-RESEARCH ARTICLE-

EFFECT OF DISAGGREGATED COUNTRY RISK SHOCKS ON FINANCING DECISIONS OF THE JSE LISTED FIRMS

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─**Abstract**─

Firms in South Africa and other developing countries are facing a rapid increase in capital cost accompanied by an increase in leverage as a result of operating in uncertain environments, which complicate firms' financing decisions and strategies. This paper examined the impact of rising leverage levels on firm's cost of capital and the effect of country risk shocks on cost of capital and financing decisions among JSE listed firms. A dynamic panel model estimated with two-step system generalised methods of moments (GMM) was used to analyse panel data from 198 listed non-financial firms. The results suggest that the rising debt levels of JSE listed firms are negatively associated with weighted average cost of capital and cost of debt. Cost of equity was found to be an increasing function of firm leverage. High financial risk was found to be associated with an increase in cost of capital, high political risk associated with an increase in cost of equity and weighted average cost of capital (WACC), while an increase in economic risk is

associated with high WACC and cost of debt. The study establishes that disaggregated country risk shocks significantly affect firms financing decisions.

Key Words: Cost of capital, Leverage, Country risk components, GMM

JEL Classification: G10, G32

1. INTRODUCTION

The proponents of the capital structure theory, Modigliani and Miller (1958), assuming a perfect market in a world without taxes, initially argued that the capital structure of a firm is irrelevant in determining the cost of capital of a firm. Subsequent studies (Jensen, 1986; Myers, 2001; Myers & Majluf, 1984) challenged this position based on the existence of market imperfections, asymmetric information and agency costs. The development in financial theory later reveals that leverage lowers the cost of capital due to tax shield brought by debt financing. The global credit research by Moody's (2017) reveals that South African firms have low leverage compared to global standards. This is supported by de Souza (2016), who documents that leverage levels of firms in developing economies are very low and are reported to be almost half of the firms in developed economies. In the South African context, leverage is rising from previous low levels among JSE listed firms.

Developments in capital structure theories reveal that debt financing is cheaper and the tax shield advantage lowers the average cost of capital of a firm and increases firm value (Yuan & Motohashi, 2014). However, in practice, South African firms are experiencing an increase in the overall cost of capital, stagnant investment and decay of value as leverage levels increase. The expectation would be a reduction in cost of capital and an increase in value following increased use of cheaper debt but the cost of capital is reported to be on an uptrend and investment is stagnant among South African firms (Fosu, 2013). This trend leaves many unanswered questions and one of them is the role leverage plays on a firm's cost of financing among South African firms. Alternatively, one could ask whether the development indicates a different phenomenon, which can be explained by the peculiar characteristics of developing economies such as higher risk, sluggish economic growth, poor credit ratings and low financial development. This may be the case for South Africa, which suffers from high levels of corruption, civil unrests (demonstrations and strikes) and high crime (Asiedu, 2006). Above all, the lack of precision on policy and structural reforms is also a concern for investors. In the presence of such uncertainties, lenders may require higher return on their capital and this may influence firms' financing

decisions. Against this backdrop, it is worthwhile to explore South African evidence on the empirical association between cost of capital and capital structure taking into consideration the changing country risk dynamics. The present paper, therefore, examines the effect of political, economic and financial components of country risk shocks on the JSE firms' financing decisions.

2. LITERATURE

The proponents of the capital structure theory, Modigliani and Miller (1958) (M&M), initially assumed a frictionless perfect market and posit that the capital structure of a firm does not affect its weighted average cost of capital (WACC). This means that the cost of capital of a firm is independent of its capital structure. M&Ms argument was based on the fact that as firms introduce cheaper debt in the capital structure, the overall risk increases and shareholders will demand a higher return for their investment and, hence, wiping off any benefits of cheap debt and the firm's WACC will remain unchanged (Aivazian, Ge, & Qiu, 2005). In such a world, M&M argue that the value of a firm sorely depends on its ability to generate income (Antoniou, Guney & Paudyal, 2008). Taking taxes into consideration, Modigliani and Miller (1963) later show that leverage reduces the cost of capital due to the presence of interest tax shield. However, the irrelevance M&M proposition was based on perfect markets, which do not exist in the real world with inevitable factors, such as transaction costs and information asymmetry. Subsequent studies such as Jensen and Meckling (1976) and Myers and Majluf (1984) challenged the M&M irrelevance proposition; as a result, different theories were developed based on the existence of imperfect markets, asymmetric information, agency costs and country risk dynamics.

The trade-off theory puts forth that an optimal capital structure that maximises the value of a firm can be identified and maintained at a level where the WACC is minimum (Myers, 2001). This optimal capital structure is a trade-off between the benefits (tax shield) and costs of debt financing (financial distress) (Bas, Muradoglu & Phylaktis, 2009). Thus, the increase in leverage initially reduces the cost of capital (at this point the benefits of debt outweigh the cost) to a certain point, where any benefits from tax shield will be eroded away by any addition in debt financing (Akhtar, 2005). From the agency cost theory perspective, the interaction of bondholders, managers and shareholders generates friction, which induces under-investment and over-investment incentives (Jensen, 1986). In the context of increasing leverage, Jensen and Meckling (1976) proposed a trade-off between agent costs and benefits (Aivazian et al., 2005). The pecking order theory suggests that when seeking external finance, firms look for ways to minimise the

cost of capital; hence, a preference for internal funds before considering external financing (Myers & Majluf, 1984). The market timing hypothesis argues that financial managers move in and out of financial markets to take advantage of any mispricing in the market to reduce the overall cost of capital; predicting that firms increase debt when it ultimately reduces the overall financing cost.

The capital structure theory sparked a lot of controversy in corporate finance and empirical studies present varying results warranting further investigations. Singh and Nejadmalayeri (2004) found a negative relationship between leverage and cost of capital in French firms, this study showed that French firms were able to minimise the cost of capital by increasing the debt level. Similarly, Narayanasama (2014) found a direct relationship between leverage and cost of capital in a sample of 32 firms analysed with simple correlation analysis. Additionally, a study by Okiro, Aduda and Omoro (2015) found a positive relationship between capital structure and cost of capital for 56 firms listed on the East African Community Securities Exchange.

Contrary to the study that found a direct relationship between capital structure and cost of capital, Sagala (2003) concludes that such a relationship is unique to each firm, in a study of Kenyan firms, and cannot be generalised. This suggests that the change in capital structure does not always affect the cost of capital. For example, a study by Khadka (2006) on 15 Nepalese firms found that the relationship between leverage and cost of capital was not significant. Therefore, there are mixed empirical results on the effect of capital structure on a firm's cost of capital, where some studies found a positive relationship, some a negative and others found no relationship between the two variables. These divergent views by different studies can be explained by the absence of capturing the country risk shocks, which tend to cause shifts in financing decisions of firms. Thus, further analysis, which examines the role of country risk in the relationship between capital structure and cost of capital, is crucial and can shed more light on the dynamics that affect corporate financing decisions.

3. EMPIRICAL APPROACH

3.1. Data, sampling and variables

To ascertain the impact of country risk on capital structure and cost of capital, the study considered all JSE listed firms. Listed firms were selected due to availability of reliable financial data. The final sample constituted 198 firms after excluding financial firms and firms with no data for the post-apartheid sample period (1995 to 2018). Financial firms were excluded from the sample because of their more stringent regulations; therefore, their capital structure form exhibits

regulatory requirements than firm's discretion. Secondary data from firm's financial statements obtained from Bloomberg database were used. Following previous studies by Aivazian et al. (2005), Yuan and Motohashi (2014), capital structure (the combination of debt and equity) was measured as a leverage ratio (ratio of debt to total assets); the higher the leverage ratio, the more debt financing used by such firms. The cost of capital was measured in three different ways. Cost of equity, which reflects the required return on equity holders, cost of debt the required return on lenders and WACC, the required return on company assets. The cost of debt was measured as a ratio of interest payments to debt (Dang, 2011). In line with empirical studies, the capital assets pricing model was used to calculate the required return on equity as follows:

$$k_e = r_f + \beta\left(R_m - r_f\right) \tag{1}$$

Where k_e is cost of equity, r_f is the risk-free rate measured by the return on the short-term government bonds, R_m is the return on the overall market and β is the sensitivity of the stocks returns to the returns of the market. WACC was measured as a weighted average cost of firm financing as follows:

$$WACC = \sum W_i * k_i \tag{2}$$

Where W_i is the weight of financing source i measured in market values and k_i is the cost of financing source i (debt or equity).

Country risk data developed by the ICRG were used. The three risk indices (financial, political and economic risk) were used. The ICRG methodology assesses financial risk index through the stability of exchange rates, international liquidity and the proportion of foreign debts (Cermeño & Suleman, 2014). Financial risk assesses the ability of an economy to pay its obligations. Economic risk evaluates the economic weaknesses and strengths through the economic risk components such as inflation, GDP growth and GDP per capita (Howell, 2011). When economic strength outweighs weaknesses, there is low economic risk (Suleman & Randal, 2016). Political risk measures the economy's political stability. In assessing political risk, the ICRG methodology uses different components including military in politics, corruption, government stability, conflict, democratic accountability, law & order among others (Howell, 2011). Standard variables used in the empirical literature as control variables include asset tangibility, firms with more tangible assets are expected to have a lower financing cost, liquidity where liquid firms are expected to raise capital at a lower cost, sales to control for firm size, where larger firms are expected to enjoy lower borrowing rates (Sengupta & Dasgupta, 2002) and earnings variability measured

by the coefficient of variation of annual earnings estimated as a ratio of standard deviation of earnings divided by its mean.

3.2. Model specification

The cost of capital was expressed as a function of country risk, leverage and control variables, which include assets tangibility, size, earnings variability and liquidity.

$Cost\ of\ capital_{i,t} = (Country\ risk\ componets, leverage, \sum_i^n Control\ variables)$

To examine the impact of country risk and leverage on firms cost of capital, this study considered a dynamic panel model, which captures the effects of previous financing costs on the current cost (Yuan & Motohashi, 2014) and reduces auto correlation that may arise from model misspecification (Arellano & Bond, 1991).

A general panel model takes the following form:

$$y_{i,t} = \alpha_0 + \beta_1 x_{i,t} + \sum_i^j Z_{it}\beta + \varepsilon_{i,t} \tag{3}$$

Where $y_{i,t}$ is the dependent variable for firm i at time t, x_{it} an independent variable and Z_{it} a vector of explanatory variables with j factors (j=1..., 4). $\varepsilon_{i,t} \backsim N(0, \sigma^2{}_\varepsilon)$ random disturbance and assuming $\sigma^2{}_\varepsilon > 0, \in (\varepsilon_{i,t}, \varepsilon_{j,s}) = 0$

Equation 1 was extended to a dynamic panel model which takes the following general form:

$$y_{i,t} = \gamma y_{i,t-1} + \sum_i^j x_{it}\beta + \varepsilon_{i,t}; |\gamma| < 1 \tag{4}$$

Where $y_{i,t-1}$ is the lagged dependent variable. Three different specific models for the three costs of capital measures (WACC, cost of equity and cost of debt) were estimated in the following form:

Model 1:

$$WACC_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \tag{5}$$

Model 2:

$$Ke_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \tag{6}$$

Model 3:

$$Kd_{i,t} = \gamma K_{i,t-1} + \beta L_{i,t} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \tag{7}$$

Where $WACC_{i,t}$ is the weighted average cost of capital, $Ke_{i,t}$ is the cost of equity and $Kd_{i,t}$ is the cost of debt. $L_{i,t}$ is leverage, a ratio of debt to assets. $F_{i,t}$, $EC_{i,t}$, $P_{i,t}$ is financial, economic and political risk respectively. $S_{i,t}$; σ_{EBT}; $AT_{i,t}$ and $LQ_{i,t}$ respectively are firm size, earnings variability, asset tangibility and liquidity. γ; β; ϑ; λ; π; ξ; ψ; ϱ; ϕ are parameters to be estimated.

The study employed the system GMM estimation methodology given that the lagged dependent variable $K_{i,t-1}$ may introduce autocorrelation with error term and dynamic bias. Possible omitted variables, measurement errors and bi-directional relationship may lead to the independent variables being correlated with the error term, giving rise to endogeneity problems. In such conditions, the traditional estimation techniques used in previous studies (Khadka, 2006; Narayanasama, 2014) are inefficient and the GMM technique attests to it being the suitable technique (Roodman, 2006). The system GMM technique is robust in dealing with endogenous variables, serial correlation and heteroscedasticity. The technique increases efficiencies by creating a system of equations through differenced instruments, instrumenting levels equations and levels instruments differenced equations (Blundell & Bond, 1998). The lagged and levels endogenous instruments makes the endogenous variables predetermined and eliminates correlation with the error term. Blundell and Bond (1998) established that GMM is handy in controlling heteroscedasticity, correlation of errors overtime and endogeneity. Through first differencing, equations 3-5 are transformed to

$$\Delta K_{i,t} = \gamma \Delta K_{i,t-1} + \beta \Delta L_{i,t} + \vartheta \Delta F_{i,t} + \lambda \Delta EC_{i,t} + \pi \Delta P_{i,t} + \xi \Delta S_{i,t} + \psi \Delta \sigma_{EBT} + \varrho \Delta AT_{i,t} + \phi \Delta LQ_{i,t} + \varepsilon \tag{8}$$

The firm fixed effect that does not vary over time is removed by differencing. The source of autocorrelation is K_{it-1}, which is controlled by instrumentation with differenced instruments and past levels instruments.

4. EMPIRICAL RESULTS

4.1. Descriptive statistics

The descriptive statistics of sample data show, over the period under study, that JSE listed firm's cost of capital as measured by WACC averaged 9.28 percent,

cost of equity 9.8 percent and cost of debt 6.45 percent. The average cost of capital is comparatively higher than the average cost of capital for US firms, which averaged 7 percent and 6.9 percent for European firms (Angelopoulos et al., 2016). This signifies higher risk, as investors demand a higher return for their capital invested, implying that for JSE listed firms to generate value they must invest in projects with a return in excess of 10 percent on average. The descriptive statistics further show that cost of debt variation is higher than the WACC and cost of equity, as shown by a higher standard deviation of 3.1 percent, indicating unstable borrowing rates in the South African debt market. On average, the ratio of debt to total assets is at 16 percent, indicating that South African firms use leverage conservatively compared to developed economies standards with debt ratios in excess of 40 percent. JSE listed firms finance their assets with more equity than debt. There is higher variation of the debt ratio, as indicated by a higher standard deviation of 13.6 percent relative to mean, which implies lack of consistency and stability in JSE listed firm's financing strategies. Regarding country risk components, the descriptive statistics show that political risk has the lowest risk points, 67.37, indicating higher risk and financial rating has the highest rating, 75 percent (37.75/50), indicating lower risk compared to political and economic risks. Political risk rating has the highest standard deviation, 3.48, implying higher volatility and instability of the political environment in South Africa over the sample period.

4.2. Cost of capital and leverage

Table 1 depicts the regression results of the dynamic panel models on cost of capital, country risk and capital structure. Three models were estimated to examine the impact of increasing leverage levels of the South African firms and country risk dynamics on the cost of capital. The results provide evidence that there is a statistically significant negative relationship between leverage and WACC and cost of debt, implying that firms with high leverage enjoy lower average cost of financing. The findings are inconsistent with the M&M 1958 proposition, which asserts that the cost of capital of a firm is independent of its capital structure. The results are in line with later developments in financial theory that dismissed the M&M irrelevance proposition owing to the non-existence of perfect markets. The trade-off theory argues that WACC initially declines with an increase in leverage due to the use of cheap debt and tax shield advantage (Myers & Majluf, 1984). Thus, a negative relationship between leverage and cost of capital is expected. South African firms leverage levels are increasing but the findings suggest that these firms are still operating at lower leverage than the

optimal level as shown by the inverse relationship between WACC and leverage. Implying that increase of leverage in the JSE firms is not yet detrimental and they still have room to exploit the tax shield advantage.

The results are consistent with Huang (2006) in Chinese firms and Singh and Nejadmalayeri (2004) who found a negative relationship between capital cost and capital structure in French firms. The negative relationship between leverage and cost of debt can be explained by the reduction in financial risk as firms progress through the life cycle, since most firms and the South African economy were categorised with high growth prospects during the sample period.

Table 1: Dynamic panel GMM estimation results

VARIABLES	Description	Model 1 WACC	Model 2 KE	Model 3 KD
L. Dependent	lagged dependent variable	0.539***	0.367***	0.861***
		(0.00489)	(0.0182)	(0.00758)
Leverage	Debt: Total assets	-0.0199***	0.0166***	-0.0216***
		(0.00152)	(0.00322)	(0.00291)
Financial risk	Ability to pay obligations	-0.304***	-0.104***	-0.0972***
		(0.00462)	(0.0285)	(0.0161)
Economic risk	Economic strength/weaknesses	-0.0310***	0.336***	-0.047***
		(0.00383)	(0.0194)	(0.0094)
Political risk	Political stability	-0.0953***	-0.0979***	0.126***
		(0.00292)	(0.0167)	(0.0115)
CVV	Earnings variability	0.0838***	0.00474	0.156***
		(0.00598)	(0.0237)	(0.0353)
Liquidity	Cash ratio	-0.143***	-0.351***	-0.582***
		(0.0409)	(0.0991)	(0.0381)
Sales	Revenue: Total assets	-0.191***	-0.332***	-0.503***
		(0.0195)	(0.105)	(0.0449)
Tangibles	Tangible: Total assets	-0.113***	0.505***	-0.0737***
		(0.00732)	(0.0374)	(0.0250)
Observations		1,620	1,620	1,620
Number of ID		176	176	176
Instruments		138	78	127
AR (2)		0.35	0.28	0.10
Hansen test		0.25	0.51	0.63

*Corrected standard errors in parentheses, The AR (2) tests for autocorrelation and the Hansen test tests for over identification of instruments, *** p<0.01 significant at 1% level, ** p<0.05 significant at 5% level, * p<0.1 significant at 10% level.*

Heavy reliance on equity financing as indicated by low debt to assets ratio also explains the negative relationship. This low leverage may be a result of the increasing cost of debt (high cost of debt in SA). Consistent with M&M (1958) for cost of equity the study found a statistically significant positive relationship between cost of equity and leverage, suggesting that as South African firms are increasing their leverage the cost of equity is also going up. As firms introduce more debt into their capital structure, the present value of financial distress costs increases as there is higher probability of bankruptcy. The higher financial distress costs outweigh all the benefits from tax shield and cheaper debt; hence, higher financial risk (Myers & Majluf, 1984). As financial risk increases, equity holders will demand a higher return for their invested capital to neutralise the additional risk; hence, a positive relationship between cost of equity and leverage. Consistent with dynamic stability, the coefficient of the lagged dependent variable is less than one. The lagged dependent variable is positive and statistically significant. There is a direct relationship between current cost of capital and previous period cost implying that firms with high cost of capital are likely to face more capital cost in the next period. Previous cost of capital is a significant determinant of current cost of capital in JSE listed firms.

4.3. Country risk components and cost of capital

On the impact of country risk components on firms cost of capital, this research found a statistically significant negative relationship between financial risk score and the three different costs of capital (WACC, k_e, k_d). The decrease in financial risk index score (increase in financial risk) at aggregate level results in an increase in the cost of capital at firm level. Financial risk measures the country's ability to pay financial obligations; an increase in financial risk means a reduction in the ability to pay obligations; hence, the cost of capital increases as the ability to pay obligations decreases in an economy. Cost of capital is a return to lenders and investors; as risk increases, lenders will demand a higher return, raising the cost of capital for a firm high (Huang, 2006). Regarding political risk, the study found a statistically significant negative relationship between political risk index score and WACC and cost of equity. The decrease in political risk index score (high political risk) results in an increase in cost of capital, indicating that political instability and turmoil result in an increase in firms cost of capital. During political instability periods there will be higher uncertainty and lenders demand higher return for their capital resulting in increase in the cost of financing. High economic risk (low index score) is also significantly associated with high WACC and cost of debt. As economic strengths are outweighed by weaknesses, there is a

resultant increase in the cost of capital. To stimulate growth in an economy, investment should be kept high; hence, policy makers should reduce country risk, which will then lower the cost of capital for firms. Lower cost of capital makes more investments worthwhile, while firms earn high returns from their investments and invest more.

The study found a significant positive relationship between earnings variability and cost of capital. Firms with unstable and more volatile earnings face higher cost of capital. Volatile earnings signify high risk hence higher capital cost. Consistent with Huang (2006) on firms listed on the New York Stock Exchange and (2004) in French firms, firm size was found to be negatively associated with the cost of capital. Big firms generate more sales and cashflows and are regarded as less risk; hence, they enjoy lower cost of capital (Yuan & Motohashi, 2014). Similarly, assets tangibility and liquidity were found to be negatively associated with the cost of capital. High liquid firms have higher ability to service their obligations, have less risk and face low cost of capital. Firms with more tangible assets provide lucrative collateral for lenders; hence, they attract lower capital cost.

4.4. Country risk and financing decision

To examine the impact of country risk and country risk shocks on financing decisions, the following two models were estimated extending from Equation 4.

Model 4:

$$Lev_{i,t} = \gamma lev_{i,t-1} + \vartheta F_{i,t} + \lambda EC_{i,t} + \pi P_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \qquad (9)$$

Model 5:

$$lev_{i,t} = \gamma lev_{i,t-1} + \vartheta FRC_{i,t} + \lambda ERC_{i,t} + \pi PRC_{i,t} + \xi S_{i,t} + \psi \sigma_{EBT} + \varrho AT_{i,t} + \phi LQ_{i,t} + \varepsilon \qquad (10)$$

Where $lev_{i,t}$ is a ratio of total debt to total assets a proxy for capital structure, $FRC_{i,t}$; $ERC_{i,t}$; $PRC_{i,t}$ are financial, economic and political risk shocks respectively, calculated as the change in risk rating from previous years rating.

Table 2 depicts the estimation results on country risk and firm capital structure. Model 4 shows the impact of financial, political and economic risk ratings on the firm's capital structure. Model 5 is the impact of country risk shocks on the cost of capital. Country risk shocks were calculated as the change in risk rating from period t-1 to period t. As shown in Model 4, there is a statistically significant

relationship between country risk components and the firms leverage ratio. The study provides evidence of a negative relationship between financial risk index and leverage, implying that in periods of lower financial risk (high risk index score) firms use less leverage and more leverage during high financial risk periods. This can be explained by the motive to transfer risk to debt holders (Jensen & Meckling, 1976) as shareholders are reluctant to inject their capital due to uncertainty. Political and economic risk were found to be directly associated with leverage, with a positive relationship, implying that high economic and political index score (low risk) is associated with high leverage. In periods of low risk, lenders are more willing to extend credit; hence, an increase in leverage levels.

Table 2: Dynamic panel data estimation country risk and capital structure

VARIABLES	Definition	MDEL 4 TDTA	MODEL 5 TDTA
L.TDTA		0.666***	0.690***
		(0.00846)	(0.00942)
FR	Financial risk	-0.424***	
		(0.0515)	
PR	Political risk	0.107***	
		(0.0262)	
ER	Economic risk	0.117***	
		(0.0291)	
CVV	Earnings variability	0.515***	0.326***
		(0.0513)	(0.0512)
CASHRATIO	Liquidity	-3.092***	-2.968***
		(0.186)	(0.180)
Sales	sales/total assets	3.883***	3.718***
		(0.187)	(0.173)
Tangibility	Tangible assets/ta	2.040***	1.779***
		(0.0873)	(0.0440)
FRC	Financial risk shock		-0.360***
			(0.0462)
PRC	Political risk shock		0.0196
			(0.0192)
ERC	Economic risk shock		0.318***
			(0.0564)
Observations		1,556	1,556
Number of ID		164	164
AR(2)		0.743	0.697
Hansen		0.656	0.641

Corrected standard errors in parentheses, The AR (2) tests for autocorrelation and the Hansen test tests for over identification of instruments. *** $p<0.01$ *significant at 1% level*, ** $p<0.05$ *significant at 5% level*, * $p<0.1$ *significant at 10% level.*

The study reveals that country risk shocks also affect the firm's capital structure choice. Changes in the country risk affect the firms financing decisions. Financial risk shocks are positively associated with leverage. Changes in financial risk increase debt financing as firms use more debt to transfer risk to debt holders (Jensen & Meckling, 1976). Economic risk shocks are negatively associated with leverage; in periods of high economic risk shocks, JSE firms use less leverage. No statistically significant relationship was found between political risk shocks and firm leverage. This may suggest that JSE firms may not consider political uncertainty in their financing decisions and consequently firms do not adjust their capital structure to mitigate political risk. This is explained by the nature of political shocks that tend to affect the whole country and as a result it becomes expensive for firms to borrow in an environment of political uncertainty. Overall, the effect of country risk components on firms' financing decision provides a plausible explanation for low leverage in the South African firms and other developing economies.

4.5. Model specification tests

The GMM estimator is consistent if there is no second order serial correlation in the residuals of the differenced equations. The study used the Arellano-Bond AR (2) test to test for serial correlation. The AR (2) is more than 5 percent in all five models, suggesting the absence of serial correlation. The Hansen test was used to test for over-identification of moment conditions. In all five models, the Hansen test is more than 5 percent, evidencing correct instruments identification and model specification.

5. CONCLUSION

The study employed dynamic panel data models estimated with two-step system GMM to examine the impact of rising leverage levels of South African firms on cost of capital, disaggregated country risk on cost of capital and country risk shocks on firms financing decisions. The study establishes that the rising leverage levels of JSE listed firms are negatively related with WACC and cost of debt. The negative relationship between leverage and cost of capital suggests that JSE listed firms use leverage conservatively, are still operating below the optimal levels of debt and they still have the capacity to enjoy the tax shield advantage of debt financing. Regarding country risk, the study found that an increase in financial, political and economic risk has a significant negative impact on cost of capital. The results evidence that country risk affects firm's financing decisions but political shocks do not affect firm's financing decisions. These findings reveal that external shocks such as economic, financial and political uncertainties have

bearing implication on firms' financing decisions and can comprise firms' ability to minimise the cost of capital. This suggests country investors should earn a premium for the exposure on these risk factors, which influence company's financing decisions. Policy-makers should therefore create a conducive political, economic and financial environment for firms to attain optimum capital structure. Our findings empathise the need for considering the moderating impact of country risk components in analysing the effect of leverage on cost debt and equity.

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