

# Impact of macroeconomic and idiosyncratic uncertainty on firms' financing decisions: Evidence from SADC countries

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## Keywords

Capital Structure, risks, Financing Decisions, SADC.

## Abstract

*Purpose of Study:* The purpose of this study is to investigate the impact of idiosyncratic and macroeconomic risks on financing decision on SADC countries.

*Methodology:* Employing data from the African Financials database, the analysis is conducted over a ten-year period spanning from 2008 - 2019 for 309 companies. Unit Root Fisher Chi-Square Test and Granger Causality test were employed to test for unidirectional and bidirectional relationships cross-sectionally. Pooled Regression Analysis- (Fixed and Random effect) was employed as main topology for panel regression analysis.

*Findings:* The study confirmed that companies become risk averse when there is an increase in idiosyncratic and macroeconomic risk and therefore take less leverage whichever type of financing decision is opted. In other words, when there are high idiosyncratic risks, debt to equity ratio is low. Banking and financial institutions charge a higher risk premium for companies having a high-risk profile. Due to this, the cost of debt financing augments. Therefore, companies employ internal financing and reduce debts due to high bankruptcy risk and costs. This finding is in line with the pecking order theory (Myers and Majluf, 1984). Conversely, a significant positive linkage is reported in Namibia and South Africa. This estimate posits that these companies use more debts during periods of high idiosyncratic risk which corresponds to the trade-off theory.

*Originality:* The study is among one of the pioneering works underpinning the idiosyncratic risk and macroeconomic risk on capital structure and relying on a large number of companies across the SADC region. In this respect, it adds contribution to the existing literature on risks and capital structure to the socio-economic goals of the SADC region.

## 1.0 The Introduction

A theoretical linkage exists between companies' leverage and economic indicators and previous research confirm that capital structure is a substantial part of strategic financial decisions due to its relationship with the economic (microeconomics and macroeconomics) and institutional environment of a specific jurisdiction (Riaz et al. 2014; Toadler et al. 2021).

Different theories of capital structure stipulate various sources of predictions associated with the effect of risk in firms' own business operations and macroeconomic conditions affecting financial decisions on companies at any level. Based on the trade-off theory, it is assumed that higher idiosyncratic risks increase bankruptcy and bankruptcy costs, thus reducing leverage. So, a negative relationship between idiosyncratic risks and leverage is implied. Meanwhile, according to the agency theory, as higher idiosyncratic risks reduce agency debt cost, companies have a tendency to upraise their debt financing, thus revealing a positive association with business uncertainty and leverage (Myers, 1977).

According to Gertler & Hubbard (1993), firms lower the negative effects of idiosyncratic risks, but they cannot overcome systematic and macroeconomic risk exposures completely. Economic indicators drive an economy towards a certain direction and play a crucial role in influencing the firms' choices of leverage (Riaz et al 2014). Therefore, firms prefer equity to debt financing so as to share at least some of the systematic risk with their outside investors when macroeconomic risk is high. While taking the

optimal capital structure decision of the firm, it is important to understand both the magnitude and the stability of the firm's cash flows relative to the fixed charges associated with the use of debt. It is seen that firm cash flow is highly sensitive to systematic risk (highly correlated with macroeconomic volatility), hence, it would not be able to justify higher leverage in its capital structure, as probability of default behaves countercyclical for firms with high response to macroeconomic conditions. Here, a high level of leverage expects an increase in the level of financial distress costs. Hence, a heightened level of macroeconomic uncertainty will consequently lessen leverage.

Empirical evidence proving the negative relationship between idiosyncratic risk and leverage are as follows:- ("Castanias, 1983;Booth et al., 2001;Titman and Wessels, 1988;Rashid, 2012; Wahom, 2015)". Further, evidence reporting negative relationship between macroeconomic risk and leverage include Chen (2017); Sinha (2015); Salim (2019) and Toadler et al. (2021).

The SADC debt market has provided adequate facilities for African corporate. The SADC Protocol on Finance and Investment was implemented in 2010 to foster harmonisation of the financial and investment policies of member States so as to make them consistent with the aims of SADC and ensure that any alterations to financial and investment policies in one member State do not necessitate undesirable adjustments in other member States' investment policies and laws. More precisely, SADC has set itself macroeconomic convergence benchmarks of 3 per cent inflation rate by 2018, a budget balance deficit of 3 per cent, public debt less than 60 per cent of GDP. The SADC and the Committee of Insurance, Securities and Non-Banking Financial Authorities (CISNA) implemented strategies to coordinate the regulatory framework for securities markets across the region. However, continuously rising of public debt leads to increased interest rates, lower credit rating, and increases the odds of a country defaulting on its debt. In the SADC region, debt has become more expensive to service because interest rates are very high. Hence, a large amount of revenue is being channelled towards servicing the debt instead of investing in critical areas of the economy and this leads to poor long-term economic performance. SADC countries must use domestic and regional public leverage management strategies ensuring that public debt does not become a fiscal burden (Political Economy, 2019).

The purpose of the study is to examine the influence of risks on financial decisions on the SADC countries. The objective is to assess the effect of the two types of uncertainties on debt-to-equity ratio to ascertain whether companies prefer debt financing or equity financing.

To the best of the author's knowledge, there is a lack of research studies regarding firm specific and macroeconomic uncertainty on financial decisions in developing countries. Previous studies were performed in developed and developing countries (US, UK, India, Pakistan) namely Byoun (2008), Bahmra et al. (2010), Rashid (2012), Riaz et al. (2014), Sinha (2015), Panda (2015), Venanzi et al. (2017),Toadler et al., (2021) have analyzed the effect of idiosyncratic and macroeconomic conditions on firms' financial decisions. Ultimately, this is one of the first studies investigating the impact of idiosyncratic risks and macroeconomic volatility on financial decisions in the emerging markets particularly the SADC region. As such, the estimates are of direct relevance to those financial researchers, investors, managers and other agents involved in the African capital market. In addition, this research enables financial researchers and investors to assess and determine the cyclical state of economy on different jurisdictions of the African financial economy. Another objective is that it aids to determine any similarities and differences of capital structure's behaviour of companies in developing countries as well as the effect of time- varying macroeconomic risks on financial decisions employing different types of leverage and equity components and different sources of risks. By concentrating on the emerging market, this study brings new contribution to the existing literature (on emerging market or for SADC).

The study is sub-divided as follows. Section 2 provides a clear description of the data and topologies to be employed on the study. Section 3 focuses on the empirical results of the research. Section 4 concludes the study.

## 2. Data and Methodology

This section explains the topology of the research focussed on the impact of idiosyncratic, macroeconomic uncertainty on security issuance decisions on SADC countries. The study is thus based by analyzing the various sectors of the economy namely banking and insurance, manufacturing, ICT,

retailing, financial services, and investment companies listed on the different stock exchange institutions of the following markets: Botswana, Malawi, Mauritius, Namibia, South Africa, Tanzania, Zambia and Zimbabwe over a ten-year period spanning from 2008 to 2019. This study employs both time series model including Principal Component Analysis and GARCH model to test idiosyncratic risks and macroeconomic risks. Moreover, the technique utilized for analysis is pooled regression- fixed and random effects, as adapted by Singh and Bagga (2019).

## 2.1 Population

SADC Countries	Potential Number of Companies	Actual Number of Companies
Botswana	34	17
Malawi	14	11
Mauritius	51	30
Namibia	39	21
South Africa	362	181
Tanzania	25	11
Zambia	24	15
Zimbabwe	64	23
Total	613	309

Table 1 represents the population of the study.

## 2.2 Data

To undertake the investigation, the study constructs an annual panel dataset for the 8 SADC countries using financial information collected from annual reports, handbook, board's managers' reports, companies' websites, African Financials and Datastream database.

## 2.3 Conceptual Framework

Prior to empirical evidence, the conceptual framework of the study has been designed as follows:-

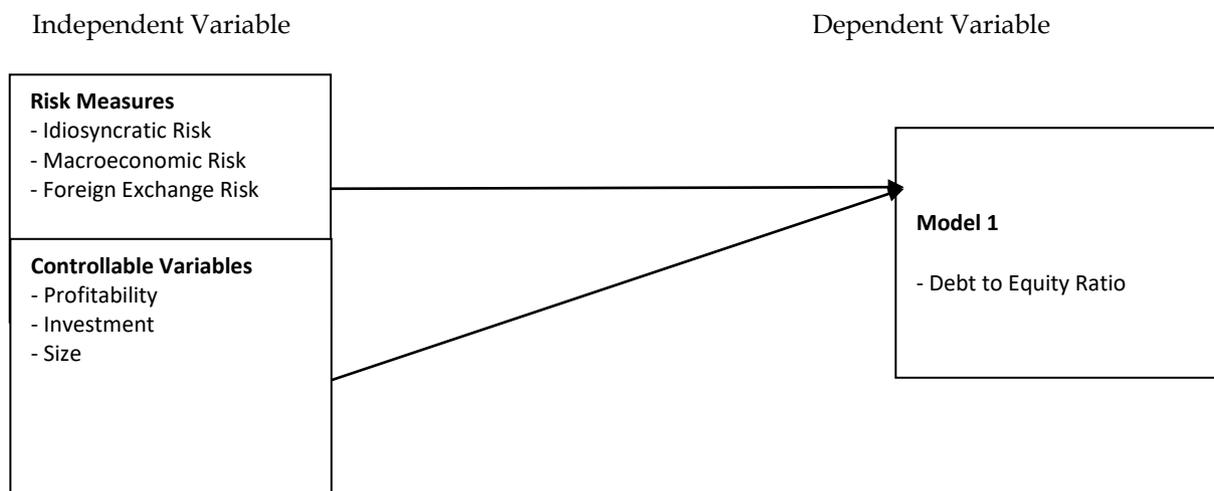


Figure 1 indicates the Conceptual Framework of the study.  
(Author's computation)

Figure 1 reports the conceptual framework of the study. Here, the study examines the impact of risk on financing decisions. Initially, the model is measured by considering debt to equity ratio. Meanwhile, the independent variables involve idiosyncratic risk, macroeconomic risk and foreign exchange risk. The controllable variables are profitability, investment and size.

## 2.4 Main Regression Model -

Referring to the previous empirical studies adopted by Rashid (2012), the analysis on the influence of idiosyncratic and macroeconomic risk on financing decisions has been investigated using a standard leverage model augmented by idiosyncratic and macroeconomic uncertainty to measure debt to equity ratio and net profitability. The main regression model of the study is explained as follows:-

$$DER_{it} = \beta_0 + Z_{it-1} \beta_1 + \beta_2 R_{it-1}^{firm} + \beta_3 R_{it-1}^{macro} + \beta_4 FREX_{it-1} + \beta_5 ROA_{it} + \beta_6 INV_{it} + \beta_7 Size_{it} + \epsilon_{i,t} \quad (1)$$

where:-

$DER_{it}$  stands for Debt Equity Ratio on firm  $i$  at time  $t$ .

$Z$  is a vector factor that denotes one of time- varying lagged leverage.

$R_{it-1}^{firm}$  refers to one of time-varying lag firm- specific risk measure on firm  $i$  at time  $t$ .

$R_{it-1}^{macro}$  denotes to one of time- varying lag macroeconomic risk measure on firm  $i$  at time  $t$ .

$FREX_{it-1}$  refers to one of time- varying lag foreign exchange risk measure on firm  $i$  at time  $t$ .

$ROA_{it}$  is referred to as return on assets-profitability measure on firm  $i$  at time  $t$ .

$INV_{it}$  is investment on fixed tangible assets on firm  $i$  at time  $t$ .

$Size_{it}$  is size of natural logarithm of the total sales on firm  $i$  at time  $t$ .

$\epsilon_{it}$  stands for error term.

### 2.4.1 Research Hypotheses

Based on conceptual framework and previous empirical research, this study designs the main hypotheses which are explained as follows:-

Main Hypothesis

$H_1$ = There is significant relationship between idiosyncratic risk, macroeconomic risk, Foreign Exchange Risk, return on assets, investment and size on Financing Decisions.

Sub- Hypotheses

Model 1

$H_2$ = There is significant relationship between idiosyncratic risk, macroeconomic risk, Foreign Exchange Risk, return on assets, investment and size on Debt Equity Ratio.

## 2.5 Econometric Measures

Unit Root Test

Before proceeding to the panel regression analysis, unit root test is conducted to the data set to examine whether the variables used to measure for reverse causality are stationary. Augmented Dickey Fuller Test is utilized in this study. The two-unit root tests measures are explained as follows:-

(i) Augmented Dickey Fulley Test

The ADF test was developed by Dickey and Fuller in 1984 which is an augmented version of the DF test. The augmented Dickey-Fuller (ADF) statistic, used in the test, should be a negative number. The more negative it is, the stronger the rejection of the hypothesis that there is a unit root at some level of confidence. It is also important that the error term should be correlated. The ADF test is indicated as follows:-

$$\Delta x_t = a_0 + b_0 x_{t-1} + \sum c_0 \Delta x_{t-1} + w t \quad (2)$$

Where:-

- $\Delta$  is the difference operator,  $a_0$ ,  $b_0$ ,  $c_0$  are coefficients to be estimated,
- $x$  is a variable whose unit roots are examined, and  $w$  is the error term.

The null hypothesis for this is  $b_0 = 0$  (i.e., the series is non-stationary and a random walk with drift) against the alternative hypothesis  $b_0 < 0$  (i.e., the series is stationary).

The Fisher-ADF and PP tests allow for individual unit root processes so that pimary vary across cross-sections. The tests are all characterized by the combining of individual unit root tests to derive a panel-specific result. Im et al. (2003) begins by specifying a separate ADF regression for each cross section:

$$\Delta y_{it} = \alpha y_{it-1} + \sum_{j=i}^{Pi} \beta_j \Delta y_{it-1} + X_{it}^i \delta + \varepsilon_{it} \quad (3)$$

$$H_0 : \alpha = 0 \text{ for all } i \text{ while the alternative hypothesis is given by } H_1 \left\{ \begin{array}{l} \alpha_1 = 0 \text{ for } \dots i = 1, 2, N_1 \\ \alpha_1 < 0 \text{ for } \dots = N + 1, N + 2 \dots N \end{array} \right\}$$

## 2. Granger Causality Test

The Granger Causality test Brooks (2008) is employed to test for the presence of reverse causality issues. Moreover, this test is appropriate as the study is dealing with variables of a dynamic financial and economic nature. In terms of econometric terms, it is useful in finding whether one time-series ( $x_t$ ) can be predicted by another time series ( $y_t$ ). The test is carried out by regressing ( $x_t$ ) on its lagged values and the lagged values of ( $y_t$ ). If the results indicate that ( $x_t$ ) can be predicted by ( $y_t$ ), it is said that ( $y_t$ ) Granges causes ( $x_t$ ). However, the Granger causality implies a correlation between the current value of one variable and the past values of others; it does not mean changes in one variable cause changes in another. If there are two series ( $x_t$ ) and ( $y_t$ ), then it is said that ( $x_t$ ) doesn't granger cause ( $y_t$ ). If all lagged coefficient for ( $x_t$ ) are zero, then

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \alpha_2 y_{t-2} + \dots + \beta_1 y_{t-1} + \dots + \beta_p y_{t-p} + \varepsilon_t \quad (5)$$

$$x_t = \beta_0 + \beta_1 x_{t-1} + \beta_2 x_{t-2} + \dots + \beta_p y_{t-p} + u_t \quad (6)$$

Then,  $\beta_1 = \beta_2 = \dots = \beta_p = 0$  that is lagged of  $x_t$  has no effect on  $y_t$ .

If there is reverse causality between risk and capital structure and secondly, capital structure and risk, this study will resort to simultaneously equations models. This means that the both relationships could be bi-directional.

## 3. Fixed Effects and Random Effects

The pooled OLS method is a "form of mathematical regression analysis that finds the line of best fit for a dataset, providing a visual demonstration of the relationship between the data points. The fixed effects model explores the relationships between independent variables and explained variables in separate entities, assuming that companies have their own characteristics that affect the relationships between variables. On the contrary, the random effects model implies random variation across companies, uncorrelated with explanatory variables. The Hausman test reveals the better model between the fixed and random effects. The null and alternate hypotheses for this test are that the random effect and fixed effect are appropriate, respectively".

## 3.0 Results and Discussion

### 3.1 Diagnostic results

#### Unit Roots Test

The study employed Eviews 12 to test for Augmented Dickey Fuller to examine whether the variables used to measure for reverse causality using the Granger causality method are stationary.

## Augmented Dickey- Fuller (ADF) Fisher Chi- Square Test

Country	Level				First Differences			
	Intercept & Trend	Fischer Square	Chi-Value	P-Value	Intercept & Trend	Fischer Square	Chi-Value	P-Value
Botswana	-0.286	32.809	0.002	0.002	-3.500	101.733	0.000	0.000
Malawi	-0.851	42.843	0.000	0.000	-3.199	63.252	0.000	0.000
Mauritius	-0.176	65.137	0.002	0.002	-1.912	335.580	0.000	0.000
Namibia	-0.518	17.766	0.001	0.001	-3.533	39.164	0.000	0.000
South Africa	-0.381	31.051	0.000	0.000	-3.272	176.556	0.000	0.000
Tanzania	-0.228	25.017	0.013	0.013	-2.097	91.888	0.000	0.000
Zambia	-0.447	26.904	0.000	0.000	-2.614	40.883	0.000	0.000
Zimbabwe	-0.161	48.728	0.000	0.000	-2.886	135.054	0.000	0.000

\*MacKinnon (1996) one-sided p-values.

(Author's Computation)

Table 2: ADF Unit Root Test Results of the study.

The Unit roots test conducted on the study employing the ADF root test indicates that the results become non-stationary at the first difference of analysis.

### 3.2 Regression Analysis Results

#### 3.2.1 Regression Analysis Results- Model 1: Capital structure and Debt to Equity Ratio

First of all, the estimates pertain that there is a positive relationship between lagged leverage and debt to equity ratio in Botswana, Mauritius, South Africa and Zambia. This finding indicates companies in these countries take debts on a continuous basis to be able to finance their finance and investment operations.

Secondly, the findings postulate that again that there is a statistically significant and negative association between idiosyncratic risk and debt to equity ratio in Zambia. In other words, when there is high idiosyncratic risk, debt to equity ratio is low. This result makes sense as banking and financial institutions may charge a higher risk premium for companies having a high-risk profile. Due to this, the cost of debt financing may amplify. Therefore, companies prefer to employ internal financing and reduce the level of debts due to high bankruptcy risk and costs. Ultimately, companies prefer to use internal financing or issue equity and retire their outstanding debts. This finding is in line with the pecking order theory (Myers and Majluf, 1984) and Rashid (2012). On the other hand, a statistically and significant positive linkage is reported in Namibia and South Africa. This estimate posits that these companies have a tendency to take on more debts during periods of high idiosyncratic risk which corresponds to the trade-off theory. "It is reported that debt increased by 60% in Namibia and 63.3% in South Africa in 2019 (Trading economics, 2021).

On the other hand, it is seen that there is statistically and significant positive nexus between market risk and debt to equity in Zimbabwe. In this case, when the level of macroeconomic risk is heightened, companies have a tendency to employ more leverage. In short, companies do not finance investment and capital expenditures using equity financing due to the rise in the cost of capital but prefer to employ leverage to carry out their expenditures. "In 2019 Zimbabwe public debt amounted to USD 181,867 million and has expanded to USD 167,408 million since 2018. This amount refers to the debt in 2019 that reached 113.92% of Zimbabwe GDP, a 52.43 percentage point rise from 2018, when it was 61.49% of GDP (Country economy, 2021)". The findings are in conformance with Rashid (2012). Meanwhile, a statistically significant negative relationship is posited in South Africa. During high economic downturns, South African companies might reduce the employment of debts. Botswana, Mauritius and Namibia have positive but insignificant results whereas Malawi, Tanzania and Zambia have negative coefficient, but they are insignificant.

Based on the results gathered, it is observed that Namibia has a positive and statistically relationship between foreign exchange risk and debts to equity ratio. This finding is similar to the second regression. The findings are in line with Purnanandam (2008) who stipulated that companies with tighter financial constraints / higher leverage are more likely to use foreign exchange derivatives for hedging purposes. Moreover, according to Bris and Koshiken (2000), they argued that in terms of debt structure, a positive exposure is expected as currency movements might trigger a raise in leverage during times of currency depreciation. On the other hand, Malawi, Mauritius and Tanzania exhibit an insignificant positive association whereas Botswana, South Africa and Zambia report an insignificant negative relationship.

Moreover, the study reports a statistically significant and negative association between return on assets and debt to equity ratio in Malawi. In short, companies prefer to employ internal financing and diminish the level of debts when there is an improvement or increase in the level of profitability. This finding is in line with the pecking order theory (Myers and Majluf, 1984). Contrarily, Botswana, Mauritius, Zambia and Zimbabwe exhibit an insignificant negative nexus while Namibia, South Africa and Tanzania illustrate an insignificant positive association.

Now, Model 1 (Investments and Debt to equity ratio) mentions that Botswana, Malawi, Namibia, South Africa, Tanzania and Zimbabwe state statistically insignificant negative figures. However, Mauritius is the only country where a statistically significant negative relationship has been observed. This result can be due to that Mauritius, there are many low- growth companies, the higher the level of debts will compel those companies to reduce investments. Recently, Ahn et al. (2006) discovered that the negative relation between leverage and investment in diversified institutions is significantly stronger for high Q segments than for low Q business segments and is significantly stronger for non-core segments than for core segments. As to low-growth leverage will force them to give up investment. Meanwhile, debt can restrict the excessive investment in non-profit programs. Hence, it protects the interest of shareholders, thus strengthening the negative correlation between debt financing and investment behavior. As to the high growth company, higher level of debt can induce the impulse in asset substitution. They invest in high-risk projects in seek of high profits, though there exists risk of bankruptcy, which can restrict the investment behavior to some extent.

Finally, all countries with the exception of South Africa and Zambia have statistically and significant positive nexus between size and debt to equity ratio. "It is stated that more total assets provide the opportunity to the managers of SADC countries that they could include more debt in their capital structure by adding more assets as collateral". According to Ang et al. (1982) postulated that bankruptcy costs are relatively higher for small companies, because large firms indicate more stability and hold more diversified portfolios of activities. This situation supports a positive relationship between firm size and total and long-term debt. Conversely, Botswana, Mauritius and Zimbabwe have an insignificant positive association whereas Malawi, Namibia and Tanzania exhibit an insignificant negative linkage.

Table 3: Regression Analysis Results- Model 1: Capital structure and Debt to Equity Ratio

\*\*\*, \*\*, \* stands for statistical significance at the 1%, 5% and 10%.

REGRESSORS	Bostwana		Malawi		Mauritius		Namibia		South Africa		Tanzania		Zambia		Zimbabwe	
	FE	RE	FE	RE	FE	RE	FE	RE	FE	RE	FE	RE	FE	RE	FE	RE
Constant	0.09	0.07	0.51	0.48	0.33	0.24	0.19	0.14	0.17	0.07	0.43	0.36	0.13	0.05	0.52	0.37
LFINLEV	11.83*	10.7	-7.48	-6.52	30.14***	28.15	-0.83	0.72*	15.67***	13.52	4.09	3.02	256.09*	115.2	13.85	12.52
LEVBETA	-1.94	-1.07	-8.86	-7.32	-3.75	-2.89	1.66**	1.48	1.42***	0.86	6.51E-02	0.08	-34.71*	-26.85	-0.91	-0.76
MRISK	-6.94	-5.27	97.75	82.12	-6.27	-5.21	-13.99	-12.85	-7.67*	-6.89	2.08E+01	0.02	182.94	95.21	148.76**	139.52**
FREX	-64.21	-63.0	3.08	2.07	35.64	33.24	93.65**	90.65	-15.32	10.30	0.78	0.64	-443.99	224.2	0.00	0.00
ROA	-0.05	-0.02	-5.74*	-4.82	-0.15	-0.04	0.11	0.09	0.06	0.03	0.00	0.00	-0.33	-0.29	-0.44	-0.43
INV	-2.69	-1.56	59.95	48.82	-21.96***	-	20.14	-1.72	-1.68	-1.28	-9.19	-	8.03	-0.04	-0.03	-1.28
SIZE	1.61	1.03	-0.56	-0.36	0.85	0.75	-0.46	-0.34	0.61***	0.59	-0.06	-	0.05	36.13**	34.2**	1.49

\*\*\*, \*\*, \* stands for statistical significance at the 1%, 5% and 10%.

(Author's computation)

Table 3.illustrates the regression analysis results: Model 1- Capital Structure and Debt to Equity Ratio.

Table 4: Hausman Test

While working with Panel data, the choice between fixed effect and random effect model has to be made. These techniques help to control time invariant inter-firm heterogeneity. Hausman test is used to choose the suitable model and in cases where the level of significance of the chi-square test is lower than 5%, then fixed effects model has to be applied. Hence this test is conducted to check whether fixed effect model or random effect model is appropriate for this study.

Country	Chi-Square	Model to be opted
Botswana	7.24**	Fixed Effect is appropriate
Malawi	3.26**	
Mauritius	11.96***	
Namibia	7.82*	
South Africa	25.86***	
Tanzania	13.25*	
Zambia	9.61***	
Zimbabwe	6.54**	

Table 4. represents the Hausman test results of the study.

The estimates of the Hausman test with a chi square value of Chi- square of the different countries in Table 4 supported the option of the fixed effect model. The study therefore selects the coefficients of the fixed effect model for further discussions.

Reverse Causality: Capital Structure and Idiosyncratic and Macroeconomic Risk

Table 5: Reverse Causality- Capital Structure and Idiosyncratic, Macroeconomic and Foreign Exchange Risk

Null Hypothesis	Botswana		Malawi		Mauritius		Namibia		South Africa		Tanzania		Zambia		Zimbabwe		
	F-Statistic	Prob.	F-Statistics	Prob.	F-Statistic	Prob.	F-Statistic	Prob.	F-Statistics	Prob.	F-Statistics	Prob.	F-Statistics	Prob.	F-Statistic	Prob.	
BRISK does not Granger Cause	24.21																
FINLEV does not Granger Cause	950	0.000	3.291	0.041	2.013	0.135	0.380	0.684	1.411	0.244	9.185	0.000	3.492	0.033	7.492	0.001	
BRISK does not Granger Cause	0.004				40.43												
FINLEV does not Granger Cause	87	0.995	5.839	0.004	1	0.000	0.026	0.074	1.787	0.168	2.272	0.108	0.531	0.589	0.118	0.888	
MRISK does not Granger Cause									10.67								
FINLEV does not Granger Cause	0.231	0.793	1.858	0.160	0.747	0.475	0.317	0.728	4	0.000	1.976	0.143	5.261	0.006	1.183	0.308	
MRISK does not Granger Cause	0.091	0.912	0.991	0.375	5.767	0.004	0.352	0.704	0.139	0.870	1.309	0.274	0.232	0.793	1.019	0.363	
FREX does not Granger Cause	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FREX does not Granger Cause	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5: Granger Causality Test Estimates of the study.

To investigate reverse causality, Granger causality test was employed using Eviews 12 to determine whether risk Granger causes capital structure, or it is capital structure that Granger causes risks of institutions in SADC countries. Table 5 reported that the F- Statistics are not significant meaning that the null hypothesis of no causality is not rejected. In other words, there is no reported reverse causality in the study.

Based on this, the study is utilizing an instrumental variable (IV) estimation that is System GMM econometric application.

### Conclusion

The rationale of the study was to investigate the impact of idiosyncratic risk and macroeconomic risk on financing decisions on eight countries listed firms from the SADC region. A panel data set of 2738 observations for a time period of 12 years spanning from 2008 to 2019. Different proxies of risk for both idiosyncratic, macroeconomic and foreign exchange risk are employed. The estimates can be summarized as follows:--

In this research, the findings postulate that there is a statistically significant and negative association between idiosyncratic risk and debt to equity ratio in Zambia. In other words, when there is high idiosyncratic risk, debt to equity ratio is low. This result makes sense as banking and financial institutions may charge a higher risk premium for companies having a high-risk profile. Due to this, the cost of debt financing might augment. Therefore, companies prefer to employ internal financing and reduce debts due to high bankruptcy risk and costs. This finding is in line with the pecking order theory (Myers and Majluf, 1984). Conversely, a statistically and significant positive linkage is reported in Namibia and South Africa. This estimate posits that these companies use more debts during periods of high idiosyncratic risk which corresponds to the trade-off theory and asymmetric information theory.

Meanwhile, a statistically and significant positive nexus between market risk and debt to equity in Zimbabwe is reported. In this case, when the level of macroeconomic risk is heightened, companies employ more leverage. In short, companies do not finance investment and capital expenditures using equity financing due to the rise in the cost of capital but prefer to employ leverage to carry out their expenditures. The findings are in conformance with Rashid (2012). Meanwhile, a statistically significant negative relationship is posited in South Africa. During high economic downturns, South African companies might reduce the employment of debts.

Finally, Namibia has a positive and statistically relationship between foreign exchange risk and debts to equity ratio. The findings are in line with Purnanandam (2008) who stipulated that companies with tighter financial constraints / higher leverage utilize foreign exchange derivatives for hedging purposes.

Finally, even though the SADC countries investigated involve eight countries listed on the stock exchange. The study postulated that each respective country has its own capital structure behaviour, which is based according to the market structure, industry, stock market operations, market capitalisation and size of the country. On the other hand, the study vindicates that companies take lower leverage where there is a boost in either idiosyncratic or macroeconomic risk for whichever use of financing method. The estimates support the literature of pecking order theory, trade-off theory.

## Appendix A. Expected Hypothesis Signs

Table 2 reports the expected hypothesis signs for the three models. Firstly, impact of firm risks (accumulated) and macroeconomic risks (GDP) on financial decision considering the effect of Debt to Equity on financial decisions.

Variable	Notation	Model 1 and 2	Predicted Effect	Explanation	References
Dependent					
Debt Equity Ratio		*		N/A	
Net Profitability	New Retained Earnings difference / Book Value of Total Assets	*			Rashid (2012)
Idiosyncratic Risk	Beta on Leverage		Negative	A negative nexus between firm risk and leverage signifies that firms will use less debts in their capital structure.	Rashid (2012) , Baum et al. (2016)
Macroeconomic Risk- GDP	GARCH Model and using PCA	*	Negative	A negative relationship between macroeconomic risk and leverage states that companies tend to utilize less debts in their capital structure.	Rashid (2012) , Baum et al. (2016)
Foreign Exchange Risk	Std. Deviation of monthly changes real effective foreign exchange rate	*	Negative	According to studies such as Sinha (2015), foreign exchange risk is negatively affected by total debt. Therefore, it can be considered that firms that have high foreign exchange risk, they tend to take lower total debt in their capital structure.	Sinha (2015), Khanna (2015), Panda (2015)
Return on Assets	ROA	*	Negative	Myers (1984) found a negative relationship between capital structure and profitability on the basis that successful companies do not need to depend so much on external funding, thus relying on their internal reserves accumulated from past profits.	Myers (1984), Martin et al (2017)
Investment	INV	*	Positive	A positive relationship would mention that an increase in capital investment will lead to an increase in the use of debts as a means of external finance	Titman and Wessels (1988), Rashid (2012),
Size	SIZE	*	Positive	A large-sized company is less likely to become bankrupt, and therefore attracts more debt. Therefore, corporations with more total assets use the higher level of debt in their debt equity mix. More total assets provide the opportunity to the managers that they could include more debt in their capital structure by putting the more assets as collateral.	Lim (2012), Alnajjar (2014)

Table 2 represents Expected hypothesis signs of the study.

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