in liquidation. Therefore, the greater the proportion of tangible assets on the balance sheet (fixed assets divided by total assets), the more willing should lenders be to supply loans, and leverage should be higher. In tangibility makes it difficult addition. for shareholders to substitute high-risk assets for lowrisk ones. The lower expected costs of distress and fewer debt-related agency problems predict a positive relation between tangibility and leverage. Moreover these tangible assets can be pledged as collateral when borrowing from financial institutions.

As such, it is expected from a trade-off theory perspective that as companies grow they will borrow more by dint of having more tangible assets to pledge as collateral, in-order to enjoy the debtinterest tax shield. This view is espoused by Antoniou *et al* (2008:63), who contend that in the case of bankruptcy, tangible assets are more likely to have a market value, while intangible assets will lose their value. Therefore, the risk of lending to firms with higher tangible assets is lower and, hence, lenders will demand a lower risk premium. Thus there is presumed to be a positive relationship



between leverage and asset tangibility. Also, Harris and Raviv (1990: 323) contend that firms with higher liquidation value, e.g., those with tangible assets, will have more debt, will have higher yield debt, will be more likely to default, but will have higher market value than similar firms with lower liquidation value. Whereas the pecking order theory predicts an inverse relationship between firm leverage and asset tangibility. This can be attributed to low information asymmetry associated with tangible assets making equity issuances less costly. Thus, leverage ratios should be lower for firms with higher tangibility (Frank and Goyal, 2009:9).

On the one hand, the positive firm leverageasset tangibility prediction finds empirical support from Faulkender and Petersen (2006:57); Antoniou *et al* (2008:73) amongst others. On the other hand, Bradley *et al* (1984:874); Ahmad and Abbas (2011:208); Al-Najjar and Hussainey (2011:333) report an inverse relationship between firm leverage and asset tangibility. The dichotomy in the predictions can be perhaps be explained by the observation that the determination of the capital structure of a firm is as a result of the interplay of many factors that are not necessarily mutually exclusive.

#### 2.3. Profitability

From the pecking order theory vantage point, highly profitable firms are expected to employ more and more internal resources to finance the firm at the expense of using debt or floating shares. Profitability is associated with the availability of internal funds and thus may be associated with less leverage under the pecking order theory (Baker and Wurgler, 2002:7). Thus, firm leverage is negatively associated with profitability.

Bartoloni (2013) finds evidence to lend credence to the inverse firm leverage-profitability nexus. He finds that more profitable firms tend to use internal finance more, as implied by the negative relationship linking a firm's debt ratio and return on sales. Further he reasons that, the role of a firm's profitability in reducing the need for external finance characterises all firms, regardless of size as measured by employment, although large firms show a lower sensitivity of leverage to profit variations. This prediction is also supported by the empirical evidence found by Rajan and Zingales (1995: 1457); Booth et al (2001:117); Hovakimian et al (2001:3); Faulkender and Petersen (2006:57); Utrero-González (2007:22); Antoniou et al (2008:67); Frank and Goval (2009:26); Ahmed et al (2010:10); Ahmad and Abbas (2011:209); Al-Najjar and Hussainey (2011:334) and Lemma and Negash (2014:81) amongst others.

Contrarily the trade-off theory predicts a positive relationship between firm leverage and profitability. From the trade-off vantage point, highly profitable firms are expected to make use of more and more debt, inorder to benefit from the debt-interest tax shield and maximise value of the firm. According to Hovakimian *et al* (2004:523), the positive firm leverage-profitability association may arise for a number of reasons. For example, other things equal, higher profitability implies potentially higher tax savings from debt, lower probability of bankruptcy, and potentially higher target debt ratio. This

view is buttressed by Myers (2001: 89) who asserts that high profitability means that the firm has more taxable income to shield and that the firm can service more debt without risking financial distress.

Notwithstanding the above foregoing, it is plausible to conjecture that both predictions of the pecking order and trade-off theories are admissible as they have been supported by empirical findings by equal measure. However it is instructive to posit that the predictions complement rather than outwit each other. This was perhaps demonstrable in Hovakimian et al (2004:534) who suggest that their results on profitability could be reflecting an of trade-off and pecking order interaction considerations. They go on to observe that specifically, if firms have target debt ratios but also prefer internal funds to external financing, then the tendency to issue debt when operating performance is high, as implied by the target leverage hypothesis, will be tempered by the preference for (and availability of) internal financing. The tendency to issue equity when operating performance is poor will be reinforced by the lack of internal funds, forcing the firm to seek external equity financing.

#### 2.4. Growth

Frank and Goyal (2009:8) contend that, growth increases costs of financial distress, reduces free cash flow problems, and exacerbates debt-related agency problems. Growing firms place a greater value on stakeholder coinvestment. Thus, the tradeoff theory predicts that growth reduces leverage. Further Antoniou et al (2008:62) posit that a negative relation is expected between growth opportunities and leverage for two main reasons. First, according to the trade-off theory, the cost of financial distress increases with expected growth forcing managers to reduce the debt in their capital structure. Second, in the presence of information asymmetries, firms issue equity instead of debt when overvaluation leads to higher expected growth. They go on to observe that however internal resources of growing firms may not be sufficient to finance their positive NPV investment opportunities and, hence, they may have to raise external capital. In essence if firms require external finance, they issue debt before equity according to the pecking order theory. Thus, growth opportunities and leverage are positively related under the pecking order theory.

We find empirical support in favour of the negative firm leverage-growth prediction from Rajan and Zingales (1995:1455); Hovakimian *et al* (2001:22); Barclay and Smith (2005:13) and Antoniou *et al* (2008:86) amongst others. On the other hand we find empirical support for the positive firm leverage-growth prediction from Ahmed *et al* (2010:10); Ahmad and Abbas (2011: 208) and Al-Najjar and Hussainey (2011:333).

#### 2.5. Debt-tax-shield

Taxes and the costs of financial distress were the first major frictions considered in determining optimal capital ratios (Berger *et al*, 1995:395). They also contend that since interest payments are tax deductible, but dividends are not, substituting debt for equity enables firms to pass greater returns to



investors by reducing payments to the government. The trade-off theory predicts a positive relationship between firm leverage and effective tax rate. As such, high tax rates increase the interest tax benefits of debt. The trade-off theory predicts that to take advantage of higher interest tax shields, firms will issue more debt when tax rates are higher (Frank and Goyal, 2009:9). Debt is advantageous for tax reasons. The net tax advantage of debt is the difference between the corporate tax advantage of debt (interest is corporate tax deductible) and the personal tax disadvantage of debt (Dangl and Zechner, 2004: 184)

According to Rasiah and Kim (2011:154) the most significant reason that prompt firms to raise debts are due to the tax shield that results from the tax savings generated by making interest payments on debt. They go on to suggest that as a result, by using debt, estimated tax liability of firms could be deducted and thus increase its after-tax cash flow, causing more lucrative business to utilise higher level of debt for the sake of increasing their debt tax shield. The firm's tax shield from debt is the present value of tax savings created by paying tax-deductible interest payment on debt instead of dividend payments made to shareholders. As such Faulkender and Petersen (2006:60) argue that firms with higher marginal tax rates prior to the deduction of interest expenditures should have higher interest tax shields and thus have more leverage.

From the pecking order theory vantage point, a negative relationship is expected to subsist between firm-leverage and the effective tax rate. All things being equal, a higher effective tax rate also reduce the internal funds of profitable firms, and subsequently increase its cost of capital (Rasiah and Kim 2011:157). As a result, an expectation for the negative relationship between the effective tax rate and leverage ratio is created within the framework of pecking order model.

The empirical evidence that lends credence to the positive firm leverage-effective tax rate prediction can be found in Booth et al (2001:97) amongst others. However Fama and French (1998:841) do no find evidence that debt has any net tax advantage. Further, Faulkender and Petersen (2006: 60) results are unambiguous. They conjecture that firms with higher marginal tax rates before the deduction of interest expenditures should have higher interest tax shields and thus have more leverage. Notwithstanding when they included the simulated marginal (pre-interest income) tax rates, they found a negative and not a positive coefficient. They reason that this could be as a result of employing a different proxy for the debt ratio. For instance when they changed to make use of the longterm debt-to- market value of assets, the coefficient becomes positive. Suffice to highlight that the empirical results may not conform to *a priori* expectations as a result of the sensitivity of the regression to the proxy chosen to represent either the debt or tax variables.

#### 2.6. Non-debt-tax Shield

The non-debt-tax shield prediction is principally a departure from the trade-off theory world view of firm leverage. It was advanced by DeAngelo and Masulis (1980:27) based on the model advanced by

Miller (1977) which incorporated personal income tax as a determinant of capital structure. They conjecture that tax deductions for depreciation and investment tax credits can be considered as substitutes for the tax benefits of debt financing. These features can lead to market equilibrium, where each firm has an interior optimal leverage (Antoniou *et al*, 2008:64). Thus it seems that firm leverage is also determined by intangible assets such as depreciation which substitute the benefits derived from debt-interest tax shield.

The *a priori* expectation from a trade-off theory premise therefore is that, firm-leverage is inversely associated with non-debt tax shield. Nondebt tax shield proxies—that is, net operating loss carry forwards, depreciation expense, and investment tax credits-should be negatively related to leverage (Frank and Goyal, 2009: 9). Accordingly, firms with higher amounts of non-debt tax shields will have lower debt levels. Moreover it would seem that higher corporate tax levels tend to favour the use of debt, while non-debt tax shields such as depreciation deductions can be used as substitutes for debt tax advantage and therefore reduce the leverage level of firms (Utrero-González, 2007:483). Therefore, a firm's motivation to borrow declines with an increase in non-debt tax shields (Antoniou et al, 2008:64).

The empirical results is support of the inverse, firm leverage-non-debt tax shield prediction are somewhat mixed. We find empirical support for this prediction from Antoniou et al, (2008:80) and Lim (2012:198) amongst others. To the contrary, according to Barclay and Smith (2005:15) studies that examine the effect of non-debt tax shields (depreciation, tax-loss carry forwards, and investment tax credits) on corporate leverage have found that companies with more non-debt tax shields appear to have, if anything, more debt in capital structures. For instance such their anomalous behaviour of firms is reported by Bradley et al (1984:877). They find evidence of a strong direct relation between firm leverage and the relative amount of non-debt tax shields. This contradicts the theory that focuses on the substitutability between non-debt and debt tax shields. Further they reason that, a possible explanation is that non-debt tax shields are an instrumental variable for the securability of the firm's assets, with more securable assets leading to higher leverage ratios.

## 2.7. Age

Age is one of the most important factors that determine the capital structure of firms. The age of a firm is intricately linked to other determinants of capital structure as well. For instance, on one hand older firms are expected to be profitable and hence have more internal resources at their disposal. The dictate would therefore to follow the financial hierarchy and finance out of retained earnings first. On the other hand, older firms are expected to have generated a reputation in the debt market and hence can be evaluated favourably. Notwithstanding the abundance of free cash flow, conventional wisdom dictates that older firms seek financing from the debt markets first. Thus the prediction is that firm leverage is positively related to age.



The proponents of the "reputational view" include Harris and Raviv (1991:305). They assert that, the longer the firm's history of repaying its debt, the better is its reputation, and the lower is its borrowing cost older, more established firms find it optimal to choose the safe project, that is, not engage in asset substitution to avoid losing a valuable reputation. Young firms with little reputation may choose the risky project. If they survive without a default, they will eventually switch to the safe project. As a result, firms with long track records will have lower default rates and lower costs of debt than firms with brief histories.

Ramjee and Gwatidzo (2012:61) espouse the above foregoing. They contend that there is no agreement on the impact of age on leverage in the literature. For example, age can be used as a proxy for reputation. In this reputational role, older firms tend to have acquired sufficient reputation to access debt markets; thus one would expect a positive relationship between age and leverage. However, it may also be the case that firms that survive are those that are more profitable. In line with the pecking order theory, older, more profitable firms tend to use internal funds rather than debt; thus in this case one can expect a negative relationship between age and leverage.

We are inclined to posit that the empirical evidence regarding the firm leverage-age prediction is mixed. Amongst others, Johnson (1997:58) results conform to the *a priori* expectation of a positive relationship between firm leverage and the age variable. To the contrary amongst others, Ahmed *et al* (2010:10); Huynh and Petrunia (2010:1007) and Ramjee and Gwatidzo (2012:61) report a negative relationship.

#### 2.8. Risk

In finance parlance, risk is defined as the probability of a loss occurring resulting in the impairment of earnings. In the context of firm financing, risk measures the volatility of cash flows or earning prospects of a firm. The trade-off theory predicts a negative relationship between firm-leverage and risk. In other words a firm that has highly volatile cash flows must avoid debt financing. The intuition behind is that, highly volatile cash-flows could result in financial distress. As such to avoid going bankrupt, firms with high levels of volatile cashflows must desist from debt financing.

According to Antoniou *et al* (2008:64), firms with high earnings volatility carry a risk of the earnings level dropping below their debt servicing commitments. Such an eventuality may result in rearranging the funds at a high cost or facing bankruptcy risk. Therefore, firms with highly volatile earnings should have lower debt capital. This view is bolstered by Frank and Goyal (2009:9). They postulate that firms with more volatile cash flows face higher expected costs of financial distress and should use less debt. More volatile cash flows reduce the probability that tax shields will be fully utilised.

Whereas the pecking order theory predicts a positive relationship between firm leverage and risk. This ought to be premised on the notion that volatility of cash-flows implies the volatility of earnings. As such, the firm becomes constrained to finance out of retained earnings. It would thus have to seek funding from the external markets, starting off with the debt market to avoid the problem of adverse selection. In synch with this view, Frank and Goyal (2009:9) assert that firms with volatile shares are expected to be those about which beliefs are quite volatile. It would seem plausible that such firms suffer more from adverse selection. If so, then the pecking order theory would predict that riskier firms have higher leverage. They go on to suggest that firms with volatile cash flows might need to periodically access the external capital markets.

Ahmed *et al* (2010: 10) find a positive relationship between capital structure and risk of the insurance companies. They contend that the debt ratio increases with the increase of claim ratio of Pakistan insurance companies. Whilst Al-Najjar and Hussainey (2011: 335) report a negative relationship between firm leverage and risk. They study a sample of UK firms and their results show that there is a negative relationship between firms' risk and capital-structure. They aver that firms with high-risk will tend to have a higher risk of default and less access to debt financing.

#### 2.9. Dividend Policy

The interaction of dividend policy and firm leverage can be explained in two ways. Firstly, signalling is one mechanism by which dividend policy filters into the capital structure decision. Increased dividends signal increased future earnings, and then the firm's cost of equity will be lower favouring equity to debt. To the contrary, a dividend cut might signal financial distress and send out a negative sentiment to the equity market. Therefore from the signalling theory perspective, firm leverage is anticipated to be inversely related to the dividend payout ratio.

Secondly from the premise of the contracting cost theory, one way to attenuate the free cash-flow problem of overinvestment is to increase the dividend payout ratio. Similarly to mitigate the problem of suboptimal investment, the company can pursue a restrictive dividend policy and thus reduce its dividend payout ratio. In the former case, the company is constrained to access more debt and in the latter case the company is liberated to seek more debt.

Antoniou *et al* (2008:80) report an inverse relation between leverage and dividends in the U.S. They assert that this supports the view that dividend payments signal a firm's future performance and thus, high dividend-paying firms benefit from a lower equity cost of capital. Lemma and Negash (2014:81) also find an inverse relationship between firm leverage and dividend payout ratio basing on a study of firms drawn from nine developing economies in Africa being; Botswana, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, South Africa, and Tunisia.

## 2.10. The Major Predictions of Trade-Off Theory Versus the Pecking Order Theory

A summary of the major predictions by the two "contestant" theories—being the pecking order and trade-off theories is given in Table 2.2. Suffice to highlight that the predictions are divergent. In the next section we shall consider the empirical studies that have been conducted to test the capital structure theories.



Variable Theory	Size	Profitability	Asset tangibility	Growth	Debt Tax Shield	Non-debt Tax Shield	Risk
Pecking Order	Positive	Negative	Negative	Positive	Negative	No prediction	Positive
Trade-Off	Positive	Positive	Positive	Negative	Positive	Negative	Negative

## **3. EMPIRICAL STUDIES**

Extant empirical studies on capital structure focuses on: (1) whether firms have a target capital structure; (2) evidence of capital structures of firms in the developed countries and (3) evidence of capital structures in the developing countries. We shall consider each category of empirical studies on capital structure in turn.

#### 3.1. Do Firms have a Target Capital Structure?

The static trade-off theory has managers seeking optimal capital structure (Shyam-Sunder and Myers, 1999:226). Further they posit that random events would cause them to drift away from the optimal capital structure, and they would then have to work gradually back. If the optimum debt ratio is stable, a mean-reverting behaviour towards this target capital structure would be expected. The first caveat was perhaps put aptly by Flannery and Rangan (2008:407), where they observe that in a frictionless world, firms would always maintain their target leverage. However, transaction costs may prevent immediate adjustment to a firm's target, as the firm trades off adjustment costs against the costs of operating with a sub-optimal debt ratio. The second caveat is enunciated by Barclay and Smith (2005:15). They contend that, even if managers set target leverage ratios, unexpected increases or shortfalls in profitability, along with occasional attempts to exploit financing "windows of opportunity," can exploit financing cause companies to deviate from their targets. In such cases, there will be what amounts to an optimal deviation from those targets-one that depends on the transactions costs associated with adjusting back to the target relative to the (opportunity) costs of deviating from the target.

We shall first delve on the empirical studies on the existence of a target capital structure before we consider the empirical evidence about the determinants of the speed of adjustment towards the target capital structure. Firstly, Elsas et al (2014:1380).evaluate US firms' leverage determinants by studying how firms paid for 2,073 very large investments between 1989 and 2006. They find evidence consistent with target adjustment behaviour for their sample firms to be strong. First, they find that the type of securities issued to finance a large investment significantly depends on the deviation between a firm's target and actual leverage. Over-leveraged firms issue less debt and more equity when financing large projects, and vice versa. This result holds for a variety of methods for estimating leverage targets. Second, demonstrate that firms making thev large investments converge unusually rapidly toward target leverage ratio.

Secondly, Flannery and Rangan (2006:471) employ a sample of all firms (excluding financial firms and regulated utilities) included in the Compustat Industrial Annual tapes between the years 1965 and 2001. Their evidence indicates that firms do target a long run capital structure, and that the typical firm converges toward its long-run target at a rate of more than 30% per year. Further they aver that this adjustment speed is roughly three times faster than many existing estimates in the literature, and affords targeting behaviour an empirically important effect on firms' observed capital structures. They also contend that target debt ratios depend on well-accepted firm characteristics. Firms that are underleveraged or overleveraged by this measure soon adjust their debt ratios to offset the observed gap.

Thirdly, Leary and Roberts (2005:2577) by utilising a sample of non-financial and non-utility firms listed on the annual Compustat files for the years 1984 to 2001, perform a nonparametric analysis of the leverage response of equity issuing firms, as well as examining the impact of introducing adjustment costs into their empirical framework. They find that firms are significantly more likely to increase (decrease) leverage if their leverage is relatively low (high), if their leverage has been decreasing (accumulating), or if they have recently decreased (increased) their leverage through past financing decisions. This is consistent with the existence of a target range for leverage, as in the dynamic trade-off model.

Fourthly, Hovakimian *et al* (2004:520) using annual firm level data from the Compustat Industrial, Full Coverage, and Research files for all firms (and also excluding financial firms) for the years between 1982 to 2000, find evidence consistent with a hybrid hypothesis that firms have target debt ratios but also prefer internal financing to external funds. They also find that profitability has no effect on target leverage.

Fifthly, Hovakimian et al (2001) test for the existence of a target debt level by employing firm level data from the 1997 Standard and Poor's Compustat annual files (including the Research file) for the 1979-1997 period. They also exclude financial firms. They find that specifically, when firms either raise or retire significant amounts of new capital, their choices move them toward the target capital structures suggested by the static trade-off models, often more than offsetting the effects of accumulated profits and losses (Hovakimian et al, 2001:22). Further they go on to suggest that, the tendency of firms to make financial choices that move them toward a target debt ratio appears to be more important when they choose between equity repurchases and debt retirements than when they choose between equity and debt issuances.

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From the above foregoing it is impelling to suggest that there exist a target capital structure. It would seem that it is a target range and firms seek to operate within this target range. The attainment of this target is also dependent on the firm level characteristics. Having established that there is compelling evidence for the existence of a target capital structure, the main focus of empirical studies on firm leverage has changed to investigating the determinants of the speed of adjustment towards the target debt ratio. The main determinants of the speed of adjustment that have been cited in literature are: size, the cost of adjustment, the distance between observed leverage and target leverage and growth.

Antoniou *et al* (2008:83), employ a sample comprising of all non-financial firms, traded in the major stock exchanges of the five major economies of the world—France, Germany, Japan, the U.K., and the U.S from 1987 to 2000. Using dynamic models of estimation, they find evidence that reveals the presence of dynamism in the capital structure decisions of firms operating in the G5 countries. They contend that managers assess the trade-off between the cost of adjustment and the cost of being off target. Thus, the speed at which they adjust their capital structure may crucially depend on the financial systems and corporate governance traditions of each country.

Mukherjee and Mahakud (2010:261) study the dynamics of capital structure in the context of Indian manufacturing companies in a partialadjustment framework during the period 1993-1994 to 2007-2008. They consider all the companies available in the PROWESS database. They find strong evidence of a positive relationship between the speed of adjustment and the distance variable. They reason that this result confirms the idea that the firm's cost of maintaining a sub optimal debt ratio is higher than the cost of adjustment and the fixed costs of adjustments are not significant. Therefore, the companies which are sufficiently away from their target leverage always want to reach the optimal very quickly. A positive relationship is also found between size of the company and the adjustment speed. They contend that this result lends support to the hypothesis that for large firms the adjustment costs are relatively lesser than the small firms due to the less asymmetric information. Therefore, the adjustment speed to the target leverage ratio has been more for large firms than small firms. Further they also find evidence that firms with higher growth opportunities adjust faster towards their target leverage. This confirms the a priori expectation that a growing firm may find it easier to change its capital structure by altering the composition of new issuances.

Lastly among others, Oztekin and Flannery (2012:108) estimate a standard partial adjustment model of leverage for the firms in 37 countries during the 1991-2006 period. They find that the mean adjustment speed is approximately 21% per year, half-life of three and two years for book and market leverage, respectively, but the estimated adjustment speeds vary from 4% (in Columbia) to 41% (in New Zealand) per year. In terms of the adjustment's half-life, the mean speed implies three years, and the range varies between one and a half and 17 years. As such they reject the constraint that firms in all countries have the same adjustment speed. They reason that, variation in leverage adjustment speeds must reflect something about the costs and benefits of moving toward target leverage. Further they conjecture that the effectiveness of a country's legal, financial, and political institutions is systematically related to cross-country differences in the adjustment speeds. Moreover their results suggest that, higher aggregate adjustment costs reduce estimated adjustment speed by roughly 12% of the average country's adjustment speed, even account for adaptations to firm after they characteristics that tend to raise adjustment speeds. As such they contend that evidence that adjustment speeds vary plausibly with international differences in important financial system features provides support for the applicability of a partial adjustment model of leverage adjustment to private firms.

In the final analysis it would seem that firms set a target debt ratio. They gravitate towards this target ratio. It could be that they operate within a target range of this ratio. Notwithstanding the quest to operate within this target range, there are some factors that can aid or militate against this objective. For instance, the prohibitive adjustment costs can hinder the firms from rebalancing their debt ratio should it fall without the optimum range. In the next section we consider the empirical studies that have been conducted on the determinants of capital structure in the developed world.

# 3.2. Empirical Evidence of Capital Structures of Firms in the Developed Countries

Extant studies conducted on capital structure policies of firms have sought to test the practical efficacy of the capital structure theories- the main "contestants" being the pecking order theory and the trade-off theory. Further these studies have sought to establish the firm level determinants of capital structure. It is trite to highlight that we have every reason to discern between developed countries and developing countries in our review of empirical studies on firm financing behaviour, as we believe that the nature of frictions in the developing countries is dissimilar to those found in developing markets.

Titman and Wessels (1988:2) employed a sample of manufacturing firms in the U.S found on the Compustat database for the period 1974 to 1982. Their results suggest that firms with unique or specialised products have relatively low debt ratios. The proxies they employed for uniqueness are the firms' expenditures on research and development, selling expenses, and the rate at which employees voluntarily leave their jobs. They also found that smaller firms tend to use significantly more shortterm debt than larger firms. However they aver that their model explains virtually none of the variation in convertible debt ratios across firms and find no evidence to support theoretical work that predicts that debt ratios are related to a firm's expected growth, non-debt tax shields, volatility, or the collateral value of its assets. Notwithstanding, they that find some support for the proposition profitable firms have relatively less debt relative to the market value of their equity.

Using international data from Group of Seven (G7) countries for the period from 1987 to 1991,

Rajan and Zingales (1995:1421), investigate the determinants of capital structure choice by analysing the financing decisions of public firms in the major industrialised countries. They find that at an aggregate level, firm leverage is fairly similar across the G-7 countries. Also, they find that factors identified by previous studies as correlated in the cross-section with firm leverage in the United States, are similarly correlated in other countries as well. Precisely they find that profitability and market-to-book value have a negative impact on capital structure, whereas asset tangibility and firm size have a positive effect impact on capital structure.

The reliability of the pecking order theory, amongst others, was tested by Frank and Goval (2003:217). Their test was conducted on a broad cross-section of publicly traded American firms for 1971 to 1998. They report that, contrary to the pecking order theory, net equity issues track the financing deficit more closely than do net debt issues. While large firms exhibit some aspects of pecking order behaviour, the evidence is not robust to the inclusion of conventional leverage factors, nor to the analysis of evidence from the 1990s. Financing deficit is less important in explaining net debt issues over time for firms of all sizes. They also contend that in contrast to what is often suggested, internal financing is not sufficient to cover investment spending on average. Instead they find that external financing is heavily used. Moreover they find evidence that debt financing does not dominate equity financing in magnitude.

The two "contestant" theories of capital structure (pecking order theory and trade-off theory) were pitied against each other by Shyam-Sunder and Myers (1999:221). They examine the financing behaviour of 157 U.S. firms listed on the Compustat database (excluding financial firms and regulated utilities) for the period 1971 to 1989. They find that a simple pecking order model explains much more of the time-series variance in actual debt ratios than a target adjustment model based on the static tradeoff theory. Moreover, they demonstrate that the pecking order hypothesis can be rejected if actual financing follows the target-adjustment specification. Further they assert that on the other hand, this specification of the static trade-off hypothesis will appear to work when financing follows the pecking order. They reason that this false positive results from time patterns of capital expenditures and operating income, which create mean-reverting debt ratios even under the pecking order. As such, they posit that they have grounds to reject the pecking order but not the static trade-off specification. Finally they conclude that the pecking order is a much better first-cut explanation of the debt-equity choice, at least for the mature, public firms in their sample.

Frank and Goyal (2009:1) examined the relative importance of many factors in the capital structure decisions of publicly traded American firms from 1950 to 2003. They found that the most reliable factors for explaining market leverage are: median industry leverage, market-to-book assets ratio, tangibility, profits, log of assets and expected inflation. Market-book-value (the growth variable) and profitability are found to be inversely related to leverage. On the other hand, tangibility, median industry leverage, log of assets (size variable) and inflation are found to be directly (positively) associated with firm leverage. Further they find that dividend-paying firms tend to have lower leverage. When considering book leverage, somewhat similar effects are found. However, for book leverage, the impact of firm size, the market-to-book ratio, and the effect of inflation are found not to be reliable. They assert that their empirical evidence seems reasonably consistent with some versions of the trade-off theory of capital structure.

More recently, the profit-leverage conundrum has been revisited by Frank and Goyal (2014: 1448). The evidence they lead tilt the scale in favour of the trade-off theory. Following from other studies on capital structure, they make use of a sample of nonfinancial firms found on the now Compustat database for the period 1971 to 2009. Their results suggest that more profitable firms really do borrow more and not less. Further their evidence points to more profitable firms repurchasing their equity. They experience an increase in both the book value of equity and the market value of equity. Less profitable firms really do tend to reduce their debt and to issue equity. They also unearth evidence that firm size and market conditions also matter. Larger firms tend to be more active in the debt markets while smaller firms tend to be relatively more active in the equity markets. During good times there is more use of external financing.

Further, Frank and Goyal (2014:1448) posit that the usual profits-leverage puzzle result is primarily driven by the increase in equity that is experienced by the more profitable firms. They reason that the puzzle should be restated as asking: why do firms not take sufficiently large offsetting actions to fully undo the change in equity? What limits the magnitudes of the typical leverage response to profit shocks? They go on to say that in a frictionless model the partial response appears puzzling. Further they contend that there is good empirical reason to believe that rebalancing entails both fixed and variable costs and that firm size matters. The rebalancing costs can be fully avoided by doing nothing. Accordingly, the firm must decide whether any given shock is big enough to be worth responding to. If it is, then the firm must decide how big a response is called for. They refer to these technical conditions as "value matching" and They "smooth pasting". also deduce that optimisation implies that some shocks will be ignored. Even if the shock is not ignored, the optimal response will only partially undo the shock. The magnitude of the leverage response must balance the marginal cost and the marginal benefit of an extra unit of leverage. Since the marginal cost of adjusting leverage is strictly positive, the adjustment toward that static leverage optimum will only go part way. This is true both for leverage increases and for leverage reductions.

#### **3.3. Empirical Evidence of Capital Structures of Firms in the Developing Countries**

Mukherjee and Mahakud (2010:250) investigated the dynamics of capital structure in the context of Indian manufacturing companies in a partialadjustment framework during the period 1993-1994 to 2007-2008. They applied a partial-adjustment model and used the generalised method of moments



technique to determine the variables which affect the target capital structure and to find out the factors affecting the adjustment speed to target capital structure. They found that firm-specific variables such as size, tangibility, profitability and market-to-book ratio to be the most important variables which determine the target capital structure across the book and market leverage. Further they found that factors like size of the company, growth opportunity and the distance between the target and observed leverage determine the speed of adjustment to target leverage for the Indian manufacturing companies. They aver that their overall results are consistent with the dynamic trade-off theory of capital structure.

Ramjee and Gwatidzo (2012:52) employed a dynamic model to investigate capital structure determinants for 178 firms listed on the Johannesburg Stock Exchange for the period 1998-2008. The sample of firms is also used to examine the cost and speed of adjustment towards a target debt ratio. They applied a target adjustment model is estimated using a generalised method of moments technique to examine the cost and speed of adjustment towards a target debt ratio. Further they also examined the determinants of target capital structure for South African listed firms. Their results suggest that a target debt-equity ratio does exist for South African firms. Further they found that these firms bear greater transaction costs when adjusting to a target debt ratio than to a target long-term debt ratio. However, they do adjust to their target ratios relatively quickly.

Their study also reveals that firms with a larger proportion of tangible assets have higher debt ratios, more profitable firms operate at lower levels of leverage, larger firms operate at higher levels leverage, and that fast growing firms prefer debt to equity when raising funds. Further they found that when firms require finance, they prefer internal to external sources of finance. They reason that, these firms seem to take into account the trade-off between the costs and benefits of debt when making financing decisions. The evidence that they lead suggest that the capital structure decisions of South African listed firms follow both the pecking order and the trade-off theories of capital structure.

Chipeta *et al* (2012:171) investigate the dynamics of firm leverage within the context of a transition economy of South Africa. They employ a sample consisting of non-financial firms that were listed on the JSE before and after the financial liberalisation phase. They utilise the I-Net Bridge database to source audited income statements, balance sheets and financial ratios for a sample of firms that operated from 1989 to 2007. Their data is split between the two regimes, that is the pre liberalisation period (1989-1994), and the post liberalisation period (1995-2007). Their results confirm the predictions of most the theories of capital structure.

Precisely for the pre-liberalisation period on the one hand, they report an inverse relationship between firm leverage and the profitability and size variables. On the other hand the find a positive relationship between firm leverage and the tax variable. Further for the post liberalisation period they find that on the one hand, firm leverage is positively associated with the size, growth and dividend payout variables. On the other hand firm leverage is found to be negatively related to the profitability, tax and asset tangibility variables. Moreover, they find that the empirical relationship between the firm-specific determinants of capital structure and leverage is statistically stronger for the post liberalised regime than the pre liberalised era. The same holds for the coefficient on the target leverage. They reason that this confirms their conjecture that transaction costs are lower in a post liberalised regime.

Furthermore, Lemma and Negash (2014:64) examine the role of institutional, macroeconomic, industry, and firm characteristics on the adjustment speed of corporate capital structure within the context of developing countries. They utilised a sample of 986 firms drawn from nine developing countries in Africa over a period of ten years (1999-2008). Their study applies a dynamic partial adjustment models that link capital structure adjustment speed and institutional, macroeconomic, and firm characteristics. Their analysis is carried out using system Generalized Method of Moments. They find evidence that firms in developing countries do temporarily deviate from (and partially adjust to) their target capital structures. Their results also indicate that more profitable firms tend to rapidly adjust their capital structures than less profitable firms. They also find that the effects of firm size, growth opportunities, and the gap between observed and target leverage ratios on adjustment speed are functions of how one measures capital structure. Further they also establish that adjustment speed tends to be faster for firms in industries that have relatively higher risk and countries with common law tradition, less developed stock markets, lower income, and weaker creditor rights protection. They reason that their evidence reveals that capital structure of firms in developing countries not only converges to a target but also that it faces varying degrees of adjustment costs and/or benefits in doing so. This suggests not only that dynamic tradeoff theory explains capital structure decisions of firms but also rules out the dominance of information asymmetry-based theories within the context of firms in developing countries.

#### **4. CONCLUSION**

In this article we have reviewed extant literature on capital structure with view to establishing what drives the financing decisions of firms. The starting point was to review the MM irrelevance propositions. These were subsequently demonstrated not to hold in a world with frictions such as taxes and transactions costs. As such capital structure choices affect firm value. Firstly, we established that there are reliably important firm characteristics that determine the capital structure choices of firms. These are: size, profitability, growth, asset tangibility (collateral), debt-tax shield, non-debt-tax shield, risk, dividend policy and age. Their interaction with firm leverage was demonstrated. Secondly, we also reviewed the predictions of major theories of capital structure namely the trade off and pecking order theories. Suffice to highlight that in some instances, there is a dichotomy in the predictions by the major theories of capital structure. The "horse race" is usually between the pecking order theory and the



trade-off theory. This article demonstrated that in order to reconcile the predictions of the two theories, it is imperative to highlight that the aforementioned theories compliment rather than substitute each other in explaining financing behaviour of firms. As such the financing behaviour of firms exhibits some element of dynamism. It was demonstrated that these theories mutually reinforce rather than substitute one another. Thirdly, in this article we reviewed empirical studies that have been conducted to investigate the existence of a target capital structure. We established that the majority of these studies demonstrate that firms set a target ratio and actively seek to achieve it. There are a number of factors that might promote or deter the firms from achieving this target. These are size, adjustment costs and the distance between the observed and target leverage. Finally this research effort also considered the empirical studies that have been conducted to examine firm financing behaviour both from developed countries as well as from developing countries. It was established that the factors that drive firm financing in the developed countries also carry over to the emerging markets notwithstanding the disparities of their financial markets. However it would seem that the trade-off view dominates the pecking order view in explaining the firm financing behaviour in the developing countries. It could be that firms in the developing countries are relying more on external financing as compared to their counterparts in the developed countries.

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