

# Moderating Effect of Interest Rates in COMESA Countries

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**Abstract:**-The paper sought to determine the moderating effect of interest rate on the linkage between financial factors and financial development in 19 COMESA Countries. The specific objectives were to determine the moderating effect of interest rates on the relationship between international remittance, financial access and the financial development in COMESA countries. The results indicated that interest rate moderated positively the relationship between international remittance and financial development ( $\beta = 0.0217, p - value = 0.0074$ ). Further, interest rate showed a significant moderating effect on the relationship between financial access and the financial development with coefficient 0.0046 ( $p - value = 0.0009$ ). Therefore, results are expected to provide a basis for policy reference and also stimulate debate on diaspora policies on interest rates in developing countries especially COMESA region to encourage foreign remittances, financial access and thereby fostering financial development.

## I. BACKGROUND OF THE STUDY

International remittances are measured in terms of total deposits and credit as well as % percent of GDP. International remittances are the second largest source of finance after FDI and there has been continuous increase inflow in the last three decades and this is an important input in national economic development as indicated by World Bank report (2016). Bhattacharya *et al.*, (2018) indicated that financial globalization has given rise to the improvement of financial by increasing access to funds and also improving financial infrastructure in the developing countries. Money is transmitted into the developing countries through operators such as Western Union and Money Gram and also with other domestic and foreign financial institutions. Developing countries are integrated into global financials where more capital flows into these countries. Aggarwal, *et al.*, (2010), point out that poor Countries received larger international remittances as compared to the developed Countries. Coulibaly *et al.*, (2014), indicated that international remittances influence financial development by extending credit to remittance recipients or by increasing bank's loanable funds, mitigate credit market development by relaxing financial constraints of remittance recipients. Coulibaly, (2014), further points out those remittances promote growth where the financial sector does not meet the credit needs of the population. Hollifield *et al.*, (2006), Nyamongo and Misati, (2011) and Aggarwal *et al.*, (2011), and Kumar *et al.*, (2013), share the same view that international remittances promote banking where recipients are able to open bank accounts and deposit the money

received for safe storage and also recipients are able to get other services or products from the banks. This also enables banks to have credit outstanding since there is more money for credit. Empirical studies done by Misati and Kamau, (2018), indicate that families that receive migrant remittances access better health facilities, have better education, higher financial access and low poverty levels than households who do not receive remittances. Fayad, *et al.*, (2013) examined the relationship between international remittances and financial development and finds that international remittances have a negative effect on financial development. It is perceived that differences in remittances across different countries are due to the level of financial development.

A rise in international remittances might not translate to itself into an increase in credit to the private sector if these inflows are instead channeled to finance the government or if the banks are reluctant to lend and prefer to hold liquid assets. The study, further argues, that remittances might increase bank deposit if they are immediately consumed or if they remittance recipients distrust financial institutions and prefer other ways to save these funds. It is exactly not clear as to how remittances might spur financial success in each COMESA Countries despite the fact that there is an increase of volume of remittances from migrants working abroad to their home countries. International remittances are channeled through a financial institution such as Western Union and Money-gram. It is not clear as to whether remittances Granger causes financial development or financial development Granger cause remittances in COMESA Countries. This raises the question: Do remittances have an effect on the financial development of the country receiving the funds? This research will fill the gap in the literature by investigating the relationship between International remittances and financial development in COMESA countries.

Financial access refers to the availability of supply of reasonable quality of financial services at reasonable costs (Claesseus, 2006; World Bank Research Observer, 2006). Financial access is measured by the number of people with bank accounts per 100,000 people, number of Automated Teller Machines (ATMs), percentage of people with a bank account, percentage of firms with line of credit (all firms), Accounts per thousand adults (commercial banks) and market penetration of mobile phones as proxy for mobile banking. World Bank Report (2008), indicate that there are large differences in the use of credit services across countries. In the developed countries, individuals are likely to borrow from

formal sources while on the other hand in the Developing Countries, individuals and firms rely more on informal sources such as friends, family, and informal lenders. World Bank report further indicates that, in the developing Countries, minimum loan amounts and loan fees are very high when compared to per capita income hence restricting access to bank credit to the high-income household. Claessens, (2006) argue that lack of access to financial services occur when barriers to access the formal financial system are too high or costs are unreasonably high or because they do not have a credit record. Further, individuals will not access to financing because there are no distribution points of financial institutions in their area.

Torre *et al.*, (2017), indicate that there is sheer lack of access to the use of financial services in the Developing Countries and that firms and households may not be using those services, even when available, because they do not need them. Torre, (2017), further argue that in the developed countries, the use of bank accounts to save and make payments is almost universal while in the Developing Countries, it is much lower. Data from the World Bank’s Global financial inclusion show that more than 90% of adults in high-income Countries had an account at financial institutions in 2014 compared to about 29 and 51% adults in Sub-Saharan Africa and Latin America.

Jonathan & Camilo, 2008; Demombyness and Thegeya, 2012 share the same view that mobile phones accelerate financial access in the form of phone-based money transfer and storage. Ondege, (2010), is of the view that Mobile transactions in developing enable users to store value in an account and cover cash into and out of the bank accounts and transfer stored value between accounts. The users of mobile phones can transfer funds between accounts linked to mobile phones by using a set of SMS messages and PIN Codes. This enables users to move money from the place and provide an alternative to the payment system offered by banking Pawn shops, remittance firms. Mobile phones offer access to basic banking services and basic banking services can be accessed with the help of a network of mobile phone agents which in Kenya outnumber the of bank branches to a great extent (Mas & Radcliffe, 2011). The study further finds that the mobile phone can be used as Automated Teller Machines (ATMs) for payment of goods at the store. The study further finds that the mobile phone is used as an internet banking terminal by making payments and transfers. Data from Global index indicate adults who borrow from a financial institution averaged 17.3% in high-income countries in 2014, as compared to 12 for Eastern Europe and 6% for Middle East (World Bank, 2014).

Financial access refers to the availability of supply of reasonable quality of financial services at reasonable costs, where reasonable quality and reasonable costs (Arora, 2010)

Claessea and Laeven (2002) examined the relationship between financial development, property rights, and growth argues that the existence of an environment with poorly

developed financial systems and weak property rights reduces the access of firms to external financing and also force firms to allocate resources in suboptimal way i.e. allocation of inevitable resources. The degree to which firm allocate resources can be impeded when there are weak property rights. So the degree to which firms allocate resources in an optimal way will depend on the strength of a country’s property rights.

1.1 Objectives of the Study

This paper has to objectives to investigate on;

1. Determine the moderating effect of interest rate on the relationship between international remittance and financial development in COMESA counties.
2. To investigate the moderating effect of interest rate on the relationship between financial access and financial development in COMESA countries.

II. SPECIFICATION OF THE ECONOMETRIC MODEL- STATIC AND DYNAMIC STATES

The specification of the econometric model is based on econometric theory and on any information relating to the phenomenon being stated. In this study, this model explains the independent, dependent and moderating variable.

$$FD_{it} = \beta_0 + GDP_{it} + c_{it} + \varepsilon_{it} \dots\dots\dots (Model 1)$$

$$FD_{it} = \beta_0 + \beta_1GDP_{it} + \beta_2RMT_{it} + \beta_3FINAC_{it} + \beta_4INFL_{it} + \beta_5FDI_{it} + c_{it} + \varepsilon_{it} \dots\dots\dots (Model 2)$$

Where:  $FD_{it}$  = Financial development which is dependent variable;  $\beta_0$  = Intercepts and is assumed to remain constant across all the units according to Cameron and Trivedi (2005).  $RMT_{it}$  = Remittances;  $FINAC_{it}$  = Financial access;  $INFL_{it}$  = Inflation;  $FDI_{it}$  = Foreign direct investment;  $INTR_{it}$  = Interest rate;  $c_{it}$  = individual specific effect and  $GDP_{it-1}$  = Lagged value of GDP,  $\varepsilon_{it}$  = Stochastic error term and is assumed to be uncorrelated with all explanatory variables of all past, present and future time periods. This is a strong assumption which rules out lagged dependent variables. It also assumes that the idiosyncratic error term is uncorrelated with the individual specific effect ( $c_{it}$ ).

$\beta_1, \dots, \beta_5$  = Slope parameters estimated by regression analysis. The coefficients range from  $\beta_1, \dots, \beta_{10}$  because of moderation regression. Moderating effect of interest rate on the relationship between remittances and financial development (INTR\*REM).

$$FD_{it} = \beta_0 + \beta_1GDP_{it} + \beta_2RMT_{it} + \beta_3FINAC_{it} + \beta_4INFL_{it} + \beta_5FDI_{it} + \beta_6INTR_{it} * REM_{it} + c_{it} + \varepsilon_{it} \dots\dots\dots (Model 3)$$

Interest rate moderates the relationship between Financial access and financial development (INTR\*FINAC).

$$FD_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 REM_{it} + \beta_3 FINAC_{it} + \beta_4 INFL_{it} + \beta_5 FDI_{it} + \beta_6 INTR_{it} * REM_{it} + \beta_7 INTR_{it} * FINAC_{it} + c_{it} + \varepsilon_{it} \dots \dots \dots (Model 4)$$

III. RESULTS AND DISCUSSION

Table 4.9: Moderation Regression Effect

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Constant	23.3962*** [1.1833]	23.0365** [2.4132]	22.5864*** [1.5658]	21.1766*** [1.5588]
GDP	-0.6447*** [0.1669]	-0.6008*** [0.1628]	-0.5662** [0.1610]	-0.6212*** [0.1570]
REM		0.3246 [0.2980]	-2.1175** [0.8778]	0.2367 [0.2898]
FINAC		0.3075*** [0.0556]	0.3202*** [0.0542]	0.0641 [0.0744]
INFL		-0.08452** [0.0403]	-0.0760* [0.0399]	0.0356 [0.0732]
FDI		-0.4605** [0.1826]	-0.4168** [0.1805]	-0.0543 [0.0393]
REM*INTR			0.0217*** [0.0074]	0.0144*** [0.007]
FINAC*INTR				0.0046*** [0.0009]
R <sup>2</sup>	0.0332	0.1115	0.1292	0.1677
R <sup>2</sup> Change		0.0783	0.0177	0.0385
Wald-Chi2	14.93	53.97	63.78	86.66
Prob.>Chi2	0.0001	0.0000	0.0000	0.0000

\*The level of significance is represented by (\*) for 10%, (\*\*) for 5% and (\*\*\*) 1%. The values in brackets [ ] are the standard errors.

Source: Author’s Survey Data, 2019

Having estimated the bi-variate regression between the control variable and the dependent variable, the next step was to find the direct relationships between financial development, GDP, remittances, financial access, inflation, and foreign direct investment.

To achieve this, the random effects model was estimated for Model 2. Results indicated that GDP growth had a negative and significant coefficient (-0.6008). International remittance is positive but not significant (0.3246). Financial access registered positive and significant coefficient(0.3075), showing that when access changes by a unit bank credit to the private sector is expected to increase by 0.3075 units.

In the case of inflation, the coefficient is negative and significant (-0.08452). In addition, foreign direct investment (FDI) recorded negative and significant coefficient of -0.4605 as observed from bivariate regression results, R-Squared increased by 0.0783 showing that independent variables increase the precision of the relationship.

The next multivariate moderated regression was estimated to link between financial factors, interest rate financial development. The study established the link international remittances, financial access, inflation rate, foreign direct investment GDP and moderation between international remittances and interest rate (REMIT\*INTR), that is model 3. Results showed that GDP growth is negative and significant. The international remittance furthermore registered a negative and significant coefficient. In line with prior expectation, financial access reveals a positive and significant effect on

financial development. Similarly, foreign direct investment gave positive and significant coefficient, showing that when FDI increases by a unit, financial development increases by 0.4168 units at 5% level of significance. The interaction between international remittance and interest rate (REM\*INTR) is positive and significant at 1%. The value of R-Square improved by 0.0717 when the interaction is included between international remittance and interest rate. Therefore, the hypothesis;  $H_{05.a}$ : Interest rates do not have a moderating effect on the relationship between remittances and financial development in COMESA countries was rejected and concluded that interest rate moderates the relationship between remittance and bank credit to the private sector.

Regression results of model 4 showed that GDP growth had a negative and significant coefficient (-0.6021). Samargandiet al., (2013), explored the relationship between financial development and economic growth monotonic for 52 middle-income countries for the period 1980-2000 using pooled mean in group estimator in dynamic heterogeneity and find that financial development stimulates growth by channeling savings to the most productive investment projects. However, this study report that in financial repression occur in a poorly functioning financial system which in turn depresses growth. This happens when the government interferes in the financial system by putting in place regulations such as interest rate ‘cap’ or interest rate ceilings, higher bank reserve requirement and direct credit programs for those sectors which are preferential.

The interaction between the interest rate and financial access was also positive and significant this implies that the hypothesis;  $H_{05b}$ : Interest rate does not moderate the relationship between financial access and financial development in COMESA Countries thus rejected.

In addition, this result supports Loayza and Rancieue (2006) who examined the relationship between financial development and economic growth using annual data with 75 countries over the period 1960-2000 and find a significant and positive long-run relationship between financial development and economic growth.

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