STOCK MARKETS' DEVELOPMENT AND ECONOMIC PERFORMANCE IN COMESA COUNTRIES[1]

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Abstract: The objective of this research is to investigate the impact of economic performance on stock markets development in the Common Market for Eastern and Southern Africa (COMESA).This research employed a panel data analysis. The four member countries in COMESA(Sudan, Kenya, Mauritius and Egypt) to examine the effect of the economic growth, inflation rate and banking sector developmenton stock markets development, using a secondary data from the World Bank database and the annual reports of stock markets in the selected COMESA countriesfor the period (1995 - 2017).The research adopted the fixed effect model based on the result obtained fromHausman test. Our results revealed thattheeconomic growth has a positive and highly significant impact on stock markets development in COMESA countries, and the impact ofbanking sector developmenton stock markets development ispositive and highly significant.. Ourresults also showed that the impact of inflation rateon stock markets development in COMESA countries is not significant.This research recommendsthat it is required to put policies that promote economic growth and efficiency of the banking sector, in order to promote the growth of stock markets in COMESA countries.

Keywords: COMESA; Stock markets; Economic development

INTRODUCTION

Stock market development plays an important role in predicting future economic growth. However, Economies without well-functioning stock markets may suffer from three types of imperfections: first, opportunities for risk diversification are limited for investors and entrepreneurs, second, firms are unable to optimally structure their financing packages and third, countries without well-functioning markets lack information about the prospects of firms whose shares are traded, thereby restricting the promotion of investment and its efficiency.(Demirguc-Kunt *et al*, 1996).A sound and stable

macroeconomic environment is a critical prerequisite to the proper functioning of a stock market and it is essential for the stock market development (Pardy, 1992). COMESA countries are all in developing state and their economic sectors are growingandsuffer from several problems, including; unstable inflation and currency exchange rates, unemployment, lack of funding and fluctuation of economic growth. However, the stock markets in these countriesareevolving and there are only few countries so far have introduced stock marketsin their financial system.Therefore, this research will investigate the impact of economic performance on stock markets development in COMESA countries during the period from 1995 to 2017.

The objective of this research is to investigate the impact of economic performance on stock markets development in COMESA countries during the period from (1995 – 2017), by focusing the analysis on fourcountries; Sudan, Egypt, Kenya, and Mauritius.

The logic behind selection of these four countries is that they are in the same region and members in COMESA, and the most important thing is that they have the largest GDP among all COMESA countries, beside the reason of availability of the data.

The findings of this research aim to answer the following questions:

I.   Do the macroeconomic variables have significant impact on stock markets development in the selected COMESA countries?

II.   If so, how does each macroeconomic variable in this research affect the stock markets development in the selected COMESA countries?

This research examines the impact of economic performance on stock markets developmentinCOMESAmember countries, its findings will give direction to various governmental bodies and policy formulators within the region and in the sample countries in forming policies that are beneficial for the development of stock markets which contributes a positive growth in economy.

Alsowill help investors who will have a better understanding of how macroeconomic variables in the sample countries interact with their decision making tactics to optimise their portfolios.

LITERATURE REVIEW

The literature on stock market development has found that the more developed a country is, the more deeply rooted its stock market in the economic activities (Rajan and Zingales, 2003; La Porta *et al.*, 2006), and a sound and stable macroeconomic environment is a critical prerequisite to the proper functioning of a stock market.

Several studies found that financial openness and liberalization increase stock market activity (Levine and Zervos, 1998b; Henry, 2000; and Bekaert and Harvey, 2001). On the other hand, McCauley and Remolona (2000) and Shah and Thomas (2001) found that the size of the economy is an important factor in the development of liquid and well-functioning securities markets. Mishkin (2001) argues that financial liberalization promotes transparency and accountability, which reduces adverse selection and moral hazard. It thus tends to reduce the cost of borrowing in stock markets, which eventually increases their liquidity and size.Garcia and Liu (1999) investigated the macroeconomic determinants of stock market development in a sample of Latin American and Asian countries. Their findings show that GDP growth, domestic investment and financial intermediary sector development are crucial in stock market development.

The positive relationship between economic growth and stock market development is well documented in the existing literature, for instance, Shashi JeevitaMatadeen (2017) in his study identified the main macroeconomic determinants of stock market by using a dynamic Panel Vector Error Correction Model within a sample of Sub Saharan African countries, he found that economic growth has significant positive impact on stock market development.Furthermore, Kagoshi *et al.* (2013) employed panel granger causality tests for seven sub-Saharan African countries for the period 1991 to 2007 to investigate the relation between stock market development and economic growth, their findings found a bi-directional causality between stock market development and economic growth which suggest that increased output in the real economy initially permits financial development when a certain stage is reached.

Moreover, Enisan & Olufisayo (2009) examine the long run and causal relationship between stock market development and economic growth for seven countries in sub-Saharan Africa. Using the autoregressive distributed lag (ARDL) bounds test, the study finds thatthe stock market development is cointegrated with economic growth in Egypt and South Africa.However, Granger causality in the context of VAR shows evidence of bidirectional relationship between stock market development and economic growth for Cote D'Ivoire, Kenya, Morocco and Zimbabwe.

METHODOLOGY

This research investigates the impact of economic performance on stock market development in COMESA countries, by focusing the analysis on four countries (i.e. Sudan, Kenya, Mauritius and Egypt) during the period from (1995 – 2017), this chapter following the review of previous literature will focus on the research methodology, and will discuss the research questions, the research hypothesis, the population and sample

size, the methods of data collection and the method of data analysis used, while also giving a general overview of the variables under analysis.

The sample consists of four countries in COMESA region which are Sudan, Egypt, Kenya and Mauritius, the research utilizes secondary data of annual time series covering the period from 1995–2017.

Secondary data of annual time series over the period (1995-2017) was collected for each country. The secondary data are obtained from the World Bank database and the annual reports of Stock Markets and Capital Market Authorities of the selected countries (Appendix 4). The resulting data which contains both cross sectional and corresponding time series data is a balanced panel data.

In order to analyse the impact of economic performance on stock market development in the selected COMESA countries, panel data analysis (longitudinal data) is employed because of the presence of both cross section units (countries) and time series data. A panel dataset is a set of cross-section data Y_{it} ($i = 1...$ N and $t = 1...$ T) performed periodically in a defined time interval T of variables for a group of individuals (in our case countries), (Baltagi, 2005). In this research we have four countries (i.e. Sudan, Egypt, Kenya and Mauritius), the data for each country on the dependent and independent variables are available for the period 1995-2017, and therefore we have 92 observations. Data analysis and all tests in this research conducted through STATA 14 econometric software.

EMPIRICAL ANALYSIS AND INTERPRETATION

5.1 Descriptive Statistics

This section provides the descriptive statistics of the data which are used in the analytical model of this research in section (2). Table (1) below summarises the statistics for the sample countries (i.e. Sudan, Kenya, Mauritiusand Egypt).

Table 1: Descriptive Statistics for the sample Countries (1995-2017)

Variable	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
MCR	92	29.88979	24.15808	0.41	103.1149
RGDPR	92	4.652315	2.179057	0.2322827	11.52
INF	92	12.07708	16.42663	0.9776751	132.82
BSD	92	37.57875	27.32523	1.615531	106.2603

Source: MCR=Market capitalization ratio to GDP. RGDPR=real GDP. INF=annual inflation rate= banking sector development.

We observe from table (1) that the stock markets development in the selected COMESA countries represented by ratio of market capitalization to GDP (MCR) between 1995 and 2017 range from the maximum 103.1% in 2007 in Egypt and minimum of 0.41% in 1996 in Sudan with an average of 29.88% and a high standard deviation of 24.16% indicating a high variation of stock market development in COMESA countries.

Further, for the macroeconomic variables, the annual real gross domestic product which represents the Economic growth (RGDPR) has the lowest standard deviation value of 2.18% among the other macroeconomic variables in this research, and has a mean value of 4.65% with a range from 11.5% in 2007 in Sudan to 0.23% in 2008 Kenya.

Moreover the inflation rate (INF) has highest standard deviation with value of 16.43%. The inflation rate reached up to 132.82% in 1996 in Sudan and at the lowest of 0.98% in 2016 in Mauritius with average value of 12.08%.

The Banking Sector Development (BSD) in COMESA countries which is represented by the ratio of domestic credit provided by the banking system to GDP also shows a high standard deviation with value of 27.32%, and an average value of 37.58% with a range value from minimum 1.61% in 1999 in Sudan to maximum 106.26% in 2013 in Mauritius.

5.2. Results of Panel Data Analysis

The panel data regression techniques are utilized in this research to investigate the impact of the selected macroeconomic variables (RGDPR, INF and BSD) on stock market development represented by the ratio of Market capitalization to GDP in the selected COMESA countries (Sudan, Egypt, Kenya and Mauritius) for the period 1995-2017.

As it has been previously discussed in chapter (4) that the pooled OLS model is not chosen for this research, therefore the panel data analysis in this section will be between the fixed effects and random effects model. Before further looking into the results of panel data analysis, we need to carry out the Hausman test to be able to choose the most appropriate panel data analysis model, which is between therandom effects and fixed effects model.

Table 2 below shows the results of estimating the fixed effects model, table 3 showsthe results of random effect model estimation as well as the results from the Hausman test.

Table 2: Results of Fixed Effect Model Estimation:

Dependent variable - Market Capitalization/GDP (MCR)

Independentvariables	Coefficient	P-Value
RGDPR	2.279256*	(0.001)
INF	0.0603832	(0.538)
BSD	0.8363304*	(0.000)
Cons.	-12.87153*	(0.040)

Model summary:

Countries included	4
Total observations	92
F-test	18.35*(0.0000)
	0.3931

Notes: 1. The F-test has normal distribution (0, 1) and tests the null hypothesis of insignificance as a whole of the estimated parameters, against the alternative hypothesis of significance as a whole of the estimated parameters.

    2. * denote significance at 5% (0.05) level of significance.

    3. RGDPR, INF, BSD denotes Economic Growth, Inflation Rate and Banking Sector Development respectively.

Source: Own calculation by STATA 14 (Appendix 1)

Table 3: Results of Random Effect Model Estimation and Hausman Test

Dependent variable - Market Capitalization/GDP (MCR)

Independentvariables	Coefficient	P-Value
RGDPR	1.856029*	(0.008)
INF	-0.0309647	(0.757)
BSD	0.7187617*	(0.000)
Cons.	-5.381247	(0.265)

Model summary:

Countries included	4
Total observations	92
Wald	172.53*
	(0.0000)
	0.6622
Hausman test	13.78*
	(0.0032)

Notes: 1. The Wald test has χ^2 distribution and tests the null hypothesis of insignificance as a whole of the parameters of the explanatory variables, against the alternative hypothesis of significance as a whole of the parameters of the explanatory variables.

2. The Hausman test has χ^2 distribution and tests the null hypothesis that unobservable individual effects are not correlated with the explanatory variables, against the null hypothesis of correlation between unobservable individual effects and the explanatory variables.

3. * denotes significance at 5% (0.05) level of significance.

4. RGDPR, INF, BSD denotes Economic Growth, Inflation Rate and Banking Sector Development respectively.

Source:　　Own calculation by STATA 14 (Appendix 2,3)

FINDINGS

The two panel data models i.e. the fixed and random effects; present different estimates, however, the Hausman test was conducted in order to choose the appropriate model. Results from Hausman test as presented in table 4 shows a p-value of 0.0032 which is less than 0.05 (the significant level). Consequently, this implies that the null hypothesis is rejected, and we accept the alternative hypothesis . Thus, the fixed effects model is the most appropriate panel data analysis model in this research.

According to the results from Hausman test, the fixed effects model is chosen to test our data under different specificcountrycharacteristic estimations, in which the panel data consists of four countries within COMESA region with the time span of 23 years from 1995 to 2017.When using fixed effect model we assume that something within the country may impact or bias the independent variables and we need to control for this. This is the rationale behindthe assumption of the correlation between the country-specific errorand independent variables, and the fixed effect model remove the effect of those time-invariant characteristics, so we can assess the net effect ofthe predictors on the outcome variable, (Park, Hun Myoung, 2011). Another important assumption of the FE model is that those time-invariant characteristicsare unique to the individual/country and should not be correlated with other individual/countrycharacteristics. Each country is different, therefore the country's error term and the constant (which captures individual/country characteristics) should not be correlated with the others.

The results from estimating the fixed effect model presented in table (2) above demonstrates that the statistics is 0.3931, this implies that theindependent variables (Economic growth, Inflation Rate and Banking Sector Development) explain 39.31% of the dependentvariable (Stock Market Development). F-test is conducted toestablish whether all the coefficients in the model are different than zero. In this research the F-test gives a result of 18.35 withp-value of (0.000), which is less than the significance

level (0.05), therefore we can conclude that we can reject the null hypothesis, that the explanatory variables (macroeconomic variables) do not explain the dependent variable (stock market development), and the model is a good fit for the data.

The estimation results of the fixed effect model in table (2) indicates that the impact of economic growth (RGDPR) on stock market development is positive and highly significant at (0.05) significant level, as shown by a regression coefficient of 2.279 with a positive sign and p-value of (0.001), this implies that a 1% increase in economic growth in the selected COMESA countries increases the stock markets development in these countries by 2.27%. Therefore, we reject and accept of the first hypothesis of this research, that the economic growth has a significant positive impact on stock markets development in the selected COMESA countries.

The findings also shows that the effect of banking sector development (BSD) on stock market development is positive and highly significant at (0.05) level of significance, as indicated by a regression coefficient of 0.836 with a positive sign and p-value of (0.000), this implies that a 1% rise in banking sector development in the selected COMESA countries leads to an increase in stock markets development by 0.84%, and we suggest that the stock markets in COMESA countries are complement rather than substitute for the banking sector. According to this finding, we reject and accept of the second hypothesis of this research, that the banking sector development has a significant positive impact on stock market development of the selected COMESA countries.

CONCLUSION

This research empirically examined the impact of economic performance on stock markets development in COMESA countries. We used epanel data approach for a sample of four member countries in COMESA, these are Sudan, Egypt, Kenya and Mauritius for the period from 1995 to 2017, to analyse the impact of the selected macroeconomic variables which are economic growth (real GDP growth), banking sector development (ratio of domestic credit to private sector to GDP) and inflation rate, on stock market development (ratio of stock market capitalization to GDP). Adopting the fixed effect model from the results of Hausman test, the findings show that the economic growth has a positive and highly significant impact on stock markets of the selected COMESA countries.

Based on the previous studies and the findings of this research, this research has some important policy implications for the countries in COMESA region so as the stock markets can be improved. Firstly, the evidence indicates that economic development plays an important role in stock markets development in COMESA countries. Therefore, it is important for policy makers in these countries to liberalize

the economy when undertaking financial liberalization, and should consider pursuingpolicies that promote economic growth. And to focus on developing the infrastructure (services and manufacturing) of the economy so as to drive the development of stock markets through their contribution to diversifying the economy and increasing the regional and international trade and investment. Secondly, based on the results in this research which confirm that the stock market is a complement rather than substitute for the banking sector in COMESA countries. Thus, policies should be put in place to promote the efficiency of the banking sector. One of the first recommended policies is to have less state involvement in the system. This includes cutting back on public ownership of financial institutions, minimizing monetary financing of budget deficits and linking the development of securities market with the development of capital markets, money markets, insurance markets. Besides, a more opened approach to multinational banks and other institutions which would also benefit the industry in terms of financial innovation. A stronger, more transparent institutional and legal framework should consolidate the sector. Developing financial intermediaries can promote stock markets development with the successful examples of Malaysia and Thailand exchanges.

NOTE

1. The Common Market for Eastern and Southern Africa (COMESA) include Sudan, Egypt, Kenya, and Mauritius.

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