Economic Regulation Volatility and Resource Rent: Moderating Effect of the Growth of the Financial Sector in the SADC Countries

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Abstract

This study examines the moderating effect of financial growth on the relationship between economic regulation volatility and resource rents using 2013–2023 SADC data with FMOLS and DOLS methods. The study tested three hypotheses. The first hypothesis tested whether economic regulation volatility has a significant negative effect on resource rents. The second hypothesis examined whether financial growth has a positive and significant impact on resource rents, while the third hypothesis investigated whether financial growth moderates the relationship between economic regulation volatility and resource rents. Findings reveal that economic regulation volatility significantly reduces resource rents (coefficient: -0.622), while financial growth positively impacts resource rents (coefficient: 0.096) and moderates the ERV-RRT relationship (coefficient: 0.199), all at a 1% accuracy level. The negative effect of economic regulation volatility on resource rents likely stems from heightened regulatory volatility, creating uncertainty around government decisions. The research reveals complex economic dynamics within the SADC countries and emphasizes the important role of financial growth in reducing the negative effects of economic regulation volatility on resource rents.

Keywords: *Economic Regulation, Resource Rent, Financial Sector and SADC Countries.*
JEL Codes: M49, L86.

Introduction

Amidst a period marked by worldwide economic interconnectedness and quick advances in technology, comprehending the many factors that impact a country's economic prosperity is of utmost importance (Ullah et al., 2024). Economic regulation volatility (ERV), the effective control of precious resource rents, as well as the significance of revenue growth have grown into key topics in discussions on economic stability and development (Alananga, 2022). The interplay of these characteristics in the varied economic environments of SADC countries presents a compelling topic for study (Semwenda, 2023). Hence, understanding the complex relationship between ERV, resource rents, and financial growth in the SADC environment is not just of educational value however additionally of practical importance (Monareng, 2022). In recent decades, there has been a growing focus on Economic regulation volatility (ERV) due to its significant impact on investment choices, economic growth, and general financial health (Sithole, 2021).

The escalating economic volatility resulting from unpredictable governmental decisions, such as financial, trading, and laws and regulations, may significantly affect the financial growth of a nation (Udeagha and Ngepah, 2023b). The volatility frequently emerges due to modifications in government management, indecisiveness in legislation, or unforeseen occurrences like financial crisis, and it may impede business activities, investment, and overall economic performance (Prempeh et al., 2024). The topics of ERV and resource rents have consistently captivated the attention of scholars, legislators, and economists (Sethi et al., 2023). The intricate and interconnected link between these two elements has substantial consequences for both the growth and the stability of countries, especially in the environment of emergent economies. In addition, the importance of financial growth, which includes many components that comprise a nation's system of finances, has become progressively acknowledged to be a crucial factor in influencing economic results (Chih et al., 2022).

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Resource rents, such as the income derived from resources that are renewable such as oil, gas, minerals, and agricultural products, are of great importance to several global economies. The impact of these charges on economic growth may be substantial, since they can be both advantageous and detrimental (Destek et al., 2023). Resource-emergent nations might experience significant financial gains, but they can also face difficulties associated with relying heavily on resources, fluctuating prices, and the need to diversify their economy (Sheikh Ali et al., 2024). Considering the complex connection between ERV as well as resource rents, this is crucial to investigate the influence of FG (financial growth) within regulating the interaction. Financial growth involves several dimensions, such as the extent, effectiveness, and reliability of financial systems and markets, and the availability of loans, along with the advancement of inventive instruments for financing (Masuku and Cletus, 2024).

These factors may have a substantial impact on the ability of a nation to handle economic volatility and optimise the advantages of resource revenues. An advanced financial system can offer solutions to reduce the negative impacts of volatility and improve the efficient distribution of money from resource rents (Ouedraogo, 2023). The detrimental impact of ERV on resource revenue highlights the possible harmful outcomes of increased ERV on the utilisation of resource revenue in these countries (Haibo et al., 2023). As the Economic Regulation Volatility (ERV) rises, it may deter expenditures and hinder the efficient utilisation of precious natural resources (Tackie et al., 2023). On the other hand, robust financial sectors and organisations provide effective means for allocating resources and revenue, thereby enhancing the economic prosperity of the nation. In addition, the paper analyses the moderating effect of FG on the connection between ERV and resource revenue. This research is not simply intellectually relevant however additionally has meaning in practice over many different purposes. First and foremost, the SADC countries as a whole account for more than 54% of Sub-Saharan Gross Domestic Product (GDP).

Any alterations in their economic direction have extensive repercussions for global commerce, investment, and political conditions. Hence, comprehending the determinants that impact their economic progress is essential for regulators and investors (Haibo et al., 2023). Furthermore, the dependence on revenue generated from natural resources has had both positive and negative consequences for several nations blessed with abundant resources (Tackie et al., 2023). Although these rental payments might provide substantial income and contribute to economic expansion, they may also result in economic instability. The degree that are ERV contributes to or reduces these consequences is a crucial inquiry in significant implications for regulations (Macamo, 2022). Furthermore, the significance of the financial industry in influencing the economic environment cannot be exaggerated. The development and diversification of the economies of SADC countries need the important role of mature and efficient systems of finance in ensuring their profitability (Macamo, 2022). Although there has been much study on the relationship between economic regulation volatility (ERV) and resource rents, the impact of financial growth (FG) on this relationship in the environment of SADC countries has not been well investigated (Chamisa and Sunde, 2024). The paper aims to fill a gap in research by assessing the connection between the economic regulation volatility and resource rent in the context of the moderating effect of the growth of the financial sector in the SADC countries.

Literature Review

There are a number of scholarly articles that investigate the empirical correlation between ERV and resource rents. As an illustration, Adeniyi (2022) employed nonparametric causation in the quantiles to examine the volatility as well as projected returns of six major assets over a period of twenty years. The results suggest that trader opinions, including those that are negative and positive, have a significant causal effect on the volatility as well as returns of goods in different quantiles. This effect exceeds that of ERV. The results emphasise the importance of taking into account current opinions in equity markets when formulating plans to invest in commodities. Xu et al. (2024) examined the correlation between gold prices and ERV using data spanning the years 1995 to 2017. Standard linear Granger causality tests do not yield any evidence of a causal connection between variables. However, when employing a nonparametric

correlation in quantiles method, it becomes evident that ERV exerts a substantial adverse influence on the value of gold, especially for the lowest quantiles. Amidst the trade dispute between the United States and China, Qamruzzaman et al. (2024) examine the influence of ERV on worldwide markets in both countries.

The fact that the United States continues to dominate worldwide markets regardless of the rise of China suggests that sociopolitical rather than economic considerations may be at the heart of worries regarding China's threat to the US-led world system. The impact of financial complexity on rental rates for natural resources was examined in a global sample of 90 countries from 2002 to 2017 by Sibanda et al. (2024). Financial complexity appears to have an effect on overall resource rents, especially in medium-sized enterprises and health information exchanges, whereas its influence is less evident in UMEs, according to the study. David et al. (2024) examined the influence of political instability and exchange rate volatility on rents for natural resources in emerging market economies. The results indicate that natural resource rents continue to be depressed by risks related to geopolitics, whereas economic growth has an advantageous effect on rents; however, the extent to which ERV influences rents differs between quantities. The findings underscore the intricate consequences that these factors have on resource rents. Recent studies by Chen et al. (2022) investigated the impact of the worldwide the worldwide epidemic on the recklessness of U.S. mineral price fluctuations as well as volatility in the worldwide economy.

The study uncovered short-term volatility in crude oil and ERV costs and emphasised the need for legislators to tackle these results in light of the resulting energy and financial effects. The influence of ERV, advances in technology, and the price of crude on the use of resources in the SADC economies was examined by Şanli et al. (2024). Certain findings of their research demonstrated that ERV has a positive impact on utilisation of resources, whereas oil price fluctuations have a negative effect. Therefore, the main objective of this study is to investigate the moderating influence of financial growth on the relationship between economic regulation volatility and resource rents. Ultimately, increased utilisation of resources decreases resource rents. Hypothesis one posits the following:
H_1: Economic regulation volatility has a significant negative effect on resource rents.

Resource Rents and Financial Growth (FG)

It is possible to investigate the relationship between the FG and resource rents through an analysis of prior research. Investigating the reciprocal connection among financial growth as well as resource rents, there are two primary bodies of literature that examine these topics. An investigation conducted by Şanli et al. (2024) examined the influence of various forms of mineral revenues, market liberalisation, national investing, and income per person on Pakistan's financial growth spanning the years 1975 to 2017. The results, which were obtained through the utilisation of ARDL Limits evaluation and VAR breakdown evaluation, suggest that although woodland and oil leases originally facilitate immediate business expansion, there is a sustained inverse correlation between fossil fuels, woodlands, and gas from natural sources, and petroleum leases and domestic lending extended to private companies.

In line with this, Diendere et al. (2024) investigated the influence of corporate guidelines on Capital Investment International (CII) in Asian nations and discovered that favourable regulations have the potential to offset the adverse economic growth effects of plentiful resources. Ouattara and Kouakou (2024) adopted an alternative methodology to examine the impact of natural resource revenues and economic expansion on worldwide financial growth. Their findings suggested that economic expansion contributed positively, whereas the impacts of natural resources varied by measure. Thioune et al. (2024) examined the interplay among Capital Investment International (CII), mineral income, and international capital growth in nations with abundant resources for a duration of 46 years in the second thread. Hence, with regard to an exhaustive examination of the impact of FG on the dynamics of resource rent. In order to fill this void, the paper put forth and examine the subsequent hypothesis:

H_2: Financial growth has a positive and significant impact on resource rents.

The Moderate Function of Financial Growth in the Nexus of ERV and Resource Rents

Financial growth could reduce the detrimental impacts of ERV on resource rents. Several studies from previous research provide insights into the manner in which financial growth may successfully impact this connection. Zoatsa et al. (2022) used a unique quantile autoregressive distributed lag methodology to assess the influence of natural assets (NA) on FG in South Africa. The results validate the resource curse hypothesis, which posits that financial growth is impeded by natural resource rents, whereas resource rents are adversely affected by ERV. Nevertheless, these impacts are offset by fiscal decentralisation and technological advancement. This implies that South Africa may be able to convert the resource curse into an economic boon through the implementation of environmentally conscious technology acceptance, strategic administration of resources, and area fund reorganisation. According to the findings of Aliamutu and Mkhize (2024b), ERV exerts an adverse effect on the Z-score, which represents overall stability in finance, while it positively influences the consistency of the banking sector in advanced countries, as denoted by NPL.

The impact of governance quality on minimising risks differs throughout regions, bank categories, and market systems; however, its importance was notably heightened throughout the global financial crisis (Ohonba and Akinola, 2023). A recent study investigated the relationship among natural resource rent (RRT), Capital Investment International (CII), globalisation, and the rebounding economy of G7 economies from 2000 to 2020. According to the statistics presented in this article, economic advancement can be impeded by a significant amount of natural resource rent; however, EG is stimulated by Capital Investment International, financial growth, innovation in technology, and liberalisation of trade. Notably, the research also identified a symbiotic relationship among Capital Investment International (CII) and natural resources, and it was noted that the enhancement of human capital can mitigate the adverse consequences of ample resources. Nonetheless, it appeared that economic globalisation impeded the expansion of the financial industry.

Using an innovative econometric method, ALIAMUTU and MKHIZE (2024a) examined the paired influence of natural resources and ERV on FG in South Africa through 2000 to 2019. The results indicated that NR exhibited a favourable impact on FG; however, its combination with ERV resulted in an adverse consequence for FG over an extended period of time. The findings of this study underscored the reducing impact of ERV on the relationship between resource rents and FG. Nevertheless, an area of research that has yet to be explored is the moderating influence of financial growth on the relationship between ERVs and resource rents. By investigating the subsequent hypothesis, this research lacuna provides a possibility for additional study to tackle this problem.

H₃: Financial growth moderates the relationship between ERV and resource rent.

Research Methodology

The study used a dataset spanning from 2013 to 2023 for study empirical study. This dataset specifically examines the economies of the SADC countries, namely Namibia, Mozambique, Botswana, Lesotho, DRC and South Africa. The reason for examining the SADC economies at this particular moment is motivated by the need to comprehend the progression of these emerging countries' powerhouses, particularly in the context of globalisation, their abundance of natural resources, and their financial growth. This prolonged duration offers useful observations on the evolution and interaction of ERV, TRR (resource rents), and financial growth over an extensive period. The ERV data is obtained via an online platform created by Caramento et al. (2023), while the other variables are collected from GEI (global economic indices). In this study, the term "resource rents" refers to a dependent variable that represents the cumulative score of the overall natural resource rents. Resource rents refer to the revenue generated from natural resources, which is calculated by subtracting the costs of production and economic rents (such as land rent and royalties' fees) given to governments or other organisations. They serve as a vital economic measure, especially for nations abundant in resources, since they demonstrate the economic advantages gained from extracting and

selling natural resources. Studies conducted by Ohonba and Akinola (2023) used an equivalent method for measuring resource rents.

The ERV is a primary dependent variable that was quantified using an index developed by Kassouri (2024). The term " regulation volatility" refers to the degree of ambiguity that exists about government regulation, such as budgetary, monetary, trading, and policy, among the SADC countries. The rise of the financial sector serves as a moderating variable. Financial growth involves several facets of a nation's banking system, such as the extent, effectiveness, and reliability of financial institutions and markets, the availability of credit, and the advancement of inventive instruments for financing. Udeagha and Ngepah (2022) used a comparable proxy to evaluate the level of financial progress. Furthermore, the research incorporates other factors such as CII influx, economic growth, and actual rates of interest as control variables. Capital Investment International (CII) influx refers to the movement of investment from foreign firms into the countries of the SADC countries. The study analyses the effect of Capital Investment International (CII) influx on resource rents and economic growth, considering its effects. Economic development refers to the general increase in economic activity among the SADC countries. It is regarded as a possible variable that might impact resource rents as well as is incorporated to guarantee accuracy for the study. The real rate of return refers to interest rates that have been modified to account for inflation.

The Study Models

The connection between the variables under consideration may be mathematically represented by the formulas that follow:

$$RRT_{it} = \beta_o + a_1 ERV_{it} + \beta_1 FGI_{it} + \beta_2 GDP_{it} + \beta_3 RIR_{it} + \mathcal{E}_{it} \tag{1}$$

$$RRT_{it} = \beta_o + a_1 FG_{it} + \beta_1 CII_{it} + \beta_2 GDP_{it} + \beta_3 RIR_{it} + \mathcal{E}\ it \tag{2}$$

$$RRT_{i\,t} = \beta_o + a_1 ERV_{it} + a_2 FG_{it} + a_3 ERV_{it}\ x\ FG_{it} + \beta_1 CII_{it} + \beta_2 GDP_{it} + \beta_3 RIR_{it} + \mathcal{E}_{it} \tag{3}$$

All abbreviations of the variables are shown in Table 1 earlier. Equation (3) demonstrates the moderating influence of (ERV*FG) on RRT. The α vector corresponds to the coefficients of the explanatory variables, while the β vector corresponds to the coefficients of the control variables. We have used two significant economic models, the FMOLS and DOLS models presented by Udeagha and Ngepah (2023a), to fully assess the data. Nevertheless, the paper performed a number of preliminary procedures to guarantee the robustness of the study before exploring the outcomes from these models. Initially, we carried out a CD (Cross-section Dependency) test as well as provided the results in Table 1. This test is necessary to find out if the data show any reliance between the many cross-sections, which might have an impact on the validity of our models. Cross-section dependency was found by the results of underpinning methods proposed by Muhamad (2023), indicating that this problem needed to be addressed in our further investigations. The study used a unit root test that DORCAS (2022) developed after the CD test. This test is designed to find out the probability that the first-level stationarity of the variables in our dataset exists. Non-stationary data might provide erroneous findings in econometric models; hence it is essential to guarantee its stationarity.

As the linearity of the data was confirmed, we looked into the series cointegration. When many non-stationary time series form a long-term link, cointegration takes place. In this instance, the cointegration among the variables was found via the study shown in Table 3, indicating that they have a steady long-term connection. The FMOLS along with DOLS models are built for processing co-integrated data efficiently, so the existence of cointegration has important consequences for this paper. Regression analysis may benefit from the particular cointegration handling of FMOLS and DOLS models. Such models facilitate the clarification of the fluctuations and interrelations among variables that, while non-stationary at their phases, exhibit stationarity in their linear interactions.

The FMOLS as well as DOLS models have been explicitly developed to tackle cointegration, therefore being very appropriate for the regression analysis. By using these methods, dynamics and connections between variables that show stationarity in their linear interactions but can't be considered stationary in the

form of levels that may be effectively included. More effective coefficient estimates are obtained by continuously evaluating parameters to account for endogeneity problems using the FMOLS approach. Conversely, over conventional OLS, the DOLS method improves estimation accuracy by using instrumental factors to handle endogeneity issues. It is important, therefore, to recognise the limits of these methods. Assuming linear connections, both FMOLS and DOLS models may be less effective in identifying non-linear correlations in the data. Furthermore, these models might operate differently depending on the lag duration used, hence great thought must be given to this throughout the research. Still, these models' pros outweigh their cons when it comes to managing certain traits, which means they are good and dependable tools for the empirical study, as shown by the cointegration in the study dataset.

Study Results

Descriptive Analysis

Table 1. Descriptive Results

Variables	Mean	Median	Max	Min.	Std.Dev	Skewness	Kurtosis
TRR	6.396	22.603	22.603	1.063	5.622	1.349	4.275
ERV	134.247	109.485	374.459	46.577	69.289	1.599	5.343
FG	66.133	52.366	176.491	14.748	49.920	1.084	3.917
CII	2.647	2.665	5.134	0.603	2.069	0.093	1.939
GDP	5.527	6.010	15.331	-8.899	4.883	-0.777	4.068
RIR	11.927	4.845	49.605	-13.957	17.209	1.222	3.938

Source: self-generated

Table 1 provides a thorough descriptive analysis of the main factors examined in the research. The mean value of the total resource rent (TRR) is 6.396, which represents the percentage that belongs to natural resources to the overall GDP. This is a major measure of the economic dependence on these resources. The average value of economic regulation volatility (ERV) is 134.247, indicating the degree of economic volatility in the economies under examination. Furthermore, the metric for financial growth (FG) is at an average of 66.133. This number represents the ratio of private financing extended by the banking industry to the public sector, which is a crucial component of the infrastructure of finance. The inflow of Capital Investment International (CII), which on average represents 2.647% of the total Gross Domestic Product (GDP), demonstrates the level of international investment with regard to the economy. The mean increase in GDP rates throughout the specified period is 5.527, which represents the normal pace of economic expansion for the reviewed financial markets. The real interest rate (RIR) is 11.927, indicating the average real interest rate established by central banks.

Table 2. Correlation Analysis

Variables	TRR	ERV	FG	CII	GDP	RIR
TRR	1.000					
ERV	-0.043	1.000				
FG	-0.498	0.272	1.000			
CII	-0.054	-0.031	0.334	1.000		
GDP	-0.072	-0.511	0.479	0.093	1.000	
RIR	-0.565	0.337	-0.360	0.372	-0.599	1.000

Source: self-generated

Table 2 presents the findings of the correlation study performed on these variables. All variables have a correlation greater than 0.70, indicating the lack of multicollinearity. This element is crucial to consider in regression analysis.

Inferential Statistics

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Table 3. Cross Section Dependence Test

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Test	Statistic	d.f	Prob.
Breush-Pagan LM	17.864	7	0.011
Pesaram scaled LM	4.105	-	0.002
Pesaran CD	-2.030	-	0.054

Source: Self-generated

Note: We assume the null hypothesis, that is, that the variables are independent of cross-sections, in order to determine the CD~N (0,1) condition. The existence of cross-section dependency is assumed by the significant p-values of every test.

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Table 4. Unit Root Test

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	(CIPS)		(CADF)	
Variables	**Level**	**First**	**level**	**First**
RRT	(-0.519) 0.448	(-5.053) 0.000***	(8.159) 0.438	(39.559) 0.000***
ERV	(1.729) 0.958	(2.393) 0.000***	(5.037) 0.765	(32.585) 0.000***
FG	(-0.012) 0.596	(-1.895) 0.000***	(9.623) 0.487	(26.989) 0.000***
CII	(-0.465) 0.458	(-4.478) 0.000***	(8.879) 0.487	(44.250) 0.000***
GDP	(-1.293) 0.217	(-5.272) 0.000***	(23.692) 0.233	(50.359) 0.000***
RIR	(-1.941) 0.582	(-1999) 0.000***	(26.982) 0.463	(30.889) 0.000***

Source: Self-generated

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Table 5. Cointegration Analysis

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Kao Residual Cointegration Test		
Test Name	**t-statistics**	**Probability**
ADF	-4.099	0.000
Residual Variance	1.594	-
Hac Variance	1.055	-

Source: self-generated

Note: The p-value of the Augmented Dickey-Fuller (ADF) test is statistically significant at a 10% significance level, indicating that we may reject the null hypothesis, which suggests that there is no cointegration present.

Hypotheses Results of the Study

The first hypothesis (H_1) of the study tested whether economic regulation volatility has a significant negative effect on resource rents. The results are presented in Table 6.

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Table 6. Impact of Economic Regulation Volatility (ERV) on Resource Rents

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Resource rent as a dependent variable		
Variables	**DOLS**	**FMOLS**

	Coefficients	Probability	Coefficients	Probability
ERV	-0.023***	0.045	-0622***	0.034
CII	0.962***	0.026	0.516***	0.024
GDP	0.987***	0.031	0.476***	0.000
RIR	-0.163***	0.005	-0.223***	0.027
Adjusted R-squared		0.550		0.487
S.E. of regression		1.380		1.899
Long-run variance		0.485		3.999

Note: ***, **, and * indicate the significance level at 1%, 5%, and 10% respectively.

Source: self-generated

Table 6 displays the findings of a regression analysis investigating the impact of Economic regulation volatility (ERV) on Resource Rents (RRT) as outlined in Equation (1). The coefficient for ERV is -0.622, indicating a statistically significant negative impact on RRT at an accuracy level of 1%.

The second hypothesis (H_2) of the study tested whether financial growth has a positive and significant impact on resource rents. The results are presented in Table 7.

Table 7. Impact of Financial Growth on Resource Rents

Variables	Resource rents as a dependent variable			
	DOLS		FMOLS	
	Coefficients	Probability	Coefficients	Probability
FSD	0.326***	0.059	0.096***	0.000
CII	0.857**	0.077	0.428***	0.026
GDP	0.546***	0.039	0.070***	0.065
RIR	-0.063**	0.078	-0.338***	0.000
Adjusted R-squared		0.562		0.522
S.E. of regression		1.023		1.555
Long-run variance		0.244		2.669

Note: ***, **, and * indicate the significance level at 1%, 5%, and 10% respectively

Source: self-generated

Next, we will discuss Table 7, where we provide the regression analysis for Equation (2) that examines the influence of FG on RRT. The coefficient for FG is 0.096, indicating a statistically significant positive impact on RRT with an assurance level of 1%.

The third hypothesis (H_3) of the study tested whether financial growth moderates the relationship between ERV and resource rent. The results are presented in Table 8.

Table 8. The Moderating Impact of Financial Growth on the Relationship Between Economic Regulation Volatility (ERV) and Resource Rents.

Variables	Resource rents as a dependent variable			
	DOLS		FMOLS	
	Coefficients	Probability	Coefficients	Probability
Erv	-0.125***	0.007	-0.97**	0.085
FSD	0.122***	0.000	0.129***	0.000
ERV*FSD	0.198***	0.056	0.199***	0.023
CII	0.844***	0.000	0.486***	0.037
GDP	0.404***	0.065	0.059**	0.068

RIR	-0.398***	0.000	-343***	0.000
Adjusted R-squared		0.522		0.433
S.E. of regression		1.322		1.510
Long-run variance		1.512		1.967

Note: ***, **, and * indicate the significance level at 1%, 5%, and 10% respectively

Source: self-generated

Furthermore, our research examines the moderating impact by developing Equation (3) as well as offers the empirical analysis in Table 8. The correlation term (ERV*FG) has a coefficient of 0.199, which indicates a statistically significant moderating influence of FG on the ERV-RRT connection at an accuracy level of 1%. Regarding control variables, it is noteworthy that Capital Investment International (CII) as well as Gross Domestic Product (GDP) possess a favorable influence on the Risk-Return Trade off (RRT), whilst Real Interest Rates (RIR) had a negative impact. Additional information pertaining to these connections will be elaborated upon in the next section.

Discussion

The main objective of this study was to investigate the moderating influence of financial growth on the relationship between economic regulation volatility (ERV) and resource rents. In order to accomplish the goal, the study performed an empirical investigation on the economies of SADC and used FMOLS and DOLS methodologies for regression estimate. The study tested three hypotheses such. The first hypothesis tested whether economic regulation volatility (ERV) has a significant negative effect on resource rents (RRT). The second hypothesis examined whether financial growth (FG) has a positive and significant impact on RRT, while the third hypothesis investigated whether FG moderates the relationship between ERV and RRT. For the first hypothesis, the results revealed that the coefficient for ERV is -0.622, indicating a statistically significant negative impact on RRT at a 1% accuracy level. Regarding the second hypothesis, the study found that the coefficient for FG is 0.096, demonstrating a statistically significant positive impact on RRT with a 1% assurance level. Finally, the results for the third hypothesis showed a coefficient of 0.199, confirming a statistically significant moderating effect of FG on the ERV-RRT relationship at a 1% accuracy level. Thus, the study substantiates that ERV has a substantial negative impact on resource rents (RRT). The negative impacts may be attributed to the elevated Economic regulation volatility (ERV), which generates an atmosphere of volatility by reflecting the ambiguity regarding governmental decisions. Volatility over regulations and the economy might discourage investors and firms from making long-term investments in industries that have abundant resources. This may result in a decrease in the discovery, exploitation, and growth of natural resources, ultimately leading to a reduction in resource rents. Moreover, elevated levels of Economic regulation volatility (ERV) may lead to governments and companies experiencing a delay in making decisions about the growth of resource projects. These delays may arise due to regulatory reluctance or uncertainty about future economic circumstances. Consequently, the process of transforming resource richness into income may be prolonged, which might affect the complete involvement of resource rents to the finances.

Moreover, ERV has the potential to include a risk adjustment into investing in resources. Shareholders may need greater returns to offset the heightened risks linked to unpredictable changes in regulation, so diminishing the profitability of resource projects and, consequently, the buildup of resource rent. Udeagha and Breitenbach (2023) provided evidence that supports the negative impact of Economic regulation volatility (ERV) on the market worldwide. Significantly, their study, while it enhanced the comprehension of the adverse effects of ERV, did not explore its particular consequences for resource rents, thus leaving a possible vacuum in research. The study deviates from previous research by specifically examining the direct influence of Economic Regulation Volatility (ERV) on resource rents.

In addition, we expand upon the existing information by investigating how financial growth influences the relationship between economic regulation volatility (ERV) along with resource rents. The change and expansion augment the profundity and thoroughness of the research inside the wider framework of

economic regulation volatility as well as its repercussions on resource-related results. Nevertheless, the advancement of the financial sector has a beneficial effect on the income generated from natural resources. An effective financial industry, consisting of well-functioning financial markets, institutions, and credit availability, may help effectively manage resource income. The cash management and processes offered by this industry may assist organisations and governments in efficiently allocating resource rent payments, thus assuring prudent investment and contributing to broad economic development.

Furthermore, the advancement of finance systems may enhance the appeal of resource projects to both international and local investors. It has the potential to decrease the expenses associated with finance, better the ability to get cash, and boost the overall environment for investing. Consequently, this might result in a rise in resource exploitation and a greater creation of resource revenue. A strong financial industry may provide risk-mitigating tools, including hedging products, that are especially crucial for economies reliant on resources and susceptible to swings in the price of commodities. These risk management strategies may enhance the stability of resource income and mitigate the impact of unpredictable market circumstances. An advanced finance sector has the potential to facilitate diversifying economic initiatives in nations that heavily rely on natural resources.

By allocating financial resources to industries other than resources and promoting investment in diverse businesses, it is possible to decrease the financial system's reliance on resource rents as well as fostering long-term expansion. Essentially, the negative effect for ERV on resource rents is mostly caused through the ambiguity it creates. This volatility hampers investment and making decisions, and adds risk to natural resource projects. On the other hand, the beneficial influence of financial growth on resource rents is credited to its ability to aid in managing resources, reduce risks, attract investment, and promote economic diversification in countries that rely on resources. Financial sector growth has a role in moderating the relationship between individual effect and the nexus between Economic Regulation Volatility (ERV) and Total Risk Ratio (TRR). Financial growth may serve as a safeguard against the negative consequences of Economic Regulation Volatility (ERV) by offering financial tools and processes to effectively handle the heightened risks linked to ERV. For example, the banking sector provides risk-hedging instruments that allow resource businesses to reduce the financial risks associated with unforeseen changes in policies. Enhancing financial growth may enhance the availability of finance, which is essential for initiatives that need significant resources. During times of economic uncertainty caused by the Economic Regulation Volatility (ERV), it is very beneficial to have access to many sources of funding via the banking industry. Access to financing may assist resource businesses in sustaining their activities and investments, therefore reducing the negative effects of economic regulation volatility on resource rents. Moreover, an advanced finance sector may aid in effectively managing resource income. The organisation may provide specialized knowledge in fields including fund management, approaches to investing, as well as monetary organizing. This experience helps authorities effectively handle Economic Regulation volatility (ERV) and ensures that money from resource rents is properly handled and contributes to overall financial stability.

No research has been discovered in the literature that investigates the comparable influence of FG on the ERV-resource rent nexus. Therefore, this study diverges from the existing research and presents groundbreaking results by investigating the moderating influence of FG on the relationship between ERV and resource rents. The beneficial impact of CII influx on TRR may be attributed to control factors. When CII enters a nation abundant in resources, it often leads to heightened expenditures in the discovery, exploitation, and growth of natural resources. Consequently, an increase in resource production and exportation might result in a larger generation of resource rent. Similarly, an expansion of the economy positively impacts resource rents. The expansion of the economy often results in heightened interest in resources, which motivates the cost of resources and therefore boosts revenue from resource rents. Furthermore, economic expansion might result in heightened funding in resource initiatives and facilities, hence amplifying resource rents. Nevertheless, elevated real mortgage rates might augment the expenses associated with obtaining and funding the development of resource efforts. This could prevent from investing in the resource industry, particularly if finance costs escalate significantly.

Therefore, it might result in a decrease in the creation of resource rent. To summarize, the ERV has a negative influence on resource rents, whereas FG has a positive impact. Capital Investment International

(CII) and economic expansion may result in increased resource rent production by stimulating asset-related activity. On the other hand, increased actual interest rates might impede the creation of resource rent through raising the costs of pursuing resource development initiatives. Such connections demonstrate the intricate interaction between financial and economic aspects in managing and use of natural resources in economies that heavily rely on these types of assets.

Conclusion

The main objective of this study is to investigate the moderating influence of financial growth on the relationship between economic regulation volatility and resource rents, as well as the moderating influence of Financial Growth (FG) in the context of SADC countries. The scope of the research included the years 2013 to 2023, a crucial timeframe characterised by worldwide economic interconnectedness and rapid changes. The empirical results of the study offer useful knowledge into the interconnections between these fundamental economic determinants. The findings indicate that ERV has a negative effect on resource rents. This is due to the potential for higher levels of regulatory volatility to divert investments and hinder the effective supervision of resource income. Conversely, the research demonstrated that financial growth positively impacted resource rents, underscoring the critical role of widely acknowledged finance and market systems in optimising the advantages of resource investments.

A particularly fascinating discovery in the research we conducted was the substantial moderating influence of FG in mitigating the detrimental impact of ERV on resource rents. This discovery emphasizes the significance of strong financial structures in protecting resource-dependent savings from economic regulatory volatility (ERV) and allowing them to efficiently utilize their natural resources. In addition, the analysis looked at the effects of control variables. We found that Capital Investment International (CII) and economic development had an advantageous impact on resource rents, whereas RIR had a negative impact. These results highlight the complex interaction between these factors in the resource-abundant SADC countries as well as their probable impact on long-term economic growth. The research reveals complex economic dynamics within the SADC countries and emphasizes the important role of financial growth in reducing the negative effects of economic regulation volatility on resource rents.

Implications for Policy

The research's results provide significant guidance for several stakeholders, including lawmakers, investors, and scholars. The strategic use of natural resources to drive long-term economic development is a key focus in today's ever-changing global environment. The increasing influence of SADC countries in shaping the global economy highlights the importance of understanding and effectively maintaining their natural resources. This understanding acts as a crucial element for ensuring future economic success and promoting long-term growth in these countries. The analysis strongly advises SADC lawmakers to prioritise the strong development and stability of their banking industries. Legislators should give priority to reducing Economic Regulation Volatility (ERV) through the introduction of economic regulation that are open to interpretation and stable. Clearly communicating governmental goals and strategies assists in reducing volatility, encouraging an advantageous environment for local as well as global stakeholders in natural resource projects. The paper suggests that robust financial systems and organizations are essential for maximizing the benefits obtained from natural resource surpluses.

This optimisation requires a comprehensive strategy that includes improving access to credit, strengthening financial system, and fostering creativity in the financial sector. Given the complex relationship between economic regulation volatility (ERV) and resource rents, it is crucial for the SADC countries to prioritise efforts to reduce ERV. The proposal suggests that openness, policy development uniformity, and the development of clear rules and regulations are effective measures for reducing the negative effect of ERV on resource rents.

By implementing these strategies, the SADC countries can enhance the strength and adaptability of their banking systems while also creating opportunities for long-term and equitable economic development, placing themselves advantageously in the changing global economic environment. Resource-rich nations

must adopt a skilled and proactive strategy to attract international investment, considering the positive impact of CII inflow on resource rents.

As previously explained, an important phase in this process involves the adoption of investment-friendly regulations. These regulations provide advantageous conditions for international stakeholders and signify a dedication to fostering company expansion via global collaborations. Ensuring strong constitutional protections for shareholders is crucial for building confidence as well as assurance in the investing environment, which in turn encourages greater capital investment internationally. Moreover, it is crucial to emphasise the need of eliminating obstacles to Capital Investment International (CII). Simplifying bureaucratic procedures and lowering regulatory complications would not only speed up the arrival of foreign money, however it would also strengthen the country's attractiveness as a location for investing.

These diverse measures jointly stimulate the expansion of Capital Investment International (CII) into projects connected to resources, therefore driving the development of profits from these resources. To summarise, the regulation effects highlighted emphasise the need of having a thorough and linked approach to managing resources and promoting economic growth. The importance of prioritising financial growth, accountability, accessibility of Capital Investment international (CII), and diversifying the economy cannot be underestimated. In the context of SADC countries, these initiatives collectively provide an adequate structure for the effective use of their abundant natural assets. This strategy promotes enduring and stable financial growth, while also serving as a safeguard against the negative impacts of Economic Regulation Volatility (ERV). Thus, it is crucial for countries to adopt a comprehensive and future-oriented policy agenda in order to effectively manage the complexities of resource utilisation, guaranteeing economic success and robustness in the midst of worldwide challenges.

References

ADENIYI, S. 2022. Population health, infrastructure development and FDI inflows to Africa: A regional comparative analysis. Asian Journal of Economic Modelling, 10, 192-206.

ALANANGA, S. S. 2022. Spatial Centrality in the Finance-Growth Nexus: Panel Data Evidence from EAC and SADC Countries. The Open University of Tanzania.

ALIAMUTU, K. F. & MKHIZE, M. 2024a. Awareness of Unpredictability in Economic Policy, Fiscal Decentralisation, and Innovative Approaches for the Preservation of The Environment in South Africa. International Journal of Environmental, Sustainability, and Social Science, 5, 91-105.

ALIAMUTU, K. F. & MKHIZE, M. V. 2024b. The Influence of Social Responsibility on Profitability in the Southern African Banking Industry. Journal of Accounting Research, Organization and Economics, 7, 111-129.

CARAMENTO, A., SAUNDERS, R. G. & LARMER, M. 2023. The Return of Resource Nationalism to Southern Africa–Introduction. Taylor & Francis.

CHAMISA, M. G. & SUNDE, T. 2024. Key determinants of tax revenue in Zimbabwe: assessment using autoregressive distributed lag (ARDL) approach. Cogent Economics & Finance, 12, 2386130.

CHEN, H., REHMAN, M. A., LUO, J. & ALI, M. 2022. Dynamic influence of natural resources, financial integration and eco-innovation on ecological sustainability in EKC framework: Fresh insights from China. Resources Policy, 79, 103043.

CHIH, Y. Y., KISHAN, R. P. & OJEDE, A. 2022. Be good to thy neighbours: A spatial analysis of foreign direct investment and economic growth in sub-Saharan Africa. The World Economy, 45, 657-701.

DAVID, J., GAMAL, A. A. M., MOHD NOOR, M. A. & ZAKARIYA, Z. 2024. Oil rent, corruption and economic growth relationship in Nigeria: evidence from various estimation techniques. Journal of Money Laundering Control.

DESTEK, M. A., HOSSAIN, M. R., AYDıN, S., SHAKIB, M. & DESTEK, G. 2023. Investigating the role of economic complexity in evading the resource curse. Resources Policy, 86, 104131.

DIENDERE, L.-J. B., DIENDERE, A. A. & EGGOH, J. 2024. Role of central bank independence on monetary integration and business cycle synchronization in the economic community of West African States. Cogent Economics & Finance, 12, 2399959.

DORCAS, G. 2022. TRADE OPENNESS, ECONOMIC GROWTH, INCOME INEQUALITY AND POVERTY NEXUS IN SADC COUNTRIES: 1980-2019. UNIVERSITY OF FORT HARE.

HAIBO, C., MANU, E. K. & SOMUAH, M. 2023. Examining finance-growth nexus: empirical evidence from the sub-regional economies of africa. Sage Open, 13, 21582440231153117.

KASSOURI, Y. 2024. The labor market impact of inflation uncertainty: Evidence from Sub-Saharan Africa. International Review of Economics & Finance, 89, 1514-1528.

MACAMO, R. D. C. 2022. Mineral resources and economic growth: evidence from the coal sector in Mozambique. Espaço e Economia. Revista brasileira de geografia económica.

MASUKU, S. T. & CLETUS, D. 2024. POLICY RESEARCH.

MONARENG, K. P. 2022. Financial sector development and economic growth in South Africa: role of the banking sector.

MUHAMAD, G. M. 2023. Presentation of Results. Reducing Natural Resource Dependency for Economic Growth in Resource Rich Countries. Springer.

OHONBA, A. & AKINOLA, G. W. 2023. The effect of governance on capital flows in Sub-Saharan African countries. Journal of Infrastructure, Policy and Development, 7, 2122.

OUATTARA, K. & KOUAKOU, A. K. 2024. Carbon Emissions, Renewable Energy Consumption, Trade and Financial Development Linkages in SADC Countries: Evidence from a Nonlinear ARDL Analysis. Low Carbon Economy, 15, 1-34.

OUEDRAOGO, M. 2023. Economics and Political Economy of Natural Resources in Developing Countries: Essays on the Private Sector, Environmental Policies and Deforestation. Université Clermont Auvergne.

PREMPEH, K. B., KYEREMEH, C., YEBOAH, S. A. & DANSO, F. K. 2024. Quantifying carbon emissions through financial development in Ghana: empirical evidence from novel dynamic ARDL and KRLS techniques. Cogent Economics & Finance, 12, 2423260.

QAMRUZZAMAN, M., KARIM, S. & KOR, S. 2024. Nexus between Innovation–Openness–Natural Resources–Environmental Quality in N-11 Countries: What Is the Role of Environmental Tax? Sustainability, 16, 3889.

ŞANLI, O., SAHU, P. & JANJUA, L. R. 2024. Underlying the impact of economic, social, and governance adaptation on poverty reduction under the shadow of external financial inflows—panel estimation from the sub-saharan region. Sustainable Economic Development: Fostering the United Nations Goals. Springer.

SEMWENDA, A. S. 2023. Testing the Finance Growth Nexus for Sub Saharan Africa: A meta analysis of the evidence. UCL (University College London).

SETHI, N., BEHERA, B. & DASH, D. P. 2023. Is Aid-FDI-Financial Development Dynamics a Vanguard for economic growth? Perspective of the emerging Asian economies. The International Trade Journal, 1-24.

SHEIKH ALI, A. Y., GUTALE, A. A. A. & DALMAR, M. S. 2024. Biomass energy consumption and sustainable human development: the role of financial development in EAC member countries. Cogent Economics & Finance, 12, 2386390.

SIBANDA, K., TAKENTSI, S. & GONESE, D. 2024. Energy consumption, technological innovation, and environmental degradation in SADC countries. Cogent Social Sciences, 10, 2355553.

SITHOLE, M. S. 2021. A causal relationship between financial intermediation and economic growth: A case study of South Africa.

TACKIE, E. A., CHEN, H., AHAKWA, I., AMANKONA, D. & ATINGABILI, S. 2023. Drivers of food security in West Africa: Insight from heterogeneous panel data analysis on income-level classification. Environmental Science and Pollution Research, 30, 87028-87048.

THIOUNE, T., MIGNAMISSI, D. & MINKOÉ BIKOULA, S. B. 2024. The Non-linear effect of Inflation on Economic Growth in Sub-Saharan Africa: Does Democracy Matter? Journal of the Knowledge Economy, 1-24.

UDEAGHA, M. C. & BREITENBACH, M. C. 2023. Can fiscal decentralization be the route to the race to zero emissions in South Africa? Fresh policy insights from novel dynamic autoregressive distributed lag simulations approach. Environmental Science and Pollution Research, 30, 46446-46474.

UDEAGHA, M. C. & NGEPAH, N. 2022. Dynamic ARDL simulations effects of fiscal decentralization, green technological innovation, trade openness, and institutional quality on environmental sustainability: evidence from South Africa. Sustainability, 14, 10268.

UDEAGHA, M. C. & NGEPAH, N. 2023a. Achieving decarbonization goals in BRICS economies: Revisiting the joint role of composite risk index, green innovation, and environmental policy stringency. Cogent Social Sciences, 9, 2234230.

UDEAGHA, M. C. & NGEPAH, N. 2023b. The drivers of environmental sustainability in BRICS economies: do green finance and fintech matter? World Development Sustainability, 3, 100096.

ULLAH, W., ZUBIR, A. S. M. & ARIFF, A. M. 2024. Exploring the moderating effect of regulatory quality on the relationship between financial development and economic growth/economic volatility for developed and developing countries. Borsa Istanbul Review.

XU, Y., NASSANI, A. A., ABRO, M. M. Q., NASEEM, I. & ZAMAN, K. 2024. FinTech revolution in mineral management: Exploring the nexus between technology adoption and sustainable Resource utilization in an industry 4.0 context. Heliyon, 10.

ZOATSA, M. N., EDWARD, T. E. & SAMA, M. C. 2022. Effect of Governance on Macroeconomic Instability in Sub-Saharan Africa: Does Regional Analysis Matter? Regional Economic Development Research, 160-177.