## WHAT DRIVES FOREIGN DIRECT INVESTMENTS INTO WEST AFRICA? AN EMPIRICAL INVESTIGATION

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## **ABSTRACT**

This paper analyzed drivers of foreign direct investments (FDI) to West Africa using a panel dataset from 1970 to 2010. OLS and GMM techniques are used for the estimations. The main results indicate that there is a U-shaped relationship between economic development and FDI inflows to West Africa. In summary, (i) The quadratic element of real per capita GDP, domestic investment, trade openness, first year lag of FDI, natural resources (oil and metals) endowment and exports, and monetary integration have positive and significant effect on FDI inflows to West Africa; and (ii) there is a negative relationship between FDI inflows to the sub-region and second-year lag of FDI, economic growth, level of economic development (real GDP per capita), and life expectancy.

#### I. INTRODUCTION

Foreign direct investment (FDI) can play an important role in an economy's development efforts, including: supplementing domestic savings, employment generation and growth, integration into the global economy, transfer of modern technologies, enhancement of efficiency, development of local suppliers, and raising skills of local manpower (Dupasquier and Osakwe, 2003; Anyanwu, 2006). In African countries, in particular, besides being a critical source of long-term capital for investment in infrastructure and other developmental initiatives, FDI can be a catalyst for economic diversification, helping these economies move beyond overdependence on natural resources.

While Africa is not a major recipient of FDI flows and so lags other regions of the world, FDI inflows not only vary across sub-regions in the continent but has shown very significant and dramatic increase in a number of countries in West Africa. Indeed, between 2007 and 2013, FDI projects in West Africa grew at a compound annual growth rate (CAGR) of 27.7%, the strongest growth in the African continent. In 2013, West Africa surpassed North Africa in FDI projects for the first time, becoming the second most attractive sub-region in Africa. The West African sub-region, until the latest Ebola outbreak, has been characterized by rapid economic growth and an expanding consumer class, awhile transforming more and more into a demand-driven economy. Together, the 16 member countries¹ of the sub-region have a population in excess of 300 million, thus presenting huge opportunity. West Africa's known reserves of oil, gas, and minerals are enormous. And thanks to high global demand, Africa's share of global production and export of these natural resources has been significant.

However, there is a dearth of studies on FDI-determinants that have been undertaken in the particular context of West Africa as a sub-region. Most of the earlier studies on FDI have either been on Sub-Sahara Africa, Africa as a whole, or country specific.<sup>2</sup> Africa is the second largest continent in the world with diverse cultures and distinct regulatory environments hence investors should not view Africa as a single entity to invest in. It is for this reason that investors are increasingly able to look at a larger reach than just a single country. Regional economic blocs such as West Africa provide investors with access to larger markets and variety of attractive environments.

Thus, the key objectives of the study are: (a) To analyze the major characteristics - scale, trends, and country shares - of FDI inflows to West Africa; (b) To empirically investigate the major factors attracting or discouraging FDI inflows to the sub-region; and (c) To summarize the key findings and discuss their policy implications for FDI policy and

<sup>&</sup>lt;sup>1</sup> Benin, Burkina Faso, Cape Verde, Cote D'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal Sierra Leone, and Togo

<sup>&</sup>lt;sup>2</sup> See Anyanwu (2012) for a survey of the literature.

promotion in the sub-region. Indeed, an understanding of the characteristics and driving factors of FDI inflows to West Africa is crucial for the effective design and implementation of policies to boost FDI inflows, which can be used as an effective driver of socio-economic cum political development and enhanced social welfare.

This paper therefore aims at examining the factors that cause FDI to go or not to go to the West African sub-region. This enables us to propose some measures for FDI promotion in the sub-region given its peculiar characteristics. This is done by means of cross-country time series regressions, using pooled OLS (with time and natural resources fixed effects) and system-GMM techniques for the period 1970-2010. Thus, the further contents of the paper are as follows. Section II presents a review of some stylized facts on FDI inflows to West Africa. Section III examines some theoretical perspectives of the factors driving FDI inflows to developing countries, including those in Africa. Section IV reviews the recent empirical literature pertaining to Africa while section V presents the econometric model and data. The empirical results are presented in section VI. Section VII summarizes and concludes the paper with some policy recommendations for increased FDI inflows to West Africa.

#### II. STYLIZED FACTS ON FDI INFLOWS TO WEST AFRICA

Global FDI has made rapid increases in the last few decades. For example, global inward FDI flows rose from US\$54.1 billion in 1980, reaching US\$207.7 billion in 1990 to a peak of US\$1.402 trillion in 2000. A fall ensured from 2001 such that by 2003 it had dipped to US\$565.7 billion before peaking again at US\$2100 billion in 2007. Estimates for 2010 put the fall to US\$1.409 trillion consequent upon the financial and economic crisis. The 2011 recovery appeared short-lived as global FDI inflows fell by 18 percent in 2012, down from US\$1.700 trillion in 2011 to only US\$1.330 trillion. After the 2012 slump, global FDI returned to growth, with inflows rising by 9% in 2013, to \$1.45 trillion. On the other hand, after almost ten years of growth, FDI inflows to Africa fell from a peak of US\$72 billion in 2008 to \$59 billion in 2009 - a 19% decline compared to 2008 - due to the financial and economic crisis. This fell further to US\$44 billion in 2010. A gradual recovery ensued from 2011 such that FDI flows to Africa grew by 3.6% in 2013 to reach US\$57 billion from US\$55 billion in 2012, (UNCTAD, 2014) but representing only 3.9% of the global total.

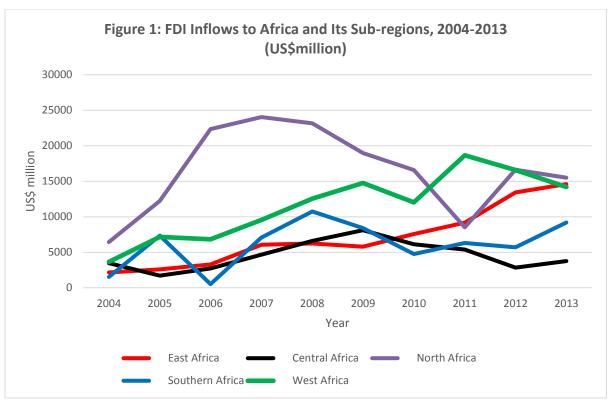
There are a number of interesting and changing characteristics of FDI in Africa. One of them is that FDI inflows vary across sub-regions as defined by the United Nations. Between 1970 and 2013, the average FDI inflows by sub-region was highest in North Africa (US\$4.84 billion), followed by West Africa (US\$3.64 billion), with the lowest average going to Central Africa (US\$1.65 billion). As Figures 1 illustrates, North Africa dominated by a great margin between 2004 and 2010 before West Africa took over from 2011, though this was short-lived. However, in terms of the average percentage of the total inflows to Africa, West Africa received the highest during the same period at 31.29%, followed by

North Africa (29.67%), Central Africa (15.25%), Southern Africa (12.02%), and East Africa (11.77%).

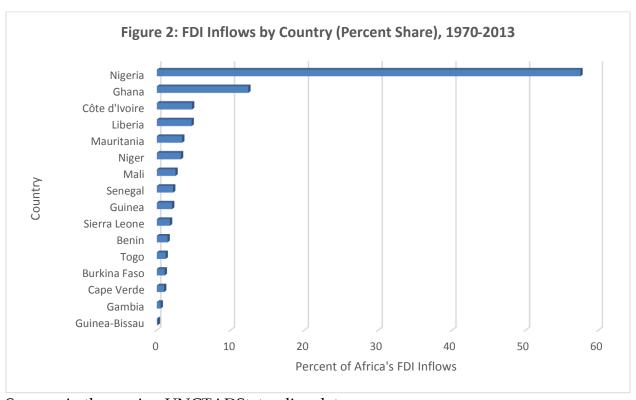
These, however, mask country differences and major recipients, a second major characteristic of FDI inflows to West Africa. Between 1970 and 2013, the top five country recipients in West Africa were Nigeria (57.5%), Ghana (12.4%), Cote d'Ivoire (4.8%), Liberia (4.7%), and Mauritania (3.4%), most of which are fossil fuel and metal producers and exporters and their collective inflows representing over 80% of the total inflows (Figure 2). In 2013, for example, apart from Nigeria (the largest oil producer in the subregion), oil production in Ghana and Côte d'Ivoire attracted considerable investment from foreign transnational corporations (TNCs) Royal Dutch Shell (United Kingdom), ExxonMobil (United States), China National Offshore Oil Company (CNOOC) and China National Petroleum Corporation (CNPC), as well as from State-owned petroleum companies in Thailand and India. Between 2007 and 2013, FDI projects into Ghana increased at a compound annual growth rate (CAGR) of more than 50% — the fastest in Africa. In terms of FDI projects, Ghana was the fourth-most attractive FDI destination in Africa in 2013.

The third major characteristics pertains to the share of overall FDI inflows to the subregion. As a share of GDP, FDI inflows to major recipients in terms of value were much smaller: between 1970 and 2013, the five top recipients in terms of the share of FDI inflows in GDP included smaller economies such as Liberia (20.1%), Mauritania (4.2%), Cape Verde (2.9%) and The Gambia (2.6%) (Figure 3).

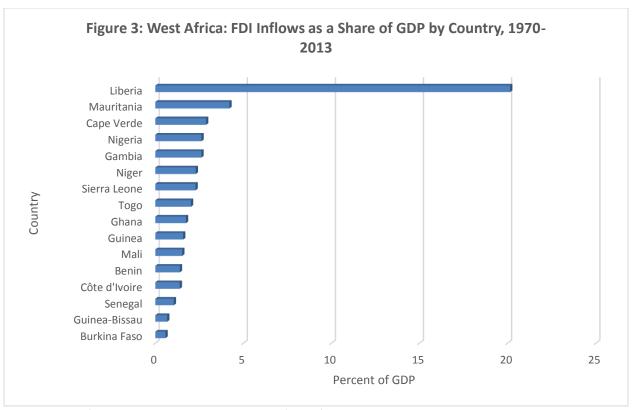
The fourth mega trend relates to differences in FDI projects in the sub-regions. During 2013, for example, in West Africa, FDI projects increased by 20.5% 9the highest among the five sub-regions) against 7.4% increase in East Africa and a decline of 28.7% in North Africa as well as a decline of 21.7% in Central Africa.



Source: Authors, using UNCTADStat online data



Source: Author, using UNCTADStat online data



Source: Author, using UNCTADStat online data

The fourth critically important aspect of the changing character of FDI activities in West Africa is the fact that there has been significant growth in intra-regional investment into new FDI projects. This growth in intra-regional investment is being led by the regional powerhouse, Nigeria. Indeed, Nigerian companies have also been increasing intra-African investment, notably in the post-crisis period (2008–2013). Between 2008 and 2012, for example, investment from Nigeria into the rest of the continent has grown at a rate of 73.2 percent (Ernst & Young, 2013). Also, between 2007 and 2013, Nigeria's intra-regional investment amounts rose by 10.7% while the number of projects increased by 11.6%. During the same period, its job creation rose by 11.4% (Ernst & Young, 2014).

# I. KEY FACTORS DRIVING FDI INFLOWS: A THEORETICAL FRAMEWORK

A popular conceptualization of, and theoretical framework for, FDI determinants is the "eclectic paradigm" attributed to Dunning (1977, 1993). It provides a framework that groups micro- and macro-level determinants in order to analyze why and where multinational companies (MNCs) invest abroad. The framework posits that firms invest abroad to look for three types of advantages: Ownership (O), Location (L), and Internalization (I) advantages; hence it is called the OLI framework. The ownership-specific advantages (of property rights/patents, expertise and other intangible assets) allow a firm to compete with others in the markets it serves regardless of the

disadvantages of being foreign because it is able to have access to, and exploit and export natural resources and resource-based products that are available to it. These advantages may arise from the firm's ability to coordinate complementary activities such as manufacturing and distribution, and the ability to exploit differences between countries. The location advantages are those that make the chosen foreign country a more attractive site (such as labor advantages, natural resources, trade barriers that restrict imports, gains in trade costs and strategic advantages through intangible assets) for FDI than the others hence the reason for the FDI is to supply the domestic market of the recipient country through an affiliate (horizontal FDI). The location advantages may arise from differences country natural endowments, government regulations, transport macroeconomic stability, and cultural factors. Internalization advantages arise from exploiting imperfections in external markets, including reduction of uncertainty and transaction costs in order to generate knowledge more efficiently as well as the reduction of state-generated imperfections such as tariffs, foreign exchange controls, and subsidies. In this case, the delocalization of all or a portion of the production process (e.g. production of components/parts and/or different locations) leads to low costs benefits (vertical FDI) (Baniak et al, 2005; Sekkat and Veganzones-Varoudakis, 2007; Pantelidis and Nikolopoulos, 2008; and Kinda, 2010). Following on these, Dunning (1993) identified four categories of motives for FDI: resource seeking (to access raw materials, labor force, and physical infrastructure resources), market seeking (horizontal strategy to access the host-country domestic market), efficiency seeking (vertical strategy to take advantage of lower labor costs, especially in developing countries), and strategic-asset seeking (to access research and development, innovation, and advanced technology) (Cleeve, 2008).

The literature on the forces driving FDI has also identified both policy and non-policy factors as drivers of FDI (Fedderke and Romm, 2006). Policy factors include openness, product-market regulation, labor market arrangements, corporate tax rates, direct FDI restrictions, trade barriers, and infrastructure. Non-policy factors include market size of the host country (often measured by the GDP), distance/transport costs, factor proportions (or factor endowments) and political and economic stability (Mateev, 2009).

The pull factors or domestic factors include economic, socio-political and structural conditions, including uncertainty, while the push factors relate to cyclical and structural conditions, irreversibility and herding (see Fernández-Arias, 1996; Fernández-Arias and Montiel, 1996; Gottschalk, 2001).

Fernández-Arias (1996), Fernández-Arias and Montiel (1996), Gottschalk (2001) and Calvo et al. (1996) present a two-factor classification of the factors that influence FDI flows: as "push" (those that are external to the recipients of FDI - relating to cyclical and structural conditions, irreversibility and herding) or "pull" factors (those internal to them such as economic, socio-political and structural conditions, including uncertainty). A similar classification has emerged from the works of Tsai (1994), Ning and Reed (1995) and Lall et al. (2003) who see these factors as (i) those on the "supply-side" (e.g., skilled

labor, research and development, and infrastructure), (ii) those on the "demand-side" (host country economic and social variables or pull factors, including interest rates, tax and tariff levels, market size and potential, wage rates, income distribution, human capital, cost differentials, exchange rates, fiscal policies, trade policies, physical and cultural distance, among others) (Karakaplan et al., 2005); and (iii) "institutional factors" (e.g., culture, intellectual property rights, transaction costs, political risk, corruption, and bureaucracy).

Sekkat and Veganzones-Varoudakis (2007) have grouped the factors determining the inward flow of FDI into three categories: basic economic factors, trade and the exchange market policies, and other aspects of the investment climate. The basic economic factors include the difference in the rate of return on capital across countries, portfolio diversification strategy of investors and market size of the host country. Trade and foreign exchange policy considerations relate to trade liberalization and exchange rate movements and their volatility (Froot and Stein, 1991). Business climate factors relate to infrastructure (Wheeler and Mody, 1992), labor costs and availability of skilled labor/education, incentive factors, political risk, economic factors (per capita GDP, GDP growth rate, economic integration, importance of transport, commerce and communication), social factors (degree of urbanization), political stability (the number of constitutional changes in government leadership), the role of institutions (in terms of commitments to and enforcement of rules) (Schneider and Frey, 1985), the stability of basic macroeconomic policies (fiscal, monetary, and social) (Baniak et al, 2005), and the catalyzing effect of foreign aid (Harms and Lutz, 2006; Kimura and Todo, 2010).

## IV. THE LITERATURE REVIEW

This section examines some empirical perspectives of the factors driving FDI inflows to African countries. The literature on the forces driving FDI has also identified both policy and non-policy factors as drivers of FDI and whether they are "pull" or "push" factors, "demand side" or "supply side" or institutional factors, among others. These are alternatively viewed as basic economic factors, trade and the exchange market policies, and other aspects of the investment climate (Anyanwu, 2012). The reviews below follow these key factors in a clustered manner.

## **Basic Macroeconomic and Other Factors**

Nnadozie and Osili (2004) find less robust evidence on the role of GDP per capita on FDI inflow but GDP growth is found to have significant impact. Market size is found to play an important role in FDI inflows (Anyanwu, 1998, 2011, 2012) though the results of Kyereboah-Coleman and Agyire-Tettey (2008) indicate that most foreign investors do not consider this factor in making a decision to invest or otherwise in Ghana. Lederman et al (2010) find some differences between SADC and the rest of the world in FDI behavior, namely, that in SADC, the income level is less important and openness more so.

However, relative to other regions of the world, SADC's low FDI inflows are explained by economic fundamentals.

Inflation as a proxy for economic instability has been found to negatively affect FDI inflows (Nnadozie and Osili, 2004) though the findings of Brahmasrene and Jiranyakul (2001) indicate otherwise. Trade openness has also been found to be positively associated with FDI inflows (Asiedu, 2002). Oladipo (2008) examines the determinants of Nigeria's FDI inflow for the period 1970-2005 and finds that the nation's potential market size, the degree of export orientation, human capital, providing enabling environment through the provision of infrastructural facilities, and macroeconomic stability are important determinants of FDI flows.

Varied results have been found on the influence of exchange rate on FDI inflows: A case study on Ghana by Kyereboah-Coleman and Agyire-Tettey (2008) on the volatility of real exchange rate shows that the volatility of the real exchange rate has a negative influence on FDI inflow However, Brahmasrene and Jiranyakul (2001) find no statistically significant relationship between the level of the exchange rate and FDI inflows.

## Foreign Aid

There are a few studies which examine the relation between foreign aid and FDI by using cross-country panel data, most notably Kimura and Todo (2010), Harms and Lutz (2006), and Yasin (2005). For example, Kimura and Todo (2010) find robust evidence that foreign aid from Japan in particular has a vanguard effect (that is, Japanese aid promotes FDI from Japan but does not attract FDI from other countries. Their finding is consistent with Blaise (2005) who uses province-level data and finds that Japanese aid in China has a positive and significant impact on the locational choice of Japanese private investors in China. On the other hand, Harms and Lutz (2006) find that the effect of aid on FDI is generally insignificant but significantly positive for countries in which private agents face heavy regulatory burdens.

Yasin (2005) shows that bilateral official development assistance to selected SSA countries has a significant and positive influence on foreign direct investment flows while multilateral development assistance does not have a statistically significant effect on foreign direct investment flows. Also, Anyanwu (2012), using cross-country time series data of African countries for the period, 1996-2008, finds that higher FDI goes where foreign aid also goes in Africa. In addition, FDI inflows are positively related to market size, openness to trade, prevalence of the rule of law, agglomeration, natural resource endowment and exploitation (such as oil) just as East and Southern African sub-regions appear positively disposed to obtain higher levels of inward FDI. However, higher financial development has negative effect on FDI inflows.

## **Infrastructure Development**

Study by Dupasquier and Osakwe (2006) shows that FDI in Africa is dependent on the development of infrastructure. The results of a study on US FDI flow to Africa by Nnadozie and Osili (2004) find less robust evidence on the role of infrastructure on foreign direct investment. Results from Anyanwu and Erhijakpor (2004) indicate that telecommunications infrastructures, economic growth, openness and significantly increase FDI inflows to Africa while credit to the private sector, export processing zones, and capital gains tax have significant negative effects. Findings by Sekkat and Veganzones-Varoudakis (2007) indicate that infrastructure availability, openness, and sound economic and political conditions are important for South Asia, Africa, and the Middle East in attracting FDI.

## Institutional and Political Factors and Investment Climate

Poor governance and inhospitable regulatory environments; foreign ownership ceiling in sectors open for FDI, policy on repatriation of capital and remittance of profit, and government regulations and restrictions on equity holdings by foreigners all are found to have negative impact on FDI inflow (Dupasquier and Osakwe, 2006). Also, political stability is inversely related to FDI inflows (Kyereboah-Coleman and Agyire-Tettey, 2008). Cleeve (2008) finds that that in addition to traditional variables and government policies to attract foreign investment to Africa, tax holidays are important. Asiedu (2004) finds that the impact of capital controls on FDI inflows varies by region and has changed over time: in the 1970s and 1980s, none of the policies had a significant impact on FDI inflows but in the 1990s, all three were significant. However, the author finds that capital controls have no effect on FDI to SSA and the Middle East, but adversely affects FDI to Latin America and East Asia. Results from Baniak et al (2005) show that high volatility of fiscal and business regulations makes the inflow of FDI smaller, macroeconomic and legal instability leads to adverse selection of the investors, and higher variability of basic macroeconomic fundamentals reduce the inflow of FDI.

## **Attraction of Natural Resources**

The works of Dupasquier and Osakwe (2006) and Aseidu (2002) report that the availability of natural resources has a positive and significant effect on FDI inflows. Also, Mohamed and Sidiropoulos (2010), using a panel of 36 countries, conclude that the key determinants of FDI inflows in MENA countries are the natural resources, the size of the host economy, the government size, and institutional variables. Asiedu (2006) finds that countries that are endowed with natural resources or have large markets attract more FDI. In addition, good infrastructure, an educated labor force, macroeconomic stability, openness to FDI, an efficient legal system, less corruption and political stability promote inward FDI. Hailu (2010) concludes that natural resources, labor quality, trade openness, market accession and infrastructure condition positively and significantly affect FDI inflows but the availability of stock market has positive but insignificant effect.

## Human Resources Development, Productivity and Cost

The study by Reiter et al (2010) shows that FDI inflows are more strongly positively related to improvement in human development when FDI policy restricts foreign investors from entering some economic sectors and when it discriminates against foreign investors relative to domestic investors. In addition, it finds that the relationship between FDI and improvement in human development is also more strongly positive when corruption is low. Rodríguez and Pallas (2008) find that human capital is the most important determinants of inward FDI. Alsan et al (2006) find that gross inflows of FDI are strongly and positively influenced by population health (life expectancy) in low- and middle-income countries.

## II. Methodology and data

## 3.1 Methodology

The FDI model used in this study is defined as follows:

$$\left(\frac{FDI}{GDP}\right)_{it} = \alpha_0 + \alpha_1 \left(\frac{FDI}{GDP}\right)_{it-1} + \beta X_{it} + \varepsilon_{it}$$
 (1)

with i indicating the country, t, the time is in year,  $\alpha_0$  is an intercept, and  $\varepsilon_{it}$  is the error term.

Vector X includes the following variables as the determinants of FDI inflows:

**Macroeconomic Condition**: Real GDP growth rate is used to represent a country's economic track record and as an indicator of profitable investment opportunities. It is also included to allow for a systematic relation between cross-border financial activity and the level of development. Indeed, economic growth has an effect on the domestic market, where countries with expanding domestic markets should attract higher levels of FDI. We also included the gross fixed capital formation because it is hypothesized that FDI follows domestic investment.

**Political and Institutional Variables**: We used polity2 as a political and regime type from the Polity IV Project. The Polity IV Project has rated the levels of both democracy and autocracy for each country and year using coded information on the general qualities of political institutions and processes, including executive recruitment, constraints on executive action, and political competition. These ratings have been combined into a single, scaled measure of regime governance: the Polity score, which ranges from -10, fully institutionalized autocracy, to +10, fully institutionalized democracy. A perfect +10 or democracy, has institutionalized procedures for open, competitive, and deliberative political participation; chooses and replaces chief executives in open, competitive elections; and imposes substantial checks and balances on the discretionary powers of the chief executive. On the other hand, in a perfect -10 or autocracy, citizens participation is

sharply restricted or suppressed; chief executives are selected according to clearly defined (usually hereditary) rules of succession from within the established political elite; and, once in office, chief executives exercise power with no meaningful checks from legislative, judicial, or civil society institutions. Countries with Polity scores from +6 to +10 are counted as democracies while those with Polity scores from -10 to -6 are counted as autocracies. To measure the effect of political instability, we use a dummy representing coup d'état carried out in the region, especially as the preponderance of coups carried out in Africa is in the West African sub-region. State weakness in the form of political instability precipitates risk for foreign investors.

**Trade openness**: The effect of trade openness depends on the type of FDI. Some studies have found negative impact of trade openness on market-seeking FDI inflows. The reason is related to the tariff jumping theory which stipulates that MNEs that seek to serve local markets may decide to set up subsidiaries in the host country when it is difficult for them to import products in that country (Anyanwu, 2012, Mijiyawa, 2012). Other studies found that countries that are more opened for international trade receive more FDI (Asiedu (2002), Noorbakhsh et al. (2001), Morisset (2000), Aizenman and Noy (2006), and Anyanwu (2012)). We use total trade as a share of GDP to measure trade openness.

Natural resource endowment: Many West African countries receive much FDI in natural resource-based sectors, as they are rich in minerals, oil and natural gas. Indeed, both theoretical and empirical literature has shown that the need to get a secure access to natural resources is one of the main motivations driving MNCs to Africa and its subregions, indicating one of the key characteristics of African countries in terms of natural resource endowment (Dupasquier and Osakwe, 2006, Asiedu, 2006). Natural resource endowment is represented by two dummy variables, indicating whether or not a country is an oil/mineral producer and exporter.

Market size: "Market seeking" is a relevant motivation of MNCs' investments in developing countries such as Africa. Therefore, market size is proxied by Real GDP per capita (the level of economic activity/development) (Al-Sadig, 2009, Javorcik et al., 2011; Anyanwu, 2012). Foreign investors are also well aware that most urban dwellers constitute the largest consumers of their products and would cherish and crave for such market hence the inclusion of urban share of the population.

**Human capital:** The level of human capital is measured by life expectancy. Some studies such as Anyanwu (2012), Reiter et al. (2010), Nonnemberg and Cardoso de Mendonça (2004, Markusen (2001), and Rodriguez and Pallas (2008)) have shown that improvement in human capital is positively related to FDI inflows. In particular, Alsan et al (2006) find that gross inflows of FDI are strongly and positively influenced by population health (life expectancy) in low- and middle-income countries.

**Foreign aid:** There are few studies that investigate the relationship between foreign aid and FDI inflows using cross-country panel data (Anyanwu (2012), Kimura and Todo (2010), Harms and Lutz (2006), Yasin (2005), and Karakaplan et al. (2005). For instance, Harms and Lutz found that the effect of foreign aid on FDI is generally insignificant while Anyanwu (2012) and Yasin (2005) found a significant and positive effect. We used the net official development assistance as a share of GDP.

**Agglomeration Effects:** To test for agglomeration effects, we relate current FDI inflows to past FDI inflows. Agglomeration economies may exist given that foreign investors may be attracted to countries with more existing foreign investment. Indeed, being less knowledgeable of a country's environment, foreign investors may view the investment decisions by others as a good signal of favorable conditions and invest there too, so as to reduce uncertainty. This is proxied by the lags of the dependent variable.

Monetary Union/Integration: Theoretical explanation of the ability of currency union/integration attracting FDI is well documented in the literature. Among the arguments is the ability of currency union to reduce macroeconomic instability and destabilizing speculation; increase in transparency and credibility of rules and policies (Lane, 2006; Usman and Ibrahim, 2012). Monetary integration reduces trading costs, eliminates the costs from exchange rate volatility, and precludes future competitive devaluation thus facilitating foreign direct investment. The enlarged market as a result of currency union also facilitates the exploitation of economies of scale by MNCs (Pantelidis, Kyrkilis and Nikolopoulos, 2012). Empirical evidence from the European Economic Union affirms theoretical position (De Sousa and Lochard, 2006; Petroulus, 2007; Schiavo, 2007; Brouwer, Paap and Viaene, 2008; and Aristotelous and Fountas, 2012). Monetary/currency union is proxied by a dummy, monetary integration, which assumes the value of 1 if a country is a member of West African Economic and Monetary Union (WAEMU) but =0 if otherwise.

## 3.2 Data and estimation technique

Regarding the estimation methodology, two estimation techniques, the Ordinary Least Squares regression (OLS) and the Generalized Method of Moments (GMM) were used.. Firstly, we performed an OLS with time fixed effects, dummies for natural resources and monetary integration in the sub-region as well as two lags of the dependent variable. But, because of the potential endogeneity bias and serial correlation of the error term, OLS may lead to inconsistent parameter estimates. However, the GMM technique, used in the second stage, addresses these issues and provides consistent estimates.

The data used for this study consists of annual data from 1970 to 2010 for 17 West African countries, collected from the World Development Indicators (WDI), except polity2 which

is taken from Polity IV project. It shows that, from 1970 to 2010, net FDI inflows as a share of GDP is relatively small in the region averaging 2.54% while net ODA inflows to the region averaged 14% of GDP. Regarding domestic investment, it averaged 18.5% of GDP during that period. Domestic credit represents on average 15% of GDP share. The average inflation rate was about 10.4%. Trade openness, measured as the share of total trade to GDP, averaged 65% in the region. Urban population averaged 31% and the average life expectancy was less than 49 years old (Table 1).

Table 1: Descriptive statistics of the main regression variables				
(excluding dummies), average from 1970-2010				
Variables	Obs.	Mean	ST Dev.	
FDI	629	2.54	7.97	
ODA	651	13.95	13.91	
GDP growth	674	3.21	7.76	
Log GDP pc	670	5.73	0.53	
Inflation	507	10.39	15.55	
Domestic investment-GDP	599	18.48	8.76	
Dom. credit to priv. sector-GDP	627	15.08	10.17	
Polity2	659	-2.23	5.96	
Trade Openness	642	65.32	27.93	
Urban pop share	697	30.99	11.66	
Life expectancy	680	48.75	7.09	
Source: Authors' calculations				

## III. RESULTS AND DISCUSSION

Table 2 reports the results. The estimate of the first lag dependent variable is positive and significant for both OLS and GMM. This indicates that previous level of FDI inflows contributes positively in explaining the current level of foreign investment inflows to West Africa. This indicates that foreign investors are attracted to countries with more existing foreign investment. But the second lag is significant only in the GMM and has a negative sign. This shows that the region's attractiveness decreases with time.

The estimate of the share of ODA to GDP is positive but significant only in the OLS. More ODA contributes to increased FDI inflows to West Africa.

In our results, the coefficient associated with the level of real GDP per capita is found to be negative and statistically significant in both the OLS and GMM estimations. This shows that West African countries with high real per capita GDP tend to receive less FDI

than the others. To test the hypothesis that real GDP per capita has a non-monotonic relationship with FDI inflows, the squared real GDP per capita is included as an explanatory variable. The quadratic term is positive in sign and significant in both OLS and GMM estimations. These results provide evidence of U-shaped relationship between real GDP per capita and FDI inflows in West Africa. Thus, these results suggest that although higher levels of real GDP per capita are negatively associated with FDI inflows, the effect is not constant. Rather, for levels of real GDP per capita above a certain point, higher levels of real GDP per capita act to increase FDI inflows to West Africa, holding other factors constant. This relationship suggests that the marginal effect of real GDP per capita exhibits increasing returns for FDI inflows in the sub-region.

GDP growth rate has a negative and significant impact on FDI inflows to the region, indicating that it is not economic growth that attracts foreign investors to the sub-region. The share of domestic investment to GDP has a positive and significant effect on FDI inflows to West Africa at the 1 percent significance level, indicating that FDI follows domestic investment. A one percentage increase in domestic investment results in between 0.16 and 0.25 percentage increase in FDI inflows to West Africa Trade openness has a positive and significant effect on FDI inflows, indicating that a one percentage increase in trade openness leads to about 0.5% increase in FDI inflows. This is consistent with the FDI theory which states that openness is indicative of the host country's ease of access to the world market (Anyanwu, 2010). Inflation rate does not impact FDI inflows. Countries that are more urbanized tend to attract more FDI. This supports the evidence that suggests that FDI is attracted to urban clusters, which are fast developing in tandem with infrastructure and transport corridors. A growing increase in the proportion of the population in West Africa is living in urban agglomerations. Urban clusters facilitate a means of entering several markets in quick succession, if not simultaneously. For example, while investors may not find it viable to target the entire West African region, the Greater Ibadan-Lagos-Accra (GILA) urban corridor, with a population of more than 25 million consumers, makes for a more manageable and focused target market. The rapid pace of urbanization, combined with strong economic growth, is expected to create "consumer cities." This trend will play out in the larger hubs of Lagos while secondary hubs such as Abidjan (Côte d'Ivoire) will be the fastest-growing cities.

Domestic credit to the private sector, though negatively signed, is insignificant and hence does not affect FDI inflows to West African countries. Political regime has a negative but insignificant effect. High life expectancy tends to have negative and significant impact on FDI inflows to the sub-region. Political instability as proxied by coups, impacts negatively on FDI inflows to the sub-region. Thus, our evidence shows that countries that have a history of attempted coups will be less likely to see significant inflows of FDI. However, natural resources exploitation and exportation, especially oil and metal, contributes positively and significantly in attracting FDI to West Africa.

A key novel finding in this paper is that monetary union matters for FDI inflows to West Africa. The result indicates a positive and large significant effect of monetary union on FDI inflows to the West African sub-region, all other factors remaining constant. It goes to suggest that the adoption of common currency, along with the other positively significant factors, will maximize the benefit of currency union membership in the sub-region.

Table 2: West Africa: OLS and GMM Estimation Results for FDI Inflows					
VARIABLES	(1) (OLS)	(2) (GMM)			
Net ODA (% GDP)	0.0504 (1.75)*	-0.0318 (-0.99)			
Log Real GDP pc 2000	-31.44 (-2.84)***	-48.988 (-3.22)***			
Log Real GDP pc 2000 squared	2.571 (-2.67)***	3.904 (2.98)***			
GDP growth rate	-0.2674 (-4.64)***	-0.1143 (-2.39)**			
Domestic investment (% GDP)	0.1653 (4.65)***	0.2511 (7.52)***			
Polity2	-0.0512 (-0.75)	-0.1336 (-1.50)			
Trade Openness	0.0464 (3.30)***	0.0452 (2.84)***			
Inflation rate	-0.0079 (-0.39)	0.02540 (1.40)			
Urban Population Share	0.3258 (4.99)***	0.0315 (0.36)			
Life expectancy	0.0142 -0.17	-0.2306 (-1.67)*			
Coups	-2.6886 (-1.88)*				
Domestic credit to private sector(% GDP)	-0.0586 (-1.19)	-0.0484 (-1.13)			
Metal Exporters	3.959 (3.57)***				
Oil exporters	6.1698 (4.74)***				
Monetary Union	3.7194 (3.37)***				
L1.FDI	0.2128 (4.05)***	0.1129 (2.86)***			
L2.FDI	0.0231 (0.46)	-0.0666 (-1.84)*			
Constant	87.7034 (2.47)***	151.4548 (3.30)***			
Observations	402	398			
R-squared	0.4675				
Number of id	17				
Wald chi2(14)		177.55			
Prob > chi2		0.0000			
Sargan Test overidentification					
chi2(404)		392.66			
Prob > chi2		0.6477			
t-statistics in parentheses: *** p<0.01, ** p<0.05, * p<0.1					
Source: Authors' Computations					

#### VII. CONLUSION AND POLICY IMPLICATIONS

The main empirical results of this study are summarized as follows: (i) The quadratic element of real per capita GDP, domestic investment, trade openness, first year lag of FDI, natural resources (oil and metals) endowment and exports, and monetary integration have positive and significant effect on FDI inflows to West Africa; and (ii) there is a negative relationship between FDI inflows and second-year lag of FDI, economic growth, level of economic development (real GDP per capita), and life expectancy.

These findings have a number of key policy implications. First, our results confirm a U-shaped relationship between economic development and FDI inflows to West Africa. Therefore, West African countries must take measures to accelerate their national incomes far beyond the initial take-off stage. To increase per capita income, African countries must deepen macroeconomic and structural reforms to increase their competitiveness, create increasing and more quality jobs and hence increase participation in economic activity, dismantle existing structural bottlenecks to private and public investment, scale up investments in hard and soft infrastructure to enhance local production and regional integration, structurally transform the economy for increased trade competitiveness in knowledge-intensive manufacturing, and increase productivity, especially in agriculture, through creating incentives and opportunities for the private sector and increasing government support to small farm holders in terms of finance, formalization of land ownership, and technical advice.

Second, given our finding that domestic investment significantly increases FDI inflows to West African countries, achieving higher domestic investment must remain as an active goal of governments in the sub-region. A key challenge for African countries, therefore, is to mobilize increased resources for such high domestic investment. Successful promotion of investment in West Africa will require actions and measures at the national and regional levels: First, at the national level, apart from continuing to deepen the reforms (macroeconomic and institutional) that they have embarked on in the last decade, West African countries need to increase efforts at the mobilization of higher domestic savings, including through the implementation of tax reforms, cost sharing in the provision of public goods and services and enhancing public expenditure productivity. Tax reforms should focus on broadening the tax base, emphasizing indirect taxes/value added tax (VAT) (and hence keeping marginal and average income tax rates low), raising tax elasticity with respect to economic growth, reducing exemptions, simplifying and improving tax administration, especially developing more efficient and effective tax collection systems. Further efforts should also be made to improve the efficiency and effectiveness of public institutions, if these are to serve as genuine partners for the private sector. Sustainable domestic investment also needs increased human capital investment to enhance the health and welfare of populations and generate the skills required in a competitive global environment.

Third, another important finding is that trade openness positively affects FDI inflows. Countries that export more attract more foreign investors. In other words, exporting more implies more market opportunities for the countries and in turn investors have good signal that they can invest in the countries and get more economic returns. It is therefore important for countries to improve their trade partnership with the rest of the world because this contributes in attracting more foreign investors who could invest in their countries to meet not only domestic demand but also external demand. International development partners should continue to facilitate the establishment of a more open and equitable trade regime. Countries that have diversified their exports suffer from problems of quality and lack knowledge of export markets and appropriate technology. African exporters of agricultural products suffer from the high subsidies in developed countries exporting similar agricultural products. This is why the quick conclusion of the Doha Development Round is essential.

Fourth, regarding institutional factors, foreign investors are not first concerned about the political regime in the place but the presence of political instability such as the frequency of coups prevents foreign investors from investing in the sub-region. For West African countries, this is very important since during the last few years, the countries in this sub-region such as Côte d'Ivoire, Mali, Nigeria, Liberia, Sierra Leone and Guinea have gone through different political crises. Thus, given the preponderance of military coups in West Africa and the ethnic configuration of most African countries, there is need for the institutionalization of inter-ethnic elite accommodation, in which elites from rival ethnic groups are co-opted into the political system (ethnic power sharing) as a means by which to federate the different ethnic groups via a coalition of their elites. Such ethnic power sharing is expected to provide a win-win solution for rulers and societal elites while safeguarding social and political peace. This should be supported by the intensification of the implementation of the institutionalization of political power and growing anticoup measures (also a kind of 'coup proofing' technique) by the African Union (AU) and international donors so as to reduce the spate of coups in West Africa.

Fifth, foreign investors are mainly attracted in natural resource endowed countries in West Africa. Given that oil, gas and mineral resources are non-renewable resources, it is vital to negotiate more beneficial and transparent contracts with oil/mining MNCs operating in West Africa, and ensure that these companies do not evade taxes. For greater returns to African countries in terms of royalties, for example, governments should engage in auctions for oil/mineral rights. In this regard, international financial institutions like the African Development Bank have a critical role to play in helping these countries acquire the much-needed capacity not only to negotiate beneficial contracts but also for effective management of natural resource revenues. In addition, there has to be full disclosure of terms of natural resources contracts and activating third-party brokers such as development partners (e.g. African Development Bank) and NGOs to ease information availability and reduce information asymmetry. African natural resource-

rich countries should stop the practice of entering into bilateral development agreements with extractive companies since these are characterized by secrecy. Consequently, all contracts and terms should be legislated in the substantive law and implemented as such.

Lastly, our results show that the FDI inflow benefits of monetary union appears to be an important contribution given that the issue has been under-examined in the literature, especially in the West African context. This means that the implementation of the Second West African Monetary Zone (WAMZ) should be accelerated. Indeed, enhanced monetary regional cooperation and integration will also increase market size in West Africa and help attract investors currently constrained in part by the small size of some domestic African markets.

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