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FDI AND TRADE OPENNESS: THE CASE OF EMERGING AFRICAN ECONOMIES

Dr Patricia Lindelwa Makoni (PhD)
Senior Lecturer, Department of Finance, Risk Management and Banking, University of South Africa (UNISA), Lynnwood Ridge, South Africa
Email: makonpl@unisa.ac.za; patricia.makoni@gmail.com

ABSTRACT:

The primary objective of this study was to examine the effect of trade openness of foreign direct investment using a panel of nine African countries, over the period 2009 -2016. We analyzed our data using the panel data method. Building on from the new growth theories, the results from the random effects model show that trade openness positively influences inward FDI although the relationship is only significant at 10%. Other FDI determinants that emerged were real exchange rate which was positive and very significant, while the lag of FDI was positive and significant at 5%; capital openness was positive but insignificant. In light of these findings, we therefore recommend that host countries remove trade tariffs and reduce taxation rates for multinational corporations that deter foreign investment. Further to this, they should ensure that their investment and macroeconomic policies are suitable to ensure capital accumulation, which will spur productivity and increase employment.

Keywords: *FDI, trade openness, foreign direct investment,Africa*

1. INTRODUCTION

According to many scholars, international trade is important for countries in the wake of globalization, of which foreign direct investment (FDI) is only one aspect of many. FDI is known to complement domestic savings thereby increasing capital accumulation and investment, which in turn improve local productivity. FDI has been the preferred mode of entering international markets by multinational corporations (MNCs). It has been received by the host countries because it is a secure source of external financing, thereby contributing to the stabilisation of the host country's economy (Makoni, 2016). Other spillover effects of FDI are the creation of employment, advanced technology, new markets and economic growth (Anyanwu, 2006). Despite this, the inflows of foreign direct investment into Africa have been significantly lower than those of other developing economies in Asia and Latin America (African Development Bank, 2015).

Key determinants of FDI have been identified as previous inflows of FDI, foreign portfolio investment, human capital development, macroeconomic stability, institutional quality, natural resource endowment, reliable infrastructure development and trade openness. (Makoni, 2016). Other scholars such as Trevino and Mixon (2004) underscored institutional quality, infrastructure, import tariffs, macroeconomic stability as being positive drivers of FDI.

To this end, in line with theory and earlier empirical papers, we seek to examine the relationship between trade openness and foreign direct investment, using a panel of nine selected African countries comprising of Botswana, Cote D'Ivoire, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, and South Africa from 2009 to 2016. The contribution of our paper is that it examines the period that falls immediately after the global economic crisis which had serious ramifications for many countries, and had an impact on the decision by international investors and multinational corporations on where to place their investments. We test the proposition that economies that are more open to trade have a higher likelihood of attracting FDI inflows, and consider our sample of African economies to be no different.

The remainder of this paper considers the associated literature, methodology to test our variables and the analysis thereof. We end the paper with our conclusions and policy recommendations based on our findings.

2. LITERATURE REVIEW

The theory of FDI and by default, multinational corporations, is postulated from the writings of Hymer (1976), and later the eclectic paradigm of Dunning (1977) (see Dunning & Lundan, 2008). The ownership, locational and internali-

zation (OLI) model are argued that international investors are motivated by market-seeking, efficiency-seeking, strategic-asset-seeking and rent-seeking reasons for pursuing FDI. According to Popovici and Calin (2014), the theory explained the success of FDI among countries based on the national wealth of a country, such as its natural resources endowment, availability of labour, local market size, infrastructure, trade openness and government policy regarding these national resources. They further argued that market-seeking FDI was relevant to those MNCs exploring new markets to boost their revenue, while efficiency-seeking companies were driven by the need to be located in as few countries as possible but serving a much larger market. MNCs pursuing strategic-asset FDI are concerned with having a global footprint while increasing competitiveness, while rent-seeking companies were inspired by natural resources, and availability and cost of factors of production to complement their existing operations (Popovici & Calin, 2014).

Although Solow's (1957) neo-classical growth model advanced the argument that technological change is exogenous, and therefore unaffected by a country's trade openness; it is the new growth theories of Romer (1986) and others that has been more convincing on the role of trade openness. A country's trade openness is associated with spillover advantages such as access to production inputs (both imports and exports); an increased market size and the "contagion" effect would ensure diffusion of technology (Romer, 1994). Generally, MNCs can successfully serve existing and new markets, if there are no export restrictions, and in such a case, the greater the trade openness of the host country, the more positive its effect on FDI flows. On the other hand, restrictive trade and capital policies, exchange rate instability and poor institutional quality would have the opposite effect on inward FDI. Hence, theoretically, while trade openness is linked to higher economic growth; its effect on FDI largely depends on locational factors.

Empirically, Balasubramanyam, Salisu and Sapsford (1996) contend that trade openness is important for countries to gain from the growth effects of FDI. Asiedu (2002) examined the determinants of FDI to developing countries and concluded that trade openness promotes FDI to both Sub-Saharan African and non-Sub-Saharan African countries. In 2004, Anyanwu and Erhijakpor studied trends and determinants of FDI in Africa and observed that infrastructure and trade openness had a positive influence on FDI inflows. Büthe and Milner (2008) asserted that favorable domestic policies and trade agreements accelerated FDI inflows. The panel regression analysis of Liargovas and Skandalis (2012) found that trade openness positively impacts on inward FDI in developing countries. Cantah, Brafu-Insaidoo, Wiafe and Adams (2018) in their study on FDI and trade policy openness in Sub-Saharan Africa concluded that

trade openness shared a positive with FDI flows. However, Aizenman and Noy. (2006) established bi-directional causality between trade openness and FDI.

3. METHODOLOGY

3.1. DATA AND VARIABLES

The association between trade openness and FDI will be assessed using a panel data set from a sample of nine African countries during the period 2009 -2016. These countries include Botswana, Cote D'Ivoire, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, and South Africa, selected on the basis of data availability. The data was all sourced from the World Bank's Development Indicators.

The dependent variable is FDI which is measured as the ratio of net FDI inflows to GDP (FDI). Our independent variables are the log of FDI to GDP, and trade openness which is the sum of imports and exports scaled by GDP (TRDOPN). Other control variables include the real exchange rate (REXCR), macroeconomic stability proxied as real economic growth (RGDPG), natural resources endowment (NATRES), infrastructure (INFRAS) and capital openness (KAOPEN) (Alfaro *et al*., 2004; Asiedu, 2006; Agbloyor et al., 2014).

3.2. ECONOMETRIC MODEL

In determining the relationship between FDI and trade openness, we estimated the following model:

$$FDI_{it} = \alpha_0 FDI_{it-1} + \alpha_1 TRDOPN_{it} + \alpha_2 REXCR_{it} + \alpha_3 RGDPG_{it} + \alpha_4 NATRES_{it} + \alpha_5 INFRAS_{it} + \alpha_6 KAOPEN_{it} + \varepsilon_{it} \quad (1)$$

where, i denotes country, t denotes time, α_0 is a constant term, ε_{it} is a random error term and the other variables are defined as above.

Diagnostic tests were applied to the above model before it was estimated. To avoid spurious results of the regression analysis, the data were tested for serial correlation, multicollinearity and heteroskedasticity. The Breusch-Pagan test was used to test for heteroskedasticity. A correlation matrix was used to detect any multicollinearity amongst the variables. The Ordinary Least Squares (OLS) model was applied on the multiple regression to determine the nature of the relationship between the dependent and independent variables. The next section presents the results of the regression analysis.

4. RESULTS

The objective of this study was to find out what effect trade openness has on FDI in a panel of different African countries from 2009 – 2016. The correlations at 5% level of significance are presented in table 1 below.

Table 1: Correlations

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. pwcorr FDI RGDPG REXCR NATRES TRDOPN INFRAS KAOPEN, star(0.05)

             |   FDIGDP    RGDPG    REXCR   NATRES   TRDOPN   INFRAS   KAOPEN
-------------+---------------------------------------------------------------
      FDIGDP |   1.0000
       RGDPG |  -0.0244   1.0000
       REXCR |  -0.0739   0.2562*  1.0000
      NATRES |  -0.2137   0.1237   0.2812*  1.0000
      TRDOPN |   0.2783* -0.0605   0.0047  -0.6188*  1.0000
      INFRAS |   0.4244* -0.2290  -0.4368* -0.5378*  0.6135*  1.0000
      KAOPEN |   0.2572*  0.1289  -0.2956* -0.4078*  0.2784*  0.4565*  1.0000
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Table 2: Estimation results

	POOLED OLS ROBUST	FIXED EFFECTS	RANDOM EFFECTS	2-STEP GMM	GLS	LSDVC
L.FDIGDP	0.0205	-0.00678***	0.0205	-0.153	0.00999	0.155
	(0.181)	(0.000638)	(0.0308)	(0)	(0.00592)	(0.284)
RGDPG	0.294	-0.330	0.294	0.718	0.340***	-0.360
	(0.395)	(0.534)	(0.412)	.	(0.0277)	(4.521)
REXCR	0.0344	0.208	0.0344***	0.0140	0.0469**	0.236
	(0.0300)	(0.276)	(0.00963)	.	(0.0169)	(1.790)
NATRES	-0.108	0.517	-0.108	2.932	-0.114**	0.471
	(0.257)	(0.905)	(0.518)	.	(0.0363)	(0.692)
TRDOPN	-0.101	0.536	0.101	-0.00488	-0.0388	-0.561
	(0.111)	(0.668)	(0.0887)	(0)	(0.0270)	(0.716)
INFRAS	0.182	-0.000317	0.182***	-0.620	0.141***	0.0267
	(0.149)	(0.0350)	(0.0337)	(0)	(0.0355)	(0.368)
KAOPEN	1.789	1.047	1.789	2.338	1.260***	0.461
	(1.615)	(1.508)	(1.096)	-	(0.237)	(1.483)
_cons	-4.942	27.21	-4.942		-6.960*	
	(5.155)	(26.62)	(8.251)		(3.436)	
N	63	63	63	54	63	63
R^2	0.240	0.007				

Standard errors in parentheses
** p < 0.05, ** p < 0.01, *** p < 0.001*
Source: Author's computation using Stata software

Table 3 shows the diagnostic statistics of all the estimation models presented in Table 2.

Table 3: Diagnostic statistics

	Pooled OLS	**Fixed effects**	**Random effects**	**Diff GMM**	**GLS**	**LSDVC**
Observations	63	63	63	54	63	63
Groups	9	9	9	9	9	9
F-stats/Wald chi2	52.63	257.21	6321.68	31.83	53695.85	
Prob>F/Prob>Wald chi2	0.0000	0.0000	0.0000	0.0000	0.0000	
Hausman (Chi2)		121.35	121.35			
Prob>chi2		0.0021	0.0021			
R-SQUARED						
Within		0.0073	0.0001			
Between		0.1474	0.9253			
Overall	0.2404	0.0373	0.2404			
Arellano-Bond AR(1)				-0.99		
Prob>z				0.321		
Arellano-Bond AR(2)				-1.00		
Prob>z				0.316		
Sargan test of overid				36.64		
Prob>chi2				0.004		
Hansen test of overid				3.02		
Prob>chi2				0.771		
Instruments				25		

Source: Author's computation using Stata software

Panel data enables us to undertake an analysis with relatively few data points, i.e. more countries and a shorter time period. In addition, panel data gives more variability, less collinearity, and more degrees of freedom; advantaging it over pure cross-sectional or time series data in that we are able to identify and measure effects of the independent variables on the dependent

variable. We used a sizeable number of estimation techniques that includes the pooled OLS, Least squares dummy variable (LSDV) corrected for Kiviet bias (see Kiviet, 1995), Fixed effects (FE) model, Random effects (RE) model, Generalized Method of Moments (GMM) model, and the generalized least squares (GLS) primarily as a means for rigorous testing (robustness). Since the econometric modelling of panel data is based on two principal estimation techniques, fixed effects and random effects models, this study also narrowed the analysis to these estimators. To determine the most appropriate estimation technique between the two approaches, we employed the Hausman (1978) specification test.

Mundlak (1978) argued that the random effect model assumes exogeneity of all the regressors and the random individual effects. Wooldridge (2010) later added weight to this argument, stating that the random effects (or error component) model is based on the assumption that there is no correlation between the regressors (explanatory variables) and the unobserved, individual-specific effects. A fixed effects model, on the other hand, would allow the individual-specific intercept to be correlated with one of more of the regressors (Gujarati & Porter, 2009). The p-value of 0.9951 for the Hausman test indicates that there is no evidence that the random effects estimates are invalid, thereby making the random effect model more efficient than the fixed effects model for this study. Applying random effects would further allow generalization of inferences beyond just the sample in the study. The Hausman test results with a chi-square of 0.98 and a probability of 0.9951 suggests that we should fail to reject the null hypothesis, that the unobservable, country-specific effects and the regressors are statistically independent (orthogonal). As such, the random effects estimation approach results are discussed in the next section.

5. DISCUSSION

The random effects model shows that the foreign direct investment is positively related with trade openness. This implies that a country with fewer restrictions on imports and exports both by local companies and multinational corporations has a higher chance of attracting FDI. The higher the openness, the higher the FDI. There is a direct reason and indirect reason for this nexus. The direct reason is that as foreign companies establish themselves in the domestic market, their capital that they bring into the host countries counts as part of the gross domestic product, which is further enhanced through productivity and technology advancement. The indirect reason comes through a transmission mechanism, whereby the FDI is an injection and therefore, through the multiplier effect, the country's GDP is further boosted.

Developing African markets are hence encouraged to adopt investment and other macroeconomic policies that attract FDI, as this is beneficial to the growth and development of the country. Also, reducing trade tariffs and offering favorable taxation rates, could work positively with trade openness, especially for MNCs that export large volumes. This is in line with the neoclassical growth model that argues for a positive relationship between trade openness and FDI. The results confirm what Asiedu (2002), Liargovas and Skandalis (2012) and Cantah *et al*. (2018) found with regard to the positive impact of trade openness on FDI.

In addition to trade openness, FDI generally goes to where other multinational corporations have successfully penetrated markets, as reflected by the lag of FDI. Other FDI drivers are the real exchange rate which is a proxy for macroeconomic stability, and currency risk. A host country's currency encourages inward FDI as it increases export earnings potential. Capital openness enhances inward FDI in that it raises the confidence of foreign investors that they will be able to expatriate their earnings to their home countries. The results confirm what scholars such as Liargovas and Skandalis (2012) concluded on the effect of other determinants of FDI on FDI itself.

This study is in line with the theoretical underpinnings of new growth theories of Romer (1986) and others that a country's trade openness is associated with spillover advantages such access to production inputs (both imports and exports), an increased market size and the "contagion" effect would ensure diffusion of technology (Romer, 1992). Hence, in our case, although we established a strong but insignificant relationship between trade openness and FDI, we can conclude that the more open a host country is in terms of trade (and capital), the better its prospects of attracting and gaining from inward FDI.

6. CONCLUSIONS

The main aim of this paper was to investigate the effect of trade openness of foreign direct investment (FDI) using a panel data set of nine selected African economies, from 2009 to 2014. The study employed various econometric techniques such the pooled OLS, Least squares dummy variable (LSDV), Fixed effects (FE) model, Random effects (RE) model, Generalized Method of Moments (GMM) model, and the generalized least squares (GLS). The analysis was done based on the FE model as recommended from Hausman test results. The results revealed a positive relationship between trade openness and FDI. Likewise, there was a positive relationship between the lag of FDI, real exchange rate, infrastructure and capital openness. Although these variables are by no means the only determinants of inward FDI, we considered them to be the key factors for purposes of our study.

In light of these findings, the policy implications are that these African countries need to adopt policies that ensure macroeconomic stability and economic growth, as well as those policies that do not hinder the flow of capital, both into and out of the country. By so doing, investor confidence is boosted while the host countries also enjoy spillover effects of inward FDI. Future studies may investigate the minimum threshold levels that needs to be achieved for trade openness to have an effect on FDI.

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IZRAVNA STRANA ULAGANJA I TRGOVINSKA OTVORENOST: SLUČAJ AFRIČKIH GOSPODARSTAVA U RAZVOJU

SAŽETAK RADA:

Primarni cilj ovog istraživanja bio je ispitati učinak trgovinske otvorenosti izravnih stranih ulaganja na uzorku od devet afričkih zemalja, u razdoblju od 2009. do 2010. godine. Analizirali smo naše podatke pomoću metode panel podataka. Na temelju novih teorija rasta, rezultati iz modela slučajnih učinaka pokazuju da otvorenost trgovine pozitivno utječe na izravna strana ulaganja, iako je odnos značajan samo u 10% slučajeva. Ostale odrednice izravnih stranih ulaganja koje su se pojavile bile su realni tečaj koji je bio pozitivan i vrlo značajan, dok je kašnjenje izravnih stranih ulaganja bio pozitivan i značajan za 5%; otvorenost kapitala bila je pozitivna, ali beznačajna. Dobiveni rezultati upućuju na činjenicu da bi zemlje domaćini trebale ukinuti trgovinske tarife i smanjiti stope oporezivanja za multinacionalne korporacije koje sprečavaju strana ulaganja. Nadalje, trebaju osigurati da njihova investicijska i makroekonomska politika budu primjerena za osiguranje akumulacije kapitala, što će potaknuti produktivnost i povećati zaposlenost.

Ključne riječi ***izravna strana ulaganja, trgovinska otvorenost, Afrika***