SECURITIES MARKET DEVELOPMENT, GOVERNMENT REGULATIONS AND ECONOMIC GROWTH AMONG THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA MEMBER STATES

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Abstract

Purpose: The purpose of this paper was investigates the effect of Government regulations on the relationship between securities markets development and economic growth of the Common Markets for Eastern and Southern Africa (COMESA) member states.

Design/Methodology: The study was structured as a longitudinal study using a causal research design focusing on the study period from 2005 to 2020. The study utilized panel data on nine (9) COMESA member states and an econometric model of four indicators: stock market capitalization, the stock traded value for securities market development (SMD), ease of doing business index (score) for government regulations (GR) and real GDP growth rate for economic growth (EG), with fixed effects model as an discussion estimator.

Findings: The study findings were that government regulations positively influence the relationship between securities market development and the economic growth of COMESA member states. The findings of the study support the neoclassical growth theory and the public interest theory of regulations. The study conclude that government regulations is a strong macroeconomic factor that can be used by the member states to directly determine the level of the relationship between SMD and economic growth.

Originality/Value: The study contributes to knowledge by providing evidence on the effect of government regulations on the relationship between SMD and EG of COMESA member states in light of the fact that there is limited empirical evidence in the finance literature.

Implication to Policy: The study recommends that COMESA member states should put in place strong and investor-friendly government regulations aimed at making the securities markets more efficient and attractive to investors to promote economic growth within the trading bloc.

Key Words: Securities Market Development, Government Regulations Economic Growth, and Fixed Effects Model.

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1. Introduction

It is important to understand how security's markets impact on the financial system and the economy. The expectation is that economic growth (EG) is synonymous with an increase in the general living standards of households (Naik & Padhi, 2015). A nation's wealth is determined by land, labour and accumulated capital (Smith, 1776). Security's market development facilitates the access of investors to financial resources and stimulates efficient allocation of resources, boosting both national and foreign investments (Levine and Zervos, 1998; Demigurc Kunt & Levine, 1996). The point is that an adequate functioning of the security's market represents a significant condition for financial sector evolution, which is essential to sustainable economic development. The security's market enables investors to join or leave such a market at their convenience. Government regulations are meant to protect investors. However, excessive regulations are harmful to market players. Government regulations are meaningful when they facilitate security's market efficiency, given that assets in such a market will not be mispriced.

A critical aspect of security's market is liquidity. That is, the ease at which investors can convert their investment into cash. Investors prefer liquid market because transactions in such a market are not at higher discount price. When investors become comfortable in a security's market then they will supply capital needed for economic growth. However, theoretical debate exists about whether greater stock liquidity actually encourages a shift to higher-return projects that stimulate productivity and economic growth. Since more liquidity makes it easier for investors to sell shares, some scholars argue that more liquidity reduces the incentives of shareholders to undertake the costly task of monitoring managers, thus impeding corporate governance (Shleifer and Vishny, 1986; Bhide, 1993). A weaker corporate governance slows economic growth. Investor-friendly government regulations provide a secure and conducive business environment to market participants encourage security's market development that accelerates economic growth (Levine, Lin & Xie, 2016). Therefore, the relationship between the functioning of stock markets and economic growth taking into account government regulation is debatable.

COMESA trading bloc was founded to raise the living standards of citizens of member states through sustainable economic growth. World Bank (2019) reports that the economic growth within COMESA has lost momentum and financing conditions have inhibited financial markets. The bank adds that government regulations in their present form are not supportive of economic growth. The interpretation is that government regulations can inhibit or positively power security's market to support economic growth. Thus, the infrastructure that promotes economic growth in this trading bloc must be understood and managed well. The effect of government regulations on the relationship between security's market development and economic growth is examined in this study. The study seeks an answer to the question: do government regulations affect the relationship between SMD and the economic growth of COMESA member states?

The remainder of the paper is structured as follows. Section 2 is literature review. Section 3 provides a brief discussion on the data and methodology used in this study and presents empirical findings. Finally, the conclusion of this study will be presented in Section 4.

2. Literature Review

There is evidence on the effect of government regulations on the relationship between security's market development and economic growth in other parts of the world economies, especially the developed world, the same cannot be said about COMESA trading bloc. Khatum (2019) investigated the interaction between financial openness, an aspect of government regulation and economic growth, among BRICS countries over twenty-two years. The result showed that overall financial openness exhibited a positive effect on EG. Polat (2019) sought to find out whether the financial sector development (FSD) has any role in determining the impact of trade openness on EG. Using dynamic panel data of 41 developing countries over the period 1995-2014; report no effect of trade openness or financial development on economic growth. Menyah, Nazlioglu and Wolde-Rufael (2014) investigated the causal relationships between the FD, trade openness and EG from a panel of 21 Sub-Saharan African countries from 1965 to 2008 and ascertained that efforts aimed at financial development and trade liberalization did not significantly influence EG. On the other hand, World Bank (2019) in its study of 190 world economies established that markets may not operate efficiently if overregulated. The result would be productivity, employment and economic growth.

The effect of government regulations on the relationship between securities market development and economic growth was debated by Khatum (2019), Polat (2019), Manasseh, Ogbuabor, Anumudu, Abada, Okolie, and Iri (2018), Menyah, Nazlioglu, Wolde-Rufael (2014) and Ayadi, Arbak, Naceur

and De Groen (2015). These studies disagree on the effect of government regulations on the relationship between security's market development and economic growth. Furthermore, these studies were undertaken in countries that are not COMESA member states, and their findings may not apply to COMESA member states due to variations in levels of technological advancement, market capitalization, market size, liquidity, structure, regulatory framework and levels of economic growth.

Studies by Khatum (2019) and Manasseh, Ogbuabor, Anumudu, Abada, Okolie, and Iri (2018) found that government regulations exhibited a positive effect on the relationship between security's markets development and economic growth. Polat (2019) and Menyah, Nazlioglu, Wolde-Rufael (2014) found that government regulations have no effect on the relationship between security's market development and economic growth. Ayadi, Arbak, Naceur and De Groen (2015) established that government regulations negatively affected the relationship between security's market development and economic growth. With findings that are mixed, inconclusive and contradictory, there is a need to test further these relationships in other countries.

3. Data and Methodology

The annual panel data of real gross domestic product (GDP) growth rate, stock market capitalization, stocks traded value and ease of doing business scores were collected over the period 2005-2020 from the World Bank database. Stock market capitalization represents the size of the stock market, while the total value of stocks traded value represent liquidity of the security's market. The ease of doing business score/index is a computation by World Bank from a cluster of regulations deemed to help in gauging the level of regulatory performance and improvement over time. In this study securities market development (SMD) is a composite index of stock market capitalization and stock traded value.

3.1 Descriptive Statistics

In Table.1 are the descriptive statistics of the study variables. The maximum stock market capitalization rate of change was 21.75 while the minimum was -.99 (Mean=.2281, median=.06, standard deviation=1.90). The rate of change of stock market capitalization is positively distributed with skewness of 10.96 respectively, meaning that the distribution has a long right tail. Negative skewness indicates a distribution with a long left tail. This indicator has a kurtosis that is above the

value of 3 (124.68) implying the distribution is peaked or leptokurtic relative to the normal distribution.

Table 1: Summary of Descriptive Statistics

	N	Minimum	Maximu m	Mean	Median	Std. Deviation	Skewnes	s	Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
Market Capitalization Rate of Change (MC)	135	99	21.75	.2281	.06	1.90	10.96	.209	124.68	.414
Stock Market Value Rate of Change (STV)	135	-1.00	19.79	.54	.08	2.29	5.81	.209	41.13	.414
Ease of doing Business Scores (GR)	135	8.27	81.47	51.72	54.50	16.70	660	.209	.198	.414
Economic growth (EG): The rate of change of real GDP	135	-17.67	19.68	4.3676	4.39	4.30	999	.209	6.91	.414

Source: Researcher's Computations (2021)

The maximum stock traded value rate of change was 19.79 and the minimum was -1.00 (mean= .54, (Median=.080, SD=2.29). STV rate of change is positively distributed with skewness of 5.81, which essentially means that the distribution has a long right tail, while negative skewness indicates a distribution with a long left tail. The study indicator has a kurtosis that is above the value of 3 (41.13), implying the distribution is peaked or leptokurtic relative to the normal distribution. The maximum ease of doing business score was 81.5%, while the minimum score was 8.27% (mean=51.7169, median=54.500, SD=16.71). The ease of doing business score is negatively distributed with skewness of -.660. Negative skewness indicates a distribution with a long left tail. The results also indicate the ease of doing the business score has a kurtosis that is below the value of 3, that is, .198 with a standard error of .414, indicating that the distribution is low peaked relative to the normal distribution. The rate of change of real GDP ranged from -17.67 to 19.68 (mean = 4.37, median=4.3900, SD = 4.30). GDP is negatively distributed with a skewness of -.999. Negative skewness indicates a distribution with a long left tail. The results also have a kurtosis that is above the value of 3, that is, 6.908 with a standard error of .414. This shows that the distribution is high-peaked relative to the normal distribution.

3.2 Analytical Framework

To select the most appropriate model, the study used the Hausman Test to choose between the fixed effect and random effect model. The null hypothesis was: The appropriate model is the Random effects

model while the alternative hypothesis was the appropriate model is the fixed effects model. If Result: H0: p> 0.05, select RE and if H1: p < 0.05, Select FE (Hartono, Sari, Tinungki, Jakaria & Hartono, 2021; Saragih, Raya & Hendrawan, 2021). From the test, the fixed panel effects model was chosen to investigate the effect of government regulations on the relationship between securities market development and economic growth.

3.3. Hypothesis Test

- *H*₀: There is no significant moderating effect of *GR* on the relationship Between SMD and EG of *COMESA member states*.
- *H*₁: There is significant moderating effect of GR on the relationship Between SMD and EG of COMESA member states.

The moderating effect of GR on the relationship between SMD and EG of COMESA member states was computed using the method proposed by Baron and Kenny (1986). To proceed with hypothesis tests, an interaction term is computed by multiplying the centered independent variable and centered moderator (SMD*GR). Centering is achieved by subtracting a mean from a variable. Table 3.1 presents the variables employed.

Table 3.1: Moderating effect	regression	models -	Dependent	Variable:	EG, Independent
Variable: Securities market dev	velopment (S	MD), and	Government	Regulation	is (moderator)

Model	Securities market development (Predictor/IV)	Government Regulations (Moderator)	Interaction Term
Model 1a	SMD	GR	-
Model 1b	SMD	GR	SMD*GR

3.4 Diagnostic tests

The relevant assumptions of this statistical analysis were tested which included multicollinearity, Heteroscedasticity and autocorrelation.

3.4.1 Heteroscedasticity Test

If the variance given by the residuals is not a constant, the residual variance is heteroscedastic. Breusch-Pagan test for heteroscedasticity was used to test for homoscedasticity. The null hypothesis is that there is homoscedasticity while the alternative hypothesis is that there is heteroscedasticity. If the p-value is p>0.05, we fail to reject the null hypothesis but accept it means that the dataset is homoscedastic. If the p-value is P<0.05, we reject the null hypothesis and accept the alternative hypothesis implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 3.2 presents the results of the Breusch-Pagan test.

Table 3.2: Breusch-Pagan test

Model	Statistic	p-value
Model 1a	0.99	0.3210
Model 1b	0.77	0.3812

The null hypothesis is homoscedasticity (or constant variance).

The alternative hypothesis is there is heteroscedasticity

The p-value in Table 3.2 is not significant (p>0.05) and therefore we fail to reject the null hypothesis but reject the alternative hypothesis which implies that the dataset is homoscedastic (Tabachnick & Fidell, 2013).

3.4.2 Autocorrelation/Serial Correlation test

Wooldridge test for autocorrelation in panel data was used to detect serial correlation. Serial correlation causes the standard errors of the coefficients to be smaller than they are and higher R-squared. The null hypothesis is there is no serial correlation in the residual while the alternative hypothesis is there is serial correlation in the residual. If the p-value is p>0.05, we fail to reject the null hypothesis but accept it meaning that the dataset has no serial correlation in the residual. If the p-value is P<0.05, we reject the null hypothesis and accept the alternative hypothesis implying that the data set has a serial correlation in the residual. Table 3.3 presents the results of the Wooldridge test for autocorrelation.

Table 3.3: Wooldridge test for autocorrelation

Model	Test statistic	Prob > F
Model 1a, F(1, 8)	13.650	0.0061
Model 1b, F(1, 8)	13.940	0.0058

The p-value is significant (P<0.05) implying that there is a problem of autocorrelation in the dataset. The Newey –West estimator to address the problem of autocorrelation.

3.4.3 Hausman specification Test

To choose the most appropriate model between fixed or random effects, the Hausman test was used. The null hypothesis was that the appropriate model is random effects while the model is the fixed effects. In the tests, if the p-value is p>0.05, we fail to reject the null hypothesis meaning that the appropriate model is the Random effect. If the p-value is P<0.05, reject the null hypothesis and accept the alternative hypothesis implying that the most appropriate model is the Fixed effect. Table 3.4 shows the results of the Hausman test.

 Table 3.4: Hausman Test to Choose Fixed or Random Effect regression model.

Model	Chi-square statistic	P-Value
Model 1a	6.30	0.0429
Model 1b	8.24	0.0412

The p-value is significant (p-value<0.05), that is, the fixed effects model was chosen as the most appropriate model for testing the hypothesized relationship.

3.4.4 Test of Moderation using the Fixed Effects Model

The moderating effect of Government Regulations on the relationship between Securities Market Development and Economic Growth of COMESA Member states was computed using the method proposed by Baron and Kenny (1986). Baron and Kenny discussed steps for testing moderating effect as follows. Step1: Estimate the relationship between the dependent variable, moderator and independent variable (model 1a) using panel regression analysis as guided by the Hausman test. The

model should be statistically significant. Step 2: Estimate the relationship between the dependent variable, independent variable, the moderator and the interaction term (SMD*GR) to determine and check whether the moderator variable alters the strength of the causal relationship. Step 3: Determine whether introducing the Interaction Term changes the direction or magnitude of the relationship between two variables. Determine the magnitude and statistical significance of the R-square change. Determine if the statistical significance of the interaction term in the response variable is better than before.

3.4.5 The Moderating effect of GR on the Relationship between EG and SMD

In step 1 (model 1a), the Fixed Effect model estimator was used to estimate the relationship among SMD, GR and EG (dependent variable). The results of panel regression analysis are presented in Table 3.5. F-test (p<0.05) is statistically significant, therefore the regression model have information. Securities market development (SMD) (β = 2.807, p<0.1) and Government regulations (GR) (β = -0.140, p<0.001) are significant predictors of economic growth (EG). This shows that for every unit increase in SMD, there are 2.807 units increase in EG and for every unit increase in GR, there is a 0.140 unit decrease in EG. The relationship between GR and EG is negative and statistically significant. The t-test for SMD equals 1.88 (p<0.1) while the t-test of GR equals -4.96 (p<0.01), and both are statistically significant, meaning that the regression coefficients for SMD and GR are significantly different from zero. R-squared (R²) is 0.229 suggests that SMD (independent variable) and GR (moderator) jointly account for 22.9% of the variance in Economic growth (dependent variable) of COMESA member states.

 Table 3.5 Fixed Effects Panel data Regression Results, Dependent Variable: Economic Growth,

 Predictors: SMD and Government Regulations (Model 1a)

EG	Coefficient	Std. Err.	t	P>t
SMD	2.807*	1.496	1.88	0.063
GR	-0.140***	0.028	-4.96	0.0000

_cons	12.03***	1.575	7.64	0.0000
Model Summary				
Observations	118			
R-squared	0.229			
F(2,115)	15.88			
Prob > F	0.0000			
Number of Country ID	9			

*** p<0.01, ** p<0.05, * p<0.1

In step 2 (model 1b), the interaction term (SMD*GR) was introduced in the fixed effects panel regression model. Fixed Effect model was run to estimate the relationship among SMD (independent variable), GR (moderator), interaction term and the dependent variable (EG). The results of panel regression analysis are presented in Table 5.3 below. F-test is statistically significant, meaning that the regression model is statistically significant, (F(3,114)= 10.61, p<0.05). Furthermore, Securities market development (β = 3.017, p<0.1) and Government Regulations (β = -0.135, p<0.01) are statistically significant predictors of economic growth (EG). It indicates that for every unit increase in SMD, there are 3.017 units increase in EG, and for every unit increase in GR, there is a 0.135 unit decrease in EG. From the results, the relationship between GR and EG is negative and statistically significant. The regression coefficient of the interaction term (SMD*GR) was not statistically significant (β = -0.0612 p>0.05). Table 3.6 presents the results of Panel Fixed Effects Regression Results, Dependent Variable: EG, Predictors: SMD, GR and Interaction term (SMD*GR) (Model 1b)

EG	Coefficient	Std. Err.	t	P>t
SMD	3.017*	1.554	1.94	0.055
GR	-0.135***	0.030	-4.56	0.0000
SMD*GR	-0.061	0.117	-0.52	0.603
_cons	11.77***	1.661	7.08	0.0000
Model Summary				

 Table 3.6 Panel Fixed Effects Regression Results, Dependent Variable: EG, Predictors: SMD,

 GR and Interaction term (SMD*GR) (Model 1b)

F(3,106) 10. $Prob > F$ 0.0	18	
Prob > F 0.0	.231	
	0.61	
	.0000	
Number of Country ID 9		

*** p<0.01, ** p<0.05, * p<0.1

Source: Research Data (2021)

As presented in table 3.6, the t-test for SMD and GR equals 1.94 (p<0.1) and -4.56 (p<0.01) respectively, and both are statistically significant. This means that the regression coefficients for the two variables are significantly different from zero. The t-test for the interaction term SMD*GR equals -0.52 (p>0.05) which is not statistically significant. R-squared (R^2) was 0.231 which suggests that SMD (independent variable), GR (moderator) and the interaction term (SMD*GR) jointly account for 23.1% of the variance in Economic growth (dependent variable). F(3,106) is 10.61 (p<0.05) which is statistically significant term (SMD*GR) in the FE model from 0.229 to 0.231, we conclude that Government Regulations have a moderating effect on the relationship between securities market development and economic growth of COMESA member states. From the results presented in table 5.3 the interaction term marginally altered the strength of the causal relationship. It appears that government regulations introduce a positive effect on the relationship between securities market development and economic growth.

The prediction equations:

$EG_{it} = \beta 0 + \beta_1 \text{ SMD}_{it} + \beta_2 \text{ GR}_{it}) + \varepsilon_{it}$	equation 1
$EG_{it} = 12.03 + 2.807 \text{ SMD}_{it} - 0.140 GR_{it}) + \epsilon_{it}$	equation 2
$Y_{it} = \beta 0 + \beta_1 \text{ SMD}_{it} + \beta_2 \text{ GR}_{it} + \beta_3 (\text{SMD*GR}) + \varepsilon_{it}$	equation 3
$EG_{it} = 11.77 + 3.017SMD_{it} - 0.135GR_{it} - 0.0612SMD*GR + \epsilon_{it}$	equation 4

Where:

Y=Economic Growth, X₁=SMD, X₂=GR, (SMD*GR) =Interaction Term and ε_{it} is an error term, i= individual country cross-section data, t=time series

3.5 Discussion of the Results

The study objective aimed to establish whether Government Regulations moderate the relationship between security's market development and economic growth of COMESA member states. The moderating variable in the study which was GR, was represented by the ease of doing business score. Tests were conducted to establish if moderation existed. The results were significant and the interaction term altered the strength of the causal relationship. Thus, the results rejected the null hypothesis and accepted the alternative hypothesis that stated government regulations have a moderating effect on the relationship between security's market development and economic growth. The objective of the study therefore was proved by this research. The findings are consistent with the findings from (Khatum, 2019; Chalmers, Godfrey & Lynch, 2012) who advocate that that government regulations are meant to support the sharing of resources in a substantive way to promote economic growth. The study supports the public interest theory of regulations (Stigler, 1971) which propagates that the role of regulators is to come up with viable solutions that shape and influence the EG.

4.0 Conclusions

The objective was to establish whether the government regulations moderate the relationship between security's market development and economic growth of COMESA member states. The study revealed that government regulations moderated the relationship between security's market development and the economic growth of COMESA member states. This led to the conclusion that the effect of government regulations is higher than the individual effect of security's markets development on the economic growth of COMESA member states. The findings suggest evidencing of moderate regulations within COMESA.

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