An Empirical Investigation of Causal Relationship of Chinese FDI to African Economies

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Abstract
Foreign direct investment (FDI) is frequently viewed as a fundamental component in any nation's given mission for economic development. There is slight uncertainty that the growth of Chinese trade and investment with developing and underdeveloped African states has furnished these countries with a supreme chance to rejuvenate their economies. This study reviewed driving factors of Chinese FDI to African economies utilizing a panel data from 1980-2016. This study applied Granger causality test, under vector error correction modeling (VECM) to check causality among the factors. Whereas the determinants of FDI inflows were measured utilizing applying ECM and granger causality measurements as proposed by Anyanwu (2012), the dependent variable is FDI inflows to growth, was proxy by the proportion of FDI streams to total national output (GDP). Results showed that factors showing the determinants of FDI inflows have positive influence on development of West African and Monetary Unions economies.
Keywords: Chinas FDI, Granger Causality, West African and Monetary Unions economies

1.1. INTRODUCTION

China is on its way to become a net external investor. One of the potential effects of this tendency is that the government's interest in protecting their investments abroad and to facilitate market access for its businesses would be enhanced, perhaps ultimately uphold the interest of the outward FDI. China is not the only country to have its own national objectives sought with respect to foreign direct investment from overseas subsidiaries which put the home nation measures in place to encourage these goals. In almost all developed nations as well as a small number of developing countries to seek to a greater or lesser degree likewise policies and support them through the proper tools. Thus, if the home country's measures become an article of international negotiations, a number of countries will be affected directly. However, in the opinion of a number of developed countries that helps companies to invest abroad it has become disagreeable at least when it engages state-owned companies.

In the international framework this idea means that no entity in the international market should have gratuitous competitive advantages in comparison with opponents. Therefore, measures to assist companies in their outward foreign direct investment even when accessible evenly to both public and private bodies may be in the future is assess in terms of their influence on the competitive neutrality. International debates so far though have only focused on the benefits that are available to state-owned enterprises. Despite the fact that in case of states that provide such incentives home country procedures accessible by both public and private companies and that there is no methodical evidence that measures of the country of origin regularly provides state-owned enterprises with competitive compensation. The strategy seeks to maximize the benefits of foreign direct investment of the country not only limited to China and their companies but also for the environmental and socio-economic development of the host countries and it takes place in the exhibition of fair governance mechanisms and this may strategy may help for rapid sustainable foreign direct investment.

Foreign direct investment (FDI) is frequently viewed as a fundamental component in any nation's given mission for economic development. There is slight uncertainty that the growth of Chinese trade and investment with developing and underdeveloped African states has furnished these countries with a supreme chance to rejuvenate their economies. There is a learning crevice between the media covers declared ventures and genuine, basic evaluation and investigation of the real effects and final results of investment speculations. Additionally insights from official national statistical institutes should be handled with great concern as the legislature in rule has its own particular plan and can present FDI sums either pretty much or less than they really are.

Past reviews on the determinants of remote direct investment (FDI) have mainly concentrated on developed and developing economies. Though, there appear to be few reviews focusing on a comparative investigation of Chinese FDI to African nations. This study reviewed driving factors of Chinese FDI to African economies utilizing a panel data from 1980-2016.This review applied Granger causality test, under vector error correction modeling (VECM) to check causality among the factors, Whereas, the determinants of FDI inflows were measured utilizing applying ECM and granger causality measurements. The dependent variable are FDI inflows to growth, was proxy by the proportion of FDI streams to total national output (GDP). Results showed that factors showing the determinants of FDI inflows have positive influence on development of West African and Monetary Unions economies. In particular components like trade openness, macroeconomic condition, infrastructural improvement and market size have significantly positive and noteworthy impact on FDI inflows to African economies.

Significant finding is that trade openness has direct and positive impact on FDI inflows. Nations that export more catch the attention of more foreign investors. Similarly, sending out more suggests more market opportunities for the nations and therefore investor have green signal that they can put resources into the nation’s investment and gain more economic profits. It is consequently essential for nations to enhance their trade contribution with world since this adds in attraction of further investors from abroad who could put resources into their domestic as well as foreign investment to take care of local demand as well as demand from abroad. Global advancement accomplices ought to keep on facilitating the foundation of a more open and impartial trade system. Nations that have transformed their exports experience the ill effects and issues of value and information gap of export markets and proper innovation.

1.2. The Contribution of this Study

The review endeavors to add to the scholarly writing on how developing markets can expand by adopting aimed vital plan. Policy framework and vital strategies and activities can assist growing markets by making an amicable business atmosphere and in attracting Chinese foreign direct investment in West African & Monetary Union (WAMU) Countries. The review endeavors to include to the writing on the components that decide ventures by TNC's in the WAMU nations. The literature on FDI has predominantly concentrated on the developed economies and there are relatively few reviews on fast developing on emerging WAMU economies. This review adds to the literature from point of view a developing business sector.

Conventional FDI determinants, for example, size of market, foreign exchange rates, trade openness, agglomeration, and so forth have been broadly investigated as contributing factors of foreign direct investment yet components, for example, strategic infrastructure, structural transformation, and key policy strategies and activities including monetary opportunity, openness, work adaptability, and Diaspora have not been investigated much particularly in developing markets. This review fills that break. The review will highlight the pattern of development in the WAMZ nations to the current script.

This review thus looks at the variables that make FDI go or not to go toward the West African sub-district. This empowers us to propose a few measures for FDI advancement in the sub-region given its particular attributes. In addition this review investigates the accompanying supposition with respect to the Chinese FDI in WAEMU nations; to investigate the significant qualities - scale, patterns, and state’s contribution - of FDI inflows to West Africa. Moreover, to research empirically the main elements debilitating or encouraging FDI inflows to the sub-region; and to summarizes the key outcomes and talk about policy propositions and suggestions for FDI arrangement and advancement in the sub-area. In fact, a comprehension of the influencing factors and characteristics of FDI inflows to West Africa is critical for the efficient outline and usage of strategies to support FDI inflows, which can be utilized as a powerful driver of financial cum political improvement and upgraded social welfare.

1.3. Objective of the study

The review may assist the WAEMU & WAMZ government and different intrigue authorities in making the privilege amiable business atmosphere so that most of Chinese FDI can stream into WAEMU nations and African Monetary Zone nations can develop quickly. The review expects to help the Chinese FDI in comprehending the determinants of development in the quickly developing WAEMU rising markets of the world and facilitate the passage arrangement and development techniques in these business sectors relying upon strategies figured by governments in pushing the transformation procedure ahead. The review hopes to help supervisors in achieving recognition of factors of development in WAEMU & WAMZ nations.

This review goes beyond simply recommending and testing a model of development to rising markets. It recommends how the model can be actualized to the welfare of a WAEMU & WAMZ markets. The study solves the question-What are the distinctive routes in which the model can be executed to convey substantial returns to the WAMU nation’s emergent markets? The review does auxiliary research to touch base at qualified derivations that can be utilized to make significant strides in pulling in Chinese FDI in developing business sector.

2. Literature Review

Brouthers and Hennart (2007) proposed that a simple theoretical viewpoint cannot adequately explain foreign direct investment decisions or international expansion model. As a result, this analysis is based on the ownership, location specific advantage consideration and theories of Internalization, as has been identified these theories and organizational behavior of the main determinants of foreign direct investment in most developing countries (Dunning, 1981 and Aregbesola, 2014). Dunning Eclectic theory identifies three elements or conditions, (i) the advantages of ownership, (ii advantages specific to location and (iii) the advantages of internationalization. The theory is based on the cost of transactions which seeks to clarify the internationalization of the transfer and the advantages of ownership of a particular company (Brouthers and Hennart, 2007). Therefore, this theory proposes the significance of firm as well as location specific features to clarify foreign direct investment inflows determinants.

Dunning Eclectic (1993) or ownership, location and internationalization (OLI) outline can be visualized as instrument that mix ideas from resource based specific to company, institutional (location) and transactional cost (internationalization) theories (Brouthers and Hennart, 2007). Billington (2009) and Aregbesola (2014) stated that the combination of goals drives outflow of foreign direct investment growth in China, likewise intentions are also acknowledged from expansion of Multi National Enterprises headquartered in different nations, though their relative significance may differ. A large share is based on searching resources explained by the fact that China is short of petroleum and mineral wealth while the rapid economic growth is seriously in need of these resources in large quantities. Trade promoting foreign direct investment is significant reveals the country's leading position in global exports. It is comparatively more important to acquire access to markets by direct investment rather that trade as well as to provide protection to exporters in China against potential trade restrictions.

Dunning give a broad analytical theoretical structure based on the ownership benefits, i.e. benefits of location and advantages of internationalization (OLI) model. Previous studies in this regard can be classified into two groups. The focus of one class is to analyze the endogenous factors of multinational companies (MNC) like as the size of the company and principally asking what leads a firm into a foreign investor. Second group analyzes the exogenous determinants of foreign direct investment such as the advantages of host country's location, size of market and cost of labor. This study focuses on the second category as it explains exogenous determinants of FDI, however of endogenous to African host countries.

Literature related to the theory specifies that the main location factors highlighted in the theoretical framework of Ricardo or Heckscher- Ohlin are conventional sources of comparative advantage of the host country. The main concern here is that foreign companies select their investment site that reduces production expenses to minimal. Advantages based on location factors are the size of the market and the relative costs of factors of production like natural resources, human capital and labor costs. Further determinants that have been recognized in the theory consists the availability of infrastructure, economic union, economic and political background, openness of trade and economy.

Location-specific features i.e. resources, markets, technology and human capital, favorable political and economic conditions can be seen from government policy perspectives such as monetary and fiscal policies. This is based on the grounds that foreign direct investment flows to most countries will rely on the effectiveness of political institutions in the host country for the formulation of fiscal and monetary policies concerning investment (Barro and Martin, 1995 and Steers and Nardon, 2006). The theory of internalization is based on the hypothesis that company gain revenues higher than the rates of foreign direct investment by internalizing disadvantages of the host country, when their own company's assets cannot find a similar value elsewhere (Steers and Nardon, 2006 and Stiglitz and Charlton, 2005). There are many economies that may be exploited from flaws in overseas markets include reducing the costs of uncertainty and transactions for the purpose of generating knowledge more proficiently and reduce defects generated by state such as tariffs, controls of foreign exchange, subsidies etc, (Anyanwu, and Erhijakpor, 2004 and Anyanwu, 2006) . Based on this framework, Dunning (1993) presented four categories of motivation for foreign direct investment: the pursuit of resources, seeking market access, efficiency and the search for strategic assets (Alsan, et. al., 2006).

3. Econometric Model and Data Description

In this study the VAR model for panel analysis is constructed with both random and fixed co-efficient adjustment. The classical and typical method of regression is quite restrictive, therefore, for better understanding the trends of Chinese FDI on the growth of WAMU countries regarding the effect can be achieved by including fixed and random VAR effects model in the estimation. The constant coefficient model assumes that the terms of the intersection and slope are constant and there are no differences between the data matrices of the cross-sectional dimensions. However, in case of panel analysis both are varies, therefore, the VAR with both effects will be applied. The model of the study is presented in the following equation. To analyze the trends and effect of China's FDI on the growth of African and Monetary Unions countries, the following model will be followed.

$$FDIc/ GDPi= f (TLB + MecGDP + MS + IsD + MU) \quad \text{……………… (3.1)}$$

In the above equation FDIc estimates foreign direct Investment of China in WAMU countries. GDP_i indicates growth of WAMU countries. TLB assumes trade liberalization policies, MecGDP macro economic conditions and political stability in African countries, MS indicates market size of WAMU countries. IsD shows infrastructure development to attract FDI in WAMU countries and MU assumes dummy for Monetary Unions countries. The VAR econometric model for estimation random and fixed model for empirical analysis is

$$FDIc / GDP_i= \beta_0+\beta_1 TLB_{i-1} +\beta_2 MecGDP_{i-1} +\beta_3 MS_{i-1} +\beta_4 IsD_{i-1} +\beta_5 MU_{i-1} + \mu \quad \text{........ (3.2)}$$

In the empirical analysis of the above model (5.2) for trends and determinants of China FDI in West African and Monetary Unions countries, the VAR model and Multivariate co-integration analysis via granger-causality tests within the framework of Vector Error-correction Model (VECM) will be applied to analyze the dynamic relationships among the variables.

3.1. Data Analysis

In this study the panel data is employed for more than forty (40) West African and Monetary Unions countries to determine the trends and impact on its growth of China's foreign direct investment from 1980 to 2016. The data is collected from World Bank's African Development Indicators (ADI), Statistical Bulletin of China, World Trade Organization (WTO), United Nations Commodity Trade Statistics (UNCTS), World development indicators, International Monetary Fund (IMF), The World Economy, United Nations Statistics Database, The Global Economy and The Trading Economy Database.

4. Causality Analysis of Chinese FDI in African and Monetary Unions Countries

The granger co-integration approach is used to check co-integration. Approach referred to as rank reducing or demoted regression methodology (Levin, Lin and Chu, 2002) has been applied. In the first step the order of integration is determined. For this purpose unit root test is used to determine the level of integration and appropriate model selection has been done by the process used by Mohamed and Sidiropoulos (2010). The second step is to determine the optimal length of the lag. Estimated these lags to a low number and then reduces down to check AIC and SBC optimum value (Asteriou and Hall, 2007). It is also noteworthy that the methodology of diagnosis normally reduces the number of panel units in the estimate and thus, affects the explanatory influence of the model. According Aregbesola (2014) this defends the use of orthogonal deviation technique, which is more competent than differencing the panel data.

Table 1. The Granger Causality Test Results under VAR Regression Analysis

Dependent Variables	Independent Variables						
	FDI	GDP	TLB	MecGDP	MS	IsD	MU
FDI	--	3.92301*	4.9149*	5.5086	3.7491*	4.3862*	3.3974*
GDP	4.1246*	--	3.5253*	2.9834*	4.6582*	2.0917**	2.6150**
TLB	1.5412	1.9163***	--	2.3168**	1.3918	1.3151	1.0291
MecGDP	3.4247*	4.0867*	1.3172	--	0.9863	1.4924	1.6920
MS	3.3586*	2.4103**	2.0915***	1.5471	--	3.6132*	0.5461
IsD	3.0613*	2.1587**	1.1973	2.5386**	1.7591	--	4.6704*
MU	3.3353*	1.5143	1.7350	1.1804	2.3543**	4.0672*	--

(*), (**) and (***) denotes p-value at ≤0.01, ≤ 0.05 & ≤0.09.

Though, the co integration refers only to the presence or absence of Granger-causality, and usually fails to analyze the route of causal relationship and therefore, it was decided this way across the VECM (Oladipo, 2008). This investigation, though, used Granger causality test in the VECM to test the causal relationship between the variables (Pantelidis and Nikopoulos, 2008). In this dissertation, the null hypothesis of a causal test whether the probability statistics do not fall within the scope of 0:01 or 0:10, and vice versa. The results of this study analysis in tables (1) for the causal relation between determinants of Chinese FDI towards Africa Economic & Monetary Union (WAEMU) and West African Monetary Zones (WAMZ) economies. Granger Causality test under VECM results in Table 4 indicates that the and considered all the variables tested in this study are considered as significant determinants for attracting Chinese foreign direct investment to the Africa Economic & Monetary Union (WAEMU) and West African Monetary Zones (WAMZ) Economies.

In order of significance the macroeconomic situation, trade openness and monetary union and infrastructure variables are statistically significant at the level of 1% and 5% and 10% respectively. The VECM results also proposed that all the variables observed in the model are acknowledged as important determinants for China's foreign direct investment inflows to African economies. Specially, in order of significance, the size of the market (size of the population), macroeconomic situation, development of infrastructure and trade openness statistically significant at the level of 1%, 1%, 1% and 10%, respectively.

5. Conclusion

As outlined above the transformation of China to become a main provider of foreign direct outward investment led to a thoughtful reform of its investment treaty system. The data clearly create the degree to which China has left being totally capital-importing state in an attempt to maintain rapid economic growth to a capital-exporting country and catch up with Europe and the United States of America. Concurrently, the precise analysis of the data reveals that the image in some respect more complex than what is usually attached. As a common observation, the Chinese foreign direct investment in overseas volume was just US $730 billion in 2014 much smaller than the United States with more than $5 trillion. Moreover, despite the fact that a lot has been said from the control of China in Africa in that it "seeks to establish control over the resource-rich countries through its firms China ranks only in third position among investors from developing countries following Malaysia and South Africa and is moreover in the vision one commentator restricted to infrastructure financing in remote areas usually with poor quality.

REFERENCES

Anyanwu J. C. (2011). Determinants of Foreign Direct Investment Inflows to Africa, 1980-2007. African Development Bank group Working Paper Series, No 136 september.

Anyanwu, J. C and Erhijakpor, A. E. O. (2004). Trends and Determinants of Foreign Direct Investment in Africa. West African Journal of Monetary and Economic Integration, Second Half, 21-44.

Anyanwu, J. C. (1998). An Econometric Investigation of the Determinants of Foreign Investment in Nigeria. in Nigerian Economic Society (1998), Rekindling Investment for Economic Development in Nigeria, Ibadan, 219 - 241.

Anyanwu, J. C. (2006). Promoting of Investment in Africa. African Development Review, 18(1), 42-71.

Anyanwu, J. C. (2011). Determinants of Foreign Direct Investment Inflows to Africa, 1980-2007, Working Paper No. 136, African Development Bank, Tunis.

Anyanwu, J. C. (2012). Why Does Foreign Direct Investment Go Where It Goes? New Evidence From African Countries, Annals of Economics and Finance 13-2, 433-470.

Aregbesola, A. R. (2014). Foreign Direct Investment and Institutional Adequacy: New Granger Causality Evidence from African Countries. South African Journal of Economic and Management Sciences, 17(5), 557-568

Asteriou D., and Hall, S. G. (2007). Applied Econometrics, A Modern Approach, Revised Edition, New York, Published by Palgrave Macmillan.

Barro, R. and Sala-I-Martin, X. (1995). Economic growth. New York: McGraw-Hill.

Billington, N. M. (2009). The Location of Foreign Direct Investment: An Empirical Analysis. Journal of Applied Economics, 31(3), 65-76.

Brouthers, K. D. and Hennart, J. (2007). Boundaries of the Firm: Insights from International Entry Mode Research. Journal of Management, 33(3), 395-425

Dunning, J. H. (1981). Explaining the international direct investment position of countries: towards a dynamic or developmental approach. Weltwirtschaftliches Archiv, 117, 30-64.

Dunning, J. H. (1981). International Production and Multinational Enterprises, George Allen and Unwin, London, 1981.

Dunning, J. H. (1993). Multinational enterprises and the global economy. London: Addison-Wesley.

Dunning, J. H. (1996). Reevaluating the Benefits of Foreign Direct Investment, in Companies without Border: Transnational Corporations in the 1990s, UNCTAD. International Business and the World Economy, 19(6), 132-157.

Mohamed, S. E. and Sidiropoulos, M. G. (2010). Another Look at the Determinants of Foreign Direct Investment in MENA Countries: An Empirical Investigation. Journal of Economic Development, 35(2), 75-96.

Oladipo, O. S. (2008). Foreign Direct Investment Flow: Determinants and Growth Effects in a Small Open Economy. Proceedings of the Northeast Business & Economics Association, Northeast Business & Economics Association 35th Annual Conference, Long Island, New York, November 6th - 8th.

Pantelidis, P. and Nikopoulos, E. (2008). FDI attractiveness in Greece. International Advances Economic Research, 14, 90-100.

Steers, M. R. and Nardon, L. (2006). Managing in the global economy. New York: M.E. Sharpe, Inc. Stiglitze, J. E. (2002). Globalization and its discontents. New York: W.W. Norton and Company.

Stiglitz, J. E. and Charlton, A. (2005). Fair trade for all. New York: Oxford University Press

Stock, J. H., and Watson, M. W. (1999). Forecasting Inflation. Journal of Monetary Economics, 44, 293-335.