Volume: 5, Issue: 8
Page: 161-182
2021

International Journal of
Science and Business
Journal homepage: ijsab.com/ijsb

IJSAB International

The Effect of China's investment on the Business Environment and Economic Growth of Sub-Saharan Africa in perspective of Belt and Road Initiative

Weldegebriel Abrha Hagoss & Xia Youfu

Abstract:
This study was conducted to analyze the effect of China's investment on the business environment and Economic growth of Sub-Saharan Africa countries in the perspective of BRI. The study used a neoclassical growth of Solow-type growth model and panel data analysis from the period of 2003 to 2018 on 43 SSA countries for the investment. Two panel regressions were estimated using time and country fixed effects through the fixed effect study result showed that the Chinese investment in the perspective of BRI has positive and statically significant effect on the economic growth and business environment of Sub-Saharan African countries. Which the Chinese investment studied in SSA countries is not a threat and normalized the negative attitude of some western researchers about Sino-Africa. China should have to revise the policy of investment in all countries in the region. Before Chinese FDI flow to the region it should have to study the environment for investment, business, policy and need of the countries. Chinese FDI should have assurance new knowledge, capital and infrastructure in the SSA countries to develop their business policy towards BRI. Besides, there is luck of full data and information of the Chinese FDI to SSA which has a limits research and complete analysis to help policy making with difficult measuring because of all each country has different resources, political systems and histories which has a lack of a uniform and clear model does not all variables might exact influence to the economic growth. Finally, it has an advantage to SSA countries and it will help for the future base of Sino-Africa BRI research and emphasized both relationships.

Keywords: *China, SSA, FDI, Economic Growth, BRI.*

IJSB
Accepted 10 June 2021
Published 12 June 2021
DOI: 10.5281/zenodo.4934789

About Author (s)

Weldegebriel Abrha Hagoss (corresponding author), Business school, University of International Business and Economics, Chaoyang District, Beijing, P.R. China 100029. Email: weldegebrielabraha@gmail.com, DE201665026

Xia Youfu, International trade and industrial economics, University of International Business and Economics, Chaoyang District, Beijing, P.R. China 100029. Email: youfuxia@china.com.

Introduction

FDI can be defined as 'international investment that involves a long-term relationship reflecting a lasting interest of a resident entity in one economy (direct investor) in an entity resident in an economy other than that of the investor (the direct investment enterprise). During the last three decades, in developing countries the globalization foreign capital/the economy of the world predominantly FDI inflow has significantly increased, as (Adams, 2009), stated that, FDI is the most stable and predominant element of foreign capital inflows. The significance of FDI began from the responsibility of MNCs in creating jobs, transferring intangible assets such as new knowledge of technology, organizational and managerial skills transfer, and improving competitiveness(Kobrin,2005; Adams, 2009). Besides, Foreign direct investment have promotes employment creation, export expansion/access to goods and services, filling the development, foreign exchange, investment, filling the gap of saving, tax revenue gaps in developing countries and have utilized significant effects on its economic growth and structural changes in the economy of developing countries (Arango, n.d.2008; Smith.n.d,1776). Which is the importance of FDI for the developing countries is an indisputable healthy to helping directly increase productivity and ultimately economic growth. In terms of international trade also have a great impact on economic growth (Carbaugh, 2013). For the last few years the FDI flows have been increasing significantly in the continent of Africa. The external financial flows and tax revenues have important contribution for the African economic growth and development prospects.

The relationships of Sino-African countries have grown from the Bandung conference since 1955. In the recent decades the impact of Chinese growth and enterprise across African countries in both economic and political rising has attract the attention of the World(Karim & Islam, 2018). The relationship of Sino- Africa has dramatically growing and changed for Africa's development conditions. The politics and identity of Africa's, the new Sino-Africa partnership, which rhetorically stresses friendly, equal rights, respect, and characterizes an enormous increase in self-esteem. The china's FDI penetration in Africa cannot be mistrusted today. It is renewed the post Sino-Africa post 2000 by the rising the African countries bilateral agreements, statistics of trade exchange, increasing Chinese developmental aid and companies with Chinese experts operating and sharing experience in Africa. The Sino-Africa relations have a significant bound in the economic, political and social empires, where china has an access to gain mineral resources and political influence while Africa gets developmental thought and assistance and representation at international forums from China.

The influence of China's presence in Africa indicates that to secure the increased demands of China's local industry for its source of energy like oil, natural resources from Africa (United Nations Conference on Trade and Development, 2019). Due to this, the growing Sino-African relation had been the center of debating for scholars with the China's optimistic viewers and critics led by US argued that China playing a role of exploiting African resources and China itself also presented both relations as win-win partnership not exploiting (ZiroMwatela & Changfeng, 2016). China's risen in investment, trade, loan and aid to increase Africa's self-support and sustainable development in the 21st century as the second views of South-South development cooperation school of thought (Desta, 2009). This study focused to advance the understanding and justification of the various effects of Chinese investments like as FDI in economic growth of Sub-Saharan Africa in the perspective of BRI with the Sino-SSA economic co-operation investment and to know the SSA countries benefit through trade flows, foreign domestic flows, technology transfer, and integration in global value chains, in addition to aid flows from china. In the last 16 years the investment of China's in Africa has rapidly increased

and China has become Africa's largest trading partner. Similarly, China and SSA relations built economic and close diplomatic partnership since 1990, and particularly over the last two decades. SSA countries are a part of Africa then my study is taking in to 43 counties as a sample. SSA wants China for economic support, developmental thought and experience of the development process as an alternative source to the West, and as a role model of economic development for Africa to follow (Davies, 2015). Allowing to the latest Chinese official statistics, China's stock of FDI outward in SSA in 2017 amounted to $39.9 billion and in 2018 amounted to $46.1 billion, an increase from $11.7 billion from 2010 (China National Statistical Bureau, 2017).

In this this study it will analysis the critics from west like questioning the motivation of china's engagement in Africa argue that it is not a partnership it is a new neocolonial in nature. In order to improve the reality of the truth, create a confidence for both relations and to know the effects of china's FDI for the economic growth of the region and for further new cooperation in the concept of Belt and Road for long-term stable partnership with examining the problem in question with clear information and evidence for the Western researchers. FDI has a positive impact on economic growth as shown by past studies; the extent of such impact can vary across countries contingent on the level of domestic investment, human capital, infrastructure, trade policies, and macroeconomic stability (Makki & Somwaru, 2004). The literature continues to debate on the role of FDI in economic growth as well as the importance of economic and institutional developments in fostering FDI, especially in developing countries. This study aims to provide some answers on the nature and possible effect of Chinese FDI on Economic growth of Sub-Saharan Africa in the BRI perspective for new cooperation that identified the above motivations of the study.

Theoretical basis and Research Hypothesis

The main objective of this study is to determine dynamic interaction between Chinese foreign direct investment and economic growth in SSA for the period 2003–2018. This study will be on the existence of long run relationship between domestic investments, foreign direct investment and economic growth (Irfan Ullah, 2014).

Conceptual framework

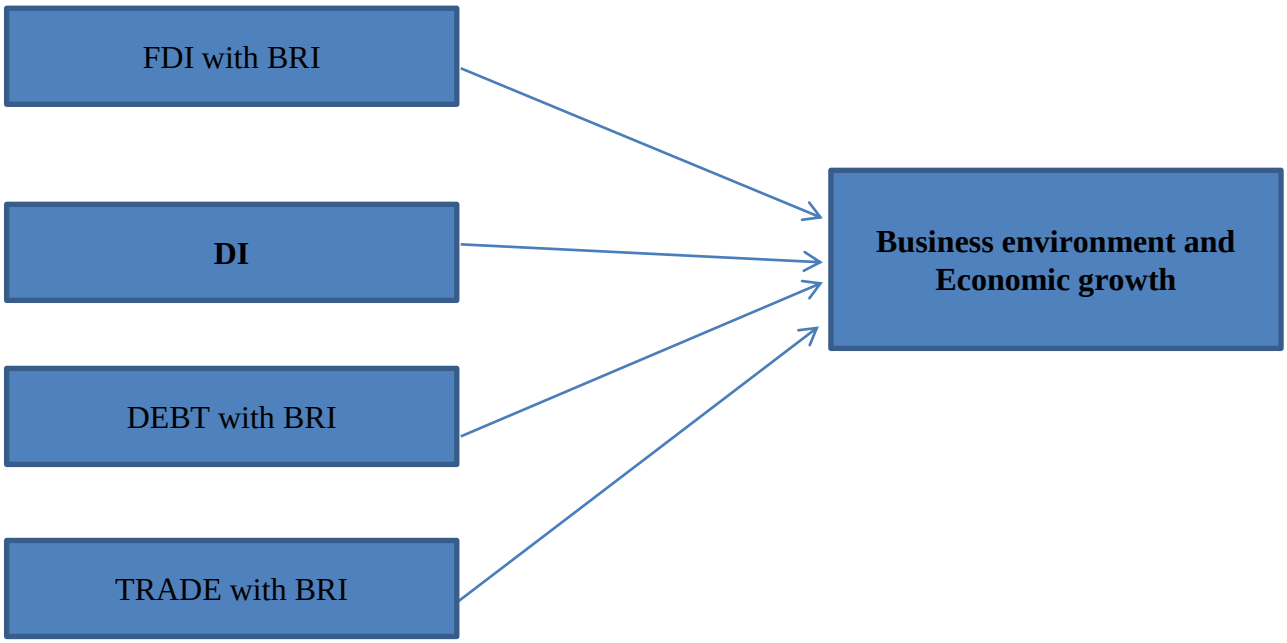

Figure 1 Conceptual framework

The Result of Research Hypothesis

Depends on this current study the following hypothesis were answered

Hypothesis

Ho = There is no significant impact of China's FDI on economic growth of Sub-Saharan Africa in perspective of Belt and Road

H1 = There is significant impact of China's FDI on economic growth of Sub-Saharan Africa in perspective of Belt and Road

The result supported H1 which China's FDI on economic growth of Sub-Saharan Africa in perspective of Belt and Road has a significant impact

LITERATURE REVIEW

Interests increasing in FDI many theories have been developed(König, 2003; Moosa, 2002). Still, on the initial study of FDI, there was a limited of theories and theoretical frameworks were independently developed centered on the perspective of trade theory (Faeth, 2009b). The initial explanation of FDI inflows was from perspective of neoclassical trade theory. The objective of these theories to describe why multinationals carry out FDI, the business activities from country to country and it's behind the specific mode of entry (Moosa, 2002). The primary description of FDI inflows from the perspective of neoclassical trade theory the Heckscher-Ohlin model supposed that as the commodities differ in comparative factor powers and countries differ in comparative factor wealth, capital will moving for this countries where the return to labour is lower and the return to capital is higher (Calvet, 1983; Faeth, 2009a; Hodd, 1967; Jones, 1956). Some from the nine theoretical models of foreign direct investment (FDI) are presented for further review of this paper. Discussed what are the early studies of factors of FDI (1) FDI factors based on the neoclassical trade theory (2), ownership advantages (3), aggregate variables (4), the location, ownership and internalization benefit framework (5), vertical and horizontal models of FDI (6), knowledge capital model (7), risk diversification models and diversified FDI (8) policy variables (9). From these nine theories, the important factors of FDI are derivative. Empirical studies indicate the importance of these determinants in the real world. Regarding this there is no one single theory of FDI, but a different of theoretical models efforts to clarify FDI and the location decision of global firms. Hence, any investigation of factors of FDI should not be grounded on a single theoretical model. In its place, FDI should be more broadly explained by a combination of aspects from different theoretical models such as agglomeration or economics ownership advantages, characteristics and market size, transport costs, cost factors, protection, policy variables and risk factors.

Sino –Africa Relations

The Sino- Africa Relationship was formally established in the 1950s and strongly linked after the Conference of Bandung in 1955 (Konings, 2007). The presence of China in Africa increased because of many interests. While some are thinking as a positive, others also concern to know the real interest of China's in what extent which the impact of China's economic engagement in Africa is hotly debated. Many have claimed that whether china is a new colonizer in nature or exploiter and a development partner or what is the evidence likes to repeat what western countries did and exploited resources of African countries (Ayodele & Sotola, 2014; Bräutigam & Xiaoyang, 2009) and also others added China is part of a new challenge of African ." from this point of view, China is perceived as a new "imperial supremacy" that inter to Africa with a new colonial mission that will continue Africa's underdevelopment through extraction and devastation of Africa's resources (Davies et al., 2008). But, the fact remains that China sees as a new investment frontier and political ally with African continent. China is strong on exploring the opportunities for the continent presents and prepared to continue giving development assistance to African countries. As

part of these assistances, the development of economic and trade cooperation zones in African countries supporting by China's Ministry of Commerce (MOFCOM) as stated. The Chinese investment it is very essential to know the Sino-Africa relation as a brief (Chun, 2013; Muekalia, 2004). While energy, oil, and other raw materials represent the most attractive business opportunities, manufacturing, infrastructure development, supplies and services are also very important. There are two separating outlooks to clarifying the effect of China's involvement in Africa. The first views of presence of China essentially taken as a good whereas the second observation taken its process that yields only negative consequences. "The former perception of scholars in China's engagements in Africa is kind and do not threaten Africa's development" (Hanauer & Morris, 2014; Raine, 2009). Besides to the above views, the Sino-African relations have three elements as a result; 1), Sino-optimism, 2), Sino-pragmatism and 3), Sino-pessimism(Adem, 2012). Sino-optimism indicates the entering of China to Africa targets as a good hopes and positive ambitions.

Theoretical Framework

FOREIGN DIRECT INVESTMENT INTO SUB-SAHARAN AFRICA

There are a number of contributed factors for the lowly registered of FDI inflows to SSA comparative to FDI flows in global. Primarily, until recently, the Sub-Saharan Countries related foreign capital with doubt, sometimes with good reason. The countries reservations were based mainly on the probability of a loss of political sovereignty, a contrary effect on domestic firms due to risen competition and if foreign entrants mostly emphasis on the sector of natural resource, fast economic degradation (Dupasquier & Osakwe, 2006). Hence, interventions introduced to discourage foreign capital. Due to this, Sub-Saharan Countries added a status as an unpleasant site for firms planning to finish in the market due to low quality of labour, the lack of infrastructure, political and economic risk, highly inefficient and costly financial systems and the distance from export markets (Ajayi, 2006; Ezeoha & Cattaneo, 2012; Pigato, 2000). From these factors that have been contributed to the level of FDI in Sub-Saharan African countries can influence the capacity of firms. Foreign Direct Investment have an important role in the capital endowment for investment, superiority skills of managerial and new technology transfer although employment creation, increased competition, and export growth. All of these improve prospects for economic growth and firm production, mainly in developing countries (Adams, 2009; Akenbor, 2014; Asiedu, 2002; Assunção et al., 2011). Additionally, FDI can influence the economic growth better than other factors.

Foreign direct investment has a vital role in the global economy with it's as a form of tangible and intangible assets (Ajayi, 2006). But, the Sub-Saharan Africa accounts only for 3% to 5% of the total global FDI. It is besides unfairly distributed and concentrated in few countries (Darley, 2012; Sathye, 2009). Among 1987-1990 increase by 33% and from 1995-1998 also increase on average 41% FDI inflows to the region departed to the following four countries which are oil producing Such as Angola, Nigeria, Equatorial Guinea and Congo Republic (Ajayi, 2006; Pigato, 2000). When we see in 2000, Nigeria accounted for 16%, Angola 25%, South Africa 14.4% and Nigeria 16%, whereas Sudan, Tanzania, Zambia, Uganda and Mauritius received a total FDI flow of 19% (Lartey, 2007). The reason in global FDI of small contribution affected by the following factors: in the past decades the Sub-Saharan countries watched foreign capital with doubt based on the prospects of a loss of political sovereignty, due to increased competition which has a negative impact on domestic firms, if more accesses of natural resources it would be an economic dreadful conditions (Dupasquier & Osakwe, 2006). Therefore, many policies implemented to discourage foreign capital in the region.

The contribution of FDI to the economic growth of China also had a positive significant effect. That is a Chinese FDI flow to Sub-Saharan Africa is since 2003 with China from zero in 2002 started in 2003 to SSA had inflows US$0.745 billion with an increment of 476.8 US$ billion FDI flow in 2017 which is growing 0.07014 billion in 2003 to 4.97236 billion which is equivalent to70 folds growth in FDI flow. Its growth over the last decade has been remarkable since 2004. As shown in the figure 1, Average Chinese FDI flows to Sub-Saharan Africa in 2003-2018 accounted for only 7 percent of total FDI inflows to Sub-Saharan Africa. According to the World Investment Report 2013 (UNCTD, 2013) and World Investment Report 2019 (UNCTD, 2019) China is the biggest developing country investor in Africa. Chinese FDI flows to Africa increased from just $0.075 billion in 2003 to $5.4 billion in 2018. Chinese FDI as % of GDP in 2003 a percent of 0.013, 0.45 percent in 2008 and 0.3 percent in 2018. A Chinese investment is a principally important source of capital for certain Sub-Saharan African countries. When we see at the average share of Chinese FDI in total FDI flows to SSA in 2003-2018, Chinese FDI accounted for 62 percent of FDI inflows in Zimbabwe, 31 percent in Mauritius, 23.3 percent in Kenya, 23 percent in Zambia, 14 percent in DRC, 11 percent in South Africa and 14 percent in Ethiopia as shown in the below figure 1.

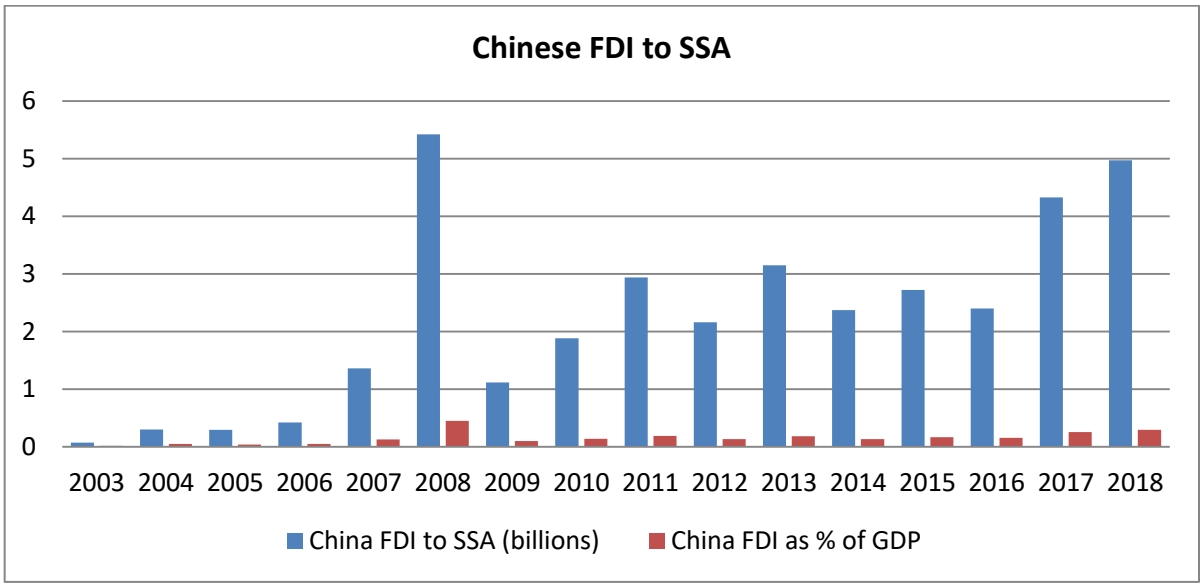

Figure 1 Chinese FDI flow to SSA

The main Sab-Sahara African host countries from 2003 -2018 in terms of total Chinese FDI stock are South Africa, Sudan, Nigeria, Zambia, Zimbabwe, Nigeria, Ethiopia, DRC and Angola. With the exception of South Africa FDI flow to Africa depends on to the resource endowments, potential markets and good institutions in host countries (Asiedu, 2006). The investment of China focused on heavily investments in African countries with weak institutions. For instance, the major resource investments of Chinese national oil companies have in Sudan, Angola, Equatorial Guinea, Nigeria, and Kenya (Kolstad & Wiig, 2011). Besides, China's state-owned Nonferrous Metal Mining has a significant investment of a copper industry in Zambia and has established a special economic zone which is called Zambia-China Economic and Trade Cooperation Zone. Most of the Chinese firms investing in Africa are state-owned investments also the private Chinese enterprises of FDI have increased particularly in recent years (Gu, 2009). In addition, Chinese FDI are encouraged by strategic national policy objectives, such as the Forum on China Africa Cooperation and Going Global Policy which is the resulting in huge and long-term related investments, complicating when it is comparison among Chinese FDI with FDI from other countries to Africa.

Prominent contribution is made by (Asiedu, 2002) which FDI inflows in the context of SSA by examining why SSA countries have received relatively less FDI compared to other non-SSA developing countries. As she investigates FDI in SSA is believed to be resource seeking and increased effects of trade openness. In the Another paper by Asiedu (2006) investigates and comes to the her conclusion that host country levels of natural endowments, market size, inflation, infrastructure, legal systems, and investment frameworks can positively affect FDI inflows in to SSA (Asiedu, 2006). Another study about the general FDI flows to SSA due to the effects on economic growth in his conclusion FDI have a positive impact on growth but it is a negative effect on domestic investments(Adams ,2009). Chinese outward FDI flows to both developed and developing countries by both resource-seeking and market-seeking motives was found insignificant with variable for quality of institutions as studied (Cheung & Qian, 2009). The impact of Chinese FDI on African growth by employing Solow growth accounting methods as studied by (Whalley & Weisbrod, 2012) has results of a significant for African Economic growth and can be attributed to Chinese FDI inflows including before and after the financial crisis. The motives of foreign direct investments in Sub-Saharan Africa might be 1) raising efficiency, 2); securing new markets 3) obtaining cheap labor, 4), securing raw materials and 5) securing protective or offensive strategic benefits, the Chinese investments in Africa looked completely focused on securing raw materials and developing the markets for Chinese goods and services (Desta, 2009). FDI in sub-Saharan Africa is based to resource extraction and domestic markets, FDI inflows depend on growth prospects, resource endowment, and investment climate of each country.

ECONOMIC GROWTH AND FDI THEORIES

The scholars of all the Classical economists like Adam Smith (Smith, 1776), Malthus (Malthus, 1798) and Ricardo ((David, 1817)) contributed concrete pillars for the modern economic growth theories. But, the classic article of Ramsey (Ramsey, 1928) argued that started point modern growth theory. In studies the change and investigation have been as an effect of selected economies achieving the level of income and higher growth rates than extra economies (Andersen & Babula, 2009; Liu & Premus, 2000; Zarra-Nezhad & Hosainpour, 2011). With the help of neoclassical production function due to more contribution for the modern growth theory Solow (1956) and Swan (1956) was studied the actual breakdown from the theory to model economic growth.

ENDOGENOUS GROWTH THEORY

The progress of the endogenous growth theories exploded the significance of economic growth within the economic occupation. Romer 1986 and Lucas 1988 (Lucas, 1988; Romer, 1986) are the main contributors to the endogenous growth theories (Lavezzi, 2003; Petrakos et al, 2007). In developing countries the models for the growth accelerated by making efficient and maximum available use resources, mainly human capital (Hamid & Pichler, 1850). The aims of this theory explained both growth rate differences across countries, observed higher proportion of the growth and advancement of technologies in the kind accumulation of capital. Assumed capital includes both the physical and human capital. Additionally, the size of GDP growth rate was not described and independently explained in the Solow model (Brzezinski & Dzielinski, 2009; Todaro & Smith, 2009). Endogenous growth theory attributes more importance on human and knowledge investment (Liu & Premus, 2000). Thus, the three emphasized important sources of growth like Innovation, New Knowledge and Community Infrastructure(Lucas, 1988; Romer, 1986). Additionally developed by Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992) and Barro (1990) argued that in the long run impact policies on growth in difference to the neoclassical opinions (Petrakos et al., 2007). The progression of knowledge accumulation is derived from the characteristics of model. The accumulation of knowledge like research and

development, skill experience used in firm level, management, new production techniques and organizational structures (Savvides and Stengos, 2008)

New Classical Theory

The mainstream economic theory rejected Keynesianism theory and back to Classical market roots which gives limited state roles with emphasis on freedom of markets in the During 1980s. This New-classical theory quickly began to adopt both the IMF and World Bank. Three different New-classical approaches appeared; 1)The free-market approach, where markets alone are expected to be enough to generate maximum welfare,2)The public-choice approach, which is an extreme New-classical model which focuses that all government is 'bad' and leads to corruption and the gradual confiscation of private property and 3)The market-friendly approach, which recommends that, while markets work, they sometimes fail to develop, and a government has an important role in compensating for missing markets, imperfect knowledge and externalities of three main market failures. In 1970s dominated New-classical theorists rejected the Keynesian view. In spite of differences of stress, they have been likely to agree that development is best left to markets. In specific, New-classical economists believed that, to develop, countries must liberate their markets, encourage entrepreneurship which is risk taking, reform labor markets and, privatize state owned industries, such like by reducing the powers of trade unions.

FOREIGN DIRECT INVESTMENT (FDI)

Foreign direct investment is seen as a facilitator for economic growth typically in developing, emerging and transition economies (Tong & Hu, 2003). The role MNEs played for the source of capital and technology (Lall & Narula, 2004). Hence, FDI is noticed as a primary source of technology, knowledge transfer and economic growth. FDI has a role of improving growth which maintained in numerous models of endogenous growth theory (Alfaro, 2003; Petrakos et al., 2007). It has a benefit from host governments to create favorable environments for investment by providing a decision of such liberalisation (OECD, 2002; Popescu, 2010). FDI helps to transfer technology by filling the gap of technology between industrializing and developed economies (Tong and Hu, 2003). Implementing the Solow-type neoclassical growth, FDI inspires the integration of new technologies in the host countries of production which valance the effects of Technology spillover and capital revenues to save the economic growth waiting for long way. In the angle of endogenous growth models, from the endogenous growth models viewpoint, FDI encourages long-run growth by expanding the current stock of knowledge in the host economy by manpower management practices, training, acquisition of skills and organizational arrangements (Kotrajaras, 2010). As researchers added that FDI has a contribution higher economic growth by generating productivity (technological) spillovers to formation of human capital, domestic firms, international trade integration, employment, enterprise development, capital inflow, income-growth and establishment of reasonable business environment (OECD, 2002, Popescu, 2010; Szent-Iványi and Vigvári, 2012). Also FDI increases production in the host country with better trainer of workers, leadership, and method of managements and arrangement of innovative technology (Falki, 2009). Multinationals are serves as reagents to allow local firms in host country in development. It can help economic structural shift to join with developed countries (Klein et al., 2001). Still, FDI has an a smaller effect on growth to the least developed economies which has a contribution a certain level of development in education, health, technology, infrastructure and financial markets from a foreign to internal markets (OECD, 2002).

Solow Growth Model

Solow growth model is a workforce of growth theory and helps as the base for other alternative growth models are evaluated. It is used for comparison causes of economic growth between countries (Dohtani, 2010; Helpman, 2009; Savvides & Stengos, 2008). The extension Harrod-Domar model and integrates capital, labour and technology to the equation of growth for development of long-run economic growth framework is the 1956 Solow growth model (Helpman, 2009; Reyes, 2011; Zarra-Nezhad & Hosainpour, 2011). This model which has the following expectations: 1) Cobb-Douglas (production function) that shows decreasing the inputs return factor like labour, capital and acknowledges persistent returns to any increment inputs will rise outputs in the same amount (Liu & Premus, 2000; Petrakos et al., 2007; Savvides & Stengos, 2008); 2) Household savings is a consistently constant in the income sharing. Similarly the model undertakes the returns decreasing, in the long-run reaching the economic growth is incredible and the economy will deteriorate at the equilibrium of zero growth which is an important model to know the stagnate or grow of economies in the long-run(Savvides and Stengos, 2008).

Economic Growth of Sub-Saharan Africa

Sub-Saharan Africa symbolizes that share of the south of the Sahara desert of the African continent. It contains 48 countries and one territory as stated by (Tyler & Gopal, 2010). The critical challenge of Sub-Saharan Africa countries is the issue of economic growth to reduce the poverty. It needs social programme and economic reform but still not effective (Ndambendia & Njoupouognigni, 2010). So, the economic trend of the region starting from 1960s had represented as a disaster and discouraged potentials with terrible consequences (Easterly and Levine, 1997). As repeatedly argued, for sustain growth of the region, it had not board on reforms. But, also it needs to improve the investment climate, develop infrastructure and keep property rights (Ndulu, 2006). Investment is an important element for the economic growth. Investment and saving rates lower in Sub-Saharan Africa when it compared with the other parts of the world, because of the development constraints. The pace of development can be slowed down, or even reversed, by various factors affecting the economy. The constraints on development include: 1) Inefficiencies within the micro-economy, 2) Imbalances in the structure of the economy,3,A rapidly growing or declining population, 4) Lack of financial capital, 5) Lack of human capital, 6)Poor governance and corruption,7) Missing markets,8)Over-exploitation of environmental capital and 9) Barriers to trade (WTO, 2019). Since Millennium most of the Sub-Saharan African (SSA) countries boom in their economic followed two decades of economic stagnation, in many of them characterized by military conflicts, mismanagement of economic and an unsustainable of external debt. An important feature of this boom is that is has largely been shared by all countries in Africa, with a few exceptions related to conflicts. The new growth has not gone unnoticed, inspiring much optimism among journalists, economists, business people and investors over the fate of a region which not so long ago seemed doomed to failure. The most recent developments however make it necessary to have a closer look at the nature of this economic growth.

In terms of GDP growth in Africa is projected to hold steady in 2019 at 2.8 per cent, from 2.6 and 2.8 per cent in 2017 and 2018 respectively (Trade development report, 2019). Based on the 2019 World Bank the sub-Saharan Africa gross domestic product (GDP) estimated the region in 2018 with GDP 1.71 Trillion USD, 1.543 Trillion in 2016 and 0.5 trillion in 2003. It is an increment of GDP in the region for the last two decades as shows below in the figure 2.

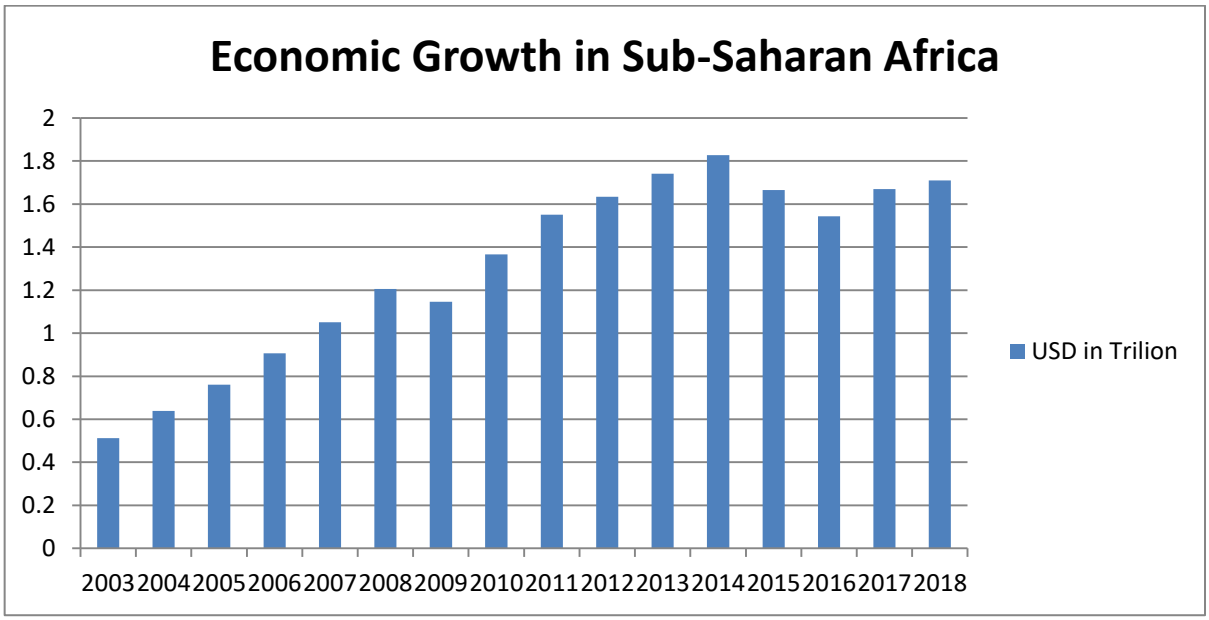

Figure 2 the levels of GDP for Sub-Saharan African Countries by USD
Source: World Bank, 2020

Research Methodology

Population of the study

This research taken as a population of study based on the 43 SSA countries considered over the period 2003 to 2018. Countries and selected years were chosen based on their availability of relevant data. List of the selected sample countries is mentioned in the table 1 below.

Table 1 List of Countries

Angola	Congo	Liberia	Sao Tome and Principe
Benin	DRC	Madagascar	Senegal
Botswana	Djibouti	Malawi	Seychelles
Burkina Faso	Equatorial Guinea	Mali	Sierra Leone
Burundi	Ethiopia	Mauritania	South Africa
Cameroon	Gabon	Mauritius	Sudan
Cape Verde	Gambia The	Mozambique	Tanzania
CAR	Ghana	Namibia	Togo
Chad	Guinea	Niger	Uganda
Cote d'Ivoire	Guinea-Bissau	Nigeria	Zambia
Comoros	Kenya	Rwanda	Zimbabwe

The Sources of Data

Secondary source of data type were used through 16 years Panel Data for the period of 2003-2018 for 43 Sab-Sahara African countries sourced and collected from United Nations Conference on Trade and Development (UNCTAD), Johns Hopkins China-Africa Research Initiative, National Bureau of Statistics of China, World Bank, World Economic Forum all through their official website to obtain latest and relevant data. In addition books, journals, policy documents were reviewed for this Study.

Theoretical Model

Solow's (1956, 1957) pioneering contribution to growth theory has generated a theoretical basis for growth accounting. In this neoclassical growth model view, it can decompose the contribution to output growth of the growth rates of inputs such as technology, capital, labor, inward FDI, or by incorporating vector of additional variables in the estimating equation such as imports, exports, institutional dummies. The neoclassical growth form of model that is

used to investigate the relationship of FDI and Economic growth will be based on the traditional neo-classical growth aggregate production function of the form is derived from the following equation;

$Y = AK^{\alpha} L^{1-\alpha}$ ..... (1)

Where, Y, K and L are real gross domestic product, capital stock and labor respectively. 'A' is a parameter that measures total factor productivity, and 1− α is the relative shares of capital and labor from the total production.

In order to investigate the importance of FDI for economic growth, a version of the familiar sources of this growth equation specified by including FDI in the log-linear model to facilitate the use of appropriate estimation method as:

$lnY = \alpha_0 + \alpha_1 lnK + \alpha_2 lnFDIC + \alpha_3 lnL + e$ ..... (2)

Where dependent variable lnY is the natural logarithm of real gross domestic product and the independent Variables is the natural log of China's foreign direct investment, the natural log of total labor force. The coefficients of $\alpha_0, \alpha_1, \alpha_3, \alpha_4$and, α_5 are the elasticity coefficients and e is the white noise error term.

In this study, particularly I am interested in the value and statistical significance of the α_2 , α_4 and α_5 Simultaneous Equation Model (SEM)

Empirical model

Model 1

To test the effect of Chinese FDI stock on economic growth, the following equation is specified.

$lnGDP_{it} = \alpha_{0_{it}} + \alpha_1 FDISC_{it} + \alpha_2 lnLF_{it} + \alpha_3 GFCF_{it} + \alpha_4 NRR_{it} + \alpha_5 AFF + \alpha_6 lnNODA_{it} + \alpha_6 GGFCE_{it} + \alpha_7 EGS_{it} + e$ ..... (3)

Where

GDP = GDP per capita by USD

FDISC = Foreign Direct Investment stock from China to SSA

LF= Labor Force, total

GFCF=Gross fixed capital formation (% of GDP)

NRR= Natural Resources Rent (% of GDP)

AFF= Agriculture, forestry, and fishing, value added (% of GDP)

NODA= Net ODA received per capita (current US$)

GGFCE= General government final consumption expenditure (% of GDP)

EGS=Exports of goods and services (% of GDP) without China

Description of Variables

For this study Economic growth was measured using GDP/per-capita by USD. This model consists of nine variables. The subscript 'it' represents respective variables at time t. amongst these variables, GDP is specified as the dependent variable and the remaining variables as the Independent variables. All the data used from secondary sources. Data sources and definitions are stated as follows in the table 2 below for all the above variables

Dependent Variable

This study used the economic growth as a dependent variable.

Economic Growth (Real GDP Per Capita at Purchasing Power Parities)

The dependent variable in this case is Economic Performance for which is used Real GDP per Capita at PPP. It has found in literature (King & Levine, 1993; Roubini & Sala-i-Martin, 1992) that GDP per Capita has been used as a proxy for economic growth. The additional cause for using GDP per capita is to integrate the population consequence.

Table 2 Definitions of Variable

Dependent Variable	proxy	Source
GDP/per-capita	U.S. dollars. GDP per capita is gross domestic product divided by midyear population, as a proxy of Economic Growth (Chuang, 2000; Pan & Nguyen, 2018)	WDI (2019)
Independent Variables		
FDISC	USD, Inflows of Foreign Direct Investment stock from China to SSA	Johns Hopkins University SAIS China-Africa Research Initiative(2019)
LF	Labor Force, total	WDI (2019)
GFC	Gross fixed capital formation % of GDP as a proxy of Capital Stock (Naik & Padhi, 2015; Rahman, Rana, & Barua, 2018)	WDI (2019)
NRR	Natural Resources Rent % of GDP	WDI (2019)
AFF	Agriculture, forestry, and fishing, value added % of GDP	WDI (2019)
NODA	Net ODA received per capita current US$	WDI (2019)
GGFCE	General government final consumption expenditure % of GDP	WDI (2019)
EGS	Exports of goods and services % of GDP	WDI (2019)
TOPP	Trade openness (The Total amount of Exports and Imports of Goods and Services measured as a Trade (% of GDP)	WDI (2019)

Independent Variable

Foreign Direct Investment is an essential and significant forecaster of the Economic Growth (Kowalski, 2000). FDI is a stimulator for economic growth in under-developed countries which provides external capital and advance technology to the economy which acts as an engine to the economic growth (Tsai, 1994). FDI has an impact on the economic growth by jobs creation, skill transfer, technology transfer and human capital (Roy & Van Den Berg, 2006) and these spillover effects equally on the host country economic environment (Kotrajaras, 2010). Also in long run FDI has negative relationship with Economic Growth (Kogid et al., 2010; Tsai, 1994). However I am trying to test if the dependency theory holds in case of SSA, as mix results have been documented in the literature. (Akram et al., 2011) has established negative association of FDI with GDP growth by taking panel data of SAARC countries. FDI used FDI per Capita in US$ as a proxy. Data for this variable is taken from the World Bank. The expected sign for foreign direct investment for the economic growth is positive.

Gross fixed capital formation

Gross fixed capital formation or investment consists of a summation of fixed assets of an economy with the net changes of inventories which the land improvements, machinery, equipment purchases and plant and; road constructions including private residential residences, industrial and commercial buildings included in fixed assets (OECD, 2018). Gross fixed capital formation used a percentage of GDP as a proxy with the expectation of positive sign. The data has been taken from World Bank.

Panel Data Analysis

In this study used Panel data regression from 2003 to 2018. It is used to study the relationship between the variables. In a quantitative studies Panel data is broadly used to estimate an econometric model which has a more advantages (Bond, 2002). Panel data

denotes to the combining of observations on a cross-sectional countries, firms and households over the various periods of time (Baltagi, 1995). Panel data allows to control for variables which cannot be measured or observe; or variables that change over time but not across objects and it includes variable at different level. Moreover, it is accurate to improve econometric estimates than cross-section or time series data (Hsiao, 2003). In fixed units which is made up of by continual observations. The cross-sectional dominant panel data which means the cross-sectional unit in the panel data is greater than the temporal unit (N>T). In the other side, temporal dominant panel data which means when the temporal units of panel is greater than the spatial units (N<T) (Podestà, 2002). Some from the advantages of panel data are; first, both the features of time series and cross-sectional panel data allow the data to contribute to the estimates of consideration. In micro level many variables can measured exactly and the biases result from over countries grouping will rejected. Second, the suggestion of Panel data varied in countries. In the heterogeneity track the risk of gaining biased results are not control by both Cross-section and Time series studies. Panel data can control time-invariant variables and for any country but it cannot control for a cross section analysis and a time-series study. Thirdly, to study the dynamics of adjustment may be essential to incorporate the dynamic effects through providing models. In this study Panel data regression analysis is employed to analyze the effect of Chinese Investment on the Business Environment and Economic growth of 43 Sub-Saharan African Countries. The estimation technique was fixed effect estimation method measured using the statistical package like STATA.

Estimation Method

This chapter examines the effect of China's Investment on the Business Environment and Economic growth in Sub-Saharan Africa (SSA) was carried out using panel data estimation techniques on a sample of SSA period for the period 2003-2018. The result of robustness was confirmed by different estimation methods. The estimation method of analysis used panel data techniques on a sample of 43 SSA countries for the period 2003-2018. Fixed effect and random effect estimations were used for the investigation. Due to using the result of Hausman test the appropriate estimation method was confirmed a fixed effect. The technique modeling used will have reduced biased estimates and which avoided severe miss-description since they permit for variation in features connecting to these countries both cross-sectional and over time. Besides, given huge difference between the variables and employing panel estimation methods will correct unobserved heterogeneity. Using fixed effect for each country, the effect of China's investment (FDI) was estimated to each country allowing by their specific influences. This indicates that, the effect of China's investment (FDI) do have a direct effect on the economic growth of the SSA countries. The time period was entirely due to availability of data and the sample size was due to period of time and some countries were outliers and were not included.

METHODOLOGY

The study has used the panel data method, through which i used the two models from the following three models: Pooled regression model (PRM), fixed effect model (FEM) and random effect model (REM). To know the best models to use in the analysis, two tests will be applied: the first test (LM test) Lagrange multiplier proposal from Preusch and Pagan in (1980). This test is used to choose between (PRM), (FEM) or (REM), the second test is Hausman test (1978), to choose between (FEM), (REM). Using a variety of studies applied to different models in the estimation of Chinese FDI on economic growth in SSA. In addition to the use of different methodologies, accordingly, the standard model in this study, the general equation is as follows:

The Hausman test

The Hausman test allows choosing between the fixed effect model and the random effect model. The null hypothesis is that the preferred model is the fixed effect model Vs the alternative which is the random effect model. It essentially tests whether the unique errors (Hausman, 1978) are correlated with the regressions; the null hypothesis is that they are not. Besides, in this panel data many diagnostic tests were applied whether the residuals are correlated across objects or not. From these robustness test was applied to check the Heterogeneity, Multicollinearity and Autocorrelation.

DISCUSSION

Descriptive Statistics

Table 3 presents the descriptive statistics for all variables in terms of the mean, median, minimum, maximum, and standard deviation. From the table 3 stated below, the mean of GDP (Economic Growth/per capital) by USD in millions was 2176.116 million USD while in 2008 in Equatorial Guinea about 22742.4 million USD with the maximum value across 43 countries in Sub-Saharan Africa. The average of China's FDI stock for Sub-Saharan African countries was projected 386.0249 million of USD with the maximum value 7472.77 million USD in South Africa in 2017. The average total Labor Force in Sub-Sahara African countries is about 7654950 with the maximum 59012447 in Nigeria in 2017. Which the Labor forces comprise people ages 15 and older who supply labor for the production of goods and services during a specified period. Gross fixed capital formations have a mean value of 22.4 percent with a minimum value of 2 percent of GDP in Zimbabwe in 2005. Natural Resources Rent averages 22.4 percent with a minimum value of 0.0011335 percent in Mauritius in 2015 and a maximum value of 59.62 percent in Republic of the Congo in 2006. Agriculture, forestry, and fishing, value added averages 22.53 within a minimum 0.893 percent over the period of 2008 in Equatorial Guinea with maximum value of 72.24 in Liberia in 2003. Net ODA received per capita has an average value of 70.5 million USD and with minimum ranges from -11.97 million USD in Mauritius in 2003 to 663.71 million USD in Cape Verde in 2010 while General government final consumption expenditure averages 14.34 percent of GDP with a minimum value of 0.952 percent of GDP in Nigeria in 2003 and a maximum value of 44.31 percent of GDP in Seychelles in 2003. Exports of goods and services minus China averages is 32.44 with a minimum value of 6.2 percent of GDP in Burundi in 2005 and a maximum value of 148.7768 percent of GDP in Djibouti in 2018. From the table 3, Except Net ODA received per capita the other variables showed a positive range which directs that the mean is normally distributed.

Empirical results:

The effect of Chinese FDI Stock on the economic growth of SSA

The purpose of this empirical investigation is to analyze the effects of Chinese FDI stock on economic growth of SSA and to examine how Chinese FDI stock interacts with total Labor, Gross fixed capital formation, Natural Resources Rent, Agriculture, forestry, and fishing, value added, Net ODA received per capita, General government final consumption expenditure, Exports of goods and services in advancing economic growth in Sub-Saharan countries. The result is in line with the previously established theory proposing that the Solow model well fits for the engaged SS African economies. I test the effects of Chinese FDI stock on economic growth in a basis of Sub-Saharan Countries equations utilizing data from 43 countries over the last 2003-2018 G.C 16 years giving a total number of 577 observations taken for the regression result. All the estimations were performed using Stata 13/ StataCorp, 2013).The system has one equation, where the dependent variable is the per-capita GDP growth by millions USD by using fixed effects regressions of panel data techniques. Regarding the within

R-squared (which is at 0.566), which is the regression's that explain a high percentage within a variation of country in GDP per capita growth that means the model relatively well fits.

Table 3 Descriptive Statistics for various indicators in Sub-Saharan Africa over the period of 2003-2017

Variable	Observation	Mean	Std.Dev	Min	Max
GDP (Economic Growth/Per capital) by USD in millions	704	2176.116	3378.917	112.8494	22742.38
FDI Stock from China to SSA by USD in millions	701	386.0249	836.6063	0	7472.77
Labor Force, total	688	7654950	1.03e+07	47959	6.07e+07
Gross fixed capital formation (% of GDP)	635	22.34452	8.859508	2.000441	60.01827
Natural Resources Rent (% of GDP)	658	13.49926	12.21684	0.0011335	59.61957
Agriculture, forestry, and fishing, value added (% of GDP)	682	22.53155	14.38218	0.8926961	72.24039
Net ODA received per capita (current US$)	702	70.50358	72.80644	-11.96667	663.7112
General government final consumption expenditure (% of GDP)	646	14.43391	5.871306	0.9517466	44.31281
Exports of goods and services (% of GDP) without China	664	32.44805	19.55913	6.2	148.7768
Trade openness (Chinese export to SSA +Chinese import from SSA (TOPCSSA) by USD	704	3581.778	21064.94	0	239844.3
Trade openness (The Total amount of Exports and Imports of Goods and Services measured as a Trade(TOPP) (% of GDP) by USD	704	7.90e+09	1.90+10	0	1.45e+11

The fixed effect regression result of the coefficients FDI stocks from China to Sub-Saharan Africa by including the variables of total Ln Labor force, Gross fixed capital formation, Natural Resources Rent, Agriculture, forestry, and fishing, value added, Ln Net ODA received per capita, General government final consumption expenditure, Exports of goods and services in advancing economic growth in Sub-Saharan countries. The result estimates for Chinese FDI stock, total Ln Labor, Gross fixed capital formation, Natural Resources Rent, Ln Net ODA received per capita, in SSA have a positive sign while Agriculture forestry and fishing value added, General government final consumption expenditure and Exports of goods and services in SSA have a negative sign. From this result five coefficients are positive and significant representing that these factors did play a great role in explaining the within variation of SS African countries economic growth while the other three coefficients in SSA have negative relationship with economic growth of SSA. The coefficient of Chinese FDI stock to SSA is positive relationship and has significant contribution for the SSA economic growth. Three from the control variables included in the model also have the negative signs but they are significant at less than 10 percent level.

In this paper I start from table 4 model specification 2 that presents of the growth equation obtained the effect of Chinese FDI stock to SSA economic growth in the table 4 presented the fixed effects and random effects estimates. As can be seen from column 2 of Table 4, Empirical results of the fixed effect model show that the effect of Chinese FDI stock variable on economic growth in SSA is positive and statistically significant effect at the one percent level for the economic growth of SSA. The result is accepted depends upon hypothesis one (H1)

and the result of this in line with the earlier established theory. For instance economic growth /DP per capita has positive and significant linked in attracting FDI. My estimation which is closed to other Solow growth regressions findings where African countries are clearly included as Hoeffler (2002) studied on 85 developing countries with including non-African countries.

Table 4 Regression Results of the effects of Chinese FDI stock on Economic Growth of SSA by using fixed and random effects estimator

Independent Variables	Regression Results based on Model 02			
	1	2	3	4
	RE	FE	RE	FE
	Ln GDP	Ln GDP	Ln GDP	Ln GDP
Foreign Direct Investment stock from China to SSA	0.000198*** (2.15e-05)	9.09e-05*** (1.76e-05)	0.000180*** (1.99e-05)	9.65e-05*** (1.74e-05)
Ln Labor Force, total	0.255*** (0.0601)	1.555*** (0.0857)	0.0721 (0.0602)	1.363*** (0.0977)
Gross fixed capital formation	0.00647*** (0.00210)	0.00332** (0.00165)	0.00661*** (0.00192)	0.00319** (0.00161)
Natural Resources Rent	0.00618*** (0.00240)	0.0123*** (0.00193)	0.00493*** (0.00191)	0.00904*** (0.00165)
Agriculture, forestry, and fishing, value added	-0.0215*** (0.00282)	-0.0102*** (0.00241)	-0.0192*** (0.00261)	-0.0114*** (0.00233)
Ln Net ODA received	0.0707*** (0.0251)	0.0602*** (0.0198)	0.117*** (0.0237)	0.0813*** (0.0202)
General government final consumption expenditure	-0.00517 (0.00457)	-0.0143*** (0.00364)	-0.0149*** (0.00434)	-0.0169*** (0.00367)
Exports of goods and services without China	0.000760 (0.00201)	-0.00353** (0.00163)		
Ln Trade openness			0.139*** (0.0147)	0.0552*** (0.0133)
Constant	3.028*** (0.928)	-16.58*** (1.294)	2.749*** (0.862)	-14.94*** (1.351)
Observations	577	577	577	577
R-squared		0.566		0.576
Hausman test Prob>chi2 = 0.0000				
Number of id	42	42	42	42

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
***significant at 1% level, ** - significant at 5% level, *significant at 10% level,

Some studies also reported related findings on the effect of the global FDI. In a comprehensive review of literature, In African countries the effect of FDI on economic growth was find to be insignificant (Adams, 2009). The effect of FDI stocks on economic growth in 33 SSA countries between 1996 and 2010 was insignificant in all of three estimation techniques (fixed effects, pooled OLS and dynamic panel model (GMM)) employed which is contrary of the general hypothesis that FDI will positively and significantly effect on growth. (Godwin Chika Okafor, 2014). In 16 Arab countries between 1970 and 2008 the effect of FDI inflows on

economic growth was very limited (El-Wassal, 2012). These unpredicted results are depending up on the evidence that the effect of FDI influenced on the local environments of host countries (Adams and Opoku, 2015). A country gains better benefits from FDI inflows in the existence of numerous situations such as a well-functioning local market (Adjasi et al., 2012; Morrissey, 2012, Drogendijk and Blomkvist, 2013, Ali, 2014 ;), skilled manpower (Morrissey, 2012, Ali, 2014), economic and political stability (Bartels et al., 2009), technological knowledge (Morrissey, 2012) and appropriate structures to support the growth. Though, few African countries have well effective plans to attract the opportunities formed by their cooperation with China (Shen, 2015). In nine West Africa countries between 1995 and 2015 the effect of FDI inflows on economic growth was statistically significant and has a positive effect on economic growth (Willy Tozoke Laou Man Cheong, Hou Junjun, 2018). The effect of Chinese FDI flows on economic growth in 37 SSA countries over the period of 2003 to 2011 has a positive effect in panel estimation with country and year fixed effects (Mamadou et al, 2018). Besides, from the given results on the table 4 based regression results on Model 02, the coefficients of all the important variables are significant. Therefore, the total labor force, gross fixed capital formation (% of GDP), natural resources rent (% of GDP), net ODA received per capita (current US$) have statistically significant effect at one percent, five percent, one percent and one percent respectively on the economic growth of SSA. The others variables such us agriculture, forestry, and fishing, value added (% of GDP), general government final consumption expenditure (% of GDP) and exports of goods and services (% of GDP) have negative relationship but statistically significant at one percent, one percent and five percent respectively on the economic growth of SSA. This implication is agreed the Chinese FDI affected through market seeking, resource seeking and efficiency seeking (Dunning, 1993). Because of Chinese FDI for SSA countries have expanded for better market access, competitive labor cost and skill availability and increasing production with access to get raw materials and acceptable risk with related environment policy for expanding necessary infrastructure like telecommunication, transport and utilities with knowledge transfer and technology transfer also one of the positive contribution of Chinese FDI to SSA countries emphasized to investment policy to attract Chinese firms throughout the African countries. In addition the Chinese FDI has a positive impact through human capital, creating jobs, management skills and market channels, technology transfer and skill transfer as Roy and Berg (2006) stated. The Chinese FDI which is a bridge to fill the gap of economic growth barriers of SSA. The FDI represents the origins of endogenous and neo-classical growth model for its important of economic growth. As (Donou-Adonsou, 2018), studied on the importance of Chinese Investment in Africa from 2003-2012 using the fixed-effects for 36 African countries concluded that Chinese FDI increases income in African countries and emphasized the relationship of Sino-Africa relation to be strong. Also the Chinese FDI impacted the standard of living with rising income per capita in African countries. FDI contributes for economic industrial transformation of a host country and its composition export commodity. The FDI encompasses the bordering productivity of the capital stock to promote the economic growth (Wang & Blomström, 1992b). Chinese FDI contributes for African Economic Growth through many channels like capital formation (capital stock includes new machinery equipment, improved technology and transportation and creation of factories (Fan & Dickie, 2000). An increasing in investment which is contributes to growth directly and indirectly and impacts macroeconomic variables, such like employment, export, consumption and saving. As (Balasubramanyam et al., 1996)states the effect of Chinese FDI on economic growth is depends on local economic conditions such like the level of government policies, , location , infrastructure and human capital. The flow of Chinese FDI to SSA have a significant effect on the Sub-Saharan African Countries of economic growth and it FDI acts as a driving force for the process of economic growth(Wang & Blomström, 1992a). Chinese FDI has an important

vehicle for economic development on African country's trade balance, transfer of technology and innovative ideas, increasing labor standards and skills, skills and the general business environment(Lenka & Sharma, 2014). Chinese foreign direct investment (FDI) recorded $74.8 million in 2003 to $5.49 billion in 2008 (MOFCOM, 2009) and in 2018 reached $5.39. In 2007, in Shanghai held for the first time annual meeting of the African Development Bank, the China's Export–Import Bank president announced the china's commitment plan at least $20 billion in export-related finance across Africa starting from the meeting time to the next three years (Ibid). The investment of China in Africa is not a problem to the continent and it has full advantageous from the investment. Because, the principle of Chinese government forces before signing contracts or other economic activities played without any political interruption for the governments of Africa. In addition Chinese companies are not willing to invest on overlap where Western companies willing to investment in any kind but western investors and aid organizations are unwilling to invest like in industry, physical infrastructure and agriculture (Thompson Ayodele & Olusegun Sotola, 2014).

Conclusion

The main objectives of this research study is to study the effect of Chinese investment on the business environment and Economic growth of Sub-Saharan Africa countries and to forward a recommendation for the prospects of new cooperation of Africa-China on Belt and Road Initiative to improving the regional business environment and economy. In this study investigates the effect of Chinese FDI in the Sub-Sahara African countries environmental business and economic growth. In this study a panel data regression model for the years of 2003 -2018 addressing 43 countries in SSA to examine the effect of Chinese FDI to these countries of SSA. The panel data regression model estimated with country and year fixed effects helps to a Chinese FDI showed that a positive effect on the economic growth of Sub-Saharan Africa countries. The countries of SSA countries have benefited from the Chinese FDI for their economic growth. The result from the regression of Chinese FDI out ward to SSA has a sufficient result in creating a good business environment and significant contribution for their economic growth. Though the separate effects of Chinese FDI have confirmed a significant contribution for the economic growth of SSA countries and it has also an effect taking experience of business environment from the Chinese firms including the Chinese BRI might have a contribution to the economic growth through FDI, trade and infrastructure. Specific to the fixed panel data model, results indicated that the effect of Chinese FDI stock variable on economic growth in SSA is positive and statistically significant effect at the one percent level for the economic growth of SSA. The result of this study on the effect of Chinese FDI stock variable on economic growth in SSA is positive and statistically significant effect at the one percent level for the economic growth of SSA.

POLICY RECOMMENDATIONS

The finding of this study reveals that the China's investment has an influence for the economic growth of SSA. The increment of Chinese investment in SSA may have a contribution to new job creation, transformational change in growth. Similarly, the Chinese investment with the effort of Chinese government grows in to inspire national companies to link with international markets. But, it has comes with significant challenges. In order to success new developments in the region and the local government have an opportunity to attract many investments and should take an experience to get more production, new employment, transfer of technology and skill transfer through learning. This study can contribute to the literature of international business and economic development which the empirical result demonstrate the Chinese FDI has positive on the economic growth of SSA countries but should have to consider for China getting cheap infrastructures and low level of human capital beyond the economic and financial profit and it should have to revise the

policy of investment in all countries in the region. So, before Chinese FDI flow to the region it should have to study the environment for investment and for business and the policy and need of the countries. Both Chinese and SSA governments should implement agreeable policies to give guarantee for new improvements in all infrastructures, education and new modern technology. If it will happen continuously changing in policy created and also the Chinese FDI should have guarantee for the new knowledge, infrastructure and capital in the SSA countries to advance their business policy in all angles. Internal strength and growth should have to attract additional new investment to bring a shift for new knowledge, and new infrastructure and new capital to the region and used for continuous development cycle of the region.

China is a model for actual development and appreciated trading partner for Africa and including all SSA countries and an alternative for financing resource and trade. SSA is not a source of commodities as a critical for local economies of China. But, Sub-Saharan African countries are an important destination for future investment of China's international firms and investors especially for the Chinese labor intensive manufacturing sector. So, in order to more give emphasis to for both Sino-SSA countries should do more and should revise their policy towards to the new project of Belt and Road Initiative. Finally, there is luck of full data and information of the Chinese FDI to SSA which has a limits research and complete analysis to help policy making. To measuring the effect of Chinese FDI on SSA countries economic growth is difficult because of all each country has different resources, political systems and histories which has a lack of a uniform and clear model does not all variables might exact influence to the economic growth.

Future Research

Due to the limitations of this study, the following potential paths have identified for future research study. First, the effect of Chinese FDI on the economic growth of SSA will help to study including other variables with the influence of BRI. Second, this study will help for future research depends on the Chinese Belt and Road Initiative with the importance of all African countries. Third, this highlight of study of findings will important for future study of the relation Sino-African Countries in detail.

References

Adams, S. (2009). Foreign Direct investment, domestic investment, and economic growth in Sub-Saharan Africa. *Journal of Policy Modeling*, *31*(6), 939–949.

Adem, S. (2012). China in Ethiopia: Diplomacy and economics of Sino-optimism. *African Studies Review*, *55*(1), 143–160.

Ajayi, S. I. (2006). FDI and economic development in Africa. *ADB/AERC International Conference on Accelerating Africa's Development Five Years into the 21st Century, Tunis, November*, 22–24.

Akenbor, C. O. (2014). Determinants of foreign direct investment in a democratic society: The Nigeria experience. *Management Review*, *4*(4), 14.

Akram, M., Hassan, S. S., Farhan, M., & Alam, H. M. (2011). Empirical analysis of determinants of economic growth: Evidence from SAARC countries. *Journal of Economics and Behavioral Studies*, *3*(2), 115–121.

Alfaro, L. (2003). Foreign direct investment and growth: Does the sector matter. *Harvard Business School*, *2003*, 1–31.

Andersen, L., & Babula, R. (2009). The link between openness and long-run economic growth. *J. Int'l Com. & Econ.*, *2*, 31.

Arango, Ó. E. M. (n.d.). *Importance of FDI in the development of Emerging Countries Application to Colombia and the Philippines*. 27.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? *World Development*, *30*(1), 107–119.

Asiedu, E. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. *World Economy*, *29*(1), 63–77.

Assunção, S., Forte, R., & Teixeira, A. (2011). *Location Determinants of Determinants of FDI: A Literature Review*. FEP working papers: University of Porto.

Ayodele, T., & Sotola, O. (2014). China in Africa: An evaluation of Chinese investment. *Initiative for Public Policy Analysis*, 1–20.

Balasubramanyam, V. N., Salisu, M., & Sapsford, D. (1996). Foreign Direct Investment and Growth in EP and is Countries. *The Economic Journal*, *106*(434), 92–105.

Baltagi, B. H. (1995). *Econometric analysis of panel data* (Vol. 2). Wiley New York.

Bond, S. R. (2002). Dynamic panel data models: A guide to micro data methods and practice. *Portuguese Economic Journal*, *1*(2), 141–162.

Bräutigam, D. A., & Xiaoyang, T. (2009). China's engagement in African agriculture:"Down to the countryside." *The China Quarterly*, *199*, 686–706.

Brzezinski, M., & Dzielinski, M. (2009). Is endogenous growth theory degenerating? Another look at Lakatosian appraisal of growth theories. *Journal of Economic Methodology*, *16*(3), 243–263.

Calvet, A. L. (1983). A synthesis of foreign direct investment theories and theories of the multinational firm. In *International Accounting and Transnational Decisions* (pp. 315–334). Elsevier.

Cheung, Y.-W., & Qian, X. (2009). Empirics of China's outward direct investment. *Pacific Economic Review*, *14*(3), 312–341.

Chun, Z. (2013). The Sino-Africa relationship: Toward a new strategic partnership. *Emerging Powers in Africa*, 10–18.

Darley, W. K. (2012). Increasing Sub-Saharan Africa's share of foreign direct investment: Public policy challenges, strategies, and implications. *Journal of African Business*, *13*(1), 62–69.

David, R. (1817). On the principles of political economy and taxation. *Publicado En*.

Davies, M., Edinger, H., Tay, N., & Naidu, S. (2008). How China delivers development assistance to Africa. *Centre for Chinese Studies, University of Stellenbosch*, 53–57.

Desta, A. (2009). *China's South-South Cooperative Investments part II*.

Dohtani, A. (2010). A growth-cycle model of Solow–Swan type, I. *Journal of Economic Behavior & Organization*, *76*(2), 428–444.

Donou-Adonsou, F. (2018). On the importance of Chinese investment in Africa. *Review of Development Finance*, 11.

Dupasquier, C., & Osakwe, P. N. (2006). Foreign direct investment in Africa: Performance, challenges, and responsibilities. *Journal of Asian Economics*, *17*(2), 241–260.

Ezeoha, A. E., & Cattaneo, N. (2012). FDI flows to sub-Saharan Africa: The impact of finance, institutions, and natural resource endowment. *Comparative Economic Studies*, *54*(3), 597–632.

Faeth, I. (2009a). Determinants of Foreign Direct Investment – a Tale of Nine Theoretical Models. *Journal of Economic Surveys*, *23*(1), 165–196. https://doi.org/10.1111/j.1467-6419.2008.00560.x

Faeth, I. (2009b). DETERMINANTS OF FOREIGN DIRECT INVESTMENT - A TALE OF NINE THEORETICAL MODELS. *Journal of Economic Surveys*, *23*(1), 165–196.

Falki, N. (2009). Impact of foreign direct investment on economic growth in Pakistan. *International Review of Business Research Papers*, *5*(5), 110–120.

Fan, X., & Dickie, P. M. (2000). The contribution of foreign direct investment to growth and stability: A post-crisis ASEAN-5 review. *ASEAN Economic Bulletin*, 312–323.

Gu, J. (2009). China's private enterprises in Africa and the implications for African development. *The European Journal of Development Research*, *21*(4), 570–587.

Hamid, A., & Pichler, H. J. (1850). Macro determinants of growth and productivity in the context of endogenous growth theory. *Interdisciplinary Journal of Contemporary Research Business, 3 (2), 1870*.

Hanauer, L., & Morris, L. J. (2014). *China in Africa: Implications of a deepening relationship*.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 1251–1271.

Helpman, E. (2009). *The mystery of economic growth*. Harvard University Press.

Hodd, M. (1967). An empirical investigation of the Heckscher-Ohlin theory. *Economica*, 20–29.

Jones, R. W. (1956). Factor proportions and the Heckscher-Ohlin theorem. *The Review of Economic Studies*, *24*(1), 1–10.

Karim, M. A., & Islam, F. (2018). *Bangladesh–China–India–Myanmar (BCIM) Economic Corridor: Challenges and Prospects*. 20.

King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics*, *108*(3), 717–737.

Klein, M., Aaron, C., & Hadjimichael, B. (2001). *Foreign direct investment and poverty reduction*. The World Bank.

Kobrin, S. J. (2005). The determinants of liberalization of FDI policy in developing countries: A cross-sectional analysis, 1992-200. *Transnational Corporations*, *14*(1), 38.

Kogid, M., Mulok, D., Beatrice, L. F. Y., & Mansur, K. (2010). Determinant factors of economic growth in Malaysia: Multivariate cointegration and causality analysis. *European Journal of Economics, Finance and Administrative Sciences*, *24*(24), 123–137.

Kolstad, I., & Wiig, A. (2011). Better the devil you know? Chinese foreign direct investment in Africa. *Journal of African Business*, *12*(1), 31–50.

König, M. (2003). An econometric framework for testing the eclectic paradigm of international firm activities. *Review of World Economics*, *139*(3), 484–506.

Konings, P. (2007). China and Africa: Building a strategic partnership. *Journal of Developing Societies*, *23*(3), 341–367.

Kotrajaras, P. (2010). Foreign direct investment and economic growth: A comparative study among East Asian countries. *Applied Economics Journal*, *17*(2), 12–26.

Kowalski, E. (2000). *Determinants of Economic Growth in East Asia*.

Lall, S., & Narula, R. (2004). Foreign direct investment and its role in economic development: Do we need a new agenda? *The European Journal of Development Research*, *16*(3), 447–464.

Lartey, E. K. (2007). Capital inflows and the real exchange rate: An empirical study of sub-Saharan Africa. *The Journal of International Trade & Economic Development*, *16*(3), 337–357.

Lenka, S. K., & Sharma, P. (2014). *FDI as a Main Determinant of Economic Growth: A Panel Data Analysis*. *1*, 14.

Liu, L.-G., & Premus, R. (2000). *Global economic growth: Theories, research, studies, and annotated bibliography, 1950-1997*. Greenwood Publishing Group.

Lucas, R. E. (1988). *On the Mechanics of Economic Development", Journal of Monetary Economics, Vol. 22*.

Makki, S. S., & Somwaru, A. (2004). Impact of foreign direct investment and trade on economic growth: Evidence from developing countries. *American Journal of Agricultural Economics*, *86*(3), 795–801.

Malthus, T. R. (1798). An essay on the principle of population as it affects the future improvement of society, with remarks on the speculations of Mr Godwin, M. *Condorcet, and Other Writers. London: J. Johnson*.

Moosa, I. (2002). *Foreign direct investment: Theory, evidence and practice*. Springer.

Muekalia, D. J. (2004). Africa and China's strategic partnership. *African Security Studies*, *13*(1), 5–11.

Ndambendia, H., & Njoupouognigni, M. (2010). Foreign aid, foreign direct investment and economic growth in Sub-Saharan Africa: Evidence from pooled mean group estimator (PMG). *International Journal of Economics and Finance*, *2*(3), 39–45.

Ndulu, B. J. (2006). Infrastructure, regional integration and growth in Sub-Saharan Africa: Dealing with the disadvantages of geography and sovereign fragmentation. *Journal of African Economies*, *15*(suppl_2), 212–244.

OECD. (2002). *Foreign Direct Investment for Development: Maximising benefits, minimising costs*. OECD.

Petrakos, G., Arvanitidis, P., & Pavleas, S. (2007). Determinants of economic growth: The experts' view. *2nd Workshop of DYNREG in Athens*, *2*(1), 9–10.

Pigato, M. (2000). *Foreign direct investment in Africa: Old tales and new evidence*. World Bank.

Podestà, F. (2002). Recent developments in quantitative comparative methodology: The case of pooled time series cross-section analysis. *DSS Papers Soc*, *3*(2), 5–44.

Popescu, R. G. (2010). The impact of foreign direct investments on labour productivity: A review of the evidence and implications. *The Romanian Economic Journal*, *XIII*, *36*, 137–154.

Raine, S. (2009). Chapter One: Contextualising Today's Sino-African Relations. *The Adelphi Papers*, *49*(404–405), 13–58.

Ramsey, F. P. (1928). A mathematical theory of saving. *The Economic Journal*, *38*(152), 543–559.

Reyes, R. C. (2011). The Green Solow Model with Natural Resources Constraint: A Theoretical Note. *DLSU Business & Economics Review*, *21*(1).

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of Political Economy*, *94*(5), 1002–1037.

Roubini, N., & Sala-i-Martin, X. (1992). Financial repression and economic growth. *Journal of Development Economics*, *39*(1), 5–30.

Roy, A. G., & Van Den Berg, H. F. (2006). Foreign direct investment and economic growth: A time-series approach. *Global Economy Journal*, *6*(1).

Sathye, S. (2009). The Development of Sub-Saharan Africa: The Role of Foreign Direct Investments. *IAHS Proceedings and Reports*, *9*(3), 136–141.

Smith, A. (1776). The wealth of nations, Book 1. *Chap. II*, *1 Part II*, 255.

Szent-Iványi, B., & Vigvári, G. (2012). Spillovers from foreign direct investment in Central and Eastern Europe: An index for measuring a country's potential to benefit from technology spillovers. *Society and Economy*, *34*(1), 51–72.

Todaro, M. P., & Smith, S. C. (2009). *Economic development. Harlow*. Pearson Education.

Tong, S. Y., & Hu, A. Y. (2003). Do domestic firms benefit from foreign direct investment? Initial evidence from Chinese manufacturing. *Prepared for the Conference on China's Economic Geography and Regional Development (December 15-16, 2003)*.

Trade, U. N. C. on & Development. (2019). *World investment report, 2019*. United Nations Publications.

Tsai, P.-L. (1994). Determinants of foreign direct investment and its impact on economic growth. *Journal of Economic Development*, *19*(1), 137–163.

Tyler, Z. C., & Gopal, S. (2010). *Sub-Saharan Africa at a crossroads: A quantitative analysis of regional development*.

United Nations Conference on Trade and Development. (2013). *World Investment Report 2013: Global Value Chains - Investment and Trade for Development*. UN.

United Nations Conference on Trade and Development. (2019). *Trade and development report, 2019: Financing a global green New Deal*.

Wang, J.-Y., & Blomström, M. (1992a). Foreign investment and technology transfer: A simple model. *European Economic Review*, *36*(1), 137–155.

Wang, J.-Y., & Blomström, M. (1992b). Foreign investment and technology transfer: A simple model. *European Economic Review*, *36*(1), 137–155. https://doi.org/10.1016/0014-2921(92)90021-N

Whalley, J., & Weisbrod, A. (2012). The contribution of Chinese FDI to Africa's pre crisis growth surge. *Global Economy Journal*, *12*(4), 1850271.

Zarra-Nezhad, M., & Hosainpour, F. (2011). Review of Grovvth Models in Less Developed Countries. *The International Journal of Applied Economics and Finance*, *5*(1), 1–17.

ZiroMwatela, R., & Changfeng, Z. (2016). *Africa in China's'One Belt, One Road'Initiative: A Critical Analysis*. 12.

Cite this article:

Weldegebriel Abrha Hagoss & Xia Youfu (2021). The Effect of China's investment on the Business Environment and Economic Growth of Sub-Saharan Africa in perspective of Belt and Road Initiative. *International Journal of Science and Business, 5*(8), 161-182. doi: https://doi.org/ 10.5281/zenodo.4934789

Retrieved from http://ijsab.com/wp-content/uploads/790.pdf

Published by

IJSAB International