

Foreign Direct Investment (FDI), Economic Growth and Bank Performance in Ghana

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Abstract Several studies have used different methodologies to establish the link between FDI and economic growth. This study extends literature of the impact of FDI on economic growth in Ghana to include the impact of FDI on performance of Commercial banks in Ghana. The study used secondary data of FDI and macroeconomic variables from the World Bank data on countries while extracting financing data from the annual report of commercial banks over a 10 year period. The correlation as well as the regression results shows that FDI inflows have a positive and significant effect on the profitability of commercial banks in Ghana. Also, the study revealed that FDI is positively associated and statistically significant with economic growth both in the short run and in the long run. The study recommends that a comprehensive study be done on the subject matter using specific FDI inflows to the banking sector and bank performance banks to understand the exact impact of FDI on economic growth. The study also calls for government to step up effort to encourage more FDI inflows into the country.

Keywords FDI, Economic Growth, Bank Performance, Ghana

1. Introduction

The role foreign direct investment (FDI) plays in the economy of the receiving countries have been documented in various literatures (Abadi, 2012; Antwi et al., 2013; Alfaro, 2003). Research has established that foreign direct investment is believed to be the engine of growth as it provided the needed financial and capital investment required by industries (Alfaro et al., 2006; Giroud, 2007; Gyebi et al. 2013). FDI inflows also increase competition in various sectors of business in the host country and help local companies to become more efficient and productive through the adoption of modern technologies. Some studies have also established that FDI inflows contribute significantly the host economy by investing in human and physical capital (Wan, 2010; Boateng et al. 2017).

The impact of FDI on the host economies have been the subject of academic debate over the past few decades. This has resulted in several academic and policy discussion papers on the subject matter in various parts of the globe. Several theories have been used to explain the different aspect of FDI (Lee et al., 2011; Behkhet & Al-Smadi, 2015).

Some of these academic and policy discussion papers have examined the determinants of FDI inflows in Ghana (Nyarko et al., 2011; Behkhet & Al-Smadi, 2015) while others have examined the impact of FDI on economic growth (Abdulai, 2005, Abor, 2010, Issah, 2013; Antwi et al., 2013; Boateng et al. 2017).

On the global stage, several studies have examined the effect of foreign direct investment on economic growth (Louzi & Abadi, 2011; Sabastian & Warner, 2014). The results of these studies have varied largely on account of the methodologies adopted as well as the focus of the study. Some of these studies found a positive effect of foreign direct investment and economic growth (Nwosa et al. 2011; Saibu et al., 2011; Awe, 2013; Saqib et al., 2013; Yaqub., 2013; Antwi et al., 2013). Other strands of literature found a negative relationship between foreign direct investment and economic growth (Osinubi and Amaonyeodiwe, 2010; Oyatoye et al., 2011; Ahmed et al., 2012; Babalola et al., 2012; Izuchukwu and Huiping, 2011; Hassen and Anis, 2012).

Balasubramanyam et al (1996) for instance analysed how FDI impacts economic growth in developing economies. By using cross-section data and OLS regressions analysis tool, they postulated that FDI inflow have positive bearing and direct impact on the economy of receiving countries. They however emphasised that receiving countries were able to achieve this positive impact through export promotion strategies instead of import substitution strategies. A work by Olofsdotter (1998) delivers analysis that supports this

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stand. Her findings using cross-sectional data concluded that an increase of the value of foreign direct investment inflows has a positive bearing and a solid impact on the economy of host countries. She however emphasised that this was based on the condition that host countries have an effective institutional capability as measured by the extent of effective property right protection and smooth bureaucratic process in the host country.

Also, a work by Choe (2003) concludes that there is connection between economic growth and FDI running in either direction but leaning towards growth that constantly require inflow of FDI. The study further argues that that there is therefore little evidence that FDI causes host country growth. This position is supported by Chowdhury and Mavrotas (2003). Rapid economic growth could contrariwise result in an increase in FDI inflows. Using an innovative econometric methodology to study the direction of causality between the FDI and economic growth, further works by Chowdhury and Mavrotas (2003) examine the connection between FDI and economic growth. The study involves secondary data from 1969 to 2000 on Chile, Malaysia and Thailand. All three countries major recipients of FDI with varied records of policy regimes, macroeconomic policy directions and growth trends and are major recipient of FDI inflows. They found strong evidence Malaysia and Thailand experiencing bi-directional relationship between FDI and economic. With that of Chile, their empirical findings concluded that it is rather GDP that causes FDI inflows. Employing bootstrap test, a strong case of justification was made to confirm their stand by testing the reliability of the result. In addition to the above, Frimpong and Abayie (2006) examined the influence of foreign direct investment on economic growth in Ghana for the period before and after structural adjustment program (SAP). Using secondary data covering the period from 1970 to 2005, their study concluded that there is no significant relationship between FDI and GDP growth representing economic growth in Ghana. Their study on the other hand reported a positive relationship between foreign direct investment and economic growth in the post –SAP period. They however admonished that due to the sensitivity and importance of the subject matter to national policy decisions, there must be continues research works over varied time periods and economic conditions to ascertain timely and accurate relationship between FDI and economic growth. Antwi *et al.* (2013) conducted similar studies on Ghana and reported a positive relationship between foreign direct investment and economic. Iddrisu *et al.* (2015) examined how FDI impact on industrial sector in Ghana and reported a positive result.

From the discussion above, it is obvious that foreign direct investments studies globally and Africa in particular have focused on its impact on the economy and with no or little on its impact on the banking industry. Boateng *et al.* (2017) study found a direct effect of foreign direct investment inflows on the financial sector. Nwosa *et al.* (2011) also reported similar result in their study in Nigeria. However,

these studies did not examine how FDI inflows affect profitability of commercial banks but focused on general development of the financial sector. This study therefore combines FDI impact on economic growth but most importantly extends FDI literature to include the impact of FDI on profitability of commercial banks in Ghana.

The contributions of the study can be viewed along three strands: research, policy and practice. In the area of research, the study extends current literature on foreign direct investment and economic growth to include the impact of FDI on bank profitability. Studies that have examined the effect of FDI on the banking sector have done so in the context of multinational banks established as a result of FDI inflows and technology transfer to the sector as a result of FDI inflows.

Concerning practice, the study will provide guideline on the Ghana Investment Promotion centre of the type of FDI that has impact on economic growth in Ghana. This will be very helpful in the country's quest to changing the structure of the economy.

2. Empirical Review and Hypothesis Development

Foreign direct Investment and Economic Growth

Examination into many research works reveals conflicting positions on the relationship between FDI and economic growth. Whereas many economist and policy makers have reached the consensus that FDI capital inflows has the tendency to spur economic activities and stimulate economic growth, many other empirical studies reveal otherwise. Empirical studies in the literatures of work conducted by Saibu *et al.* (2011), Saqib *et al.*, (2013), Yaqub, Adam and Ayodele (2013) and Awe (2013) explicitly have it that there is a negative relationship between FDI and economic growth.

Also, Wan (2010) posits that there exist theories and existing literature that provide two sides-results concerning the impact of FDI and its relationship on the host country's economy. Some of these studies identified the positive effect of foreign direct investment in the area of technology transfers, as well as knowledge and skill transfer that are need for an accelerated economic growth. On the other hand, some studies have also reported the negative aspect of FDI arguing that it may lead to crowding out of local businesses among other negative consequence on the local economy.

Findings by Lee *et al.*, (2011) on the topic "Impact of Foreign Direct Investment on Kazakhstan's Economy: A Boom or a Curse" also indicates that FDI have had an adverse impact in some sectors of Kazakhstan's economy especially on agriculture and manufacturing sectors thereby crowding-out the domestic investment. In effect, Kazakhstan's domestic investment was shadowed. In their article, they noted that usually the largest amount of Kazakhstan's FDI was seen at the energy sector. The largest

share of FDI is usually directed towards the energy sector leaving out the other sectors. Their study therefore concluded that FDI alone cannot be relied upon to promote sustainable growth of the Kazakhstan's economy just like any other.

Also, a work by Saqib et al (2013) gave two divergent view of the impact of FDI on the Pakistan's economy. While arguing that the domestic investments from FDI have benefited the Pakistan's economy, on the other breath its economic performance indicators were negatively affected as the nation's debt, trade and inflation was found to have negatively impacted its GDP. They added that debt, inflation and trade have also exhibited negative relationship with GDP.

Adebite & Ayadi (2011) after investigating the impact of FDI inflows on the economic growth of Nigeria reported that the extent to which FDI influences the economic growth positively could be limited by human capital. Saqib et al., (2013) add that quite the opposite to the modernization theory which suggests that FDI can serve as the engine to economic growth since economic growth requires capital investment, the dependency theory suggests that if a nation depends on foreign investment, its economic growth would face a negative impact.

Okeke et al. (2014) examined the effect of foreign direct investment on the Nigeria economic growth and development using secondary data from 1977 to 2011. The results of the study showed that FDI has a positive association with economic growth in Nigeria.

Imoudu (2012) investigated the impact of foreign direct investment in economic growth in Nigeria using data between 1980 and 2009. The study in a time series analysis disaggregated FDI into various sector and found that FDI inflow had little effect on sector such as agriculture, manufacturing, mining and petroleum but had some significant impact of the telecommunication sector.

Another study by Awe (2013) on the same subject matter on Nigeria's economy using similar data found a negative relationship between foreign direct investment and economic growth. It is interesting to note that three different studies on Nigeria using similar data produced different results.

Previous studies on the impact of foreign direct investment on economic growth in Ghana reported a positive association between FDI and economic growth (Abdulai, 2005; Antwi et al., 2013; Owusu-Antwi et al. 2013; Gyebi et al. 2013). This shows that previous studies are almost unanimous on the potential impact of foreign direct investment on economic growth and development in Ghana. This trend appears different from previous studies in countries like Nigeria where there have been contradicting results.

From the above analysis we hypothesize that:

H1: There is a positive relationship between FDI and economic growth in Ghana.

Impacts of FDI on the Banking Sector and Bank Performance

Goldberg (2007) in his work "Financial Sector FDI and Host Countries: New and Old Lessons" admits that the foreign direct investment in the banking and financial sector relatively a recent phenomenon, which comes in the form of financial institutions in emerging and industrialized countries and establishing subsidiaries and facilities in developing countries. Kirikkaleli (2013) in his work "Foreign Direct Investment in the Banking Sector: Empirical Evidence from Turkey" posited that there has been inflows of FDI capitals into especially developing countries through the establishment of multinational banking activities. Also, Goldberg (2007) argues that more recently, foreign direct investment into the financial sector has increased drastically especially in developing economies. The proliferation of foreign banks in Ghana is a perfect example to support the above argument.

Studies have revealed that for a host country to get maximum benefits from FDI inflows it must have a well-developed financial sector as Sghaier & Abida (2013) in their studies "Foreign Direct Investment, Financial Development and Economic Growth: Empirical Evidence from North African Countries" confirmed this statement by positing that the development of the local financial market and system is very critical for the realization of the overall impact of foreign direct investment on economic growth.

Bhatnager et al. (2013) examined the impact of foreign direct investment on the profitability of telecom companies in India. The study used a sample of 5 telecommunication companies in India and found less linear relationship between foreign direct investment and profitability of telecommunication companies in India.

Oteng-Ababio et al. (2016) examined the impact of foreign direct investment on the performance of the banking sector using some selected banks in Ghana. The study used capital base of banks, banks liquidity as well as profitability measured by return on assets to represent performance of the banking sector. The study used FDI data from 1975 to 2012 and financial data of using unbalanced data from 2000 to 2012. The results of the study showed that there was a positive and significant relationship between foreign direct investment and capital base of banks and liquidity of the selected banks in Ghana. The results however showed a negative insignificant relationship between FDI and bank profitability. Adeniyi et al. (2012) revealed that FDI inflows have significant impact on the financial sector in Nigeria.

It is evident from the review that few previous study have directly link the profitability of commercial banks and FDI even though they found evidence of some positive impact of FDI on the banking sector. It is the view of the project that FDI influence the performance of banks both in terms of profitability as a result of new customers and new business opportunities that will require the service of banks. Also this new development will also impact on the liquidity of banks since the expected inflows will go to the banking sector. Based on the above analysis the following hypothesis can be stated.

H2: There is a positive relation between FDI and banks' profitability.

3. Methodology

The study adopted the quantitative approach because the study uses secondary data in the form of numbers to establish a relationship between variables.

The data gathering process involved the calculation of variables from the annual financial reports of commercial banks in Ghana. The (Ghana Stock Exchange) GSE database and the website of the various commercial banks surfed for annual reports of sampled banks for the period 2006 to 2015. The sample included 21 banks. These the variables of consideration were computed for each bank for the period under study and put in a time series form with the aid of Microsoft Excel Spreadsheet. The time series data for each bank was finally stacked on top of each other to form a cross-section of time variant variables. This formed a panel dataset consisting of the study variables for ten banks for a 10-year period (2006-2015).

Dependent variables

ROA_{IT}: ROA is used to measure profits generated by banks using their total assets. LogGDP: Is used to measure economic growth in Ghana over the study period in the second model of the study.

Model Specification

The model adopted for the study is that of Kuznetsova and Muravyev (2001) method for panel regression for the first objective. The general form for panel data regression given as:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \quad (1)$$

Where;

i = the individual cross-sectional dimension (i.e. Banks), and t = the time dimension (i.e. 2006-2015).

α = constant/intercept

β = the coefficients

Y_{it} = dependent variables/Bank performance

X_{it} = the independent variables of the model

ε_{it} = the residual error of bank i at time, t .

From equation (1), we assumed that α is the same for all banks, hence we arrive at equation (2) as shown below:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \quad (2)$$

Where the variables are defined as before.

The following regression models will be used to determine the impact of foreign direct investment on profitability of banks in Ghana

$$ROA_{it} = \beta_0 + \beta_1 LOGFDI_{it} + \beta_2 SIZE_{it} + \beta_3 ACOMP_{it} + \beta_4 CRISK_{it} + \beta_5 AGE_{it} + \varepsilon_{it}$$

To estimate the impact of FDI on economic growth, the final estimated model is represented as:

$$InlogGDP = \beta_1 InFDI + \beta_2 InINF + \beta_3 InGE + \beta_4 InDGS + \varepsilon$$

Where In represent time trend.

Variable Description

Return on Assets (ROA)

This is used to measure profitability of Commercial banks in Ghana. It is calculated as profit before interest and tax divided by total assets. It measures the returns generated by the bank using its assets.

Foreign Direct Investment (FDI)

This represents FDI inflows into Ghana over the study period. The study use both total FDI NET inflows and FDI as a percentage of GDP to measure this variable. It is expected that the relationship between FDI and bank performance as well as economic growth will be positive.

Inflation (INF)

Inflation is believed to have an impact of economic growth in a country. This variable was included in the second model as a control variable to examine the impact of FDI on economic growth.

Government expenditure (GE)

Government expenditure is believed to influence economic growth (Djurovic, 2011, Alfaro, 2003; Edison & Levine, 2002). Government expenditure is measured as total government expenditure as a percentage of GDP.

Gross Domestic savings (GDS)

Previous studies argue that gross domestic savings influences economic growth. It is measured as gross domestic savings as a percentage of GDP.

Size

Size is a key determinant of profitability of banks. The use of bank size as determinants of its profitability seeks to measure for the existence of potential economies or diseconomies of scale in the banking sector. Some empirical evidence giving reference to the positive and significant relationship between bank size and profitability include Musah, 2017; Musah et al. 2018; Kutsienyo, 2011 etc.

Asset Composition

Asset composition is the constituents of a firm's asset. Loans are a main source of income to banking institutions. It is expected that since bank loans are a main source of revenue, there should be a positive impact on performance. However findings from various studies are inconclusive. Abreu and Mendes (2000) reveal a positive relationship while studies by Bashir and Hassan (2003) and Staikouras and Wood (2003) document a negative relationship.

Credit Risk

Credit risk is simply the uncertainty surrounding whether a borrower will pay its debt on time or pay at all (Sinkey 2002; Coyle 2000 as cited in Afriyie and Akotey, 2012). It has commonly been identified as one of the greatest risk on bank's performance. Most literature has measured credit risk by the loan-loss provision. Empirical evidence (Athanasoglou, Brissimis and Delis, 2008; Kosmidou, 2008;

Tan and Floros 2012 as cited in Adusei, 2015) suggests that by this measure, there is a negative association between credit risk and bank performance.

Age

Age is the amount of time during which a thing or being has existed. The bank age is defined as the number of years since its incorporation. Empirical evidence shows that the age of a firm positively or negatively affects its profitability. A positive relationship means the longer a firm has been in existence, the higher its profitability (Halil and Hasan, 2012; Akinyomi and Olagunju, 2012; Musah, 2017). A negative relationship on the other hand implies the longer a firm's existence, the lower its profitability (Majumdar, 1997; Dogam, 2013; Coad, Segarra and Teruel, 2007 as cited in Ilaboya and Ohiokha, 2016).

4. Data Analysis

The study employed both correlation and panel regression analysis to identify the relationship between FDI and economic development on bank performance for the time period 2006-2015. In the second model, the study used time series to estimate the relationship between FDI and economic growth. This method of data analysis has been used in previous studies to establish the effect of FDI on economic growth (Chauffour, 2011; Edison & Levine, 2005; Blonigen and Wen, 2005). Sykes (2000) asserts that multiple regression analysis is in fact capable of dealing with an arbitrarily large number of explanatory variables.

Descriptive analysis

Table 1 presents the descriptive summary statistics of the variables used in our study. This shows the average indicators of variables computed from the financial statements as well as the FDI data used for the study. This helps to identify some irregularities or abnormalities in our dataset before the regression is carried out.

On average the logarithm of FDI inflows into Ghana over the study period is 9.45 with a minimum inflow of 9.04 and a

maximum inflow of 9.56. The standard deviation of 0.19 shows that there are little variations in FDI inflows into Ghana over the study period.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	Max.
ROA	0.0289	0.0882	-0.3491	0.0850
Size	8.625	0.5552	7.84	9.50
ACOMP	0.7540	0.2267	0.1576	1.0455
CRISK	0.1670	0.2135	0.0048	1.7542
Age	29.0217	5.7956	1	119
log FDI	9.49	0.1964	9.0408	9.564

The average credit risk is 16.7%. The results means that almost total loan loss provision averaged 17 of total assets. There are no internationally accepted benchmarks for loan loss ratio but a loan loss above 10% is certainly a course for concern. The ratio suggests that most commercial banks are at a high credit risk with high potential loan default amounting 16% of total assets. It is very important to keep this ratio low as it measures the level of the bank's exposure in terms of default risk.

Also the average return on assets (ROA) is 2.89%. This shows that on average commercial banks manages its assets to produce a 2.89% increase in income. It suggests that investors are not worse off investing in these institutions although they are not attractive. This is in comparison with previous studies on listed commercial banks in Ghana where the mean return on assets was 4% (Awunyo-Vitor and Badu, 2012). The difference in the results and previous studies could be attributed to the time difference and the sample difference for both studies.

Age of the banks is the last variable with the average age of the banks sampled being 29years while the oldest bank is 119 year as at the end of 2015. This result is inconsistent with previous studies on commercial banks in Ghana where the average age was 37 (Awunyo-Vitor and Badu, 2012).

Ghana's FDI inflows pattern from 1995 to 2015

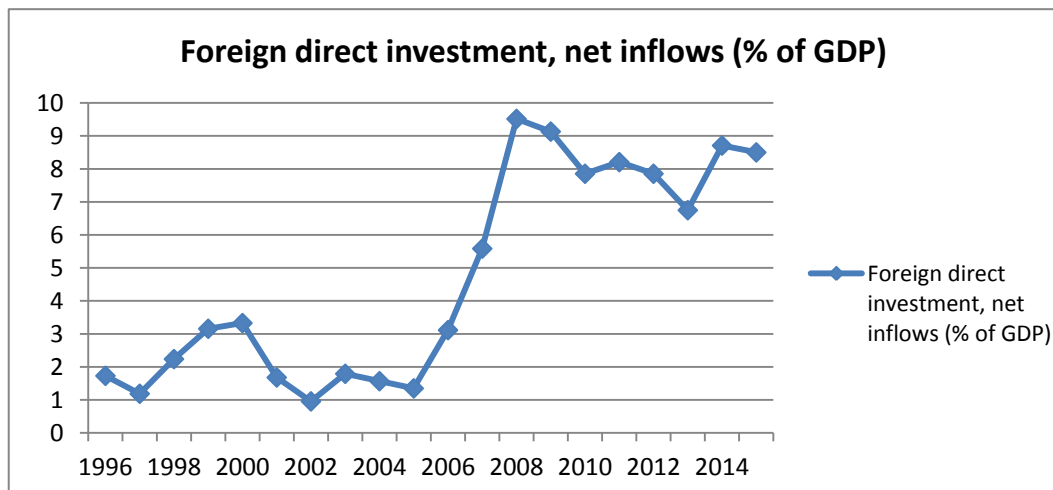


Figure 1. Ghana's FDI inflow patterns Per GDP from 1995-2014

To arrive at the inflow pattern of Ghana for the past two decades (25 years), data on Ghana's FID inflows spanning from 1980-2014 was obtained and analyzed. The table below gives a figurative summary of the data.

From the graph above depicting the trends of the inflow of FDI in Ghana, it showed that there was an increase in inflows of Ghana's FDI from 1980-2012 and a little high from 2012-2015. This is shown by the linear line plotted in the graph above.

It was also observed that there was a comparative increase in FDI inflows to Ghana from 199-1994. This was influenced by Ghana's adoption of Economic Recovery Program and the Structural Recovery Program. With these programs, liberalization policies such as the trade and the financial sector liberalizations were used as a tool to enhance the macro-economic indicators of the country, and this was able to drive the desires of foreign investors and hence the rise in FDI inflows at those periods. It could also be observed from the table that there was a significant rise in FDI inflows from .35% to 2.0% and achieving over a double figure in 1994 as per Ghana's GDP from 1992 to 1994. This was as a result of the successful establishment of the second phase of FINSAP which began in 1992. The implementation of the this policy enhanced domestic indicators such as rise in labour force and marginal productivity of investment, and in effect ensured a steady increase in of the country's FDI inflows.

However, it was observed that from 1995 to 1997 there was comparatively slight decline in the Ghana's FDI inflows from 4.2% in 1994 to 1.73% in 1996 and 1.18% in 1997. However from 1997 through to 2000, there was a turnaround in the figures for FDI inflows as it increased to 2.23% in 1998, further to 3.15% in 1999 and a little further to 3.33% in 2000. The figures for inflows saw a downturn from 2001 to 2005. It reduced to 1.68% from 3.33% in 2001, then to 0.96% in 2002, 1.79% in 2003, 1.57% in 2004 and finally down to 1.35% in 2005. There was also a sharp upturn in the FDI inflows from 2005 to 2006 as the figure increased from 1.35% to 3.12%. It also can be evidenced from the graph above that Ghana saw comparatively higher increases in FDI inflows between the periods of 2007-2009. For instance, there was a major increase from 3.12% in 2006 to 5.58% in 2007 and further to 9.13% in 2009. Since then the figures have seen variations from 2010-2012 as the figure declined

to 7.85 in 2010 from 9.13% in 2009. However, it increased to 8.14% in 2011 and again reduced to 7.86% in 2012. There was sudden fall (6.75%) in 2013 and maintained a steady rate between 2014 and 2015 with a rate of 8.70% and 8.50% respectively.

Correlation results between FDI and other variables and ROA

The results of the Pearson correlation matrix shows that there a positive and significant relationship between foreign direct investment inflows into Ghana and bank performance measured by return on assets. The results in consistent with the view of Sghaier and Abida (2013) where they argue that FDI inflows have direct impact on the banking sector of the local economy by enhancing their efficiency and performance. Markusen and Venables (1999) also support this view when they concluded that FDI inflows brings new customers to banks which have a positive impact on the performance of the sector in the receiving country.

On the control variables, Size is positively related to return on assets whiles age, asset composition, and credit risk are negatively related to ROA of Commercial banks in Ghana. The results shows that the bigger the bank, the more profitable than smaller banks in Ghana.

The key finding from the correlation matrix that is significant is the positive relationship between FDI and ROA at a 1% significance level and the negative relationship between CRISK and ROA at a 5% significance level. The results also show a positive relationship between the age of the banks and their performance at a 10% significance level. The results suggest that the older the banks, the more efficient and experienced they are thereby improving their profitability. Also, the results shows that the older banks have a better understanding of the banking terrain in Ghana and also have the goodwill and competent staff and personnel to deliver on their mandate and thereby increasing their performance in terms of profitability.

The results show that a higher foreign direct investment inflows will result in an increase is the return on assets of commercial Banks in Ghana and vice versa. Also, the negative relationship between credit risk and return on assets suggest that the higher the ratio of loan loss provision, the lower the profitability of the Commercial banks which is in line with finance theory.

Table 2. Correlation matrix

	<i>ROA</i>	<i>FDI</i>	<i>SIZE</i>	<i>AGE</i>	<i>ACOMP</i>	<i>CRISK</i>
ROA	1.0000					
FDI	0.5840***	1.0000				
SIZE	0.0702	0.4124	1.0000			
AGE	0.5375*	0.0116	0.3199	1.0000		
ACOMP	-0.0802	-0.0478	-0.0564	0.0143	1.0000	
CRISK	-0.4429**	-0.0173	-0.0395	-0.0433	-0.0403	1.0000

*** Significant at 1%, **Significant at 5%, * significant at 10%

The effect of FDI on bank profitability in Ghana

This section presents a panel regression analysis of the relationship between foreign direct investment inflows into Ghana and profitability of banks in Ghana. Previous studies on the subject have argued that foreign direct investment has resulted in the establishment of many multinational banks in many developing countries which has contributed significantly to the development of the financial sector of these countries. The situation in Ghana is not different as there is proliferation of foreign banks in the financial sector of Ghana. Nonetheless, this study is not focused on how much money comes into the banking sector as a result of FDI but try to examine the impact of total FDI inflows into Ghana and its potential impact on the profitability of banks in Ghana. It is the contention of this research that FDI inflows into Ghana goes into the financial sector in the form of deposits which increases the amount of customer deposits of commercial banks in Ghana. This means banks have the opportunity to turn these huge deposits into loans and generate more returns which will enhance their profitability. The result of the panel regression analysis on the relationship between FDI inflows into Ghana and bank profitability is presented below.

Table 3. Correlated Panels Corrected Standard Errors Regression Results

ROA			
Variables	Coef	Sig	Std Error
Constant	-0.0683	0.307	0.0669
SIZE	0.0337***	0.002	0.0111
ACOMP	-0.0256*	0.062	0.0137
CRISK	-0.0607***	0.001	0.0185
AGE	0.0368**	0.029	0.0169
FDI	0.1250 ***	0.000	0.0277
R-squared	= 0.3153		
Wald chi2(7)	= 31.75		
Prob > chi2	= 0.0000		

*** Significant at 1%, **Significant at 5%, * significant at 10%

The regression results from the table 3 shows a lower adjusted R-square of 31.53% which suggest that the independent variable can explain only 10% of the changes in the dependent variable. However, the probability of the Wild Chi2 is statistically significant at 1% significance level which suggests that the model is fit.

The main variable of interest is FDI and the results from the regression confirm that correlation matrix result which established a positive relationship between foreign direct investment inflows and profitability of Commercial banks in Ghana. The positive relationship was significant at a 1% significance level.

On the control variables the results show that firm size (SIZE) is positively related with profitability at 1% significance level. The results show that the bigger the assets size of the firms, the more profitable the firm will be and vice versa. Assets composition (ACOMP) was negatively associated with profitability at 10% significance level. The

results show that a higher loan to assets ratio is negatively related to ROA. Also credit risk is negatively associated with profitability of Commercial banks at a 1% significance level. The last control variable which is the age of the firm (AGE) was also positively associated with profitability of Commercial banks which suggest that the older the firm the more profitable they are consistent with expectations and literature.

Model Test for stationary and Unit Root Test

The study used the Augmented Dickey-Fuller (ADF) test as proposed by Dickey and Fuller (1979) and Philips-Peron (PP) test. In both test, the null hypothesis suggest non-stationary whiles the alternative is otherwise. Table 4 below presents the summary of the ADF test.

Table 4. ADF Test

Variables	Levels		First Difference	
	Constant	Constant & Trend	Constant	Constant & Trend
LnFDI	-0.2672	-2.7842	-4.9854***	-5.8583***
LnGDS	-3.2046**	-3.791**	-8.1371***	-8.0599***
LnINF	-3.5442**	-5.2922**	-6.2542***	-5.0942***
LnGCEX	-2.0909	-1.0699	-5.0813***	-6.0741***
LnGCEX_1	-3.0957	-0.04562	-4.6623***	-5.8557***

*** Significant at 1%, **Significant at 5%, * significant at 10%

The results show that LnINF and LnGDS are significant and hence stationary at 5% significance level. The other variables however were non-stationary. Also, based on the model with only constant and constant with trend, all the key variables of FDI and economic growth were significant at 1% significance level at first difference.

Table 5. The results of the PP-test is presented b

Variables	Levels		First Difference	
	Constant	Constant & Trend	Constant	Constant & Trend
LnFDI	-0.2672	-2.7842	-4.9854***	-5.8583***
LnGDS	-3.2046**	-3.791**	-8.1371***	-8.0599***
LnINF	-3.5442**	-5.2922**	-6.2542***	-5.0942***
LnGCEX	-2.0909	-1.0699	-5.0813***	-6.0741***
LnGCEX_1	-3.09657	-2.4562	-2.8765***	-3.4055***

*** Significant at 1%, **Significant at 5%, * significant at 10%

The results of the PP-test is consistent with the findings of the ADF test and shows that the two variables (LnGDS and LnINF) are significant at 5% significance level hence I(0). The rest of the variables are non-stationary. At first difference, the main variable of interest is significant. Also, LnFDI, LnGDS and the other variables are order of integration one, I(1). The results from both tests are similar and can be concluded that series of the variables in the model are mixture of order zero and order 1. This supports the use of bounds test within the framework of ARDL for test of cointegration.

Table 6. Bound Test Result

F-STATISTICS	UPPER BOUND	LOWER BOUND
5.1149**	4.01	2.86

** Significant at 5% significance level.

The result from table 6 shows that all the variables in the model show stability in the long run. The results of the F-Statistics is higher than the upper bound and the lower bound, even though significant at 5% significance level which results in the rejection of the null hypothesis. Despite the results, the study conducted short and long run analysis to serve as sensitivity analysis for the results.

Short and long run impact (relationship) of FDI on economic growth

To ascertain the short term impact/relationship between FDI and economic growth, the Error-Correlation Model was used to estimate for the variables for analysis. Below is a tabular representation of the end results;

Table 7. Short-run estimated coefficients

ARDL (1,1,0,0,2) selection based on SBC Dependent variable: ()				
Regression	Coefficient	Standard Error	T-Ratio	Probability
LnFDI	2.55200	0.61728	4.13426***	0.0001
LnGDS	3.78091	0.87226	4.33461***	0.0002
LnINF	-0.419682	0.10748	-3.90474***	0.0021
LnGCEX	0.24883	0.11187	2.22427**	0.0358
LnGCEX_1	0.09918	0.02988	3.31893***	0.0031
ECM(-1)	-0.58696	0.098465	-5.96110***	0.0061
R-Bar Squared	0.754395			
F-Statistic	11.11983***			
DW Statistic	2.183915			

Note: ***, ** implies significance level at 1% and 5% respectively.

The figures from the table 7 indicate a positive relationship/impact of FDI on the economic growth and this is shown at significant level of 1%. It is also shown that the rate of response of economic growth in relation to changes in inflow of FDI is great in the short term. This is represented by the coefficient figure of 2.55 indicating its elastic elasticity nature. In other words, the resultant figures further indicate a stronger and positive relationship between GDP/S with economic growth as indicated by the 1% significant level. The coefficient of 3.78 as shown in the table above indicates the elastic elasticity relationship between GDP/S and economic growth. These findings are in agreement with. However, that of Onu (2012), a work on "Impact of Foreign Direct Investment on Economic Growth in Nigeria" shows a positive but insignificant as his findings concluded that a 100% increase in FDI inflow in Nigeria leads to an insignificant GDP/S rate of 0.06, even though findings in previous works by Osagahale and Amenkhieman (1987) indicated a positive and significant impact of FDI to Nigeria's GDP/S.

Also, the figures for inflation as shown on the table above

indicate that there is a negative relationship between foreign direct investment and economic growth a 1% significance level in the short run. Also from the table, 1% increase in inflation means that there is 0.4% decline in economic growth and vice versa.

The results of the short run analysis could be linked with previous studies in Ghana and on the international front. The results is consistent with the results of Wan (2010) indicated that the impact of FDI on economic have been researched in different context empathising the importance of the subject matter.

Table 8. Long-run estimated coefficient

ARDL (1,1,0,0,2) selected based on Schwarz Bayesian Criterion				Dependent variable: LnGDP
Regressor	Coefficient	Standard Error	T-Ratio	Probability
Constant	-17.8120	3.3500	-5.3170***	0.0137
▲LnFDI	2.4098	0.18112	13.3053***	0.0176
▲LnGDP/S	0.61119	0.16896	3.6173***	0.0001
▲LnINF	-0.24699	0.16896	3.6173***	0.0001
▲LnGCEX	0.026075	0.08064	0.32334	0.0945

Note: *** implies significance at 1% level

Further long run estimate test shows a positive and momentous relationship with FDI and economic growth as shown above, with a FDI coefficient of 2.409 and at a significant level of 1%. With a coefficient level of 2.4098 (representing its elasticity) indicates a strong elasticity which means the responsive reaction of economic growth to FDI inflow in Ghana is high. Further explained, it means that 1% increase in FDI inflow leads to 2.4% increase in economic development and the reverse is true.

The results of the short run analysis as well as the long run analysis revealed that FDI inflows have a positive and significant impact on economic growth in Ghana. The result is consistent with several previous studies in the subject in Ghana, Africa and the world at large. In the Ghanaian context, the results are consistent with the findings of Abdulai (2005), Abor (2010), Antwi et.a. (2013); Gyebi et al. (2013) and a host of other studies. The results confirm the first hypothesis of the study which states among other things that there is a positive impact of FDI inflow on economic growth in Ghana. The result is also consistent with previous studies in other jurisdiction in Africa such as Nigeria, South Africa and other sub-Saharan African countries (Okeke et al., 2014; Awe, 2013; Yaqub et al., 2013; Saqib et al., 2013).

The results however are inconsistent with some previous studies where FDI was reported to have negative impact on economic growth (Hansen & Anis, 2012; Ahmed et al., 2012; Adebisi & Oluwakayode, 2011).

5. Discussion of Finding on the Relationship between FDI and ROA

The results of the Pearson correlation matrix and the panel

regression results shows that there is a positive and statistically significant relationship between foreign direct investment inflows into Ghana and profitability of Commercial banks measured by return on assets (ROA). The results suggest that the banking sector benefits enormously from FDI inflows into the country through improvement in their bottom line. The results is consistent with views expressed in previous studies since not much study have directly linked FDI inflows and profitability of banks. The results is consistent with views expressed by Sghaier & Abida (2013) where they posits that foreign direct investment will have a spill over effect on the performance of the banking sector. The results support the argument that foreign direct investment increases the amount of money available to banks by way of deposit which they can convert into loans to enhance their profitability. The results is contrary to a study by Bhatnagar et al. (2013) where the study examined the impact of foreign direct investment on the profitability of telecom companies in India and found no significant relationship. The results is also contrary to similar study by Oteng-Ababio et al. (2016) on the impact of FDI on profitability of selected banks in Ghana and found a negative relationship between FDI and bank profitability measured by return on assets. The study however showed that foreign direct investment had a positive impact on the capital base of the selected banks as well as the liquidity of those banks. The inconsistent result with this study could be as a result of the sample selection. The results suggest that FDI inflows improve the business climate in the country which leads to more credit creation and eventually higher profit.

On the control variables that affect profitability of Commercial banks, the study found that they were all statistically significant with profitability. In relation to size, there exists a positive and statistically significant relationship between the size of Commercial bank and its profitability. This means that large banks are more profitable than their smaller counterparts. The result means that larger banks enjoy economies of scale that reduces their cost of operations thereby enhancing profitability. The economies of scale will also reduce cost of gathering and processing information which will ultimately improve the profitability of the Commercial banks. The results can also be interpreted to mean that size is associated with diversification of risk which will impact on the portfolio of product thereby improving profitability. The results of this study is consistent with studies previous studies in Ghana (Awunyo-Vitor, 2012; Musah, 2017).

Asset composition is negatively related to profitability and significant at a 10% significance level. The ratio of loan to assets is inversely related to firm profitability contrary to the expectations that loans are the main source of revenue and as such higher loans to assets ratio should translate to higher profit. The inverse relationship could be as a result of the high non-performing loans suggesting that high loans do not translate into profitability if their recovery rate is low. Also, the high cost of holding large portfolio of loans could have contributed to the negative relationship. This means that

Commercial banks in Ghana with more non-loan earnings assets are more profitable than those that rely heavily on loans. The result is consistent with the findings of Bashir & Hassan (2003) and Staikouras and Wood (2003).

Again, on credit risk, the study found a negative relationship between credit risk and banks profitability. This suggests that the lower the risk taking incentives of Commercial banks, the higher the profitability. This is because higher provisions for loan losses signal higher risk and a higher probability of loans becoming non-performing loans. However a higher credit risk means higher non-performing loans which will impact negatively on profitability of banks. The loan recovery rate of Commercial banks is Ghana is low accounting for the high credit risk. The negative relationship suggest that banks can only be profitable if improve the loan recovery rate thereby reducing loan loss provisions. The result is consistent with the findings of Athanasoglou, Brissimis & Delis (2008); Kosmidou (2008); Tan & Floros (2012) as cited in Adusei (2015).

Finally, age is reported to have a significant positive relationship with ROA. This indicates that the older the bank, the more profitable they become. The older banks have been able to become more efficient through experience which can translate into profitability. Older banks are supposed to be more profitable because of their reputation and long tradition. The results show that this variable affect profitability of banks and those older banks have higher profitability. Even though new banks are more aggressive in their entry strategies and put pressure on the older ones thereby reducing their profitability the results shows a contrary view.

6. Conclusions

Countries the worlds over especially developing countries have over the last few decades put in measures to attract foreign direct investment. Ghana has since received its fair share of FDI inflows to Ghana with the analysis showing an upward trend in foreign direct investment over the study period. The results show that FDI inflows have direct impact on the profitability of Commercial banks in Ghana apart from the conventional setting up of new foreign banks as a result of FDI inflows. The study also found an inverse relationship between credit risk and assets composition and profitability of Commercial banks in Ghana. However, firm size and age were positively related to profitability of Commercial banks but statistically insignificant. The study also revealed that FDI have a positive impact of economic growth both in the short run and the long run.

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