African Development Bank Group

Working paper series

WPS

Exchange Rate Policies and FDI Flow in WAMZ

Perekunah .B. Eregha

Working Paper Series

AFRICAN DEVELOPMENT BANK GROUP

Exchange Rate Policies and FDI Flow in WAMZ[a]

Perekunah .B. Eregha

Working Paper No. 254
March 2017

Office of the Chief Economist

Abstract

Based on the IMF de facto classification of countries' exchange arrangements, this study examines the effect of exchange rate policies and inflationary expectation on foreign direct investment flow to the West African Monetary Zone (WAMZ). The Study employed the Arellano Panel Correction for Serial Correlation and Heteroscedaticity option of the Within Estimator for five of the WAMZ countries selected based on data availability for the period 1980-2014. Results showed that exchange rate uncertainty hampered FDI flow while inflation expectation had an insignificant effect on FDI flow to WAMZ. The fixed exchange rate policy regime was found to hamper FDI flow in the zone while intermediate policy regime had a significantly positive effect in facilitating FDI flow with periods of current account imbalances and changes in foreign exchange reserves as the channels since most of these countries use their reserves from the restricted export earnings to intervene in the foreign exchange market to maintain the official rate. The magnitude and significance of the negative effect of fixed policy regime on FDI increased indicating that fixed regime is not a good policy in period of current account imbalance and depleting foreign exchange reserve. It is therefore recommended that monetary authorities in these countries especially in periods of depleting foreign reserve and current account imbalances allow the market to determine the exchange rate or reduce their intervention so as to eliminate unnecessary uncertainties that hinders FDI flow to the zone.

1. Introduction

Foreign Direct Investment (FDI) is a main source of much desired capital flow as it is capable of facilitating technological spillovers, job creation and improves managerial skills and productivity in recipient countries (Blomstrom and Kokko, 1997; Jensen, 2003). Experts argue that FDI has the ability to argument the two gaps as identified in the literature vis-à-vis: the savings gap and the foreign exchange gap. More importantly, the desired savings to meet up with the desired investment is a mirage to most sub-Saharan African countries and this calls attention for external capital inflow to argument this short fall. Now, because the benefits of FDI are enormous, efforts geared towards attracting FDI have become one of the main aspects of growth and development policies in most economies (Jensen, 2003). This has made a number of developing countries including Africa to do everything possible to attract foreign capital with FDI being giving a priority. In fact, one of the cardinal objectives of the New Partnership for African's Development (NEPAD) was to accelerate FDI to the region (Funke and Nsouli, 2003; Adams, 2009).

However both from the theoretical angle (see, Dunning, 1977; Goldberg and Kolstad, 1995; Sung and Lapan, 2000; Brzozowski, 2006; Bailey and Tavlas, 2007; and Schmidt and Broll, 2009) and empirical angle (see, Kiyota and Urata, 2004; Schmidt and Broll, 2009; Busse et al., 2010; and Abbott et al., 2012) studies have provided extensive literature on factors[2] affecting foreign direct investment flows and one of the primary factors as espoused from the literature is exchange rate. This is because changes and instability in the external value of a currency affects the real value of investment both at the time of investment and at the time of transferring returns (Busse et al., 2010). This invariably indicates that foreign investments are affected by exchange rate movements and uncertainty which serves as an incentive or disincentive for investing abroad. Consequently, the issue of exchange rate and the achievement of a realistic exchange rate have continued to engender immense challenge to macroeconomic policy formulations over the years in most developing countries owing to its unarguable significance in not only facilitating growth but also key in ensuring external balance and investment flows. And exchange rate policies as part of macroeconomic policy formulation play very significant role and/or if not crucial role in

---

[2] For other factors (see, Dunning, 1977; Fernandez-Aria, 1996; Ferandez-Arias and Montiel, 1996; Calvao et al.,1996; Fedderke and Romm, 2006;Tsai, 1994 ; Ning and Reed, 1995 and Anyanwu and Yameogo, 2015)

determining the trend of exchange rate movement (Azam, 1999). Hence, exchange rate policies are key tools for ensuring domestic and external balances that might have the capacity to affect FDI flows if these polices creates macroeconomic distortions (Azam, 1999 and Busse et al., 2010). This is because in countries where there is always frequent government interventions that might result into exchange rate misalignment coupled with the existence of parallel exchange rate market, the resultant effect is to create inflationary expectations and price distortions (Azam, 1999) in the economy having effect on investment. For instance, Aizenman (1992) and Benassy-Quere et al., (2001) showed theoretically that exchange rate policy affect foreign direct investment flow while on the empirical side, Busse et al., (2010), Russ (2012) and Abbott et al., (2012) provided empirical correlation between different exchange rate policies and FDI flow.

The West African Monetary Zone (WAMZ) was formed in 2000 but became fully operational in 2003 with Gambia, Ghana, Guinea, Nigeria and Sierra-Leone as pioneer members and Liberia became a member in 2010. The monetary zone being the second in West Africa was sets up with some primary and secondary convergence criterion that members are targeted to meet as requirement for having a common currency over the years (Tarawalie et al., 2013). And exchange rate stability was one of the secondary criteria as the zone takes exchange rate policy as key tool for ensuring both internal and external balances. Now, these countries are basically net importers and their export sectors are dominated by primary products which is the main source of supply to the foreign exchange earnings. Hence, they are vulnerable to external shocks due to commodity price movements and the resultant effect is current account imbalances. In fact, available statistics showed that most of these countries experienced negative current account balances over the years and this has affected their foreign exchange reserve stock and thereby the exchange rate.

Before the introduction of the Structural Adjustment Programme and in some cases Economic Recovery Programme in the mid 1980s, these countries were on peg exchange rate policy but with the introduction of SAP which came with it a policy of liberalization, the exchange rate wasliberalized. However, due to the restricted export sector and increasing import demand over the years, these countries never allowed free floating and the exchange rate became overvalued in most cases making the restricted export sector to be uncompetitive. This led to serious economic woes and the pressure to either devalue or move to free float exchange rate policy so as to prevent

further depletion of foreign exchange reserves. However, due to higher demand for foreign exchange to meet up with international transactions as the government is the sole provider of foreign exchange from the proceeds of export and foreign aid, there emerged in these countries the parallel market (also called the black market) for foreign exchange (Azam, 1999). In fact, these markets are sometimes more effective and accessible to meet demand by both consumers and producers for imports.

Consequently, instead of the floating exchange rate policy[3] to ensure competitiveness, controlled fixed regime became imminent for fear of imported inflation which might results in price distortions thereby affecting foreign investment through expectations. This is because even in the periods of floating, monetary authority intervention is not totally eliminated and such disallow the market to determine the rate. Though, the case is worse in periods of fixed exchange rate regime. This is because under current account imbalances coupled with the government inability to meet foreign exchange demand due to depleting foreign exchange reserve and the alternative and easy option for importers is the parallel market and the resultant effect in most cases is widening exchange rate premium. Hence, the argument in support for such policy of the refusal of government to either devalue or allow the currency to depreciate so as to prevent imported inflation might also translate into price distortions in the midst of expectations (Azam, 1999). The main policy issue is that such decision coupled with the existence of the parallel rate market creates wrong signal and uncertainty to foreign investors due to exchange rate expectations and invariably hurts FDI flows.

It is against this backdrop that this study analyzed the effect of exchange rate policies on foreign direct investment flow in WAMZ with a view to accounting for price distortions through inflationary expectation in an empirical model. The empirical literature is very little and it is still a budding issue and an eye opener to policy makers especially in the present commodity price plunge affecting most sub-Saharan African economies. The link between exchange rate policies and FDI flow to the best of our knowledge in the literature concentrate more on exchange rate and

---

[3] floating with monetary authority intervention which in the empirical model based on the IMF classification and as used also by Abbott et al., (2012) categorized as intermediate since it was neither a fixed or free floating policy determined solely by the market.

its volatility but exchange rate policies adopted is a sin-quo-non to exchange rate behavior in affecting FDI flow. Hence, this present study bridges this gap in WAMZ by controlling for periods of current account imbalances and changes in foreign reserve in analyzing the effect of exchange rate policy on FDI flow.

2. Stylized Facts

2.1 Brief Overview of Exchange Rate Policies, Monetary Policy Framework and FDI Flow in WAMZ

Exchange rate policies are broadly categorized into three: fixed (pegged), intermediate and flexible (free floating) policy regimes. Before 1971, most countries operated under pegged exchange rate regime known as the Bretton-Woods System and under this system, countries fixed their currencies against the US dollar and dollar was worth a fixed amount of gold. Consequently, all countries participating pegged their currency to gold. This system could not go beyond 1971 as it failed but the fixed exchange rate system continued in most countries. The main thrust for the fixed exchange rate regime is the belief that exchange rate stability is necessary to facilitate trade and investment and it curbs price distortions and controls uncertainty. However, some economies especially the industrialized ones moved away from the fixed rate system to the flexible rate system where a domestic currency depreciates when the demand for foreign currency increases and appreciates when the demand for foreign currency falls. However, in WAMZ and even other Sub-Saharan African countries, the fixed rate was in practice until the introduction of the Structural Adjustment Programmes in these countries which made them to liberalize their economies and the exchange rate as well. So, the policy of devaluation came with SAP.

The implication is that WAMZ countries never practiced flexible exchange rate system as government intervention is very visible but allows devaluation for the purpose of competitiveness of the export sector and for correction of external imbalances. Using available classifications, in this case, the IMF classification[4] as also used by Abbott et al., (2012) which is based on the

---

[4] Details can be found in the various IMF Annual Reports on Exchange Arrangements and Exchange Restrictions; there are other classifications such Ghosh et al. (2002) that base their classifications on official exchange rate declarations; Reinhart and Rogoff (2004) that examined the volatility of the relevant exchange rate and sometimes the parallel rate and Levy-Yeyati and Sturzenegger (2005) that studied the volatility of official exchange rate and currency reserves.

members' actual, de facto arrangement classifying the arrangement primarily on the degree to which the rate is determined by the market rather than by official action, the study discuss exchange rate policies in these countries. Market determined rate here is basically flexible rate. From table 1a, it is shown that the IMF classification distinguishes between four major categories: hard pegs with two sub-categories, soft pegs with five sub-categories, floating regimes with two sub-categories and the residual classification which is termed as other managed arrangement as used by countries (IMF, 2012 & 2014). Therefore, the WAMZ countries can be classified into the following three exchange rate policy regimes; the fixed exchange rate regime, the intermediate and the flexible (free floating).

Table 1a: Classification of Exchange Rate Arrangement

	IMF Classifications			
	Hard Pegs	Soft Pegs	Floating regimes	Residual
Categories	Arrangement with no separate legal tender	Conventional peg	Floating	Other Managed arrangement
	Currency board arrangement	Pegged within horizontal bands	Free floating	
		Stabilized arrangement		
		Crawling peg		
		Crawl-like arrangement		

Sources: IMF Various Exchange Arrangement Reports online

By this classification, any exchange rate policy that is not determined by demand and supply in the market but allows monetary authority interventions to limit exchange rate movement is seen as intermediate regime but periods where the rate is not allowed to float at all is classified as fixed regime.

Table 1b: **Monetary Policy Framework.**

| | Monetary Policy Framework | | |
Countries	Exchange Rate Targeting	Monetary Target	Inflation Targeting
Gambia	No	1980-2014	No
Ghana	No	1980-2001	2002-2014
Guinea	No	1980-2014	No
Nigeria	Till 1974	1975-2010	2011-2014
Sierra-Leone	No	1980-2014	No

Source: Tarawalie et al., (2013).

A careful consideration of the IMF reports[5], it is evident that Gambia only moved away from the fixed exchange rate policy in 1986 after the introduction of the Structural Adjustment Programme as the economy was becoming more uncompetitive coupled with serious economic imbalances. In 1985, the Gambia dalasi was exchanging for the US$ at 3.89 but after the liberalization policy that allowed devaluation of the dalasi. Five years after in 1990, the currency was devalued and it depreciated for about 102% to 7.87 dalasi to the US$ and thereafter it depreciated further to 12.8 to the dollar in 2000 and to 28.6 in 2005 (See, Table A1 in appendix A). Inflation for the same period was 18.3% in 1985 but reduced to 12.2% after five years in 1990 within the liberalization period and to 6.98% and 4.95% in 1995 and 2005 respectively (Figure 3). FDI flows to the country also moved from negative $0.5 million in 1985 to $14.12 million in 1990 and later increased again to $43.5 million and $87.1 million in 2000 and 2005 respectively but fell to $20.4 million in 2010 (Table A1). This might not be unconnected with the current account imbalance as Gambia export fell drastically in 2005 with peanut and groundnuts as the country's major export commodities. The export share of GDP in 2005 fell to 7% from 48% in 2000 (Table A1) which explains a downward trend to foreign exchange reserves as the country tried to manage the exchange rate (Figure 2).

However, the primary concern of monetary policy in Gambia has been price stability and as well to maintain stability in the local currency. Hence, the monetary policy framework of Gambia has

---

[5] Details can be found the various IMF reports and classifications of the arrangements. This study is not intend to provide the details.

always been Monetary-Targeting Policy Framework (MTF) and monetary policy decision making is exercised through the Monetary Policy Committee (MPC) which meets twice a month to review developments in the economy. The Central Bank of Gambia uses open market operations to manage liquidity and intervenes in the foreign exchange market to smoothen short term fluctuations (Tarawalie et al., 2013).

Ghana moved away from fixed peg regime in 1983. . As at 1983, the Ghanaian economy was facing serious economic woes ranging from high inflation to widening current account imbalances and fiscal deficits. The alarming rate of inflation continued to erode the value of the cedi and the national income which undermined the confidence in the economy coupled with overvalued currency that made the export sector to be uncompetitive (Kwakye, 2012). In 1983, the government introduced the Economic Recovery Programme (ERP) followed by the Structural Adjustment Progreamme (SAP) alongside the Financial Structural Adjustment Programme (FINSAP) to restore financial and monetary discipline and all price controls were removed (Kwakye, 2012). Consequently, the government started the devaluation of the cedi which resulted into the floating of the cedi in 1990. During this period, the value was determined in the interbank market but the Bank of Ghana still provides foreign exchange to meet part of the demand which gave the Bank the position to influence the exchange rate which made it a managed float policy and not independent float. Ghana's exchange rate as at 1985 was 0.01 to the US$ but increased to 0.12 to the US$ in 1995 and to 0.54 and 0.91 in 2000 and 2005 respectively (see, Table A1).

The Ghana cedi continued depreciating due to widening current account imbalance (see, Figure 1) and shortage of foreign exchange and the inflation rate remained alarming as it was 50.1% in 1980 but after the economic recovery programme and liberalization of the economy it fell to 10.3% in 1985 and increased again to 37.2% and 59.3% in 1990 and 1995 respectively (Figure 3). In 2005, the inflation rate was still high though the economy started recovering by responding to these recovery programmes. In 2007, the Bank of Ghaha introduced a new cedi with the redenomination policy of the cedi with a view to eliminating 4-digits in the cedi so 10,000 cedi became 1 new cedi. By this new cedi, the Ghanaian currency became the highest denominated currency unit issued in Africa. Hence, in 2010 the exchange rate was 1.4 cedi to a US$ which is supposed to be 14,000 cedi to a dollar (Table A1) and consequently, inflation plunged to 6.1% in 2010 (Figure 3). FDI

flow within this period also experienced an increasing trend as FDI inflow to the Ghanaian economy increased to $14.8 million in 1990 from the previous $5.6 million in 1985. It grew significantly to $106.5 million and to $144.9 million in 1995 and 2000 respectively and thereafter maintained the upward trend (Table A1). The monetary policy goal of the Bank of Ghana during this period due to the alarming inflation was price stability and specifically to maintain low inflation to support growth and employment in the economy. Consequently, the Monetary Policy Framework of the Bank of Ghana was Monetary-Targeting (MTFW) up till 2001 but due to limited success in achieving inflation target and weakness between monetary aggregate and inflation, the Bank of Ghana switched to the Inflation-Targeting Monetary Policy Framework (ITFW) in 2002 (Tarawalie et al., 2013). Accordingly, a target of below 10% is desired in terms of an annual rate of inflation based on Consumer Price Index (CPI). The Bank of Ghana uses multiple instruments in achieving its policy objectives ranging from MPR to CCR and as well the open market operation. And in conducting monetary policy, the MPC of the Bank meets twice a month to review developments in the economy (Tarawalie et al., 2013). The main export product dominating Ghana's export is gold accounting for 29.6% of export followed by cocoa accounting for 26.8% (UNCTAD, 2014).
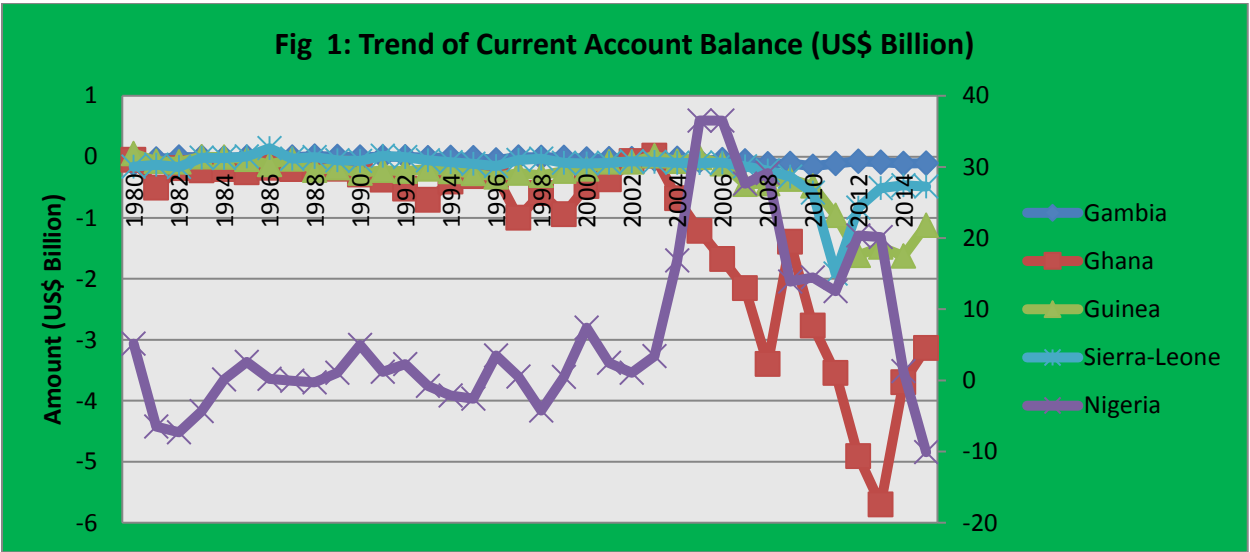
Source: IMF World Economic Outlook, 2016

Guinea on the other hand had used different currencies ranging from the Guinea franc to CFA franc and later to Syli but revert back to the Guinea franc in 1985 at par with the Syli. The country operated a fixed exchange rate regime up till 1993 before shifting to the floating regime due to

macroeconomic imbalances and uncompetitive export sector regime in 1994 though with intervention from the Central Bank of the Republic of Guinea. Within these periods, the exchange rate of the Guinea Syli to the US$ was around 92 franc to the US$ in 1980. The Guinea franc depreciated about 112% to 195 franc to the dollar five years after in 1985 and further depreciation of about 238% to 660 franc to the dollar in 1990 (Table A1). Inflation rate however, fell from 39% in 1980 to 19% in 1985 and later to 25% in 1990 (Figure 3). This is not unconnected with the fact that the Guinea export sector is well diversified with different minerals exports and tree crops as the country is endowed with several mineral resources such as bauxite, gold, diamond and oil and as well as coffee. The country possess a quarter of the world's proven reserves of bauxite having more than 1.8 billion metric tons of high grade iron ore , hence the fall in the rate of the franc never had any much effect on the inflation instead facilitated more exports. This is further supported with the trade balance statistics as export share of GDP was 38% as against 34% of import as ratio of GDP in 1980, the export ratio to GDP fell a bit to 33% in 1985 but import ratio reduced by more than 50% to a value of 15% of GDP. But by 1990, the export ratio increased significantly to 44% of GDP and import ratio declined to 8% (Table A1). This explained the reason for the controlled inflation rate during the fall in the franc rate which prevented imported inflation due to better trade performances in boasting foreign exchange earnings. The intuition is that the fall in franc actually made the export products more competitive.

However, foreign exchange earnings were improperly managed with fiscal indiscipline resulting from uncontrollable expansionary fiscal policies leading to fiscal deterioration and external imbalances coupled with falling minerals exploitation and serious capital outflows so the franc depreciated further (Table A1). In this period, FDI flow was US$0.56 million in 1980 which increased to US$17.86 million in 1990 but due to these problems it fell drastically to almost 15 years ago low figure of US$0.77 million in 1995. It increased after the further depreciation through the economic recovery programmes of IMF in 1994 to US$9.94 million in 2000 and to US$105 million in 2005 and maintain that trend further to 2014 (Table A1). Monetary policy main concern of the Bank of Guinea is to ensure price stability in facilitating growth. The country operates the Monetary-Targeting Policy framework (MTFW). Monetary policy decisions are made through the Monetary Policy Committee (MPC) that has only the central bank officials as members. In the

MPC pursues low inflation target and broad money supply growth as its intermediate target, the reserve money adjustment is seen as key to achieving these goals (Tarawalie et al., 2013).

In an attempt to manage the nation's foreign exchange earnings, Central Bank of Nigeria as a matter of policy transited the country from one policy regime to another. The country operated the fixed exchange rate policy regime up till 1985 after the collapse of the Bretton-Wood system in 1971. However, the fixed exchange rate could not manifest into the expected major policy goals as the currency was seriously overvalued due to external imbalance and widening fiscal deficit as a result of the early 80s oil price shock and increasing debt profile. As the country is plunged with serious economic woes, in 1986 Nigeria introduced the Structural Adjustment Programmes which made the country to move away from the fixed exchange rate regime to floating regime through the liberalization policy of SAP.

The floating exchange rate system operated with allowance for intervention by the monetary authority up till 1993 then a temporary halt to deregulation came in 1994 when the rate was fixed and by 1995 the country revert back to the floating policy with deregulation of the foreign exchange market through exchange rate liberalization and the institution of a dual exchange rate system. Following the adoption of the structural adjustment programme, the naira depreciated almost 802% from 0.89 naira to the US$ in 1980 to 8.03 naira to the US$ in 1990 and continued in that trend (Table A1). The naira depreciated further to about 40% from the 1995 value to 101.7 naira to the dollar in 2000 and experienced consistent fall. This is due to heavy reliance on crude oil as the main export product so any shock to international crude oil price greatly affected the current account position (see, Figure 1) as the country is a net importer in both consumables and capital goods. This translates into higher inflation rate in the country as inflation rate as at 1985 moved from 3.2% to 72.7% in 1995 within 10 years but plunged back to a 6.9% in 2000 which is as a result of oil price boom that boasted export earning in facilitating foreign reserve (Figure 2). FDI flows within this period however were on upward swing as FDI to Nigeria are mainly resource seeking specifically to the oil sector. In 1985, the FDI flows in Nigeria stood at US$485.5 million but increased to US$1271 million in 1995 and maintained steady increase up till 2010 but fell due to crude oil price plunge recently (Table A1). The monetary policy objective of the Central Bank

of Nigeria is to maintain optimal liquidity supply so as to maintain price stability and non-inflationary growth (Tarawalie et al., 2013).

Consequently, the Central Bank of Nigeria (CBN) has used contractionary monetary policy instruments over the years to curb inflationary expectations and reduce pressure on the exchange rate due to foreign exchange demand. Monetary Policy decisions are taken in the CBN Monetary Policy Committee (MPC) and recently due so much pressure on the currency as a result of falling oil price, the CBN introduced a number foreign exchange restrictions such as refusal to make withdrawals with naira dominated debit cards and refusal to accept deposit in domiciliary accounts and others including restrictions of 41 imported items to access foreign exchange from the official market. Prior to the year 2010 the CBN operated the Monetary-Targeting Monetary Policy Framework (MTFW) but switched to the Inflation-targeting Monetary Policy Framework (ITFW) in 2011.
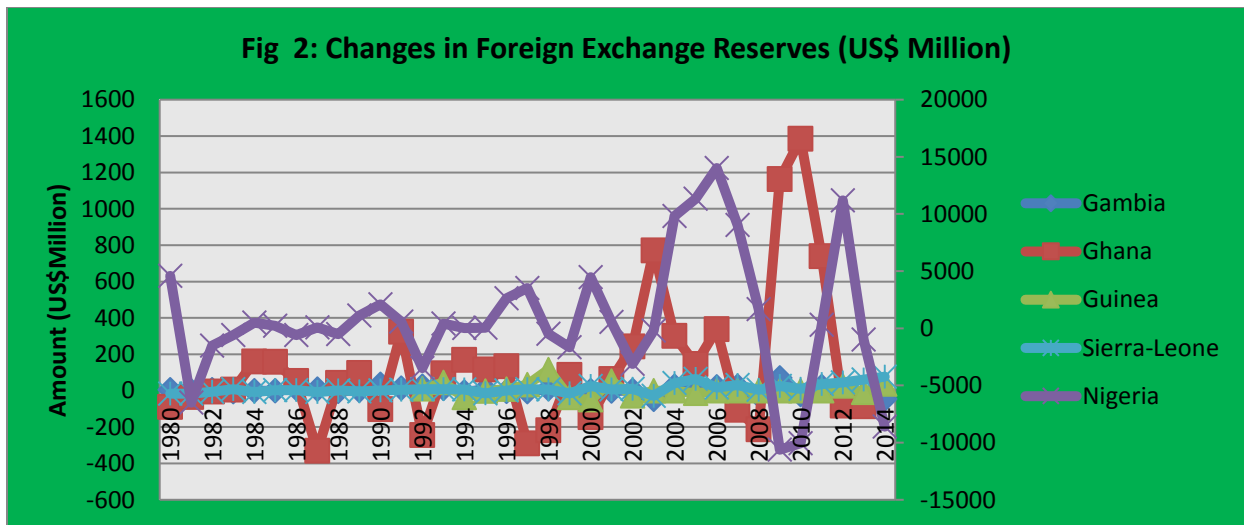
Source: IMF World Economic Outlook, 2016

Sierra-Loene operated under the fixed exchange rate up till 1989 when the Structural Adjustment Programme was introduced in 1990 and the economy was liberalized. Prior to this time, the fixed exchange rate system was in use and the country currency was pegged to different currencies at different times. From 1978 to 1982, the currency was link to IMF special drawing rights and from 1982 to 1989, the Sierra-Loene currency was pegged to the US dollar. However, in 1990 the country abandoned the fixed exchange rate regime and switched to the floating exchange rate

arrangement due to a number of macroeconomic imbalances. Available statistics showed that the currency exchange for a dollar by 1.05 Loene in 1980 but after SAP, the currency depreciated to a significant value of 151.5 Loene in 1990 (see, Table A1). The depletion of the reserve during the OAU meetings in the 80s led to the introduction of the two tier system to attract more foreign exchange to beef up the reserves. Commercial market rates were determined at fortnight auctions held by the Central Bank.

Fig 3: Trend of Annual CPI Inflation Rate
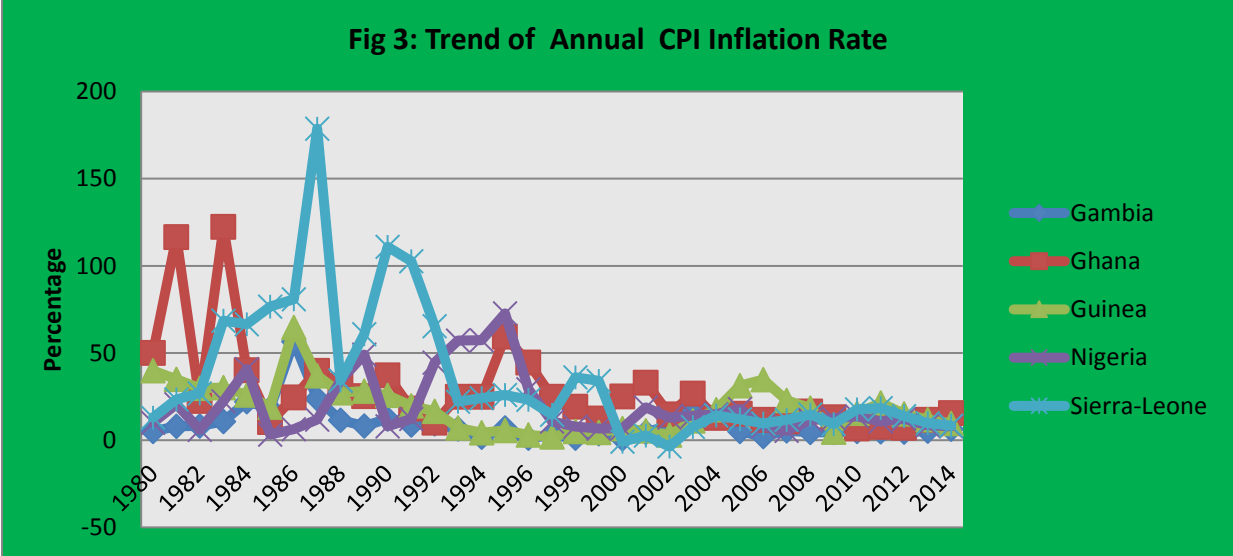
Source: IMF World Economic Outlook, 2016

During this period, CPI inflation also surged from 12.9% to 110.9% within the same period (figure 3). This is not unconnected with the fact that the country trade balance was deteriorating during the same period (figure 1) and foreign exchange was in short supply as against the demand for import as a net importing country. Mineral exports remain Sierra Leone's major source of foreign exchange earnings. The country is a major producer of gem-quality diamonds though rich in this resource; the country has historically struggled to manage its exploitation and export. The country trade balance is also affected mainly by FDI oriented imports. For instance, within the same period export as ratio of GDP plunged from 23% in 1980 to 9% in 1990 and thereafter to a non-significant increase of 11% and 10% in 1995 and 2000 respectively (Table A1) and the currency depreciated further to 755 Leone to the US dollar and consistently depreciated further as the macroeconomic indicators could not sustain the currency. FDI flow was to the tune of US$32.4 million in 1990 but fell drastically to US$7.28 million in 1995 before taking an upward trend in the year 2000 to US$38.9 million and continued in this trend up till 2014 (Table A1). The main policy thrust of the

Bank of Sierra Leone is to ensure price stability and also enhance financial sector stability and growth through strengthened supervision and vigorous regulatory agenda (Tarawalie et. al., 2013). The Bank of Sierra-Leone operates under the Monetary-Targeting Monetary Policy Framework by making use of the reserve money as the operating target and the broad money as the intermediate target.

2.2 Debt Stock and GDP Growth in WAMZ

Debt stock is one of the key indicators which serve as a measure of risk to investors and most of these countries have high debt profile with unbearable debt burden over the years as a result of debt payment and servicing. The reason is not farfetched as they are mainly import dependent economies with very narrow export based which is mainly facilitated by a primary product export that is pruned to external shock due to commodity price movements that is not under the control of these countries. Consequently, any slump in commodity prices exposes these countries to increasing budget deficit that is primarily financed through either domestic debt or external debt. In the case of external debt, foreign exchange is key to servicing foreign loans and the only supply to the foreign reserve is through this narrow based export sector that dwindles due to dwindling commodity prices except from capital inflows. It is therefore imperative that debt stock as percentage of export earnings as a trend is followed by experts and stakeholders so as not to experience sovereign debt crises resulting from low foreign reserve and this indicator is a measure of debt overhang of debt burden macroeconomics analysis.

Fig 5: Debt Stock as Share of Export
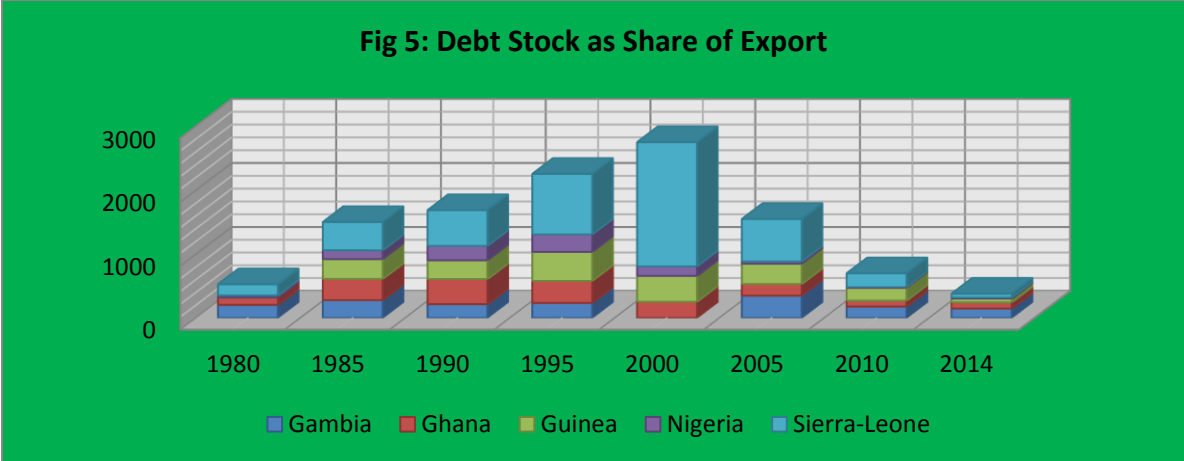
Source: World Bank WDI Online, 2015

17

An examinations of the statistics in WAMZ countries shows that most of these countries debt as percentage of export is as high as more than 200% of export earning in most cases except for Nigeria which is not unconnected with the fact that there seems to be so much export earnings from crude oil export as a leading exporter in Africa due to oil price boom (Figure 5). This is partly connected to the net export values in these countries which are pronounced from the differences between import and export shares in GDP (Table A1). This explains some of the reasons for exchange rate movement and instability experienced in these countries due to their expose to global shocks. For instance for Gambia, debt stock as percentage of GDP from figure 5 was as high as twice to thrice of export earnings in the country having a value of 206.5%, 280.9% and to a more higher value of 351% in 1980, 1985 and 2005 respectively except recently when it dropped to 179.8% and 149.2% in 2010 and 2014 respectively and this is as a result of recent surge in commodity prices coupled but with the 2015 slump in commodity prices, the figure will revert to its former trend and this can explain in terms what account for unstable exchange rate movement and effect of global shocks. For Gambia, Ghana and Sierra-Leone, the trend was not different as these three countries debt stock took more than twice or three times of their export earnings in most cases which is due to higher negative trade balance as shown earlier by the import and export shares. For instance in Ghana, it was as high as 331.8%, 393.6% and 334.4% in 1985, 1990 and 1995 respectively except recently in 2010 and 2014 when it fell to 92.8% and 96% respectively (Figure 5 & Table A1) and this can be explained by the same recent commodity prices surge and for the fact that Ghana has joined the league of oil producers recently. For Guinea, the trend was indifferent with a value of as high as 456.5% and 406.8% respectively in 1995 and 2000 and then dropped slightly to 319.5% in 2005 and to 201.9% and later to 60.1% in 2010 and 2014 explained by the surge in commodity prices also as Guinea is a major exporter of various mineral resources and tree crops.. The trend was the same for Sierra-Leone but the figured increased to as high as 559.3%, 945.2% and 1941% in 1990, 1995 and 2000 respectively which is very risky as indicator to investors and domestic business as a signal.

Fig 6: Trend Real GDP Growth Rate
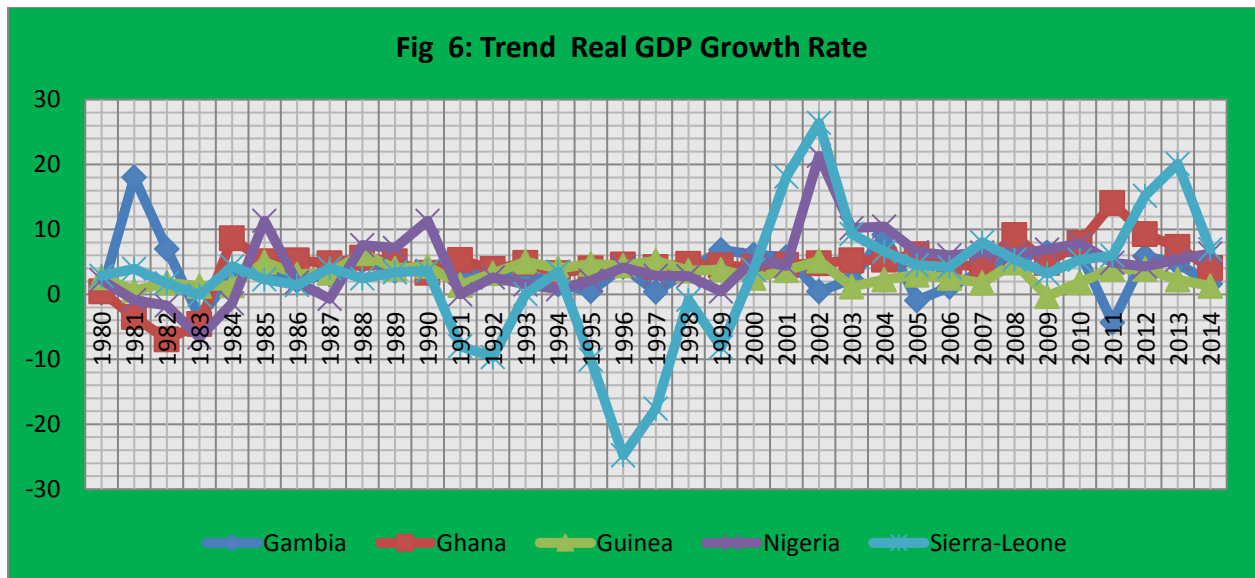
Source: UN Statistical Database Online, 2015

The case of Nigeria was at variance with these other countries as the value was only very high to 274% in 1995 but on the average it was less than 100% of export earnings. In fact, as a result of the recent surge in oil price coupled with debt forgiveness, the value dropped to as low as 35.8%, 8.79% and 14% in 2005, 2010 and 2014 respectively. This is partly supported by the trade balance as shown by the import and export shares. But the Nigerian experience is not too very different because these countries are all prone to global shocks through budgetary deficits due to dwindling commodity prices and huge import dependence to meet aggregate demand coupled with serious mismanagement. This is supported by the growth statistics in these countries which are not significantly different from each other even with better trade balance and lower debt-export ratio experienced in Nigeria compared to the other countries. For example, a cursory look at the growth statistics over the years, it is evident that growth trajectories in these countries are similar (see, Figure 6). The statistics showed that they all experienced growth rate of as low as 2% or less in some cases and to 3% except during the commodity price surge that they maintain growth path around 5% or above as can be seen from the last commodity price increase where Africa countries grow for an average of 6% for almost a decade and the commodity prices were also on the increase in these periods which explained such growth path. The implication is that any external shock affects this growth path in these countries due to their narrow production and export base.

3. Literature Review

There are several empirical literatures that examined the effect of exchange rate and expected exchange rate levels as well as the influence of exchange rate uncertainty on foreign direct investment flows. However, the literature on exchange rate policies on foreign direct investment flow is still very little so far to the best of our knowledge. However, exchange rate uncertainty and exchange rate policy are used interchangeably and are viewed as being directly related in most studies (see, Abbott et al., 2001; Schiavo, 2007 and Busse et al., 2010). In fact, in the classification of exchange rate regimes, a closer examination of the volatility of exchange rate overtime is also considered (Reinhart and Rogoff, 2004). Hence, in this review following the format of previous studies (Abbott et al., 2001 and Busse et. al., 2010) on the literature due to possible usage of the two (exchange rate regime and exchange rate volatility) interchangeably, the literature is presented in two categories vis-à-vis; link between exchange rate policy and FDI flow and the link between exchange rate volatility and FDI.

3.1 Exchange Rate Policies and FDI Flow

As earlier stated, the literature is still budding on the connection between exchange rate policy and FDI flow and the results are still imprecise. Most of the studies controlled for price distortions with inflation because it is viewed that exchange rate policy effect on FDI might go through the price distortion channel. For instance, Aizenman (1992) analyzed the factors determining the effect of exchange rate policy on the behavior of domestic and foreign investment as well as the link between exchange rate variability and investment. The study used the analytical approach with a standard equilibra macro model that allows for the presence of a short run Philip Curve under fixed and flexible exchange rate regimes. The model assumed that producers diversify internationally so as to boast the flexibility of production since being a multinational allows producers to reallocate employment and production towards the more efficient plant. The study showed that a fixed exchange rate regime is more conducive to attracting FDI compared to the flexible exchange rate regime for both real and nominal shocks. The study further showed that the correlation between investment and exchange rate volatility under flexible regime depends on the nature of

the shocks and that if the dominant shocks are nominal, there is a negative correlation but if they are real there is a positive correlation.

However, Benassy-Quere et al., (2001) investigated the impact of exchange rate polices specifically exchange rate regimes with control for exchange rate volatility on foreign direct investment model. The study first developed a theoretical model with the case of a risk-averse multinational firm which contemplates relocating two alternative foreign locations so as to re-export. The model showed that the firm will consider both locations as substitute or as complements depending on whether the two exchange rates against the investing country's currency are directly or inversely related. The study further analyzed the theoretical model empirically with a panel of 42 developing countries that received foreign direct investment from 17 OECD countries for the period 1984-1996. The results indicated the importance of exchange rate regime and found nominal exchange rate variability induced by a free floating policy regime to be detrimental in attracting FDI.

Asiedu and Lien (2004) on the other hand examined the effects of three different types of capital control policies vis-à-vis; the existence of multiple exchange rates, controls on capital account and the inflexibility of requirements for repatriation on foreign direct investment flows. The study covered the period 1970-2000 for75 developing countries and employed the fixed effect panel data modeling approach and the results showed that capital controls hampered foreign direct investment flow in these countries. Specifically, the study found that unitary exchange rate system improves the ratio of FDI flow to GDP by 0.54% however; multiple exchange rate system had detrimental effects on FDI flow.

Busse et al., (2010) study analyzed the effect of exchange rate policies on foreign direct investment flows for both developed and developing countries for the period 1980-2004. The study used dummy variables to capture the different exchange rate regimes based on the Reinhart and Rogoff (2004) regimes classifications. The study controlled for macroeconomic distortions like price distortion from inflationary expectations due to exchange rate regimes and proxy that with inflation with the inclusion of exchange rate volatility and the levels in the model. The fixed effect model was estimated with the standard OLS method but for robustness check the maximum likelihood

estimator was also used. The results should that macroeconomic distortions as proxied by inflation had a negative effect on FDI flow, however for exchange rate level, a negative effect was found for developing countries while a positive effect was found for developed countries, though the effect was not significant. The exchange rate volatility variable in the model was however positive but not significant. The study showed that fixed exchange rate regimes dummy had a positive and significant effect for developed countries but it was not significant for developing countries.

Nyako et al., (2011) examined the impact of exchange rate policy on Foreign Direct Investment inflow in Ghana for the period 1970-2008. The study used the error correction modeling approach estimated with the OLS technique. A dummy variable was used to capture exchange rate regime from where Ghana liberalized their exchange rate from fixed rate. The results showed that the liberalized exchange rate regime had positive effect on FDI flows to Ghana but it was found to be insignificant.

Abbott et al., (2012) in a recent study examined the effect of exchange rate policies on Foreign Direct Investment flows for developing countries. The study covered the period 1985-2004 for a panel of 70 developing countries and employed the system Generalized Method of Moment approach due to possible endogeneity problems in the model. The results showed that developing countries adopting fixed or intermediate regimes significantly outperform those under flexible exchange rate system in attracting foreign direct investment. Specifically, the study found that under the de facto classification schemes fixed and intermediate policy regimes are associated with significantly higher FDI inflow than the floating policy regime. The study further controlled for exchange rate volatility separately and found the fixed policy regime dummy to be bigger than intermediate policy dummy.

Russ (2012) investigated the dynamic linkages between exchange rate volatility and FDI inflows for 28 OECD countries for the period 1980-2005. The study employed panel data analysis using the OLS, FGLS and GMM techniques. The study showed fixed exchange rate regime to increase FDI inflow from partners in the peg.

A cursory look at the empirically literature, it is evident that these studies were on African specific region or country except the Nyako et al., (2011) study. And either in fixed or intermediate policy regime, most sub-Saharan Africa countries are constrained in using their foreign reserve to maintain the rate especially in the period of current account imbalances so a study that concentrates on specific Africa region of this sort is imperative.

3.2 Exchange Rate Volatility and FDI

As stated above, exchange rate volatility and exchange rate policies are used sometimes interchangeably even as some of the exchange rate arrangements classification used exchange volatility approach. Hence, it became imperative to discuss the empirical findings on the connection between exchange rate volatility and FDI flows as most of the studies on exchange rate policies also accounted for volatility in their models. For example, Baily and Tavlas (1991) studied the relationship between exchange rate variability and direct investment using quarterly data for the period 1976-1986 for the US. The study employed a stock adjustment model for the analysis and besides analyzing exchange rate volatility; it also examined the effect of misalignment. The study found a marginally significant and positive effect of short run volatility on direct investment for the US. However, when relative price term was dropped from the analysis, it was found that volatility variable had a negative and significant effect. Consequently, the study found no adverse effect of exchange rate volatility on investment.

Goldberg and Kolstad (1995) first developed a theoretical model explaining the link between FDI, exchange rate variability and demand uncertainty and further tested the theoretical predictions using bilateral FDI data on the US with the UK, Japan, and Canada. The study used quarterly data series covering the period 1978-1991. Exchange rate volatility was constructed with the standard deviation approach on exchange rate over a rolling sample of twelve quarters of data normalized by the mean level of exchange rate. Two estimation techniques were used for the study namely, OLS and GMM and it was found that exchange rate volatility never had any statistically different effects on investment shares, however real depreciations of the source country currency were associated with reduced investment shares to foreign markets but the result was insignificant.

Chakrabarti and Scholnick (2002) examined the effect of exchange rate expectations on FDI inflow for 20 OECD countries using monthly series for the period 1982-1995. The study used three measures namely mean, standard deviation and skewness of the monthly exchange rate capturing investors expectation, attitude towards risk and exchange rate shocks. The panel data approach was used with the fixed effect and random effect models using GLS as the estimator. The study found that average devaluation in the preceding year does not have a robust positive impact on FDI inflows while exchange rate volatility reduced FDI inflow though it was found not to be robust enough but skewness of devaluations had a robust positive effect on FDI.

Kiyota and Urata (2004) examined the effect of exchange rate and its volatility on Japan's FDI for the period 1999-2000 The study employed a panel data modeling approach with FGLS as the estimation technique. The study accounted for regional and sectoral differences in FDI and used the alternative measure of volatility which accounts for the impacts of factors of law of one price between different markets on real exchange rate volatility. The study showed that exchange rate volatility hampered FDI.

Brzozowski (2006) studied the effect of exchange rate volatility and uncertainty on FDI inflows into emerging and transition countries. The study disguised between volatility and uncertainty and constructed measures to capture each of them to examine their effect on FDI inflows. The panel data technique ranging from fixed effect to dynamic panel data models were used and specifically, the GMM approach was employed. The study found that exchange rate volatility and uncertainty negatively influenced the decision to locate investment in transition and accession countries.

Schiavo (2007) studied the impact of currency unions on international investment flows using selected 25 OECD countries for the period 1980-2001. The study employed a log-linear gravity model with parsimonious set of explanatory variables. The study adopted two different indicators of exchange rate volatility vis-à-vis; the short-term indicator capturing volatility and a long-term indicator capturing misalignments. The OLS and Tobit techniques were used and the study showed that a reduction in exchange rate uncertainty as a result of a single currency spurred cross country investment flows.

Udoh and Egwakhide (2008) analyzed the effect of exchange rate volatility and inflationary uncertainty on FDI inflow in Nigeria for the period 1970-2005. The GARCH (1,1) model was used to obtain the volatility variable and the analysis was done with OLS. The study showed exchange rate volatility to have a negative and significant impact on FDI inflow in Nigeria.

Ogunleye (2009) studied the dynamic link between exchange rate volatility and Foreign Direct Investment inflow in Nigeria and South Africa using Two Stages Least Square (2SLS) approach. The study obtained exchange rate volatility measure with the GARCH (1,1) model and found exchange rate volatility to impact negatively on FDI inflow in Nigeria and South Africa.

Schmidt and Broll (2009) analyzed the impact of exchange rate uncertainty, exchange rate movement and expectations on outward FDI for the US and six selected partners for the period 1984-2004. The study employed two measures of exchange rate volatility which are the expected future changes in the real exchange rate and a measure of volatility adopted from the work of Kiyota and Urata (2004) which is a specification that captured only part of real exchange rate volatility that was not explained by factors known to the investors. The study showed that the standard deviation measure of exchange rate volatility impinged on FDI outflow from the US in all the industries while the alternative measure was found to have a negative effect on FDI outflow to manufacturing sectors and a positive effect on non-manufacturing FDI.

Russ (2012) investigated the dynamic linkages between exchange rate volatility and FDI inflows for 28 OECD countries for the period 1980-2005. The study employed panel data analysis using the OLS, FGLS and GMM techniques. The study showed a non-significant effect of exchange rate volatility on FDI inflow.

4. Data and Methodology

4.1 Theoretical Considerations in Modeling Foreign Direct Investment

The eclectic paradigm of Dunning (1977) was the first theoretical consideration providing framework for FDI determinants. The framework actually grouped FDI determinants into micro- and macro-level determinants on why multinational companies invest abroad. The theory opined that firms' investment abroad is based on three advantages: Ownership (O), Location (L) and

Internalization (I). Hence, the framework is referred to as the OLI framework[6]. However, Fernandez-Aria (1996), Ferandez-Arias and Montiel (1996) and Calvao et al.,(1996) categorized factors driving FDI into push and pull factors while Fedderke and Romm (2006) classified these factors as policy and non-policy factors. Tsai (1994), Ning and Reed (1995) group them into either supply or demand sides factors. However, Aizenman (1992) and Benassy-Quere et al., (2001) provided theoretical underpinning to the link between exchange rate policies and FDI flow. Aizeman (1992) demonstrated in a standard model accounting for Philip curve and exchange rate volatility under fixed and flexible regimes with a producer with the intention of flexibility of production that fixed regime policy is more conducive to flexible regime in attracting FDI. Benassy-Quere et al., (2001) on the other hand under the case of a risk-averse firm with exchange rate regime in attracting FDI by accounting for exchange rate volatility showed that the firm will consider location as substitute or as complements depending on whether the two exchange rates against the investing country's currency are directly or inversely related implying that the link is ambiguous. Theoretically, on accounting for exchange rate volatility in FDI model, Goldberg and Kolstad (1995), Sung and Lapan (2000), Kiyota and Urata (2004), Brzozowski (2006), Bailey and Tavlas (2007) and Schmidt and Broll (2009) provided frameworks for exchange rate volatility as a key determinant of FDI flows under different assumptions by demonstrating that exchange rate volatility creates uncertainty for investment decisions on both production and returns.

5. Model Specification

Based on the above theoretical consideration and following the specifications by Busse et. al., (2010)[7] on the link between exchange rate policies and FDI flow with a view to accounting for uncertainty and inflationary expectations, the baseline empirical model is thus;

$$FDI_{it} = \theta_0 + \theta_1 \log(GDPPC)_{it} + \theta_2 Growth_{it} + \theta_3 EXR_{it} + \theta_4 OPENX_{it} + \theta_5 INFE_{it} +$$
$$\theta_6 EXRVOL_{it} + \theta_7 MPFW_{it} + \theta_8 WAMZ_{it} + \theta_9 INST_{it} + \theta_{10} Resource_{it} + \varepsilon_{it} \qquad (1)$$

Where, FDI= net FDI inflow as percentage of GDP; GDPPC=GDP per capita as measure of market size; Growth= economic growth rate as measure of economic track record; EXR=nominal

---

[6] For details about the OLI framework and other groupings (see also, Anyanwu and Yameogo, 2015).
[7] Busse et. al., (2010) considered source and host country characteristics which in this case is not considered because the FDI flow is not bilateral flows.

exchange rate; OPENX= trade openness to capture trade policy measured as total trade to GDP ratio; MPFW= dummy to capture monetary policy framework pursued in these countries which in this case, is the monetary-targeting framework; Institution[8]= captures institution and governance from the polity IV project. The polity2 which captures political and regime type ranging from -10 to +10 indicating fully institutionalized autocracy to fully institutionalized democracy is used for the INST variable; Resources= dummy value of 1 for countries which are oil resource exporters and zero otherwise; WAMZ= dummy for the periods of belonging to WAMZ; INFE= inflation expectation is included as a proxy for macroeconomic distortions like price distortion as used in Busse et al., (2010). Statistical method[9] of measurement is used here for the inflationary expectation variable which is an autoregressive model of inflation and the predicted value is used. This is because in a simple form of rational expectation, agents' expectations equal their true statistical expected values and in fact, Azam (1999) showed that inflationary expectation equal inflation if expectation is strictly less than infinity. EXRVOL= Exchange rate uncertainty measure. This study used the Brozozowski (2006) measure of exchange rate uncertainty[10] as the study emphasized the need to distinguish between volatility and uncertainty and that exchange rate innovations are unanticipated hence exchange rate uncertainty measure is better but volatility measures are basically for anticipated exchange rate innovations. To quantify exchange rate uncertainty following the Brozozowski (2006) approach which constructed sample-based measure of dispersion of unpredictable innovation through the conditional variance of the innovation constructed using the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) specification of Bollerslev (1986). The estimated variance using exchange rate monthly data with equations (2) and (3) is thus;

$$EXR_t = \alpha + \sum_{i=1}^{p} \varphi_i \, EXR_{t-i} + v_t; \; v_t \sim IID(0, \delta^2) \tag{2}$$

$$\sigma_t^2 = \vartheta_0 + \sum_{i=1}^{p} \vartheta_i \, v_{t-i}^2 + \sum_{j=1}^{q} \omega_j \, \sigma_{t-j}^2 \tag{3}$$

---

[8] Institutional variable included here is due to the data coverage as other measures have shorter time series.
[9] There are other methods like the Survey Method and the Market-Based Method which are not used due to data limitations in these countries especially with the market based method.
[10] Details on the theoretical discussion of the differences on the effects of volatility and uncertainty measures on FDI (see, Brozozowski, 2006).

Equations (2) and (3) are estimated for each country separately and for each year 12 values of σ_t^2 will be obtained, then a simple mean of fitted values from equation (3) was taken as the measure of exchange rate uncertainty for a given country in a given year.

To account for the exchange rate policy regimes[11] in the above specifications, equation (1) becomes;

$$FDI_{it} = \varphi_0 + \varphi_1 \log(GDPPC)_{it} + +\varphi_2 Growth_{it} + \varphi_3 EXR_{it} + \varphi_4 OPENX_{it} + \varphi_5 INFE_{it} +$$
$$\varphi_6 EXRVOL_{it} + \varphi_7 MPFW_{it} + \varphi_8 WAMZ_{it} + \varphi_9 INST_{it} + \varphi_{10} Resource_{it} + \varphi_{11} Fixregime_{it} +$$
$$\varphi_{12} Intermregime_{it} + \epsilon_{it} \qquad\qquad (4)$$

Where, Fixregimes= dummy value of one for periods of fixed exchange rate policy regime and zero otherwise; intermregime= dummy value of 1 for periods of intermediate regimes and zero otherwise;

Also, during periods of current account imbalances coupled with the existence of parallel market rate, the exchange rate premium might be widened in creating more distortions as foreign reserves are depleted in such situations making foreign exchange to be scarce. Theoretically, widening current account imbalance is an avenue for attracting more FDI as it is an evidence of widening output gap, but distortions and expectations created through the parallel market existence in periods of current account imbalances and falling foreign reserve might also undermine FDI flow. Consequently, a dummy variable value of 1 for periods of current account imbalances for each of the countries is created and interacted with change in foreign reserves is controlled for in the above specification since parallel market exchange rate statistics for all the countries are unavailable. Brzozowski (2006) study accounted for foreign exchange reserve and this also informed the inclusion of the interaction variable. Thus, equation (4) becomes;

---

[11] Based on the IMF classifications and reports, the fixed and intermediate policy regimes are the most common in these countries, hence this study considered only these two.

$$FDI_{it} = \omega_0 + \omega_1 \log(GDPPC)_{it} + \omega_2 Growth_{it} + \omega_3 EXR_{it} + \omega_4 OPENX_{it} + \omega_5 INFE_{it} +$$
$$\omega_6 EXRVOL_{it} + \omega_7 MPFW_{it} + \omega_8 WAMZ_{it} + \omega_9 INST_{it} + \omega_{10} Resource_{it} +$$
$$\omega_{11} Fixregime_{it} + \omega_{12} Intermregime_{it} + \omega_{13} Fix * \Delta RSV_{it} + \omega_{14} Interm * \Delta RSV_{it} +$$
$$\omega_{15} CAdum_{it} + \omega_{16} \Delta RSV * CAdum_{it} + \mu_{it} \tag{5}$$

Where, $Fix * \Delta RSV$= interaction variable between fixed regime dummy and changes in foreign exchange reserves; $Interm * \Delta RSV$ =interaction variable between intermediate regime and changes in foreign exchange reserve; $CAdum$ =current account imbalance dummy taking the value of 1 for periods of imbalances and zero otherwise; $\Delta RSV * CAdum$=interaction variable between changes in foreign reserve and the current account dummy.

Trade and FDI data were extracted from the UNCTAD Statistical database online, 2015, the institutional variable was extracted from the Polity IV project while the remaining data were extracted from IMF World Economic Outlook Database online, 2016. Three variations of the panel data models were analyzed in this study which includes the pooled OLS, fixed effect and random effect. The fixed effect model was estimated by the within estimator also called Entity Demeaning estimator while the random effect model was estimated with Swamy-Arora GLS approach. In these three models, the right test to determine the appropriate model was also conducted. We used the Ramsey-Reset omitted variable test to determine if there were omitted variables with regards to the pooled OLS. We also employed the F-test to test between pooled OLS and fixed effect model. The Breusch-Pagan test is employed to determine that of pooled OLS and random effect model, while the Hausman test is employed to determine between random effect and fixed effect models.

6. Empirical Results

Table 2 presents the results for the baseline model with a view to examining the effects of inflation expectations and uncertainty on FDI differently to avoid collinearity between them in the West African Monetary Zone during periods of Monetary-Targeting Policy Framework. This will assist in determining whether the effect of each is affected or not and/or affect the results or not when included together or separated in the analysis. In the analysis, the variables were first tested for panel unit root[12] using both the homogeneous and heterogeneous panel unit root tests and only real GDP per capita could not pass the test but its log value passed the test hence, real GDP per capita entered the model as logged. Three different panel data models were estimated vis-à-vis; the Pooled OLS, Fixed effect and Random Effect Models. In the Pooled OLS estimation, the Ramsey-RESET[13] test for omitted variable bias indicates that there are unobserved individual effects omitted as the null hypothesis of no omitted variable is rejected as deduced from the test statistics. Therefore, it is imperative that the study proceed to estimate the other variations of the panel data models. Similarly, the F-statistics values in all the estimation which are significant at 1% confirmed evidence of omitted variables making the fixed effect and random effect models more appropriate than the Pooled OLS. However, the Hausman test statistic values are also significant, hence the study reject the null hypothesis of the appropriateness of GLS estimates thereby favouring the fixed effect model as the most appropriate. But due to the discovery of serial correlation and heteroscedasticity with the fixed effect estimation using the Wooldridge LM test and the Modified Wald test respectively, the Arellano Panel Correction for serial correlation and heteroscedasticity within estimator for fixed effect model was employed.

The results show that the coefficient of the resource endowment which is a proxy for resource seeking hypothesis is positive and significant in facilitating FDI flow confirming the hypothesis. This further confirms previous findings by Asiedu (2006) and Anyanwu and Yameogo (2015) on this connection. The institutional measure was found to negatively influenced FDI flow though found not significant. This implies that the quality of institutions in these countries discourages FDI flow which is indicative of inhospitable regulatory environment in these countries. Anyanwu

---

[12] The result is not presented since it is of no use to proceed for cointegration test and also to conserve space.
[13] The result of the Ramsey Test is not presented here since the Pooled OLS was dropped and since the F-test (2) also confirmed its rejection.

and Yameogo (2015) found similar results also. The coefficient of real GDP per capita which captures market size was found to be negative and significantly influenced FDI flow. This contradicts apriori expectation and the intuition is that per capita GDP in these countries are relatively low and could not provide the platform for attracting FDI which might be indicative of non-linear relationship as also confirmed by Anyanwu and Yameogo (2015) for ECOWAS. This implies a threshold of per capita GDP that could attract FDI in this zone. This confirms the market seeking hypothesis of FDI flow in developing countries but indicative of a higher threshold for the case of WAMZ since the present GDP per capita is low. For the growth rate variable in this zone, the results showed the effect to be positive and significant influencing FDI flow which implies that good economic track record specifically higher growth rates are sin-quo-non for FDI flow as it underscores indication of profitable investment opportunities. Similarly, trade openness was significant and a positive factor in attracting FDI to the zone. This is confirmed by all the estimated models alluding to the significance of trade policy in influencing the direction of foreign investment. Nominal exchange rate was also found to be significant and positively influenced FDI flow as the coefficient is also positive and significant.

However, the coefficient of exchange rate uncertainty was negative in all the models influencing FDI flow though it became insignificant when exchange rate polices variables were included. Previous studies (Udoh and Egwakhide, 2008; Ogunleye, 2009) in sub-Saharan Africa have found the effect to be negative and significant but our results shows that when exchange rate policy regimes are accounted for, the negative effect was insignificant. The intuition is that since these countries never fully allowed free floating regimes but more of fixed and intermediate exchange rate policy regimes, the exchange rate in these countries might not be as volatile as insinuated as measured in these previous studies.

Table 2: Results on Baseline Model

Dependant Variable : FDI inflow as share of GDP

Regressors	(1)	(2)	(3)	(4)
Constant	-2.90 (-1.69)*	-3.38 (-2.12)**	-3.06 (-1.70)*	-3.52 (-2.07)**
Resource Abundance	0.92 (3.60)***	0.93 (3.42)***	0.91 (3.51)***	0.91 (3.32)***
Institution	-0.03 (-0.92)	-0.03 (-0.63)	-0.03 (-0.94)	-0.03 (-0.64)
Monetary Policy Framework	-0.51 (-1.68)*	-0.48 (-1.58)	-0.49 (-1.60)	-0.47 (-1.51)
Log GDP Per Capita	-0.85 (-4.37)***	-0.82 (-3.91)***	-0.85 (-4.35)***	-0.82 (-3.91)***
Growth	0.02 (2.27)**	0.02 (1.83)*	0.02 (2.29)**	0.02 (1.83)*
Exchange Rate	0.002 (2.27)**	0.002 (2.26)**	0.002 (2.43)**	0.002 (2.42)**
Trade Openness	1.91 (4.19)***	1.92 (4.04)***	1.94 (4.23)***	1.95 (4.01)***
WAMZ	1.75 (8.62)***	1.79 (8.95)***	1.77 (8.43)***	1.81 (8.67)***
Inflationary Expectation		0.01 (0.80)		0.01 (0.78)
Exchange Rate Uncertainty			-0.01 (-2.48)**	-0.01 (-1.78)*
Diagnosis				
R^{-2}	0.58	0.58	0.57	0.58
F-Statistics (1)	16.82 [0.00]	15.68 [0.00]	15.48 [0.00]	14.51 [0.00]
F-Statistics (2)	11.11 [0.00]	11.49 [0.00]	11.06 [0.00]	11.43 [0.00]
Hausman Test	73.45 [0.00]	72.68 [0.00]	71.63 [0.00]	68.56 [0.00]
Breusch-Pagan LM Test	9.32 [0.58]	9.48 [0.53]	9.72 [0.48]	9.86 [0.42]
Modified Wald Test	51.61 [0.00]	50.84 [0.00]	52.43 [0.00]	53.87 [0.00]

Notes: ***, ** & * indicate 1%, 5% & 10% levels of significance; (1)=Baseline model; (2)= Baseline Model accounting for expectations (3)=Baseline model accounting for uncertainty (4)=Baseline model with both expectation and uncertainty.; F-test(1)=Overall Significance Test; F-Test(2)=Test for Pooled OLS and Fixed Effect Model; ( )=indicates T-statistics; [ ]=indicates probability values.

One striking thing to note from the result is the coefficient of the WAMZ dummy which was found to be positive in influencing FDI flow. The intuition is that as the zone was formed with the pursuit of some targeted convergence criteria which exchange rate stability was one of them indicating that the formation of the zone alone was not enough in attracting FDI but the exchange rate policies pursued in this zone in achieving exchange rate stability convergence criteria contributed to the

influence of the zone in attracting FDI. This confirms Anyanwu and Yameogo (2015) findings that monetary union and integration is a key factor in influencing FDI thereby recommending the quick establishment of a common currency in the zone. The coefficient of monetary targeting policy framework dummy which all the countries practiced in one period or the other was found to negatively influenced FDI flow in the zone however the significance level was weak in the baseline model but became insignificance in the models afterward. The policy issue is that monetary targeting policy framework operated in these countries never delivered the expected monetary targets indicative of dynamic inconsistency with policy announcement and thereby sending wrong signals to foreign investors through their high and volatile monetary policy rates over the years. This made Nigeria and Ghana to even switch to the inflation targeting framework (see, Tarawalie, et al., 2013).

Table 3 presents results for the case of controlling for exchange rate policies to the baseline model. Here also, the panel data model selection tests supported the fixed effect model as the most appropriate as provided by both the F-statistics values and the Hausman statistics values in the table. The results found were similar with the previous result as the coefficients of the variables in the base line model maintained the same signs except for the monetary-targeting policy framework coefficient that became positive when exchange rate policy regimes were included. This is indicative of the fact that in attempt to achieve price stability through meeting monetary targets, the desired effect and effort cannot be divorced from exchange rate policy in facilitating FDI flow. This implies that monetary-target alone will not deliver the desired result to attract FDI but must be complemented with the right exchange rate policy especially when it is not possible for a country to fixed the rate and wanting to use macroeconomic policies freely. Trade openness, growth and nominal exchange rate were still found to positive and significantly influenced FDI flow while exchange rate uncertainty and GDP per capita had negative but not significant effect in influencing FDI flow in the zone.

On the variables of interest vis-à-vis; fixed and intermediate policies as shown in table 3, the results showed that inflationary expectations never had any significant effect on FDI flow but was positive. This implies that higher expectations of inflation influenced FDI flow which is not unconnected with the fact that higher expectations are indications of higher prices and

consequently higher returns for foreign investors via nominal exchange rate channel. Though, this might discourage domestic productions and investors through imports of inputs and via wage indexation and real money balance channels. However, it was found that fixed exchange rate regime was negative and significantly influenced FDI flow. In fact, the magnitude and the significance level were high. The results showed that the negative effect was as high as 0.79 but increased further when period of current account imbalances and changes in foreign reserve were controlled for. This is an indication that the negative effect comes via foreign exchange intervention by monetary authority to keep the rate fixed from the narrow export oriented supply of foreign exchange as tool for maintaining the fixed rate and creating exchange rate expectations and thereby making risk-averse investors to change their investment decisions or delay in their decisions. The policy issue is that most of these countries experiences current account imbalances and making foreign exchange scarce since they are import dependant economies hence depleting foreign reserve is the case in an attempt to keep the exchange rate fixed through intervention and this results in so much expectations of possible devaluation or depreciation of the rate soon and hampered FDI flow especially when this is not done on time.

Table 3: Results on Exchange Rate Policies in the Baseline Model

Dependant Variable: FDI inflow as share of GDP

Regressors	(5)	(6)	(7)
Constant	-8.17 (-3.84)***	-7.89 (-3.64)***	-8.77 (-4.18)***
Resource Abundance	0.68 (2.59)***	0.68 (2.69)***	0.72 (3.56)***
Institution	-0.04 (-1.36)	-0.04 (-1.57)	-0.04 (-1.69)*
Monetary Policy Framework	0.24 (0.93)	0.21 (0.76)	0.38 (1.19)
Log GDP Per Capita	-0.03 (-0.12)	-0.05 (-0.22)	-0.02 (-0.11)
Growth	0.02 (1.52)	0.02 (1.91)*	0.02 (2.15)**
Exchange Rate	0.001 (2.26)**	0.001 (2.26)**	0.001 (1.81)*
Trade Openness	1.67 (13.72)***	1.64 (11.97)***	1.58 (8.83)***
WAMZ	1.49 (6.92)***	1.51 (7.320***	1.52 (6.02)***
Inflationary Expectation	0.02 (1.52)	0.02 (1.63)	0.01 (1.61)
Exchange Rate Uncertainty	-0.007 (-0.71)	-0.006 (-0.60)	-0.001 (-0.76)
Fixed Regime Policy	-0.79 (-2.54)**	-0.83 (-2.89)***	-0.86 (-3.11)***
Fixed Regime*Changes in Reserves		-0.001 (-2.91)***	-0.001 (-12.01)***
Intermediate Regime Policy	0.61 (2.35)**	0.54 (2.52)**	0.43 (2.57)**
Intermediate Regime*Changes in Reserves		-0.0001 (-2.27)**	-0.0001 (-2.19)**
Current Account Imbalances			0.56 (3.33)***
Current account Imbalance* Changes in Reserves			0.01 (26.9)***
Diagnosis			
R^{-2}	0.65	0.65	0.67
Observations	170	170	170
F-Statistics (1)	16.72 [0.00]	14.86 [0.00]	14.01 [0.00]
F-Statistics (2)	3.88 [0.01]	3.66 [0.01]	4.55 [0.001]
Hausman Test	49.24 [0.00]	48.75 [0.00]	46.92 [0.00]
Breusch-Pagan LM Test	9.89 [0.39]	9.91 [0.33]	10.01 [0.29]
Modified Wald Test	56.12 [0.00]	58.43 [0.00]	59.67 [0.00]

Notes: ***, ** & * indicate 1%, 5% & 10% levels of significance; (1)=Baseline model; (2)= Baseline Model with control for exchange rate policies (5)=Baseline model accounting for exchange rate polices; (6)=Baseline model with exchange rate policies and the interactions; (7)=baseline model with exchange rate policies and accounting for periods of current account imbalances and changing foreign exchange reserves; F-test(1)=Overall Significance Test; F-Test(2)=Test for Pooled OLS and Fixed Effect Model; ( )=indicates T-statistics; [ ]=indicates probability values.

This result is at variance with Busse et al., (2010) and Abbott et al., (2012) studies that found the effect to be positive and significant in developing countries. Though for IMF classification, Abbott et al., (2012) found the effect to be insignificant. The possible explanation is that some of these developing countries export sectors might be more diversified than the WAMZ countries hence, managing fixed regime might be easy and ensure stability thereby providing positive signal for investors. On the contrary, intermediate policy regime was found to be positive and significant in influencing FDI flow and this is not unconnected with the fact that during intermediate regime the monetary authority intervention is reduced compared to the fixed regime. Abbott et al., (2012) also found similar result.

Other variables included in the model such as the periods of current account dummy and the interaction were found to be positive and significant and this conforms to theory because current account imbalance provides opportunity for capital flows and as destination for foreign investment opportunities because current account imbalances is an indication of output gap where aggregate demand is higher than aggregate supply and as such importation the augmenting factor.

On the robustness of the results, the results are robust enough because the main variables in the baseline model never changed sign except the monetary-targeting dummy in all the estimations despite controlling for different variables to the baseline model and the variables of interest also maintained same magnitude and sign. Besides, the Arellano panel correction for serial correlation and heteroscedaticity within estimation procedure for fixed effect model was estimated and in all the estimations the post estimation diagnostic test shows the absence of heteroscedaticity in the result as confirmed by the significance of the modified Wald chi-square test. The Breusch-Pagan LM test for cross-sectional independence failed to reject the null hypothesis of cross-sectional independence in all the estimations as well indicating the absence of cross-sectional dependence with the results.

6. Conclusion

This study examines the effect of exchange rate policy on FDI flow in WAMZ. The study controlled for periods of current account imbalances and changing foreign exchange reserves in these countries in the model and analysis was informed by accounting for this channel. The study

covered the period 1980-2014 and panel data modeling approach was used for the study. Available diagnostics tests favoured the fixed effect model which was estimated based on Arellano panel correction for serial correlation and heteroschedaticity option for the within estimator for fixed effect model and results showed that exchange rate uncertainty hindered FDI flow though not found significant when exchange rate policies were included and inflation expectation had an insignificant effect on FDI flow. However, fixed exchange rate policy regime hampered FDI flow in the zone significantly while intermediate policy regime had a significantly positive effect in facilitating FDI flow. The study controlled for periods of current account imbalances and changes in foreign exchange reserve in the model and made some interactions with the policy regimes since most of these countries use their reserves from the restricted export earnings to intervene in the foreign exchange market to maintain the rate. The results showed the magnitude and significance of the negative effect of fixed policy regime on FDI inflow to increase further indicating that fixed policy regime is not a good policy in periods of current account imbalances and depleting foreign reserve as it affected FDI inflow on a higher magnitude than the intermediate regime. This is because with such intervention, the official rate might be misaligned which might results in further external imbalances and undue expectations thereby sending wrong signals to investors. It is therefore recommended that monetary authorities in these countries especially in periods of depleting foreign reserve and current account imbalances allow the market to determine the exchange rate or reduce their intervention so as to eliminate unnecessary uncertainties that hinders FDI flow to the zone.

References

Abbott, A., D.O. Cushman and G. De Vita (2012). Exchange Rate Regimes and Foreign Direct Investment Inflows to Developing Countries. Review of International Economics, 20(1): 95-107

Anderson, T.W. and C. Hsiao (1981). Estimation of Dynamic Models with Error Components. Journal of the American Statistical Association 76: 589–606.

Aizenman, J. (1992). Exchange Rate Flexibility, Volatility and the Patterns of Domestic and Foreign Direct Investment. NBER Working Paper Series No. 3953.

Anyanwu, J.C and N.D. Yameogo (2015). What Drives Foreign Direct Investment into West Africa? An Empirical Investigation. African Development Review, 27(3): 199-215

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability, The World Economy, 29 (1):63-77

Asiedu, E. and D. Lien (2004). Capital Controls and Foreign Direct Investment. World Development, 32(3):479-490

Azam, J. (1999). Dollars for Sale: Exchange Rate Policy and Inflation in Africa. World Development, 27(10): 1843-1859

Bailey, M.J and G.S. Tavlas (1991). Exchange Rate Variability and Direct Investment. The Annals of the American Academy of Political and Social Sciences, 516: 106-116

Benassy-Quere, A., F. Fontagne and A. Lahreche-Revil (2001). Exchange Rate Strategies in the Competition for Attracting Foreign Direct Investment. Journal of the Japanese and International Economics 15(2): 178-198

Bollerslev, T (1986). Generalized Autoregressive Conditional Heteroskedasticity. Journal of Econometrics, 31:307-327

Brzozowski, M (2006). Exchange Rate Variability and FDI: Consequences of EMU Enlargement. Eastern European Economics 44(1): 5-24

Busse, M., C. Hefeker and S. Nelgen (2010). Foreign Direct Investment and Exchange Rate Regimes. Joint Discussion Paper Series in Economics. Marburg. University of Marburg. Paper No. 15-2010. www.uni-marburg.de/.../15-2010_busse.pdf. accessed on 4th March, 2016.

Calvo, G.A., L. Leiderman and C.M. Reinhart (1996). Inflow of Capital to Developing Countries in the 1990s. Journal of Economic Perspectives, 10(2): 123-139

Chakrabarti, R and B. Scholnick (2002). Exchange Rate Expectations and FDI Inflows. Weltwirtschaftliches Archive Bd. 138, H.1: 1-21

Dunning, J.H. (1977). Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach, in B. Ohlin and P.O. Hesselborn (eds.), The International Allocation of Economic Activity, 395-419. London. Macmillan

Fedderke, J.W. and A.T. Romm (2006). Growth Impact and Determinants of Foreign Direct Investment in South Africa, 1956-2003. Economic Modeling, 23: 738-760.

Fernández-Arias, E. (1996). The New Wave of Capital Inflows: Push or Pull? Journal of Development Economics, 48: 389-418.

_____and P.J. Montiel (1996). The Surge in Capital Inflows to Developing Countries: An Analytical Overview. The World Bank Economic Review, 10(1): 51-77

Ghosh, A. R., A. M. Gulde and H. C. Wolf (2002). Exchange Rate Regimes: Choices and Consequences, MIT Press, Cambridge, MA.

Goldberg, L.S and C.D. Kolstad (1995). Foreign Direct Investment, Exchange Rate Variability and Demand Uncertainty. International Economic Review, 36(4): 855-873

International Monetary Fund (2012). Annual Report on Exchange Arrangements and Exchange Restrictions. Washington D.C. IMF online.

International Monetary Fund (2014). Annual Report on Exchange Arrangements and Exchange Restrictions. Washington D.C. IMF online.

Jensen, N.M (2003). Democratic Governance and Multinational Corporations: Political Regimes and Inflow of Foreign Direct Investment. International Organizations, 57(3): 587-616

Kiyota, K and Urata, S (2004). Exchange Rate, Exchange Rate Volatility and FDI. The World Economy, 27: 1501-1536

Kwakye, J.K. (2012). Determinants of Real Exchange Rate Mislaignment for Ghana. Ghana. Institute of Economic Affairs Monograph No 31.

Levy-Yejati, E. and F. Sturzenegger (2005). Classifying Exchange Rate Regimes: Deeds vs. Words, European Economic Review 49 (6): 1603-1635.

Ning, Y. and M.R. Reed (1995). Location Determinants of the US Direct Foreign Investment in Food and Kindred Products. Agribusiness: An International Journal, 11:77-85

Nyako, P.A., E. Nketiah-Amponsah and C. Barnor (2011). Effects of Exchange Rate Regimes on Foreign Direct Investment Inflows in Ghana. International Journal of Economics and Finance, 3(3): 277-286

Ogunleye, E.K. (2009). Exchange Rate Volatility and Foreign Direct Investment in Sub-Saharan Africa: Evidence from Nigeria and South Africa', in A. Adenikiju, A. Busari and S. Olofin (eds.), *Applied Econometrics and Macroeconometric Modelling in Nigeria*, Ibadan University Press, Ibadan.

Reinhart, C. M. and K. S. Rogoff (2004). The Modern History of Exchange Rate Arrangements: A Reinterpretation, Quarterly Journal of Economics 119:1–48.

Russ, K.N (2012). Exchange Rate Volatility and First-Time Entry by Multinational Firms. Review of World Economics, 148: 269-295

Schiavo, S (2007). Common Currencies and FDI Inflow. Oxford Economic Papers, New Series, 59(3):536-560

Schmidt C.W. and U. Broll (2009).Real Exchange Rate Uncertainty and US Foreign Direct Investment: An Empirical Analysis. Review of World Economy, 145: 513-530

Sung, H and H.E. Lapan (2000). Strategic Foreign Direct Investment and Exchange Rate Uncertainty. International Economic Review, 41(2):411-423

Tarawalie, A., M. Sissoho., M. Conte and C.A. Ahotor (2013). Fiscal and Monetary Policy Coordination in WAMZ; Implications for Member States' Performance in the Convergence Criteria. Ghana. WAMI Occasional Paper Series 1(4).

Tsai, P. (1994). Determinants of Foreign Direct Investment and its Impact on Growth. Journal of Economic Development, 19: 137-163

Udoh, E and F.O. Egwaikhide (2008). Exchange Rate Volatility, Inflation Uncertainty and FDI in Nigeria. Botswana Journal of Economics, 5(7): 14-31

UNCTAD (2014). Ghana Economic Profile Analysis. UNCTAD Statistical Database Online. www.unctad.org/statistics

Appendices

Appendix A: Selected Macroeconomic Indicators

Table A1: Selected Macroeconomic Indicators in WAMZ[14]

		1980	1985	1990	1995	2000	2005	2010	2014
Gambia	Exchange Rate	1.72	3.89	7.87	9.5	12.8	28.6	28.01	41.7
	Interest Rate	15	14.5	26.5	25	24	34.9	27	28
	Openness	89.3	102.8	104.4	108.5	106.1	42.5	35.8	57.8
	Import (%GDP)	66	54	60	63	58	35	26	39
	Export (%GDP)	24	49	44	45	48	7	26	39
	GDPgrowth	0.24	3.4	3.6	0.52	6.13	-0.94	6.5	1.62
	Inflation Rate	5.01	18.3	12.2	6.98	0.85	4.95	5.05	
	FDI inflow	0.28	-0.5	14.12	15	43.5	87.1	20.4	28.4
	Output gap	5.9	4.8	3.5	-1.2	0.25	-1.1	0.4	-1.33
	Debt(%export)	206.5	280.9	217.5	236.9	-	351.5	179.8	149.2
Ghana	Exchange Rate	0.001	0.01	0.03	0.12	0.54	0.91	1.4	3
	Interest Rate	19	21.2	23.3	23.7	23.4	23	23.3	23
	Openness	54	35	43	55	118	61	90	102
	Import (%GDP)	37	24	26	30	68	38	50	53
	Export (%GDP)	16	12	18	24	51	22	40	53
	GDPgrowth	0.46	5.1	3.3	4.02	4.2	6.2	7.9	4.1
	Inflation Rate	50.01	10.3	37.2	59.3	25.1	15.1	6.7	
	FDI inflow	15.6	5.6	14.8	106.5	114.9	144.9	2527.4	3356.9
	Output Gap	-3.6	-7.9	-4.3	-3.6	-2.1	-0.2	3.9	8.8
	Debt(%export)	115.6	331.8	393.6	344.4	254.6	181.4	92.8	96
Guinea	Exchange Rate	92	195	660	991	1746	3644	5726	7014
	Interest Rate	17.3	17.4	21.2	21.5	19.4	20.7	20.3	20.3
	Openness	68	67	76	55	66	65	84	125
	Import (%GDP)	32	32	39	29	35	34	53	90
	Export (%GDP)	36	35	38	26	31	31	31	35
	GDPgrowth	2.6	4.9	4.2	4.7	2.5	3	1.9	1.3
	Inflation Rate	39	19	25	5.6	6.8	31	15	

---

[14] Exchange Rate values are from the same source and they are all domestic currency to dollar exchange. Ghana case is due to the redecimalization of the currency.

	FDI inflow	0.56	1.11	17.86	0.77	9.94	105	101	566
	Output gap	-0.1	-0.8	-0.23	0.03	0.4	0.3	-0.29	-0.25
	Debt(%export)	-	311.7	294.8	456.5	406.8	319.5	201.9	60.1
Nigeria	Exchange Rate	0.55	0.89	8.03	67.4	101.7	131.3	150.3	158.6
	Interest Rate	8.4	9.4	25.3	20.2	21.3	17.9	17.6	16.7
	Openness	72	48	52	30	35	32	45	35
	Import (%GDP)	34	15	8	7	8	12	19	12
	Export (%GDP)	38	33	44	23	27	20	26	23
	GDPgrowth	2.2	11.3	11.4	2.2	5.3	6.5	7.8	6.3
	Inflation Rate	9.9	3.2	7.9	72.7	6.9	17.8	13.7	8.5
	FDI inflow	-738.8	485.5	1002	1271	1309	4978	6098	4693.8
	Output gap	0.04	-0.18	-1.78	-2.25	-1.53	0.5	2.5	2.6
	Debt(%export)	32.2	138.1	226.5	274	149.1	35.8	8.79	14
Sierra-Leone	Exchange Rate	1.05	5.1	151.5	755	2092	2889	3978	4524
	Interest Rate	11	17	52.5	28.8	26.3	24.6	21.3	20.6
	Openness	78	27	24	29	45	46	54	125
	Import (%GDP)	55	16	15	18	35	29	38	51
	Export (%GDP)	23	11	9	11	10	17	16	74
	GDPgrowth	2.9	2.3	3.6	-10	3.8	4.5	5.4	6.9
	Inflation Rate	12.9	76.6	110.9	25.9	-0.92	12.1	17.8	9.8
	FDI inflow	-18.67	-30.95	32.4	7.28	38.9	90.7	238.4	439.9
	Output gap	1.33	-0.83	-1.14	-4.8	-5.4	1.95	3.3	6.8
	debt (%export)	175.6	443.3	559.3	945.2	1941	664.7	218.3	63.1

Sources: UNCTAD Database Online, 2015; UN Statistical Database Online, 2015; IMF World Economic Outlook Database Online, 2015; World Bank WDI online, 2015.

Recent Publications in the Series

nº	Year	Author(s)	Title
253	2017	Gutu T. Boka	Climate Change Challenges, Smallholder Commercialization and Progress out Poverty in Ethiopia
252	2017	Ibrahim Alley	Capital flow surges and economic growth in sub-Saharan Africa: Any role for capital controls?
251	2017	Solomon Abayomi Olakojo	Foreign trade and international financial flows: Implications for economic stability in ECOWAS countries
250	2017	Anthonia T. Odeleye	Quality of Corporate Governance on Dividend Payouts: The Case of Nigeria
249	2017	Arcade Ndoricimpa	Threshold Effects of Inflation on Economic Growth in Africa: Evidence from a Dynamic Panel Threshold Regression
248	2017	Boris Odilon Kounagbè Lokonon	Farmers' Vulnerability to Climate Shocks: Insights from the Niger Basin of Benin
247	2017	Adamon N. Mukasa, Anthony M. Simpasa, Adeleke O. Salami	Credit constraints and farm productivity: Micro-level evidence from smallholder farmers in Ethiopia
246	2017	Abebe Shimeles and Tiguene Nabassaga	Why is inequality high in Africa?
245	2016	Anthony Simpasa and Lauréline Pla	Sectoral Credit Concentration and Bank Performance in Zambia
244	2016	Ellen B. McCullough	Occupational Choice and Agricultural Labor Exits in Sub-Saharan Africa

African Development Bank
Immeuble du Centre de Commerce International
d' Abidjan (CCIA)
01 BP 1387, Abidjan 01
Côte d'Ivoire
E-mail: afdb@afdb.org