

EFFECT OF DIFFERENT COMPONENTS OF COUNTRY RISK ON CREDIT EXTENSION IN SOUTH AFRICA

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-Abstract-

There is a growing concern about the impact of country risk rating on financial institutions due to increased political, financial and economic risk. This study utilizes the autoregressive distributed lag (ARDL) model and the Toda–Yamamoto approach of Granger causality test to analyse the long and short run effects of economic, financial and political components of country risk on credit extended to the South African private sector. The results indicate that there is a negative long-run relationship between credit extension and country risk. In the short-run, credit extension is mainly affected by its previous changes, with a limited effect from financial and economic risks. The causality analysis showed that previous changes in country risks do not Granger-cause changes in current credit extension, but that credit extension Granger-causes the economic and financial risks. The study concluded that changes in country risk have a long-term implication on credit extended to the South African private sector.

Key Words: Credit extension, country risk, economic risk, financial risk, political risk, ARDL, South Africa

JEL Classification: G010; G210

1. INTRODUCTION

Country risk ratings are among the most important indicators of a country's financial health and its ability to meet its sovereign debt obligations. The ratings are based on a broad range of criteria that includes economic, financial and political factors (The PRS Group 2017), which have a bearing on the private and public

sectors' ability to attract international capital finance. Improvements in a country's transparency, information control and sovereign risk levels are often associated with increases in capital inflows, and improvements in the extent of financial development and integration of the local financial markets with global capital markets, hence creating stable conditions for credit extension (Kim & Wu, 2008). Predicting the effects of country risk ratings is therefore high on the agenda of practitioners and policymakers. This paper seeks to contribute to the empirical literature on country risk ratings by establishing the direction of causality between country risk and credit extension, and evaluating the short run and long run impact of such a risk.

The effects of credit ratings have significant implications for financial stability and financial market integration. Academic studies have found country risk ratings to have an impact on the international cash flows and cost of capital (Cantor & Packer, 1996; Kaminsky & Schumkler, 2002; Brooks, Faff & Hillier, 2004), financial markets behaviour (Kaminsky & Schumkler, 2002) and financial institution asset allocation decisions (Bofondi, Carpinelli & Sette 2013; Apergis, Payne & Toumas, 2011). In addition, ratings can have a direct impact on the domestic private sector creditworthiness, as the determinants of country risk tend to influence the supply and cost of international capital flows (Reinhart & Rogoff, 2004).

Although the effects of ratings has been studied extensively, particularly in developed economies, the literature examining the effects on the private sector is limited. To fill this gap, the paper explores the interactions between a country's risk rating and private sector credit in the South African context. This study uses the autoregressive distributed lag (ARDL) model and the Toda–Yamamoto approach of Granger causality test to analyse the long- and short-run effects of economic, financial and political components of country risk on credit extended to the South African private sector from 1995 to 2015.

2. LITERATURE REVIEW

Country risk ratings enable investors to make rational decisions, which minimises their risk and increase their profitability. In the literature, sovereign credit ratings have been found to consist of various components of a country's debt history and macroeconomic factors (Cantor & Packer, 1996). A low level of country risk would typically indicate a low probability of default on sovereign debt, with a high risk level indicating a high probability of default. Ratings agencies often determine the ratings based on observations, and current information about a country's economic,

financial and political health (Boot, Milbournand & Schmeits, 2006). Changes in a country's credit ratings typically result in interest rates adjustments, which affect capital flows (Reinhart & Rogoff, 2004; Kim & Wu, 2008). Therefore, credit ratings have the potential to change a country's economic and financial state (Cantor & Packer, 1996; Kaminsky & Schumkler, 2002; Brooks et al., 2004).

Empirical research has generally focused on the influence of country risk ratings on financial markets (Cantor & Packer, 1996; Kaminsky & Schumkler, 2002; Brooks et al., 2004). Cantor & Packer (1996) found that the short-term effects of sovereign credit rating announcements significantly influences the market's perception of sovereign risk. Hence, economic proponents and policy makers have singled out credit rating agencies as one of the contributors to fluctuations in financial markets. Further evidence by Kaminsky & Schumkler (2002) suggests that credit ratings can be procyclical, such that ratings upgrades occur when markets are in an upturn, and downgrades occur when there is a downturn, therefore contributing to economic fluctuations. The impact of ratings changes were also found to be asymmetrical by Brooks et al. (2004), who found that a sovereign rating upgrade had a non-significant effect on abnormal stock returns, whereas rating downgrade effects had a negative and significant impact on domestic stock markets. When sovereign ratings fall, thus alluding to high country risk levels, investors are inclined to move their capital investments from the high-risk countries characterised by political uncertainty, financial instability and economic volatility, to countries with lower country risk (Kaminsky & Schumkler, 2002).

Country risk ratings are an important tool used by domestic and international investors to make profitable investment decisions (Reinhart & Rogoff, 2004; Kim & Wu, 2008). According to Reinhart & Rogoff (2004), sovereign credit ratings have a significant influence on the inflow of capital, particularly for emerging markets. The study found evidence in support of a strong link between political risk and capital flows to developing countries. When investigating the role of sovereign credit ratings on financial market development indicators in emerging countries, Kim & Wu (2008) found that sovereign ratings measures have a short-term effect on measures of financial sector developments and international capital flows. They found a positive relationship between capital inflows and long term sovereign ratings improvements. In contrast, they found an improvement in sovereign ratings in the short term to be detrimental to financial market development and capital inflows.

Governments and domestic financial institutions seek better risk ratings to gain access to international capital markets, where investor preference for rated securities out-weighs their preference for unrated securities (Cantor & Packer, 1996). The ratings assigned by rating agencies are also an important determinant of ratings assigned to domestic governments and their private sectors. Thus, the level of credit extended to the domestic private sector tends to be influenced by changes in a country's risk ratings. Bofondi et al. (2013) examined the causal effect of sovereign rating crisis periods on credit supply, and found that domestic banks tightened their supply of credit following a sovereign crisis and increased the cost of credit more than foreign banks. Apergis et al. (2011) investigated the impact of ratings upgrades and downgrades on a bank's asset classes, profitability, leverage and size over one year and two year periods following ratings changes. The study found that the effects of a rating downgrade were more severe and had long-term effects on banks when compared to upgrades. Furthermore, Apergis et al. (2011) found that lending supply and profitability increased one year following a rating upgrade and reduced following a rating downgrade. Banks have a higher appetite for risk when they believe there is a high probability of recovering the debt and the losses associated with downgrades deter banks from taking on more risk.

Despite the critical link, there is limited empirical evidence establishing the impact of changes in country risk ratings on credit extension to the private sector, specifically in the South African context. This relationship is important, particularly for emerging markets, where domestic banks hold a significant number of government bonds in their books, with defaults having the potential to result in a credit crunch (Borensztein & Panizza, 2008). While the literature provides useful insight into the impact of sovereign credit ratings, it does not however consider the impact of each component of country risk on credit extension to the private sector.

3. METHODOLOGY

3.1. Sample and data description

Time series data of 252 monthly observations from January 1995 to December 2015 was employed for empirical analysis. The sample period coincides with a period in which economic structural changes were introduced, following the democratisation of South Africa in 1994. The variables, used in the analysis, include credit extension to the private sector and three main components of country risk, namely: political, financial, and economic risks (the PRS Group, 2017). Credit extension is measured by the total credit extended to the South African private sector (households and private firms) by all monetary institutions (South African Reserve Bank, SARB, 2017). It mainly includes factors such as mortgage loans, instalment sale credit,

leasing finance, bills discounted and credit cards (Van Der Walt, 1997). The three broad categories of country risk rating consist of 22 indicators, with political risk comprising 12 (with 15 subcomponents), and financial and economic each comprising five (the PRS Group, 2017). The Political Risk index is based on 100 points, Financial and Economic Risk both based on 50 points, with a high index being associated with low risk (Howell, 2011). The description of all variables and abbreviations used in the study are summarised in Table 1.

Table 1. Summary description of the variables

Abbreviation	Variable name	Description	Measurement	Data source
CE	Credit extension	Total credit extended to the private sector	Millions of rand (in real values)	South African Reserve Bank
PR	Political risk	South Africa's Political risk index	Index of 100 points	The PRS Group
ER	Economic Risk	South Africa's Economic risk index	Index of 50 points	The PRS Group
FR	Financial risk	South Africa's Financial risk index	Index of 50 points	The PRS Group

3.2. Models specification

The autoregressive distributed lag (ARDL) model was used to analyse the long- and short-run effects of the economic, financial and political components of country risk on credit extended to the South African private sector. Using the variables listed in Table 1, we express the credit extension function as follows:

$$CE = f(PR, ER, FR) \quad (1)$$

Where PR is political risk index, ER is economic risk index and FR is financial risk index. As the aim of this study was to test both the short- and long-run responses of credit extended to the selected variables, the ARDL model was selected because it uses a single equation to estimate these relationships (Pesaran & Shin, 1998). The ARDL can also be utilised when all variables are I(0), I(1) or a combination of I(0) and I(1) variables (Pesaran, Shin & Smith, 2001). Additionally, the ARDL model permits the use of a different number of optimal lags for each variable (Habanabakize & Muzindutsi, 2016). The following ARDL model was generated from the function in Equation 1.

$$\Delta LCE_t = \alpha_0 + \sum_{j=1}^k \alpha_j \Delta LCE_{t-j} + \sum_{j=0}^k \beta_j \Delta LPR_{t-j} + \sum_{j=0}^k \lambda_j \Delta LER_{t-j} + \sum_{j=0}^k \gamma_j \Delta LFR_{t-j} + \delta_1 LCE_{t-1} + \delta_2 LPR_{t-1} + \delta_3 LER_{t-1} + \delta_4 LFR_{t-1} + u_t \quad (2)$$

Where: LCE is the log of real credit extension; LPR is the log of the political risk index; LER is the log of the economic risk index and FR is the log of financial risk

index. $\alpha_j, \beta_j, \gamma_j, \lambda_i$ and δ_j are the coefficients to be estimated and t refers to the specific time period. α_j and u_t , represent the intercept and the error terms, respectively.

The hypotheses to test for cointegrating relationship between the variables in Equation 2 were set as follows:

- Null hypothesis (H_0) - there is no co-integration: $\delta_1 = \delta_2 = \delta_3 = \delta_4 = 0$
- Alternative hypothesis (H_1)- there is a co-integration: $\delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq 0$

Using Wald F-statistics, an ARDL bounds test was carried out to test the null hypothesis by comparing the estimated F-statistics to the upper and lower bounds critical values from Pesaran et al. (2001). In this study, the estimated F-values were compared to the critical value automatically estimated by E-Views 9. If the calculated F-value was greater than the upper critical value, H_0 would be rejected, and the conclusion would be that a cointegrating relationship exists between the variables. However, if the lower critical value was found to be greater than the estimated F-value, the H_0 would not be rejected, suggesting the absence of cointegration between the variables. If the estimated F-statistics was between the upper and lower critical values, the results would be inconclusive and additional information would be required in order to ascertain the cointegration between the variables (Muzindutsi & Manaliyo, 2016). The presence of cointegration between credit extension and components of political risk would suggest that there is a long-run relationship between these variables, which would require the estimation Error Correction Model (ECM). The ECM equation derived from our ARDL model in Equation (2) is as follows:

$$\Delta LCE_t = \alpha_0 + \sum_{j=1}^k \alpha_j \Delta LCE_{t-j} + \sum_{j=0}^k \beta_j \Delta LPR_{t-j} + \sum_{j=0}^k \lambda_j \Delta LER_{t-j} + \sum_{j=0}^k \gamma_j \Delta LFR_{t-j} + \varphi u_{t-1} + e_t \quad (3)$$

Where u_{t-1} is the error correction term (ECT) and φ is the ECT coefficient that measures the speed of adjustment towards equilibrium.

The literature (Apergis et al. 2011; Bofondi et al., 2013) suggests that there may be a causal link between credit extension and the country risk rating, implying that a causality analysis may be necessary. Furthermore, if two or more time-series are cointegrated, then there must be Granger causality between them, either one-way or in both directions. Thus, if the ARDL model establishes the cointegrating relationship, causality analysis can then be conducted. The ordinal Granger causality test by Granger (1969) assumes that variables are integrated of the same order and may provide invalid results if the variables have a different order of

integration (Toda & Yamamoto, 1995). Thus, the Toda–Yamamoto (T-Y) approach of Granger causality test is used when variables have a different order of integration. This approach minimises the risk of computing incorrect results resulting from disparities in the order of integration and sample size (Mavrotas & Kelly, 2001). The following equations estimated the T-Y test:

$$LCE_t = \alpha_1 + \sum_{j=1}^k \beta_{1j} LCE_{t-j} + \sum_{i=k+1}^{k+dmax} \beta_{1i} LCE_{t-i} + \sum_{j=1}^k \gamma_{1j} LPR_{t-j} + \sum_{i=k+1}^{k+dmax} \gamma_{1i} LPR_{t-i} + \sum_{j=1}^k \delta_{1j} LER_{t-j} + \sum_{i=k+1}^{k+dmax} \delta_{1i} LER_{t-i} + \sum_{j=1}^k \lambda_{1j} LFR_{t-j} + \sum_{i=k+1}^{k+dmax} \lambda_{1i} LFR_{t-i} + e_{1t} \quad (4)$$

$$LPR_t = \alpha_2 + \sum_{j=1}^k \beta_{2j} LCE_{t-j} + \sum_{i=k+1}^{k+dmax} \beta_{2i} LCE_{t-i} + \sum_{j=1}^k \gamma_{2j} LPR_{t-j} + \sum_{i=k+1}^{k+dmax} \gamma_{2i} LPR_{t-i} + \sum_{j=1}^k \delta_{2j} LER_{t-j} + \sum_{i=k+1}^{k+dmax} \delta_{2i} LER_{t-i} + \sum_{j=1}^k \lambda_{2j} LFR_{t-j} + \sum_{i=k+1}^{k+dmax} \lambda_{2i} LFR_{t-i} + e_{2t} \quad (5)$$

$$LER_t = \alpha_3 + \sum_{j=1}^k \beta_{3j} LCE_{t-j} + \sum_{i=k+1}^{k+dmax} \beta_{3i} LCE_{t-i} + \sum_{j=1}^k \gamma_{3j} LPR_{t-j} + \sum_{i=k+1}^{k+dmax} \gamma_{3i} LPR_{t-i} + \sum_{j=1}^k \delta_{3j} LER_{t-j} + \sum_{i=k+1}^{k+dmax} \delta_{3i} LER_{t-i} + \sum_{j=1}^k \lambda_{3j} LFR_{t-j} + \sum_{i=k+1}^{k+dmax} \lambda_{3i} LFR_{t-i} + e_{3t} \quad (6)$$

$$LFR_t = \alpha_4 + \sum_{j=1}^k \beta_{4j} LCE_{t-j} + \sum_{i=k+1}^{k+dmax} \beta_{4i} LCE_{t-i} + \sum_{j=1}^k \gamma_{4j} LPR_{t-j} + \sum_{i=k+1}^{k+dmax} \gamma_{4i} LPR_{t-i} + \sum_{j=1}^k \delta_{4j} LER_{t-j} + \sum_{i=k+1}^{k+dmax} \delta_{4i} LER_{t-i} + \sum_{j=1}^k \lambda_{4j} LFR_{t-j} + \sum_{i=k+1}^{k+dmax} \lambda_{4i} LFR_{t-i} + e_{4t} \quad (7)$$

where *dmax* denotes the maximal order of integration for all variables. In this model, the seemingly unrestricted regression, and the modified Wald (MWALD) test, were used to test the H_0 null hypothesis that the coefficients of the lagged values of each independent variable (in each of equations 4 to 7) are zero, with the H_0 rejection supporting the presence of Granger causality. Before interpreting the results, diagnostic tests for normality, parameter stability, autocorrelation and heteroscedasticity were carried out to ensure the ARDL and T-Y models met the basic econometric assumptions.

4. RESULTS AND DISCUSSION

4.1. Results of unit root and stationarity tests

Table 2 presents the results from unit root testing of the underlying variables, which are based on the Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin test statistic (KPSS) tests. The ADF test tests the H_0 that a variable has unit root against the H_1 that the variable is stationary. The KPSS test tests the H_0 that a variable is stationary against the H_1 that the variable is not stationary.

Table 2: Results of unit root test

Variable	Model	ADF (t-stats)		KPSS (LM values)		Order of integration
		Levels	1st Difference	Levels	1 st Difference	
LCE	Constant	-1.51292	-5.9184 ^{***}	2.0346 ^{***}	0.47817	I(1)
	Trend	-0.94880	-6.08534 ^{***}	0.2766 ^{***}	0.14899	
LER	Constant	-2.70103	-16.529 ^{***}	0.4748 ^{**}	0.04914	I(1)
	Trend	-2.96579	-16.501 ^{***}	0.2003 ^{**}	0.03703	
LFR	Constant	-4.2629 ^{***}	-----	0.1369	-----	I(0)
	Trend	-4.2532 ^{***}	-----	0.1386	-----	
LPR	Constant	-2.3079	-14.068 ^{***}	0.8682 ^{***}	0.06397	I(1)
	Trend	-2.5376	-14.054 ^{***}	0.17308	0.04488	

(***), (**) indicate the rejection of the H_0 at the 1% and 5% level of significance, respectively

Note: A series is stationary if the ADF test rejects the H_0 and the KPSS test does not reject the H_0 .

The results from the ADF test shows that the H_0 , for the three variables (LCE, LER, and PR) cannot be rejected at levels. At first differences, the H_0 for LCE, LER, and PR is rejected, meaning these three variables are integrated of order one. The KPSS test also confirms that these three variables are integrated of order one, I(1), while LFR is integrated of 0, I(0). Therefore, the ARDL model can be used to analyse the data, as none of the variables are integrated of two, I(2). The next step was therefore to use bound co-integration to test for the existence of a long-run relationship between the variables.

4.2. Long-run analysis

The bound co-integration under ARDL was used to test the presence of the long-run relationship, with ARDL (5, 2, 0, 2) being selected based on the Akaike Information criteria. This model was estimated with a trend and intercept, and the results of the bound co-integration displayed in Table 3. The F-statistic is found to be greater than the upper bound value at the 0.05 significance level, implying that the H_0 for no co-integration was rejected. This indicates a long-run relationship between real credit extension and the three components of country risk, suggesting that long-run coefficients should be analysed.

Table 3: Results of ARDL Bounds Test

F-statistic	5.415314	
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
10%	3.47	4.45
5%	4.01	5.07
2.5%	4.52	5.62
1%	5.17	6.36

$$LCR = -12.41 + 3.665LER + 1.729LFR + 1.477LPR + 0.0102@Trend \quad (8)$$

The long-run coefficients in Equation 8 show that all the three components of country risk have a positive effect on real credit extension, with the economic risk index contributing more than other risk indices. In the long-run, when the economic risk index increases by one percent, the real credit extension increases by 3.665 percent. Similarly, a one percent increase in the financial risk index leads to an increase of 1.729 percent in real credit extension. In the long-run, a one percent increase in political risk index results in a 1.477 percent increase in real credit extension. Given that the increase in the risk index implies a decline in country risk, the observed positive long-run relationship suggests that real credit extension increases as country risk decreases. This means that the increase in the country risk level has an adverse effect on the credit extended to the private sector. These findings are similar to those from other studies (Apergis et al., 2011; Bofondi et al., 2013), which found a significant long-term relationship between credit rating and bank lending.

4.3. Short-run relationships

After establishing a long-run relationship, the ECM was estimated to determine the short-run dynamics, with the results in Table 4 showing that ECT is negative and significant at 0.05 significance level. The coefficient of -0.014752 suggests that approximately 1.48 percent of the deviations from equilibrium are eliminated each month. It therefore takes about 67.57 (1/0.0148) months (approximately 5.6 years) to restore the long-run equilibrium in real credit extension, when the components of country risks are considered. This speed of adjustment in the real credit extension is low suggesting that it takes time to restore the disequilibrium caused by changes in country risk. Short-run coefficients show that credit extension is affected by its own lags (lags 2 to 4) and the current changes in the components of the country risk index. However, the effect of lags of the components of country risk index on the real credit extension seems to be negative, suggesting that previous changes in country risk index have a negative effect on current changes in credit extension.

Table 4: ECM results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LCE(-1))	-0.090678	0.063699	-1.423548	0.1559
D(LCE(-2))	0.145948	0.061620	2.368539	0.0187
D(LCE(-3))	0.187476	0.061855	3.030869	0.0027
D(LCE(-4))	-0.154159	0.063354	-2.433308	0.0157

D(LER)	0.025062	0.032229	0.777608	0.4376
D(LER(-1))	-0.067480	0.031779	-2.123440	0.0348
D(LFR)	0.025511	0.014286	1.785765	0.0754
D(LPR)	-0.125560	0.053852	-2.331591	0.0206
D(LPR(-1))	-0.119305	0.053888	-2.213962	0.0278
@TREND	0.000151	0.000072	2.096853	0.0371
ECT	-0.014752	0.006818	-2.163713	0.0315

4.4. Causality between the credit extension and components of country risk

The presence of the cointegrating relationship suggests that there should be at least one causal relationship between real credit extension and the three components of country risk. As we had a combination I(0) and I(1) series, the T-Y Granger causality was used to test for causality between the variables. Using the information criteria three lags were selected and the T-Y model (in equations 4 to 7) was estimated with three lags¹. The results displayed in Table 5, indicate that the lags of the three risk indices can be excluded from the LCE equation (column 2). This suggests that real credit extension is not Granger-caused by the country risk indices. However, real credit extension Granger-causes economic and financial risks as its lags cannot be excluded from the equations of economic and financial risks. There is also a two-way causal relationship between the financial and political risks. These results imply that previous changes in financial and economic risks have no effect on current changes in credit extension, but that previous changes in real credit extension lead to changes in current economic and financial risks. Thus, these results suggest that real credit extension may affect the economic and financial risks in the short-run. This finding differs from that of Apergis et al. (2011), who documented evidence of a short-run impact of risk ratings on bank credit extension but not the other way round. They explain that a ratings downgrade causes banks to reduce lending in the short-run in order to reduce credit risk exposure. Our findings therefore suggest that in the South African context, economic and financial risks are sensitive to short-run changes in credit extension.

¹ The number of lags in T-Y model was selected by the information criteria in VAR system.

Table 5: Results of T-Y Granger causality test (Chi-square and P-values)

Excluded lags	Dependent variable			
	LCE	LER	LFR	LPR
LCE	-----	7.93888 (0.0473)	7.934652 (0.0474)	0.775460 (0.8553)
LER	0.700786 (0.8730)	-----	3.030143 (0.3870)	1.247428 (0.7417)
LFR	5.17713 (0.1593)	4.398492 (0.2215)	-----	19.43726 (0.0002)
LPR	4.851103 (0.1830)	7.084189 (0.0693)	10.54212 (0.0145)	-----

P-values in brackets

4.5. Diagnostic tests

Residual diagnostic tests and stability tests were conducted to check the robustness of our results from the ARDL and T-Y models. Table 6 summarises the results of the diagnostic tests for the estimated ARDL model. The H_0 for no heteroscedasticity and no serial correlation cannot be rejected, indicating that the residuals are homoscedastic and are not autocorrelated. The Ramsey RESET test shows that the model is correctly specified, and the CUSUM and CUSUMSQ graphs indicate that the parameters in the model are stable, implying that the relationship between real credit extension and the components of country risk was consistent throughout the sample period. Thus, the presence of major economic or financial events, such as the 2008 financial crisis, did not affect the consistency of the estimated relationship. The T-Y results also passed all diagnostic tests.

Table 6: Results of diagnostic tests

Test	Null hypothesis (H_0)	P-values	Decision
White Heteroscedasticity Test	No conditional heteroscedasticity	0.4591 (F) 0.4444 (Chi-Square)	Do not reject H_0
Breusch-Godfrey Serial Correlation LM Test	No serial correlation	0.374 (F) 0.3509 (Chi-Square)	Do not reject H_0
Jarque-Bera (JB)	Normality in residuals	0.0975	Do not reject H_0
Ramsey RESET Test	The model is correctly specified	0.2085 (F)	Do not reject H_0
CUSUM	The model is stable at 0.05 significance level.		
CUSUMSQ	The model is stable at 0.05 significance level.		

5. CONCLUSION AND RECOMMENDATIONS

Credit is vital for economic activity as individual households borrow to smooth consumption and purchase assets such as homes. Credit is also pivotal to firms that

often require credit to finance investments or improve their productivity. Thus, credit extension to the domestic private sector plays an important role in promoting an economy by empowering companies and households to realise their investment goals. Such extension of credit requires a sound financial system, which permits credit suppliers to access funds. However, there is a growing concern about the impact of country risk rating on financial institutions due to increased political, financial and economic risks both locally and globally. South Africa has been experiencing increase country risks due economic and political uncertainty, with evidence suggesting that changes in country risks may have severe implications on credit extended to the private sector. This study used the ARDL model and the T-Y approach of Granger-causality test to ascertain whether a relationship exists between credit extension to the South African private sector and the various components of country risk.

Our findings established a long-run relationship between the real credit extension and the components of country risk, where credit extended to the private sector increases as the levels of country risk decrease. Thus implying that economic, financial and political stabilities are crucial for creating a suitable environment for credit extension to households and firms. When comparing the effects of the three main components of country risk, we found that economic risk tends to have a larger long-run effect on credit extended to the private sector. This evidence emphasises the important role of economic certainty in ensuring a sustainable financial system to facilitate credit extension.

The short-run findings revealed that credit extension is mainly affected by its previous changes, with limited effects from financial and economic risks. Our findings showed that previous changes in country risks do not Granger-cause changes in current credit extension, but that credit extension Granger-causes economic and political risks. This suggest that, in the short-run, credit extension does play a role in a country's economic and financial stability. Overall, changes in country risk have a significant implication on credit extended to the South African private sector, as maintaining a good risk grade may assist in creating a favourable lending environment. South African policy makers should therefore strive to maintain a healthy risk grade in order to ensure a stable credit extension in the financial system. Future research can extend the model used in this study to explore how the changes in country risk affect other factors of the private sector, such as the private consumption.

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