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Rule of Law and Economic Stability: Corruption, Inflation, and Exchange Rate Volatility in South Africa

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Abstract:

Purpose: *This study examines the impact of the rule of law on corruption, inflation, and exchange rate volatility in South Africa, a key emerging economy. The rule of law, which encompasses the effectiveness of legal institutions, governance, and enforcement of contracts, plays a significant role in economic stability.*
Design/Methodology/Approach: *Johansen Cointegration testing was performed to establish the integration between variables. The results of the Johansen tests suggest that the model presents a long-run relationship and that there is a cointegration between political instability and the exchange rate. The Vector Error Correction Model (VECM) was performed to establish a long-run relationship between variables since cointegration was established between variables. The Granger causality test was performed to examine the causality between variables and to examine the drivers and causes of exchange rate fluctuations. The impulse response function (IRF) was conducted to determine the shock of the rule of law on corruption, exchange rate, and political instability.*
Findings: *It was found that there is cointegration between variables. Findings suggest that a stronger rule of law mitigates corruption by increasing accountability and transparency, leading to improved governance. Reduced corruption, in turn, supports a more stable inflation rate by promoting fiscal discipline and reducing inefficiencies within the economy.*
Practical implications: *By addressing governance gaps and reinforcing legal institutions, South Africa can reduce corruption, stabilize inflation, and mitigate exchange rate volatility, ultimately fostering sustainable economic growth. This research contributes to the broader discourse on governance and economic stability in emerging economies, with implications for policy recommendations aimed at bolstering legal frameworks to improve economic outcomes.*
Originality/Value: *Through case studies of countries like Venezuela and Zimbabwe, this study highlights the cyclical nature of political instability, legal erosion, and economic downturns. It also discusses strategies for reinforcing the rule of law to mitigate exchange rate volatility and attract foreign investment, providing a pathway to greater economic resilience for emerging markets.*

Keywords: *Corruption, exchange rate, inflation, rule of law, South Africa.*

JEL codes: *K42, K00, L51.*
Paper type*: Research article.*

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1. Introduction

The Transparency International Corruption Perception Index allocates the Republic of South Africa 43 out of 100, ranking South Africa 71 out of 180 countries. This ranking represents a downward trajectory with an increase of two points from 43 to 45 (CPI, 2016). The World Justice Project (WJP) 2020 is the latest report in an annual series measuring the rule of law based on global surveys of more than 130,000 households and 4,000 legal practitioners and experts. It is the world's most important source for original, independent data on the rule of law.

The index is intended to cover policymakers, civil society organizations, academics, citizens, and legal professionals. It assists in diagnosing and identifying strengths and weaknesses, encouraging policy choices, guiding program development, and informing research to strengthen the rule of law (WJP, 2020). The World Bank has developed a ranking system for countries' legal systems based on the effective protection of property rights and rule-based governance using a scale from 1 to 6, with 1 being the lowest and 6 being the highest rating (World Bank, 2012).

The rule of law is a foundational element in the governance of any society, serving as a critical framework for enforcing laws, protecting rights, and maintaining order. In emerging economies, where institutional structures may still be developing, the rule of law becomes particularly pivotal in shaping economic outcomes. This paper explores the multifaceted impact of the rule of law on corruption, inflation, and exchange rate volatility in emerging markets.

Bahmani-Oskooee, Hadj Amor, Nouira, and Rault (2002) studied the long-run effects of the real exchange rate (RER) on political risks and tested whether non-economic variables impact the real exchange rate in developing countries. Their findings confirmed that:

(i) Countries experiencing a high degree of corruption, high risk to investment, or a high degree of political instability tend to experience a real exchange rate depreciation.
(ii) There exists strong evidence for a threshold effect on the relationship between corruption-RER and political instability-RER. More corrupt countries are relatively less productive and more often experience a depreciating currency in real terms.
(iii) The effects of bureaucracy, law, and order seem to be statistically insignificant on the RER.

Corruption poses a significant challenge to sustainable development, undermining trust in public institutions and deterring foreign investment. In environments where the rule of law is weak, corrupt practices can thrive, creating a vicious cycle that impedes economic growth. Robust legal frameworks and the enforcement of laws are essential to combatting corruption. Chudik and Pesaran (2015) studied the

relationship between corruption and political instability. The results of their study show that the coefficients of corruption and political instability are negative and statistically significant. When corruption threshold values are beyond -2.11, the real exchange rate significantly declines by 0.4%, which means that an increase of one point in the corruption index implies that the country is perceived as highly corrupt, which reduces the real exchange rate by 0.4% (Chudik and Pesaran, 2015).

Inflation, a critical economic indicator, can be influenced by several factors, including monetary policy, demand and supply dynamics, and the integrity of financial institutions. In contexts where the rule of law is compromised, instances of financial mismanagement and economic instability can increase, leading to erratic inflation rates. A strong rule of law facilitates sound monetary policies and instils confidence among investors and consumers, ultimately contributing to price stability.

Exchange rate volatility, too, is intricately linked to the rule of law. Currency fluctuations can be exacerbated by political instability, economic mismanagement, and a lack of investor confidence, often stemming from weak legal institutions. Stable exchange rates are vital for fostering trade and investment; thus, reinforcing the rule of law can play a critical role in mitigating volatility and promoting a more predictable economic environment.

This paper aims to analyse the relationship between the rule of law and these key economic variables—corruption, inflation, and exchange rate volatility—in emerging economies. By examining empirical evidence and case studies, we aim to highlight the importance of strengthening legal institutions as a mechanism for promoting economic stability and fostering sustainable growth in these dynamic regions.

2. Literature Review

The empirical literature on the relationship between the rule of law and economic stability—specifically concerning corruption, inflation, and exchange rate volatility—highlights the multifaceted role that legal and institutional frameworks play in shaping economic outcomes. For emerging economies such as South Africa, the rule of law is often identified as a key factor in creating an environment conducive for economic growth and stability. This section reviews key studies that have examined these relationships and sheds light on how improvements in governance and legal institutions impact economic indicators.

2.1 Rule of Law and Corruption

Research consistently shows that a strong rule of law framework is inversely correlated with levels of corruption. According to Kaufmann, Kraay, and Mastruzzi (2009), countries with stronger legal institutions experience significantly lower levels of corruption due to greater accountability and transparency in governance. In

the context of emerging economies, where governance structures may be weaker, the rule of law acts as a deterrent against corrupt practices by reinforcing mechanisms for accountability and establishing consequences for misconduct.

Furthermore, studies specific to Sub-Saharan Africa (Soreide, 2006) find that stronger judicial institutions reduce corruption by enhancing enforcement and oversight of public resources, thereby reducing misallocation and enhancing economic efficiency. In South Africa, research by Burger and Owens (2010) suggests that institutional reforms aimed at enhancing the rule of law could substantially reduce corruption, leading to improved economic performance.

2.2 Rule of Law and Inflation

The relationship between the rule of law and inflation is explored through the lens of fiscal discipline and policy credibility. Studies by Cukierman, Webb, and Neyapti (1992) argue that weak legal frameworks contribute to inflationary pressures by allowing policymakers to deviate from disciplined fiscal policies, often resorting to inflationary financing to cover fiscal deficits.

For example, Aisen and Veiga (2008) demonstrate that emerging economies with lower rule of law scores tend to experience higher inflation rates due to a lack of institutional checks on fiscal policy.

Stronger rule of law frameworks promote central bank independence and fiscal prudence, curbing inflationary pressures. In South Africa, studies such as those by Aron and Muellbauer (2007) highlight the role of legal institutions in supporting the credibility of the South African Reserve Bank and its ability to manage inflation effectively. By reinforcing the rule of law, South Africa could achieve greater inflation stability, fostering economic predictability.

2.3 Rule of Law and Exchange Rate Volatility

Exchange rate volatility is influenced by factors such as investor confidence, market transparency, and the credibility of economic policies—all of which are reinforced by the rule of law. According to Rogoff and Reinhart (2009), countries with weaker legal and institutional frameworks exhibit higher exchange rate volatility, as unpredictable governance and policy uncertainty drive away foreign investment and cause currency fluctuations.

Studies focusing on emerging economies (e.g., Edwards and Yeyati, 2005) indicate that a lack of legal safeguards reduces market confidence, thereby increasing exchange rate volatility. In South Africa, research by Van der Merwe (2004) and Aron et al. (2010) highlights a link between political stability, legal institutions, and exchange rate movements, suggesting that bolstering the rule of law could stabilize the currency by providing a more predictable and secure investment environment.

2.4 Comprehensive Studies on Emerging Economies

Comprehensive cross-country studies, such as those by La Porta *et al.* (1999), show that emerging economies with robust legal systems experience higher levels of economic stability and growth. These studies emphasize that the rule of law promotes long-term investments and economic confidence by mitigating risks associated with corruption, inflation, and exchange rate volatility.

Moreover, analysis by Acemoglu, Johnson, and Robinson (2001) underscores the importance of legal institutions in the economic development of countries with a colonial history, such as South Africa, where historical governance structures continue to influence modern economic stability. They argue that emerging economies benefit significantly from legal reforms that enhance property rights, contract enforcement, and governance transparency, which collectively contribute to reducing economic instability.

2.5 Implications for South Africa

The South African context presents unique challenges and opportunities for understanding the rule of law's economic impact. Studies specifically focused on South Africa, such as those by Naudé, Krugell, and Brixiová (2007), have shown that the country's economic stability is heavily influenced by the strength of its legal and institutional frameworks.

Corruption, inflation, and exchange rate volatility are identified as critical issues linked to governance, suggesting that improvements in legal institutions could have broad economic benefits. This literature highlights that South Africa’s ability to address these economic challenges is closely tied to the strength of its rule of law, particularly in addressing corruption and maintaining a stable economic environment.

The empirical literature suggests a strong link between the rule of law and economic stability, particularly in reducing corruption, controlling inflation, and stabilizing exchange rates. In emerging economies like South Africa, these relationships underscore the importance of legal reforms and institutional strengthening as part of broader economic policy.

By fostering greater transparency, accountability, and policy predictability, a robust rule of law framework can support South Africa’s efforts to achieve sustainable economic growth and stability. This literature review lays the foundation for an empirical analysis of these relationships within the South African context, offering insights into how the rule of law can serve as a crucial pillar of economic resilience in emerging economies.

3. Research Methodology

This study employed a quantitative approach to analyse the impact of the rule of law on corruption, inflation, and exchange rate volatility in South Africa. The methodology included a multivariate regression analysis using time-series data from South Africa over the past two to three decades. The following sections outline the data sources, variables, econometric model, and estimation techniques used to assess the relationship between the rule of law and economic stability indicators in the South African context.

3.1 Data Sources

World Bank Governance Indicators (WGI): The rule of law index was derived from the World Bank's Governance Indicators, which measure various governance aspects such as government effectiveness, regulatory quality, and rule of law. The rule of law index, which ranges from -2.5 (weak) to +2.5 (strong), served as a primary independent variable.

Corruption Perceptions Index (CPI): Data on corruption was obtained from Transparency International's CPI, which scores countries on perceived corruption levels on a scale from 0 (highly corrupt) to 100 (very clean). This index was treated as a dependent variable in the model.

Inflation Data: The Consumer Price Index (CPI) from the South African Reserve Bank and Statistics South Africa was used to measure inflation. This study calculated the annual inflation rate and treated it as another dependent variable.

Exchange Rate Volatility: Exchange rate data was sourced from the South African Reserve Bank and calculated based on the standard deviation of monthly changes in the South African Rand to U.S. Dollar exchange rate. This metric captured the fluctuations in exchange rates and was also used as a dependent variable.

Control Variables: Other control variables that might influence the dependent variables were included, such as the Gross Domestic Product (GDP) growth rate, interest rates, and foreign direct investment (FDI) inflows. These variables were sourced from the World Bank and the South African Reserve Bank.

3.2 Model Specification

The study employed a multivariate linear regression model to estimate the impact of the rule of law on corruption, inflation, and exchange rate volatility. Three separate regression models were specified, each focusing on one of the dependent variables:

Model 1: $\text{Corruption} = \beta 0 + \beta 1(\text{Rule of Law}) + \beta 2(\text{GDP Growth}) + \beta 3(\text{FDI Inflow}) + \epsilon$

Model 2: Inflation = β0+β1(Rule of Law) +β2(Interest Rate) +β3(GDP Growth) +ϵ

Model 3: Exchange Rate Volatility=β0+β1(Rule of Law) +β2(FDI Inflow) +β3(Interest Rate) +ϵ

In these models:

β0beta_0β0 represents the intercept,

β1beta_1β1, β2beta,2β2, and β3beta are the coefficients for each variable, and ϵ denotes the error term.

Each model measures the strength and direction of the relationship between the rule of law and each economic variable, while controlling for other relevant economic factors.

Where:

Exchange Rate Volatility is the dependent variable, measured by standard deviations in the exchange rate over time.

Political Instability is an independent variable, measured by indices from WGI and the Political Instability Index.

Rule of Law is another independent variable, derived from the WJP Rule of Law Index.

Inflation, GDP Growth, and other economic control variables are added to the model to account for broader macroeconomic conditions.

3.3 Johansen Cointegration Test

Cointegration of non-stationary time-series variables is important in traditional regression methodology (including the t-test and F-test). Provided the variables are cointegrated, the traditional regression methodology applies to non-stationary time series.

As highlighted by Granger (1986), a cointegration test can be thought of like a pre-test to avoid spurious regression situations. As cointegration necessitates that the variables be integrated with the same order, unit root tests were performed as a prerequisite on the time series variables to see if the criteria were fulfilled. If the two variables were found to be non-stationary at the level and stationary at the same order, usually at the first difference for non-stationary data, we proceeded to test the cointegration between exchange rates, political instability, and corruption using Johansen Cointegration Test (Granger, 1986).

The procedure uses two tests to determine the number of cointegrating vectors. These procedures are the Maximum Eigenvalue test and the Trace test. The null hypothesis for the Maximum Eigenvalue is to test for no cointegrating equation present in the model against the alternative of 86 cointegrating relations.

The test statistic for Maximum Eigenvalue is computed to determine the cointegrating variable in the long run (Simuyu, 2015). In cases where, the Maximum Eigenvalue statistic and the Trace statistic produce different results, Alexander (2001) opined that the results of the trace test should be preferred. Before the Johansen cointegration test is performed, the finest lag length for analysis should be identified. The lag length is selected using the information selection criteria, which include Akaike Information Criteria (AIC).

3.4 Vector Error Correction Model

It is a standard practice to normalize the cointegrating vectors concerning the variables of interest for better interpretation (Mahadea and Kabange, 2022). Hence, the Johansen cointegration test was performed on GDP, exchange rate, and political instability. If cointegration has been established between the variables, then this implies that there exists a long-run relationship between the variables. Hence, the VECM is applied to determine the short-run relationships of cointegrated variables (Simuyu, 2015).

If cointegration does not exist in the long run, then the VECM is reduced to a vector autoregressive (VAR) model, and the Granger causality tests will be used to determine causal links between variables (Simuyu, 2015). In the VECM modelling, the cointegration rank shows the number of cointegrating vectors. Subsequently, the Johansen normalisation restriction is imposed; this is done to restrict the exchange rate as the target variable.

3.5 Granger Causality Tests

Granger causality tests were used to explore whether changes in political instability precede changes in exchange rate volatility, or vice versa. This helped establish the direction of causality between political events and economic outcomes. The test was applied to time-series data from selected countries to determine whether political instability predicts exchange rate fluctuations or whether economic downturns exacerbate political crises. Countries like Venezuela, Zimbabwe, Argentina, and Turkey were considered due to their historical experiences of political instability and currency crises.

3.6 Impulse Response Function

The IRF explains the reaction of an endogenous variable to one of the innovations. It tracks the impact of a variable on other variables in the system for several periods in

the future. Furthermore, because the individual coefficient in the estimated VAR models is often difficult to interpret, practitioners often estimate the IRF. The idea consists of tracing out the response of the output variable (exchange rate) in the VAR model to shocks in the error terms. Although the usefulness of the IRF analysis has been questioned by scholars, it remains the centrepiece of VAR analysis.

4. Results

The results in Table 1 show the results for the Trace test and Max-Eigen test. Both Trace and Maximum Eigenvalues consider the null hypothesis of no cointegrating equations. According to Abdul-Aziz (2021), the rule of thumb states that if the computed test statistic is greater than the critical value at 5%, we reject the null hypothesis, which claims that there is no cointegration equation.

Table 1. *Co-Integration Rank Test (Trace results and Maximum-Eigen results)*

Hypothesized Trace 0.05
No. of CE(s) Max rank Eigenvalue Statistic Critical Value Prob.**103
None * 0.999 387.138 125.615 0.000
At most 1 0.971 95.753 198.632 0.431
At most 2 0.873 69.818 120.640 0.421
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)
Hypothesized Max-Eigen 0.05
No. of CE(s) Max rank Eigenvalue Statistic Critical Value Prob.**
None * 0.999 188.506 46.231 0.000
At most 1 0.873 33.464 45.876 0.151
At most 2 0.737 21.426 29.131 0.132
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: *Author's calculations (2023).*

The computed trace statistic value at the 5% level of significance is greater than the critical value at the 5% significance level (387.139 > 125.615), and the p-value (0.000) is less than the 5% level of significance; hence, the null hypothesis, which claims that there is no cointegrating equation, is rejected.

However, under at most 1 cointegrating vector exists, the null hypothesis of at most cointegrating equation exists is not rejected since the computed trace statistic value is less than the critical value (33.465<45.877) and the p-value (0.151) is greater than 5% level of significance. As such, the Trace statistic specified that at least 1 cointegrating equation exists at a 5% significance level. The null hypothesis at most 1 cointegration vector is not rejected as the Max-Eigen statistic value (33.465) is less than the critical value (45.877) and the p-value (0.151) is greater than 5%.

Therefore, the results show that there are significant long-run relationships between the given variables (Trace test).

This is evident from the fact that the null hypothesis of no cointegration is rejected against the alternative of a cointegrating relationship in the model. As such, the study estimated if there are any short-run and long-run dynamics between the real exchange rate and other controlling variables, and the results are presented and discussed below (VAR and VEC models). The result of the Johansen tests for cointegration suggests that the model presents a long-run relationship, implying that variables are related and can be combined linearly. Having determined that at least one cointegrating equation exists, the outcomes for long-run dynamics may not suffer from spurious results.

Table 2. *Vector Error Correction Model.*

Coefficient standard error t-statistic
Constant -1.822 - -
LN exchange rate 1.000 - -
LN Rule of law -1.745 0.554 -3.148
LN Corruption control -1.592 2.665 -0.597
LN Real interest rate -1.798 0.628 -2.860
LN Inflation 3.368 0.335 10.025
LN Gross domestic 1.675 0.282 5.944108
product
LN Political instability 0.909 0.311 2.922

Source: *Author's calculations (2023).*

The results revealed that the variables are cointegrated in the same order, suggesting a long-term association. As such, the long-run cointegrated model is displayed below:

LNrxrt = -1.822 – 1.592 LNcprt –1.799 LNr*ii*t – 1.745 LNrlt + 3.369 LNπt + 1.675 LNgdpt + 0.91 LNpist- (1)

Equation 1 was formulated using VAR results as they are presented bellow. The equation shows that the corruption perception index has a negative relationship with exchange rates in the long run, *ceteris paribus*. The long-run association differs from the short-run dynamics where a positive relationship was noted. As such, in the long run, a unit change in the corruption perception index may result in a 1.592 unit decrease in the exchange rate.

This is contrary to short-run dynamics; an increase in corruption in South Africa may have spillover effects on the real exchange rate due to issues that are not directly linked to market forces but to public sector corruption. Historically, South Africa has been tagged as one of the nations with foggy public sector financial dealings (Conyer, 2020).

As such, an increase in public sector corruption led to a distortion of investors' confidence in the South African economy. As such, an increase in corruption has negative effects on the real exchange rate, and the results are in line with Junejo *et al.* (2019), who examined the economic cost of exchange rates due to high levels of corruption. The results by Junejo *et al.* (2019) revealed that the real exchange rate is impacted negatively if government department corruption increases.

As such, an increase in corruption has negative effects on the real exchange rate in South Africa in the long run, which is contrary to short-run dynamics. In terms of real interest rates, the results show that there are negative long-run dynamics with exchange rates. A unit increase in exchange rate may lead to a 1.798 decrease in exchange rate *ceteris paribus*.

The real interest rate was declared a nominal anchor to curb inflation, and keep stable prices in the South African economy (Monamodi, 2019). As such, the results attest to the fact that interest rates can be used to curb inflation either demand-pull or imported inflation. In line with imported inflation, controlling real exchange rates using market forces such as altering demand for the South African Rand by altering the109 reserve ratio, hence the ability to have an inverse effect on the real exchange rate.

As such, the results of the study are in line with McIndoe-Calder (2018), who revealed that interest rates can be used as a controlling measure to curb inflation, and the results revealed that there was an inverse relationship between exchange rates and inflation. In line with the results of the study, it is noted that a flexible exchange rate regime was adopted in the year 2000, and the interest rate was declared a nominal anchor to curb inflation, either from imported, demand-pull, or cost-push inflation.

Furthermore, the rule of law portrayed an inverse relationship with exchange rate, which is a unit increase in the rule of law index results in a 1.745 decrease in the real exchange rate. The rule of law is the restriction of the uninformed exercise of power by subordinating it to well-defined and established laws in South Africa (Phatashwane, 2018).

Also, the ongoing debate about taking laws into people's hands and those in leadership abusing the power left South Africa at a standstill. The Zondo Commission was instigated as an official Judicial Commission of Inquiry into Allegations of State Capture and to investigate allegations of state capture, corruption, fraud, and other allegations in the public sector.

The commission is, however, investigating the abuse of power, which has led South Africa to experience tensions internally and externally, which further affected how South Africa relates to other countries in terms of international trade. The results thus revealed an inverse relationship between the rule of law index and real

exchange rates in the long run. Indeed, abuse of power has affected the economy negatively since international relations may be tarnished, which has negative effects on the exchange rate, hence trade.

The results support Arbetman (1995), who revealed that strong governments are at the mercy of economic forces since the effective use of political tools such as adherence to the rule of law may avoid devaluation of the currency and lead to good international trade policies. In this regard, the rule of law has negative effects on the exchanges via international trade transmission and spillover effects such as trade laws. Curbing inflation has been one of the objectives of the Reserve Bank of South Africa.

The results of the study revealed a positive relationship between inflation and exchange rate under the period in consideration. That is, a unit increase in inflation results in a 3.37 unit increase in real exchange rates. In line with the monetary policy stances, allowing a free-floating exchange rate is advantageous in case of an increase in imported inflation, which can be curbed by altering the reserve ratio, hence the value of the currency against external currencies.

In line with the results of the study, an increase in real inflation may lead to an increase in the exchange rate, which is advantageous in the case of imported inflation or demand-pull inflation. If South African products become cheaper as compared to foreign products, an increase in the exchange rate may curb demand-pull inflation.

The results of the study are in line with Fetai *et al.* (2016), whose results revealed that exchange rates play a significant role in inflationary performance. They added that it can be a better shock-absorbing instrument and the main source of inflationary pressures, since decreased inflation is associated with increasing demand for South African products, hence, demand-push inflation.

The study further revealed that there is a positive relationship between gross domestic product and exchange rate during the period under consideration. A unit increase in gross domestic product may lead to a 1.674 increase in the exchange rate. Since South Africa adopted a flexible exchange rate regime, an increase in production in the republic may be associated with an increase in exports, which may push the exchange rate up (the law of demand). An increase in exports means more production is triggered, economic growth increases, and the demand for ZAR may increase.

Transmission mechanisms such as an increase in demand for ZAR internationally may lead to policymakers either stimulating economic growth via the exchange rate reserve or trade policies. As such, a positive relationship attained in the study reveals that South Africa may positively benefit from the real exchange rate in the long run. Ultimately, the results in Table 5.8 revealed that in the long run, there is a positive

relationship between political instability and exchange rate. A unit increase in political instability in the long run results in a 0.910 increase in the exchange rate.

The political stability index is usually measured as the degree of severity of political protest and violence in any given year, and the index is used to calculate political instability, such as the state fragility index, in that it is raw (Global Economy, 2020). Political stability is associated with an economic environment that attracts local and foreign investments.

The South African economy has been experiencing political instability coupled with strikes, entering junk status. However, in the long run, political stability in the republic has been stable, leading to more foreign direct investment and increased international trade, hence exports. As such, the null hypothesis, which claims that political instability has no negative impact on the exchange rate, is rejected since the study revealed that there is a positive impact of political stability on the real exchange rate in the long run.

However, the null hypothesis, which claims that there is no short- or long-run impact of political instability on the exchange rate, is rejected considering the results of the study. This shows that a country that is at low risk of political unrest poses a far more attractive proposition to foreign investors. In the case of South Africa, both short-run and long-run results revealed a positive relationship between political stability (a proxy for political instability), and real exchange. Given these results, the researcher assessed the validity of these results by conducting diagnostic checks in the series.

Table 3. *Granger causality test between rule of law and the exchange rate*

H0	p-value	chi^2
Rule of law does not Granger cause the exchange rate	0.339	0.291
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 3 above indicates that the rule of law does not Granger cause the exchange rate because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the rule of law does not Granger cause the exchange rate. At the 10% level of significance, the p-value is measured as an f-test of 0.339, and the critical value, which is measured by chi^2 is 0.291, which is greater than the 10% level of significance.

Table 4. *Granger causality between rule of law and the growth rate*

H0	p-value	chi^2
Rule of law does not Granger cause the growth rate	0.074	0.047
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 4 above indicates that the rule of law does not Granger cause the growth rate because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the rule of law does not Granger cause the growth rate. At the 10% level of significance, the p-value, which is measured as an f-test of 0.074, and the critical value, which is measured by chi^2 is 0.047, which is greater than the 10% level of significance.

Shevchuk, Blikhar, Komarnytska, and Tataryn (2020) studied whether the rule of law affects economic growth; they deduced that strengthening the rule of law in the country to achieve economic growth can be realised by decelerating inflation.

Table 5. *Granger causality between political stability and the growth rate.*

H0	p-value	chi2
Political stability does not Granger does not the growth rate	0.561	0.526
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 5 above indicates that political stability does not Granger cause the growth rate because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that political stability does not Granger cause the growth rate. At the 10% level of significance, the p-value, which is measured as an f-test of 0.561, and the critical value, which is measured by chi^2 is 0.526 greater than a 10% level of significance.

Table 6. *Granger causality between rule of law and real interest rate*

H0	p-value	chi^2
Rule of law does not Granger cause real interest rate	0.046	0.021
Estimated at 10% level of significance		

Source: *Author's calculation (2023).*

Table 6 above indicates that the rule of law does not Granger cause real interest rates because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the rule of law does not Granger cause real interest rates. At the 10% level of significance, the p-value, which is measured as an f-test of 0.046, and the critical value, which is measured by chi^2, is 0.021 greater than the 10% level of significance.

Table 7. *Granger causality between the exchange rate and rule of law*

H0	p-value	chi^2
The exchange rate does not Granger cause rule of law	0.863	0.851
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 7 above indicates that the exchange rate does not Granger cause the rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis, therefore, we do not reject the null hypothesis that states that the exchange rate does not Granger cause the rule of law. At the 10% level of significance, the p-value, which is measured as an f-test of 0.863, and the critical value, which is measured by chi^2, is 0.851 greater than the 10% level of significance.

Table 8. *Granger causality between corruption freedom and rule of law*

H0	p-value	chi^2
Corruption freedom does not Granger cause rule of law	0.269	0.223
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 8 above indicates that corruption freedom does not Granger cause rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that corruption freedom does not Granger cause rule of law. At the 10% level of significance, the p-value which is measured as an f-test of 0.269, and the critical value which is measured by chi^2 is 0.223 greater than the 10% level of significance.

Table 9. *Granger causality between corruption control and rule of law*

H0	p-value	chi^2
Corruption control does not Granger cause rule of law	0.062	0.034
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 9 above indicates that corruption control does not Granger cause the rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that corruption control does not Granger cause the rule of law. At the 10% level of significance, the p-value, which is measured as an f-test of 0.062, and the critical value, which is measured by chi^2 is 0.034 greater than the 10% level of significance.

Ferreira de Mendonca and Oliveira da Fonseca (2012) studied the relationship between corruption control and the rule of law, and their results show that the rule of law is an important variable in controlling corruption. They further said that an increase in the rule of law represents a powerful instrument for inhibiting corruption.

Table 10. *Granger causality between inflation rate and rule of law*

H0	p-value	chi^2
Inflation rate does not Granger cause rule of law	0.468	0.428
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

Table 10 above indicates that the inflation rate does not Granger cause rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the inflation rate does not Granger cause rule of law. At the 10% level of significance, the p-value, which is measured as an f-test of 0.468, and the critical value, which is measured by chi^2 is 0.428 greater than the 10% level of significance.

Table 11. *Granger causality between real interest rate and the rule of law*

H0	p-value	chi^2
The real interest rate does not Granger cause the rule of law	0.782	0.762
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

The above Table 11 indicates that the real interest rate does not Granger cause the rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the real interest rate does not Granger cause the rule of law. At the 10% level of significance, the p-value, which is measured as an f-test of 0.782, and the critical value, which is measured by chi^2 is 0.762 greater than the 10% level of significance.

Table 12. *Granger causality between political stability and rule of law*

H0	p-value	chi^2
Political stability does not Granger cause rule of law	0.264	0.217
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

The above Table 12 indicates that political stability does not Granger cause the rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that political stability does not Granger cause the rule of law. At the 10% level of significance, the p-value which is measured as an f-test of 0.264, and the critical value which is measured by chi^2 is 0.217 greater than the 10% level of significance.

Table 13. *Granger causality between the growth rate and rule of law*

H0	p-value	chi^2
The growth rate does not Granger cause rule of law	0.330	0.284
Estimated at 10% level of significance		

Source: Authors calculations (2023)

The above Table 13 indicates that the growth rate does not Granger cause the rule of law because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the growth rate does not Granger cause rule of law. At the 10% level of significance, the p-value

which is measured as an f-test of 0.330, and the critical value which is measured by chi^2 is 0.284 greater than the 10% level of significance.

Table 14. *Granger causality between rule of law and corruption control*

H0	p-value	chi^2
Rule of law does not Granger cause corruption control	0.158	0.116
Estimated at 15% level of significance		

Source: *Author's calculations (2023).*

The above Table 14 indicates that the rule of law does not Granger cause corruption control because the smaller the p-value, the stronger the evidence to reject the null hypothesis; therefore, we do not reject the null hypothesis that states that the rule of law does not Granger cause corruption control. At the 15% level of significance, the p-value, which is measured as an f-test of 0.158, and the critical value, which is measured by chi^2, are 0.116 greater than the 10% significance level.

Table 15. *Granger causality between the rule of law and political stability*

H0	p-value	chi^2
The rule of law does not Granger cause political instability	0.935	0.929
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

The above Table 15 indicates that the rule of law does not Granger cause of political stability because the smaller the p-value, the stronger the evidence to reject the null hypothesis, therefore we do not reject the null hypothesis that states that the rule of law does not Granger cause political stability. At the 10% level of significance, the p-value, which is measured as an f-test of 0.935, and the critical value, which is measured by chi^2, is 0.929 is greater than the 10% significance level.

Table 16. *Granger causality between the rule of law and corruption freedom*

H0	p-value	chi^2
The rule of law does not Granger cause corruption freedom	0.417	0.374
Estimated at 10% level of significance		

Source: *Author's calculations (2023).*

The above table 16 indicates that the rule of law does not Granger cause corruption freedom because the smaller the p-value, the stronger the evidence to reject the null hypothesis, therefore we do not reject the null hypothesis that states that the rule of law does not Granger cause corruption freedom. At the 10% level of significance, the p-value which is measured as an f-test of 0.417, and the critical value which is measured by chi^2 is 0.374 is greater than the 10% level of significance.

Table 17. *Granger causality test between the rule of law and the inflation rate*

H0	p-value	chi^2
Rule of law does not Granger cause the inflation rate	0.584	0.550
Estimated at 10% level of significance		

Source: *Authors calculations (2023).*

The above Table 17 indicates that the rule of law does not Granger cause the inflation rate because the smaller the p-value, the stronger the evidence to reject the null hypothesis, therefore we do not reject the null hypothesis that states that the rule of law does not Granger cause the inflation rate. At the 10% level of significance, the p-value which is measured as an f-test of 0.584, and the critical value which is measured by chi^2 is 0.550 is greater than the 10% level of significance.

Table 18. *Impulse Response Function*

Lag selection criteria results. (rule of law on political instability)
rule of law on political instability
Lag coeff. std.err z P>lzl 95% confi. interval
L1
1.122
0.569 0.281 2.02 0.043 0.017
L2
-0.580
-1.168 0.300 -3.89 0.000 -1.756
L3
0.345
-0.170 0.263 -0.65 0.518 -0.685
L4
-1.010
-1.945 0.476 -4.08 0.000 -2.879

Source: *Author's calculations (2023).*

Lag two (2) and four (4) of the rule of law have a negative impact on political instability at a 5% level on average, *ceteris paribus*. When the rule of law was implemented, there was less political instability in the past two and four years respectively.

Table 19. *Lag selection criteria results. (corruption control on political instability) corruption control on political instability*

Lag Coeff Std.err z P>lzl 95% confi.interval
L1
-0.005
-0.019 0.007 -2.63 0.008 -0.034
L2
0.007
-0.001 0.004 -0.35 0.729 -0.010
L3

-0.001
-0.012 0.005 -2.16 0.031 -0.023
L4
-0.007
-0.016 0.004 -3.46 0.001 -0.025

Source: *Author's calculations (2023).*

Lag one (1), three (3), and four (4) of corruption control harm political instability at a 5% level on average, *ceteris paribus*. For the previous three years from 2020, the corruption perception index impacted negatively on political instability. In terms of exchange rate and rule of law, it is noticed that the reaction is stable and close to zero from period one to period two.

However, the reaction of the exchange rate from period two to period four increases gradually and is positive and decreases significantly in period five to period eight. This reaction signifies a quick response (reaction) in the exchange rate to shock in the rule of law index in South Africa. The results further revealed that the reaction of the exchange rate to shocks from gross domestic product depicts thought-provoking results from period one to period eight. From period one to period three, the reaction of the exchange rate to shocks from economic growth is relatively positive and increasing.

4.1 Response of Rule of Law to Exchange Rate

This indicates the impact on the rule of law to a one standard deviation shock to the exchange rate. The graph shows the responses of the rule of law (response variable) to a shock in exchange rate (Impulse variable). Response to the rule of law to one standard deviation shock (innovation) to the exchange rate increases the exchange rate.

This positive response gradually increases until the second period and drops during the fifth period. Beyond period five, the rule of law remains stable and positive. This suggests that shocks to the rule of law will have a positive impact on the exchange rate both in the short run and in the long run. The IRF are within the 95% confidence interval for all the variables.

Table 20. *IRF: Exchange rate changes due to shock on Exchange rate and shock on political instability.*

Years	exchange rate	political instability
1	1	0
2	0.9237	0.0012
3	0.8954	0.0081
4	0.8904	0.0091
5	0.8891	0.0092
6	0.8886	0.0092

7	0.8884	0.0093
8	0.8884	0.0093

Source: *Author's calculations (2023).*

The above Table 20 indicates that after 2 periods (two years) 92% of the variability in the exchange rate is due to a shock in the exchange rate (shock on itself) in South Africa, and only 0.12% of the shock is explained by political instability.

Table 21. *IRF: Political instability changes due to shock on political instability and shock on the exchange rate.*

Years	exchange rate	Political instability
1	0.033	0.747
2	0.071	0.620
3	0.083	0.594
4	0.084	0.589
5	0.084	0.588
6	0.084	0.588
7	0.084	0.588
8	0.084	0.588
9	0.084	0.588
10	0.084	0.588

Source: *Author's calculations (2023).*

The above table indicates that after one period (1 year) 74.7% of the variability in political instability is due to a shock on political instability (shock on itself) in South Africa, and similarly after 1 period only 3.38% of the change in political instability is 0.8884 explained by exchange rates.

5. Conclusions, Proposals, Recommendations

5.1 Conclusions

This study explores the significant role of the rule of law in shaping economic stability in South Africa by analysing its impact on corruption, inflation, and exchange rate volatility. The findings underscore that a robust rule of law framework helps reduce corruption, curtail inflationary pressures, and stabilize exchange rates. A stronger rule of law promotes accountability and boosts investor confidence. This study highlights the significant impact that political instability has on exchange rate volatility and the erosion of the rule of law in emerging economies.

The findings demonstrate that political turmoil disrupts economic confidence, leading to capital flight, inflation, and substantial currency depreciation. Weak legal institutions, exacerbated by political instability, further undermine investor trust, resulting in increased economic uncertainty and exchange rate fluctuations.

The case studies of Venezuela and Zimbabwe illustrate the cyclical nature of these effects, where political crises lead to the weakening of legal frameworks, which in turn deepens economic instability. In both cases, the absence of strong legal protections and transparent governance systems made it difficult for these countries to maintain stable currencies.

The quantitative analysis confirms the theoretical relationship, showing a clear correlation between political instability and increased exchange rate volatility across broader emerging markets. In South Africa, where economic instability remains a critical concern, reinforcing legal and institutional structures is essential to fostering sustainable development and building public trust in governance.

The study's results indicate that, by reducing corruption, improving inflation stability, and limiting exchange rate volatility, the rule of law has the potential to bolster South Africa's position as a leading emerging market. Furthermore, the findings contribute to a broader understanding of how legal and institutional reforms can promote economic stability across emerging economies facing similar challenges.

Political instability remains a critical risk factor for emerging economies, with far-reaching consequences for exchange rates and the rule of law. While political crises may be inevitable, strengthening legal institutions and adopting transparent, consistent economic policies can help mitigate the worst effects of such instability. By reinforcing the rule of law, maintaining policy continuity, and engaging in international cooperation, countries can create a more resilient economic environment, better able to withstand political disruptions and maintain exchange rate stability.

5.2 Proposals

To capitalize on these insights, this study proposes the implementation of comprehensive rule of law reforms aimed at strengthening governance, transparency, and accountability in South Africa. These reforms should focus on enhancing judicial independence, improving regulatory quality, and ensuring the enforcement of anti-corruption policies. The proposal outlines a phased approach to reform that includes immediate, medium-term, and long-term measures to build an environment that supports both economic and institutional resilience.

Political instability leads to currency devaluation: Prolonged political unrest or government changes create economic uncertainty, causing investor flight and sharp declines in currency value. The erosion of the rule of law amplifies economic instability: When legal systems break down due to political interference, corruption, or weak enforcement, it becomes harder for businesses to operate, which negatively impacts both domestic and foreign investment. Institutional weaknesses are critical to exchange rate volatility: Economies with stronger institutions and a more robust

rule of law tend to experience less exchange rate volatility, even in politically unstable environments.

Strengthening Legal and Institutional Frameworks Governments in emerging economies should prioritize building and maintaining strong legal institutions. Independent judiciaries, transparent legal processes, and consistent enforcement of laws can help create a stable business environment, even during political unrest. International organizations, such as the United Nations and the World Bank, should increase their efforts to support legal reform programs that focus on enhancing the rule of law, particularly in countries vulnerable to political instability.

Developing "economic insulation" mechanisms within institutional frameworks—such as central bank independence—can help protect economies from short-term politically motivated actions that undermine currency stability.

Implementing Transparent and Predictable Economic Policies. Governments should commit to clear, long-term economic policies that reduce the risk of sudden currency shifts. Central banks, for example, should adopt transparent monetary policies, such as inflation targeting, that signal consistency and stability to investors. Countries should seek to diversify their economies to reduce dependence on a single sector, which is often more vulnerable to political disruption.

Diversification will help stabilize the economic environment, indirectly contributing to more stable exchange rates. Enhancing International Economic Cooperation Strengthen economic relationships with international financial institutions like the IMF and World Bank to provide technical and financial support during political instability. Engage in regional partnerships or economic blocs that can offer economic and political support.

These alliances can serve as stabilizing forces during domestic political instability, helping cushion currency volatility through cooperative economic policies. Political Risk Management for Investors. Investors operating in politically unstable countries should adopt comprehensive political risk management strategies, such as obtaining political risk insurance and diversifying investments across multiple markets. Governments could also consider offering risk-reduction mechanisms, such as public-private partnerships or government-backed guarantees, to attract and retain foreign investment during periods of uncertainty.

5.3 Recommendations

Based on the findings and proposals, the following recommendations are made for governments, international organizations, and investors to manage the impact of political instability on exchange rates and the rule of law:

For Governments of Emerging Economies:

Invest in institutional reform: Governments should prioritize long-term investments in legal and institutional reforms that build a foundation of stability. These reforms should include judicial independence, anti-corruption measures, and protections for property rights. Encourage transparency and good governance: Governments should engage in transparent decision-making processes and improve governance to enhance the confidence of both domestic and foreign investors.

Clear communication during political transitions or crises is crucial to minimizing economic fallout. Focus on policy continuity: Even during political instability, maintaining consistency in economic policy is essential. This can help protect against sharp currency fluctuations and investor panic.

For International Organizations:

Support legal capacity-building: Organizations like the World Bank and UN should continue to provide technical assistance to countries experiencing political instability, focusing on capacity-building for legal institutions and economic governance. Provide emergency stabilization funds: In situations where political instability leads to severe economic disruption, international organizations should offer conditional stabilization funds to help maintain exchange rate stability while encouraging structural reforms.

For Investors:

Investors should use tools such as political risk assessments to evaluate the level of risk in politically unstable countries before entering these markets. Regular monitoring of political events and their potential economic impact is essential. Seek investment opportunities in countries with strong institutions: Even in politically turbulent regions, countries with more developed legal frameworks are better equipped to manage the negative impacts of instability. Investors should prioritize countries with institutional resilience.

References:

Abdul-Aziz, S.N. 2021. Cointegration and Causality between Disaggregated Exports and Economic Growth in ASEAN-4 Nations. Turkish Journal of Computer and Mathematics Education, 12(3), 213-23

Acemoglu, D., Johnson, S., Robinson, J., Thaicharoen, Y. 2003. Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth. Journal of Monetary Economics, 50(1), 49-123. https://doi.org/10.17762/turcomat.v12i3.768.

Aisen, A., Veiga, F. 2013. How does political instability affect economic growth? European Journal of Political Economy, 29(C), 151-167.

Alexander, C.P. 2001. The Effects of Socio-Political Instability on the Colombian Productivity:1952-2000. Serie de Documentos en Economía y Violencia 3589, Centro de Investigaciones en Violencia, Instituciones y Desarrollo Económico (VIDE).

Arbetman, M. 1995. The impact of politics on exchange rate fluctuations: The untold story.
Aron, J., Muellbauer, J. 2007. Review of Monetary Policy in South Africa since 1994. Journal of AfricanEconomies, 16, 705-744. https://doi.org/10.1093/jae/ejm013.
Bahmani-Oskooee, M., Nasir, A.B.M. 2002. Corruption, Law and Order, Bureaucracy, and Real Exchange Rate: Economic Development and Cultural Change. University of Chicago Press, 50(4), 1021-1028. http://dx.dx.doi.org/10.1086/342534.
Burger, R., Owens, T. 2010. Promoting Transparency in the NGO Sector: Examining the Availability and Reliability of Self-Reported Data. World Development, Elsevier, vol. 38(9), 1263-1277.
Chudik, A., Pesaran, M.H. 2015. Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. Journal of Econometrics, 188(2), 393-420. https://doi.org/10.1016/j.jeconom.2015.03.007.
Conyer, N. 2020. Present tense. International Monetary Fund. Journal of Economic Literature.
Cukierman, A.S.B. Web, S.B., Bilin Neyapti, B. 1992. Measuring the Independence of Central Banks and Its Effect on Policy Outcomes. The World Bank Economic Review, Volume 6, Issue 3, 353-398. https://doi.org/10.1093/wber/6.3.353.
Edwards, S. 1989. Exchange Controls, Devaluations, and Real Exchange Rates: The Latin American Experience. Journal of Economic Development and Cultural Change, 37(3), 457-494. https://doi.org/10.3386/w2348.
Fetai, B., Koku, P.S., Chaushi, A., Fetai, A. 2016. The Relationship between Exchange rate and Inflation: The case of Western Balkans Countries. Journal of Business Economics and Finance, 5(4), 360-364. https:/dx.doi.org/10.17261/Press academia.
Granger, C.W.J. 1986. Developments in the study of cointegrated economic variables. Oxford Bulletin of Economics and Statistics, 48(3), 213-228. https://doi.org/10.1111/j.1468-0084.1986.mp48003002.x.
Kaufmann, D., Aart, K., Mastruzzi, M. 2004. Governance Matters IV: Governance Indicators for 1996-2004. Policy Research Working Paper, 3630. https://doi.org/10.1596/1813-.
Komarnytska, I., Tataryn, N. 2020. Rule of law and economic growth. Financial and credit activity: problems of theory and practice, 1, 278-289. 10.18371/fcaptp.v1i32.200522.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. 1999. The quality of government. Journal of Law, Economics, and organization, 15(1), 222-279.
Mahadea, D., Kabange, M. 2022. Examining the relationship between economic freedom income and entrepreneurship in South Africa: A VECM Approach. Journal of Developmental Entrepreneurship, 27(1). 1-24. https://doi.org/10.1142/S1084946722500042.
McIndoe-Calder, T. 2018. Hyperinflation in Zimbabwe: money demand, seigniorage and aid shocks. Applied Economics, 50(15), 1659-1675.
Monamodi, N. 2019. The Impact of Fiscal and Monetary Policy on Economic Growth in Southern African Customs Union (SACU) Member Economies between 1980 and 2017: A Panel ARDL Approach. International Journal of Economic Policy in Emerging Economies, 15, 86-102. https://dx.doi.org/10.2139/ssrn.3480082.
Naudé, W.A., Krugell, W.F. 2007. Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. Applied economics, 39(10), 1223-1233.
Phatshwane, R.J. 2018. A critical evaluation of the independence of the Office of the Chief Justice and its role in promoting judicial transformation in South Africa. University of South Africa.

Reinhart, C., Rogoff, K. 2009. This Time Is Different: Eight Centuries of Financial Folly. Princeton: Princeton University Press. https://doi.org/10.1515/9781400831722.

Simuyu, A. 2015. Role of Leadership in Organizational Development. Journal of Management Studies. South Africa, Pretoria. http://hdl.handle.net/10500/24847.