



Does Economic Freedom Matter to Foreign Direct Investment in Sub-Saharan Africa?

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ABSTRACT

This paper examines whether economic freedom matters to inward Foreign Direct Investment in Sub-Saharan Africa. A key contribution of this study is that it uses disaggregated measures of economic freedom from The Heritage Foundation and the Fraser Institute to unveil which components of economic freedom matter for inward FDI in a sample of 40 SSA countries during the 1997-2016 period. The estimation is done using panel data models with fixed and random effects. The results indicate that higher overall economic freedom is a key determinant of inward FDI in SSA. However, there is clear evidence that it is regulatory efficiency (business, labor and monetary freedom), fiscal freedom (low tax burden), market openness, market size, trade openness, and strong telecommunications infrastructure that are the key factors in attracting FDI in SSA. While monetary freedom (price stability) is important, financial freedom (banking and financial sector independence) or investment freedom seem less critical. Results on trade freedom suggest that SSA tends to attract tariff-jumping and efficiency-seeking FDI. There is no consistent evidence that stronger rule of law and property rights really matter for inward FDI in SSA. It appears that FDI tends to flow to SSA countries that have lax property rights protection.

Keywords: Foreign Direct Investment, Economic Freedom, Sub-Saharan Africa

JEL Classifications: C33, F21, O43, N27

1. INTRODUCTION

Sub-Saharan Africa is unlike most regions in the world in terms of both economic freedom and as a destination for Foreign Direct Investment (FDI). Over the past 20 years, Sub-Saharan Africa has experienced an increase in inward FDI of approximately 9 times, with FDI stock rising from USD 65 billion in 1997 to USD 600 billion in 2016 (UNCTAD, 2017). FDI rose significantly each year, with the exception of the 2007-2008 period due to the global financial crisis. Even though FDI has increased significantly over the past two decades, Sub-Saharan Africa's share of global FDI is below 2% (Fofana, 2014). Host country governments in Sub-Saharan Africa have particularly made considerable efforts to attract FDI and some Sub-Saharan African countries have progressively become attractive destinations for FDI (Ajide and Eregha, 2015).

Key determinants of FDI inflows to developing countries have evolved from traditional factors such as market size, macroeconomic policies, and trade openness to less conventional ones such as economic freedom. Economic freedom is increasingly being considered as one of the key drivers of FDI (Hossain, 2016) because it plays a substantial role in creating a positive image about the investment climate of host economies (Berger and Bristow, 2009).

However, most of the countries in Sub-Saharan Africa face challenges in terms of their levels of economic freedom. Despite some progress in recent years, Sub-Saharan Africa continues to have an Index of Economic Freedom, as measured by the Heritage Foundation, below 60 which is considered poor (Miller and Kim, 2017). Among the 48 countries in Sub-Saharan Africa, only Mauritius and Botswana are mostly free (score of 70-79.9), while

South Africa, Swaziland, Seychelles, Uganda and Cote d'Ivoire are moderately free (score of 60-69.9). The rest are either in the mostly unfree (50-59.9) or repressed (score of 0-49.9) category. This poses a problem because economic freedom is believed to bring prosperity in an economy according to both the Heritage Foundation and the Fraser Institute. Countries enjoying more economic freedom tend to achieve higher wealth and enhanced living standards, and they represent a better investment and business climate to attract FDI.

There is ample theoretical basis and empirical evidence why developing countries would like to attract FDI as part of their long-term economic development strategy. FDI is perceived as a boon mostly by capital scarce developing countries as their potential benefits are manifold and can include the creation of jobs, additional financial resources and tax revenues, linkage and spill-over effects, technology transfer and diffusion, innovation and the transfer of knowledge, administrative skills and corporate governance practices (Akpan et al., 2014). Besides, inward FDI not only improves the recipient countries' export capacity by allowing them to increase their foreign currency earnings (Belloumi, 2014) but it also acts as an engine for growth (Balasubramanyam et al., 1996; Moussa et al., 2016) and provides a signal of confidence in investment opportunities (Barua and Naym, 2017).

From a policy standpoint, therefore, it becomes important to understand the interplay between inward FDI and economic freedom. However, economic freedom is measured differently by different organizations. According to the Heritage Foundation, economic freedom consists of the rule of law, government size, regulatory efficiency and market openness. According to the Fraser Institute, economic freedom consists of the size of government, legal system and property right, sound money, freedom to trade internationally, and regulation of credit, labor and business. In addition, these indexes of economic freedom have their sub-components as well and various empirical studies have used various estimation techniques, sample sizes and periods. Overall, there is no consensus about what type of economic freedom matters to the foreign direct investors.

The purpose of this paper is to examine whether, and if so, what type of economic freedom matters to FDI in a set of 40 Sub-Saharan African countries during the 1997-2016 period. This is the largest sample size and period that are available based on data. Both aggregated and disaggregated measures of economic freedom are sourced from the Heritage Foundation and the Fraser Institute to conduct our analysis. In addition, a set of standard control variables are used in the regression models. The study uses a balanced panel data approach driven primarily by the availability of comparable data and conducts a set of diagnostic tests including panel unit root tests, fixed effect and random effects. Results of this study will allow policymakers and foreign investors to better understand key determinants of FDI in Sub-Saharan Africa which is characterized by varied levels of economic freedom.

The rest of the paper is organized as follows. Section 2 surveys the theoretical and empirical literature that connects FDI and economic freedom. It also provides an overview of the various

measures of economic freedom. Section 3 describes the data and research methodology. Section 4 presents the estimation results and findings, and section 5 concludes with some key policy recommendations.

2. LITERATURE REVIEW

This section provides an overview of the definitions of economic freedom and its components. It also provides a survey of the theoretical and empirical literature connecting FDI and economic freedom.

Studies on FDI have been gaining grounds since the seminal work of Stephen Hymer in 1960. FDI refers to investment made by an investor residing abroad, holding an ownership in a foreign company through licensing, acquisition, merger or building of new facility (Moussa et al., 2016). FDI also implies a long-term relationship where the investor holds a significant degree of influence on the management of the foreign entity (OECD, 2008; UNCTAD's World Investment Reports, 2012). However, studies on the interaction between FDI and economic freedom, especially in the case of Sub-Saharan Africa, are limited. While there is a multitude of literature that has concentrated on traditional determinants of FDI such as market size, wage costs, and macroeconomic policies, factors such as economic freedom which is regarded as a country specific advantage, have recently gained popularity due to the drastic progress of businesses and the improvement in business environments in many countries (Hossain, 2016).

2.1. Measures of Economic Freedom

2.1.1. *The index of economic freedom (IEF) by heritage foundation*

The IEF was created by the Heritage Foundation and the Wall Street Journal in 1995. Economic freedom is the right that every individual has in order to control his or her property and labor. In addition, in an economically free society, individuals are able to work, invest, consume and produce as they like and government also allows goods, labor and capital to move freely and refrains from any restriction of liberty, but still is allowed a little intervention when necessary (Miller and Kim, 2017). According to the Heritage Foundation, countries enjoying more economic freedom achieve higher wealth and enhanced standard of living as it is strongly associated with cleaner environments, better societies, human development, greater per capita wealth, poverty elimination and democracy. As stated in the 2014 Index of Economic Freedom Report, Sub-Saharan Africa's level of economic freedom remains weaker as compared to other regions. Despite having some progress in recent years, Sub-Saharan Africa continues to have an IEF below 60 (Miller and Kim, 2017).

The IEF consists of 4 main components: Rule of Law, Government Size, Regulatory Efficiency, and Market Openness. These are further disaggregated into 12 categories. Rule of law comprises Property Right and Government Integrity. Government size comprises Tax Burden (fiscal freedom) and Government Spending. Regulatory Efficiency comprises Business Freedom, Labor Freedom, and Monetary Freedom. Market Openness comprises

Trade Freedom, Investment Freedom and Financial Freedom. Definitions of each of these indexes are provided in Table A in the Appendix.

2.1.2. *The economic freedom of the world (EFW) index by Fraser institute*

The EFW index was first introduced by Gwartney, Block and Lawson and was published by the Canadian Fraser Institute in 1997. According to the Fraser Institute, economic freedom is based on self-ownership and people have the right to decide and choose how they will live their life according to their own wish. There is the existence of free trade, personal choice, liberalized markets and a definite and enforced property right (Gwartney et al., 2017). For a country to enjoy a high EFW rating, it must yield equality in legal system, a well-established monetary environment, a fair fulfilment of contracts and protect privately owned property of its citizens. Additionally, taxes must be kept low, there should be no barriers to domestic and international trade and instead of public spending, the economy should rest more on the private sector in their allocation of goods and resources. Chad, the Democratic Republic of Congo, the Central African Republic, the Republic of Congo and Angola are the five least free economies in Sub-Saharan Africa, while Mauritius, Rwanda, Botswana, Uganda and Gambia are the five most free countries (Gwartney et al., 2017).

The EFW index ranks countries based on 5 main areas: Size of Government, Legal System and Property Rights, Sound Money, Freedom to Trade Internationally, and Regulation of Credit, Labor and Business. Definitions of each of these components are given in Table B. These 5 categories are further broken down into 24 components and 25 sub-components, which is beyond the scope of this study.

2.2. The Theoretical Link between FDI and Economic Freedom

The theoretical explanations of FDI, to a great extent, originate from conventional theories of international trade, focusing on the theories of comparative advantage and differences in factor endowments between nations. These factors attract multinational corporations (MNCs) in a particular nation as they are able to exploit the country by benefiting from lower labor cost or from its huge market size. Along these lines, traditional theories of international trade do offer some clarification of FDI. Kindleberger (1969) postulated that FDI was thought to be a vital part of Portfolio Investment and it was believed that it was the differences in interest rates that has led to capital flows in different nations. However, this hypothesis failed to clarify the fundamental distinction between portfolio and direct investment (Gupta and Singh, 2017). Hence, these theories do not give full answers with respect to why MNCs like to operate overseas. Consequently, in a world where almost all nations are interconnected, FDI theories based on perfect market do not play a significant role (Denisia, 2010). Consequently, market imperfections became one of the notable reasons for FDI flows (Gupta and Singh, 2017). Hymer (1976) was the first economist to develop his theory based on imperfect market in 1960 followed by Buckley and Casson (1976). Below we provide an overview of three key theories which we believe provide sound justifications for linking FDI and economic freedom.

2.2.1. *The eclectic paradigm theory*

One of the most important hypotheses of FDI is the Eclectic Paradigm Theory, developed by Dunning (1977; 1979; 1988), explaining why MNCs like to seek FDI. It is also known as the OLI Theory since it is the amalgamation of three different FDI theories which are Ownership advantages (O), Locational advantages (L) and Internalization (I). The ownership and internalization advantages are with respect to microeconomic theory of firms while the locational advantages are incorporated in macroeconomic theory (Popovici and Călin, 2014). Additionally, based upon this theory, Dunning (1993) identified 4 major motives of FDI and they are made up of 4 taxonomies, namely strategic seeking, resource seeking, efficiency seeking, and market seeking (Sârbu and Gavrea, 2014).

The Ownership advantages are firm-specific and relate to the tangible or intangible assets owned by the MNC which give them a monopolistic advantage to compete with domestic rivals in the host country. These advantages include excellent management and marketing skills, superior technological know-how, better access to raw materials and cheaper source of finance, economies of scale, brand names and patents (Nayak and Choudhury, 2014; Denisia, 2010; Gupta and Singh, 2017). Therefore, it can be postulated that a nation which enjoys economic freedom will tend to reinforce these monopolistic advantages which will further attract FDI in the country.

The Internalization hypothesis focuses more on the firm or industry-level determinants of FDI (Henisz, 2003). The idea behind this theory is that it is more profitable to carry out production within the host economy rather than to rely on external markets through exports and licensing. The transaction costs of arms-length relationship is higher than managing the activities and relocating production of the MNC. Hence, it is less expensive for the MNC to internalize its transactions among countries because of the existence of imperfect markets, therefore, maximizing its profits (Nayak and Choudhury, 2014). Internalization across national borders prompts FDI and the procedure is maintained until marginal benefit is equal to marginal cost (Moosa, 2015).

Locational advantages were neglected when FDI theories first originated. However, due to the wave of globalization, it has become one of the core explanations of FDI inflows (Popovici and Călin, 2014). Locational advantages allow the firm to decide in which country it will operate. The firm will tend to prefer countries where it will enjoy economic, political and social benefits. These country-specific advantages include natural resource endowment, infrastructure, economic and political stability, lower cost, appropriate telecommunications, and cultural diversity, amongst others (Denisia, 2010).

With increased interconnectedness between countries, economic freedom represents a key locational advantage in pulling FDI to host countries. Evidence suggests that U.S. MNCs are more prone to invest in countries which have better protection of intellectual property rights, lower degree of government intervention in business operations, lower level of government corruption, and better contract enforcement (Du et al. 2008). Moreover, political

and economic freedom create confidence in the mind of investors as they are reassured that their location choice will benefit them in terms of good rule of law, market openness, regulatory efficiency and government size.

Hence, for FDI to take place and for the firm to benefit from lower costs and enjoy higher returns, the OLI conditions must be achieved simultaneously (Dima, 2010). Later, Dunning (1995) came up with a new concept of “capitalism of alliances” in order to broaden the actual scope of the OLI Paradigm. This focuses on mutual trust, commitments and the contractual obligations between partners (Voyer and Beamish, 2004). Thus, “the inclusion of economic freedom issues turned to be considered in an explicit form, given its impacts on the confidence level of the agents” (Caetano and Calairo, 2009, p. 67), allowing the country to be in a better position to pull in FDI in its economy.

2.2.2. Theory of institutional FDI fitness

In line with locational advantages, the Theory of Institutional FDI Fitness developed by Saskia Wilhelms in 1998, indicates that government plays a dynamic and imperative role through its public policies and economic strategies in attracting foreign investors (Popovici and Călin, 2014). For instance, countries that have quality institutions, enjoy good governance and have a low level of corruption tend to promote FDI in its economy (Assunção et al., 2011; Buchanan et al, 2012). Moreover, host countries determinants such as high degree of macroeconomic and political stability, the existence of distinct and enforceable property rights, and liberal legislations governing the remittance of dividends and profits are important to attract FDI (Ramirez, 2017). Likewise, a country is viewed as an attractive destination for FDI when it enjoys strong institutions, mainly for three reasons that Imtiaz and Bashir (2017) summarizes: First, an excellent institutional framework allows companies to have greater discretion in the choice of their strategies (Delios and Beamish, 1999). Second, transaction costs are diminished (Bevan and Estrin, 2004). Third, information asymmetries are reduced as transaction risks are mitigated (Tong et al., 2008).

Under this theory, economic freedom captured by the rule of law and government size are key determinants of FDI because government policies constitute a legal- institutional framework which is beneficial to business activity. Transaction costs associated with negotiating contracts are minimized, there is improved transparency, less bureaucracy and access to independent financial system (Ramirez, 2017). Hence, it can thus be postulated that economic freedom, being a measure of institutional quality (Zghidi et al., 2016) is in the limelight in attracting FDI in a country as it provides a better investment climate.

2.2.3. International product life cycle (PLC) THEORY

The PLC theory which was developed by Raymond Vernon in 1966 concentrates on the role of innovation and economies of scale in deciding trade patterns. It expresses that FDI is a stage in the life cycle of a new product from its invention to maturity. This theory clarifies that in a market-driven economy, FDI is not only an activity to move out of the home markets but also it

allows the firm to explore cheaper factors of production in order to maintain its market shares (Gupta and Singh, 2017). It can also be said that this theory takes FDI as a defensive move to secure their current market position against domestic and foreign competitors (Dunning, 1993). In line with this, a country having an efficient and a well-functioning regulatory framework, alongside with its market openness, will allow foreign entrants to eliminate transaction costs and maximize profits. Another key point is that transparency in rule of law will motivate foreign investors to invest in the country, thus, enabling them to meet the rising demand of their products and allowing them to compete efficiently with their competitors (Mohamed and Sidiropoulos, 2010). Hence, given these points, economic freedom, indeed is an integral determinant of inward FDI.

2.3. Empirical Literature

The empirical literature provides some general evidence that overall economic freedom is a positive determinant of FDI (Sovbetov and Moussa, 2017; Imtiaz and Bashir, 2017; Barua and Naym, 2017; Hossain, 2016; Taran et al., 2016; Sambharya and Rasheed, 2015; Ajide and Eregha, 2014, 2015; Nasir and Hassan, 2011; Quazi, 2007; Quazi and Rashid, 2004). However, some studies like Naanwaab and Diarrassouba (2016) find that although economic freedom has a positive and significant effect on FDI in high- and middle-income countries, it is not a significant determinant of FDI in low-income countries.

In addition, most of the studies do not provide consistent evidence on what type of economic freedom is a determinant of FDI. More specifically, there is no consensus as to what type of economic freedom exactly matters for SSA in attracting FDI. Some studies like Sovbetov and Moussa (2017), Imtiaz and Bashir (2017), Barua and Naym (2017), Hossain (2016), Taran et al. (2016), Naanwaab and Diarrassouba (2016), Sambharya and Rasheed (2015), Ajide and Eregha (2014; 2015), Quazi (2007) and Quazi and Rashid (2004) use The Heritage Foundation’s measure of Index of Economic Freedom (IEF). On the other hand, studies like Fofana (2014), Bengoa and Sanchez-Robles (2003) use Fraser Institute’s measure of Economic Freedom of the World (EFW) index. Still some other studies like Subasat and Bellos (2011) and Kapuria-Foreman (2007) use both the IEF and EFW. Various studies have used various levels of disaggregation of the measures as well and obtained different results. For instance, Fofana (2014) finds that rule of law has a positive influence on FDI in SSA while Ajide and Eregha (2014; 2015) finds that property rights freedom is a drag in ECOWAS countries (Economic Community of West African States).

Besides, various studies have also used various estimation techniques, sample sizes, and time periods. Most studies use a panel data estimation approach. Some use the pooled OLS model, dynamic panel method or panel gravity model. Some others like Kapuria-Foreman (2007) use cross-country growth regressions. Taran et al. (2016) use ANOVA in addition to multiple regression analysis, whereas Caetano and Calairo (2009) use the fuzzy logic clustering technique. As regards to the sample size and time frame, most studies are driven by data availability.

3. DATA AND RESEARCH METHODOLOGY

The current study focuses on a sample size of 40 out of the 48 Sub-Saharan African countries over the time period 1997-2016. The selection of the sample size and estimation period is restricted by the availability of comparable data. A list of the sample countries is provided in Table C in the Appendix. The study uses a balanced panel approach and conducts a battery of diagnostic tests including fixed and random effects and panel unit root tests. We also use both aggregated measures of economic freedom, the Heritage Foundation's Index of Economic Freedom (IEF) and the Fraser Institute's Economic Freedom of the World index (EFW). In addition, we use Heritage Foundation's 4 indexes of economic freedom: Rule of Law, Government Size, Regulatory Efficiency, and Market Openness. We also use the 10 of the 12 disaggregated economic freedom measures of the IEF as provided by the Heritage Foundation: Property Right, Government Integrity for Rule of Law; Tax Burden (Fiscal Freedom) and Government Spending for Government Size; Business Freedom, Labor Freedom, and Monetary Freedom for Regulatory Efficiency; and Trade Freedom, Investment Freedom, and Financial Freedom for Market Openness. The measures of Judicial Effectiveness and Fiscal Health have been dropped because of non-availability of data. As regards to data from Fraser Institute, in addition to the EFW summary index, we also use the following 5 measures: Size of Government, Legal System & Property Right, Sound Money, Freedom to trade Internationally, and Regulation of Credit, Labor & Business.

We base our model specification using variations of the empirical works of Imtiaz and Bashir (2017), Fofana (2014), and Nasir and Hassan (2011) and estimate the following 5 models (3 using data from Heritage Foundation and 2 using data from Fraser Institute):

Functional Forms using the Heritage Foundation measures are represented in Models 1 to 3:

Model 1: IEF (Overall Score)

$$FDI_{it} = f(IEF_{it}, MS_{it}, OPEN_{it}, INFRAS_{it}, ER_{it}) \quad (1)$$

Model 2: Four components of IEF

$$FDI_{it} = f(Rule\ of\ Law_{it}, Govt\ Size_{it}, Regulatory\ Efficiency_{it}, Market\ Openness_{it}, MS_{it}, OPEN_{it}, INFRAS_{it}, ER_{it}) \quad (2)$$

Model 3: Ten disaggregated measures of IEF

$$FDI_{it} = f(\text{Property Right}_{it}, \text{Govt Integrity}_{it}, \text{Tax Burden}_{it}, \text{Govt Spending}_{it}, \text{Business Freedom}_{it}, \text{Labor Freedom}_{it}, \text{Monetary Freedom}_{it}, \text{Trade Freedom}_{it}, \text{Investment Freedom}_{it}, \text{Financial Freedom}_{it}, MS_{it}, OPEN_{it}, INFRAS_{it}, ER_{it}) \quad (3)$$

Functional Forms using Fraser Institute measures are represented in Models 4 and 5:

Model 4: EFW (Summary Index)

$$FDI_{it} = f(EFW_{it}, MS_{it}, OPEN_{it}, INFRAS_{it}, ER_{it}) \quad (4)$$

Model 5: Five components of EFW

$$FDI_{it} = f(\text{Size of Govt}_{it}, \text{Legal System and Property Rights}_{it}, \text{Sound Money}_{it}, \text{Freedom to Trade Internationally}_{it}, \text{Regulation of Credit, Labor and Business}_{it}, MS_{it}, OPEN_{it}, INFRAS_{it}, ER_{it}) \quad (5)$$

Where FDI=Inward FDI Stock, IEF=Index of Economic Freedom (Overall Score), and EFW=Economic Freedom of the World (Summary Index) for country i at time t . The control variables are: MS=Market Size (GDP per capita), OPEN=Trade Openness (Trade as a percentage of GDP), INFRAS=Infrastructure (Mobile Cellular Subscription per 100 people), ER=Official Exchange Rate

Inward FDI Stock as the dependent variable is obtained from UNCTAD. It represents the value of the share of capital and reserves including retained profits attributable to the parent enterprise, plus the net indebtedness of the company's subsidiaries. The selection of FDI stock is in accordance to Imtiaz and Bashir (2017) and Fofana (2014). FDI stock portrays the stock of foreign direct investors' knowledge that has been acquired in the nation over the long-run (Sooreea-Bheemul and Sooreea, 2013). It is more relevant to use FDI stock instead of flows because stock is not as volatile as flows and it is an eminent measure of capital ownership as it includes FDI funded in domestic capital market (Sooreea and Sooreea-Bheemul, 2012). It also helps foreign investors in determining global allocation of output (Bénassy-Quéré et al., 2007).

Market size of host countries plays an important role in attracting MNCs (Jadhav, 2012). GDP per capita at constant LCU is used to proxy for market size, which in most empirical works on the determinants of FDI has, by far, been widely accepted as having a significantly positive impact on FDI (Chakrabarti, 2001). Some studies have used absolute GDP as an alternative measure but as Chakrabarti (2001) points out, it is a relatively poor indicator of market potential for the products of foreign investors, particularly in many developing economies, since it reflects the size of the population rather than income. In this study GDP per capita data is taken from World Development Indicators (WDI), World Bank.

Trade openness in this study is measured as trade as a percentage of GDP. It is the sum of exports and imports of goods and services measured as a share of GDP. Numerous studies have found that nations which are freer pull in more FDI in its economy (Kandiero and Chitiga, 2006; Seim, 2009; Liargovas and Skandalis, 2012). Data for trade openness is obtained from WDI, World Bank.

To capture the quality of infrastructure, mobile cellular subscription (per 100 people) is used as a proxy. Data is taken from WDI, World Bank. A well-developed and quality infrastructure tends to facilitates production and minimizes operational costs, thus, increasing the productivity potential of investments (Sichei and Kinyondo, 2012; Rajan, 2004). Globalization and liberalization of markets are major contributions for SSA to have access to technology, hence, enjoying spill-over effects.

Exchange rate in this study is measured using Official Exchange Rate (LCU per USD, period average). It refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market and it is calculated as an annual average based on monthly averages. Data is extracted from WDI, World Bank. Exchange rate can influence FDI through an imperfect capital market where a currency depreciation could

result in surges in FDI inflows (Froot and Stein, 1991). On the other hand, unstable and fluctuating exchange rates could attract less FDI in a nation (Kiyota and Urata, 2004). Jeon and Rhee (2008) have found a significant relationship between ER and FDI while Agyire-Tettey (2008) showed a negative relationship between these two variables. Insignificant relationship is also observed (Dewenter, 1995).

Table 1 provides a summary statistics of the variables in this study. Ln represents natural logs.

There is some evidence that market openness in general is an important determinant of FDI in SSA (Model 2). However, embedded in this market openness variable is the Trade Freedom factor which does not provide clear cut evidence on its effects on FDI. When the Fraser Institute's measures are used, Freedom to Trade Internationally is negatively associated with FDI but the coefficient is insignificant (Model 5). When the Heritage Foundation's measures are used, Trade Freedom is negatively associated with FDI (Model 3) and statistically significant. A negative impact on FDI implies that FDI coming into SSA is

Table 1: Summary statistics

Variable	Obs.	Mean	Std. dev.	Min.	Max.
Ln FDI Inward Stock	792	7.23	1.85	1.792	12.098
Ln IEF (Heritage)	767	3.982	0.164	3.063	4.344
Ln Rule of Law	767	3.387	0.407	2.303	4.205
Ln Government Size	767	4.276	0.176	3.176	4.549
Ln Regulatory Efficiency	767	3.953	0.253	2.59	4.384
Ln Market Openness	767	3.897	0.244	2.708	4.415
Ln Property Right	767	3.469	0.515	1.609	4.317
Ln Government Integrity	767	3.225	0.481	1.946	4.159
Ln Tax Burden	767	4.241	0.165	3.775	4.529
Ln Government Spending	756	4.308	0.277	1.526	4.598
Ln Business Freedom	767	3.974	0.231	3.153	4.443
Ln Labor Freedom	474	3	0.249	3.0867	4.515
Ln Monetary Freedom	753	1.161	0.159	0.666	1.425
Ln Trade freedom	766	1.444	0.04	1.328	1.511
Ln Investment Freedom	762	3.801	0.38	1.6098	4.5
Ln Financial Freedom	767	3.693	0.448	2.303	4.248
Ln EFW (Fraser)	553	1.774	0.149	1.075	2.098
Ln Size of Government	553	1.838	0.196	1.054	2.243
Ln Legal system	553	1.32	0.371	0.3	2.032
Ln Sound Money	549	1.914	0.271	-0.051	2.269
Ln Freedom to Trade Internationally	552	1.789	0.181	0.723	2.17
Ln Regulation of Credit, Labor and Business	553	1.842	0.161	1.284	2.16
Ln GDPPC	800	11.633	1.983	6.342	15.925
Openness	766	75.803	42.548	20.964	531.737
Infrastructure	775	35.517	39.448	0.001	171.375
Exchange Rate	764	8800422	2.43E+08	0.012	6.72E+09

Table 2: Impact of heritage foundation's economic freedom measures on FDI

	Model 1	Model 2	Model 3
IEF (overall score)	1.118* (0.002)	-	-
Rule of law	-	0.038 (0.803)	-
Property right	-	-	-0.700* (0.000)
Government integrity	-	-	-1.828 (0.156)
Government size	-	0.137 (0.585)	-
Tax burden	-	-	43.816* (0.002)
Government spending	-	-	-0.078 (0.649)
Regulatory efficiency	-	0.928* (0.000)	-
Business freedom	-	-	0.442* (0.016)
Labor freedom	-	-	0.817* (0.005)
Monetary freedom	-	-	8.041* (0.035)
Market openness	-	0.639* (0.004)	-
Trade freedom	-	-	-181.355* (0.002)
Investment freedom	-	-	-0.042 (0.771)
Financial freedom	-	-	0.070 (0.702)
Market Size	1.692* (0.000)	1.115* (0.000)	0.084 (0.471)
Openness	0.007* (0.000)	0.006* (0.000)	0.009* (0.000)
Infrastructure	0.016* (0.000)	0.014* (0.000)	0.013* (0.000)
Exchange rate	3.65e-12 (0.972)	1.96e-12 (0.985)	-8.35e-06 (0.768)
Hausman probability	0.0000	0.0273	0.0635
Model decision	Fixed effect	Fixed effect	Random effect
R-squared	0.6176	0.6420	0.1640

P-value is in parenthesis; *indicates significant at 5% level

Table 3: Impact of Fraser institute's economic freedom measures on FDI

	Model 4	Model 5
EFW (summary index)	3.253* (0.000)	-
Size of government	-	0.830* (0.000)
Legal system and property right	-	0.590* (0.001)
Sound money	-	0.305 (0.104)
Freedom to trade internationally	-	-0.304 (0.343)
Regulation of credit, labor and business	-	1.499* (0.000)
Market size	0.667* (0.020)	0.532** (0.067)
Openness	0.015* (0.000)	0.015* (0.000)
Infrastructure	0.015* (0.000)	0.015* (0.000)
Exchange rate	-2.32e-11 (0.846)	-2.91e-11 (0.804)
Hausman probability	0.0343	0.0000
Model decision	Fixed effect	Fixed effect
R-squared	0.6054	0.6204

P-value is in parenthesis; * and ** indicate significant at 5% and 10% levels respectively

essentially of the tariff-jumping type FDI where higher tariff and non-tariff barriers reduce trade freedom and promote FDI to enter host SSA countries.

Table 2 reveals that, when the Heritage Foundation's measures are used, there are some evidence that market openness in general is an important determinant of FDI in SSA (Model 2). However, embedded in this market openness variable is the Trade Freedom factor which does not provide clear cut evidence on its effects on FDI. Besides, Trade Freedom is negatively associated with FDI (Model 3) and statistically significant. A negative impact on FDI implies that FDI coming into SSA is essentially of the tariff-jumping type FDI where higher tariff and non-tariff barriers reduce trade freedom and promote FDI to enter host SSA countries. Tax Burden factor is positive and significant, indicating that a 1% increase in Tax Burden Freedom can lead to FDI to rise by 43.8%.

Table 3 reveals that, when the Fraser Institute's measures are used, Freedom to Trade Internationally is negatively associated with FDI but the coefficient is insignificant (Model 5).

The results also indicate that there is some evidence that fiscal freedom (low tax burden) and the size of government are important determinants of FDI in SSA. A 1% increase in the Size of Government leads to an increase in FDI by 0.83%.

However, there is no clear cut evidence about the role of Rule of Law and Property Rights in determining FDI in SSA. Model 2 suggests that Rule of Law is an insignificant determinant of FDI, whereas Model 5 suggests that the Legal System & Property Right is a statistically positive determinant of FDI. In advanced economies, Legal System and Property Right are generally thought to be an important attraction for FDI. However, Model 3 suggests that improvements in Property Right is in fact a deterrent to FDI in SSA. This suggests that FDI seek those SSA countries that have lax property rights protection to escape from tight conditions at home.

Table 4: Panel unit root tests (Im-Pesaran-Shin)

Variables	P-value at level	P-value at first difference	Decision
Ln FDI Inward Stock	0	-	I(0)
Ln IEF (Heritage)	0	-	I(0)
Ln Rule of Law	0.001	-	I(0)
Ln Government Size	0.001	-	I(0)
Ln Regulatory Efficiency	0.98	0	I(1)
Ln Market Openness	0	-	I(0)
Ln Property Right	0.059	0	I(1)
Ln Government Integrity	0	-	I(0)
Ln Tax Burden	0	-	I(0)
Ln Government Spending	0	-	I(0)
Ln Business Freedom	0.7	0	I(1)
Ln Labor Freedom	0.023	-	I(0)
Ln Monetary Freedom	0	-	I(0)
Ln Trade freedom	0	-	I(0)
Ln Investment Freedom	0.262	0	I(1)
Ln Financial Freedom	0.064	0	I(1)
Ln EFW (Fraser)	0.002	-	I(0)
Ln Size of Government	0.0001	-	I(0)
Ln Legal system and Property Rights	0.045	-	I(0)
Ln Sound Money	0	-	I(0)
Ln Freedom to Trade Internationally	0.132	0	I(1)
Ln Reg. of Credit, Labor & Bus	0	-	I(0)
Ln GDPPC	0.009	-	I(0)
Openness	0.001	-	I(0)
Infrastructure	0.125	0.0003	I(1)
Exchange Rate	1	0	I(1)

In terms of the control variables, the estimated models indicate that market size, trade openness and infrastructure are generally important determinants of FDI in SSA, whereas exchange rates are insignificant.

4.1. Diagnostic Tests

To test the validity of our models, a battery of tests have been performed. To detect any probable collinearity, the Variance Inflation Factor (VIF) is conducted. Results show that multicollinearity is not present since the VIF value is <5. To identify the presence of heteroskedasticity in the models, the Breusch-Pagan test is carried out with the null (H0) of constant variance, and alternative (H1) of heteroskedasticity. Results indicate that since the $P > 0.05$, the models are homoskedastic. To choose between Random Effect and pooled OLS, the LM test is conducted with H0=Variance across entities is zero (no panel effect), and H1=Variance across entities is not zero (panel effect). Results indicate that Random Effect model is appropriate to Model 3 only (Prob > chibar2 is 0.000). Panel unit root tests are done using Im-Pesaran-Shin (1997) test to check whether time-series variables are non-stationary and contain a unit root (H0) versus stationary (H1). The lag-length selection is based on Schwarz Information Criteria (SIC). Almost all the variables are integrated of order zero, I(0), that is stationary, with the exception of Regulatory Efficiency, Property Right, Business Freedom, Investment Freedom, Financial Freedom, Freedom to Trade Internationally, Infrastructure and Exchange Rate which are I(1). The non-stationary variables are stationary after differencing once. The results of the panel unit root tests are shown in Table 4.

4. CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper has investigated whether, and if so, what aspects of economic freedom matter to inward FDI in a sample of 40 Sub-Saharan African countries during the 1997-2016 period. The study contributes to the literature by examining a larger set of SSA over a longer time period using a balanced panel data approach. It also uses both the Heritage Foundation's Index of Economic Freedom (IEF) and the Fraser Institute's Economic Freedom of the World (EFW) index. To get a more comprehensive understanding of which components of economic freedom matter for FDI, the disaggregated measures of IEF and EFW are also considered.

IEF consists of 4 main components: Rule of Law, Regulatory Efficiency, Government Size, and Market Openness. These four indexes are further disaggregated into 10 measures: Property Rights, Government Integrity, Tax Burden, Government Spending, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Investment Freedom, and Financial Freedom.

EFW is categorised into 5 major components: Size of Government, Legal System and Property Rights, Sound Money, Freedom to Trade Internationally, and Regulation of Credit, Labor and Business.

Five regression models are estimated (3 using IEF measures and 2 using EFW measures). A set of standard control variables are used to control for market size, trade openness, infrastructure and exchange rates. The econometric testing is done using a panel data model with Fixed and Random Effects based upon the Hausman Test. Panel unit root tests are also employed to check for stationarity in the data.

The results indicate that overall economic freedom is a positive and statistically significant determinant of FDI, thus lending overall support to the OLI eclectic paradigm, the institutional theory of FDI, and the international product life cycle theory. More interestingly, the results indicate that irrespective of which measure of overall economic freedom is used (the Heritage Foundation's IEF or the Fraser Institute's EFW), SSA that have higher economic freedom tend to have higher FDI. In fact, a 1% improvement in economic freedom (IEF or EFW) raises FDI in SSA by 1.12%-3.25% (respectively).

The positive results are consistent with previous studies. A higher degree of economic freedom creates a better investment climate and likely attract more foreign direct investors since they would benefit from improved transparency, better institutional framework and a reduction of information asymmetries, amongst others. It also creates a sense of confidence in the mind of investors which further help to attract more FDI in the economy. According to the African Economic Outlook (2017), an economy's growth is promoted due to enhancement in macroeconomic governance and business environment. Additionally, some countries in SSA were characterized by good integrity score in 2015 and they include South Africa, Benin, Mauritius, Kenya and Liberia, followed by Ghana and Uganda. Some countries are also progressing in terms

of political environment (Africa Investment Report, 2016). This further shows that higher economic freedom (IEF or EFW) is an important overall determinant of FDI in SSA.

There is also clear evidence that Regulatory Efficiency including Business Freedom, Labor Freedom and Monetary Freedom are key determinants of FDI in SSA. It is interesting to note that while Monetary Freedom (i.e. price stability) is an important determinant of FDI in SSA, Financial Freedom (i.e. banking independence and government interference in the financial sector) or Investment Freedom are not significant determinants of FDI in SSA.

There is some evidence that market openness in general is an important determinant of FDI in SSA. However, there is no clear impact of Trade Freedom on FDI. When the Heritage Foundation's measures are used, Trade Freedom is negatively associated with FDI. A negative impact on FDI implies that FDI coming into SSA is essentially of the tariff-jumping type FDI where higher tariff and non-tariff barriers reduce trade freedom and promote FDI to enter host SSA countries. On the other hand, all estimated models in both Tables indicate that openness to trade is an important determinant of FDI. So, it likely means that FDI that enter SSA choose SSA countries that have higher trade barriers to get in (i.e. the FDI is tariff-jumping) but once they are in the SSA countries their objective is to use the SSA countries as export platforms to export out of those countries. So, the FDI coming into SSA are therefore efficiency seeking as they take advantage of different factor endowments, cultures, institutional arrangements and policies to supply multiple markets, consistent with Dunning (1993).

The results also indicate that there is some evidence that fiscal freedom (low tax burden) and the size of government are important determinants of FDI in SSA. Tax Burden factor is positive and significant. For a country to maximize economic freedom, the state should minimize tax burden by allowing individuals and businesses to retain and manage a bigger portion of their wealth and income for their own benefit and use. Hence, by so doing, this will lead to a fall in the cost of doing business. As a result, this will attract MNCs, thereby, increasing FDI. So, this impacts positively on the locational choice of foreign investors. This is consistent with the finding of Imtiaz and Bashir (2017) and Hassan (2015). According to Subasat and Bellos (2011), the Size of Government is also an attraction to FDI. Some governments do their best to make their SSA countries an attractive destination through investment promotion authorities and investment in public goods like roads and public infrastructure development projects.

Other important findings of this study are that market size, trade openness and infrastructure are generally important determinants of FDI in SSA, whereas exchange rates are insignificant. Bigger market size represents favorable demand conditions and tend to promote FDI; this is consistent in the literature (Barua and Naym, 2017; Kapuria-Foreman, 2007; Asiedu, 2006). A positive and statistically significant coefficient on Trade Openness is largely in accordance with previous studies such as Imtiaz and Bashir (2017), Naanwaab and Diarrassouba (2016) and Jadhav (2012). This reaffirms that SSA will be able to attract higher FDI if their economies are more open. Thus, liberalization of trade plays a

crucial role in pulling in higher levels of FDI. Infrastructure is also positive and highly significant in all the five models. It boosts FDI and this is in conformity with Imtiaz and Bashir (2017), Quazi (2007) and Asiedu (2006). Good quality infrastructure, which forms part of a sound institutional framework, helps investors to stimulate productivity and enjoy good governance, subsequently, leading to higher FDI in the host economy.

However, there is no clear-cut evidence about the role of Rule of Law and Property Rights in determining FDI in SSA. In advanced economies, Legal System and Property Right are generally thought to be an important attraction for FDI. Investors are attracted to invest in countries where protection of property rights is highly valued (Fofana, 2014; Cleeve, 2008; Asiedu, 2006; Kinoshita and Campos, 2003). However, our study indicates that improvements in Property Right is in fact a deterrent to FDI in SSA. This suggests that FDI seek those SSA countries that have lax property rights protection to escape from tight conditions at home. Ajide and Eregha (2015) suggests that Property Right in this case is a drag to FDI because no severe action is taken when individuals breach laws which protect property and patent rights. Also, even if laws exist, there may be no enforcement. Despite these constraints, still investors are ready to invest in SSA, probably because of their other motives of FDI. For instance, they want to obtain high quality natural resources, creative assets, physical infrastructure and cheap semi-skilled labor which are otherwise unavailable or costly in their home country.

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APPENDIX

Table A: The 4 components and disaggregated measures of heritage foundation's index of economic freedom (IEF)

(1) Rule of Law

Property Rights

It assesses the ability of individuals to accumulate private property which are secured by strong laws that are enforced completely by the state. This boost citizens' confidence which allow them to make long-term plans because they are sure that their income, property and savings are safe.

Judicial Effectiveness

A well-functioning legal framework, leading to a fair and effective judicial system, ensures that laws are being honoured and it protects the rights of all citizens through appropriate legal actions taken against violation

Government Integrity

To prevent market evils such as corruption, bribery, nepotism, cronyism, patronage, embezzlement and graft, government integrity is important for allowing transparency which is essential for the efficient functioning of a free market.

(2) Government Size

Tax Burden

For a country to maximise economic freedom, the state should minimise tax burden by allowing individuals and businesses to retain and manage a bigger portion of their wealth and income for their own benefit and use.

Government Spending

Government spending such as providing infrastructure, improving human capital, funding R&D and spending on public goods benefit the whole society as it reduces the distortion of the markets. However, excessive government spending can lead to crowding out of private economic activity

Fiscal Health

This include the government budget and the extent to which it will intervene. It represents efficient management of resources which is necessary for economic freedom and a dynamic long-term economic development. The opposite is true for widening deficits and a growing debt burden.

(3) Regulatory Efficiency

Business Freedom

It refers to the capability to create, operate, and close an entity promptly and easily without any government intervention. Burdensome and redundant regulations limit business freedom.

Labor Freedom

It refers to the ability for employers to freely employ labor and dismiss redundant workers without any interference from the state as businesses main aim is to increase productivity of their employees.

Monetary Freedom

Price stability is necessary since inflation and price control mislead market activity. Also, economically free individuals need a steady and reliable currency as a medium of exchange, unit of account and store of value because without them, creation and accumulation of long-term capital becomes difficult.

(4) Market Openness

Trade Freedom

It is a composite measure of the absence of non-tariff and tariff barriers that affect imports and exports of goods and services.

Investment Freedom

It refers to the assessment of free flow of capital, particularly foreign capital.

Financial Freedom

It is a measure of banking security and independence from government control since political partisanship has no place in a free capital market.

Source: Compiled from Heritage Foundation (2017)

Table B: The 5 components of Fraser institute's economic freedom of the world (EFW) index

(1) Size of Government

For a country to enjoy high economic freedom, government spending and taxation should be lowered. The state should not interfere massively in business activities as this may limit the choice of individuals.

(2) Legal System and Property Rights

One of the crucial tasks of the government is to protect individuals and their property rights. A nation where its government fulfils this function properly will enjoy high economic freedom.

(3) Sound Money

To be able to protect individuals' property rights, it is primordial to have sound money. This is because high and volatile inflation impedes the value of wages and savings earned and prevents people from planning for the future as volatile inflation creates uncertainty.

(4) Freedom to Trade Internationally

Economic freedom soars when a country trades across many countries. That is, people and enterprises should have the freedom to exchange goods, services and contracts globally.

(5) Regulation of Credit, Labor, and Business

Government establishes regulations that create restrictions to freedom of exchange, the way individuals manage their enterprises voluntarily, gain credit and individuals' choices of where and for whom to work.

Source: Compiled from Fraser Institute The above 5 categories can further be broken down into 24 components, which themselves comprise of numerous sub-components. In total, there exist 42 distinct variables of EFW. Each component of economic freedom is graded on 0-10 scale and they are given equal weight when calculating the final aggregate score. 10 is viewed as the highest score, implying that the country has the greatest economic freedom and is fully free

Table C: Sample countries

Angola	Equatorial Guinea	Malawi	Senegal
Benin	Ethiopia	Mali	Sierra Leone
Botswana	Gabon	Mauritania	South Africa
Burkina Faso	Ghana	Mauritius	Swaziland
Burundi	Guinea	Mozambique	Tanzania
Cabo Verde	Guinea-Bissau	Namibia	The Gambia
Cameroon	Kenya	Niger	Togo
Chad	Lesotho	Nigeria	Uganda
Cote d'Ivoire	Madagascar	Rwanda	Zambia
Central African Republic	Democratic Republic of Congo	Republic of Congo	Zimbabwe