Impact of Institutional Quality Indicators on Chinese Foreign Direct Investment Flow to Selected West African Countries

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Abstract

This study investigated the impact of institutional quality indicators on Chinese FDI flow to selected West Africa countries during the period 2002-2020. The study employed standard OLS and standard date panel techniques to differentiate between efficiency effects of fixed and random effects. The study provided empirical evidence that supports the Dunning eclectic macroeconomic theory of FDI flow. The results of the analysis indicated that control of corruption(CC), political stability and absence of violence (PV), regulatory quality (RQ), rule of law (RL), voice and accountability (VA), market size (rGDP) and exchange rate (EXR) were found to be positively related to Chinese FDI flow to the selected West African countries. The coefficient of rGDP and PV are statistically significant. The study results revealed government effectiveness (GE), trade openness (TOP), debt to GDP ratio (DEBT), and inflation (INF) variables have negative and not statistically significant impacts on Chinese FDI inflows. In light of the findings, higher levels of trade openness and better governance structures are less likely to attract Chinese FDI in the long run. Though, promoting good governance is better to support strong open trade policies which improve investment climate and level of rGDP. Also, the coefficients of INF and DEBT are in line with economic theories. However, INF and DEBT variables cannot significantly explain the variation in Chinese FDI inflows. The results revealed that geographical distance does not encourage the inflows of FDI from China. This study concludes that improvements in the institutional qualities are keys to spurring Chinese FDI inflows.

Keywords: Institutional Quality, Foreign Direct Investment, Policy Reforms, China, and West Africa.

JEL Classifications: O0, O1, O4, O5, F0

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1. Introduction

Chinese-Africa economic relation has experienced the fastest growth after the forum on the China-Africa cooperation conference in Beijing in 2000. This Africa-China economic tie has been mainly manifested by trade openness, Chinese FDI flow and financial assistance for African countries. Chinese FDI into African countries has grown rapidly in recent years since the conference. For example, Chinese foreign direct investment (FDI) annual flows to Africa, also known as overseas foreign direct investment (OFDI) in Chinese official reports have been increasing steadily since 2003. The flow peaked in 2008 at US$5.5 billion because of the purchase of twenty percent of the shares in Standard Bank of South Africa by Industrial and Commercial Bank of China (ICBC). Chinese FDI stock in African countries reached nearly US$24 billion in 2013, reflecting an annual growth rate of more than fifty percent between 2004 and 2013 (Copley, Maret-Rakotondrazaka and Sy, 2014). Furthermore, Chinese FDI into Africa increased dramatically in 2016 registering a one hundred and six percent jump in projects (Ernst and Young Africa, 2014) and stood at US$1.9 billion in 2020 (CARI and Boston, 2021). The surge in Chinese FDI into African countries can be link to large market size and a growing internal demand for natural resources (see, Adisu, Sharkey and Okoroafo, 2010; and Sanfilippo, 2010). However, empirical studies like that of (Kapuria-Foreman, 2008; Anyanwu, 2012; Buchanan, Le and Rishi, 2012; William, Agyapong and Abass, 2013) argued that traditional FDI promoters such as natural resources and market size are relatively becoming less important, while less traditional factors, such as institutional quality and governance, and economic freedom are becoming major promoters of FDI flow. Therefore, empirical assessment of the drivers of Chinese FDI flow to African countries should take into account the institutional quality on the top of the traditional determinants of FDI flow.

This rapid growth of Chinese FDI in Africa is considered as one of the indicators of Africa's development potential and investment appeal and also points to the mutually beneficial nature of China-Africa cooperation. The interesting thing about Chinese FDI is its composition which is more diversified than the compositions of other major countries that are investing in Africa. It consists 19.5% in financial services sector, 16.4% in construction sector, 15.3% in manufacturing, and the remaining 18.2% in business and tech services, geological prospecting, wholesale retail, agriculture and real estate (Copley, Maret-Rakotondrazaka and Sy 2014) and it is also distributed in almost all African countries. However, from the existing empirical literature, only few studies have examined the impact of Institutional Quality on Chinese FDI flow to the selected West African countries. Majority of the empirical studies that exists focused on the relationship and impact of business environment and institutional quality on aggregate FDI flow to develop and developing countries. To the best of our knowledge no disaggregated study on the impact of institutional quality indicators on Chinese FDI flows to the selected West African countries. Hence, the broad objective of this study was to examine the impact of the institutional quality indicators on Chinese FDI flow to the selected West African countries of Nigeria, Ghana, Cote d'Ivoire, Guinea, and Senegal between 2002 and 2020. The specific objectives of this study were to evaluate the impact of institutional quality

indicators, the effect of trade openness and examine the effect of market size, creditworthiness and inflation rate in the selected West African host countries on Chinese FDI flow. This study addressed and provided insight into how and what pushed the influx of China investment to the selected West African countries.

2. Literature Review

2.1. Institutional Quality (IQ)

A commonly accepted definition of institutions is that they are the formal and informal rules that organize social, political and economic relations (North, 1990). They are the systems of established and prevalent social rules that structure social interactions (Hodgson, 2006). North (1990) defines institutions as humanly devised constraints that shape interaction between people. Institutional development is the best indicator for structural development and long term welfare creation for a nation. There is a common understanding that strong institutions facilitates long term economic progress, but there remains much debate about what strong institutions are exactly. Institutions operate in all spheres of life and can affect access to economic, legal, political, and social rights and opportunities. They are sometimes confused with organisations. One can think of the differences between them in this way: 'If institutions can be defined as the "rules of the game", organisations are how we structure ourselves to play' (DFID, 2003a). Organisations are shaped by institutions, and in turn shape institutional change. Organisations are the material expressions of institutions circumscribed by 'groups of individuals bound by a common purpose' (North, 1990; Harper, Jones, and Watson 2012). Institutions should be viewed as a basic requirement for economic success and long term progress (Harper, Jones, and Watson, 2012). There are different approaches to the emergence of institutions, such as spontaneous emergence, evolution and social contracts (North, 1990). Some scholars argue that institutions can emerge spontaneously without intent as individuals and groups converge on a particular institutional arrangement. Some see institutional development as the result of evolutionary or learning processes, while others see institutions as being formed through social contracts or rational purposeful designs (Unsworth, 2010).

The extent to which a country's institutions facilitate international transactions and provide for their security and predictability is institutional quality (North, 1990). It is a broad concept that captures law, individual rights and high quality government regulation and services. Institutional quality and economic development reinforce each other over the longer term, but several studies have argued that, institutional quality leads this virtuous circle (Unsworth, 2010). Importantly, institutional development unlocks growth potential and does not intrinsically suffer from diminishing returns. Data show that countries with high institutional quality have been more successful in adopting frontier technology and productivity since the turn of the millennium (Leftwich and Sen, 2010). Much of the pioneering work into institutional quality has been done by North (1990). North (1990) defines institutions as humanly devised constraints that shape interaction between people. Essentially, in North (1990) framework, institutional quality improves with the limitations imposed on executive power. The limitations may be either formal rules or informal constraints and their strength is shaped

by the characteristics of enforcing them. This study constructed institutional quality annually, so that the study can keep track of institutional improvements or deterioration over time. Institutional quality consisted of the following six key dimensions; Government Effectiveness (GE), Voice and Accountability (VA), Political Stability and Absence of Violence (PV), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC).

2.2. Foreign Direct Investment (FDI)

FDI is a net flows injected by an investor to acquire a 10 percent or more lasting management interest in a company that operates in an economy other than that of the investor (World Bank, 2004; Almfraji and Almsafir, 2014). The lasting interest implies a long-term relationship between the direct investor and the investee company, and the requirement of ten percent or more necessitates significant influence to be exerted by the direct investor into the enterprise (UN, 1999).

2.3. Theoretical Framework

Some popular theories of FDI includes: the neoclassical theory of optimal capital accumulation, Heckscher–Ohlin trade model, Buckley and Casson internalization theory, Dunning's ownership-location-internalization (OLI) eclectic theory, export versus FDI theory, and an assignment theory of FDI, amongst which it is established that, trade between different countries is based essentially on the following factors: the business environment, institutional quality, human capital, natural resources, infrastructure considerations, market size and population, creditworthiness, inflation rate, exchange rate, the mass of the country of origin, the mass of the country of destination and the physical distance between the two countries, etc. However, this study was predicated on Dunning (1988) theoretical framework which seems to do a good job of predicting Chinese investment. A clear example of this is in extraction industries.

2.3.1. Neoclassical Theory of Optimal Capital Accumulation

The capital accumulation problem has been the subject of intense theoretical and empirical scrutiny and of considerable controversy. Much of the controversy has centered on the empirical validation of the role assigned by neoclassical theory to relative prices in the determination of the optimal capital stock. The neoclassical theory of optimal capital accumulation implies a theory of the cost of capital. The market value of the firm is equal to the discounted value of cash flow net of direct taxes. The appropriate after-tax rate of discount is the cost of capital employed in the accounting price for capital services used in the choice of an optimal level of capital services at each point of time. The cost of capital can be measured from net cash flow, the market value of the firm, and the change in this market value. This theory of the cost of capital has been developed by Modigliani and Miller (1958, 1966). The neoclassical theory assigns an important role to the cost of capital, and it also attributes considerable importance to the rate of change of the price of investment goods. Changes in this price result in capital gains and losses that must be included in the calculation of economic profit or loss associated with alternative production plans. Holding the other determinants of the price of

capital services constant, a high rate of change of prices of investment goods should provide an incentive to use more capital, while a low rate of change should serve as a disincentive.

2.3.2. Heckscher–Ohlin (H–O) Trade Model

The Heckscher-Ohlin model is one of the most important models of international trade. It expands upon the Ricardian model largely by introducing a second factor of production. Modern econometric estimates have shown the model to perform poorly, however, and adjustments have been suggested, most importantly the assumption that technology is not the same everywhere. This change would mean abandoning the pure H–O model. In 1954 an econometric test by Wassily W. Leontief of the H–O model found that the United States, despite having a relative abundance of capital, tended to export labor-intensive goods and import capital-intensive goods. This problem became known as the Leontief paradox. Alternative trade models and various explanations for the paradox have emerged as a result of the paradox. One such trade model, the Linder hypothesis, suggests that goods are traded based on similar demand rather than differences in supply side factors (Linder, 1961). The product-quality view of the Linder hypothesis and work related to the Linder hypothesis more generally have focused solely on explaining trade patterns. Yet the key forces in these approaches might also be important for understanding global patterns of FDI. A prominent view of the determinants of FDI is that firms' decisions about how to serve foreign markets reflect a proximity-concentration tradeoff (Markusen, 1984). In the presence of trading costs, firms are more likely to serve foreign markets from local production facilities when those markets are large. A product-quality view of the Linder hypothesis suggests that market size will vary with per capita income and product quality, which may therefore influence the circumstances under which firms will find FDI to be the most profitable mode of foreign delivery.

2.3.3. Buckley and Casson Internalization Theory

Internalization theory was developed to explain two key phenomena of the 1970s: namely the concentration of FDI in knowledge-intensive industries and the cross-flow of FDI between the United States and Europe. Neither could be explained using conventional economic theory. There were anomalies that had to be addressed. The theory was designed for this specific purpose. Because it was based on a fundamental principle, however, it was readily generalized. The early focus on Western Multinational Enterprises (MNEs) was broadened. It has been claimed, at various times, that internalization theory cannot explain Japanese MNEs, Chinese MNEs (Buckley, Jeremy, Adam, Xin, Hinrich and Ping 2007), and other emerging market MNEs, but it has since been shown that the theory applies to MNEs wherever they are headquartered (Ramamurti and Singh 2009; Ramamurti, 2012; Hoskisson, Wright, Peng, and Filatotchev 2013). It is a general theory that develops contingent predictions, as explained above, and it is this contingency; allowing for different forms of MNEs to emerge in different contexts, that give it such flexibility (Buckley and Ghauri, 2004, Buckley, 2011, Buckley and Strange, 2015). The theory is more realistic and not predictive, but contains other propositions. It is the synergy between all these propositions that gives the theory explanatory power (Buckley and Casson, 2009)

2.3.4. Dunning's OLI Eclectic Theory

The Eclectic Model was formed to incorporate the three different forms of international growth/expansion; licensing, exports and FDI. This model supports the manager's decisions in choosing appropriate strategies for expansion that is why proper understanding is needed. The OLI framework is also known as the eclectic paradigm which was proposed by Dunning (1988). His framework was an extension of the internalization theory which originated from the transaction theory stating that 'companies should seek lower costs between handling something internally and contracting another party to hold it for them' (Daniels, Radebaugh, and Sullivan, 2001). Dunning's (1988) proposed model followed Hymer's (1960) application of industrial organization economics in order to study the investment and international trade. The strong position of this model in economic theory gave a basis for integration of various strategic models related to similar theories and for further development. The Eclectic model was developed with the aim of understanding FDI throughout the world. According to Amadeo (2012), FDI can be divided into three types namely Brownfield; which requires purchase of existing operators/firm, Greenfield; where the firm engages into new investments, and Joint ventures; where the company participates with another organization to pursue the same goal. The ability of an international firm to correctly select markets for its portfolio of products is paramount to its success. In order to make a clear decision of which strategy to choose, Dunning (1981) developed Table 2.1 below, to display the advantages a company may experience with a particular growth strategy.

Table 2.1. Dunning's Eclectic Paradigm

Dunning's Eclectic Paradigm		**Categories of Advantages**		
		Ownership Advantages	Internalization Advantages	Location Advantages
Form of Market Entry	Licensing	Yes	No	No
	Export	Yes	Yes	No
	FDI	Yes	Yes	Yes

Source: Dunning (1981)

2.3.5. An Assignment Theory of Foreign Direct Investment

Nocke and Yeaple (2008) developed an assignment theory to analyze both the volume of FDI and its composition between cross-border acquisitions and Greenfield investment. In their model, a firm consists of a bundle of heterogeneous and complementary corporate assets. The merger market allows firms to trade these corporate assets to exploit complementarities. A cross-border acquisition involves purchasing foreign corporate assets, while Greenfield FDI involves building production capacity in the foreign country to allow the firm to deploy its corporate assets abroad. Equilibrium in the merger market is the solution to the associated assignment problem. There are two countries that can freely trade with one another, and production cost differences between countries give rise to Greenfield FDI and to cross-border acquisitions, while cross-country differences in entrepreneurial abilities give rise only to cross-border acquisitions. According to Nocke and Yeaple (2008), in equilibrium, Greenfield FDI is always one way: from the high-cost to the low-cost country, while

cross-border acquisitions are always two-way. Their model generated two-way FDI flows even in the absence of transport costs and production cost differences and the choice of FDI, and the re-assignment of corporate assets on the international merger market have an important impact on aggregate productivity by magnifying underlying Ricardian differences between countries.

2.4. Empirical Review

Fon, Filippaios, Stoian and HeeLee (2021) examined the impact of FDI flows on institutional quality in African countries by distinguishing investments from developed versus developing economies. Using bilateral Greenfield FDI flows between 56 countries during 2003 and 2015, the paper found no significant FDI effect from developed and developing economies on institutional quality in host countries. However, aggregate FDI flows from developed and developing economies have a significant positive effect on host country institutional quality but differ concerning the impact's timing. In contrast, the paper found no significant effect of FDI flows from China on host country institutional quality. Also, paper results are robust to alternative measures of institutional quality.

Jelena, Slavica and Vesna (2021) investigated the relationship between FDI and institutional quality measures (control of corruption, political stability, and rule of law) in the Western Balkans. The empirical study is based on panel techniques and causality in the period 2002–2017. The results indicated that control of corruption, political stability, and rule of law cause an inflow of FDI at the Western Balkans. The bidirectional relationship has been found between political stability and rule of low, control of corruption and rule of law, and control of corruption and inflow of FDI. Thus, the study recommended that stronger institutional measures cause a higher inflow of FDI.

Munmi (2021) examined the effect of institutions on the location choice of FDI using a novel dataset for bilateral FDI of India. The study follows prior works to argue that institutions have a positive association with FDI. The study considers three widely used institutional pillars namely state judiciary system, bureaucracy system, and property right protection to examine the effect of institutions on location choice of FDI. The study extends prior works focusing on the influence of firms' heterogeneity on the connection between institutions and FDI using the gravity model. The study found that institutions have a significant and positive impact on the location choice of FDI. The results reveal that institution of developed regions is positively associated with FDI. But surprisingly, there is a negative association between institutions of the developing region and FDI. The study put the firms into four separate bins according to their size to capture the firms' heterogeneity. Results show that large-sized firms are more likely to invest in countries with good institutions.

Behera, Mishra, Priyadarshini and Satpathy (2020) examined the impact of institutional quality on FDI inflows for emerging economies from South Asian the period 2002-2016. Other economic factors such as globalisation, financial development, and GDP are also considered as control variables. The study used panel ARDL-PMG tests to check the existence of long-relationship among variables. Panel Granger causality test was adopted to check the direction of causality and Pedroni co-

integration technique for the robustness of results. The study found the existence of a long-run relationship between institutional quality and FDI inflows. Other economic factors such as globalization and financial development show long-run and strong causality with FDI inflows. However, the short-run unidirectional causality from institutional quality to FDI inflows is not found for all the countries. Finally, institutional quality strongly causes FDI inflows provided paired with either globalization or financial development. The study concluded that institutional quality increases the FDI inflows. Therefore, policymakers should focus on institutional quality along with globalization and financial development for higher inflows of FDI in emerging countries.

Paul and Jadhav (2020) explored the role of institutional determinants of FDI using data from 24 emerging markets including China, India, Indonesia, Turkey, Thailand, Malaysia and Pakistan. In order to identify factors that attract FDI in emerging markets, the study used data from sources such as the World Bank, Index of Economic Freedom and UNCTAD. The findings indicated that infrastructure quality, trade cost measured by tariff and non-tariff barriers, institutional quality measured by effective rule of law, political stability, regulatory quality and control on corruption are significant determinants of FDI in emerging markets.

Dinkneh and Jiang (2020) examined the impacts of institutional quality and business environment on Chinese FDI flow to Africa. The paper derived aggregate indicators of institutional quality and business environment using economic and governance institutions, doing business, transport efficiency indicators conducting a principal component analysis. The paper employed P.P.M.L procedure to estimate the gravity model of FDI flow as it can solve zero-valued observations and heterogeneity problems. Findings disclosed that institutional quality and business environment indicators are significant motivators of Chinese FDI flow to Africa. The paper findings are robust and similar after accounting for endogeneity concerns using an IV estimator. The paper concluded that improvement in the business environment and the institutional quality of African countries are keys to spurring Chinese FDI flow to Africa.

Sabir, Samina, Anum, and Kamran (2019) have examined the impact of institutional quality on FDI inflows using panel data for low, lower middle, upper-middle, and high income countries for the sample period of 1996–2016. The study was based on the system Generalized Method. Inflation, trade openness, mobile phone subscriptions per 100 people, GDP per capita, and value-added share of agriculture as a percentage of GDP independent variables acted as control variables to find the impact of institutional quality on Foreign Direct Investment inflows. The results indicated that institutional quality had a positive impact on foreign direct investment in all groups of countries. Control of corruption, government effectiveness, political stability and regulatory quality, rule of law, and voice and accountability for FDI inflows were higher in developed countries than in developing countries. GDP per capita, agriculture value-added as a percentage of GDP, and inflation variables had negative influence on FDI inflows in developed countries, while GDP per capita, trade openness, agriculture value-added as a percentage of GDP, and infrastructure had positive and statistically significant impacts on FDI inflows in developing countries. At the same time, other studies (Appiah-Kubi, Seth, Karel, Sandra, Mansoor, Michael, Joseph, Zdenka, Sylvie, and Kamil 2020a) revealed that regarding

FDI and the companies created in African countries as a result of this kind of investment, there is a positive connection between the efficiency of corporate administration and the degree of FDI and a negative connection between the level of FDI and securities standard regulation.

Ross, Omar, Xu and Pandey (2019) examined the impacts of the host country institutional environment on Chinese FDI in Africa. The study employed the pooled OLS model with both a fixed and random effects model. Results highlighted that countries that are able to provide a politically stable environment and control levels of corruption exert the greatest effects on Chinese FDI. After controlling for firm level motivation, the findings also revealed that as Chinese economic development evolves so does the apparent strategic direction of their investment patterns with greater attention now being given to investment quality and return on investment, rather than simply acquiring and extracting natural resources.

Mihaela, Waqar and Helian (2018) examined the impact of institutional quality on FDI by categorising the countries as developed or developing. The paper measured institutional quality by the sum of control of corruption and rule of law indicators. The paper also provided evidence that institutional quality positively and significantly impacts FDI in developed countries; specifically, the Authors found that a one standard deviation change in governance significantly affects FDI by a factor of 0.2225 (using common law and the lagged values of the independent variables as instruments). Ceteris paribus, the results for the developing countries demonstrates that the institutional quality impact is insignificant because of the weak structure of institutions. Result findings strongly support the significance of governance indicators in attracting foreign direct investment (FDI) inflows. The paper inferred that the relevance of governance indicators tends to be a key point in attracting foreign direct investment (FDI) inflows.

Shan, Lin, Li and Zeng (2018) examined the effect of natural resources, market size and five major institutional factors (voice and accountability; political stability and absence of violence; regulatory quality; rule of law and control of corruption) on Chinese FDI in Africa. The paper adopted regression analysis on panel data across 22 countries for the period 2008-2014. Findings showed that natural resources did not play a significant role in attracting Chinese investments, but market size did. Among the institutional factors, only voice and accountability had a significant and positive effect on attracting Chinese FDI; the effects of rule of law and control of corruption were not significant and political stability and regulatory quality had a significant and negative effect. The paper concluded that African countries that are struggling with improving their poor institutional quality in the short term could effectively attract Chinese investment by reducing investor psychic distance, e.g. establishing a closer political link with China. Nevertheless, in the long term, measures of improving institutional quality are important.

3. Methodology

3.1. Data

The study used panel data from five selected West African countries of Nigeria, Ghana, Cote d'Ivoire, Guinea, and Senegal between 2002 and 2020. The data were sourced from African Statistical

Yearbook (ASY) jointly produced by the African Development Bank (AfDB), the African Union Commission (AUC) and the United Nations Economic Commission for Africa (UNECA); International Country Risk Guide (ICRG) published by the Political Risk Services (PRS) Group; the Global Competitiveness Report (GCR) published by the World Economic Forum (WEF); and the World Competitiveness Report published by Institute for Management Development (IMD).

3.2. Variables Descriptions

3.2.1. Dependent Variable

The dependent variable is the stock of China's FDI to the sampled African countries. The data is source from the Statistical Bulletin of China's OFDI (SBCOFDI) published by National Bureau of Statistics of China. FDI is an investment that is made to acquire a lasting interest in an enterprise(s) operating outside the investor's economy (Sothan and Zhang, 2017 and (Nangpiire, Rodrigues, and Adam, 2018). Based on the existing literature, the logarithm of the net FDI inflow (LogFDI) is used.

3.2.2. Independent Variables

This study used all the six institutional variables as computed by Globerman and Shapiro (2002), and Buchanan, Le and Rishi (2012). Institutional quality is divided into six broad groups i.e., control of corruption (CC), government effectiveness (GE), absence of political violence (PV), rule of law (RL), regulatory quality (RQ), and voice and accountability (VA).

3.2.2. Control Variables

Foreign investors are determined by their anticipated return on the investment they make, the size of the domestic market available to them, the amount of raw material available, political stability in the country and a good investment climate in the country (Agodo, 1978). Again, a more stable macroeconomic environment should encourage inward FDI; as steady and predictable rates of inflation enable long-term planning in relation to consumer purchasing power and firm level profit expectations (Ross, Omar, Xu and Pandey, 2019). Similarly, a country with a large population size attracts more FDI inflow (Peres, Ameer and Xu, 2018). Also, large and growing markets allow firms to exploit economies of scale and represent demand for goods and services, which has been cited as one of the factors for attracting FDI (Asiedu, 2006; Cheung and Qian, 2009; Kolstad and Wiig, 2012). Table 3.1 below gives specific summary of how the data is sourced.

Table 3.1. Main Variables

Variables	Description	Source of Data
Dependant variable	Stock of China's FDI flow to each African country	SBCOFDI
Chinese FDI		
Explanatory variables:		
i. Institutional Quality Indicators		
VA	Voice and accountability	ICRG
PV	Political stability and absence of violence	ICRG
RQ	Regulatory quality	ICRG
RL	Rule of law	ICRG
CC	Control of corruption	ICRG
GE	Government effectiveness	ICRG
ii. Control Variables:		
INF	Inflation, GDP deflator (annual %)	GCR/WCR
RGDP	Real gross domestic product	GCR/WCR
TOP	Trade (% of GDP)	GCR/WCR
DEBT	Debt to gross domestic product ratio	GCR/WCR
EXR	Exchange rate (annual %)	GCR/WCR

Source: Researchers' Summary Analysis (2022)

This study postulates that, market size captured as real GDP will, ceteris paribus, impact positively and significantly on Chinese FDI flow. Trade openness as a measure of the rate of technological diffusion into the economy will, ceteris paribus, impact positively and significantly on Chinese FDI flow, bearing in mind that the greater diffusion and adoption of technical know-how that it engenders will have a salutary effect on the real production of goods and services in the economy. Singh and Jun (1995) found that export orientation is very important in attracting FDI, and link this to the rising complementarity of trade and FDI flows. The study expects a negative relationship between Debt to GDP ratio as a proxy of creditworthiness and Chinese FDI. This is because increasing foreign debt will distort foreign investors' vision and create negative expectations of the future economy (Ostadi and Ashja, 2014). The main control variables considered in this study are inflation rate, real gross domestic product, trade (% of GDP) and Debt to gross domestic product ratio.

3.3. Empirical Model

The analytical foundation of this study is based on Dunning (1981) eclectic macroeconomic FDI structure. The framework considers expanded issues in determining the flow of FDI. However, the study used six Worldwide Governance Indicators (WGI); Rule of Law (RL), Control of Corruption (CC), Voice and Accountability (VA), Government effectiveness (GE), Political stability (PS), and Regulatory Quality (RQ). Also included in the model specification are exchange rate, inflation rate, real gross domestic product, trade openness and debt to gross domestic product ratio as control variables. However, there is no consensus regarding the observation of these FDI determinants. In addition, many empirical approaches can be used for cross-country panel data. Specifically, the

fundamental models are Ordinary Least Squares, Fixed Effects, and Random Effects. The fixed effects model assumes that country-specific effects are correlated with the explanatory variables. On the other hand, the random-effects model assumes that country-specific effects are random and uncorrelated with independent variables. However, the Hausman test was conducted to determine which econometric model best fit the data (See Table 4.8). Finally, a fixed-effects model was selected for this study. The fixed-effects model is represented as equation 3.1 below:

$$Y_{it} = \beta_0 + \beta_1 X_t + \varepsilon_{it} \quad 3.1$$

Where β0 represents the unobserved time-invariant individual effect and εit represents the error term. Incorporating the study variables of interest in equation (3.1) results in equation (3.2) as follows:

$$LogFDI_{it} = \beta_0 + \beta 1 LogIQ_{it} + \beta_2 RGDP_{it} + \beta_3 TOP_{it} + \beta_4 INF_{it} + \beta 5 LogEXR_{it} + \beta_6 DEBT_{it} + \varepsilon_{it} \quad 3.2$$

Where, $LogFDI_{it}$ = logarithm of FDI inflow attracted by country i at period t. LogIQit = logarithm of institutional quality indicators of countries i at period t. INFRit = inflation rate of country i for period t. RGDPit = real gross domestic product of country i for period t. TOPit = trade openness of country i for period t. LogEXRit = logarithm of exchange rate of country i for period t. DEBTit = Debt to gross domestic product ratio of country i for period t. β1- β6 are coefficients of given variables. β0 = the unobserved time-invariant individual country effect. εit = the error terms.

3.3.1 Economic A priori Expectations

This refers to the supposed relationship between and or among the dependent or independent variables of the model as determined by the postulations of economic theory. Table 3.2 below gives specific summary,

Table 3.2. Summary of the A priori Expectation

Regressand	Regressors	Relationship
	Institutional Quality Indicators:	
FDI	Control of Corruption (CC)	+
FDI	Government Effectiveness (GE)	+
FDI	Political Stability/Absence of Violence (PV)	+
FDI	Rule of Law (RL)	+
FDI	Regulatory Quality (RQ)	+
FDI	Voice and Accountability (VA)	+
	Control Variables:	
FDI	Real Gross Domestic Product (GDP)	+
FDI	Trade Openness (TOP)	+
FDI	Inflation Rate (INF)	-
FDI	Debt-to-GDP Ratio (DEBT)	-
FDI	Exchange Rate (EXR)	-

Source: Researchers' Summary Analysis (2022)

4. Results and Discussion

4.1 Results and Findings

The pair-wise correlation was done between control of corruption (CC), government effectiveness (GE), political stability (PV), regulatory quality (RQ), rule of law (RL), and voice & accountability (VA). The table 4.1 below reflects the Pearson coefficient value for their significance values.

Table 4.1. Correlation Matrix of WGIs' dimensions in selected West African countries

	Control of Corruption (CC)	**Government Effectiveness (GE)**	**Political Stability (PV)**	**Regulatory Quality (RQ)**	**Rule of Law (RL)**	**Voice & Accountability (VA)**
CC	1.00					
GE	0.92	1.00				
PV	0.89	0.91	1.00			
RQ	0.93	0.91	0.86	1.00		
RL	0.95	0.94	0.90	0.93	1.00	
VA	0.89	0.90	0.87	0.89	0.94	1.00

Source: Author' Computation using E-views 12 output

Table 4.1 shows that all the institutional quality indicators have highly significant correlation (rij > 0.6 threshold) with each other. The study result shows that the problem of multicollinearity is highly possible. The matrix revealed all indicators have correlation with each other ranging from r = 0.86 for regulatory quality and political stability to r = 0.95 for control of corruption and rule of law. The relatively high correlation (rij > 0.6) among the variables shows that, they will be good candidates for factor analysis. The consistency checks conducted are Kaiser–Meyer–Olkin (KMO) value, Bartlett's test significance, Chi-square and the component matrix of the six dimensions. Table 4.2 presents a summary of the factor analysis output per year including consistency checks. The consistency checks conducted are Kaiser–Meyer–Olkin (KMO) value, Bartlett's test significance, Chi-square and the component matrix of the six dimensions.

Table 4.2. Factor Analysis Summary Outcome per Year

Variable	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
KMO-Value	0.93	0.95	0.97	0.98	0.99	0.92
Bartlett's Test Approx. (P-Value)	0.02**	0.02**	0.02**	0.01**	0.01**	0.00**
% of variation by the extracted factor	84.2%	81.7%	83.9%	84.4%	85.2%	82.6%
Component Matrix						
Control of Corruption (CC)	0.41	-0.13	-0.34	0.44	-0.61	0.37
Government Effectiveness (GE)	0.41	0.15	-0.09	-0.85	-0.18	0.21
Political Stability (PV)	0.39	0.82	-0.06	0.27	0.29	-0.04
Regulatory Quality (RQ)	0.41	-0.47	-0.46	0.01	0.63	-0.02
Rule of Law (RL)	0.42	-0.14	0.16	0.02	-0.28	-0.84
Voice & Accountability (VA)	0.40	-0.22	0.79	0.11	0.17	0.34

Source: Author's Computation using E-views 12 output

From table 4.2, the KMO >0.6 (the threshold required) as confirm from the correlation matrix shows that the data are adequate and the degree of information among the variables overlaps greatly (the presence of a strong partial correlation). That is, it is plausible to conduct factor analysis. Moreover, in Bartlett's test, the significant statistical test <0.05 shows that the correlation matrix is indeed not an identity matrix (rejection of the null hypothesis), and hence, the data's suitability for factor analysis is also confirmed. The chi-square (X2) values are statistically significant (>70%) for the period tested and revealed a higher percentage of variation by the extracted factor. This upholds the rejection of the null hypothesis that the variables are unrelated.

The summary statistics is presented in table 4.3, 4.4 and 4.5. First of all, a first pass at the data in form of descriptive statistics was carried out. This gave a good idea of the patterns in the data and the basis of quantitative analysis to be carried out. Since the data is strongly balance, each selected West African country appears on average over the 19 sampled years. Table 4.3 presents the average overall IQ indicators. It shows Ghana with 52.17 has the highest average overall IQ score by selected West African countries. This is followed by Senegal with 46.14, and then Cote d'Ivoire 19.59, Nigeria; the largest economy in Africa; has an overall average score of 15.41, which is second to the worst overall average IQ indicator of 14.17 recorded by Guinea. This results show that none of the selected West African countries has a scores higher than the total average overall IQ index (54.99); Ghana has a score (52.17) closer.

Table 4.3. Total Average Overall Institutional Quality Index

Total Overall IQ Average = 54.99	Country	**Cote d'Ivoire**	**Ghana**	**Guinea**	**Nigeria**	**Senegal**
	Overall	19.59	52.17	14.17	15.41	46.14

Average Institutional Quality Indicators by Category

Year	Average Institutional Quality Indicators by Category	**Cote d'Ivoire**	**Ghana**	**Guinea**	**Nigeria**	**Senegal**
Control of Corruption (CC)		22.84	52.55	14.67	11.21	50.22
Government Effectiveness (GE)		17.08	48.89	13.77	14.59	42.17
Political Stability (PV)		10.16	46.57	14.49	4.77	39.99
Regulatory Quality (RQ)		27.63	49.00	16.26	19.47	44.62
Rule of Law (RL)		16.33	54.82	7.41	12.95	48.88
Voice & Accountability (VA)		23.50	61.17	18.43	29.46	50.96

Source: Author's Computation

Furthermore, the study results (average institutional quality indicators by category) revealed that, Ghana has the best score in all six IQ indicators and closely followed by Senegal. Cote d'Ivoire is next except in PV (10.16) where it fell below Guinea (14.49). Table 4.3 shows that, Nigeria has the worst average score in CC, and PV, while Guinea has the worst in GE, RQ, RL and VA. Nigeria performance is better compared to Guinea from the results of the study. Table 4.4 presents the distance between China and the selected West African countries and the study adopted total straight line distance.

From table 4.4, selected West African countries with scores equal to 1 are closer to China and are expected to attract more Chinese FDI flows and vice versa. Nigeria is the closest to China and followed by Ghana, both in terms of air travel and physical distance. On the other hand, Cote d'Ivoire, Guinea and Senegal are farther from China. The farthest country from China is Senegal, followed by Guinea, and Cote d'Ivoire respectively. The study results from table 4.3 and 4.4 revealed that, Nigeria (largest economy in Africa) with the worst average IQ score (by category) of CC and PV index and the closest selected West African country to China has the highest average Chinese FDI inflows of 379.08 million dollars. It is the most prefer destination of Chinese FDI flow among the selected West African countries. Ghana with the best average overall IQ score and average IQ score (by category) is the second prefer destination of Chinese FDI inflows. Also, Ghana is the second closest country to China of the selected West African countries with an average Chinese FDI inflow of 251.87 million dollars. Cote d'Ivoire with an average Chinese FDI inflow of 195.82 million dollars is the third prefer destination of Chinese FDI inflows. It is the third farthest country from China and also has the third best average overall IQ score and average IQ score (by category) in five of the six IQ indicators. Guinea which is the second farthest of the selected West African country from China and with the worst average overall IQ score is the fourth prefer destination of `Chinese FDI inflows. For the study period, average Chinese FDI flow to Guinea is 111.57 million dollars. The farthest selected West African country from China is Senegal and which has the second best IQ indicators in terms of

average overall score and average IQ score (by category). It is the least preferred destination of Chinese FDI inflow and received a total average of 101.57 million dollars in the study period.

Table 4.4. shows the summary of descriptive statistics of the variables included in the model.

Table 4.4. Distance Between China and Selected West African Countries

Country	Cote d'Ivoire	Ghana	Guinea	Nigeria	Senegal
Chinese FDI (Overall Mean)	195.82	251.87	111.57	379.08	101.57
Score (Miles)	0	1	0	1	0
Score (Km)	0	1	0	1	0

Mean Distance (MD)

Air Travel (Miles)	Overall Mean	6,833
Physical Distance (Km)	Overall Mean	10,996

Actual Distance (AD)

Country	Actual Distance Between Countries	**Air Travel (Miles)**	**Criteria**	**Physical Distance (Km)**	**Criteria**
Cote d'Ivoire		7,001	AD > MD	11,267	AD > MD
Ghana		6,741	AD < MD	10,848	AD < MD
Guinea		7,113	AD > MD	11,448	AD > MD
Nigeria		6,164	AD < MD	9,920	AD < MD
Senegal		7,145	AD > MD	11,499	AD > MD

Source: Author's Computation

Table 4.4. Panel Summary Statistics of variable

Variable	**Mean**	**Median**	**Std. Dev.**	**Skewness**	**Kurtosis**	**Jarque-Bera**	**Prob.**	**Observation**
**FDI	214.65	78.60	309.26	2.21	8.69	198.82	0.00	92
**CC	30.53	26.02	19.60	0.22	1.41	10.46	0.01	92
**GE	27.51	19.62	16.42	0.33	1.49	10.36	0.01	92
**PV	23.38	16.26	17.99	0.24	1.39	10.86	0.00	92
**RQ	31.89	28.65	14.39	0.08	1.45	9.35	0.01	92
**RL	28.57	20.20	20.88	0.19	1.30	11.59	0.00	92
**VA	37.49	33.82	17.59	0.19	1.69	7.12	0.03	92
**RGDP	2.25	2.41	3.35	-0.12	4.20	5.78	0.06	92
**TOP	61.02	60.69	20.49	0.53	3.96	7.74	0.02	92
**DEBT	2.38	1.87	1.73	1.03	3.65	18.09	0.00	92
**INF	8.68	8.35	7.49	0.97	4.16	19.57	0.00	92
**EXR	1445.13	486.19	2610.76	2.04	5.66	90.69	0.00	92

** Represents Non-log Variables

Source: Author's Computation using E-views 12 output

It can be seen that variability is higher in the dependent variable FDI, as indicated by the standard deviation of 309.26, and there is greater difference in FDI flows among the selected West African countries for the period under study. For the explanatory variables, variability was higher, as indicated by the standard deviation; DEBT had the lowest variability of 1.73, while RL had the highest variability of 20.88. Furthermore, the IQ indicators, TOP, DEBT, INF and EXR are positively skewed while market size is negatively skewed. Variables with value of kurtosis < 3 are called platykurtic (fat or short-tailed) and all the IQ indicators qualified for this during the study period. On the other hand, variables whose kurtosis value > 3 are called leptokurtic (slim or long tailed) and all the control variables qualified for this during the study period. Jarque-Bera test shows that the residuals are not normally distributed since the probability values do not exceed 5%. Additionally, before conducting

the regression analysis, the study conducted a diagnostic test to check for the presence of multicollinearity between all pairs of variables. The summary statistics (Correlation Matrix) is presented in table 4.5.

Table 4.5. Correlation Matrix between Dependent and Independent Variables

	**FDI	**CC	**GE	**PV	**RQ	**RL	**VA	**RGDP	**TOP	**DEBT	**INF	**EXR
**FDI	1.00											
**CC	0.02	1.00										
**GE	-0.04	0.93	1.00									
**PV	-0.05	0.90	0.91	1.00								
**RQ	-0.02	0.94	0.92	0.87	1.00							
**RL	0.05	0.96	0.95	0.91	0.93	1.00						
**VA	0.13**	0.91	0.92	0.89	0.89	0.95	1.00					
**RGDP	0.14**	0.09	0.09	0.16	0.10	0.09	0.17	1.00				
**TOP	-0.23**	0.19	0.21	0.40	0.15	0.12	0.09	0.22	1.00			
**DEBT	-0.17**	0.26	0.19	0.17	0.22	0.16	0.12	-0.18	0.08	1.00		
**INF	0.01	-0.24	-0.11	-0.10	-0.24	-0.17	-0.08	0.03	0.19	-0.07	1.00	
**EXR	-0.08	-0.38	-0.41	-0.19	-0.46	-0.47	-0.43	0.06	0.54	-0.20	0.23	1.00

****** Represents Non-log Variables

Source: Author's Computation using E-views 12 output

The correlation matrix shows high prospects for the selected model. The bivariate relation between the dependent variable and each of the specified variables in the model is not significant except for VA, RGDP, TOP, and DEBT. Moreover, there is a strong positive correlation between the institutional quality indicators, hinting at a potential mediation effect, while also raising a suspicion regarding multicollinearity. As for the control variables, the moderate to strong correlation amongst them, as well as the independent and mediator variable raises concern regarding multicollinearity. Yet, Gujarati (2009) emphasized that multicollinearity can be tolerated as long as collinearity between variables is not perfect. Nonetheless, a formal diagnostic test will be carried out after fitting the model to reach a formal conclusion regarding the significance of the issue.

To avoid a false regression, the stability of the panel data was verified before the regression analysis. Thus, the LLC (2002), IPS (1997), ADF and Maddala and Wu (2007) tests were conducted on the variables for the selected West African countries and the results presented in table 4.6.

Table 4.6. Summary of Panel Unit Test Results

Variables	At level				At first difference			
	Levin, Lin & Chu t*	**Im, Pesaran and Shin W-stat**	**ADF-Fisher Chi-square**	**PP-Fisher Chi-square**	**Levin, Lin & Chu t***	**Im, Pesaran and Shin W-stat**	**ADF-Fisher Chi-square**	**PP-Fisher Chi-square**
FDI	-3.14**	-1.74**	16.84	29.32**	-5.45**	-5..41**	45.97**	415.79**
CC	-0.67	-.069	11.14	18.14**	-3.44**	-2.71**	24.11**	53.68**
GE	-0.56	-.073	16.88	14.57	-1.76**	-4.17**	35.68**	72.69**
PV	-0.66	-1.14	13.85	21.19**	-2.71**	-4.43**	37.88**	104.76**
RQ	0.16	-0.13	8.56	17.19	-2.36**	-4.09**	35.37**	85.36**
RL	-.073	-0.34	10.58	11.79	-3.32**	-3.12**	27.59**	46.15**
VA	-0.57	0.45	5.75	10.32	-0.74	-2.43**	24.05**	53.68**
RGDP	-0.39	-1.19	15.43	27.22**	-1.66**	-4.00**	34.78**	149.71**
TOP	-1.14	-0.39	12.34	6.17	-4.42**	-4.86**	41.55**	59.87**
DEBT	-0.91	-.077	15.2	17.29	0.55	-3.84**	33.43**	77.04**
INF	-4.89**	-3.98**	34.33**	31.89**	-3.63**	-6.79**	58.18**	358.77**
EXR	1.69	2.28	4.44	13.51	-5.19**	-3.84**	33.78**	47.49**

******indicates statistically significant at 5% level of significance (Test critical values at 5% level of significance).
Source: Constructed by Author using E-views 12 output

The LLC, IPS, ADF-Fisher and PP-Fisher results of unit root test presents that the variables were not all stationary at level 1 (0) as in Table 4.6. The LLC and IPS results revealed that only FDI and INF were stationary at level, i.e., were integrated of order 0 or are 1(0) series. For the ADF-Fisher result, only INF was stationary at level. The result of the PP-Fisher shows that FDI, two IQ indicators (CC and PV), RGDP and INF were stationary at level. Furthermore, after first differencing, the LLC result revealed that VA and DEBT were not integrated of order 1 or is not 1(1) series. The IPS, ADF-Fisher and PP-Fisher results revealed all the variables became stationary after first differencing, i.e., were integrated of order 1 or are 1(1) series. The unit root tests revealed that some variables have unit roots and cannot be directly employed for empirical analysis without differencing (Granger and Newbold, 1974). Consequent upon the results, further analysis into ascertaining the long-run equilibrium conditions of the series was estimated using the Kao (1999) test in conducting the cointegration test for the panel data. The results are displayed in table 4.7. From table 4.7 and at the significance level of 5%, the panel ADF rejects the null hypothesis within the dimension of the panel Kao statistics indicating panel cointegration relationship exists. This means that, in each short-term period, all variables tend to adjust to each other to achieve long-term balance.

Table 4.7. Summary of Panel Unit Cointegration Results

Estimates	t-Statistic	Prob.
ADF	-4.003708	0.0000
Residual Variance	11.15024	
HAC Variance	5.28397	

Source: Constructed by Author using E-views 12 output

Table 4.8. Fixed and Random Effects Regression Results

	(1)	(2)	(3)
Variables	Pooled OLS	Fixed Effects	Random Effects
Constant	0.35*	-3.13*	0.95*
	(0.89)	(0.36)	(0.63)
LOG(CC)	0.31	0.33	0.33
	(0.59)	(0.55)	(0.46)
LOG(GE)	-1.89**	-1.06	-1.73**
	(0.01)	(0.12)	(0.00)
LOG(PV)	0.22	1.18**	0.24
	(0.60)	(0.01)	(0.45)
LOG(RQ)	-0.19	0.39	-0.39
	(0.85)	(0.68)	(0.59)
LOG(RL)	0.42	0.85	0.36
	(0.58)	(0.23)	(0.53)
LOG(VA)	2.64**	1.12	2.52**
	(0.01)	(0.35)	(0.00)
RGDP	-0.21**	0.13**	0.21**
	(0.00)	(0.02)	(0.00)
TOP	-0.04**	-0.03	-0.04**
	(0.00)	(0.12)	(0.00)
DEBT	-0.12	-0.10	-0.03
	(0.25)	(0.36)	(0.12)
INF	0.03	-0.00	0.03
	(0.21)	(0.99)	(0.08)
EXR	0.00**	5.67	0.00**
	(0.04)	(0.85)	(0.04)
Observations	95	95	95
R-squared	0.52	0.62	0.51
Hausman test	59.57**		
P-value	0.0000		

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

Source: Constructed by Author using E-views 12 output

The stationary variables and model were used for the study on the outcome of the Kao (1999) test results. Next, panel data regression estimations were performed and the study reported findings for the pooled OLS, fixed and random effect models to enable comparison and to allow for robustness of results. The results for the Pooled OLS, fixed and random effects estimates are shown in Table 4.8.

The results in table 4.8 revealed the FE estimation technique is most reliable based on the Hausman test (P-value < 0.05). It implies that the effects are correlated at 5% level; otherwise, they are not at that level. Hence, interpretation of results was based on the fixed effects regression estimation. However, the study report findings for the pooled OLS, fixed and random effect models for comparison purposes and to allow for robustness of results. The coefficient of determination, R-squared (0.62) indicates that the explanatory variables (IQ indicator, market size, TOP, DEBT, INF and EXR) explain 62% of the variation in the dependent variable (FDI from China to the selected West African countries).

The study results revealed that the institutional quality indicators; except for government effectiveness (GE), have positive impact on Chinese FDI inflows which is in line with empirical study of Sabir, Samina, Anum, and Kamran (2019). Control of corruption (CC) has a positive and not statistically significant effect on Chinese FDI flow to the selected West African countries supporting the evidence that countries with better legal environment (this could be protecting investors against possible expropriation) are likely to attract Chinese FDI inflows. The government effectiveness (GE) is negative and statistically significant. This suggests that the more effective governance is, the less likely it is that Chinese FDI will be attracted in the long run to the selected West African countries. For example, study have shown that some Chinese firms have been engaging in some illegal economic activities in Nigeria such as illegal mining, fishing, logging of timber, and importation of cheap and inferior goods into Nigeria market (Chukwuebuka, 2022). Also, the study indicated that capital flight, strangulation of local industries, and poverty are the effects of Chinese illegal economic ventures in Nigeria. The study concluded that until Nigeria develops an effective governance system, Chinese illegitimate economic activities will continue unabated. This same situation is applicable to Ghana were 169 Chinese miners were arrested in Ghana's gold-mining Ashanti region (Mouhamadou, 2013).

Generally, countries are not exogenously endowed with institutions that promote good governance. Indeed governance system is determined endogenously depending on the legal origins, the type of law that governs the country, and the level of economic development. Political stability and absence of violence (PV) is positive, and statistically significant. This indicates that countries with stable democratic systems with violent free economy are more likely to attract to Chinese FDI inflows. The coefficient is positive and not statistically significant. This suggests that selected West African countries with better regulatory institutions will attract Chinese FDI inflows. The result revealed that rule of law (RL) has a positive and not statistically significant effect on Chinese FDI to the selected West African countries suggesting that countries with better legal processes and governance institutions that can protect investors against possible expropriation are likely to attract FDI from China. The coefficient of voice and accountability (VA) is positive and statistically not significant. This implies that selected West African countries which allows freedom, secure property rights through legal enforcement, strengthens legal claims via effective legal code are likely to attract FDI from China.

The study result revealed that internal market size (RGDP) has a positive and statistically significant association with Chinese FDI flow to the selected West African countries which is in line with empirical studies of Wijeweera and Mounter (2009) Chang, Stuckler, Yip and Gunnel (2013), Ho, Khairunnisa, Linda and Nurain (2013), Chen, Dollar and Tang (2015), and Shah and Khan (2016), This result suggests that, a large domestic market presents huge opportunities for products and services produced by Chinese FDI in local markets. Trade openness (TOP) has negative relationship with Chinese FDI flow to the selected West African countries which is in line with empirical studies of Adow and Tahmad (2018), Cantah, Gabriel, Emmanuel and Abass (2018) and Khan and Hye (2014). The study also revealed the openness is not statistically significant which is in line with empirical studies of Ho, Khairunnisa, Linda and Nurain (2013) and Wickramarachchi (2019). This suggests that the higher the level of openness is, the less likely it is that Chinese FDI will be attracted in the long run to the selected West African countries. For example, study has shown that some Chinese firms have been involved in activities strangulating local industries and directly engaged in the importation of cheap and inferior goods and services into the Nigeria market (Chukwuebuka, 2022). Also, in the Nigeria economy, empirical analyses showed that China has a revealed comparative advantage in a relatively broad range of products and that almost all of these items are labor intensive in production or require inputs of specialized natural resource materials.

The study result revealed that Debt to GDP ratio (DEBT) has a negative and not statistically significant effect on Chinese FDI flow to the selected West African countries. This outcome is in line with theoretical expectation as the expected relationship between Chinese FDI and Debt to GDP ratio used to proxy creditworthiness is negative, though not significant. This is because increasing foreign debt will destroy foreign investors' vision and create negative expectations of the future economy (Ostadi and Ashja, 2014). The coefficient of inflation rate (INF) is negative. This outcome is in line with theoretical expectation, however not significant with Chinese FDI flow to the selected West African countries which is in line with empirical studies of Anyanwu and Erhijakpor (2004), Hintošová, Michaela, Zuzana and Rastislav (2018), (Ross, Omar, Xu and Pandey, 2019), and Vijesandiran and Vinayagathasan (2020). The study result revealed that exchange rate (EXR) has a positive and not statistically significant association with Chinese FDI inflows to the selected West Africa countries. This is in line with empirical study of Kimino, Saal and Nigel (2007).

4.2 Discussion of Results

This study examine the impacts of the institutional quality on Chinese FDI flow to the selected West African countries of Nigeria, Ghana, Cote d'Ivoire, Guinea, and Senegal between 2002 and 2020. Internalization theory predicts that market-seeking firms are more likely to serve geographically proximate countries through exports and more distant markets via FDI (Buckley and Casson, 1981). This study revealed that geographically distance does not play a key role in determining Chinese FDI inflows. This is supported by the fact that, Nigeria; the closest sampled West African country from China, is the most preferred destination of Chinese FDI inflows, while Senegal; the farthest sampled African country to China, was the least preferred destination. Other

West Africa countries like, Ghana (second closest); Cote d'Ivoire (third closest); and Guinea (forth closest), which are closer to China than Senegal attracted more Chinese FDI inflows. The results revealed that geographical distance between the sampled West African countries and China does not encourage the inflows of FDI from China. In sum, the results show that political stability and absence of violence (PV) is positive and significant implying that PV significantly explain the variation in Chinese FDI inflows throughout the study years and will positively affect Chinese FDI inflows in the long-run. For control of corruption (CC), regulatory quality (RQ), rule of law (RL) and voice and accountability (VA) were found to have a positive and not statistically significant effect on Chinese FDI flow to the selected West African countries. The study results revealed that these variables cannot significantly explain the variation in Chinese FDI inflows throughout the study years; implying that the variables do not affect Chinese FDI inflows in the long-run.

The study results revealed among the institutional quality indicators, only government effectiveness (GE) have a negative and insignificant association with Chinese FDI inflows to the selected West African countries. This suggests that the more effective governance is, the less likely it is to attract Chinese FDI inflows in the long-run. Reasons for finding an unexpected sign between government effectiveness (GE) and Chinese FDI inflows might be that the government effectiveness (GE) of the economy of the selected West African countries might be inefficient in attracting Chinese FDI compared to other competing countries. This study supports that institutional quality in selected West African host countries have significant influence in explaining variations in FDI flow from China. This is in line with the discussed literature (Globerman and Shapiro, 2002; Gani, 2007; Gangi and Abdulrazek 2012, and Sabir, Samina, Anum, and Kamran 2019). Also, this result is in line with the findings derived by Asiedu (2006), Mishra and Daly (2007), and Karau and Mburu (2016) who posited that better institutional functions will attract FDI.

Empirical studies have confirmed that market size is one of the main elements of foreign direct investment inflows. In general, a larger market of the host country attracts more quantum of FDI. This study supports that market size in the selected West African host countries have significant influence on FDI flow from China. This result is in line with the discussed literature (Globerman and Shapiro, 2002; Gani, 2007; Luiz, 2009; and Gangi and Abdulrazek 2012), and suggests that, large market presents huge opportunities for products and services produced by Chinese FDI in local markets of the selected West African countries. Also, this result is consistent with those of Asiedu (2006), Ali, Faki and Suleiman (2018), and Vagadia and Solanki (2014), all of which found a positive relationship between FDI and GDP. This study also shows that, international investors are attracted to the size of the West African market. This result is also in line with the literature reviewed and previous findings done by Buckley. Jeremy, Adam, Xin, Hinrich, and Ping, (2007), and Asiedu (2002) who tested the determinants of Chinese OFDI based on the continent.

This study supports the evidence that, trade openness in selected West African host countries have no significant influence on FDI flow from China. Trade openness affects the Chinese FDI flow negatively as opposite to economic theories, which suggests that the higher the level of openness, the

less likely it is that Chinese FDI will be attracted in the long run. This result is consistent with those of Adow and Tahmad (2018), Cantah, Gabriel, Emmanuel, and Abass (2018), and Khan and Hye (2014). Furthermore, this study supports the evidence that, creditworthiness of selected West African host countries have significant effect on FDI flow from China. This study outcome is in line with theoretical expectation, as the expected relationship between Chinese FDI inflows and Debt to GDP ratio used to proxy creditworthiness is negative. This is because increasing foreign debt will destroy foreign investors' vision and create negative expectations of the future economy (Ostadi and Ashja, 2014).

The study result revealed that inflation variable has a negative impact on Chinese FDI inflows in the short-run and cannot significantly explain the variation in Chinese FDI inflows throughout the years. In light of this finding, the study supports a more stable macroeconomic environment would encourage inward FDI; as steady and predictable rate of inflation will enable long-term planning in relation to consumer purchasing power and firm level profit expectations. Exchange rate has a positive and not statistically significant effect on Chinese FDI inflows. It indicated that, real depreciation of domestic currency increases the wealth of foreign investors relative to that of domestic investors and thereby increases Chinese FDI inflows. The study supports that exchange rate in the selected West African countries have effect on Chinese FDI inflows.

5. Conclusion

The study aimed at investigating the impact of the institutional quality on Chinese FDI flow to selected West African countries of Nigeria, Ghana, Cote d'Ivoire, Guinea, and Senegal between 2002 and 2020. The results revealed the following findings: geographical distance between the sampled West African countries and China does not encourage the inflows of FDI from China and market size and political stability and absence of violence variables are the only statistically significant independent variables. The following variables: CC, GE, RQ, RL, VA, TOP, DEBT, INF and EXR are statistically not significant, implying that these variables do not affect the dependent variable, Chinese FDI inflows in the long-run in the selected West African countries. Market size and political stability and absence of violence have a positive and statistically significant relationship with Chinese FDI inflows throughout the period. This indicates that the domestic market size of the selected West African countries, couple with a very strong, stable and violent free political environment is efficient in attracting Chinese FDI inflows. Furthermore, the study suggests boosting innovation and keeping political and economic stability, in order to improve Chinese foreign direct investment inflows. However, there is a positive effect of the control of corruption, regulatory quality, rule of law, voice and accountability, and exchange rate variables on Chinese FDI inflow. This indicated that, selected West African countries with poor institutional quality indicators mentioned above and those where real depreciation of domestic currency decreases the wealth of foreign investors relative to that of domestic investors, will ordinarily attract less Chinese FDI inflows. Furthermore, the study results revealed government effectiveness, trade openness, debt to GDP ratio and inflation variables have negative impacts on Chinese FDI inflows. The coefficients of inflation rate and DEBT are in line with

economic theories. However, inflation rate and DEBT variables cannot significantly explain the variation in Chinese FDI inflow to the selected West African countries. In light of the findings, higher levels of trade openness and better governance structures are less likely to attract Chinese FDI in the long run. Though, promoting good governance is better to support strong open trade policies which improve investment climate and level of market size. In addition, this study has only included six independent variables of institutional quality and five control variables. In order to have a more conclusive answer, future research should include more control variables, such as wage rate, infrastructure, corporate tax and other human development indicators (education, etc.).

This study contributes a number of contributions to knowledge in relation to what drives Chinese FDI into the selected West African host countries. Trade openness which affords greater degree of freedom in moving resources across national boundaries appears not to have been a major factor driving Chinese FDI inflows. This observation is not in tandem with provisions relating to the metamorphosis of the General Agreement for Trade and Tariffs (GATT) into the World Trade Organisations (WTO). Also, geographical distance does not play a key role in determining Chinese FDI inflows. Specific question was raised as to whether, the institutional environment in the selected West African countries matters in driving inflows of Chinese FDI especially given that, the highest recipient of Chinese FDI (Nigeria) had the second worst average overall institutional quality index. Having carried out this study on the impact of the institutional quality indicators on Chinese FDI flow to selected West African countries, it becomes imperative to suggest that further studies should be carried out on the following research topics to cover the gap this study could not cover. Further research works should:

i. impacts of the business environment and institutional quality on Chinese FDI flow to selected African countries;

ii. Examine the impacts of business environment and institutional quality on Greenfield FDI in sub-Sahara Africa; and

iii. The relationship between institutional quality and FDI through other entry strategies like merger and acquisitions (M&As) and joint ventures (JVs.).

The results in this study can also be complemented by an analysis of the impacts of Chinese FDI on institutional quality and the business environment by disaggregating Chinese FDI into various sectors like manufacturing, extractive and services; to examine whether Chinese FDI has a homogenous effect on host country institutional quality across all sectors.

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