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Determinants of Financial Institutions Leverage in Tanzania: Trade- off Theory versus Pecking Order Theory

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Abstract:
Trade-off theory and pecking order theory have evolved as two competing theories to explain how financial managers make capital structure decision. However, theoretical and empirical debate on capital structure remains inconclusive. Most studies have applied these corporate finance theories to large and listed firms mostly in the developed world. Financial institutions are lending institutions with different risk and return from the corporate firms. This paper attempts to shed light on whether or not financial institutions in developing countries such as Tanzania exhibit the capital structure that conforms to standard finance theories.To address these challenges, a study was conducted from two listed financial institutions in Tanzania namely, CRDB and NMB. The data were captured from Dar es Salaam Stock Exchange (DSE) annual financial statements covered a six years period, from 2010-2015. The data were analyzed using Pearson's product moment correlation analysis. The findings have shown that the relationships between financial institutions leverage and age of financial institutions, liquidity, asset tangibility, size, growth opportunities and profitability support the assumptions of trade-off theory. Therefore, it is safe to conclude that the determinants of the financial institutions leverage in Tanzania conform to the assumptions of trade-off theory.

Keywords: *Financial institutions, leverage, trade-off theory, pecking order theory, Tanzania*

1. Introduction

Following the 2008 financial crisis that affected most financial institutions across the world, the issues of capital structure by lending institutions have become increasingly important (Bogan, 2012). However, the application of corporate finance theories to lending institutions is less straight forward (Bogan, 2012). Likewise, the studies were conducted in their respective markets. The applicability of the findings may be limited. According to Bogan (2012), many financial institutions look to deposit financing and commercial debt as essential elements of funding their future growth. This has unavoidable implications for the capital structure. The issue on how firms should choose their capital structures to maximize the value of the firm is one of the most debatable topics in the field of corporate finance (Myers, 2001; Boateng, 2004; Abor, 2005; Kyereboah, 2007). However, the question is whether or not the capital structure of financial institutions follows the standard finance theory.

Since the landmark paper by Modigliani and Miller published in 1958, debate has raged about the theoretical basis for the determinants of financing decisions of the firms. Modigliani and Miller assumed a perfect market and that the value of a company is independent of its capital structure. However, in the real world, there exist market imperfections which provide a basis for the capital structure to be relevant and affecting a firms value (Myers, 2001).

In 1963, Modigliani and Millerwere the starting point for the trade-off theory where by they introduced corporate income tax to the original irrelevance theorem, and allowed bankruptcy costs to exist. In the trade off theory, company is looking for a leverage ratio where they can take the maximum benefit of the tax shield from debt but without affecting their financial distress (Fama and French, 2005).

Many variables can determine the debt policy of a firm such as profitability, size, investment opportunity, tangibility of the asset and so on (Frank and Goyal, 2003). However, variables of optimal capital structure are different in business-to-business, countries to countries (Rahman and Arifuzzaman, 2014).

In 1984, Myers and Majlufcome with a pecking order theory maintained that businesses adhered to hierarchy of financing sources and preferred internal financing when available and that debt was preferred over equity if external financing was required. The pecking order theory assumes that managers have more inside information than investors and act in favor of old shareholders. They add that because of the information asymmetries between the firm and potential investors, the firms choose capitals according to the following preference order: the firm will prefer retained earnings to debt, short-term debt over long-term debt and debt over equity. They argued that if firms issue no new security but only use its retained earnings to support the investment opportunities, the information

asymmetric can be resolved. They add that firms with large information asymmetry should issue debt to avoid selling under-priced securities because new stock offering leads to a decline in firm's stock price.

Trade-off theory and pecking order theory have evolved as two competing theories to explain how financial managers make capital structure decision (Matemilola *et al.,* 2012).However, researchers are yet to reach consensus on a unified theory that could comprehensively explain many facts about how firms make capital structure decision in the real business world (Frank and Goyal, 2003).

Theoretical and empirical debate on capital structure remains inconclusive, which suggest that more studies need to be conducted in order to add clarity to the theoretical and empirical debate on capital structure (Fama and French, 2005).

Most of the researches have applied these corporate finance theories to large and listed firms mostly in the developed world (Myers, 2001; Boateng, 2004; Abor, 2005; Kyereboah, 2007).Financial institutions are lending institutions with different risk and return characteristics from the corporate firms (Bogan, 2012). Since, trade-off and pecking order theories have clear opposite effects on debt; what has remained a puzzle in this debate is which theory fits best the leverage strategy of the financial institutions. This paper attempts to shed light on whether or not financial institutions in developing countries such as Tanzania exhibit the capital structure that conforms to standard finance theories. This paper addresses this controversial issue as to which of the two major theories of capital structure trade-off theory or pecking order theory or both theories provided the best predictions as regards to the leverage behavior of listed financial institutions in Tanzania.

2. Methodology

2.1. Source of Data

The sample of this study consists of listed financial institutions in Tanzania. The data were captured from the annual financial statements covered a six years period, from 2010-2015. The listed financial institutions which have provided the financial statements to the Dar es Salaam Stock Exchange (DSE) for the period under study were CRDB Bank Plc (CRDB) and National Microfinance Bank Plc (NMB). Therefore, CRDB and NMB were suitable to examine the determinants of financial institutions leverage in Tanzania.

2.2. Measurement of Variables

The variables used in this study and their measurement were adopted from existing literature which ensures the validity of the study. This also allowed comparing the findings with prior empirical studies.

Therefore, debt ratio was measured by the ratio of total debts over total assets as suggested by Chandra (2011).Age was measured by number of years since listed as suggested by Shumway (2001).Liquidity ratio was measured by the ratio of current assets over current liabilities as suggested by Chandra (2005).Asset tangibility was measured by was measured by the ratio of fixed assets over total assets as suggested by Bourdieu and Sédillot (1993).Growth opportunities were measured by growth in sales during that year as suggested by Pandey (2011).Size was measured by market value of equity as suggested by Adams and Buckle (2003). Finally, the ratios of net profit before taxes over total assets were used as a measure of firms' profitability as suggested by Rajan andZingales (1995).

2.3. Analysis

The data were analyzed using Pearson's product moment correlation analysis. The study analyzed the relationships between the determinants of financial institutions leverage and debt ratio. The values of the Pearson correlation coefficient ranges from 0 to 1, and the higher the value the greater is the correlation between the variables (Hair *et al.,* 2005).

3. Results and Discussion

The results of testing the relationships between debt ratio and the determinants of financial institutions leverage for CRDB and NMBare presented in Tables 1.

	Standardized Correlation Coefficients	
Measured Variable	**CRDB**	**NMB**
Age	0.690	0.823
Liquidity	0.938	0.765
Asset Tangibility	0.763	0.660
Growth Opportunities	0.875	0.676
Size	0.988	0.882
Profitability	0.825	0.779

Table 1: Results of Correlation Analysis for Debt Ratio and Determinants of Financial Institutions Leverage for CRDB and NMB Correlation is significant at the 0.05 level (2- tailed)

3.1. Age

With respect to the age of the financial institutions and leverage, the findings indicate a positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.690 and 0.823 respectively supporting the trade-off theory. These findings imply

that older financial institutions have a longer track record and stronger reputation and therefore have better relationships with lenders. The findings of this study are in line with Nico and Hulle (2010) that have found positive relationships between age of the firms and leverage. They stated that a firm age facilitates its relationship with lenders, alleviate information asymmetries and therefore improve the efficiency of credit allocation.

The trade-off theory suggests a positive relationship between age of the firms and leverage because mature firms have more information records, better reputation and more experience. Pecking order theory suggests a negative relationship between age of the firm and leverage assuming that mature firms have less recourse to leverage. Empirical evidence concerning the relationship between age of the firms and leverage is unclear. On one hand, Boussaa (2000) as well as Adair and Adaskou (2011) find a negative relationship between age of the firms and leverage which is consistent with the predictions of pecking order theory which suggests that mature firm have lower leverage. On the other hand, Ahmad and Aris (2015) findings did not support any of the theory.

3.2. Liquidity

With regards to liquidity of the financial institutions and leverage, the findings indicate a stronger positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.938 and 0.765 respectively supporting the trade-off theory. These findings imply that high amounts of current assets owned by these financial institutions increases the chances of obtaining more debts.The findings of this study concur with Alkhatib (2012) that found out a positive relationship between liquidity and leverage.

Trade-off theory suggests a positive relationship between liquidity and leverage because higher liquidity ratio can support a relatively higher leverage due to greater ability of a firm to satisfy short term contractual obligations on time. However, pecking order theory suggests a negative relationship between liquidity and leverage because firms with ample liquidity may use internally available fund to finance investment. Some studies have found a negative relationship between liquidity and leverage includes Ahmad and Aris (2015).

3.3. Asset Tangibility

With respect to asset tangibility of the financial institutions and leverage, the findings indicate a positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.763 and 0.660 respectively supporting the trade-off theory. These findings imply that tangible assets which are mostly used as collateral help these financial institutions to be credible from point of view of creditors. These findings are in line with Dereeper and Trinh (2015)thathave shown positive relationships between asset tangibility and leverage. They conclude that firms with more asset tangibility face fewer constraints in borrowing because these assets eliminate information asymmetry, adverse selection and moral hazards and therefore have greater access to debt financing. However, other studies have shown a negative relationship between leverage and tangibility includes Quan (2002) and Mazur (2007).

According to Trade-off theory, there is a positive relationship between asset tangibility and leverage because tangible assets play the role of collateral in debt issuance. In addition, the trade-off theory argues that firms with collateral reduce the agency cost of debt. However, pecking order theory suggests a negative relationship between asset tangibility and leverage because firms holding more tangible assets will be less prone to asymmetric information problems and hence less likely to issue debt.

3.4. Growth Opportunities

With regards to growth opportunities of the financial institutions and leverage, the findings show a positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.875 and 0.676 respectively supporting trade-off order theory. The findings imply that these financial institutions have more investment opportunities which are in form of tangible assets, hence more leverage.The trade-off theory suggests that firms with high future growth opportunities which are mainly in form of intangible assets tend to borrow less than firms with high future growth opportunities which are mainly in form of tangible assets. However, pecking order theory suggests that growing firms require more funds for their expansion. If firms deplete their internal earnings during the growth process, the firms would prefer debt to equity. The findings of this study are in line with other studies such as Ahmad *et al.* (2015) which have found out that firms with growth potential tends to look for bank financing implying positive relationship between growth potential and leverage. However, empirical evidences concerning the relationship between growth opportunities and leverage are mixed. Other studies such as Deeper and Trinh(2015) found out that firms with high growth potential were associated with lower leverage. They argue that leverage is negatively related to growth for firms whose growth opportunities are either not recognized by the capital markets or are not sufficiently valuable to overcome the effects of their debt.

3.5. Size

With respect to size of the financial institutions and leverage, the findings show a stronger positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.988 and 0.882 respectively supporting the trade-off theory. These findings imply that large financial institutions tend to have more leverage perhaps because they are more transparent in terms of providing information and less prone to bankruptcy. These findings are in line with other studies such as Fama and French (2002) that have found a significant positive relationship between firms' size and leverage.

According to trade-off theory, the size of the firms is positively related to leverage. The trade-off theory argues that large firms are less at risk of bankruptcy than small firms because large firms diversify their investments and may experience lower transaction costs associated with debt and lower information costs due to quality of financial reporting. Moreover, this theory argues that smaller firms should operate with low leverage because these firms are more likely to be liquidated when facing financial distress. However, pecking order theory suggests a negative relationship between firms' size and leverage. According to pecking order theory, whenever they enlarge, they should increase equity rather than leverage in order to have less exposure to the risk of bankruptcy. Empirical

evidences concerning the relationship between size of the firms and leverage are mixed. Other studies such as Chen (2004) and Ezeoha (2008) have found a significant negative relationship between firms' size and leverage which is consistent with the predictions of pecking order theory.

3.6. Profitability

With regards to growth opportunities of the financial institutions and leverage, the findings indicate a positive significant relationship ($p \leq 0.05$) for both CRDB and NMB with correlation coefficients of 0.825 and 0.779 respectively supporting trade-off theory. These findings imply that the financial institutions which are more profitable sends good signal to the lender concerning their financial health thus more leverage. These findings concur with other studies such as Frank and Goyal (2003), Flannery and Rangan (2006), Titman and Tsyplakov, (2007); they concluded that more profitable firms borrow more to reduce their tax liabilities.

Nevertheless, other studies found out that higher profitability leads to lower leverage supporting pecking order theory of negative relationship between profitability and leverage (Fama and French, 2002; Hall, *et al.,* 2004, González and González, 2012).

According to trade-off theory, profitability is positively related to leverage. The trade-off theory argues that profitable firms prefer debt because of tax advantage on debt which helps them to maximize firms' value. However, the pecking order theory suggests a negative relationship between firms' profitability and leverage because firms with large profits afford to undertake investments based on internal funds and thus debt is unnecessary.

4. Conclusion

Capital structure is explained by different corporate finance theories in which trade-off theory and pecking order theory are the most popular. Testing the two models help to explain how financial managers make capital structure decision. The findings of this study have shown that the relationships between financial institutions leverage and age of financial institutions, growth opportunities, liquidity, asset tangibility, size and profitability support the assumptions of trade-off theory. Therefore, it can be concluded that financial institutions in developing countries such as Tanzania also exhibit the capital structure that conforms to standard finance theories. Furthermore, in the context of Tanzania, the theory which fits best the leverage strategy of the financial institutions is the trade-off theory.

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