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Determinants of Capital Structure: A Theoretical Review

Abstract

The study aimed to determine the capital structure determinants of the firm. By using previous literature results have shown that firm size, profitability, and earning volatility, Firm age and tangibility are negatively related to capital structure. Liquidity, non-debt tax shield, and growth are positively related to capital structure. Profitability is inversely associated with capital structure because internal financing has been preferred by firms and this argument supported by pecking order theory. Positive association exists between liquidity and capital structure because firms quickly convert their assets into liquidity instead of using debt. Results conclude that the financing behavior of firms in developed countries is not aligned with the financing of firms in developing countries like Pakistan. Results will be beneficial for all stakeholders of a firm including all academicians and all industries.

Keywords: Capital Structure; Firm size; Earning volatility; Liquidity. Firm age

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Introduction

Capital structure has significant importance in finance literature. It comprises equity and debt and is also important for the corporate sector. Modigliani and Miller (1958) presented a debate on capital structure since then not much literature has been available on capital structure to date. However, no specific theory was developed to explain the ideal capital structure by determining the level of equity and debt. One theory that scholars created to describe the capital structure was the static trade-off theory presented by (Fama & French, 2002).

In financial literature, theories which explain capital structure mixture are pecking order theory and trade-off theory. Different financing decisions are important for the welfare of firms. False decisions of capital structure can cause bankruptcy and financial distress (Stoiljkovi´c et al., 2022). The Managers set their capital structure to increase their firm value. Previously numerous studies had been conducted to discover the optimal level of capital structure. Myers and Majluf (1984) described how management had tried to maintain a specific capital structure. The selection of ideal capital structure is a vital decision for firms. The question arises as to why many theories have been developed and how much literature designed to describe capital structure, the reason is that it decreases cost of capital and enhance value of firm (Khan et al., 2023). Currently, no consensus is available in the finance world regarding which factors influence capital structure, and results available in the literature are not applicable in developing countries like Pakistan.

The results of this study will be helpful for management in choosing an ideal capital structure. Firms raise additional capital to finance their financial needs by using debt and equity securities (Ahsan et al., 2016). Each method has advantages and disadvantages that should be considered while deciding a capital structure. Inappropriate selection of capital structure effects in a high rate of capital which directly influences the required rate of returns and strict monitoring of investment opportunities, equity financing provides the benefit of liquidity because it has no fixed terms (Mardan et al., 2023). When firms issue equity shares, firms become financially stronger and their credit rating looks stronger, this condition is helpful for firms in the future to obtain loans from creditors. Issuance of equity shares enhances the number of owners in a firm, ultimately leading to a loss of control over companies (Rani et al., 2020).

Literature Review

Profitability and Capital Structure

Trade-off theory argues that businesses with greater profitability should use high debt levels because firms with profitability have fewer bankruptcy risks and creditors tend to fund these firms more. Leverage of firms due to information asymmetry is positively associated with leverage (Morri & Parri, 2017). Firms having more profitability don't rely on external financing, this financing uses their internal funding and due to this reason, firms have low debt in their capital structure. Profitability is known as the survival tool of any business organization. Existing literature on capital structure describes the importance of profitability. Ozkan (2002) found leverage is inversely associated with ROA. Deesomsak et al., (2004) found leverage is inversely associated with profitability. Frank and Goyal (2009) Profitability is positively associated with leverage (Frank & Goyal, 2009). Rafiq (2008) found profitability is inversely associated with debt ratio. An inverse association exists between profitability and debt (Sheikh & Wang, 2011).

Akinlo and Asaolu (2012) found that leverage is inversely associated with ROA. Harrison and Widjaja (2013) found an inverse relation between debt and ROA. Osaretin and Michael (2014) found debt ratio is not significantly associated with profitability. Rani et al., (2020), Dasilas and Papasyriopoulos (2015) found that profitability has a positively linked with leverage. Viviani, (2008); Zhong, and Zhang (2018), Jong et al., (2008); Chipera and Deressa (2016), Matias and Serrasqueiro (2017) found profitability is inversely associated with leverage.

H1: Profitability has an inverse relation with capital structure

Non-Debt Tax Shield and Capital Structure

Firms save tax on depreciation because depreciation is treated as a non-cash expense by firms. Firms having larger non-debt tax shields would use fewer debt amount in their capital structure. Non-debt tax shields encourage managers to include components of debt in capital structure. No significant relation was found between debt ratio and non-debt tax shield (Sheikh & Wang, 2011). Non-debt tax shields encourage managers on debt level components to involved it in capital structure (Sanchez-Vidal, 2014). Found positive association. Previous studies also found an inverse relation between leverage and non-debt tax shields (Matemilola et al., 2018; Dakalakis et al., 2017; Zhang & Liu, 2017, Ramli et al., 2019).

H2: Non-debt tax shield has an inverse relation with capital structure

Size and Capital Structure

Large-sized firms have fewer chances to become bankrupt and it attract more debt. Positive relation exists between firm size and debt. large firms have diversification and that helps to tolerate high levels of debt (Alipour et al., 2015). This argument has been supported by trade-off theory. The Pecking order theory assumes that large-sized firms give greater information asymmetry and do not attract high debt levels. Large firms can easily access equity financing instead of small firms (Stoiljkovi´c et al., 2022). An inverse relation exists between firm size and capital structure because large-size firms are more interested in funding by issuing shares instead of relying on debt financing. The size of business organizations is important while making optimal decisions of capital structure. Wagenvoort (2016) found that size is positively associated with leverage. Zou and Xiao (2006) described size as inversely associated with debt. Sheikh and Wang (2011) describe that size has positive association with leverage. Bassey et., (2014) found that size is inversely associated with capital structure. Previous studies (Eriotis et al., 2007; Yu and Aquino, 2009); Zhong & Zhang, 2018; Zhang & Liu, 2017; Matemilola et al., 2018; Jong et al., 2008; Sohrabi & Moveghari, 2020; Chipeta & Deressa, 2016; Bukair, 2019; Al-Fayoumi and Abuzayed, 2009) found that size is positively associated with leverage. Previous studies (Vo, 2017; Rani et al., 2020) described that size is inversely associated with leverage.

H3: Size has a positive relation with capital structure.

Tangibility and Capital Structure

The trade-off theory postulates that tangible assets are positively associated with capital structure because firms rely on tangible assets for the use of collateral and firms can easily obtain external finance with having higher tangible assets. Agency costs can be decreased due to the high tangible assets of firms (Alipour et al., 2015). Yang et al., (2010) described asset tangibility as

positively associated with capital structure because firms use tangible assets for tax deductibility. Jong et al., (2008) and Viviani (2008) found that positive relation exists between tangibility and leverage. Zou and Xiao (2006) found that tangibility is positively associated with debt is positively associated with leverage. Asset tangibility attracts confidence due to its advantage of collateral security and it is important for business organizations (Lemma & Negash, 2014). Previous studies (Morri & Parri, 2017; Faccio & Xu, 2015; Alves et al., 2015) also found direct relation between tangibility and leverage. (Pacheco & Tavares, 2016; Mazur, 2007; Moradi & Paulet, 2019; Hang et al., 2018) found that tangibility is inversely associated with leverage.

H4: Tangibility has a positive relation with capital structure.

Growth and Capital Structure

Pecking order theory debates that firms having growth opportunities will not issue securities due to fewer information asymmetries. This led to firms with high levels of growth with more leverage. Fast-growth firms need to borrow more and solve free cash flow problems (Vo, 2017). Agency theory postulates that firms' financing is influenced by managers and investors, which can solve the free cash flow problem (Lemma & Negash, 2014). Firms having growth opportunities need financing these firms use equity financing instead of debt financing and take less debt for consideration in future financial decisions. Firms having growth opportunities do not use debt and debt is predictable to be inversely related with growth opportunities. Trade-off theory postulates negative relation between capital structure and growth opportunities. Growth opportunities have inverse relation with capital structure, this argument support by trade-off theory. The growth of business is an opportunity for prospects. Zou and Xiao (2006) found that growth is inversely associated with debt. Deesomsak et al., (2004) found that growth is negatively related to debt. Previous studies (Vo, 2017; Rashid et al., 2020; Ramli et al., 2019) found that positive relation exists between leverage and growth. Some previous studies Zhang & Liu, 2017; Sanchez-Vidal, 2014; Sikveland & Zhang, 2020; Neves et al., 2020; Milos, 2015; Dasilas & Papasyriopoulos, 2015; found that growth is inversely associated with leverage.

H5: Growth has an inverse relation with capital structure

Age and Capital Structure

Older firms have more collateral and have a good reputation in the market, these factors positively influence capital structure. Pecking order theory proposes an inverse relation between firm age and capital structure because older firms become profitable with time, ultimately inversely influencing firms' capital structure (Rabbani, 2020). The age of business organizations is important for capital structure decisions because age describes how much time these business organizations have been involved in business. Bukair (2019) found a direct relation between the age of a business firm and leverage. Previous studies (Zhang & Liu, 2017; Saif-Alyousfi et al., 2020; Sanchez-Vidal, 2014; Bhaird and Lucey, 2010; Matias & Serrasqueiro, 2017) found that the age of a firm is inversely associated with leverage. Rabbani (2020) found positive relation exists between firm age and leverage.

H7: Age has an inverse relation with capital structure.

Earnings Volatility and Capital Structure

Trade-off theory and pecking order theory showed a negative relation between earning volatility and capital structure. Firms with stable earnings borrow more debt than firms with volatile earnings and most often firms with volatile earnings also fail to meet their obligations on required time (Neves et al., 2020). Earning volatility shows variations in the earnings of a business firm which impacts capital structure decisions. Previous studies (Sofat & Singh, 2017; Hang et al., 2018; Soykan & Ulucak, 2016; Zhang & Liu, 2017) found that earning volatility is positively associated with leverage. Studies (Neves et al., 2020; Jong et al., 2008) found negative association exists between earning volatility and leverage.

H8: Earning volatility has an inverse relation with capital structure.

Theories

Trade-off Theory

An ideal point of debt is reached where marginal cost and marginal debt become equal. Reduction in agency cost and tax deductibility on interest expense is derived when cash flows are in excess amount. The cost of debt consists of bankruptcy costs and high interest rates, which cost in a situation of excessive debt. firms can achieve their ideal level of capital structure by shifting equity and debt until the marginal tax shield benefit becomes equal to the marginal cost financial distress cost (Jensen, 1986). Firms can attain their ideal level of capital structure by shifting equity and debt until marginal financial distress cost become equal to marginal tax shield benefit. This theory proposes that firms must have an ideal debt level. Every Firm has its ideal debt level; firms must consider trade-off between cost and benefits of using debt (Jensen, 1986).

Pecking Order Theory

Pecking order theory describes that managers have an interest in using the internal funds of a firm instead of relying on external funds. Pecking Order Theory proposes that firms include more towards using internal funds in place of debt capital. Firms use their internal funds on a priority basis when it comes to equity financing. Firms acquire external debt when firms have a shortage of internal funding. Equity financing consists of large information asymmetry costs, making issuance of equity financing expenses as compared to other sources of funding (Myers & Majluf, 1984).

Information Asymmetry Theory

Ross (1977) suggests that managers hide information on the expenses of investors. Using of debt finance provide signals to stakeholder's cash flows of firms, sometimes managers make variations in the capital structure to communicate with external users.

Free Cash Flow Theory

Jensen (1986) proposed that firms having significant levels of free cash flow which face Managerial and shareholder interest conflict. When firms use debt finance, they become indebted to make periodic outflows of interest. This decreases the cash balance held by firms, decreasing incentives to misappropriate the use of cash of a firm. Debt also decreases agency costs by decreasing cash flow and compelling managers to work more proficiently and effectively to decrease bankruptcy threats.

Market timing Theory

Fluctuation in share price has an influence on the capital structure of the firm and there is no ideal capital structure exists. Firms issuing equity and debt securities when they are in good condition and they have low market value (Baker & Wurgler, 2002)

Conclusion

The research was conducted to find the influence of determinants of capital structure on. Theories that were used in the study are pecking order theory, trade-off theory, information asymmetry theory and market timing theory, free cash flow theory. This sector enhances revenue and brings foreign investment. Results demonstrate that profitability, and firm size. firm age Tangibility and earning volatility are inversely associated with capital structure and non-debt tax. shield, growth, and liquidity have positive associations with capital structure. Stable firms can easily afford debt; firms with high business risk rely on more equity. Profitable firms relying on their international financing, this concept aligns with pecking order theory. Firms prefer debt financing to take tax shield benefit. Firms having more tangible assets can use these assets as a collateral tool to take debt. Firms having growth opportunities take less debt and avoid financial distress risks. Interest rates, economic conditions directly influence on decisions of capital structure.

Gap

Capital structure determinants mostly focused on general factors (e.g., profitability, asset structure) instead of Industry specific factors (manufacturing firms and technological firms). Future researches must be done on how various capital structure determinants impacts on specific factors of industry. Existing literature had ignored the behavioral factors including risk tolerance of managers and patterns of decision making. Future research needed to find influences of these factors. Capital structure theories had ignored the macro economic conditions and only focused on specific factors of firm. Future research should cover this gap. Advance statistical models including machine learning could find relations among determinants of capital structure. Future studies must focus on comparative studies on determinants of capital structure, which brings new insights on how regulations of different countries, economic and cultural and environments of institutions directly influence decisions of capital structure. Existing research ignored Small and Medium Enterprises (SMEs) and only had focused on large corporations. Future research needed to fill this gap. Role of technological innovations on decisions of capital structure still has a unexplored gap. Theories of capital structure focus on developed countries like Western Europe, US but ignored developing countries like Africa and Asia.

Future insights

Firms adopt those capital structures which favor hybrid instruments and short term debt, most important part play by interest rates. Firm with Environmental Social Governance profiles have advantage to green financing which significantly impact of capital structure. Firms (software firms) rely on debt financing, equity financing may become dominant if new models of valuation has adopted by lenders. International firms diversify their capital structures across different regions on the basis of tax considerations and political and environmental risks. Deduction of tax and dividend policy changes, dependence of firms on using debt decreases. Capital structures adjusting with macro economic variables including interest rates, global economy and inflation will have competitive advantage. Digital financial platforms must influence on decisions of capital structure. Different changes in policy alter the traditional debt financing advantage.

Use of artificial intelligence in determining capital structure significantly influences in risk and valuation.

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