



Empirical Evidence of Target Leverage, Adjustment Costs and Adjustment Speed of Non-Financial Firms in Selected African Countries

Oyebola Fatima Etudaiye-Muhtar^{1,2*}, Rubi Ahmad³

¹Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, Malaysia, ²Faculty of Management Sciences, University of Ilorin, Ilorin, Nigeria, ³Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, Malaysia.
*Email: fatimaetudaiyemuhtar@yahoo.com

ABSTRACT

The issue of target leverage for corporate firms in developing countries has received little attention in extant literature, especially countries in Africa. Given the imperfection that exists in African financial markets that may limit firms access to external capital, this study investigates dynamic adjustment towards a target debt ratio. In addition, the study used a dynamic panel data estimation technique to determine adjustment costs and speed of adjustment in non-financial firms in selected African countries over the period 2003-2012. The study finds that the firms make dynamic adjustment to a target leverage with low adjustment costs and relatively fast speed of adjustment.

Keywords: Capital Structure, Target Leverage, Adjustment Costs

JEL Classification: G32

1. INTRODUCTION

Decades after the seminal article by Modigliani and Miller (1958) on the irrelevancy of capital structure decisions to firm value, capital structure studies of corporate entities remain an important theme in corporate finance. The irrelevancy theory is based on certain perfect market assumptions, such as perfectly rational investors, absence of transaction costs and taxes and perfect market competition. Nevertheless, subsequent research queries whether the assumptions of the irrelevancy theory really hold given the existence of transaction prices, bankruptcy costs and taxes. Noting that these assumptions may in fact not hold, extant literature has come up with several other theories that try to explain the capital structure choice of firms given the existence of transaction costs, agency costs, bankruptcy costs taxes and irrational investors. Some of these theories include trade-off theory, pecking order theory and market-timing theory.

Most of the capital structure studies from developing country perspective, specifically for the African region use firm-specific and macroeconomic factors within a static framework to provide an

explanation of how the different theories work i.e., the determinants of capital structure (Akinlo, 2011; Bundala, 2012; Kyereboah-Coleman, 2007; Salawu and Agboola, 2008). This implies that these studies did not take into consideration, frictions that make a firm to deviate from its target leverage¹ and costs of adjustment that inhibit firms from going back to the target. Barclay and Smith (2005) posit that in order to make sensible capital structure decisions, firm managers have to understand the costs and benefits that are associated with moving away from target capital structure and adjusting back to target leverage. i.e., adjustment costs. Furthermore, Leary and Roberts (2005) highlight the importance of adjustment costs that leads to a lingering effect on leverage.

This study deviates from previous studies on capital structure of firms in African countries by investigating target leverage within a dynamic framework, which permits the determination of adjustment costs and speed of adjustment. Given that African

¹ Hovakimian et al. (2001) defines target leverage as the debt ratio a firm will choose in the absence of information asymmetries, transaction costs and other adjustment costs.

financial markets are besieged by various imperfections that may lead to costly adjustment costs, the possibility of firms operating at below target leverage cannot be ruled out. The reverse is the case for firms in markets with no friction and adjusting to target leverage when deviation occurs, is less costly or costless (Drobetz and Wanzenried, 2006). Moreover, Črnigoj and Mramor (2009) argue that factors that determine capital structure in developed countries may be different from those in developing countries.

A second contribution of this study is the investigation of the dynamic trade-off theory for a panel of 599 non-financial firms listed on nine active stock exchange in Africa². Although, Ghazouani (2013) and Ramjee and Gwatidzo (2012) investigated target leverage and adjustment costs for non-financial firms in Tunisia and South Africa respectively, both studies were single country studies. Other studies noted earlier also examined single countries. Thus, we may not be able to generalise the results to firms in other African countries.

The present study close the identified gap by investigating the speed of adjustment and adjustment costs with a target adjustment model specification. The study uses a generalized system of moments estimation technique on a sample of 599 non-financial firms listed in nine active stock exchange in nine countries in the region. Findings from the investigation indicate that the firms in the selected countries adjust to target leverage relatively fast. Asset tangibility, growth opportunity (GO) and firm size (FS) are firm-specific variables that are important determinants of dynamic target leverage while important macroeconomic variables were gross domestic product (GDP) and inflation.

The rest of the paper is organized as follows: section two gives a brief literature review on target leverage, adjustment costs and adjustment speed. Section three describes the data, variable and estimation technique. Section four reports the empirical results and discussion. Section five gives the concluding remarks with relevant policy implications derived from the study.

2. RELATED LITERATURE: TARGET LEVERAGE, ADJUSTMENT COSTS AND SPEED OF ADJUSTMENT

As noted in the introductory section, following the irrelevancy theory by Modigliani and Miller (1958), several theories developed show that the capital structure of a firm is relevant. One of such theory is the trade-off theory. With the trade-off theory, the firm considers the tax advantage of debt and the associated costs of financial distress and bankruptcy and tries to maintain a balance between the two. Optimal capital structure is attained when marginal benefits derived from the use of debt and costs associated with debt financing are equal. There are two different forms of the trade-off theory: the static and dynamic trade-off theory. The static version assumes that there is no difference between actual and desired leverage ratio (Myers,

1984). On the other hand, the dynamic version of the theory assumes that a firm has target leverage and makes adjustment towards achieving this target (Myers, 1984; Shyam-Sunder and Myers, 1999). It recognizes that frictions exist to push a firm away from its desired debt level and costly adjustment costs may prevent the firms from achieving its target debt level (Drobetz and Wanzenried, 2006; Ozkan, 2001; Öztekin and Flannery, 2012). The other theories (pecking order and market timing) which are beyond the scope of this paper assume that firms do not have target leverage and do not make the adjustment to target leverage.

Supporting empirical evidence of target leverage and the cost of adjustment in non-financial is concentrated more in developed countries than in developing countries. De Miguel and Pindado (2001) investigated how firm-specific factors and institutional affect capital structure choice in a sample of 133 Spanish non-financial firms. Using the instrumental variable approach of Arellano and Bond (1991)³ the study finds that Spanish firms incur adjustment costs when they try to adjust back to target leverage after deviating from it. These costs are noted to be lower than those of non-financial firms in the United States. They attributed this to the high use of private debt by Spanish firms due to the lower development of the Spanish bond market as compared to the bond market in the United States.

Similar evidence of target leverage behaviour is reported in Drobetz and Wanzenried (2006) for 90 Swiss non-financial firms. Within a dynamic model specification, they document that faster growing firms and firms that are far away from target leverage adjust easily with higher speeds of adjustment when the economy is booming. This implies that the adjustment costs are low and do not hinder the adjustment process. Comparable finding of a target leverage adjustment is reported for US firms in Flannery and Rangan (2006) with firms having a mean adjustment speed estimated at 30% per year. They pointed out that the 30% adjustment speed is three times higher than usually reported in literature and therefore, underscores the need for studies on target leverage behaviour. Antoniou et al. (2008) also document evidence of firms adjusting to target leverage ratio in a sample of non-financial firms in market and bank based economies with adjustment speed higher in market-based economies than bank-based economies. They argued that this is because firms in bank-based economies have no need to depend on debt to signal the quality of the firm to investors in the market unlike firms in market-based economies. In addition, firms in the bank-based economies weigh the costs of being off target against agency expenses. If the cost incurred for being off target is lower than adjustment costs, the firms adjust slowly and do not bear significant agency costs.

Empirical evidence from developing countries is sparse. Getzmann et al. (2010) examined the determinants of capital structure and speed of adjustment towards target leverage in a sample of 1301 non-financial firms listed in Asian financial markets for the period 1995-2009. Using the system generalized method of moments (GMM) estimation, they find that non-

² Botswana, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, South Africa and Tunisia

³ Also known as the difference generalized method of moments approach

financial firms in Asia exhibits target leverage behaviour with adjustment speed ranging from 27% to 39%. This speed of adjustment is comparable with those of US firms reported in Flannery and Rangan (2006). Evidence from 590 non-financial firms listed in Malaysia as reported in Haron et al. (2013) indicates that Malaysian firms make adjustment to target leverage when deviations occur. Using a partial adjustment model and the GMM s technique, they report adjustment cost of 0.43 and adjustment speed of 0.57. Arioglu and Tuan (2014) recently document speed of adjustment of approximately 29% for 148 non-financial firms listed on Borsa Istanbul for the period 1998-2010. This finding is also comparable with the findings from developed markets.

One of the few studies on dynamic target leverage from an African perspective is Ghazouani (2013) who investigated the trade-off theory in a sample of 20 Tunisian firms. Their findings report high adjustment costs between 0.836 and 0.81 with slow speed of adjustment using the difference GMM estimation technique. They attributed the high costs to the inefficiency of the banking sector and underdevelopment of the bond market in Tunisia.

However, Ramjee and Gwatidzo (2012) find lower adjustment costs in a sample of 178 South African non-financial firms listed on the Johannesburg stock market. The study employed the GMM s to investigate the cost of adjustment and speed of adjustment over the period 1998-2008. The empirical findings show that the firms have lower adjustment costs than firms in developed markets with higher speed of adjustment. The coefficient for the adjustment cost of total debt is given as 0.345 while that of long-term debt is 0.198. This implies that the adjustment speed is 0.665 and 0.802 respectively. These values are comparable to the values reported for Spanish firms in De Miguel and Pindado (2001).

3. DATA, VARIABLE AND ESTIMATION TECHNIQUE

3.1. Data and Variables Description

In order to investigate target leverage, adjustment costs and speed of adjustment, macroeconomic and annual firm level data of non-financial firms listed on nine most active stock exchange in Africa is used. Following previous capital structure studies, we exclude financial firms, real estate firms and other regulated firms whose capital requirements are subject to regulation. We extract firm data from the annual balance sheet and income statement obtained from Thomson Reuters Datastream while macroeconomic data is taken from the World Bank development indicators database. Firms that have <3 years of consecutive data are excluded to enable us to perform the regression equation.

The period of investigation is from 2003 to 2012. The final sample consists of an unbalanced panel of 599 firms because some of the firms do not have observations in some years. Table 1 gives the breakdown of the number of firms in each country. It is observed that South Africa has the highest number of firms and represents 40.7% of the entire sample while Botswana is the least represented at 1.4% of the total sample size.

The dependent variable is the leverage ratio of each firm and is measured as the ratio of the book value of total debt to book value of total assets. We use a second dependent variable measured as ratio of book value of long-term debt to total assets to test the robustness of the estimation. This serves as proxy for the target debt level. Other firm specific variables that may affect capital structure decisions are taken from Acaravci (2015), Frank and Goyal (2009) and Ozkan (2001). These variables are profitability, tangibility of assets, non-debt tax shield (NDTS), GO and FS. We include two commonly used macroeconomic variables namely GDP and inflation. Table 2 gives the variable description and measurement.

Table 3 shows the descriptive statistics for the variables. From the Table 3, it is observed that the value for the mean book leverage is 0.189. Profitability has a mean of 0.08 while asset tangibility has a mean of 0.351 the mean value of NDTS, GO and FS are 0.038, 0.068 and 13.596 respectively.

The correlation matrix presented in Table 4 shows the absence of multicollinearity among the variables as indicated by the low correlation values.

Table 1: Overview of sample composition

Countries	Number of firms	Percentage of total sample
Botswana	8	1.4
Egypt	132	22
Ghana	17	2.8
Kenya	37	6.2
Mauritius	24	4
Morocco	50	8.3
Nigeria	59	9.9
South Africa	244	40.7
Tunisia	28	4.7
Total	599	100

Source: Authors computation from data obtained from Thomson Reuters Datastream

Table 2: Variable description and measurement

Variable	Measurement
Dependent variable	
TDR	Book value of total debt to book value of total assets
LTDR	Book value of long-term debt to total assets
Firm specific variables	
PRF	Operating income divided by total assets
ATAN	Net fixed assets divided by book value of total assets
NDTS	Depreciation divided by book value of total assets
GO	Capital expenditure divided by book value of total asset
FS	Natural logarithm of sales
Macroeconomic variables	
GDP	Annual change in gross domestic product of the country
INF	Annual change in the consumer price index of the country

TDR: Total debt ratio, LTDR: Long-term debt ratio, PRF: Profitability, ATAN: Asset tangibility, NDTS: Non-debt tax shield, GO: Growth opportunity, FS: Firm size, GDP: Gross domestic product, INF: Inflation

3.2. Estimation Technique

Following previous studies, we model leverage as a function of firm specific and macroeconomic determinants within a specification that permits the determination of adjustment costs and adjustment speed (Antoniou et al., 2008; Drobetz and Wanzenried, 2006; Flannery and Rangan, 2006; Ozkan, 2001). The general specification for the model is given in equation (1) as:

$$Lv_{it} = \alpha Lv_{it-1} + \alpha \beta X_{it} + \gamma_i + \lambda_t + v_{it} \quad (1)$$

Where Lv is the leverage ratio, α is the adjustment parameter, X is a vector of explanatory variables as given in Table 2, v is an error term, β is a $K \times 1$ vector of constants is unobserved firm specific effects assumed constant over t , λ_i is the unobserved time specific effects assumed constant over i , i is individual firm and t denotes time. Investigating the effect of a one period lagged leverage on present leverage as asserted by Antoniou et al. (2008), enable the determination of whether or not a firm adjusts to target leverage and the corresponding adjustment speed (where the adjustment speed is given by $1-\alpha$). Antoniou et al. (2008) argue that a positive and below one coefficient of lagged leverage implies the existence of target leverage behaviour. Furthermore, the adjustment parameter in equation (1), α is a proxy for adjustment cost and has an inverse relationship with the speed of adjustment which is given by $1-\alpha$ (Flannery and Rangan, 2006).

We decompose model one into two models for the purpose of our investigation and is given as:

$$TDR_{i,t} = \beta_0 + \beta_1 TDR_{i,t-1} + \beta_2 ATAN_{i,t} + \beta_3 NDTs_{i,t} + \beta_4 NDTs_{i,t} + \beta_5 GO_{i,t} + \beta_6 FS_{i,t} + \beta_7 GDP_{i,t} + \beta_8 INF_{i,t} + error_{i,t} \quad (2)$$

$$LTDR_{i,t} = \beta_0 + \beta_1 LTDR_{i,t-1} + \beta_2 ATAN_{i,t} + \beta_3 NDTs_{i,t} + \beta_4 NDTs_{i,t} + \beta_5 GO_{i,t} + \beta_6 FS_{i,t} + \beta_7 GDP_{i,t} + \beta_8 INF_{i,t} + error_{i,t} \quad (3)$$

The variables are as described in Table 2.

Flannery and Hankins (2013) contend that using a combination of a lagged dependent variable and firm fixed effects to control for serial correlation and unobserved time invariant differences across firms in capital structure studies lead to a biased estimate of the coefficients in a dynamic panel. They equally note that this situation is worsened in short panels. This implies that estimating equation (2) and (3) with the ordinary least squares or the generalized least squares method will yield inconsistent and biased estimates. Based on this argument, we use an instrumental variable technique, the GMM for the estimation. The GMM is known to address issues like endogeneity that results from the use of lagged dependent variable and serial correlation. It is also an estimation technique that is robust to panel - specific autocorrelation and heteroskedasticity (Antoniou et al., 2008).

Due to the unbalanced panel and small time period of the data, we use the two step system GMM of Arellano and Bover (1995) and Blundell and Bond (1998) to estimate equation (2) and (3). The system GMM is more efficient than the difference GMM of Arellano and Bond (1991) because it makes an additional assumption that the first differences of instrumental variables are uncorrelated with the fixed effects (Roodman, 2009). The system GMM uses levels equation as in equation (1) to obtain a system of two equations namely differenced and levels. This introduces more instruments into the equation and variables in levels in the second equation are used as instruments with their own first differences, thus improving the efficiency of the estimation. Time dummies are included in the specification to avoid cross-individual and contemporaneous correlation (Roodman, 2009).

To confirm the validity of the models specified, we report four test statistics; the Wald test for the joint significance of the explanatory variables, the first and second order serial autocorrelation of residuals (AR (1) and AR (2)) and the Hansen statistics for instrument over-identification. The AR (1) and AR (2) follow a normal distribution $N(0,1)$ with a null hypothesis of no autocorrelation although by construction, there is serial correlation

Table 3: Descriptive statistics

Variable	Mean	Standard deviation	Minimum	Maximum
TDR	0.189	0.224	0	0.906
LTDR	0.094	0.170	0	0.815
PRF	0.083	0.369	-17.648	1.850
ATAN	0.351	0.302	0	0.958
NDTS	0.038	0.035	-0.004	0.227
GO	0.068	1.967	-122.798	1.002
FS	13.596	2.450	0	20.189
GDP	0.435	0.023	-0.078	0.150
INF	0.073	0.044	0.009	0.262

Source: Authors' computation from data obtained from Thomson Reuters Datastream. ****Significance at 10%, 5% and 1% respectively, TDR: Total debt ratio, LTDR: Long-term debt ratio, PRF: Profitability, ATAN: Asset tangibility, NDTS: Non-debt tax shield, GO: Growth opportunity, FS: Firm size, GDP: Gross domestic product, INF: Inflation

Table 4: Correlation matrix

Variables	TDR	LTDR	PRF	ATAN	NTDS	GO	FS	GDP	INF
TDR	1.000								
LTDR	0.777***	1.000							
PRF	-0.107**	-0.109**	1.000						
ATAN	0.124**	0.139***	0.032**	1.000					
NDTS	0.100**	0.098***	0.009	0.211**	1.000				
GO	-0.013	-0.006	0.033**	0.071**	0.035**	1.000			
FS	0.010	0.005	0.164**	0.120**	0.040**	0.034**	1.000		
GDP	0.017	-0.040***	0.023	0.06***	0.020	-0.014	-0.025	1.000	
INF	-0.020	0.060***	0.032**	0.112*	-0.089***	0.001	0.047**	0.1635*	1.000

Source: Authors' computation from data obtained from Thomson Reuters Datastream. **** implies significance at 10%, 5% and 1% respectively, TDR: Total debt ratio, LTDR: Long-term debt ratio, PRF: Profitability, ATAN: Asset tangibility, NDTS: Non-debt tax shield, GO: Growth opportunity, FS: Firm size, GDP: Gross Domestic Product, INF: Inflation

in AR (1). Arellano and Bond (1991) argue that coefficient estimates are valid only in the absence of no second order serial correlation. The Hansen statistics has the null hypothesis that the over-identifying restrictions are valid. A rejection of the null indicates that the model is not valid for GMM estimation and that the instruments are over identified (Roodman, 2009).

4. RESULTS AND DISCUSSION

The results presented in Table 5 for both total debt ratio (TDR) and long-term debt ratio (LTDR) show that firms in the study exhibit target leverage behaviour as indicated by the below one, positive and significant coefficient of the lagged leverage. Being that the lagged leverage variable is also a proxy for adjustment costs, this suggests that when deviations occur from the target leverage, the firms incur adjustment costs of approximately 42.7% (0.0.427) for TDR and 37.4% (0.374) for LDTR to get back to target leverage. The speed of adjustment is given as 57.3% or 0.573 (1-0.427) and 62.6% or 0.626 (1-0.374).

Table 5 also reveal that the effect of firm-specific and macroeconomic variables on leverage ratio is sensitive to the definition given to leverage ratio. For instance, in terms of firm-specific variables, the positive and significant coefficient of asset tangibility, GO and FS in the column for TDR suggests evidence of the dynamic trade-off theory. This lends support to the findings of Ramjee and Gwatidzo (2012) for non-financial firms in South Africa. However, only tangibility of asset is seen to have a positive and significant effect on debt ratio in the column for LTDR.

The positive coefficient of asset tangibility implies that tangible assets in firms' possession enable the firms to take on more debt financing because they have the collateral to secure the credit and

reduces the risk for lenders. The significance of FS implies that the larger the firm, the more debt it uses for financing positive NPV investments. This is due to the lower information asymmetry that is associated with larger firms (Drobetz and Wanzenried, 2006). Although the pecking order theory predicts a negative coefficient for GO, Antoniou et al. (2008) argues that when a firm exhausts its retained earnings and is still in need of finance, it will use debt instead of equity because of the lower agency costs.

The two macroeconomic variables (INF and GDP) are seen to have negative and statistically significant coefficients in the column for LTDR. Frank and Goyal (2009) argues that agency problem worsens during recessions, thus firms are inclined to borrow less because stakeholders wealth are reduced. The results however do not show evidence of PRF and NDTS having an effect on the leverage ratio.

Post estimation validity checks for the model specification indicates that the system GMM is an appropriate estimation technique as seen by the non-significance of AR (2) and significance of the Wald Chi-square statistics. The AR (2) indicates the absence second order serial correlation while the Wald Chi-square implies that the explanatory variables are good predictors of the leverage ratio by being jointly significant. The Hansen *P* value also indicates that the instruments used in the equation are valid and are not over identified.

The adjustment cost of 0.427 (TDR) and 0.374 (LTDR) in the estimation is noted to be lower than those obtained in previous studies of firms in developed markets. For example, Antoniou et al. (2008) find that non-financial firms in France, Germany, Japan, United Kingdom and the United States have adjustment costs of approximately 0.7463 with the speed of adjustment at 0.2537. Similarly, for firms in the United States, Flannery and Rangan (2006) report adjustment costs of 0.7 while speed of adjustment is given as 0.3. Evidence from non-financial firms in the Asian capital market as reported by Getzmann et al. (2010) show that the average adjustment cost is 0.61 while the speed of adjustment is reported as 0.39.

Nevertheless, the adjustment cost reported in Table 5 is comparable to those of non-financial firms in South Africa reported in Ramjee and Gwatidzo (2012) as 0.345 for total debt and 0.198 for long-term debt and De Miguel and Pindado (2001) for Spanish firms at 0.2095. Both of these studies argue that the adjustment costs for the firms in South Africa and Spain are lower than the adjustment costs for firms in developed markets because the bond markets in South Africa and Spain are less developed. Due to the low level of development of the bond market, firms rely mainly on private debt sourced from commercial banks. The commercial banks provide lower transaction costs because of the surplus capital and inexpensive funding they get from deposits. We may therefore also argue that because of the underdevelopment of the bond market in the countries where the sample firms are domiciled, firms in these countries rely primarily on bank debt as the major source of debt financing. This is consistent with an earlier affirmation by Ncube (2007) that the main sources of debt finance for firms in Africa are banks.

Table 5: Two step system generalized methods of moments estimates

Vairables	TDR	LTDR
Independent variable		
TDR _{it-1}	0.427*** (0.103)	-
LTDR _{it-1}	-	-0.374*** (0.099)
PRF	-0.017 (0.019)	-0.005 (0.007)
ATAN	0.048* (0.025)	0.057* (0.033)
NDTS	0.029 (0.182)	-0.033 (0.146)
GO	0.004* (0.002)	0.001 (0.001)
FS	0.005** (0.002)	0.002 (0.001)
GDP	-0.211 (0.083)	-0.092** (0.041)
INF	-0.056 (0.058)	-0.053*** (0.053)
Wald Chi-square	7.50***	6.91***
AR (1) <i>P</i> values	0.001	0.003
AR (2) <i>P</i> values	0.372	0.840
Hansen statistics <i>P</i> value	0.523	0.459
Number of groups	596	596
Number of instruments	52	47
Number of observations	4064	4064

Source: Authors' estimation from data obtained from Thomson Reuters Datastream. The dependent variables are TDR and LTDR. The dependent variable as well as other variables is as described in Table 2. TDR_{it-1} and LTDR_{it-1} are one period lagged dependent variables. Standard errors robust to heteroskedasticity and small sample bias are given in parenthesis. *, **, ***Significance at 10%, 5% and 1% respectively. TDR: Total debt ratio, LTDR: Long-term debt ratio, PRF: Profitability, ATAN: Asset tangibility, NDTS: Non-debt tax shield, GO: Growth opportunity, FS: Firm size, GDP: Gross domestic product, INF: Inflation

We also find support for banks providing a lower transaction cost than public debt markets in the assertion of Barclay and Smith (2005). They contend that equity issues have the highest transaction costs followed by long-term public debt and that short-term private debt has the lowest transaction costs. Because of the lower transaction costs of debt provided by the banks, the firms are able to have low adjustment costs and conversely higher speeds of adjustment since adjustment costs and speed of adjustments are inversely related.

5. SUMMARY AND CONCLUDING REMARKS

Given the imperfections that exist in African financial markets, this study investigates target leverage behaviour, adjustment costs and speed of adjustment in a sample of 599 non-financial firms in nine African countries over the period 2003-2012. The two-step system GMM estimation technique is used to estimate the coefficients in the regression specification. The study reports evidence indicating that the firms adjust to target leverage although the effect of the variables on leverage is sensitive to the definition given to leverage ratio. While asset tangibility is robust to the two definitions (TDR and LTDR), GO and FS were found to have significant effects only on TDR.

In addition, the study finds that adjustment costs for these firms are lower when compared with firms in developed markets. This is because non-financial firms listed on the stock exchange in Africa primarily rely on private debt sourced from commercial banks due to the under-development of the bond market, which affords them the opportunity to get lower transaction costs.

In terms of the study's implication to relevant stakeholders, the findings suggest attempts by the firms to maximize firm value for shareholders as indicated by the target leverage behaviour. This information may be useful to current and potential investors in the stock market in order to make informed decisions concerning their investment.

The result of the study should however be interpreted with caution. Firstly, even though the sample firms used in the study are those listed on the most active stock markets in the region, we may not be able to generalize the findings to firms not listed on the stock exchange and firms in other African countries. Secondly, because the industrial classification of firms is not considered in the study, classifying the firms into industries may yield different results. This may be due to the nature of the operations of the firms where firms in certain industries tend to be more levered than others are. Future research may use these limitations to extend the investigation dynamic target leverage behaviour in developing countries especially in Africa.

REFERENCES

- Acaravci, S.K. (2015), The determinants of capital structure: evidence from the Turkish manufacturing sector. *International Journal of Economics and Financial*, 5(1), 158-171.
- Akinlo, O. (2011), Determinants of capital structure: evidence from Nigerian panel data. *African Economic and Business Review*, 9(1), 1-16.
- Antoniou, A., Guney, Y., Paudyal, K. (2008), The determinants of capital structure: capital market-oriented versus bank-oriented institutions. *Journal of Financial and Quantitative Analysis*, 43(1), 59-92.
- Arellano, M., Bond, S. (1991), Some tests of specification for panel data: monte carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), 277-297.
- Arellano, M., Bover, O. (1995), Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29-51.
- Arioglu, E., Tuan, K. (2014), Speed of adjustment: evidence from bursa Istanbul. *Borsa Istanbul Review*, 14, 126-131.
- Barclay, M.J., Smith, C.W. (2005), The capital structure puzzle: the evidence revisited. *Journal of Applied Corporate Finance*, 17(1), 8-17.
- Blundell, R., Bond, S. (1998), Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115-143.
- Bundala, N.N. (2012), Do Tanzanian companies practice pecking order theory, agency cost theory or trade-off theory? An empirical study in Tanzanian listed companies. *International Journal of Economics and Financial Issues*, 2(4), 401-422.
- Črnigoj, M., Mramor, D. (2009), Determinants of capital structure in emerging European economies: evidence from Slovenian firms, *Emerging Markets Finance and Trade*, 45(1), 72-89.
- De Miguel, A., Pindado, J. (2001), Determinants of capital structure: new evidence from Spanish panel data. *Journal of Corporate Finance*, 7(1), 77-99.
- Drobtz, W., Wanzenried, G. (2006), What determines the speed of adjustment to the target capital structure? *Applied Financial Economics*, 16(13), 941-958.
- Flannery, M.J., Hankins, K.W. (2013), Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, 19, 1-19.
- Flannery, M.J., Rangan, K.P. (2006), Partial adjustment toward target capital structures. *Journal of Financial Economics*, 79(3), 469-506.
- Frank, M. Z., Goyal, V. K. (2009), Capital structure decisions: which factors are reliably important? *Financial Management*, 38(1), 1-37.
- Getzmann, A., Lang, S., Spremann, K. (2010), Determinants of the target capital structure and adjustment speed— Evidence from Asian capital markets. Paper Presented at the European Financial Management Symposium.
- Ghazouani, T. (2013), The capital structure through the trade-off theory: evidence from Tunisian firm. *International Journal of Economics and Financial Issues*, 3(3), 625-636.
- Haron, R., Ibrahim, K., Nor, F.M., Ibrahim, I. (2013), Factors affecting speed of adjustment to target leverage: Malaysia evidence. *Global Business Review*, 14(2), 243-262.
- Hovakimian, A., Opler, T., Titman, S. (2001), The debt-equity choice. *Journal of Financial and Quantitative Analysis*, 36(1), 1-24.
- Kyereboah-Coleman, A. (2007), The determinants of capital structure of microfinance institutions in Ghana. *South African Journal of Economic and Management Sciences*, 10(2), 270-279.
- Leary, M., Roberts, M. (2005), Do firms rebalance their capital structures? *Journal of Finance*, 60, 2575-2619.
- Modigliani, F., Miller, M.H. (1958), The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.
- Myers, S.C. (1984), The capital structure puzzle. *The Journal of Finance*, 39(3), 574-592.
- Ncube, M. (2007), Financial services and economic development in Africa. *Journal of African Economies*, 16 Suppl 1, 13-57.
- Ozkan, A. (2001), Determinants of capital structure and adjustment to

- long run target: evidence from UK company panel data. *Journal of Business Finance & Accounting*, 28(1-2), 175-198.
- Öztekin, Ö., Flannery, M.J. (2012), Institutional determinants of capital structure adjustment speeds. *Journal of Financial Economics*, 103(1), 88-112.
- Ramjee, A., Gwatidzo, T. (2012), Dynamics in capital structure determinants in South Africa. *Meditari Accountancy Research*, 20(1), 52-67.
- Roodman, D. (2009), How to do xtabond2: an introduction to difference and system GMM In Stata. *Stata Journal*, 9(1), 86-95.
- Salawu, R.O., Agboola, A.A. (2008), The determinants of capital structure of large non-financial listed firms in Nigeria. *The International Journal of Business and Finance Research*, 2(2), 75-84.
- Shyam-Sunder, L., Myers, S. (1999), Testing static trade-off against pecking order models of Capital structure. *Journal of Financial Economics*, 51(2), 219-244.