PUBLIC FINANCE INVESTMENT, MUTUAL FUNDS IN GOVERNMENT STOCKS AND INVESTMENT ACTIVITY IN THE BRICS COUNTRIES

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ABSTRACT

The paper investigates public finance investment and the influence of mutual funds in government stocks on investment activity, using the BRICS countries data. Investment has been recognized as one of the most volatile expenditure components over the business cycle. Investment activity should therefore be convenient, practical and efficient as investment activity can enhance economic growth. The paper uses panel unit root test, panel autoregressive distributed lag model (PARDL), panel cointegration tests, Engle-Granger causality test, impulse response functions and variance decomposition tests. The panel unit root tests confirms different orders of cointegration; and, panel cointegration tests, where one lag was used, indicated the presence of a long-run relationship among investment activity and mutual funds. The findings corroborate the idea that investment activity is positively impacted by mutual funds in the long run as suggested by the PARDL model. The Engle-Granger casualty test shows a unidirectional causality from investment activity to government stock on corporations as well as from government stock on bonds to liquid assets. The impulse response function test indicates that the impulse percentage of fluctuation and the variables did contribute to each other, from various periods in the short and the long run. The results show a long run relationship between the variables as they move together in the long run and mutual funds having a positive effect on investment activity. The paper recommends that mutual fund policy makers need to develop policies that will lead to financial stability and increase the performance of financial institutions. These policies should be able to help financial institutions in making investment decisions that will further benefit them and the country's economy not only in the short term but also in the long term. Furthermore, critical evaluation is needed to avoid investment shocks, instability of investment activity, instability of financial markets and that of the economy as a whole.

Keywords*:* Investment; Mutual Funds; Panel Autoregressive Distributed Lag; Engle-Granger Causality Test; BRICS

INTRODUCTION AND BACKGROUND

The relationship between investment and economic growth continues to be debated in literature. There is a general agreement that economic expansion occurs as a result of investment activity, and that investment is crucial to correct ills such as unemployment and poverty (Arestis & de Paula, 2008; Alexiou, Tsaliki & Tsoulfidis, 2016; Pradhan, Arvin, Nair & Bennett, 2020a). Of course, there remains intellectual contestations about the nature and form of investments that could lead to economic expansion. But, generally, investment activities can promote economic growth even as it involves the process of investing money in return for profit (Sibirskaya, Stroeva, Khokhlova & Oveshnikova, 2014; Pradhan *et al.,* 2020a). Furthermore, investment can also initiate the development of innovation activity (Sibirskaya

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et al., 2014; Pradhan *et al.,* 2020a). Investment has been recognized as one of the most volatile expenditure components over the business cycle. Investment activity should be convenient, practical and efficient as investment activity can be a pre-requisite for qualitative dynamics of different companies (Arljukova, 2008; Pradhan, Arvin, Nair & Bennett, 2020b). Small and non-expert investors tend to be more attracted to mutual funds, as the investor invests in a limited amount with low transaction costs (Alexiou *et al*., 2016; Pradhan *et al.,* 2020b). Investors can be indifferent about investing in mutual funds or buying individual assets directly. Traditionally mutual funds aggregate the individual investor's capital contributions and reinvest their contributed capital in publicly traded companies (Cumming & Macintosh, 2007; Pradhan *et al.,* 2020a, 2020b). Individual investors on the capital market prefer investment through the mutual fund to an individual investment. Efficient operation of financial markets will lead to high investments and improvement inappropriate allocation of investments, such will also result in growth within the economy of the country.

Productive investments have been unequal especially in developing countries like South Africa, resulting in worsened inequalities within societies. India and South Africa's investment is mainly capital intensive leading to a dual economy, meaning inequitable growth occurs. Inequitable growth occurs when the economy does not provide or increase the living standards for the entire society. Low levels of investment in human capital formation have a negative effect as it limits life expectancy, education levels, reducing the well-being of poor service users, hampering economic development and growth sustainability (Eklund, 2009; Nkoro & Uko, 2019; Pradhan *et al.,* 2020a, 2020b).

Investment is a determinant of economic growth as an increase in investment activity contributes positively to the economy at large (Sibirskaya *et al*., 2014; Pradhan *et al.,* 2020a, 2020b). Therefore, it is imperative to determine the impact that risky financial assets such as mutual funds have on investment activity. Mutual funds are financial instruments found from securities usually administered by banks (Ferreira, Keswani, Miguel & Ramos, 2011; Pradhan, Arvin, Nair, Bennett & Bahmani, 2019). The study used Brazil, Russia, India, China and South Africa (BRICS) panel data to determine how mutual funds on government stock can influence investment activities. In the world economy, BRICS countries in the past decade have played an important role in terms of total production, capital destination, investment and as potential consumer markets. China has the fastest-growing economies with the highest investment and saving rates followed by India. Among all the BRICS countries combined, China has a major economy. The high savings and investment rates in these two countries assisted to ease the share of net exports to gross domestic product (GDP). The economy of China has developed at a yearly rate of 9.9 percent between 1978 and 2009, and was above the world average during that period. Investment can be restrained by national savings rates that are at lower levels (Sridharan, Vijayakumar & Rao, 2009; Pradhan et al., 2019; Pradhan *et al.,* 2020a, 2020b). For BRICS countries to avoid low growth which leads to vulnerability of the domestic economy and instability, the countries need to improve their domestic market. Financial products should be developed by the BRICS countries that target certain segments of the population group. Financial products that include derivative products for farmers to make available agricultural insurance and innovative mutual funds for small-scale investment to be able to advance small and medium enterprises (SMEs) (John, 2012; Pradhan et al., 2019). Using data from BRICS countries, this paper investigates the influence of mutual funds in government stock on investment activity.

There exists no previous study that had analysed the influence of mutual funds in government stock on investment activity among the BRICS countries. The contribution of this paper to the field is that it applies a combination of six statistical modelling techniques and tests, which are the panel unit root test, panel autoregressive distributed lag model (PARDL), panel cointegration tests, Engle-Granger causality test, impulse response functions and variance decomposition tests, to analyse the 2001-2016 panel data among the BRICS countries. No other known existing study has applied the same combination of tests on the BRICS countries 2001-2016 panel data. Given that the panel data analysed is drawn from the 2001-

2016 annual statistics, the paper does not suggest in any way that the findings are applicable to the period before 2001 or post 2016. Instead, the paper is reporting the relationship between mutual funds in government stock on investment activity underlying this specific panel data.

THEORETICAL AND EMPIRICAL LITERATURE REVIEW

The literature review is divided into two sections, namely the theoretical framework and empirical literature which provides findings from various studies. As investment theories differ, the Keynes Theory of investment and the Neoclassical theory of investment behaviour are adopted in this study.

Theoretical Framework

Two theoretical traditions on investment are crucial to this paper; and, they are: the Keynes theory of investment; and, the Neoclassical theory of investment behaviour.

Keynes Theory of Investment

The Keynes theory was developed founded on the demand and supply price of capital in 1936. Keynes argued that until the expected future revenues present value is equal to capital opportunity cost investments will be made at the margin. This implies that when the net present value is equal to zero, investments will be made (Eklund, 2013; Senyo & Osabutey, 2020). Compared to the amount of money invested, the demand and supply price of capital are not similar. These would be due to pressure placed on facilities producing capital goods and changes in prospective yields. It was believed by Keynes that investment fluctuations were caused by cyclical fluctuations. An increase in investment also results in income expansion, therefore leading to an increase in consumption increasing until savings rises to a point of equality with new levels of investment (Wray & Tymoigne, 2008; Pradhan et al., 2019). Hence, expansionary effects tend to take place when planned investments reach higher levels, due to greater share profits at every income level (Wray & Tymoigne, 2008; Pradhan, Arvin, Nair, Hall & Bennett, 2021). Harcourt (2006) emphasised that for a higher share of gross profit to occur there would be higher investment rates present. Expected profits can influence investment decisions. Kregel (2008) furthermore states that a decrease in investments and profit can occur as anything might cause lower expected future profitability. However, in economic theory, the nature of investment decisions remains largely unresolved.

Neoclassical Theory of Investment Behaviour

The development of the Neoclassical theory of investment behaviour is centered on the optimal accumulation of capital or optimal capital stock. Optimal capital stock can be generated maximizing profits each period (Eklund, 2013; Pradhan *et al.,* 2019; Pradhan *et al.,* 2020a, 2020b). According to Eklund (2013), Chatterjee (2020) and Pradhan *et al.* (2020a, 2020b), the Neoclassical theory assumes optimization behaviour on behalf of the investor, explicitly assuming profit and value maximization. It highlights the significance of interest rates and prices to determine the investment saving decisions (Alexiou *et al.*, 2016; Chatterjee, 2020; Pradhan *et al.,* 2020a, 2020b). The theory states that interest rates do control the demand for investment goods. Expected profits motivate most investment decisions, as investment expenditure is aggregate demand key component that conditions through economic activity, employment, and the introduction and diffusion of new technology. The theory further stipulates that capital earns a return that is equal to its marginal productivity, however, it was argued that in a capitalist economy monetary returns were important by Keynes and Minsky (Wray & Tymoigne, 2008; Pradhan *et al.,* 2020a).

Empirical Analysis

This subsection discusses studies of mutual funds in government stock and investment activity. There has been an increase in the number of academic and professional research due to the growth of mutual funds which has led to a search for clear, accurate presentation and analysis of results. Mutual funds play a greater role in financial markets (Ferreira *et al*., 2011; Nkoro & Uko, 2019; Pradhan *et al.,* 2020a). For various reasons, fund managers that manage equity mutual funds that are actively managed, do buy and sell stocks. A fund manager is motivated to buy stock with the certainty that stocks are undervalued when there are heavy investor's outflows. Alexander, Cici & Gibson (2007) reveal that managers that make purchases that are valuation motivated exhausted the market, however, when bound to invest excess cash from investor inflows is not possible. BRIC countries behaviour of stock and bonds was analysed by Bianconi, Yoshino & de Sousa (2013) using daily data, it was found that the BRIC bond and stock deviated among each other in the long run. At the same time, it was revealed that for Brazil and Russia, stock returns and bond correlations were considered great and negative.

According to BRICS promising economic prospective and demographic power, the countries are well-known for having the fastest developing markets in the universe (Bianconi *et al*., 2013). The BRICS countries aim to form a just and equitable international order. Economic growth in the BRICS countries and policies of social inclusion has led to stability in the global economy, alleviation of poverty, creation of jobs and reduction in inequality just to name a few. After the financial crisis, the global economy showed extreme recovery. Brazil and Russia's economy has improved significantly after the 1990s financial crisis. Russia's overseas investments have generally focused on industries in which it has a comparative advantage, industries such as gas, oil, mining and metallurgy.

The performance of funds was assessed in recent years to determine how investors can be better off by receiving marginally better returns for investments (Chiwawa, Fox & Wissink, 2020). Due to markets that are competitive in conventional finance, fund managers have been seeking different investment options (Chiwawa *et al.,* 2020). It has been long recognized that investors also tend to react to the performance of the mutual fund (Ivkovich & Weisbenner, 2008; Chatterjee, 2020; Pradhan *et al.,* 2020a, 2020b). However, emerging markets have been the best choice with new ethical investment options, like Malaysia's overall performance of its mutual funds' industry (Mansor & Bhatti, 2014; Nkoro & Uko, 2019). The Islamic mutual funds return performance was explored comparative to the respective market benchmark. It was shown that there is a superior fund selectivity skill by Mansor & Bhatti (2014), but a substandard market timing expertise amongst the Islamic fund managers and the market benchmark performance. Some empirical studies have suggested negative market timing ability with regards to the market timing strategy.

RESEARCH METHODOLOGY

This section outlines the methodology used and provides insight into the process of data collection, model specification and model estimation. It should suffice to mention that literature review was conducted to provide existing knowledge contexts to the argument and findings of this paper. Also, the paper uses a panel secondary annual data spanning from the periods 2001 to 2016. Data for government stock on mutual funds (GSMutualF), control variables such as the government stock on bonds (GSB), government stock on corporations (GSCorp), government stock on liquid assets (GSLA) and investment activity variable which is measured in terms of gross fixed capital formation (GFCF), was obtained from the World Bank. Vandemoortele *et al.* (2013) state that the BRICS countries commonly referred to as the five key emerging market economies have countries that have promising economic growth and flexibility in financial markets.

Model Specification

In the model, investment activity is a function of government stock on mutual funds, government stock on bonds, government stock on corporations and government stock on liquid assets. There are a large number of academic and professional results devoted to the performance persistence in mutual funds. Haskell (1990) and Amenc & Le Sourd (2003) explained that the performance persistence in mutual funds cannot be viewed as the manager's superior stock-picking skills. The linear model estimated is written as follows:

$$GFCF_{it} = \beta_0 + \beta_1 GSB_{it} + \beta_2 GSMutualF_{it} + \beta_3 GSCorp_{it} + \beta_4 GSLA_{it} + \varepsilon_{it} \qquad (1)$$

In equation 1, β_0 is the constant and ε_{it} is the error term. Where GFCF is used as a proxy for investment activity in the BRICS countries.

Estimation Techniques

Econometric methods namely the panel unit root test, panel autoregressive distributed lag model, panel cointegration test, Engle-Granger causality test, the impulse response function (IRF) and lastly the variance decomposition test were conducted. The econometric techniques were employed to test the hypothesis that mutual funds in government stock have an impact on investment activity.

Panel Unit Root Test

The test has been used in many studies as the panel unit root test is poised to have a power that is higher as compared to the unit root tests of an individual time series (Costantini & Martini, 2009; Cahtterjee, 2020). Panel data techniques make it possible for models that are yet to be estimated to be selected with a high degree of flexibility and to be preferred due to their restrictions (Maddala & Wu, 1999; Costantini & Martini, 2009; Chatterjee, 2020). The Levin, Lin and Chu test (LLC); Im, Pesaran and Shin test (IPS) and the ADF Fisher type test, including the PP Fisher panel unit root tests can also be termed as the multiple series unit root tests (Alexiou *et al.*, 2016; Chatterjee, 2020). The following tests, namely the LLC, IPS, ADF and PP Fisher Chi-square panel unit root tests, were conducted.

Panel Cointegration Test

There has been a rise in the usage of cointegration techniques to estimate whether a relationship exists in the long run among variables in the empirical literature. Johansen & Juselius (1990) and Chatterjee (2020) hypothesize that the panel cointegration test examines the no cointegration null hypothesis among the variables against the alternative that there exists cointegration.

Panel Autoregressive Distributed Lag (PARDL) Model

Nkoro & Uko (2016, 2019) noted that the PARDL model has several advantages when there is a single long-run relation and it is very free from residual correlation when all variables are assumed endogenous, the model can differentiate the dependent and independent variables and it makes it easy for researchers to be able to analyse the reference model. Furthermore, Pesaran, Shin & Smith (2001) and Chatterjee (2020) the PARDL model can identify cointegrating vectors when there are multiple cointegration vectors.

Engle-Granger Causality Test

When there is a problem associated with testing or using small samples, causality between variables can be determined making use of panel data (Costantini & Martini, 2009; Chatterjee, 2020). The Engle-Granger causality test is employed to check if there is a bidirectional or a unidirectional relationship between the variables (Ahmad, 2015; Chatterjee, 2020).

Impulse Response Function (IRF) and Variance Decomposition

The IRF measures the time profile of each variable, how variables within the model respond to own shocks and in other variables over a while (Gujarati, 2004; Brooks, 2008; Ahmad, 2015; Chatterjee, 2020). The IRF can be used to also examine how the dependent variable responds to a shock in the error term directed to one or several equations included in the vector autoregression (VAR) system (Gujarati, 2004; Brooks, 2008; Chatterjee, 2020).

The variance decomposition test provides valid information regarding the relative significance of each random innovation affecting the VAR variables, as it examines the VAR system dynamics (Brooks, 2008; Chatterjee, 2020). The test also provides a proportion of the movements of the dependent variable as a result of their shock and shocks by other variables in the model (Gujarati, 2004; Chatterjee, 2020).

EMPIRICAL RESULTS AND DISCUSSION

The section presents outcomes of the tests and analyses conducted as well as the discussions obtained from the estimated model.

Panel Unit Root Test Results

The LLC, IPS, ADF and PP Fisher Chi-square panel unit root tests were performed. Lutkepohl (1993), pointed out that the level of integration explains whether data is stationary or nonstationary. Table 1 (see Appendix at the end of this paper) shows that the series is all of $I(1)$ and the panel variables where differenced once to induce stationarity. Gross fixed capital formation, government stock on corporations and government stock on liquid assets variables are stationary at $I(1)$ for all tests. Government stock on bonds is stationary at $I(0)$ for the Fisher-PP and LLC test, and $I(1)$ for the IPS and Fisher-ADF test. For government stock on mutual funds, there is stationarity at $I(0)$ for Fisher-PP and $I(1)$ for the other tests. Some variables are integrated of different orders $I(0)$ or $I(1)$ or a combination of both. When variables are integrated into different orders, the PARDL cointegration technique is usually preferred (Nkoro & Uko, 2016; Lutkepohl, 1993).

Panel Cointegration Test

The Johansen Fisher panel cointegration test (table 2) indicates if there is any cointegration or not and whether a relationship exists in the long-run among the variables. The panel cointegration test is usually used as a pre-requisite, determining whether a standard vector error correction model (VECM) or VAR should be conducted to analyse the presence of a relationship amongst the variables (Gujarati & Porter, 2009).

Table 2: Johansen Fisher Panel Cointegration Test Results

Hypothesized No. of CE(s)	Fisher stat. (from trace test)	Probability	Fisher stat. (from the maximum-Eigen test)	Probability
None	23.97	0.0077*	23.97	0.0077*
At most 1	75.07	0.0000*	75.07	0.0000*
At most 2	85.00	0.0000*	69.66	0.0000*
At most 3	31.73	0.0004*	24.78	0.0058*
At most 4	22.09	0.0147*	22.09	0.0147*

*denotes rejection of the null hypothesis at 0.05 significance level

Source: Authors own computations

One lag length was used to determine cointegration between the variables. The Johansen Fisher panel cointegration test results (table 2) indicate that the trace statistic has five cointegrating equations. The Fisher maximum-Eigen test also shows five cointegrating equations at a 5 percent significance level. When all the p-values are less than 0.05, we reject the null hypothesis of no cointegration and accept the alternative. There is a long-run relationship in the model and cointegration among the variables.

The individual cross-section results are presented in table 3 in which on the hypothesis of none and at most 1 are interpreted, showing results from the BRICS countries. From the results in table 3, it is shown that at the none hypothesis the countries of Brazil, Russia, China and South Africa we cannot reject the null hypothesis as there is no cointegration where the p-values are greater than 0.05.

Table 3: Individual Cross-section Results

Cross Section	Trace Test Statistics		Probability**	Max-Eigen Test Statistics	Probability**
	The hypothesis of no cointegration				
BRAZIL	NA		0.5000	NA	0.5000
RUSSIA	NA		0.5000	NA	0.5000
INDIA	1009.3756		0.0001	494.9071	0.0001
CHINA	NA		0.5000	NA	0.5000
SOUTH AFRICA	NA		0.5000	NA	0.5000
	The hypothesis of at most 1 cointegration relationship				
BRAZIL	516.8459		0.0001	480.7447	0.0001
RUSSIA	524.7243		0.0001	485.2030	0.0001
INDIA	514.4685		0.0001	479.5265	0.0001
CHINA	NA		0.5000	NA	0.5000
SOUTH AFRICA	538.9155		0.0001	476.4025	0.0001

Source: Authors own computations

For the country of India, there is cointegration under the trace test and maximum-Eigen test, at none and most 1. Unlike China which still reflects no cointegration at most 1 hypothesis, the countries of Brazil, Russia and South Africa under the trace test and maximum-Eigen test indicate cointegration.

Panel Autoregressive Distributed Lag (PARDL) Model

The PARDL long run indicates how the independent variables influence the dependent variable. The PARDL short run, however, indicates the speed of adjustment on whether the model or investment activity of the BRICS countries will ever return to equilibrium. The speed of adjustment which is also referred to as the ECT shows whether the economic models will be able to return to equilibrium or not and at what speed (Brooks, 2008).

From the PARDL long run results in table 4, it is evident that gross fixed capital formation is affected negatively by government stock on bonds. The outcome of the results confirms that a 1 percent increase in government stock on bonds will lead to a decrease of 3.3838 percent in gross fixed capital formation. For each 1 percent increase in government stock on mutual funds, the gross fixed capital formation will increase by 2.9584 percent in the long run. When the financial system is stable, there is also stability in the investment activity of a country. Also, the economic growth of a country can increase as a result of a well-functioning and stable financial system (Pradhan, Arvin, Hall & Bahmani, 2014).

Table 4: PARDL Long Run Results

LONG RUN		
	Coefficient	Probability
GSB	-0.033838	0.0000
GSMUTUALF	0.029584	0.0000
GSCORP	-0.464305	0.0001
GSLA	0.276565	0.0000
SHORT RUN (SPEED OF ADJUSTMENT): -0.543092		

Source: Authors own computations

This paper shows that in BRICS countries during the period under consideration, gross fixed capital formation is also negatively related to government stock on corporations. A 1 percent increase in government stock on corporations leads to a 46.4305 percent decrease in gross fixed capital formation. Proper investment decisions lead to growth and stability in a corporation or financial market, which will in turn lead to a positive impact on the economic growth of a country. As it was found in the study of Wray & Tymoigne (2008), a decline in investments and profits may take place, as anything that might cause expected future profitability to be lower can also cause today's demand price of capital to result as being lower than the supply price.

Gross fixed capital formation is positively related to government stock on liquid assets. Which implies that a 1 percent increase in government stock on liquid assets will lead to a 27.6565 percent increase in gross fixed capital formation in the long run. Performance of the economy will also depend on investment decisions made by corporations.

Table 5: PARDL Short Run Results

SHORT RUN		
	Coefficient	Probability
D(GSB)	0.015469	0.2242
D(GSMUTUALF)	-0.024016	0.3269
D(GSCORP)	-3.658543	0.5719
D(GSLA)	-0.064621	0.6975
(SPEED OF ADJUSTMENT): -0.543092		

Source: Authors own computations

The estimated speed of adjustment has a negative sign, which is at -0.543092 and is highly significant (table 5). The speed of adjustment that is highly significant also confirms the existence of cointegration among the variables and a stable long-run relationship. Therefore, there is a long-run causality moving from the independent variables towards the dependent variable and that approximately 54 percent of disequilibrium is corrected each year. It will take 54 percent each year for investment activity to return to equilibrium, which is not a slow movement back to equilibrium.

Engle-Granger Causality Test

The Engle-Granger causality test (table 6) is employed to examine the presence of causality and the direction of causality between the variables. Government stock on mutual funds does not Granger cause gross fixed capital formation or verse vice, as the p-values are greater than 5 percent. Government stock on mutual funds and government stock on bonds do not influence each other as the null hypothesis cannot be rejected and is insignificant. Government stock on liquid assets and government stock on mutual funds do not influence each other, including government stock on liquid assets and government stock on corporations. As the p-values are greater than 5 percent, therefore insignificant. The results revealed that there is a unidirectional relationship between investment activity and government stock on corporations and between government stock on bonds and government stock on liquid assets. The unidirectional relationship implies that investments are not useful in forecasting government stock on corporations.

Table 6: Engle-Granger Causality Results

NULL HYPOTHESIS	PROBABILITY
GSB does not Granger Cause GFCF	0.6082
GFCF does not Granger Cause GSB	0.6391
GSMUTUALF does not Granger Cause GFCF	0.9871
GFCF does not Granger Cause GSMUTUALF	0.1612
GSCORP does not Granger Cause GFCF	0.7885
GFCF does not Granger Cause GSCORP	0.0033
GSLA does not Granger Cause GFCF	0.729
GFCF does not Granger Cause GSLA	0.7543
GSMUTUALF does not Granger Cause GSB	0.7124
GSB does not Granger Cause GSMUTUALF	0.6227
GSCORP does not Granger Cause GSB	0.7049
GSB does not Granger Cause GSCORP	0.7819
GSLA does not Granger Cause GSB	0.691
GSB does not Granger Cause GSLA	0.0445
GSCORP does not Granger Cause GSMUTUALF	0.2103
GSMUTUALF does not Granger Cause GSCORP	0.7941
GSLA does not Granger Cause GSMUTUALF	0.3779
GSMUTUALF does not Granger Cause GSLA	0.4904
GSLA does not Granger Cause GSCORP	0.5405
GSCORP does not Granger Cause GSLA	0.4547

Source: Authors own computations

Impulse Response Function (IRF) and Variance Decomposition

This paper determines, in this subsection, the impulse response function results and the variance decomposition results.

Impulse Response Function Results

To be able to get appropriate results, a time horizon of 10 years was observed when checking the persistence during the long run of gross fixed capital formation. The impulse response plots (figure 1) are usually given with a zero line, when the responses are statistically insignificant it means that the responses are below the zero line Ahmad (2015).

In figure 1 the blue line represents investment activity as shown on the IRF graphs. The response of gross fixed capital formation to gross fixed capital formation graph shows own shock, and significance as investment activity line is above the zero line and positive. The response of gross fixed capital formation to government stock on bonds graph indicates that shocks in government stock on bonds have a negative impact on investment activity. At the beginning, the magnitude of response of gross fixed capital formation is positive at zero until year 2 and becomes negative and in turn, reaches the lowest level between years 3 to 5. This suggests that shocks in government stock on bonds have a negative influence on the investment activity level. The response of gross fixed capital formation to government stock on mutual funds graph shows similar results as the response of gross fixed capital formation to government stock on bonds, which shows that shocks in government stock on mutual funds have a negative impact on gross fixed capital formation.

The response of gross fixed capital formation to government stock on corporations graph suggested that at the start gross fixed capital formation responded positively to maintain the investment activities by investing more. This trend suggests that at the beginning, the BRICS countries invested more and continued to do so as corporations performance improved. The results from the response of gross fixed capital formation to government stock on liquid assets graph suggest that investment activity responds positively to the shocks of government stock on liquid assets. This means that investment activity level increases because the BRICS are investing more.

Variance Decomposition Results

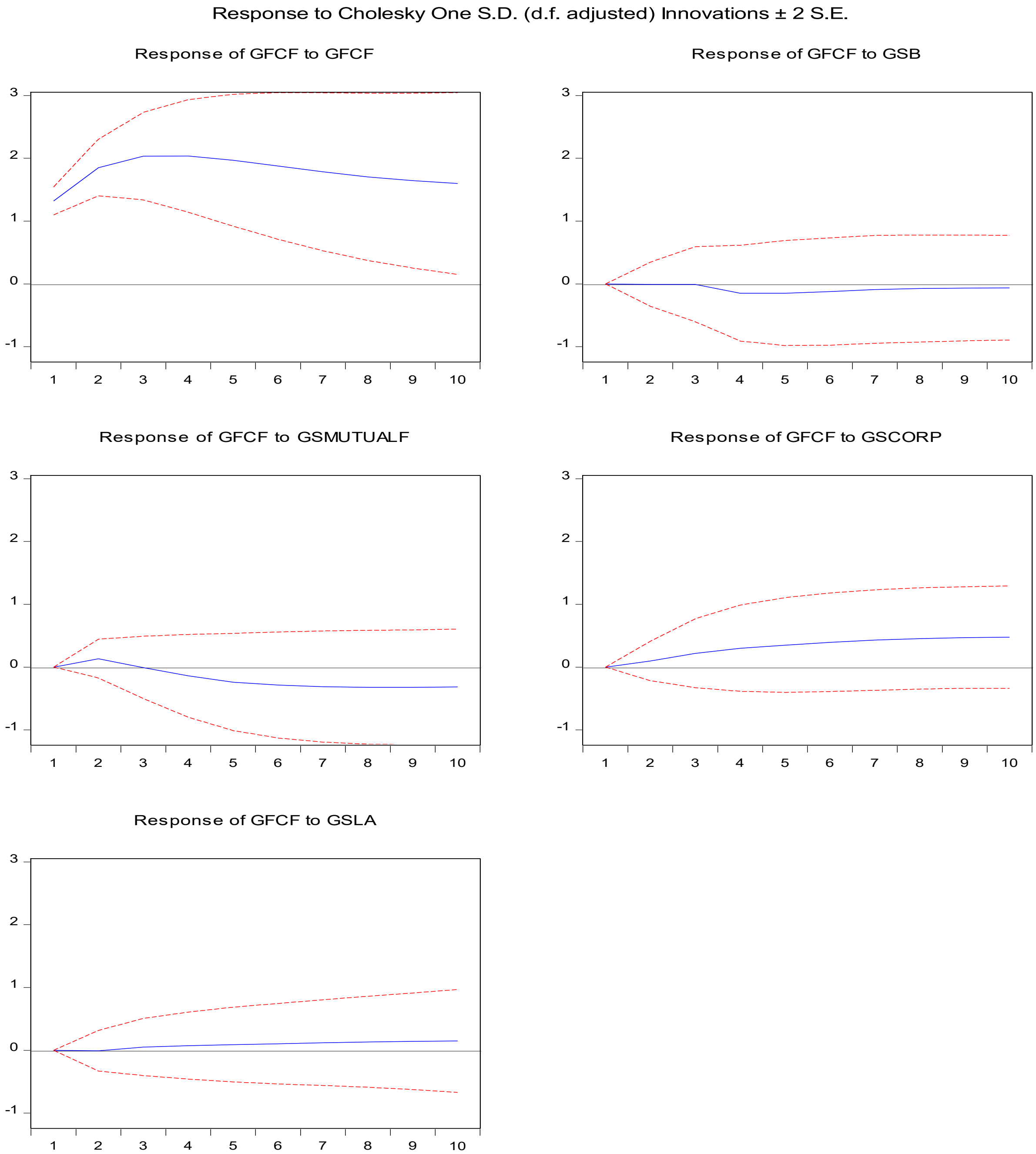
The variance decomposition (table 7) indicates that in all the periods, from period 1 until 10 gross fixed capital formation is shocked by its innovations (own shock) even throughout the other periods. The gross fixed capital formation percentages are greater than the percentages of other variables. Period 3 shows the short run, where the innovation to gross fixed capital formation accounts for 99.16725 percent variation of the fluctuation in gross fixed capital formation (own shock) which is significant.

Table 7: Variance Decomposition Results

Variance Decomposition of GFCF:						
Period	S.E.	GFCF	GSB	GSMUTUALF	GSCORP	GSLA
1	1.320795	100.0000	0.000000	0.000000	0.000000	0.000000
3	3.063456	99.16725	0.000959	0.193124	0.608439	0.030229
10	5.849068	94.07620	0.234883	1.694534	3.693841	0.300540

Source: Authors own computations

Figure 1: Impulse Response Function (Response of Cholesky One S.D Innovation)



Source: Authors own computations

Shock to government stock on bonds can cause 0.000959 percent fluctuation in gross fixed capital formation, while a shock to government stock on mutual funds can cause 0.193124 percent fluctuation in gross fixed capital formation. Shock to government stock on corporations can cause 0.608439 percent fluctuation in gross fixed capital formation and shock to government stock on liquid assets can cause 0.030229 percent fluctuation in gross fixed capital formation. However, total fluctuation becomes 100 percent, in the short run in year 3.

Period 10 which indicate the long run results show that the shock to gross fixed capital formation can contribute 94.07620 percent variation of the fluctuation in gross fixed capital formation (own shock). Shock to government stock on bonds can contribute 0.234883 percent fluctuation in the variance of gross fixed capital formation and shock to government stock on mutual funds can contribute 1.694534 percent fluctuation in gross fixed capital formation. The shock to government stock on corporations can contribute 3.693841 percent fluctuation in gross fixed capital formation and shock to government stock on liquid assets can contribute 0.300540 percent fluctuation in gross fixed capital formation. From the results, it is evident that mutual funds do not have a lot of influence on investment activity.

CONCLUSION AND RECOMMENDATIONS

This paper has given an account of how mutual funds in government stock influence investment activity. Yearly data from 2001 to 2016 was used and the panel autoregressive distributive lag model of BRICS countries was employed as the econometric methodology, making use of data collected from the World Bank. Cointegration methods were used to determine long-run effects. Furthermore, Granger causality was employed for directional analysis and variance decomposition and impulse response function indicated the presence of shocks to the series. The results showed a long-run relationship among the variables as they move together in the long run. Estimates of mutual funds indicated a positive and significant impact on investment activity.

The paper recommends that mutual fund policymakers need to develop policies that will lead to financial stability and promote the performance of financial institutions. These policies should be able to help financial institutions in making investment decisions that will further benefit them and the country's economy not only in the short but also in the long term, considering the risks afflicting financial institutions daily. Well-performing financial institutions have the potential to grow the economy. The growth of the economy has prospects of augmenting employment rate while providing more opportunities that could help alleviate poverty. A critical evaluation is needed to avoid investment shocks, instability of investment activity, instability of financial markets and the economy as a whole. Additionally, the paper recommends that an institution of policies that promote financial stability in all financial sectors needs to be established in order to ensure that proper investment decisions are made with an assessment of associated risks. From a managerial perspective, the paper recommends that specific expertise in financial and economic performance need to be sourced in order to ensure that the mutual fund policies are evidence-based. In cases where the institution is unable to host such expertise internally, then such necessary expertise needs to be sourced as and when the institution seeks to develop and implement mutual fund policies.

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