Drivers of Weighted Average Cost of Capital in Selected Listed Companies in Tanzania

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ABSTRACT

This study investigates drivers of the weighted average cost of capital (WACC) for the listed companies in Tanzania. Specifically, the study aimed to investigate the relationship between size of the firm and WACC of the selected listed companies in Tanzania, to examine how Profitability of the firm affects WACC of the selected listed companies in Tanzania, to analyze Growth rate impact on WACC of the selected listed companies in Tanzania and to examine how tangibility of the firm affects WACC of the selected listed companies in Tanzania. The study employed quantitative time series data covering data from various sources such as the published company's financial statements, managerial commentary and reports, data from Dar-es-salaam Stock Exchange (DSE) was also form a prominent part of data for the purpose of the study in a span of 11 years (2010 to 2020). The study findings reveal that a percentage increase in the size of members will lead to a 0.00% increase in WACC. More so, A percentage increase in profitability will lead to a 1.46 percent decline in WACC. A percentage increase in growth rate will lead to a 0.07 percent increase in WACC. A percentage increase in asset tangibility will result in a 0.04 percent decline in WACC. The study recommends that a company's capitalization structure can have a significant impact on its financial performance as everything begins with how the company finances its operations, from its first sale to future investments. However, the profitability of a listed company can be achieved by finding against the company's predetermined investments as the company uses profitability for expansion and dividend distribution to shareholder debt by carefully analyzing the debt ratio. Additionally, larger profits made by a firm can boost investor and creditor confidence in capital investments, which has an impact on a company's capital structure.

Keywords: Weighted Average Cost of Capital, Profitability, Growth Rate, Tangibility, Debt

INTRODUCTION

The question relating to measuring the cost of capital has recently gained importance. The concept is central to modern finance touching on investment, divestment decision, measure of economic profit, performance appraisal, and incentive system (Bruner, et al, 2016) In recent decades, there was a breakthrough of a different theoretical view of measuring cost of capital. Over 1950s, 1960s and 1970s, five concepts of finance theories have been developed in this area starting with early gearing (leverage model), the model of Modigliani& Miller (MM), Capital Asset Pricing Model (CAPM), Arbitrage Price Theory (APT) and Gordon Model (Tashfeen & Liton, 2010).

All these and many theories in finance have revealed the fact that a firm is expecting to invest or continue investing where expected returns from that investment is greater than the cost of investment, and thus any

use of capital, imposes an opportunity cost on investors (Tashfeen &Liton, 2010). They concur on the fact that, use of capital by a company imposes both explicit and implicit cost. Due to the availability of different investment opportunities with limited resources (capital), it is important that investment decisions should be benchmarked against proper criteria. For most investments, this benchmark is usually provided by the cost of capital. The benchmark for a decision to use any form of capital against many market opportunities should therefore be given a prominent importance. This benchmark is in most cases provided by the cost of capital.

A standard means of expressing a company's cost of capital is the Weighted Average Cost of individual source of capital employed (WACC) (Bruner et al., 1998). Surveys such as Graham and Harvey (2001) report that many financial managers use WACC in appraising their investments. The WACC is composed of cost of equity (Ke), cost of preferred stock (Pe) and cost of debt (Kd); these are weighted to reflect corporate leverage and debt is adjusted for corporate tax (Murray et al., 2013).

The valuation of external investments, such as mergers and acquisitions, is a crucial part of corporate finance and accounting. If the risk is different from the rest of the firm's assets, these investments may be considered separate projects that should be evaluated using the project's unique risk characteristics (Oesch & Schmid, 2013). Graham & Harvey (2001) used a survey approach to investigate the adoption of company-wide WACC among Fortune 500 companies, demonstrating the "WACC fallacy." Even if the investment had a variety of risk characteristics, 60% of the 392 CFOs surveyed said they would almost always utilize a company-wide discount rate (Graham & Harvey, 2001).

Companies that employ a company-wide discount rate for investments that are riskier than the rest of the company's assets face a slew of problems. For example, the WACC fallacy might lead to an overestimation of riskier assets compared to the company's typical investments (Krüger et al., 2015). As a result, firms may overinvest in divisions with higher beta values than the total beta of the company, or vice versa (Krüger et al., 2015). This is particularly true in conglomerates, where applying a company-wide discount rate to investments in unrelated operations and sectors is almost useless (Brealey et al., 2011). Companies that use a company-wide discount rate may make very haphazard estimates of their value and performance (Bancel et al., 2013).

1.1 Weighted Average Cost of Capital

The anticipated return that investors expect on a company's assets takes into account both the cost of capital for the company and the needed rate of return for investors. The weighted average cost of capital (WACC) of the individual costs of the various financing instruments that make up the firm's capital structure may be used to determine it. The weighted average necessary rates of return on all securities issued by the corporation are added to determine the WACC. The weighted average of returns required by equity and loan investors is equivalent to this WACC. The debt and equity components of the capital structure's matching market values serve as the basis for the weights. The rate of return necessary for both new and existing investments to produce a just rate of return for both equity and debt investors is hence the WACC. According to Olowe (1998), only long-term funds should be taken into account when calculating the WACC since they are used to finance investment decisions. The weight is the percentage of each security in the company's value that is determined by market prices as opposed to book values. The expected return for debt and equity holders varies when the firm's capital structure changes in terms of the ratios of debt to equity. The after-tax cash flows on upcoming projects that are exact replicas of the company's current operations are discounted using the WACC. According to Brealey et al. (1995), the sum of money required to provide debt holders with a reasonable rate of return is equal to the desired rate of interest multiplied by the sum of money provided. The amount donated by equity holders multiplied by the rate of return on equity yields the revenue required to compensate equity holders.

According to Brealey et al. (1995) and Pandey (1999), the weighted average cost of capital can be calculated by first calculating the value of each instrument as a percentage of the firm's value, then determining the required rate of return on each instrument, and finally calculating the weighted average of these required returns. As a consequence, depending on the market pricing of the financing instruments, the firm cost of capital is the estimated rate of return that investors anticipate from the company's assets and operations. Despite being relevant for a number of additional reasons, book values frequently do not adequately represent market prices since they only take into account net cumulative historical outlays, according to Brealey et al. (1995) and Pandey (1999). They go on to say that market value, which is based on anticipated future earnings and cash flows as opposed to accounting history, which typically represents capital raised in the past from shareholders or reinvested by the firm on their behalf, quantifies what investors desire from the company. Market value is frequently favored based on this principle. The cost of debt is decreased by the amount of these tax savings Kd since debt interest payments are once again subtracted from income before taxes are calculated (1-t).

- **Cost of Capital**

In the investigation of the cost of capital for alternative investments, Jurek and Stafford (2015), document that the risk shape of the collective hedge fund universe can be accurately matched by a simple index put option writing plan that proposals monthly liquidity and complete transparency over its state contingent payoffs. The contractual nature of the put options in the standard selection allows us to evaluate appropriate required rates of return as a function of stockholder risk priorities and the underlying distribution of market returns. This simple framework produces a number of diverse estimates about the cost of capital for alternatives relative to traditional mean-variance analysis.

According to Amardeep (2013), the cost of capital is the very basis for financial appraisal of new capital expenditure proposals. The conclusion of the finance manager will be unreasonable and wrong in case the cost of capital is not correctly determined. The capital cost is also important consideration in capital structure decisions. The finance manager must raise capital from different foundations in a way that it optimizes the risk and cost factors.

There is a growing debate in the documented empirical literature on the drivers of weighted average cost of capital. Some studies conducted in different countries and using different methodologies have focused on relating the weighted average cost of capital to either investment or returns (Frank & Shen, 2016; Drobetz et al., 2018; Syamsudin et al., 2021), among others. Other studies have related the cost of capital with firm's tax rate, growth and capital intensity (Chen, 2004). Other studies indicate that cost of capital is highly determined by factors such as financial and business risk, fixed asset backing, and liquidity issues.

This debate indicates that there is no universal agreement or conclusion given on the appropriate drivers of weighted average cost of capital. Moreover, in developing countries especially in Tanzania, very little studies have been done to examine the impact of cost of capital on investment and returns as well as in assessing the determinants of cost of capital used in appraising investment. Therefore, this study aimed to investigate the appropriate key drivers of the cost of capital for the listed companies in Tanzania.

LITERATURE REVIEW

Weighted Average Cost of Capital

Cost of capital, at its most basic level, is just the pre-tax rate of return necessary for an investment project to be appealing to investors. Since its debut decades ago, WACC has grown in popularity as a legitimate and often used way of valuing investments. Business students are taught to project cash flows and discount them

using WACC in order to assess company investment. According to Investing Answers (Markauskas & Saboniene, 2020), the weighted average cost of capital (WACC), which takes into account all different forms of capital sources, is a formula for calculating a firm's cost of capital. According to another source, cost of capital is the lowest rate of return that a business must achieve before creating value. A company must at the very least make enough money to pay the cost of the capital it utilizes to fund its operations before it can start to make a profit. This includes the costs of both the equity and debt used to finance a corporation. The capital structure of a firm which determines the sort of financing it chooses to rely on, has a significant impact on the cost of capital for that organization. The company may rely entirely on debt, entirely on equity, or a combination of the two.

Cost of Equity

The cost of equity is the required rate of return for a shareholder's various equity investments. In other words, it is th remuneration they expect for taking the risk of investing in your company. According to CAPM, cost of equity can be calculated as follows:

$Ra = Rrf + [Ba * (Rm - Rrf)]$

where:

Ra = cost of equity (in percentage)

Rrf = risk-free rate of return

Ba = beta of the investment

Rm = the market's rate of return

According to Gordon's model theory/dividend model theory, cost of equity = (Next year's annual dividend / Current stock price) + Dividend growth rate (CFI 2021)

Profitability of a Firm

Profitability of a firm refers to the revenue generated over a period of time in relation to the asset value (La Rocca et al., 2010; Tarus et al., 2014). According to the Pecking Order Theory, profitability will reflect the level of cash adequacy and less dependency on debt. The pecking order idea is supported by the majority of empirical findings. Titman & Wessels (1988) found that the level of debt in the capital structure has a negative relationship with profitability. Profitability supports the predictions of pecking order theory (Khan &khan, 2015). Larger enterprises with more profits will have a bigger debt capacity and, as a result, will be able to borrow more money.

Size of the Firm

Size is represented by market capitalization. Market values are accurate firm values at an exact point in time and are favored over net asset values. Book value of assets is recorded at their historical costs and is not good proxies for a modern firm size. Earlier studies such as Sharma &Kesner (1996) strongly hold the effect of firm size on industry survival and disagreement in operating performance. They argue that it is a source of competitive benefit in the sense that better companies have a tendency to be more capable than their less significant comparable and have enhanced assets to survive economic recessions. It refers to the value of assets in terms of currency. It captures the size of the company as well as the concept of capacity (Ogbulu & Emeni, 2012; Oh et al.,2014).

Trade of f Theory

The traditional trade-off theory of capital structure states that an ideal capital structure exists when the weighted average cost of capital (WACC) is lowest and the market value of assets is maximized (Kraus & Lintzenberger; 1973; Scott, 1977; Kim, 1978). Businesses appear to achieve the ideal, value-maximizing debt-to-equity ratio by balancing the benefits of debt against its drawbacks. Therefore, businesses will set a goal debt ratio and work slowly to achieve it (Myers, 1984).

Pecking Order Theory

The pecking order theory is focused on a company's capital structure. The notion was popularized by Myers & Majluf (1984) who claimed that "managers analyze sources of money in a hierarchy." Pecking order theory promotes order in the selection of finance sources due to the varied levels of information asymmetry and associated agency costs reflected in the diverse sources of funding (CFI). The argument holds that managers are more aware of a company's value than investors, and managers will look to finance the new project with a market-valued security, such as internal funds or riskless debt, to avoid the underinvestment issue. The sources are chosen by comparing the cost and risk levels. The philosophy emphasizes using internal financial resources first, then debt, and then, as a last resort, external financing. It is simply the culmination of the companies' efforts to reduce information asymmetry. Profitability is therefore anticipated to be negatively correlated with leverage.

Empirical Literature Review

Profitability, according to Semenescu & Badarau, (2011) determines the rhythm of the wealth accumulation in forming the own capital of the company. This, therefore, decreases the invitation to borrow and thereby reduces the cost of debt though at a fairly expense of the cost of equity as profit retaining reflects a fairly cheaper source of raising the company's capital. This on the creditor's side may have a contradicting implication. One way it incites creditors to lend to profitable companies which should result in decrease of cost of debt. On the other hand, high profitability is often associated with a higher operational risk, leading to an increase in the cost of borrowing.

Bundala (2012) researched on determinants of capital structure for listed companies in Tanzania using multiple regression method also guided with tradeoff theory and pecking order theory. The study found a positive relationship between capital structure and profitability. A similar study was done in Malaysia by Saarani and Shahadan (2013) using regression analysis of 344 companies five years data which showed a negative significant relationship between profitability and debt ratio. Other empirical studies supporting this finding include Jaafar et al. (2020).

Bas et al. (2009) identified that size of the company, its performance, the tangible asset, and growth opportunities as the determinants of the capital structure of the companies listed in Burcharand Stock Exchange. The argument was that size determines the diversity of the financial sources available to the specific company, as well as induces creditors to perceive a lower risk of default to the company. This therefore may imply that, the bigger the size of the company, the lower the cost of debt. However, creditors and financial analysis seems not to concur with this without controversy.

Al Ani and Al Amri (2015) conducted a study in Oman aiming to investigate the determinants of capital structure of industrial companies listed in Muscat Security Market from 2008 to 2012 using linear regression analysis. Results show a negative association between growth rate and leverage. Other studies show that the rate of growth is inversely proportional to the degree of long-term debt (Jensen & Meckling, 1976). Titman & Wessels (1988) conducted an empirical study which also found a negative relationship between growth

opportunity with capital structure. Similar results were also found in a study of Saaran & Shahadan, (2013), which came up with a negative relationship between growth opportunity and total debt ratio.

According to Khan & Khan (2015),fixed assets such as buildings and land machinery, are included in physical assets, as are current assets, such as cash inventories. An intangible asset is the inverse of a physical asset. Nonphysical assets include things like trademarks, patents, goodwill and brand recognition, and copyrights. The researcher showed a positive relation between asset tangibility and leverage, and support trade off theory. A different study was done in by Hamzah et all, (2020), to determine the drivers of capital structure on Jakarta Islamic Index using regression panel data in a sample of 20 listed companies over three years where results showed a significant relationship with asset tangibility with capital structure.

According to Omran & Pointon, (2004) growth and size are particularly important factors. The study analyzed the segments the analysis into how the company is active in the market and according to different industries. For actively traded companies and for heavy industries, in particular, financial and business risks are significant factors. For the contracting and real estate sector, which has a higher cost of capital, fixed asset backing is another key variable. In the food sector, liquidity is one of the important determinants. However, there is still no consensus on what are the key variables affecting cost of debt, as these are attributable to wider circumstances and less meaningful to generalize.

Sabal(2004) argues in his study that although WACC discounting is suitable for project and firm valuation, it is a poor rule for investment decision making. The reason for this is that WACC frequently transforms undesirable initiatives into projects that seem to be acceptable by combining the project's value with the tax benefit. Real assets must only produce positive net present values (NPVs) when discounted using the unleveraged discount rate, that is, without taking into account the tax shield. If the investment and borrowing decisions are linked, the investor has limited access to the financial markets, or the financial markets are not complete or efficient, negative net present value projects with no leverage may be acceptable. Only when a new project has been approved and a fixed debt ratio policy has been put in place, can WACC be used to assess how it will affect the value of the company. Arguments have been made that as leverage rises, the weighted average cost of capital will drop until bankruptcy risk starts to drive up the cost of capital (Block &Hirt, 2008).

Numerous studies have been conducted on the primary factors influencing capital costs in various regions. For instance, Boutayeba (2017) investigated the numerous factors that affect the cost of capital for the region's and Egypt's developing sectors. An empirical analysis has been done based on a sample of 119 enterprises. Calculations of equity and total cost of capital are made using both book and market-based metrics. The overall cost of capital is found to be 12 percent, while the cost of equity is 12.5 percent. A stepwise multiple regression approach is used to obtain meaningful results. Growth and size have been identified as key indicators of capital cost. For trading companies, the cost of capital is primarily determined by business and financial risk factors. The cost of capital is higher in real estate. However, in order to examine the impact of liquidity on the cost of capital, it must be taken into consideration (Haseeb et al., 2019).

The cross-sectional factors that affect the cost of capital metrics are the main topic of Liu and Wysocki's, (2017) study. They looked at the empirical relationship between accrual quality and the cost of capital for this purpose. They initially discovered that the primary drivers were the operating volatility of the business and accrual quality. Their research is recognized as an empirical contribution to the literature that takes into account elements like accrual quality, company operating volatility, and the cost of capital.

According to Drobetz, et al. (2018) study examined at the cost of capital, policy uncertainty, and investment components. Economic policy is used as a crucial signal between investment and the cost of capital for this aim. They discovered a bad correlation between investment and the cost of capital. However, it has been found that when economic policy becomes more uncertain, investment sensitivity for companies receiving

government subsidies decreases. It is determined that the link between the cost of capital and investment can be severely disrupted by economic policy and uncertainty.

Frank & Shen (2016) study aimed to determine the importance of the weighted average cost of capital for corporate investment. With the addition of the costs of debt and equity, the weighted average cost of capital was computed. Two methods were used to determine the cost of equality in this study. The capital asset pricing model was one method of calculating the cost of equity, while the implied cost of capital was another method. The Gordon growth model was utilized in the implied cost of capital technique to calculate the cost of equity. The findings showed that enterprises with a high cost of equity invested less when the implied cost of capital was utilized to calculate the cost of equity. However, when the cost of equity was calculated using the CAPM model, the companies with a high cost of equity made greater investments. In this study, it was argued that the implied cost of capital, as opposed to the CAPM model, can assess the required return on capital more accurately.

In their study, Jagongo & Mutswenje, (2014) found that decision tools are frequently used to promote investments. The market's information structure and characteristics have an impact on both individual and collective investment decisions. By utilizing a variety of techniques, they came to the conclusion that the reputation of the company, its standing, expected earnings, profit, past stock performance, price per share, cost of capital, and anticipated dividend by investors are the most crucial factors from which investment decisions are influenced. These variables reveal how investors behave when making investing decisions.

In their study, McConnell & Servaes, (1995) stated that the main goal of their research was to examine the correlation between corporate value, or the worth of a corporation with leverage, and owners' equity. They came to the conclusion that corporate value has a negative association with leverage for high-growth enterprises, whereas leverage has a positive link with low-growth. All of these researchers used different metrics to study the effects of leverage or the cost of debt on investments, but they did not specifically examine the effects of the cost of equity. In this analysis, the costs of debt and equity have been combined. In their study, the cost of debt was calculated using a firm's debt value, whereas the cost of equity was calculated using four different methods, and the weighted average cost of capital for each method yielded a different conclusion.

METHODOLOGY OF THE STUDY

The study used quantitative time series approaches, which allowed the researcher to evaluate the data, assisting in the development of a complete understanding of the research topic. Data was collected from various sources such as the published company's financial statements, managerial commentary and reports, data from Dar-es-salaam Stock Exchange (DSE) also formed a prominent part of data for the purpose of the study in a span of 11 years (2010 to 2020). The present study used a sample of four(4) selected companies namely NMB Bank Plc, CRDB Bank Plc, Tanga Cement Plc and Tanzania Cigarette Company Limited drawn from 29 companies listed in the DSE. The aim was to obtain a vast understanding on the real practical aspect of determining the cost of capital from Tanzanian perspective.

FINDINGS OF THE STUDY

Descriptive statistics

Descriptive statistics are used to highlight the key characteristics of the data in a sample (Trochim, 2020). Before doing any regression, it is crucial to determine if the sample statistics are normally distributed or highly dispersed. Descriptive statistics are used to convey quantitative descriptions in a digestible manner.

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Table 1: Descriptive Statistics

	WACC	Size of Members	Profitability	Growth Rate	Asset Tangibility
Mean	15.2574	28885.67	8372223.708	46.0133	0.5488
Median	15.2976	30746.015	8807108	50.5	0.4829
Maximum	23.2235	48674.2341	14412703	57.2	1.673
Minimum	9.2322	7521.5601	-3710074	5	0.0993
Std. dev	2.7209	13629.6748	3016488.562	11.6416	0.2883
Skewness	0.3416	-0.2236	-2.0373	-1.2736	1.3792
Kurtosis	4.1075	1.7218	9.3992	4.5328	6.2539
Jarque-Bera	3.3868	3.6679	115.1052	17.6746	36.3945
Probability	0.1839	0.1598	1.0121	0.0002	1.2503
Observation	48	48	48	48	48

Results in Table 1 show that the mean, indicating the average values of each study variable. The median, however, shows the middle value of each variable. Maximum and minimum values however indicate the maximum and minimum values of each of the study variables. More so, the standard deviation shows the deviation from the sample mean with respect to each variable.

The table also contains the results of the skewness which gives a measure of how symmetric the observations are about the mean. Skewness indicates that values with a range from zero are seen to be normally distributed. From the descriptive table above, WACC as a dependent variable is seen to have a skewness of 0.3416 indicating that WACC values are normally distributed with a distribution symmetric around its mean over the period under observation. More, so the size of members, profitability, and growth rate value are seen to have a negative skewness of -0.2236, 2.0373 and -1.2736 respectively which is relatively lower than zero thus, still indicating that the profitability values are having a long-left tail which indicates lower values than the sample mean. Asset tangibility, however, is seen to have a positive skewness of 1.3792 which is greater than zero hence, depicting a long right tail due to higher value.

Kurtosis from the descriptive statistics above describes the peaks and the flatness of the data values. From table 2, WACC, profitability, growth rate, and asset tangibility are seen to have a positive higher leptokurtic which indicates a peaked curve due to the fact that their values are greater than 3 which is the desired value. The size of members however is seen to have a positive platykurtic indicating the distribution is having a flat surface.

The Jarque Bera test statistics measure the difference between skewness and kurtosis of each normally distributed variable. Moreso, the probability of the Jarque Bera can be used to determine the normality of the variables. The null hypothesis is that data is not normally distributed is strongly rejected due to the availability of enough evidence to reject as WACC, size of members, profitability, and asset tangibility have greater values of 0.1839, 0.1598, 1.0121, and 1.2503 respectively which is higher than 5% level of significance.

Normality Test

Since various statistical techniques for data analysis presuppose that the distribution of the population data is normal, it is important to assess and analyze if the data meets the formality requirements (Kwak & Park, 2019). The normality of the sample data is therefore calculated using the Shapiro-Wilk test in table 4.2 in order to determine whether the sample data set is adequately approximated by a normal distribution and to calculate the likelihood that a random variable underlying the sample data is normally distributed

Criticalvalue (α), 5%, 1%

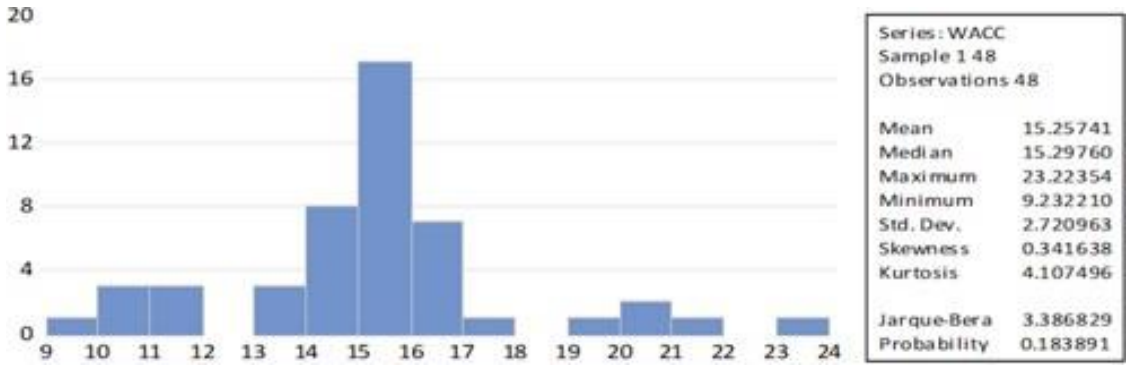
H0: the sample data are not normally distributed.

H1: the sample data are normally distributed.

Decision criteria. Reject the null hypothesis if W< α).

Based on the histogram normality test presented in table2, the results show that the sample data are normally distributed because their P-values of the Jarque Bera test are greater than the significant alpha value (5%). Hence there is enough evidence to reject the null hypothesis as the data of the sample satisfies the normality requirement at the 5% significance level.

Table 2: Descriptive Statistics Normality Test (Jarque Bera)



Stationarity Test

It is said that a time series is stationary when the time series has no pattern. A unit root test using the Augmented Dickey-Fuller (ADF) test is then performed before running any association model to test the relationship between two variables while maintaining the effects of other associated variables unchanged (ceteris paribus). The justification for this test is to avoid the risk of having a spurious regression.

Table 3: Stationarity Test

ADF-test statistics	**Statistics**	**Prob****
Individual levels	-3.2091	0.0262
1st difference	-5.6346	0.0000
Note: significant at 10%, significant at 5%, significant at 1%.		

H0; there is no unit root (non-stationary)

H1; there is unit root (stationary)

The output of this test is shown in Table 3. Clearly, it has been disclosed that variables such as WACC, asset tangibility, growth rate, profitability, and size of members are not stationary they are in their individual levels, and when they are in their first difference level the variables are seen to be stationary. This is due to the fact that the P-values of the data series of the statistic in their individual levels are greater than the 5% level of significance at their levels. This is not the same observation at their first difference where their p-values are less than the desirable level of significance of 5%. Hence rejecting the null hypothesis that there is no unit root (non-stationary) in their first difference.

Heteroskedasticity Test

In order to ensure that the assumptions are correct and that the estimation limits for the dependent variable are true, and that confidence intervals and p-values for the parameters are valid, the regression of the squared residuals on the cross products of the original regresses was performed using the white heteroskedasticity test without white cross terms to check the presumption of constant variance (homoskedasticity).

The hypotheses are as follows:

H0: There is no heteroskedasticity in the models

H1: There is heteroskedasticity in the model

From the description table 4 shows, decision rule: reject H_0 (of no constant variance, i.e., heteroskedasticity) at 5% level of significance, if prob chi-square is greater than 5%level of significance and accept otherwise {that is, if H1 ? 5%}. Therefore, from the model, the null hypothesis of no heteroscedasticity is dismissed as the chi-squared likelihood is greater than the 5 percent significance level. This means that in the model there is homoscedasticity and that in a regression model the error term is constant.

Table 4: White Heteroskedasticity Test

Heteroskedasticity test: White		
f-statistics	Prob. F (10,37)	0.0124
Obs *R-squared	prob. Chi-square (10)	0.0253

Johansen Co-Integrated Test

Table 5: Cointegration Test

Maximum Eigen Test			**Trace Test**			
Maximum eigen value	5% critical value	prob**	trace value	5% critical value	prob**	hypothesized no of CE(s)
53.7236	33.8769	0.0001	89.2191	69.8188	0.0007	None*
24.3096	27.5843	0.1243	35.4955	47.8561	0.4221	At most 1*
5.9947	21.1316	0.9830	11.1859	29.797	0.9566	At most 2*
4.8954	14.2646	0.7550	5.1913	15.4947	0.7882	At most 3
0.2958	3.8414	3.8415	0.2958	3.8415	0.5665	At most 4

The Johansen co-integrated test reports the block report called trace statistics, where the number of co-integration equations under the null hypothesis is shown in the first column. The second column is the II matrix order value, the third column is the test statistic and the last two columns are 5% and 1% critical values and p-values respectively. Thus, the results of this sequence test procedure are reported at the bottom of each block as shown by the co-integration test results shown in the table below.

Table 5 presents the effects of the Johansen Co-integration Test on the basis of Maximum Eigen and Trace Test Statics. The null hypothesis of no co-integration in the first columns is rejected at the 5 percent significance level because the trace and max-Eigen statistics of these tests display a less P-value than their critical values for both the trace and max statistics. However, since the P-values of their trace and max-Eigen statistics for the last four columns are less than their essential values, the null hypothesis of no co-integration for the second, third, fourth, and fifth columns fails to be rejected at a 5 percent significance

level. The null hypothesis of no co-integrating equation is rejected at the 5 percent stage, given the results generated. It is therefore concluded that there is a possibility, within the studied time-series data set of a long-term relationship among the drivers of weighted average cost of capital and its indicators (profitability, growth rate, asset tangibility, size of members). However, these test results correlate with their probabilities, since the same results are seen by both trace and max test statistics.

Thus, the coefficient signs are revealed in the normalized cointegration equation of the Johansen model which is representing the long run (standard error). This means that; both the size of members and profitability has a negative significant impact on WACC in the long run. Thus, an increase in profitability and the size of members will lead to a decline in WACC. However, an increase in the growth rate and asset tangibility of the listed companies will lead to an increase in WACC.

Regression Analysis

Having confirmed the existence of a long-term equilibrium relationship among the variables in the regression model; however, it is the short-run that transmits to the long-run. Thus, the error correction mechanism is therefore used to correct or eliminate the discrepancy that occurs in the short run. The coefficient of the error-correction variable gives the percentage of the discrepancy between the variables that can be eliminated in the next time period. The coefficients of the explanatory variables in the error correction model measure the short-run relationship. Thus, the first-order specification of the model VAR is selected with a constant and a time.

Thus, the description of regression model results, from table 6 above shows the results of the VECM test between drivers of Weighted Average Cost of Capital for the selected listed companies in Tanzania. Thus, the assessment demonstrates a long-run coefficient (C1) which has a negative but significant coefficient (-0.533). more so, the coefficient shows a long-run causality between (WACC) dependent and independent variables (profitability, growth rate, asset tangibility, size of members). From the analysis, a negative demonstration shows a sign of the ability of the study variables to bounce back to equilibrium.

Moreover, the short-run coefficient (C2) which represents WACC depicts that a percentage increase in itself (WACC) will lead to a decline in WACC by 0.08 percent. Also, a percentage increase in the size of members (C3) will lead to a 0.00% increase in WACC (C2). More so, A percentage increase in profitability (C4) will lead to a 1.46 percent decline in WACC (C2). A percentage increase in growth rate (C5) will lead to a 0.07 percent increase in WACC. A percentage increase in asset tangibility (C6) will result in a 0.04 percent decline in WACC whereas, (C7) represents a constant.The study, therefore inferred that the drivers of WACC are statistically significant to account for changes in WACC in the short term.

Table 6: R*egression Analysis*

Regression	Coefficient	Std. Error	T-statistic	Prob
C1	-0.5633	0.1759	-3.2012	0.0027
C2	-0.0827	0.1654	-0.4999	0.6199
C3	0.0002	0.0002	0.801	0.4274
C4	-1.4621	1.4857	-0.9841	0.3311
C5	0.0711	0.0471	1.5104	0.139
C6	-0.0483	1.7258	-0.0281	0.9778
C7	-0.2586	0.4921	-0.5255	0.6022

R-squared	0.5209	Mean dependent var	-0.0279
Adjusted R-squared	0.2164	S.D. dependent var	3.4006
F-statistic	3.0712	Schwarz criterion	5.4594
Prob (F-statistic)	0.0147	Durbin-Watson stat	2.0169

Furthermore, the error correction coefficient gives the speed of adjustment within the model and will restore its equilibrium following any disturbances. The coefficient of ECT with WACC as a dependent variable is negative and statistically significant indicating that there is a convergence from short dynamics toward long-run equilibrium. The adjustment coefficient was 0.5623 percent.

Granger Causality Test

Granger causality is a statistical analytical technique developed to analyze the flow of information between time series that characterizes the directionality, directness, and dynamics of the effect between variables. (Purdon P. A., 2017). The pairwise granger causality test was therefore used to evaluate whether the size of members, profitability, growth rate, and asset tangibility granger predictor variables cause WACC, to be correlated with an instantaneous moment in time related to the principle of measuring cause and effect relationship from VECM due to the existence of a long-term relationship among the variables.

Table 7: Pairwise Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.
SIZE OF_MEMBERS does not Granger Cause WACC	47	0.1029	0.7498
WACC does not Granger Cause SIZE OF_MEMBERS		0.1244	0.7259
PROFITABILITY does not Granger Cause WACC	47	3.0281	0.0888
WACC does not Granger Cause PROFITABILITY		3.1773	0.0816
GROWTH_RATE does not Granger Cause WACC	47	1.1245	0.2947
WACC does not Granger Cause GROWTH_RATE		0.1488	0.7016
ASSET TANGIBILITY does not Granger Cause WACC	47	0.8936	0.3497
WACC does not Granger Cause ASSET TANGIBILITY		0.7637	0.3869

The results of the Granger Causality Test (Table 7) from the VECM estimates do not reject the null hypothesis due to the fact that the F-values of WACC drivers (profitability, growth rate, asset tangibility, size of members) and WACC as a dependent variable have a significant value greater than 0.05 level of significance.

Consequently, the results show that the causality of the size of members and WACC are independent ofeach other. And thus, neither does the size of members granger cause WACC nor does WACC grangercause the size of members, due to the test results which show a probability of F-statistics to be relativelyhigher than the 5% significant level.

Autocorrelation Test

Autocorrelation is a mathematical representation of the degree of similarity over successive time intervals between a given time series and a lagging version of itself. (Smith, 2020). Durbin-Watson test Statistic from the regression analysis was used to validate whether the random or error term, '?', is temporarily independent, i.e., the value assumed '?' is independent of the value assumed in any previous period. In other words, it tests the validity of non-auto-correlation disruptions.

The hypotheses are stated as follows;

H0: There is no auto-correlation in the model

H1: There is an auto-correlation in the model

Decision rule: reject H0 and accept H1 if; d* ? 2 but if d* ? 2, we accept H0 and reject H1.

Based on the regression result (Table 4.6), the results of the model indicate that d * = 2.0168. Therefore, since the value of 2.0168 is greater than two (2) it implies that in the approximate model, there is no autocorrelation observed hence failing to reject the null hypothesis (H0). This suggests that there is no auto-correlation of the first order in the estimated models, and therefore the errors in the models are not auto-correlated.

DISCUSSION

Influence of Size of the Firm on WACC of Selected Listed Companies

From the regression model, results depict the size of the firm and WACC of different listed companies included in the study which are Tanga Cement, Tanzania Cigarette Company (TCC), NMB Bank, and CRDB Bank. The results from table 7 show a percentage increase in the size of members (C3) will lead to a 0.00% increase in WACC which keeps the company safe from debts and bonds. This means that increasing the firm's size leads to a significant increase in WACC's minimum influence. A low WACC, on the other hand, indicates that a company is not paying as much for the equity and debt it uses to expand its business. Companies with a low WACC are more established, larger, and safer to invest in because lenders and investors have seen their value. The company is able to obtain funding at a lower cost of capital by demonstrating long-term value (Segal, 2022).

However, the size of the firm determines the variety of financial sources available to the specific company, as well as induces creditors to perceive a lower risk of default to the company. As a result, the greater the size of the company, the lower the cost of debt. However, creditors and financial analysis appear to disagree without reservation. Thus, if a change in the capital structure reflects a lower WACC, it will ultimately increase the market value of the company and thus increase shareholder wealth. Therefore, the search for the optimal capital structure becomes the search for the lowest WACC, because when the WACC is minimized, the value of the company/shareholder wealth is maximized. Therefore, it is the duty of all finance managers to find the optimal capital structure that will result in the lowest WACC (Watson D and Head A, 2016).

On the other hand, Serghiescu & V'idean (2014) found a positive correlation between the weighted average cost of capital and leverage, supporting Pecking's order theory. Whereas, a different study conducted in Pakistan by Khan and Khan (2015) using a pooled regression model on 20 firms from 2006 to 2011 found a negative relationship between firm size and firm leverage, which contradicted the trade-off theory. Also, the granger causality test from table 7 indicates that the causality of the size of members and WACC are independent of each other. And thus, neither does the size of members granger cause WACC in larger proportion nor does WACC granger cause the size of members to grow, due to the test results which show a probability of F-statistics to be relatively higher than the 5% significant level despite the existence of a long-term positive relationship between the variables as depicted by the Johansen cointegration test.

Effects of Profitability of the firm on WACC of Selected Listed Companies

From the regression model depicted in table 6, the results show that a percentage increase in profitability of either of the listed companies will lead to a 1.46 percent decline in WACC. According to the theory of the

net income approach, increasing financial leverage lowers the weighted average cost of capital (WACC), while increasing the firm's value and the market price of the ordinary share. A decrease in leverage, on the other hand, will result in an increase in the overall cost of capital and, as a result, a decrease in the value as well as the market price of equity shares (Bagga, 2015). However, these results align with the ones by Titman and Wessels (1988) who found that the level of debt in the capital structure has a negative relationship with profitability. Profitability supports the predictions of pecking order theory, according to Khan & Shan (2007). Larger enterprises with more profits will have a bigger debt capacity and, as a result, will be able to borrow more money. Profitability, according to Timisoara (2011) determines the rhythm of the wealth accumulation in forming the own capital of the company. This, therefore, decreases the invitation to borrow and thereby reduces the cost of debt at a fair expense to the cost of equity as profit retaining reflects a fairly cheaper source of raising the company's capital.

However, Bundala (2012) researched on determinants of capital structure for listed companies in Tanzania using multiple regression also guided by tradeoff theory and pecking order theory, where they found a positive relationship between capital structure and profitability. A similar study was done in Malaysia by Saarani & Shahadan, (2013) using regression analysis of 344 companies with five years of data which showed a negative significant relationship between profitability and debt ratio. Other empirical studies supporting this include Jaafar et all (2020) More so, the negative sign is contradictory to an Indian study that looked at the impact of capital structure on Nifty 50 company profitability from 2008 to 2017. The study found that capital structure has a significant positive impact on a company's profitability (Singh, 2019).

However, these results contradict with the findings in the study of Chen& Chen(2011) who observed that the higher a company's profitability is, the more assignable profit it has and the higher its value. Profitability has a strong positive impact on the value of a company. According to the pecking order theory, highly profitable businesses are less reliant on outside capital, and thus profitability has a significant negative impact on leverage.

Influence of Growth Rate on WACC of Selected Listed Companies

The results of the Johansen cointegration test indicate the presence of a long-term relationship between a firm's growth rate and the capital structure of a firm. This precedes the results from the regression analysis in the table 4.7above show that a percentage increase in the firm's growth rate will lead to a 0.07 percent increase in WACC. This supports the pecking's orders theory and also rejects the trade-off theory. More so, the test results of the granger causality test from table 4.8 above depict the existence of an independent relationship between growth rate and a firm's capital structure. The independent relationship is that they do influence each other independently as their P-values are greater than the 5% level of significance hence failing to reject the null hypothesis.

These findings, on the other hand, go hand in hand with the findings (Brusovet al., 2021) that the discount rate for leveraged companies changes from WACC to WACC–g (where g is the growth rate), and for financially independent companies. Therefore, WACC increases as the growth rate increases, whereas real discount rates WACC–g and k0–g (where k0 is the cost of equity) decrease as the growth rate increases. As a result, the company's capitalization rises with g. As g increases, the tilt angle of the cost of equity increases. Because the economically justified value of dividends is equal to equity cost, hence, results in a change in the company's dividend policy. These results, however, contradict a study conducted in Oman using linear regression analysis to investigate the determinants of capital structure of industrial companies listed on the Muscat Security Market from 2008 to 2012. The findings indicate a negative relationship between growth rate and leverage.

Effects of Tangibility of the Firm on WACC of the Selected Listed Companies

The Johansen cointegration test statistics in table 5 show that there is a long-term negative link between a

firm's asset tangibility and its weighted average cost of capital. As a result of the existence of the relationship, the results of the regression equation from the vector error correction model show that a percentage increase in asset tangibility (C6) will result in a 0.04 percent decline in WACC which does not support the trade-off theory, whereas the results of the Granger causality test show that the null hypothesis is not rejected because the P-value of the F-statistics is greater than 5% level of significance, indicating that asset tangibility does not granger cause WACC and vice versa.

If a company's management expects a lower return than its own investors, they'll want to invest their money more wisely. A lower WACC however, usually indicates a less risky business hence, can facilitate a healthy company that can attract investors at a lower price. A higher WACC, on the other hand, is typically associated with riskier businesses that must compensate investors with higher returns (Hargrave, 2022). Serghiescu & Vaidean (2014) on the other hand, observed a negative relationship between tangibility and debt ratio for firms in developing countries, owing to the fact that a high level of tangible fixed assets does not represent a guarantee for creditors in the event of the borrower company's default. Hamzah et al. (2020) conducted a separate study to determine the drivers of capital structure on the Jakarta Islamic Index using regression panel data in a sample of 20 listed companies over three years, and the results revealed a significant relationship between asset tangibility and capital structure. Saaran & Shahadan (2013) on the other hand demonstrated a positive relationship between long-term debt and short-term debt.

CONCLUSIONS AND RECOMMENDATIONS

The study findings reveal that a percentage increase in the size of members will lead to a 0.00% increase in WACC. More so, a percentage increase in profitability will lead to a 1.46 percent decline in WACC. A percentage increase in growth rate will lead to a 0.07 percent increase in WACC. A percentage increase in asset tangibility will result in a 0.04 percent decline in WACC. For a healthy company a low WACC, on the other hand, indicates that a company is not paying as much for the equity and debt it uses to expand its business. Companies with a low WACC are more established, larger, and safer to invest in because lenders and investors have seen their value. The company is able to obtain funding at a lower cost of capital by demonstrating long-term.

Furthermore, the findings show that the causality of member size and WACC is independent of one another. As a result, neither the size of members nor the size of WACC causes the size of members, according to the test results, which show that the probability of F-statistics is relatively higher than the 5% significant level. A company's capitalization structure can have a significant impact on its financial performance as everything begins with how the company finances its operations, from its first sale to future investments. However, the profitability of a listed company can be achieved by finding against the company's predetermined investments as the company uses profitability for expansion and dividend distribution to shareholder debt by carefully analyzing the debt ratio. Additionally, larger profits made by a firm can boost investor and creditor confidence in capital investments, which has an impact on a company's capital structure. This is in line with the Pecking Order Theory, which holds that as profitability increases, the lesser debt the corporation employs.

The ability to leverage current money through debt, on the other hand, enables organizations to grow faster than they otherwise could. Effective use of debt financing results in revenue growth that outpaces the cost of interest payments, and because interest payments are tax deductible, businesses pay fewer taxes overall. This is in line with the Trade-Off Theory, according to which a firm can take on more debt the bigger it is because doing so lowers its chance of going bankrupt. Additionally, using large corporate debt costs less than using small corporate debt, which encourages companies to use more debt. As a result, it can be claimed that the size of the business affects how much capital is used by looking at the debt.

REFERENCES

1. Al Ani, M., & Al Amri, M. (2015). The determinants of capital structure: an empirical study of Omani listed industrial companies. Business: Theory and Practice, 16(2), 159-167.
2. Amardeep (2013), Impact of Cost of Capital in Decision-Making; *Indian Journal of Applied Research* ; 3(8), 100-102, doi: https://www.doi.org/10.36106/ijar
3. Bas, T., Muradoglu, G., & Phylaktis, K. (2009). *Determinants of capital structure in developing countries*. Cass Business School, London EC1Y 8TZ, UK.
4. Block, S. B. & Hirt, A. G. (2008). Foundations of financial management, 12th Edition, McGraw-Hill Irwin Standard and Poor's.
5. Boutayeba, F. (2017). Estimating the Returns to Education in Algeria. Asian Journal of Economic Modelling, 5(2), 147-153.
6. Brealey RA, Myers SC & Marcus JA (1995). Fundamentals of Corporate Finance. McGraw-Hill, New York, USA.
7. Brealey, R.A., Myers, S.C. & Allen, F. (2011) *Principles of Corporate Finance*. 10th Edition, McGraw-Hill/Irwin, New York.
8. Brusov, P., Filatova, T., Orekhova, N., Kulik, V., Chang, S. I., & Lin, G. (2021). Generalization of the Modigliani–Miller theory for the case of variable profit. *Mathematics*, *9*(11), 1286.
9. Bruner, R. F., Eades, K. M., Harris, R. S., & Higgins, R. C. (1998). Best Practices in Estimating the Cost of Capital: Survey and Synthesis. *Financial Practice and Education*, 8(1), 13-28.
10. Bruner, R. F., Eades, K. M., & Harris, R. S. (2016). *Best Practices in Estimating the Cost of Capital; Survey and Synthesis*
11. Bundala, N. N. H. (2012). Determinants of Capital Structure: Evidence from TanzanianNon–Financial Listed Companies. *The Open University of Tanzania.*
12. Chen, J. J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business research*, *57*(12), 1341-1351.
13. Chen, L. J., & Chen, S. Y. (2011). The influence of profitability on firm value with capital structure as the mediator and firm size and industry as moderators. *Investment Management and Financial Innovations*, 8(3), 121-129.
14. Drobetz, W., El Ghoul, S., Guedhami, O., & Janzen, M. (2018). Policy uncertainty, investment, and the cost of capital. *Journal of Financial Stability*, 39, 28-45. doi: https://doi.org/10.1016/j.jfs.2018.08.00
15. Frank, M. Z., & Shen, T. (2016). Investment and the weighted average cost of capital. *Journal of Financial Economics*, 119(2), 300–315. Available at https://doi.org/10.1016/j.jfineco.2015.09.001 (accessed on May 15 2022)
16. Graham, J.R. & Harvey, C.R. (2001) The Theory and Practice of Corporate Finance: Evidence from the Field. *Journal of Financial Economics*, 60, 187-243.
17. Hamzah, R. S., Annisa, M. L., & Patmawati, P. (2020). The Determinant Analysis of Capital Structure Policy at Listed Companies on Jakarta Islamic Index. Advances in Economics, Business and Management Research, 142, 57-63.
18. Haseeb, M., Hussain, H. I., ?lusarczyk, B., & Jermsittiparsert, K. (2019). Industry 4.0: A solution towards technology challenges of sustainable business performance. Social Sciences, 8(5), 154.
19. Jaafar, M. N., Muhamat, A. A., Basri, M. F., & Joreme, A. A. (2020). Determinants of capital structure among shariah compliant industrial product and services firms listed on Ace Market, Bursa Malaysia. *Journal of Islamic Finance*, 9(1), 024-034.
20. Jagongo, A.O. and Mutswenje, V. S. 2014. "A survey of the factors influencing investment decisions: the case of individual investors at the NSE". *International Journal of Humanities and Social Science* ,4(4), 92-102.
21. Jurek, J. W., & Stafford, E. (2015). The Cost of Capital for Alternative Investments. The Journal of Finance, 70(5), 2185–2226. Portico. https://doi.org/10.1111/jofi.12269

22. Khan, I., Jan, S. U., & Khan, M. (2015). Determinant of capital structure: An empirical study of cement sector of Pakistan. Asian Journal of Management Sciences & Education, 4(3), 50-60.
23. Kim E (1978), A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity, J. Fin., 33: 45-63.
24. Kraus A, Litzenberger R (1973). A State-Preference Model of Optimal Financial Leverage, J. Fin. 28: 911-922.
25. Krüger, P., Landier, A., &Thesmar, D. (2015). The WACC fallacy: The real effects of using a unique discount rate. The Journal of Finance, 70(3), 1253-1285.
26. Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. Journal of accounting research, 45(2), 385-420.
27. La Rocca, M., La Rocca, T., Gerace, D., &Smark, C. (2009). Effect of diversification on capital structure. *Accounting & Finance*, 49(4), 799-826.
28. Liu, M., & Wysocki, P. (2017). Cross-sectional determinants of information quality proxies and cost of capital measures. Quarterly Journal of Finance, 7(02), 1650016. Available at: https://doi.org/10.1142/s2010139216500166 (accessed on April 10 2022)
29. Markauskas, M., &Saboniene, A. (2020). Evaluation of capital cost: long run evidence from the manufacturing sector. *Engineering Economics*, 31(2), 169–177.Available Online https://doi.org/10.5755/j01.ee.31.2.21439 (accessed on 13 April 2021)
30. McConnell, J. J. and Servaes, H. 1995. "Equity ownership and the two faces of debt". *Journal of Financial Economics*, 39(1), 131-157.
31. Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review.*
32. Murray, e. (2013). *Investment and the Weighted Average Cost of Capital.* Washington: University of Minnesota.
33. Myers, S. C., &Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics,* 13(2), 187–221. Available: https://doi.org/10.1016/0304-405X(84)90023-0 (accessed on May 5 2022)
34. Oesch & Schmid, Markus, Product Market Competition, Corporate Governance, and Firm Value: Evidence from the EU Area (June 2013). European Financial Management, Vol. 19, Issue 3, pp. 452-469, 2013, Available at SSRN: https://ssrn.com/abstract=2274563(accessed on 05 November 2020)
35. Ogbulu, O.M. & Emeni, F.K. (2012). Determinants of corporate capital structure in Nigeria, International Journal of Economics and Management Science, 1(10), 81-96. Available Online: http:// managementjournals.org, (accessed on May 8 2022)
36. Olowe, A. R. (1998). Stock splits and the efficiency of the Nigerian stock market. *African Review of Money Finance and Banking*, 97-126
37. Omran, M., & Pointon, J. (2004). The Determinant of the Cost of Capital by Industry within an Emerging Economy; Evidence from Egypt. *International Journal of Business*, 1,2.
38. Pandey IM (1999). Essentials of financial management. Vikas, New Delhi, India.
39. Saarani, A. N., &Shahadan, F. (2013). The determinant of capital structure of SMEs in Malaysia: evidence from enterprise 50 (E50) SMEs. Asian Social Science, 9(6), 64.
40. Sabal, J. (2004), The discount rate in emerging markets: A guide, Journal of Applied Corporate Finance, 16(2-3), 155-166.
41. Kwak, S. G., & Park, S. H. (2019). Normality test in clinical research. *Journal of Rheumatic Diseases, 26*(1), 5-11.
42. Scott J (1977). Bankruptcy, Secured Debt, and Optimal Capital structure, J. Fin., 32: 1-19.
43. Segal, T. (2022). 'What Does a High Weighted Average Cost of Capital (WACC) Signify?'
44. Semenescu, A., & Badarau, C. (2011). Determinants of Cost of Debt and their Influence on the Capital Structure. *Timisoara Journal of Economics.*
45. Serghiescu, L., &V?idean, V. L. (2014). Determinant factors of the capital structure of a firm-an empirical analysis. Procedia Economics and Finance, 15, 1447-1457.
46. Shah, A., & Khan, S. (2007). Determinants of capital structure: Evidence from Pakistani panel data. *International review of business research papers*, *3*(4), 265-282.

47. Syamsudin, S., Setiadi, I., Santoso, D., & Setiany, E. (2021). Capitals structure and investment decisions on firm value with profifitability as a moderator. *Riset Akuntansi Dan Keuangan Indonesia*, *5*(3), 287-295.
48. Tarus, T. K., Nehemiah, C., & Geoffrey, B. (2014). Do profitability, firm size and liquidity affect capital structure? Evidence from Kenyan listed firms.
49. Tashfeen, H., & Liton, C. (2010). Is the Cost of Capital an Important Determinant of Commercial Market Performance of Private Commercial banks in Bangladesh? Las Vegas: ASBBS.
50. Titman, S. and Wessels, R. (1988) The Determinants of Capital Structure Choice. The Journal of Finance, 43, 1-19. Available: http://dx.doi.org/10.1111/j.1540-6261.1988.tb02585.x (accessed on 07 June 2022)
51. Trochim, W. M. (2020). Descriptive statistics: Correlation. *Research Methods Knowledge Base. Retrieved August*, *7*, 2020.