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Determinant of Sino-African Foreign Direct Investment (FDI) Flows

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Abstract
There has been a significant increase in the flow of FDIs from China to Africa. Available evidence shows that the inflow increased from US$ 75 million in 2003 to US$ 4.2 billion in 2020. Yet, despite this giant leap, an understanding of the major drivers has not been adequately researched. Therefore, this paper conducts an empirical investigation of the determinants of Sino-African foreign direct investment (FDI) flows within the context of the Eclectic paradigm of Dunning's eclectic paradigm (OLI framework). The study utilized the dynamic system generalized method of moments on a panel of 52 African countries over the period 2004-2017. The empirical exercise showed that GDP, natural resources endowments, infrastructure, favourable macroeconomic environment as well as political risk factors significantly influence the flow of Chinese FDI flows to Africa. The result showed that Chinese investors seem to be skewed towards relatively politically unstable countries thus, refuting the notion that multinational enterprises are generally risk-averse. The findings were found to be robust after conducting sensitivity analysis by considering a sub-sample that excludes the five largest regional economies as well as the inclusion of other control variables such as inflation, corruption, governance and institutional quality. The paper concludes that market size, natural resources and economic stability drive Sino-African investment flows while political risk does not hinder Chinese FDI flows to Africa.

Keywords: FDI Flows, Africa, Panel Data, System and Difference GMM
JEL Classification: F21, O55, C33, C36

1. Introduction

Foreign Direct Investment (FDI) has emerged as one of the most important sources of globalization and an important catalyst for economic prosperity, transferring technology, and knowledge between participating countries. FDI also helps to fill the domestic revenue generation gap which has been a problem faced by developing regions like Africa, as government and domestic investors struggle to generate sufficient revenue to meet up

with their expenditure needs. Africa is to spend $6 trillion in 20 years to build, maintain and upgrade infrastructure to achieve its development goals (Global Infrastructure Hub [GIH], 2017). In 2017, investment inflows to Africa increased by about 10% to about $65 billion. However, over the last 40 years, Africa's share in global foreign direct investment (FDI) has on average declined from about 6% in 2017 to just over 3.4% in 2018 (World Bank, 2018). Compared to a nominal GDP of more than $2 trillion, the FDI inflow is far from sufficient to generate sustainable growth. This triggered Africa's quest for both regional and interregional cooperation aiming at sourcing for finance and foreign capital to cover this gap.

China is one of the big investors in Africa. Its investment relations with Africa dates back to the 1980s on a small scale, but since the establishment of the Forum on Africa-China Cooperation (FOCAC) in 2000 Chinese FDI in Africa increased significantly in recent years. Chinese FDI as can be seen in appendix 1 and 2 increased from $317 million in 2004 to $1.5 billion in 2007 and shortly to a whooping sum of $5.4 billion in 2008. However, this figure declined to $1.4 billion in 2009 attributable to the global financial crisis. Since then Chinese FDI kept fluctuating but maintained an upward trend. Chinese FDI stood a 4.1 billion USD in 2017 with an average growth of 44.9% with over 3000 firms investing across sectors of 52 African countries. Major recipient countries are South Africa, Sudan Nigeria, Zambia and Algeria.

Looking at Africa's recent advancement in both regional and interregional cooperation, the (International Trade Centre [ITC], 2018) released a report characterizing Africa as an attractive investment destination. In addition, limited available literature on Chinese investment globally as well as the determinants of FDI in Africa suggests market, resources, institutions and political environments (particularly, poor institutions and risky political environments) as the drivers of Chinese FDI firms (Asiedu, 2002, 2005 Anyanwu, 2011; Kariuki, 2015; Nguyen, 2016; Huseynov, 2016; Amighini & Franco, 2013). Given Africa's population of over 1.2 billion people, large natural resources reserve and its long history of poor institutions and risky political environment scored the continent high as the most attractive and perfect destination for Chinese FDI (Ross, 2015). However, Africa was able to attract only 3400 out of 39200 Chinese FDI firms globally. In percentages, only 4 % of total Chinese FDI flows accrue to Africa. This is worrisome given that Africa has the highest number of countries covered by Chinese firms, 52 of 189 with a regional coverage rate of 86%. Again, Chinese firms have successfully explored 80% of African countries but none of these countries made the top 20 destinations of Chinese

FDI (Ministry of Finance and Commerce of the People's Republic of China [MOFCOM], 2017).

Africa faces several developmental challenges and Chinese FDI could provide opportunities that may prove important in stimulating economic growth and development within Africa. However, the exact economic determinants of Chinese FDI in Africa have not received adequate empirical analysis despite the tremendous debate that has remained contentious thus, the motivation of this study. Specifically, this paper examined the determinants of Sino-African FDI flows and the role of governance and institution in attracting Chinese FDI to Africa. The rest of this paper is organized as follows: Section 2 contains a review of the literature, while Section 3 presents the model and method of estimation. The results of estimations are presented in Section 4 and robustness analyses are presented in section 5. The final section concludes.

2. Literature Review

When looking at the activities of multinational enterprises (MNEs) in Africa, the literature differs substantially from those on developing countries in terms of the methods applied, the sample of countries included, the period covered and variables used. Generally, data restrictions make the analysis of FDI in Africa problematic. Asiedu (2002), who argued that different factors influence different types of FDI in developing countries, confirms this. Therefore, the most appropriate approach will be to analyze the determinants of each type of FDI. However, this seemed to be impossible due to data issues. The available but fairly limited literature (Asiedu, 2002, 2005; Anyanwu, 2011; Kariuki, 2015) indicates economic growth, openness to trade, inflation, foreign reserves, quality institutions, good governance, literacy levels, levels of domestic investment and natural resource endowment as important determinants of FDI in Africa. This seems to appease the literature on the determinants of Chinese FDI (Nguyen & Doan, 2016; Huseynov, 2016; Amighini & Franco, 2013).

However, the literature on Chinese FDI in Africa shows inconsistent or conflicting results on the aforementioned variables. Ross (2015) claimed that theoretical incompatibilities, as well as data limitation, are responsible for the contradictory results. However, the objective of this study is not to resolve the conflicting results but to analyze the extent to which the variables included in previous studies explains Chinese FDI in Africa using a more recent dataset. In addition, the sample, period covered and methods used by researchers differ substantially, and these factors influence the outcomes. Thus, results and methods used by previous studies on Chinese FDI in Africa

between 2010 and 2017 are summarized. This period is chosen to present a summary of more recent findings on the subject.

In an attempt to examine, the nexus between Chinese FDI to Africa and foreign economic cooperation and the first effort made to analyze the determinants of Chinese FDI in Africa. Sanfilippo (2010) used a panel model and a system of equations on 41 African countries over the period 1998–2007. The results showed that Chinese FDI to Africa is pushed by the need to satisfy a growing internal demand for natural resources as well as the market potential to place its low-cost production in excess. The results also showed Chinese investors in Africa as ambiguous towards risk. However, the results from the system of equations show that the Chinese low-risk aversion attitude is reinforced by a more robust result when dealing with aid and this is evident given the link between Chinese FDI and aid to Africa. Thus, suggesting that, the 'Going Out' strategy initiated by the Chinese Government is motivated by domestic political and economic factors in conjunction with some host county characteristics such as natural resource endowments and market potential.

In the spirit of exploring the determinants and motives of Chinese FDI in Africa, Lemblé (2011), investigated the determinants as well as the implications of Chinese FDI in Africa using OLS on averaged annual data from 46 African countries. The results revealed that natural resources endowments and market size are significant motivations of Chinese investment in Africa, which portrayed Chinese firms in Africa as market and resource seekers. Chinese investment decisions were also found to be ambiguous towards political and economic risk.

However, using disaggregated data Claassen, Loots and Bezuidenhout (2012), found political stability to be a significant determinant of Chinese FDI in Africa. They investigated the determinants of Chinese FDI in Africa using four-panel models (the base model, food security, energy and market potential models) on country-specific disaggregated data of Chinese FDI inflows to Africa from 2003 to 2008. The results from their base model indicated domestic investment, infrastructure and political stability as significant determinants of Chinese FDI in Africa. In addition, they found out that, China did not consider institutions, macroeconomic stability or human capital when investing in Africa. Results from their food security model, energy security and market models revealed that food security, market size as well as the quest for energy to sustain domestic production constituted the motivations of Chinese investment in Africa. However, the energy model revealed that china has an indifferent attitude towards political and economic risks in oil-rich African countries. On causality, the authors found out that

poor infrastructure, as well as high corruption, attracts Chinese FDI flows to Africa.

Mourao (2017) examined the political and economic determinants of Chinese FDI in Africa using panel data from 48 countries from 2003-2010. The results revealed that market size and large forest area are the most preferred destinations for Chinese FDI flows. The author argued that the efficiency of FDI flows can be maximized by increased political stability and regulatory quality, with effective institutions being an additional factor. Lu, Huang and Muchiri (2017) used the panel data over 10 years period (2003-2012) to investigate the link between Chinese aid, Chinese FDI and political risk in Africa. They found that Chinese FDI flows to Africa is positively related to Chinese aid and therefore, suggests that Chinese aid and FDI flows to Africa may be bundled together. The results also reveal that the country-level political risk is positively related to Chinese FDI.

2.1 Literature Gap

There is still limited empirical literature on the activities of Chinese MNEs (Buckley & Ghauri (1999); Kolstad & Wiig, 2009). The empirical literature on Chinese FDI inflows to Africa are limited (Sanfilippo, 2010; Claassen, Loots & Bezuidenhout, 2012; Ross, 2015; Mouro, 2017). This may be traced to limited and incomplete data that are relevant for assessing Chinese FDI inflows to Africa. Although previous studies on Chinese outward FDI have used approved outward FDI from China (Buckley et al., 2007; Cheung & Qian, 2008) while sanfilippo (2010) used averaged annual data. However, these data underestimate actual FDI flows from China and are likely to generate biased estimates of host country determinants of Chinese FDI flows (Claassen et al, 2012). To overcome this limitation, Ross (2015) used the stock of Chinese FDI in Africa. However, FDI stocks usually take a long period to establish and unlike FDI flows, they are not easily affected by short-run market and environmental fluctuations. This study improves on these studies by using disaggregated data of Chinese FDI flows to Africa (2004 to 2017) obtained from the Ministry of Commerce of the People's Republic of China. This would help address the existing measurement challenges. In addition, the time frame to be covered is extended beyond the scope of previous studies.

3. Theoretical Framework and Methodology

This study will adopt the eclectic theory of Dunning on FDI flows. The mainstream perspective in international business based on the experience of MNEs from developed economies assumes that companies will internationalize based on a defined competitive advantage that allows them

to secure high returns that cover the additional costs and risks associated with operating abroad (Buckley & Ghauri, 1999). Dunning identified three interrelated factor-drive; the "why", "where" and "how" of FDI activities. These form the sources of advantages which are preconditions for firms to engage in FDI. These are; the ownership (firm-specific) advantage 'O', location advantage 'L' and the internalization advantage 'I'.

3.1 Model Specification

Therefore, to examine the determinants of Chinese DFI flows to Africa, a dynamic generalized method of the moment model is specified in the spirit of Ross (2015) but differs in that, gross domestic product (GDP) is used to proxy market size and not GDP per capita or GDP growth. In addition, transportation productivity and productivity of cross border trade from the productive capacity index are used as proxies for infrastructure and openness respectively. Voice and accountability index and regulatory quality index from the world governance indicators are used to proxy the effect of governance and institutional quality respectively.

The model is specified as follows;

$$CFDI = f(O, L, I) \quad \ldots(1)$$

$$CFDI_{it} = \beta_1 O_{it} + \beta_2 L_{it} + \beta_3 I_{it} + \varepsilon_{it} \quad \ldots(2)$$

Where CFDI Chinese foreign direct investment is a function of O ownership advantages, L location advantages, I internalization advantages. CFDI, the Chinese outward foreign direct investment is measured by annual flows of Chinese FDI flows to Africa. The Ministry of Commerce of the People's Republic of China (MOFCOM) has provided a comprehensive database of Chinese foreign direct investment in its annual statistical bulletin of China's outward foreign direct investment and such data is used in this study. Thus, the results will provide better explanations of the determinants of Sino-African investment flows. In addition to the use of disaggregated data, the analysis covers the periods 2004-2017, which extends beyond the sample of 2003-2012 used by Ross (2015).

The study makes use of pooled data from 52 African countries over the period 2004-2017. Thus, the model could suffer from a lack of the degree of freedom as the number of cross-sections (N) exceeds that of time (T) therefore, pooled OLS would not be efficient. In addition, models such as fixed effects and random effects models could correct problems of omitted variables as well as account for unobservable individuals or country-specific effects. However, given the nature of the model and the variables included, there is a possibility of reverse causation between the Chinese FDI and the explanatory variable and such endogeneity problem is not be captured within the fixe effect framework. Thus, the study relies on the Dynamic System

Generalized Method of Moments (DSGMM) estimator rooted in the works of Holtz-Eakin, Newey and Rosen (1988), Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). This estimator is suited for regressions featuring independent variables that are not strictly exogenous, fixed effects, heteroscedasticity, and serial correlation within but not across individuals (Roodman, 2009).

The explanatory variable "O" is firm-specific and can be measured in numerous ways. Three measures exchange rate EXRATE, labour quality LABQ and infrastructure INFR are used measurements for Chinese firm-specific advantages in Africa. The use of the exchange rate is motivated by the fact that it provides a clear estimate of a foreign firm's capital base and strength over local firms through their respective currency's purchasing power. China has been characterized as a source of cheap labour thus; Chinese investors are not motivated by labour costs. However, their attraction to quality labour has not received adequate attention in the literature despite its role in increasing efficiency and productivity. In addition, the nature of CFDI relations with the infrastructure in host countries is not quite understood as there are mixed conclusions regarding the relationship. EXRATE is measured as local currency rate to the United States (US) Dollar obtained for the World Bank database of World Development Indicators. LABQ and INFR is human capital productivity and transportation productivity respectively both obtained from the United Nations Conference for Trade and Development (UNCTAD) database of the Productive Capacity Index (PCI).

The "L" variable is country-specific and is measured by two variables market size and natural resources. This is because location advantages come in form of market and environmental factors and Chinese firms are said to be motivated by the market as well as resources, particularly energy resources. The market size variable is measured by the host country's annual GDP while natural resources are proxied by trade percentage of GDP both obtained from the world development indicators. The "I" variable is measured by the regulatory quality and level of trade openness obtained from the world band database of world governance indicators (WGI) and PCI. The fixed effects are encompassed in (ε_{it}), the error term, which is assumed white noise and consists of the unobserved country-specific effects (V_{it}) and the observation specific error (μ_{it})

Based on the above definition of variables and accounting for the role of governance and institutions, Equation (2) becomes Equation (3) below.

$$CFDI_{it} = \beta_1 GDP_{it} + \beta_2 RESRCS_{it} + \beta_3 EXRATE_{it} + \beta_4 LABQ_{it} + \beta_5 INFR_{it} + \beta_6 INST_{it} + \beta_7 OPEN_{it} + \beta_8 INFL_{it} + \beta_9 CRPTN_{it} + \beta_{10} POLST_{it} + \beta_{11} GOV_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

3.2 Methodology

Specifying Equation (3) as a dynamic process thus,

$$CFDI_{it} = \beta_1 CFDI_{it-1} + \beta_2 GDP_{it} + \beta_3 RESRCS_{it} + \beta_4 EXRATE_{it} + \beta_5 LABQ_{it} + \beta_6 INFR_{it} + \beta_7 INST_{it} + \beta_8 OPEN_{it} + \beta_9 INFL_{it} + \beta_{10} CRPTN_{it} + \beta_{11} POLST_{it} + \beta_{12} GOV_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Where the lagged dependent ($CFDI_{it-1}$) variables form the dynamic component.

There are two estimators used to correct endogeneity in GMM; Difference and System GMM. The difference GMM as proposed by Arellano and Bond (1991) corrects endogeneity and removes individual fixed effects by transforming all the regressors through differencing. Taking the first difference of Equation (4) thus,

$$\Delta CFDI_{it} = \beta_1 \Delta CFDI_{it-1} + \beta_2 \Delta GDP_{it} + \beta_3 \Delta RESRCS_{it} + \beta_4 \Delta EXRATE_{it} + \beta_5 \Delta LABQ_{it} + \beta_6 \Delta INFR_{it} + \beta_7 \Delta INST_{it} + \beta_8 \Delta OPEN_{it} + \beta_9 \Delta INFL_{it} + \beta_{10} \Delta CRPTN_{it} + \beta_{11} \Delta POLST_{it} + \beta_{12} \Delta GOV_{it} + \Delta\varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

From Equation (5), the individual fixed effect is removed by transforming the regressors through first differencing. However, the problem of endogeneity still exists between y_{it-1} and ε_{it}. Another weakness of the difference GMM is that it is not suitable for an unbalanced panel. This is because it subtracts previous observations from subsequent ones and this helps widen the gaps in an unbalanced panel. The system GMM on the other hand, as proposed by Arrelano and Bover (1995) and subsequently modified by Blundell and Bond (1998) corrects for endogeneity as well as increases efficiency of estimates by introducing more instruments and transforming them to make them uncorrelated to the fixed effect. The system GMM builds a system of two equations (original and transformed) and unlike indifference GMM where previous observations are subtracted from future ones, the system GMM uses orthogonal deviations. It subtracts the average of all available future observations of a variable. This helps minimize data loss as the gap can be covered for each unit except the last. Thus, this study relies on the system GMM to examine the determinants of Sino-African FDI flows to Africa.

The dynamic panel data model is estimated using the xtabond2 command in STATA. To avoid possible correlation between the GMM instruments and the error term (the endogeneity problem); different

specifications are tested to select the robust and most efficient one. The GMM-style instruments (FDI and GDP) are lagged 2–4 years while 1–5 year lags were used as iv-style instruments due to endogeneity arising from reverse causation between FDI and GDP. Although the use of lagged regressors as instruments helps to address the endogeneity problem, it does not deal with the problem of omitted variable bias. This is because the model is likely to suffer from this problem, as some variables (such as insurgency) could not be captured due to data unavailability. Hansen's J-statistic of over identifying restrictions confirmed that the instruments used in the models, as a group, are indeed exogenous. In addition, The appropriateness of the instruments, as well as the choice of lag lengths, is also evident given the insignificance of the AR(2) statistic.

4. Results and Discussion

Table 1 presents the result of the system GMM with four (4) scenarios. Scenarios 1 to 3 represents attractions of Chinese FDI (CFDI) flows to individual advantages of Ownership (O), Location (L) and Internalization (I) respectively, while scenario (4) augments the three advantages controlling for the effect of political and environmental risk, as well as the role of Governance. The result shows that the Sino-African investment relation is motivated by three factors (market, resources and efficiency) of the four motivations given by the Eclectic theory (OLI framework). It can be seen from scenario (1) which includes only the "O" advantages, infrastructure and labour quality are significant determinants of Chinese FDI flows to Africa. The negative relationship asserted by labour quality is because qualitative labour is expensive to acquire and maintain. Given china's position as a major source of cheap labour, it will be irrational for Chinese investors to acquire expensive labour abroad.

Table 1: System GMM Result

CFDI	Scenario 1 (O)	Scenario 2 (L)	Scenario 3 (I)	Scenario 4 (OLI)
L.CFDI	0.443***	0.277***	0.188***	0.243***
	(0.101)	(0.032)	(0.0046)	(0.057)
GDP		0.626***		0.382**
		(0.169)		(0.186)
Exchange Rate (EXRATE)	-0.049			-0.051
	(0.046)			(0.086)
Natural Resources (RESRCS)		0.001		0.020*
		(0.011)		(0.011)
Infrastructure (TRANS)	0.112**			0.096**
	(0.050)			(0.046)
Trade Openness (OPEN)			0.042***	-0.127
			(0.015)	(0.051)

Labour Quality (LABQ)	-0.129**			0.031
	(0.051)			(0.047)
Corruption (CRPTN)				0.638
				(1.016)
Institutions (REG)			0.169	0.501
			(0.265)	(0.719)
Political Stability (POLST)				-0.759**
				(0.283)
Inflation (INFL)				-0.008**
				(0.004)
Governance (VOICE)				0.305
				(0.399)
Diagnostics Tests				
Number of observations	239	311	233	234
[Lags]	[6]	[4]	[4]	[4]
Number of groups	41	46	42	40
[Instruments]	[24]	[32]	[18]	[38]
F-test	0.000	0.000	0.000	0.000
AR (2)	0.702	0.463	0.626	0.419
Hansen Statistic	0.175	0.250	0.270	0.353

Notes:***, **, * are statistical significance at the 1%, 5% and 10% levels respectively; Robust SE(in parentheses); p-values reported for AR(2) and Hansen Statistic.

Source: Author's Computation, Using STATA15 (2022)

However, when other factors are considered in scenario (4) only infrastructure remained significantly positive among the O advantages. It can be concluded that CFDI flows is efficiency-seeking. The negative effects of the control variable for economic conditions (inflation) further confirm this claim. scenario (2) shows that CFDI in Africa is market-oriented when considering investment destinations as the coefficient of the market size (GDP) is positive and statistically significant. This implies that Chinese investors are more likely to consider market potentials than resources endowments when choosing investment locations. The coefficient of market size is also significantly positive in scenario (4), thus showing that market size is a key attraction of Chinese FDI to Africa. These findings are in line with other studies (Sanfilippo, 2010; Classen et al, 2011; Cheung, de Haan, Qian and Yu 2012; Ross, 2015; Mouro, 2017) which showed that Chinese FDI in Africa is market seeking. This is also in line with the eclectic theory of FDI motivation.

In addition, initial investment proxied by the lagged value of Chinese FDI flows (L.CFDI) is positive and highly significant in all four (4) scenarios. This implies that Chinese investors are more likely to invest in regions or countries where they have prior investments. Thus, initial investments serve as save-heaven and confidence boosters for Chinese

investors. This confirmed previous findings (Sanfilippo 2010) who argued that Chinese investment and aid, as well as economic ties in Africa, are somewhat related as investors are attracted more to regions that are beneficiaries of Chinese aid. However, the coefficient of natural resources became significant in model 4. Thus, suggesting that when other factors are considered, resource acquisition is key for CFDI in Africa. This is also in line with the findings of previous studies such as Sanfilippo 2010; Lemblé 2011 who argued that CFDI in Africa is resource-driven to meet the increased domestic energy demand in China.

For the internalization determinants, scenarios (3) show that trade liberation increases the attraction of African countries for CFDI. This implies that countries with flexible cross-border trade policies attract CFDI flows. This, however, was not true when other factors are considered, as none of the internalization factors is significant in scenario (4). In addition, CFDI is seen to be negatively related to political stability. This implies that Chinese investors seem to prefer a politically unstable environment to a stable one. In addition, the coefficients of institution and governance are not significant. The result of the difference GMM in appendix 3 also supports these claims except for scenarios 1 and 4. However, the difference GMM estimator is less efficient compared to the system GMM especially in solving endogeneity problems. This is because of the highly inflated coefficients in the difference GMM results, especially in scenarios 1 to 3.

4.1 Robustness Checks

To test the robustness of the results, two alternative specifications were conducted. Firstly, a pooled ordinary least squares (OLS) estimation was conducted to examine the outcome in a homogenous setting. Secondly, A system GMM estimation was conducted on a sub-sample excluding the five (5) largest economies from each sub-region; West-Nigeria, South-Republic of South Africa, North-Egypt, East-Kenya and Central-Angola. Notably, the high SD of the primary regressor, as well as the slight variance between the difference and system GMM results, further justifies the pursuit of this robustness check. The results of the pooled OLS estimation suggests strong support to previous conclusions as they show that, CFDI in Africa is motivated by market size, natural resources and efficiency gains. Specifically, results from the sub-sample estimation depict a somewhat exact outcome with appendix 3. All the instruments relied upon are orthogonal to the error term as revealed by the Hansen statistic. In addition, reducing the number of countries does not seem to pose any challenge given a large number of instruments vis-a-vis the sample size as it does not weaken the Hansen test of over identifying restrictions.

5. Conclusion and Policy Implications

The paper identified market size, natural resources as well as economic stability (measured by inflation) as important determinants of Sino-African investment flows. In addition, political risk, which constitutes an important source of concern to many MNEs as it relates to investment risk, does not appear to impede Chinese investors in Africa. This suggests that Chinese MNEs are not risk-averse compared with other conventional multinational firms. This further confirms the assertion that Chinese FDI flows are often skewed towards developing countries, especially in Africa that are characterized by high political risks and economic instability compared with developed countries. The paper concludes that market size, natural resources and economic stability drive Sino-African investment flows while political risk does not hinder Chinese FDI flows to Africa.

This implies that Chinese investors in Africa are out to search for potential markets for their products and thus, operates a forward-vertical FDI. This result is not surprising given China's rapid surge in industrialization. Africa's rapid population growth serves as a destination for these products despite potential political and environmental risks. This is because the majority of Chinese firms investing in Africa are SOEs, protected by diplomatic arrangements between the two parties thus; the real risk is much lower than it appears. This explains why most populated countries top the list of Chinese investment destinations in Africa. Another reason is that, low-risk countries are saturated, as they are a potential destination of many investors making them tense and competitive. Securing a market share in such economies for a newcomer like China will be a herculean task if not impossible. This is because these countries have well designed political and economic structures characterized by high taxes and taste for high standard products.

Similarly, to maintain its rapid industrialization, China needs the energy to keep these industries running. Petroleum imports account for 34% of China's domestic consumption in 2001 increasing to about 60% in 2015. Therefore, energy security becomes a crucial target of Chinese outward FDI and in line with China's government policy to ensure energy security for domestic production, Chinese firms, particularly SOEs activities in Africa are primarily mining and geological explorations. To achieve this, Chinese firms provides funding and expertise for infrastructure development, particularly in resource-rich African countries. This helps improve political stability and living standards in such countries as well as facilitates exports of primary resources. Thus, little attention is given to governance and institutions or Assets related determinants. This is because Chinese firms hardly merge or

acquire African companies but set out marketing units as 90% of Chinese products are made in China.

Furthermore, the anticipation of higher returns in future as well as the drive to secure a strategic position in African markets before the influx of other investors. A typical example is Nigeria where over 80% of its consumer goods are produced by Chinese firms and in 2016, Huawei inaugurated its eight (8) innovation and experience centre in Lagos investing over USD 6 million. In the same way, Lifan motors started as a motorcycle repair shop in 1992 with only nine (9) staff. Soon after acquiring a license for automobile production in 2005, it opened an assembling unit in Ethiopia in 2007 and in 2014, it set up a facility with the capacity of producing five (5) different brands. Lifan motors now have two subsidiaries in Addis Ababa (Yangfan Motors) and another one in Dukem.

The study thus recommends that efforts should be made by policy makers in order to encourage and create more robust regional integrations for effective intra-market engagements. This will help to distribute income (GDP) evenly thereby increasing market markets potentials and attracting greater Chinese FDI flows. Africa's poor infrastructure and risky macroeconomic environment (inflation) constitutes unfavourable business environments. Countries under this category will have a hard time attracting one of Africa's largest investor and miss the so-called "Chinese Bonus" thus, losing the benefit accruing from FDI. In addition, given the fact that Chinese investment in Africa is also centered the acquisition of natural resources, resource rich African countries must ensure that they are not exploited to the detriment of the country in the long-term, when Chinese investment is no longer taking place especially given the fact that Chinese investment is encouraged by risky environments. This can be achieved by creating competition through strengthening improving regulatory environment, which increase the ease of doing business, and Africa's level of attraction. Thus Africa will become less risky and favourable investment destination attraction a wider range of MNEs.

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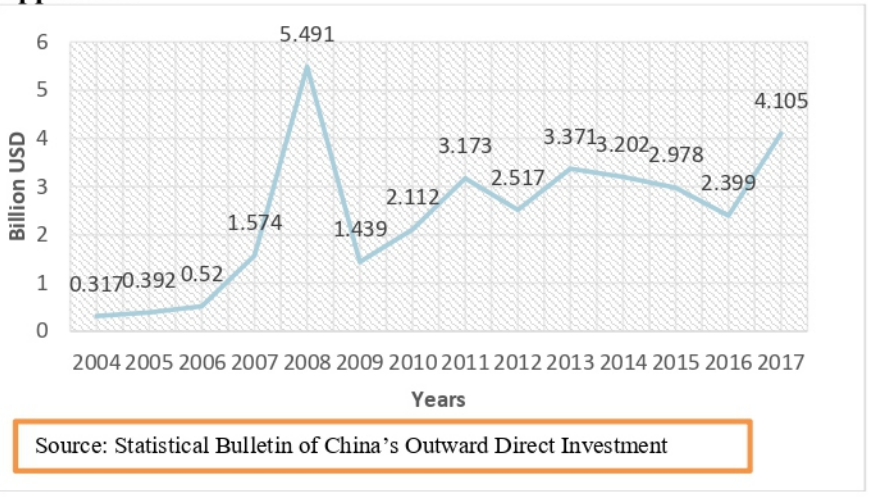
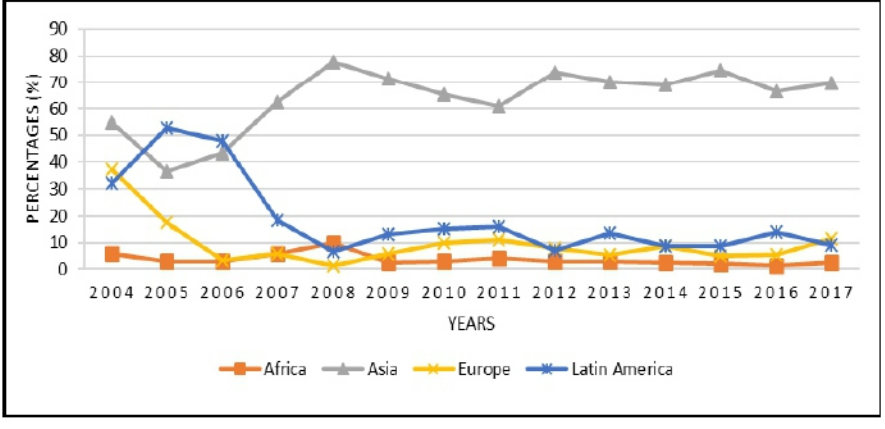
Appendices

Appendix 1



Source: Statistical Bulletin of China's Outward Direct Investment

Appendix 2



Source: Statistical Bulletin of China's Outward Direct Investment (2017)

Appendix 3

CFDI	Scenario 1 (O)	Scenario 2 (L)	Scenario 3 (I)	Scenario 4 (OLI)
L.CFDI	0.067	0.128	0.313**	0.099
	(0.076)	(0.101)	(0.139)	(0.063)
GDP		2.501**		0.084
		(0.868)		(1.247)
Exchange Rate (EXRATE)	-2.272**			-0.008
	(0.889)			(0.234)
Natural Resources		0.015		0.115*
(RESRCS)		(0.057)		(0.067)
Infrastructure (TRANS)	-0.379			-0.153*
	(0.389)			(0.076)
Trade Openness (OPEN)			1.108**	0.268***
			(0.542)	(0.077)
Labour Quality (LABQ)	0.634***			0.391**
	(0.166)			(0.147)
Corruption (CRPTN)				1.848
				(1.286)
Institutions (REG)			0.647	-0.556
			(3.985)	(1.259)
Political Stability (POLST)				0.137
				(0.584)
Inflation (INFL)				-0.018**
				(0.007)
Governance (VOICE)				-0.673
				(1.031)
Diagnostics Tests				
Number of observations	202	211	234	234
[Lags]	[4]	[5]	[4]	[4]
Number of groups	39	42	40	40
[Instruments]	[13]	[15]	[14]	[38]
F.Statistics	0.000	0.000	0.000	0.000
AR (2)	0.159	0.771	0.343	0.419
Hansen Statistic	0.269	0.284	0.573	0.353

Notes:***, **, * are statistical significance at the 1%, 5% and 10% levels respectively; Robust SE(in parentheses); p-values reported for AR(2) and Hansen Statistic.

Source: Author's Computation, Using STATA 15 (2021)