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THE IMPACT OF FOREIGN DIRECT INVESTMENT ON STOCK MARKET DEVELOPMENT: EVIDENCE FROM GHANA

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Abstract

This study examines the impact of foreign direct investment on stock market development in Ghana over the period 1991-2017 using annual time series. The study employed the Autoregressive Distributed Lag (ARDL) approach to cointegration to establish the long-run and short-run relationship amongst the variables under study. The bounds test for cointegration showed that there is a long-run equilibrium relationship among the variables under study. The Error Correction estimates suggest that in the long-run, foreign direct investment inflows impact negatively on stock market development but it is statistically not significant however in the short-run, FDI inflows have significant positive impact on stock market development. We therefore recommend that, government and policy makers should institute policies to attract more FDI inflows and also safeguard returns on investment of foreign investors for the growth of the Stock and financial market in Ghana.

Keywords: FDI Inflows; Stock Market Development; Cointegration; Vector Error Correction Model

INTRODUCTION

The study of foreign direct investment (FDI) is of a great importance to the economic development of various economies in the world. An increase in FDI may be associated with improved economic growth due to the inflows of capital and increased tax revenues for the host country. Host countries often try to channel FDI investment into new infrastructure and other projects to boost development(Goldberg, 2004). Foreign direct investment (FDI) has played a leading role in many of the economies of Africa. Therefore, most African countries try to increase their share of FDI by way of making more intelligible investment procedures, permitting tax incentives, piloting in economic liberalization and stabilizing the economy.

A positive impact of FDI on economic growth has been confirmed by a number of studies by researchers. According to(Yao, Wei, Feng, & Song, 2007) domestic investment may accelerate economic growth but new technology is usually acquired through FDI. (Borensztein, Gregorio, & Lee, 1995) believe that FDI results in technology diffusion necessary for economic growth through a process of 'capital deepening'. (Noorbakhsh, Paloni, & Youssef, 2001) argues that in addition to providing employment, FDI can also be a source of transfer of managerial skills and technology. The technical knowledge possessed by multinational companies leads to the production of new capital goods at a lower cost. In fact, investments by multinational companies have a spillover effect (Crespo & Fontoura, 2007) as the increased level of FDI by MNCs provides a boost to productivity of domestic firms.

In addition, there has been development in the financial system to include the financial market in order to direct foreign investments as this seems very significant as a whole in the development of various economies. In principle, a well-developed stock market would theoretically increase savings and efficiently allocate capital to productive investments**.** According to (M. A. Ramady, 2014) the stock market is considered a mirror that reflects the health and strength of the economy. Olweny& Kimani (2011) also postulated that companies and government raise long term capital through the stock market to finance their projects and also expanding other operations. Additional funds become important as economies develop to be able to match up to expansions therefore, the stock market serves as the breakthrough in mobilizing these funds which are important to economic growth. Globalization has also advanced in the last two decades with tighter links among financial markets and greater commercial presence of foreign financial firms around the world. This globalization of financial markets has gone together with an increase in cross border capital flows. The globalization of financial markets has also been characterized by the migration of securities market activities abroad particularly in the case of emerging markets like the Ghana Stock exchange.

The purpose of this paper is to examine the impact of foreign direct investment (FDI) on the stock market in Ghana. The study employed a time series data that covers a period from 1983-2017. The data employed in the analysis of the study is from the Ghana Stock Exchange, World Development Indicators and Bank of Ghana. The rest of the paper follows a structure as follows: section 1 presents the literature of the study, trend of Ghana's FDI inflow and an overview of Ghana's stock market. Section 2 present the methodology and estimation procedures. Section 3 presents empirical results and discussion and the final section presents the conclusion and policy recommendations.

BRIEF LITERATURE REVIEW

There has been so much concentration on the object of study, FDI and economic growth. For instance, (Choe, 2003);(Al-Iriani, 2012); (Seng & Finance, 2017) and others have studied the direct impact of FDI on the growth of Gross Domestic Product (GDP) for which results has showed that FDI has led to the increase in growth of GDP. However, research studies on the direct link between FDI and development of the financial development in developing countries has seen it dwindles.

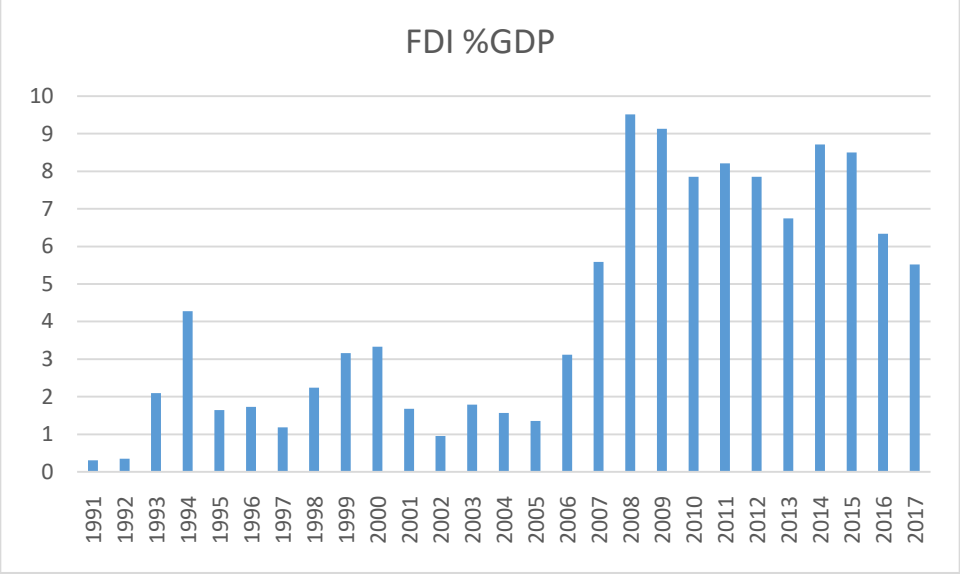
(Ramady, Economics, & Research, 2013) postulated that, the stock market has been viewed as a reflection to the health and strength of an economy. In addition, recent years have witnessed a big increase in stock prices, market capitalization and trading volumes. The stock markets have been instituted to mediate funds towards investment projects.

In another recent study, (Samman& Jamil, 2017) studied the impact of FDI on stock market development in Gulf Cooperation Council countries, utilizing data from 2002 to 2015 for all six GCC countries Oman, Saudi Arabia, the United Arab Emirates, Qatar, Kuwait and Bahrain. The study concludes FDI has statistically significant positive effect on stock market development in the long run, meaning that FDI has contributed in a substantial role in developing the stock markets in the long term in GCC countries. However, in the short term FDI has a positive effect on stock market development but this impact is not statistically significant. (Shahbaz et al., 2013) provided evidence of the direct influence of FDI on the development of the Pakistani's financial market. Similarly, Fauzel (2016) also examined the role of FDI in development of the financial market and the study found that FDI had a significant influence on the development of financial markets.

Some studies investigated showed that, most developing countries attract FDI which as a result have an impact on stock market development. For instance, Abubakar M. (2018) examined the impact of foreign direct investment on stock market development in Nigeria for the period 1981 to 2016 with ARDL approach as a way of analysis. The study revealed that foreign

direct investment has positive but statistically insignificant impact on stock market development. In addition, exchange rate and gross domestic savings had a significant positive impact on stock market development. However, inflation has insignificant negative influence on the development of stock market in Nigeria. Oseni and Enilolobo (2011) examined the impact of FDI and stock market development on economic growth in Nigeria. The study used annual data from 1980 to 2009. The Co-integration analysis revealed the existence of long-run relationship among the variables. Furthermore, the result indicated that FDI and stock market development exert positive and statistically significant influence on economic growth throughout the study period. Raza et al. (2012) analyzed the role of FDI on stock market development in Pakistan using annual data from 1988 to 2008 and OLS technique in the analysis. Their aim was also to determine whether these two important variables are related or not in Pakistan. Other control variables captured were domestic savings, exchange rate and inflation. They found that there is positive relationship between FDI and stock market development. That is to say a 1% change in FDI inflows will bring about 70% changes in stock market development in the country. Furthermore, domestic savings has positive effect on stock market development while exchange rate has negative influence on stock market development. The figure below shows Ghana's Foreign Direct Investment inflow trend from 1991-2017.

Figure 1 Foreign Direct Investment inflow trend from 1991-2017



Source: Authors' compilation using excel

Based on the chart above, Ghana's foreign direct investment as a percentage of Gross Domestic Product (GDP) recorded 0.30 billion dollars in 1991 which was the minimum, with a

maximum of 9.52 billion dollars in 2008. In recent years, FDI flows to Ghana have been increasing steadily up to 2016. In 2017, inflows of FDI declined from 6.34 to 5.52 billion dollars.

Overview of Ghana's Stock Exchange

The idea of establishing a stock exchange in Ghana dates back to 1968 and subsequent promulgation of the Stock Market Act of 1971, which laid the foundation for the establishment of the Accra Stock Market Limited (ASML) in 1971. An unfavorable macroeconomic environment, political instability and lack of government support undermined the take-off of Accra Stock Market Limited (ASML) and as a result the idea of an exchange remained a mirage. In spite of these early setbacks, two stock brokerage firms, namely National Trust Holding Company Ltd (NTHC) and National Stockbrokers Ltd, now Merban Stockbrokers, prior to the establishment of the Ghana Stock Exchange in November 1990, did over the counter (OTC) trading in shares of some foreign-owned companies. Under the supervision of the IMF and World Bank, Ghana underwent structural reforms in 1983 to remove distortions in the economy together with other financial reforms including but not limited to deregulation of interest rates, removal of credit controls, and floating of exchange rates. After the financial liberalization and the divestiture of a host of state-owned enterprises, the need for stock market in Ghana became unavoidable.

The Ghana Stock Exchange was incorporated in July 1989 as a private company limited by guarantee under Ghana's Companies Code, 1963 (Act 179). The Exchange was given recognition as an authorized Stock Exchange under the Stock Exchange Act of 1971 (act 384) in October 1990, and trading on the floor of the Exchange commenced in November 1990. In April 1994, it converted into a public company limited by guarantee. The Exchange is governed by a Council with representation from Licensed Dealing Members, Listed Companies, the banks, Insurance Companies, Money Market and the public. The Council sets the policies of the Exchange and its functions include preventing fraud and malpractices, maintaining good order among members, regulating stock market business and granting listing.

The Exchange has grown significantly since its inception. The Exchange can now boast of growing from an initial eleven (11) listed company in November 1990 to a current forty-two (42) equities (from 37 companies) and two (2) corporate bonds. As of October 2006, the market capitalization of the Ghana stock exchange was about $11.5 billion and in December 2007 it was $131.6 billion this increase was as the result of the index appreciation by 31.84%. the market capitalization as at August 31, 2009 was GH¢15.66 billion.

METHODOLOGY

The study employed the Autoregressive Distributed Lag (ARDL) approach to cointegration to institute the relationship between foreign direct investment (FDI) and stock market development. This is to establish the long-run and short-run relationship amongst the variables under study. The study follows the work of Abubakar (2018) and model the stock market-FDI relationship as follows;

$$MCP = f(FDI, EXR, INFR)$$

For which the variables in the model are stock market development proxy by; Market capitalization (MCP), foreign direct investment (FDI) as the main independent variable, exchange rate (EXR) and inflation (INF).

The study therefore estimates an econometric model of the form;

$$MCP_t = \eta FDI_t^{\beta 1} EXR_t^{\beta 2} INFR_t^{\beta 3}$$

By taking logarithm of the function;

$$lnMCP_t = ln\eta + \beta_1 lnFDI_t + \beta_2 lnEXR_t + \beta_3 lnINFR_t + \mu_t$$

Where;

$ln\eta = \beta_0$ = is the constant term

$\beta_1 - \beta_3$ = coefficients

μ = random error term

t = time trend over the period of analysis

EMPIRICAL RESULTS AND DISCUSSION

From the period 1991-2017 annual time series data on market capitalization, FDI, exchange rate and inflation were used in the study. The data coverage was informed by the fact that, the Ghana Stock Exchange was given recognition as an authorized stock exchange in October 1990.

Stock market development is measured by market capitalization as a proportion of Gross Domestic Product (GDP). Foreign direct investment is measured as a proportion of Gross Domestic Product. Real exchange rates show the ratio between the local price levels and price levels in a foreign country. This measure equals nominal exchange rate by the domestic price divided by foreign currency. For the reason of this study, Consumer Price Index (CPI) will be used as a measure of inflation rate. The idea behind the natural logarithm of all variables is to linearized exponential trends in time series data if there be.

Unit Root Test and Cointegration Test

In dealing with time series as they are characterized with the presence of unit roots and are mostly not stationary in the levels which tend to give spurious regression results, Unit roots test are very crucial. Its obligatory to run the unit root test to be able to get the integrated process of I(1). As long as it requires that the error correction model to be individually independent and homogeneously distributed, The Augmented Dickey-Fuller unit root test is adopted in this study to test for the presence of unit root.

Table 1 The results of the ADF unit root test (*Stata output*)

Level			**First Difference**		
variable	**Test statistic**	**p-value $I(0)$**	**variable**	**Test statistics**	**p-value $I(1)$**
$lmcp$	-2.552	0.3025	$lmcp$	-5.680	0.0000
$lfdi$	-3.098	0.0267	**	**	**
$linfr$	-2.350	0.1564	$linfr$	-6.043	0.0000
$lexr$	-2.183	0.2124	$lexr$	-3.553	0.0067

From the ADF table above, it could be seen that all the variables were not stationary at the levels except lfdi which was stationary at the level. However, they became stationary after first difference. This gives the combination of both I(0) and I(1) variables to be able to implement ARDL bound test to cointegration.

ARDL Bounds test approach to cointegration

ARDL bounds testing approach is a cointegration to test presence of the long run relationship between the variables which was developed by Pesaran et al. (2001). This approach comes with its own relevance for the reason being that, the approach is used irrespective of whether the series are I(0) or I(1).This model has both short and long run dynamics. Empirical results show that the approach is superior and provides consistent results.

Table 2 The results of the Bounds test cointegration (Stata output)

model	Number of regressors	Sample size	Test statistics	Critical Bounds values					
	k	n	f-statistics	10%		5%		1%	
				I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
ARDL (4, 4, 4, 3)	3	23	19.670	2.72	3.77	3.23	4.35	4.26	5.61

From the bounds test results, it could be seen that there is a long-run equilibrium relationship among the variables under study. This is established by comparing the F-statistic with the (upper) I(1) bound to establish a cointegration relationship. These results give a necessary rational to estimate the error correction model and the long-run estimates given the existence of a cointegration among the variables.

Error Correction Model and Long-run Estimates

Table 3 The results of the error correction model (Stata output)

variable	Adj. parameter (ECT)	Test statistics	p-value
$lmcp$	-1.700864	-7.79	0.001**
$lmcp$	Coefficients	Test statistic	p-value
$lfdi$	-0.14104	-1.93	0.126
$linfr$	0.47608	2.71	0.054*
$lexr$	0.4214	10.23	0.001**

Note: ** and * represent significant at 5% and 10% respectively

In the long-run, lfdi impacts negatively on lmcp with a magnitude of 0.1410 but it is statistically not significant. This means that, an increase in FDI inflows will lead to a decline in stock market development in Ghana. Also, linfr has a positive significant impact on lmcp. This means that, an increase in inflation rate increases the stock market development in Ghana. And finally, lexr has a positive significant impact on lmcp, which implies that, an increase in real exchange rate is associated with an increase in stock market development.

From the error correction model estimates, the error correction term (ECT) is correct, which is negative and statistically significant which represent the speed of adjustment towards equilibrium. This means that, when the variables are deviating from the equilibrium in the short-run, the system is going to pull it back towards equilibrium in the long-run at the speed parameter of 1.7008 percent in each period.

From the short-run estimates below, lfdi and lexr have significant positive impact on lmcp while linfr has a positive insignificant impact on lmcp. This implies that, FDI inflows to Ghana and real exchange rate will increase stock market development in Ghana when their value increases significantly. However, inflation rate will increase stock market development when its value increases but not significant.

Estimated ARDL (4, 4, 4, 3)

Table 4 Estimated ARDL and short-run coefficients of the variables (Stata output)

Variables	Coefficient	Test statistics	p-value
$lmcp$	$l1$ -0.0914	-0.53	0.621
	$l2$ -0.5415	-3.34	0.029**
	$l3$ 0.1636	1.20	0.295
	$l4$ -0.2315	-1.77	0.152
$lfdi$	0.4707	3.25	0.031**
	$l1$ -0.4413	-3.25	0.031**
	$l2$-0.1062	-0.98	0.383
	$l3$0.0721	0.93	0.406
	$l4$-0.2352	-2.67	0.056*
$linfr$	0.0068	0.05	0.963
	$l1$ -0.1193	-0.94	0.401
	$l2$0.1609	1.48	0.212
	$l3$0.1287	1.34	0.251
	$l4$0.6326	4.19	0.014**
$lexr$	0.9824	2.48	0.068*
	$l1$ 0.8836	2.62	0.059*
	$l2$-0.3478	-0.18	0.384
	$l3$ -0.8015	-2.46	0.070*

Note: ** and * represent significant at 5% and 10% respectively.

Diagnostics Test

To check the reliability of the model, diagnostic test such as serial correlation, and heteroscedasticity test and model stability test were conducted.

Test for serial autocorrelation

Table 5 Serial autocorrelation test

Durbin-Watson d-statistic (19, 23) = 2.0233

Breusch-Godfrey LM test for autocorrelation

Lags (p)	Chi2	df	Prob. > chi2
1	2.042	1	0.1530

h_0: $no\ serial\ correlation$

From the results of the Durbin-Watson, the null hypothesis of no serial correlation cannot be rejected which is further confirmed by the Breusch-Godfrey LM test.

White test for Heteroskedasticity

Table 6 Heteroskedasticity Test

$h_0: homoskedasticity$

$h_1: unrestricted\ heteroskedasticity$

Source	Chi2	Df	p-value
Heteroscedasticity	23.00	22	0.4017
Skewness	19.86	18	0.3406
kurtosis	0.14	1	0.7096
total	43.00	41	0.3856

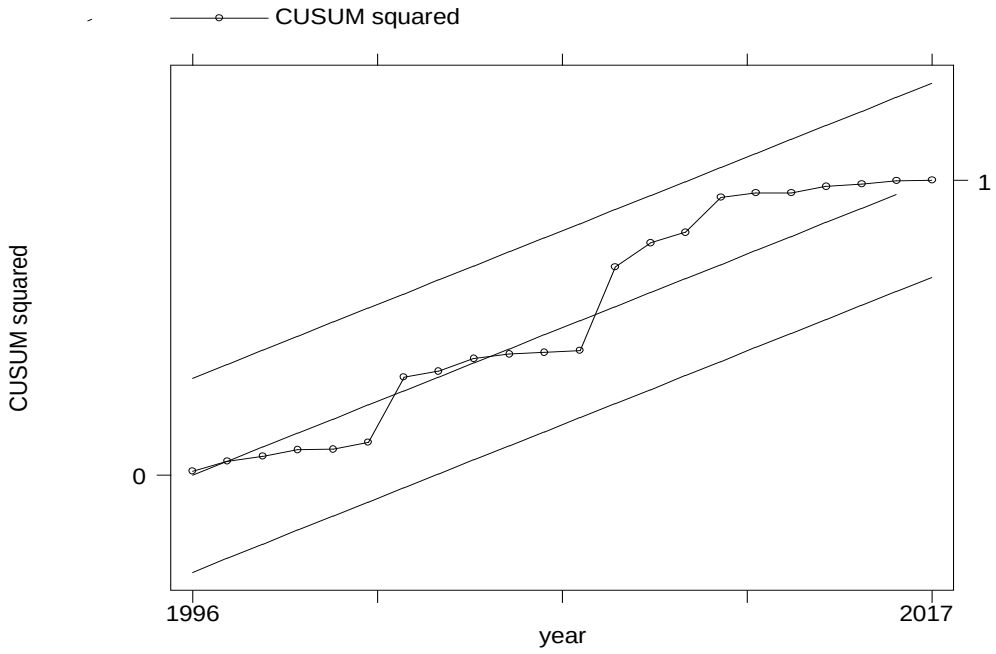
Chi2 (22) = 23.00

Prob. > chi2 = 0.4017

From the test, it could be seen that, the model is free from heteroskedasticity given that the null hypothesis of homoskedasticity cannot be rejected.

Test for Parameter Stability

Figure 2 CUSUMSQ graph



From the CUSUMSQ graph, the model lies within the 5% boundary, this shows that, the model and parameters are stable over time.

CONCLUSION AND RECOMMENDATION

The study seeks to examine the impact of FDI inflows on stock market development in Ghana using annual time series data from 1991-2017. The study employed the autoregressive distributed lag model and the Vector Error Correction Model (VECM) to establish both the long-run and short-run relationship among the variables under study.

The study therefore concluded that, there is stable long-run relationship between stock market development proxied by market capitalization of listed companies and FDI inflows and other control variables such as inflation rate and exchange rate given the existence of a cointegration relationship from the bounds test. The study found that FDI inflows has a positive impact on stock market development in the short-run but negative impact in the long-run in Ghana. Also, real exchange rate and inflation have a positive impact on stock market development in Ghana.

The study therefore recommends that, government and policy makers should implement policies to attract more FDI in to the country to boost stock market development for the prospect of the economy at large. Also, there should be strict monetary policies implementation to ensure macroeconomic stability. This is to ensure the stability of local currency and the control of inflation to enhance smooth running of the Ghana Stock Exchange for growth of the Economy.

Even though the study fully achieved its objective, it left an important gap of looking beyond Ghana but West African countries in a panel certain to check the progress of FDI inflows in developing the Stock market of the region which needs to be looked at for future research.

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