

Journal of Asian Business Strategy

ISSN(e): 2225-4226

ISSN(p): 2309-8295

DOI: 10.18488/journal.1006.2019.92.261.286

Vol. 9, No. 2, 261-286.

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URL: www.aessweb.com



THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICAS (COMESA) FREE TRADE AREA (FTA) AND FOREIGN DIRECT INVESTMENT (FDI) NEXUS



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Article History

Received: 28 October 2019

Revised: 29 November 2019

Accepted: 9 December 2019

Published: 23 December 2019

Keywords

FDI

Free trade area

Regional integration

Financial development

Human development index.

JEL Classification

F14; F15; F21.

ABSTRACT

There is neither theoretical foundation nor clear-cut empirical base on FDI determinants, amidst the proliferation of FTAs associated with the overlapping tendencies ('spaghetti bowl'), stalled Doha Development Multilateral negotiation, and the increasing argument on whether such FTAs can stimulate sustainable growth through, amongst other factors FDI (Yeats, Amjadi, Reincke, & Ng, 1997). This study examines whether the Free Trade Area (FTA) of the Common Market for Eastern and Southern Africa (COMESA) can predict the inward Foreign Direct Investment (FDI). Considering the limitation on the benchmark test (OLS Fixed Effect), the Feasible Generalized Least Squares (FGLS) robustness exhibits a positive and strong influence of COMESA-FTA on inward FDI. However, the interactive magnitudes of the FTA with Institutional Quality (IQ) and Financial Development Index (FINDI) demonstrate an inverted-U negative and significant relationship with inward FDI. Trade Openness (TOP) and the Human Development Index (HDI) have positive associations with the inward FDI, while FINDI adversely affected inward FDI. The findings suggest that FTA, TOP, HDI, and FINDI should be considered in policy. harmonization and implementation. However, the mixed coefficients of FTA across models singling unnecessary administrative burdens and inconducive policies that may create barriers from attracting FDI.

Contribution/ Originality: This study contributes in the existing literature by examining the determinant factors of FDI to FTA (with overlapping membership), taking in account the slope of FTA with multidimensional measurements of control variables for financial development, human capital, and intuitional quality. The study suggested some policy implications and areas for subsequent studies to address.

1. INTRODUCTION

The trend of liberalization urges many countries to liberalize their trade policies for promoting trade, investment, and encouraging the economic integration objectives at large. It is worth noting that the growth of regional trade agreements (RTAs) or regional economic communities (RECs) or regional integration agreements (RIAs) (hereinafter are used interchangeably) have increasingly become a key concern for both researchers and policymaker, due to the progressive outcomes in the international relation setups. Shortly, the term “regional integration” is generally used to infer a “trade-driven regionalization,” which incorporates selective coordination on institutions, policies, and “joint infrastructure projects” along with non-trade issues, like peace and security (Mengisteab & Bereketab, 2012). Moreover, to prevent and sustain countries’ interests and agenda amidst “globalization and hegemonic power,” in the international arena (Buzdugan, 2013). By the second half of 2017, the number of RTAs in force has reached 284 agreements (World Trade Organization, 2017). In the lack of real investment, RECs like COMESA would rely on aid support. Alternatively, COMESA has stepped further in promoting investment for COMESA and Non-COMESA sources of investment (Common Market for Eastern and Southern Africa, 2007).

No doubt, countries find themselves forced to adjust their investment policies to bridge the gap in national saving through their endeavors at national and regional levels, to attract more direct and indirect investment. Many RECs incorporate in their establishing agreements clauses on investment promotion and protection. Hence, FDI has increasingly become an alternative tool for capital loans, the source of capital inflow, an external source of finance compared to remittances, Official Development Assistance (ODA); portfolio investment and another investment catalyst for growth with free burden risks associated to the debt, as used to be (UNCTAD, 2017). The role of FDI has been studied extensively in recent years, as it has a lot of significant outcomes for the host country. The impact of FDI is ranging from physical to intangible assets, such as technology spillover, management practice, know-how, market opportunities.

Albeit, the relationship between FDI and other macroeconomic variables has intensively addressed in the literature. Still, the need for FDI as a source of finance for bridging the gap in development as alternative source to capital loans and ODA is persistingly increased (Agiomirgianakis, Asteriou, & Papathoma, 2003; Buckley, 1985; Dunning, 1979; Dutta, Kar, & Saha, 2017; Gökmenoğlu, Apinran, & Taşpınar, 2018; Okafor, Piesse, & Webster, 2015; Porter, 1990; Prasanna, 2017; UNCTAD, 1999a). Importantly, FDI is considered as a stable source of finance, which promotes technology transfer and generating employment. Therefore, RTAs put priority for FDI in their objectives and vision as a catalyst for improving the integration amongst member states (Common Market for Eastern and Southern Africa, 2009).

FDI inflows are different across the world. For instance, a few portions of the FDI inflows are channeled into developing countries (Mora & Logan, 2012). Despite the global declining in FDI inflows, the inward FDI into Sub-Saharan Africa (SSA) “remains low,” account 2- 3% of the worldwide total. However, “by location, there is a negative effect on FDI for being an African country” (Asiedu, 2002). Nevertheless, the COMESA region, with its stumbling integration processes, recorded a remarkable increase in FDI inflows from US\$ 18.6 bn in 2016 to US\$ 19.3 in 2017, which represents a growth rate of 3.6% (COMSTAT, 2018). That infers the consistent increase of FDI inflows from the developed countries to the developing economies (Kayalvizhi & Thenmozhi, 2018). This growth rate represents 46% of Africa’s FDI inflows, while the global FDI inflows dropped by 23% for the same period (Muchira, 2019). However, the FDI flows to the COMESA region is relatively stable over the period 2000–2016, see Figure 1. Notably, COMESA remains the most African’s RECs representative as the fact that it represents 21 African States, 560 million inhabitants, and the largest market for trade and investment.

The study objective was to analyze the impact of COMESA integration processes on inward FDI in the selected member states from 2000 to 2016. Though, several studies have investigated the determinant factors of inward FDI like institutions, macroeconomic factors, market size,

development, and trade openness (Antonakakis & Tondl, 2015; Blonigen, 2005; Faeth, 2009) the coverage were mostly confined to particular regions, mainly developed countries, for example, the European Union (EU), the North American Free Trade Agreement (NAFTA), Association of Southeast Asian Nations (ASEAN), the western Europ (15-EU), the Central and Eastern Europe (CEE), and the Southern Common Market (MERCOSUR in Spanish). Unlike the past studies, this article will add to the literature of the determining factors of FDI by giving focus on COMESA, which to the best of our knowledge, has not well addressed. Furthermore, as there was neither theoretical foundation nor clear-cut empirical base “on the robustness of the FDI determinants,” (Antonakakis & Tondl, 2015; Bolívar, Casanueva, & Castro, 2019) but few factors like human capital, market size, and institutional quality show accurate robustness effects. This study argues that COMESA-FTA is a predictor of FDI. However, having found the "Spaghetti bowl" effects and avoiding the overestimation of FTA on FDI, this study introduced a weight variable to control the impact of other regional economic and multilateral agreements (ORECMs). As in principle, the intent is to estimate the direct impact of FTA (details followed) on FDI, we also expand the analysis to see how that direct impact (FTA) matters through the interactive terms with the HDI, IQ, and the financial development index (FINDI). The assumption is that the robust FTA impact, a more significant interactive impact on FDI. Importantly, most of the previous studies used indicator measurements rather than indices, while this study employed the most relevant indices used by the recent literature based on the multidimensionality coverage in their natures. Operationally, these indices serve the research objectives by transforming the high dimension nature of indicators into low ones (Batuo, Mlambo, & Asongu, 2018; Le, Kim, & Lee, 2016). Also, to the best of authors' knowledge, there is no previous evidence measuring the impact of financial development as proxied by the Financial development index on FDI.

The literature review and data and methodology are described in Section 2 and Section 3, respectively. Section 4 discusses the results, while the conclusion and policy implications are presented in Section 5.

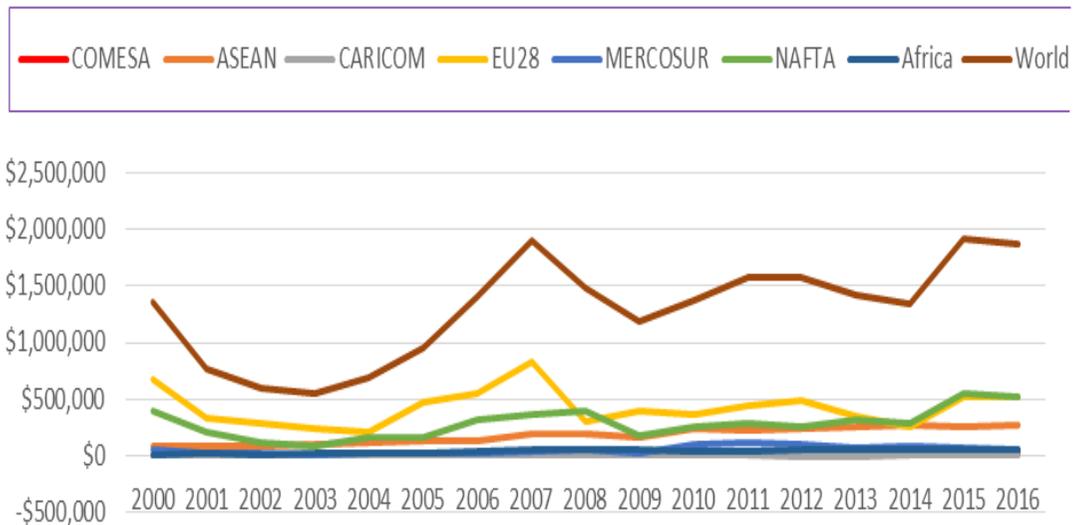


Figure-1. The global FDI inflows.

Source: Data used from UNCTAD.

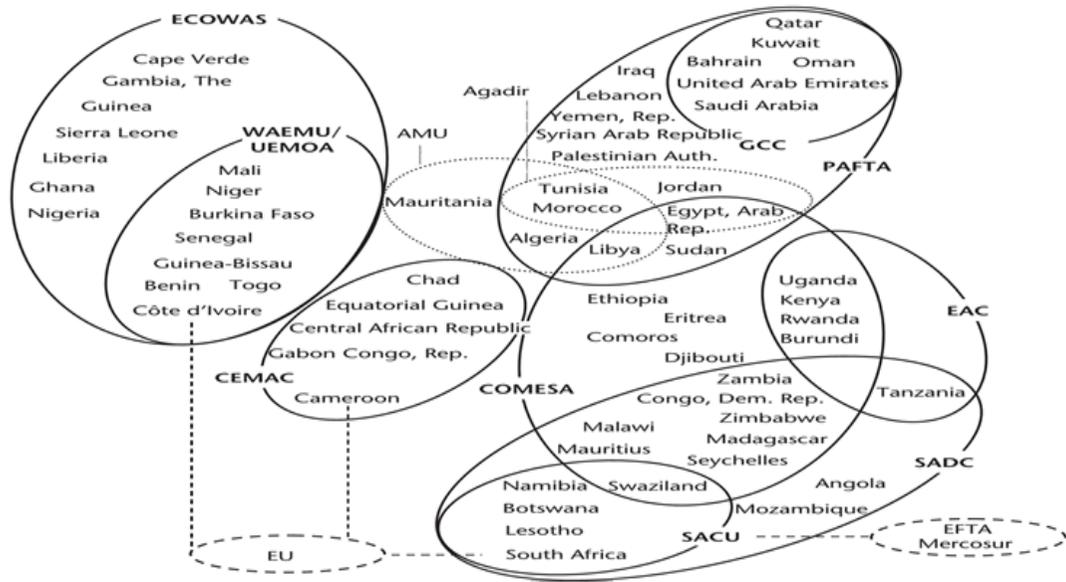


Figure-2. regional integration arrangements in Africa.

Source: Chauffour and Maur (2011) Figure 2, WTO Secretariat.

Note: AMU, Arab Maghreb Union; CEMAC, Economic and Monetary Community of Central Africa (Communauté Économique et Monétaire de l'Afrique Centrale); COMESA, Common Market for Eastern and Southern Africa; EAC, East African Community; ECOWAS, Economic Community of West African States; EFTA, European Free Trade Association; EU, European Union; GCC, Gulf Cooperation Council; Mercosur, Southern Cone Common Market; PAFTA, Pan-Arab Free Trade Area; SACU, Southern African Customs Union; SADC, Southern African Development Community; WAEMU/UEMOA, West African Economic and Monetary Union/Union Économique et Monétaire Ouest-Africaine.

2. LITERATURE REVIEW

2.1. The Theoretical Framework

The theoretical framework of FDI spillover and determinant factors have been a key concern for a firm's decision to work and compete in a host country. The most popular theories explaining this framework are; 1) The industrial organization hypothesis, which is the first theory tell how firm can decide to invest abroad (Hymer, 1976; Kindelberger, 1969) Eclectic Paradigm theory (Dunning, 1979); (Dunning, 1980); (Dunning, 2000); (Dunning, 2014); (Dunning, 2015). An Imbalance Theory of FDI (Hwy-Chang & Roehl, 2001; Moon & Roehl, 1993).

Hymer (1976) and Kindelberger (1969) underline specific advantages that foreign firm holds over hosting country's firms for the former to decide to go for international investing. Calvet (1981) also explains the development of theoretical literature towards multinational firms amidst the "market imperfections paradigm." This internalization hypothesis of FDI holds when a firm can meet the overall "market transactions" with internal transactions" through innovation, project and sustain a sound image, and ensure the quality of business (Buckley & Casson, 2009; De Beule & Van Den Bulcke, 2009). Based on the OLI model (Ownership, Location, and Internalization), which developed by Dunning (1982) explains why Multinational Corporations (MNCs) undertake FDI activities. The location advantage comprises, among other factors, the manifestation of the human capital in the host country. Moreover, in the absence of all these three advantages (OLI), the MNC should go for exporting, licensing, outsourcing, financing (Kreinin & Plummer, 2008). The impact of trade liberalization on growth can be accrued over its impact "technical and/ or labor efficiency" (Cleeve, Debrah, & Yiheyis, 2015).

The first two aforementioned-theories are based on market failure, which is either exogenous or endogenous (Dunning & Rayman, 1985; Hwy-Chang & Roehl, 2001). Whereas sometimes, firms with no "significant ownership advantage" nor have resources¹ go for investing abroad, and that what "Imbalance Theory" explains (Hwy-Chang & Roehl, 2001). The authors assured that their theory was inconsistent with the conventional methods that describe the source of FDI based on

¹ "the firm's resources are defined as stocks of factors owned by firm, while capabilities refer to a firm's capacity to deploy resources" see

the “ownership-specific advantages” and resources-based as a determinant source for FDI activities, when they noticed an increased flow of FDI from the less developed countries (LDCs), which the conventional theories of advantage do not explain. However, before the internationalization hypotheses, the behavior of FDI flows as defined by the trade theory of differential and endowment of the factor of production. The theory predicts that factors flow from country relatively hold higher factor intensities and endowment to those are relatively described less intensive and endowed factors to “exploit the higher returns” (Calvet, 1981).

2.2. FTA and FDI

Many RECs incorporate in their establishing agreements clauses on investment promotion and protection. Moreover, RTAs put priority for FDI in their objectives and vision as a catalyst for promoting the integration amongst member states (COMESA), 2009. Importantly, FDI is considered as a stable source of finance, which supports technology transfer and generating employment.

RTAs, as a determinant factor for FDI, have increasingly been a concern for both policymakers and researchers. However, meager efforts have emphasized the amplification of the regional agreement (Arregle, Miller, Hitt, & Beamish, 2018). In another word, few empirical kinds of literature provide evidence that qualifies such RECs levels, which in this study is proxied by FTA as a predict for FDI. Ghazalian and Amponsem (2019) find that FTA through entrusted trade policies has a significant effect on attracting FDI. Moreover, the role of regional integration over time has also been acknowledged as a tool serving and sustaining mutual benefits through economic activities and harmonized policies to achieve economic and or political goals (Huh & Park, 2018).

Similarly, Blonigen and Piger (2014) used a Bayesian model averaging (BMA) technique to examine 56 of FDI determinants and find that trade agreements are amongst the most robust determinants. Used static and dynamic gravity analyses of thirty-nine host economies over the period 1990 – 2011, Kahouli and Maktouf (2015) to examine the determinant of FDI in EU, NAFTA, ASEAN, MERCOSUR, AMU (The Arab Maghreb Union), and EUROMED. The study concludes different findings, as the RTAs in the EU, NAFTA, and ASEAN have a positive and statistical influence on inward FDI. However, the FTA in the EUROMED and AMU has a negative and significant association with FDI, while RTA in MERCOSUR has an insignificant negative effect on promoting FDI amongst partners.

Moreover, the dynamic result confirms that the lagged FDI and human capital holds a positive and significant impact on attracting FDI. However, the authors noticed that RTAs coefficients have different signs, which means that regional integration may create barriers (in case of negative and significant) from attracting FDI due to unnecessary “administrative burden” and inconducive policies. Kreinin and Plummer (2008) studied the impacts of EU, NAFTA, MERCOSUR, and ASEAN on FDI inflows therein. The authors conclude that RIA has a positive and significant impact on FDI with “a combination of investment creation and diversion,”; and “FDI acts as a substitute for trade in a significant number of cases, although in some cases, it complements trade.” Other previous studies suggest that RTAs have adverse effects on FDI (Brenton & Di Mauro, 1999; Portes & Rey, 2005).

By using fixed effect and system GMM, Leitão (2010) studied the FDI the determinants between Canada and the USA, EU15, Brazil, and Japan over the period 1995 – 2007. The results reveal, amongst others, trade openness are significantly explaining FDI inflows to Canada as well as the macroeconomic stability factors. Interestingly, the author noted that the inward FDI increased after the implementation of NAFTA FTA. Other studies, like Medvedev (2012) analyzed the impact of trade liberation on the net inward FDI of a sample of developing countries over the period 1990s to the early 2000s. The study confirms a positive relationship between the preferential trade agreement (PTA), as a proxy for trade liberalization and market size.

2.3. Other FDI Determinants

Generally speaking, according to Asiedu (2002), “there is a negative effect on FDI for being an African country.” Observably, according to Africa Regional Economic Index (2018), the overall COMESA integration performance is lacking relative to other RECs in Africa. The overall average RECs’ performance on regional integration stands at 47%, COMESA stands at the second last with

the average score of 41%, and number 6th in Regional infrastructure and interconnections (44%), 5th in financial integration and macroeconomic policy convergence, 4th in Trade integration 57% and last in free movement of persons' integration indicator. Considering the challenging task to identify fundamental determinant factors for FDI (Antonakakis & Tondl, 2015; Bolívar et al., 2019) some extraordinary empirical evidence documented by previous works (Blonigen. & Piger, 2014; Eicher, Helfman, & Lenkoski, 2012). Therefore, selecting appropriate determinant factors for FDI of this study it is a challenging task.

No matter how the determinants of FDI are, countries have increasingly concerned with the importance of the global economy participation, to increase income, enhance productivity and employability, promote technology spillover and management skills. Researchers have been more acknowledged with the implications between attracting FDI, economic, and political stability (Baniak, Cukrowski, Herczynski, & Jan, 2005; Dupasquier & Osakwe, 2006; Mwilima, 2003; Ok, 2004). Therefore, this study based on the previous empirical surveys in investigating the determinants that predict the inflow of foreign direct investment (Asiedu, 2002; Chakrabarti, 2001; Gastanaga, Nugent, & Pashamova, 1998; Kariuki, 2015; Kishor & Singh, 2015). Accordingly, for this study, we limited our analysis of the factors that exhibit the most significant effects.

We noted that most of the recent studies have focused on examining the traditional determinants along with political, economic, development, governance, and institutional factors. Economou (2019) used a random effect panel for some EU countries for the period 1996 -2017, finds that market size, gross capital formation along with economic freedom (proxied by "property rights, government integrity, monetary freedom, and financial freedom") have positive and robust impacts on FDI. Moreover, the study underlines the role of "institutional factors policy-makers" on attracting the FDI during the crises, in particular.

Previously undertaken studies, particularly on Sub-Saharan Africa (SSA), which characterized with the non-market seeking type of FDI, find some determinants factors like trade openness prove robust effects on attracting FDI as well as to non-SSA economies, while the return to capital and infrastructure exhibit positive impact on FDI to non-SSA countries (Asiedu, 2002). Likewise, the most recent studies, namely in SSA countries, find that FDI in the "sub-regional group" has different structural behavior as the "South and East Africa" (involved COMESA) is "efficiency seeking factors" in its nature (Okafor et al., 2015). Amongst different determinants studied, they find that trade openness and human capital (education enrolment) have positive and statistical effects on FDI, while corruption, when it is statistically determined, holds a negative impact. Similarly, Kinda (2013) examined FDI determinants for 30 SSA, through analyzing the effects on the vertical and horizontal FDI activities. He finds that finance and human capital are most robust in attracting FDI. The level of human capital is essential for developing countries, to the extent that they can embed conducting FDI in countries whose human capital is "sufficiently small" (Morita & Sugawara, 2015).

Curtis, Rhoades, and Griffin (2013) used the "Stepwise multiple regression method" for 129 countries, and they confirm that corruption and Human Development Index are the principal determinants for FDI inflows in the studied sample. Likewise, in their new approach to explain the relationship between the FDI and total factor productivity (FDI-TFP) in 51-developing countries during the period 1984 -2010, Li and Tanna (2019) find that both human capital and institutional quality are necessary for the developing countries. Gökmenoglu et al. (2018) studied the relationship between the human development index and FDI in Nigeria and found long-run bidirectional causality between FDI and life expectancy. Morita and Sugawara (2015) find a sufficiently substantial human capital in a "small open economy" to be efficient in attracting FDI. Apart from the traditional, eclectic paradigm (Dunning, 1979) recent studies focus on human capital, particularly skilled labor as a location factor in "MNE's location decision" (Dunning & Lundan, 2008; Kottaridi, Louloudi, & Karkalakos, 2019). Reiter and Steensma (2010) emphasize that the relationship between the human development index and FDI is highly associated. In order to encourage the value-added of FDI, Kottaridi et al. (2019) analyzed the effect of human capital by disaggregating it into "vocational vs. general education" by comparison study between the western Europ (15-EU) and the Central and Eastern Europe (CEE) countries and their study conclude different findings across the studied sample and education systems. Cleeve et al. (2015) used a panel data set for 35-SSA countries to investigate the quality of labor in attracting FDI. The study finds that all the proxies of human capital used to demonstrate significant effects on attracting

FDI. Moreover, much of the previous literature identifies the human capital (measured with different indicators) as the main factor in attracting FDI (see, (Blomstrom & Kokko, 2003; Eicher & Kalaitzidakis, 1997; Kar & Sinha, 2013)). However, human capital becomes invaluable when it is associated with the quality of the institution that the country maintains (Acemoglu & Robinson, 2005).

On the other hand, most recent researchers focus on the institution quality as critical determinants for FDI inflows. Ghazalian and Amponsem (2019) used the fixed and random effects model to study the effect of institutional quality on FDI inflows. They find a significantly positive relationship between economic freedom and FDI inflows, which is consistent with other studies (Azman-Saini, Baharumshah, & Law, 2010; Bénassy-Quéré, Coupet, & Mayer, 2007; Gwartney, 2009; Gwartney, Holcombe, & Lawson, 2006). Kayalvizhi and Thenmozhi (2018) used a panel model with a fixed effect for emerging economies and find a robust positive association between the governance (measured by institutional quality index) and attracting the FDI. Also, the study examines the moderate effect of governance with technology on FDI, which proved to be positive and significant. However, the authors note that the literature concludes mixed findings on the governance-FDI relationship.

A series of studies have acknowledged the role of institutional quality as a principal determinant in attracting the inflow of FDI on most of the host countries (Aziz, 2018; Azman-Saini et al., 2010; Bénassy-Quéré et al., 2007; Bengoa & Sanchez-Robles, 2003; Fadiran, 2019; Ghazalian & Amponsem, 2019; Habib & Zurawicki, 2002; Kraay, 1999). Although, the previous literature confirms a strong statistical and positive association between good public governance on inward FDI (Azemar & Desbordes, 2009; Daude & Stein, 2007; Wei, 2000) surprisingly, some studies find a poor governance stimulates more inward FDI (Darby, Desbordes, & Wooton, 2009; Dixit, 2009). Osabuohien and Efobi (2011) studied the effectiveness of African RECs during the period 1996-2008. Their findings show that, amongst others, the “institutional quality was rather low and differed markedly across RECs in Africa,” and they suggest that the simultaneous improvement in institutional quality and infrastructure will promote trade in the region. Therefore, institutional quality amongst other selected FDI determinant factors for this study can have some implications on inward FDI environment having considering the overall performance of COMESA integration (Africa Regional Economic Index, 2018).

The trade openness as a percentage of GDP is widely used as a determinant for inward FDI, as there is high interference between trade openness, and inward FDI to the extent that most of recent RECs incorporate in their establishing agreements clauses on investment promotion and protection (Correa, 2004). Evidencing that investors tend to locate in host countries whose trade ratio is relatively higher in comparison to economic size, meaning that the higher trade openness, the more inward FDI. This finding confirmed by the study of FDI and trade openness in Latin America, Asia, Africa, the Commonwealth of Independent States, and Eastern Europe (Liargovas & Skandalis, 2012). They find that trade openness, in most cases, has a positive and significant impact on FDI, while in some cases, there was positive and insignificant as well as negative and insignificant influence on FDI. In their study on examining the global FDI network, Kottaridi et al. (2019) find openness shows a positive and significant effect on FDI, too. That confirms a trade openness as an indicator of global competitiveness and dynamism, which has proved a robust relationship with FDI. Also, Kayalvizhi and Thenmozhi (2018) find that trade openness played a positive and significant role in promoting inward FDI. Bolívar et al. (2019) support these findings as they find, amongst other factors, trade openness, human capital, and institutional quality are significant determinants for inward FDI.

Dutta et al. (2017) examine the interactive effect of corruption and human capital on FDI. They find the interactive coefficient has a positive and significant impact on FDI, which means the “higher corruption score (indicating lower of corruption), the greater will be the beneficial impact of secondary enrolment on FDI inflows.” Moreover, another variable like school enrolment, trade openness exhibit positive and significant association with FDI while corruption and population maintain adverse and significant effects on FDI. In a nutshell, variety of the previous studies attribute the discrepancies on FDI inflows amongst host countries to the differences in human capital in terms of level and skills (Checchi, De Simone, & Faini, 2007; Kottaridi & Stengos, 2010; Miyamoto, 2003; Noorbakhsh, Paloni, & Youssef, 2001). However, there is no single evidence that a single theory can govern the decision of OECD FDI in developing economies rather than a

combination of theories (Antonakakis & Tondl, 2015). The authors examine the motives and determinant for the FDI in 129 countries, most of them from the SSA. The study reveals that some determinant factors, amongst them openness, and institutions establish a robust association with the FDI, as SSA proves to be a “resource-seeking FDI,” which is confirming the with the previous findings (Asiedu, 2002). The literature in SSA shows that resource-poor economies are ineffective in attracting FDI compare to resource-rich countries (Letete, 2015). In detail, in his study about governance-financial sector nexus, Asiedu (2002) confirms a significant positive association. His findings suggest that countries with sound institutions would encourage the financial market with more significant market capitalization, better income returns, higher trading shares, and a considerable presence of registered companies, which matters a lot for FDI promotion.

Financial development is a prerequisite infrastructural pillar for FDI promotion as it facilitates and reduces the cost of financial transactions cost, which in turn affects the cost of investment activities (Hussain & Kimuli, 2012). Aziz (2018) finds a positive and significant relationship between institutional quality, financial development, and school enrolment (tertiary education) with the FDI inflows. However, some institutional determinants such as political stability, democracy, and the rule of law attract FDI, while others like corruption, taxes, and culture affiliation discourage it, which are consistent with the theoretical framework (Bailey, 2018). Also, a positive link between financial development and institutional quality are extensively documented by the various literature results (Ahamed & Mallick, 2019; Chinn & Ito, 2006; Huang, 2010; Khan, Khan, Abdulahi, Liaqat, & Shah, 2019; Kutan, Samargandi, & Sohag, 2017; Le et al., 2016; Levgne, 1997). Munemo (2017) used fixed effects and system GMM for a sample of 92 developing countries for the period 2004 – 2012. The study employed the domestic credit to the private sector (percentage of GDP) as a proxy for Financial development, which above a certain threshold, has a significant and positive association with FDI. While Alquist, Berman, Mukherjee, and Tesar (2019) find countries with “lower financial development” and “higher institutional quality” positively associated with inward FDI. The role of the financial system apart from promoting development goals is contributing to banking stability, where there is reliable institutional quality, and that is the point where FDI is interesting therein.

The advanced step on examining the effect of financial development on “economic growth, inequality, and economic stability initiated by the IMF staff through introducing what so-called “financial development index” (Sviryzdenka, 2016). The classical analysis of the financial development effect is measured either by financial depth (the ratio of credit to the private sector as a percentage of GDP) or the ratio of stock market capitalization to the GDP. The essential advantage of this measurement is it’s a “multidimensional nature” as it composed of nine indices that show how financial institutions (FI) and financial markets (FM) are developed in terms of “depth, access, and efficiency” and these later indices (FI and FM) are combined into an “overall index”, the FINDI (IMF, 2016; Sviryzdenka, 2016). There is a fundamental relationship between financial development and institutional quality, as long as the latter is strong, the financial development will perform better accordingly (Adeleye, Osabuohien, & Bowale, 2017; Chong & Gradstein, 2007). Barry and Tacneng (2014) studied the role of governance in the financial sector of 30-SSA countries and confirmed a typical result.

Notably, most of the recent researches, particularly in SSA, have focused mainly on Chinese FDI (Koku & Farha, 2019). Moreover, the previous literature mostly focus on other RECs (Kahouli & Maktouf, 2015; Kreinin & Plummer, 2008) or holistic coverage (Antonakakis & Tondl, 2015; Asiedu, 2002; Cleeve et al., 2015; Kahouli & Maktouf, 2015; Kinda, 2013; Koku & Farha, 2019; Morita & Sugawara, 2015; Okafor et al., 2015). Therefore, this study focuses on how COMESA integration process controlled with the most FDI determinant factors predict the inflows of all FDI sources (Antonakakis & Tondl, 2015; Aziz, 2018; Bailey, 2018; Biresselioglu, Demir, Gonca, Kolcu, & Yetim, 2019; Curtis et al., 2013; Ghazalian & Amponsem, 2019; Li & Tanna, 2019; Sviryzdenka, 2016). To avoid the overestimation of COMESA on FDI, we introduced a weight variable to control the effects of other regional economic and multilateral agreements (ORECMs). Moreover, we added interaction terms for FTA with the HDI, IQ, and FINDI to examine the effect of FTA on inward FDI through these three determinant factors. Importantly, most of the previous studies used indicator measurements rather than indices, while this study employed the most relevant adverse used by the recent literature based on the multidimensionality coverage in their natures, which operationally serve to research the objectives by transforming the high dimension

nature of indicators into low ones (Batuo et al., 2018; Le et al., 2016). Moreover, to the best of authors' knowledge, there is no similar previous evidence measuring the impact of financial development on DFI proxied by Financial development index. Table 1 presents the effects of the selected variables on FDI.

Table-1. Summary of literature review effects of selected variables on FDI.

Determinants of FDI	Coefficients Expected Sign	Significance	Method	Previous Literature
FTA	+	Yes	Gravity, System-GMM, Fixed Effect,	Kreinin and Plummer (2008); Leitão (2010); Ghazalian and Amponsem (2019)
	-	Yes/No	Gravity	Kahouli and Maktouf (2015); Brenton and Di Mauro (1999); Portes and Rey (2005)
TOP	+	Yes	OLS, Fixed Effect, GMM, Random Effect,	Asiedu (2002); Okafor et al. (2015); Kottaridi et al. (2019); Bolívar et al. (2019); Liargovas and Skandalis (2012); Kayalvizhi and Thenmozhi (2018); Dutta et al. (2017)
	-/+	No	Fixed Effect	Liargovas and Skandalis (2012)
HDI	+	Yes	Stepwise, Fixed Effect	Curtis et al. (2013); Reiter and Steensma (2010)
	-/+			
IQ	+	Yes	Fixed Effect, Bayesian	Kayalvizhi and Thenmozhi (2018). In Antonakakis and Tondl (2015)
FINDI	-			Previous evidence not found

3. METHODOLOGY AND DATA

3.1. Model Specification

The following equation estimates the simple specification for COMESA integration processes: effects on FDI, proxied by FTA: $FDI = \alpha_0 + \beta_1 FTA_{it} + \beta_2 Z_{it} + \mu_{it}$ (1)

Where FDI, the dependent variable, is a net inflow of foreign direct investment as a percentage of the GDP (Dutta et al., 2017; Kayalvizhi & Thenmozhi, 2018) FTA is the independent variables. Z stands for the control variables, which include ORECMs, TO, FINDI, HDI, and IQ. Following Kayalvizhi and Thenmozhi (2018) we used is a panel fixed effect to measure the impact of FTA, ORECMs, TO, FINDI, HDI, and IQ on the FDI as well as e interaction effects of FTA with HDI, IQ, and FINDI on the inward FDI of COMESA countries. μ_{it} measures the error term. Therefore, to evaluate the study hypothesis, we test the following econometric specifications. Equation 2 represents the baseline model, while Equations 2a, 2b, and 2c are for the interactive effects of the FTA with HDI, IQ, and FINDI, respectively.

$$\ln FDI_{it} = \alpha_0 + \beta_1 FTA_{it} + \beta_2 ORECMs_{it} + \beta_3 \ln TOP_{it} + \beta_4 \ln HDI_{it} + \beta_5 \ln IQ_{it} + \beta_6 \ln FINDI_{it} + \delta_i + \gamma_t + \mu_{it} \quad (2)$$

$$\ln FDI_{it} = \alpha_0 + \beta_1 FTA_{it} + \beta_2 ORECMs_{it} + \beta_3 \ln TOP_{it} + \beta_4 \ln HDI_{it} + \beta_5 \ln IQ_{it} + \beta_6 \ln FINDI_{it} + \beta_7 (FTA_{it} * \ln HDI_{it}) + \delta_i + \gamma_t + \mu_{it} \quad (2a)$$

$$\ln FDI_{it} = \alpha_0 + \beta_1 FTA_{it} + \beta_2 ORECMs_{it} + \beta_3 \ln TOP_{it} + \beta_4 \ln HDI_{it} + \beta_5 \ln IQ_{it} + \beta_6 \ln FINDI_{it} + \beta_8 (FTA_{it} * \ln IQ_{it}) + \delta_i + \gamma_t + \mu_{it} \quad (2b)$$

$$\ln FDI_{it} = \alpha_0 + \beta_1 FTA_{it} + \beta_2 ORECMs_{it} + \beta_3 \ln TOP_{it} + \beta_4 \ln HDI_{it} + \beta_5 \ln IQ_{it} + \beta_6 \ln FINDI_{it} + \beta_9 (FTA_{it} * \ln FINDI_{it}) + \delta_i + \gamma_t + \mu_{it} \quad (2c)$$

Where, $\ln FDI_{it}$ stands for the natural logarithm of FDI inflows for country i in time t . While FTA_{it} , $ORECMs_{it}$, $\ln TOP_{it}$, $\ln HDI_{it}$, $\ln IQ_{it}$, $\ln FINDI_{it}$, are the measures of Free Trade Area, Other regional economic and multilateral agreements, trade openness, human development index, institutional quality, and financial development for country i in time t expressed in natural logarithm form, respectively. δ and γ_t are cross-section and fixed effect and time fixed effect, respectively. μ_{it} represents the error residual term. $\beta_1, \beta_2, \beta_3, \dots, \beta_9$ indicate the coefficients to be estimated.

As our key interest is to estimate the direct impact of FTA on FDI, we also expand the analysis to see how that direct impact (FTA) matters through the interactive terms with the HDI, IQ, and FINDI. We assume that robust FTA creates a more significant interactive effect on FDI. As elaborated in the literature part, country human capital, governance, and/ or financial development can deter inward FDI activities. Therefore, it is crucial to examine how FTA individually and interactively with HDI, IQ, FINDI predict the inward FDI. In another word, to find out how FTA affects the determinants of FDI inflows into the region. Our arguments that better or weak institutional quality can create a conducive or discouraging business environment that can attract or deter FDI flows (Aziz, 2018; Biresselioglu et al., 2019; Fadiran, 2019; Ghazalian & Amponsem, 2019; Kayalvizhi & Thenmozhi, 2018). However, in exceptional cases, poor institutional quality encourages inward FDI (Darby et al., 2009; Dixit, 2009). As well as the case for human capital, which creates an enabling environment for people to develop their potential Programme (2018) and financial development to effectively facilitate the doing business activities (Adeleye et al., 2017; Aziz, 2018; Hussain & Kimuli, 2012). Except dummy variable (FTA), and weight variable (ORECMs) all others variables are transformed into natural logarithm, to correct the skewness of the studied data (Ali, Wang, Morales, & Wang, 2019; Demekas, Horváth, Ribakova, & Wu, 2007; Gujarati, 2009; Kottaridi et al., 2019). The Hausman test suggested fixed-effect estimators. The fixed-effect model is a more reliable test for examining the variation through regressors and determining the effect of the explanatory variable (FTA) along with the control variables (Kayalvizhi & Thenmozhi, 2018).

For unit root test we applied the second generation unit root test as suggested by Pesaran (2007) and used by the latest researches (Hurlin & Mignon, 2007; Khan, Kong, Xiang, & Zhang, 2019; Le et al., 2016). Also, we test the cross-sectional dependence amongst COMESA's countries based on pairwise correlation coefficients (hereinafter CD) (Pesaran, 2004).

The key interest of the study is to analyze the impact of COMESA integration processes on FDI; however, as the integration (FTA) is a merely functional shift, therefore sometimes, it is reasonable to perceive that the shift in FDI could take place in the slope as well. Based on the literature reviewed (robustness of determinant factors), it is possible to argue that a change in inward FDI amongst COMESA member states can be due to slope of FTA with either or all control variables (HDI, IQ, FINDI, and ORECMs). Therefore, the study hypothesizing the following:

Hypothesis 1. FTA is a predictor for inward FDI.

Hypothesis 2. The interaction between FTA and HDI can promote or deter the inward FDI.

Hypothesis 3. The interaction between FTA and IQ can encourage or deter the inward FDI.

Hypothesis 4. The interaction between FTA and FINDI can encourage or deter the inward FDI.

Hypothesis 5. The ORECMs can deter the inward FDI.

3.2. Data, Description, and Sources

The study used the foreign direct inflows (FDI) as a proxy for foreign direct investment (Asiedu, 2002; Aziz, 2018; Cavallari & d'Addona, 2013; Cleeve et al., 2015; Gohou & Soumaré, 2012; Paramati, Ummalla, & Apergis, 2016). Control variables reflect the FDI determinants that predominant in the most related literature (Antonakakis & Tondl, 2015; Aziz, 2018; Bailey, 2018; Bano, Zhao, Ahmad, Wang, & Liu, 2018; Bayraktar, 2013; Bolívar et al., 2019; Cavallari & d'Addona, 2013; Fadiran, 2019; Ghazalian & Amponsem, 2019; Kishor & Singh, 2015; Konara & Wei, 2019; Li & Tanna, 2019; Lu & Liu, 2018; Ma, 2019; Yahia, Haiyun, Khan, Shah, & Islam, 2018). Table 2 shows the description and sources of the variables used. FTA (dummy variable), the explanatory variable, take one when the country is an FTA member and zero for non-FTA membership (Antonakakis & Tondl, 2015; Blonigen. & Piger, 2014). While the control variables used are categorized into five dimensions.

First, Openness and Economic Cooperation proxied by two indicators: ORECMs, which include WTO (WTO, 2019) with EU (WEU) to which some member states have held memberships, and other African's RECs, and trade openness (TOP), in order to cater for the global competitiveness and "dynamism" (Antonakakis & Tondl, 2015; Blonigen & Piger, 2014; Kottaridi et al., 2019; Yahia et al., 2018). Trade data sourced from the World Bank Indicators of the World Bank (WDI, 2019). A positive association is expected with FDI. We introduced ORECMs as a weight control variable to disentangle its effects or to avoid the overestimation of COMESA FTA on FDI. Accordingly, a weight of 1 assigned to each of the 7-ORECMs: EAC; Southern African Development Community (SADC); IGAD; CEN-SAD; TFTA; WEU; and WTO. Therefore, the more ORECMs memberships, the respective country holds the more significant corresponding weight of measurements. The ORECMs is calculated in an accumulative manner for their spillover effects over time series, for further details see the Table 3.

Second: Development/ Welfare, proxied by HDI. Most of the previous literature used either education or human capital index (HCI), which created by the World Bank to induce countries to invest in education and health (Kraay, 2018). However, some see that HCI is an inappropriate index measure to ensure that education is a priority in a country budget (Edwards, 2018). Therefore, this study used HDI as it extends the HCI to incorporate per capita income. By employing HDI, we can also cater to market size through the per capita income (Okafor et al., 2015) and welfare (Gohou & Soumaré, 2012). UNDP officially renders the HDI report on an annual base is a geometric mean for life, education, and per capita income indices. Hence the index emphasizes the role of people and capabilities along with economic growth as a measure for a country's development (Programme, 2018).

Third: Institutional Quality (IQ) measured by the governance index, which developed by Kaufmann, Kraay, and Mastruzzi (2011). These indicators are measured in unit ranging from -2.5 to +2.5, and they compose six dimensions: Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability. Following the methodology of Ellis, Moeller, Schlingemann, and Stulz (2017) we composed our index as an average of these six governance indicators. Empirical literature shows mixed findings of governance as determinants for FDI (Antonakakis & Tondl, 2015; Aziz, 2018; Bailey, 2018; Biresselioglu et al., 2019; Ghazalian & Amponsem, 2019; Habib & Zurawicki, 2002; Kayalvizhi & Thenmozhi, 2018). The data obtained from WGI (2018).

Forth: financial development, proxied by FINDI, which is a new index introduced by the IMF as an advanced step on the nature of financial development (Afesorgbor, 2017)(IMF, 2016) and recently used (Islam et al., 2018) or via composing a principal component analysis (PCA) for getting more reliable estimation (Khan, et al., 2019). Moreover, the importance of FINDI as it takes into account the "complex multidimensional nature" of financial development, which is not the case for the previous literature where either the ratio of domestic to GDP or the stock market capitalization to GDP were used. The FINDI composed of nine indices that show how financial institutions (FI) and financial markets (FM) are developed in terms of "depth, access, and efficiency" and these later indices (FI and FM) are combined into an "overall index", the FD index. (Sviryzdenka, 2016)(IMF, 2016).

Regarding the ORECMs, the effective membership verified from the East African Community (EAC) (Commission, 2019) SADC (States, 2012) IGAD (Wikipedia, 2019) CEN SAD (ECA, 2016) TFTA (Tralac, 2019) EPA (Economic Partnership Agreement) (Commission, 2019) and WTO (WTO, 2019). The fact that any COMESA member state has a membership of at least two ORECMs. Therefore, it is expected that these ORECMs exhibit positive effects on the FDI inflows of the COMESA's member states as it associated with more economic reforms that encourage FDI inflows. It worth noting that the EU has three types of agreements with the studied sample. These agreements cover trade, investment and economic cooperation that known as the EU and Eastern and Southern Africa (ESA) Economic Partnership Agreement (EU-ESA EPA) (Commission, 2007) and the EU-East African Community (EU-EAC EPA) (Commission, 2014) as well as country-based agreement with Egypt (Commission, 2004).

Table-2. Variables summary (Description and Sources).

Dimension	Variable	Description	Source
Foreign Direct Investment	FDI	Foreign direct investment, net inflows (% of GDP)	The World Bank Development Indicators (WDIs)
Integration Effect	FTA	Dummy variable that equals 1 if a country is a member of a specific agreement, 0 otherwise	COMESA
Openness and Economic Cooperation	ORECMs	Accumulative weight variable captures other regional economic and multilateral agreements ranging from 2 (minimum) to 5 (maximum)	Authors' Computation based on information from WTO, EAC, SADC, IGAD; CEN-SAD; TFTA; and EU
	TOP	Trade (% of GDP)	WDIs
Institutional Quality	IQ	Index of six governance factors (average): Control of corruption, Government Effectiveness, Political Stability and Absence of Violence/Terrorism, Regulatory Quality, Rule of Law, and Voice and Accountability.	Worldwide Governance Indicators (WGIs)
Financial Development	FINDI	Financial development defined as "a combination of depth (size and liquidity of markets), access (the ability of individuals and companies to access financial services), and efficiency (the ability of institutions to provide financial services at low cost and with sustainable revenues, and the level of activity of capital markets)"	IMF

Table-3. ORECMs weight measurements 2000-2016.

No	Country	Eac	Sadc	Igad	Cen Sad	Tfta	Weu	Wto	Orecms
1	Burundi	X				X	X	X	4
2	Comoros				X	X			3
3	Djibouti			X	X	X		X	4
4	Egypt, Arab Rep.				X	X	X	X	4
5	Kenya	X		X		X	X	X	5
6	Libya				X	X			2
7	Madagascar		X			X	X	X	4
8	Malawi		X			X		X	3
9	Mauritius		X			X	X	X	4
10	Rwanda	X				X	X	X	4
11	Seychelles		X			X	X	X	4
12	Sudan			X	X	X			4
13	Uganda	X		X		X	X	X	5
14	Zambia		X			X	X	X	4
15	Zimbabwe		X			X	X	X	4

Note: Any COMESA's member holds at least 2 ORECMs. However, the series score(s) is an accumulative number corresponding a year in which a country has joined such ORECMs plus the number of previous ORECMs, if any (weight).

Table 3 shows the state of play on ORECMs memberships. Statistics show that all COMESA member states have at least two ORECMs agreements. As a matter of these more ORECMs, trade and investment harmonization and facilitation policies are challenging but are expected to bring in a more conducive environment for FDI, as such agreements are often associated with structural reforms on the economies of the involved members. Therefore, ORECMs is expected to exhibit

positive effects on the FDI as it associated with more economic reforms that encourage FDI inflows by those effective agreements or even those at negotiating stage like TFTA, which has had higher “value-added products” compared with other trading partners worldwide (David, 2015). Consequently, a mere signature of ORECMs would create a positive environment for investors, and that why we consider it in our analysis to avoid the overestimation of COMESA FTA.

To address data missing problems, we applied an exponential “growth-rate formula”: $V_{t-1} = \exp((\ln V_t) + \bar{g})$, where V_{t-1} denotes the previous value data, V_t represents the current value data, and \bar{g} stands for the average growth rate of “the actual data points in the series” (Kumar, Stauermann, & Shahzad, 2017).

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

In the benchmark analysis, we used a panel with a fixed effect as the study focuses on a specific sample of countries to eliminate all unobserved differences across countries (Liargovas & Skandalis, 2012; Reiter & Steensma, 2010). Table 4 presents descriptive statistics for the studied sample. Variable are presented on its level forms. However, for analysis, we transformed some into a natural logarithm. The gap amongst COMESA member states on inward FDI is significant as we compare between the max (57.838) and min (-0.61) even to average FDI inflows (4.027). The table also shows the pattern of other right-sided variables used in the following tests.

Table-4. Descriptive statistics.

Variable	Obs	Mean	Std.Dev.	Min	Max
FDIGD	238	4.027	5.48	-0.61	57.838
FTA	238	0.824	0.382	0	1
ORECMs	238	2.092	0.909	1	5
TOP	238	70.31	42.455	19.101	225.023
HDI	238	0.531	0.13	0.302	0.793
IQ	238	-3.563	3.532	-11.321	5.117
FINDI	238	0.153	0.1	0.037	0.452

Note: FDIGD captures the foreign direct investment as a percentage of GDP, FTA stands free Trade Area, ORECMs enumerates other regional economic and multilateral agreements, TOP denotes trade openness, HDI symbolizes index for human development index, IQ indicates index for institutional quality, and FINDI represents financial development index. The definition of all variables is reported in the Table 1.

4.2. Correlation Analysis

The purpose is to show that there is no exact or perfect linear dependence amongst the regressors, to avoid multicollinearity. There is a positive and significant relationship between the FDI and all right side handed equations except with FTA, the explanatory variable, whose coefficients show a positive but insignificant association with the FDI. A correlation statistic of 0.80 and above between the explanatory variables is evidence of multicollinearity (Kennedy, 2003). From the result table. All the variables do not have perfect linear representations of one another. Therefore, the model past the multicollinearity check (Kutan et al., 2017). Table 5 provides the pairwise correlations amongst the selected variable.

Table-5. Pairwise correlations.

Variables	(1) FDI	(2) FTA	(3) ORECMs	(4) lnTOP	(5) lnHDI	(6) lnIQ	(7) lnFINDI
(1) lnFDIGD	1.000						
(2) FTA	0.063	1.000					
(3) ORECMs	0.148*	0.412*	1.000				
(4) lnTOP	0.417*	0.087	0.066	1.000			
(5) lnHDI	0.313*	0.069	0.119	0.634*	1.000		
(6) lnIQ	0.248*	0.105	0.147*	0.568*	0.481*	1.000	
(7) lnFINDI	0.237*	0.119	0.412*	0.602*	0.704*	0.515*	1.000

* shows significance at the .05 level.

4.3. Second Generation Panel Unit Root Tests

Though various panel studies have widely applied the first unit root generation techniques. However, this methodology (first generation) is based on the assumption of cross-sectional independence across samples (Maddala & Wu, 1999). To cater for alternative assumption, the cross-section dependence across units (Bai & Ng, 2004; Pesaran, 2007) contemporaneous correlation, structural breaks in the panel and to select an appropriate model for analysis accordingly, this study applied the second-generation unit root test as suggested by Pesaran (2004). That means a shock occurs in any member country can be transmitted to another. The CD often occurs due to “spatial spillover, omitted common factors, and interaction within the socio-economic network” (Hashem & Tosetti, 2011). Accordingly, this CD, if any, creates spatial spillover effect following the implementation of integration agreements in the field of trade, ORECMs, financial, and institutions integration within the COMESA region. Though some studies report the CD effects (Baltagi, 2013; Holly, Pesaran, & Yamagata, 2010; Khan, Khan, et al., 2019; Le et al., 2016) due to unobserved errors that create these interdependencies across cross-sections, which in turn will make FE and RE estimators “biased and inconsistent” (De Hoyos & Sarafidis, 2018). However, the CD test for each series suggests enough evidence to reject the null hypothesis of cross-sectional independence (Pesaran, 2004). Following Kutan et al. (2017); Le et al. (2016) and Ahamed and Mallick (2019). Table 6 Shows the detailed results of the analysis.

Table 6 shows the Second Generation Panel Unit Root Tests (CIPS). As per the second column of the unit root second-generation test, we reject the null hypothesis of cross-sectional independence; furthermore, the average pair-wise (p) cross-sectional coefficient is very high. As shown, the value of pair-wise cross-sectional is ranging from 0.898 as the highest in the case of HDI to the lowest one in the case of the FDIGD (0.346). Therefore, the presence of CD is undeniable, suggesting cross dependence amongst the studied sample for all. Hence, from the second generation-unit root tests, all variables are I(0), and I(1) cointegrated except lnTOP and lnIQ, which have a unit root at level order.

Table-6. Second generation panel unit root tests, 2000 – 2016.

Variables	P	CD	Level	1 st difference
			CIPS statistic	CIPS statistic
lnFDI	0.346	8.65***	-2.346 **	-4.404***
lnTOP	0.379	4.96***	-1.903	-3.848 ***
lnHDI	0.898	29.61***	-2.246 *	-3.581***
lnIQ	0.436	-1.93*	-1.384	-3.890***
lnFINDI	0.464	14.29***	-2.379 **	-4.234***

Note: CIPS: Cross-sectionally Augmented IPS, FDI: Foreign Direct Investment %GDP, TOP Trade Openness, HDI: Human Development Index, IQ: Institutional Quality, FINDI: Financial Development Index.

For CD: Under the null hypothesis of cross-section independence $CD \sim N(0,1)$

For Second Generation Unit Root:

H_0 (homogeneous non-stationary): $bi = 0$ for all i

*, **, *** represent significance levels at 10%, 5% and 1% respectively.

4.4. Empirical Results

According to the Hausman test, the fixed-effect estimators are consistent compared to the random ones. Therefore, we apply the panel fixed-effect model to estimate the variation amongst the studied variables and to measure the impact of an independent variable (FTA) on the COMESA's FDI inflow.

Table 7 presents the benchmark empirical analysis using a panel model with fixed effect along with seven specifications for the dependent variables. Under the fixed-effect test, we found significance for the year effect with all interactive terms. The baseline model in column [1], while the interactive terms for FTA with HDI, IQ, and FINDI are from column [2] to column [7], respectively. The magnitude of the interactive models provides a basis for a systematic understanding of how these variables affect FDI as well as to understand the heterogeneity amongst member countries. From the baseline model, the results reveal that our key variable of interest, the FTA exhibits a negative and insignificant effect on FDI, while the interactive terms show a positive and high significant impact with HDI, insignificant positive association with IQ, and insignificant negative effect with FINDI, such interactive coefficients attributed to the individual variables' coefficients. By virtue, the signature of an FTA agreement does not

necessarily take effect immediately on the year of signature, and spillover its effects because policy harmonization and adjustments often need time to be implemented as well as the effectiveness of the associated institutions.

Moreover, this result sounds logic with the status of stumbling integration in the region, as so far, only one level (FTA) out of the three-milestones of integration has been achieved (Cheluget & Wright, 2018). In addition to the overlapping memberships, which weakening member states' efforts towards effective reforms see Table 3 (Tavares & Tang, 2011). These mixed coefficients of FTA (across models) indicate that regional integration may create barriers (in case of negative and significant) from attracting FDI due to unnecessary "administrative burden" and inconducive policies (Kahouli & Maktouf, 2015). However, the FTA plays a positive and significant role in attracting FDI (models [2] & [3]), and this result consistent with the previous literature (Kreinin & Plummer, 2008).

Likewise, the coefficients of ORECMs suggest a negative correlation but not statistically significant effects on FDI. On the contrary to our assumption, the negative coefficients, however, have no significant impact, meaning that an increase on ORECMs will result on more obstacles towards inward FDI, in another word more ORECMs can bring in different arrangements and administrative burden, which in turn may negatively affect the FDI inflows into the region (Tavares & Tang, 2011).

The coefficient of TOP is positive and insignificant (model [1], [3], [5], & [7]), and positive and significant associated with FDI across other remaining models. That means a percentage improve on TOP leads to an increase of approximately 86% in inward FDI, which means that more trade liberalization leads to attracting more FDI significantly.

Table-7. The benchmark with the fixed effect estimation.

Dependent: FDI							
Regressors	1	2	3	4	5	6	7
FTA	-0.097 (-0.29)	1.651** (2.48)	1.494* (1.80)	0.452 (0.75)	-0.010 (-0.02)	-0.804 (-0.73)	-1.330 (-1.17)
ORECMs	-0.156 (-0.97)	-0.199 (-1.26)	-0.038 (-0.18)	-0.191 (-1.17)	-0.120 (-0.55)	-0.131 (-0.80)	-0.056 (-0.26)
lnTOP	0.787 (1.63)	0.906* (1.90)	0.500 (0.97)	0.865* (1.77)	0.532 (1.01)	0.803* (1.66)	0.497 (0.96)
lnHDI	5.479*** (3.68)	4.903*** (3.32)	3.969 (1.64)	5.836*** (3.83)	2.432 (1.01)	5.288*** (3.48)	1.495 (0.63)
lnIQ	-0.233 (-1.09)	-0.228 (-1.08)	-0.140 (-0.56)	-0.632 (-1.50)	-0.243 (-0.53)	-0.216 (-1.00)	0.059 (0.24)
lnFINDI	0.231 (0.35)	-0.326 (-0.48)	-0.344 (-0.47)	0.169 (0.25)	-0.159 (-0.22)	0.509 (0.65)	0.211 (0.25)
FTA*lnHDI		2.726*** (3.02)	2.632** (2.49)				
FTA*lnIQ				0.408 (1.10)	0.254 (0.67)		
FTA*lnFINDI						-0.312 (-0.67)	-0.417 (-0.89)
Constant	1.639 (0.61)	-0.249 (-0.09)	0.718 (0.22)	0.968 (0.35)	-0.357 (-0.11)	-17.457*** (-3.27)	0.225 (0.07)
Year effect	No	No	Yes	No	Yes	No	Yes
Observations	238	238	238	238	238	238	238
Number of ID	14	14	14	14	14	14	14
R-squared	0.118	0.153	0.232	0.122	0.211	0.119	0.212
r ² _a	0.0407	0.0752	0.0949	0.0416	0.0692	0.0383	0.0708
F	4.843	5.610	2.646	4.327	2.331	4.206	2.351

Note: Column (1) represents the baseline model, Columns (2, 4, & 6) interactive terms with no year effects, while Column (3, 5, & 7) for interactive terms with year effects, where the effect for years are only with IQ (column 5) and FINDI (column 7). z-statistics in parentheses.

*, **, *** represent significance levels at 10%, 5% and 1% respectively.

As a result, more capital movement and a business facilitation environment will be created thereof. This result akin to the recent empirical literature (Asiedu, 2002; Ghazalian & Amponsem, 2019; Kottaridi et al., 2019; Leitão, 2010; Okafor et al., 2015).

The positive signs, significance, and magnitude of HDI's coefficients (except model [5] & [7]) suggest that HDI is a crucial determinant for FDI in the region. Interestingly, the interactive term exhibit a positive and high effect (1-5%) on FDI as models [2] & [3], respectively. These results of COMESA HDI is consistently proved (Curtis et al., 2013; Gökmenoğlu et al., 2018; Kahouli & Maktouf, 2015; Kottaridi et al., 2019; Li & Tanna, 2019; Okafor et al., 2015). As explained before, this index (HDI) implicitly expands the inference to the fact that the market size of COMESA also has a determinant role in attracting the FDI, too (see section 3.1).

Even though poor institutional quality can deter inward FDI in the region (across all model specifications), the interactive coefficient of FTA with IQ has a positive but not significant association with FDI inflows. Likewise, FINDI has no significant effect on FDI.

Concisely, countries enjoy inward FDI due to HDI improvement, and its interaction effect with FTA, as well as to some extent trade liberalization (TOP) promotion. In short, FTA will deliver better results in case of interaction with HDI. Moreover, the result reveals that there are no year effects on FTA, which is well understood as usually countries do not implement the agreement once it got signed, and having considered the overlapping memberships (which is negative but insignificant) as well as the stumbling integration processes.

4.5. Diagnostics Test

Table 8 shows the results of diagnostic tests for heteroscedasticity, serial correlation, and contemporaneous correlation. The tests suggest that our model with FE suffers from heteroscedasticity, contemporaneous correlation, and serial correlation is insignificant. As a result, the FTA-FDI nexus is heterogenous and varies across countries.

Table-8. Result for heteroscedasticity, serial correlation, and contemporaneous correlation.

Test	Error process	Test statistic
Modified Wald test	Heteroscedasticity	Chi2= 2854.65 ***
Breusch-Pagan LM test	Contemporaneous correlation	Chi2= 199.506***
Wooldridge test	Serial correlation	9.384***

Note: Heteroscedasticity: Modified Wald test for group-wise heteroscedasticity in the fixed effect regression model; H0: $\sigma_{it}^2 = \sigma_{it}^2$ for all i , the model is suffering from heteroscedasticity.

Breusch-Pagan Lagrange Multiplier LM test; H0: No Contemporaneous Correlation.

Serial Correlation: Wooldridge test for autocorrelation in panel data; H0: no first-order autocorrelation. Serial Correlation.

*, **, *** represent significance levels at 10%, 5% and 1% respectively.

4.6. Robustness Analysis

From Table 7 the fixed-effect model is heteroscedastic, contemporaneously, and serially correlated. Therefore, to address these two problems and to make the analysis more reliable for further inference, we apply the FGLS (Beck & Katz, 1995). As known, the OLS or FE with such data characterized by “non-spherical errors” such as heteroscedasticity across countries, contemporaneous correlation, and serial correlation within countries produced biased estimation (Greene, 2003; Wooldridge, 2010). However, OLS/ FE yield “consistent but insufficient parameter estimates” (Canarella & Gasparyan, 2008; White, 1980). The parameters yielded by OLS/ PE will be consistent with the real value, but variance problem will not be minimized due to type I error, and that why the FGLS is an efficient methodology to address this problem. Following some relevant methodologies, we conducted the following alternative robustness analysis by applying FGLS (Al-Malkawi & Pillai, 2018; Canarella & Gasparyan, 2008; Schmitz & von Hagen, 2011; Zheng, Sarker, & Nahar, 2017) as shown in the Table 9.

Unlike, the previous benchmark results, the baseline model shows that FTA is positively associated with the FDI and statistically significant (5%). This finding consistent with the trend of FDI flows into the region COMSTAT (2018) and Muchira (2019) as well as other empirical results on different RTAs and developing countries (Blonigen. & Piger, 2014; Ghazalian & Amponsem, 2019; Huh & Park, 2018; Kahouli & Maktouf, 2015; Kreinin & Plummer, 2008); (Kahouli & Maktouf, 2015; Kayalvizhi & Thenmozhi, 2018). Ceteris paribus, this means that the FTA is a key determinant/ predict for promoting inward FDI in the region, which is consistent

with our assumption, too. Equally, the interaction terms with IQ and FINDI are negative and robust significant associated with inward FDI to the region. Models [4] and [5] indicate that IQ is positive and statistically significant, while the interactions with FTA show adverse and statistical effects, respectively. From models [4] and [5], the lower of FTA implementation (-0.362), and (-0.642), along with positive and statistically significant coefficients of IQ generate an inverted-U significant association of IQ and its interactions with FTA, (-0.408), and (-0.549) on inward FDI, respectively. *Ceteris paribus*, the inference is that as our sample is heterogeneous, the IQ setups and policies are may not well harmonized or developed to adhere to the desired COMESA FTA policies, so the poor FTA, the weak interaction with institutional influence on attracting the FDI. However, this conclusion at a regional level might not give in-depth sight as individual countries would do, as in general, countries are quite different in their institutional quality, business environment, population. Meaning that FTA does not attract inward FDI when interacted with IQ. However, in exceptional case poor institutional quality encourages inward FDI (Darby et al., 2009; Dixit, 2009).

The FINDI have negative coefficients across model specifications. Unlike the benchmark analysis, the coefficient of FINDI (-0.377) is negative and statistically significant at the 1% level. Meaning that a marginal change in the financial development sector discourages inward FDI by 38%. The result is inconsistent with previous studies (Aziz, 2018; Hussain & Kimuli, 2012). Though the coefficients of FINDI are mixed and not significant (model [6], and [7]), the interaction specifications demonstrate the different inverted-U significant relationship between FINDI and its interactions with FTA. Model [6] exhibits a consistent relationship between FINDI and its interaction with FTA, which signifies that a marginal effect of change in FINDI has a negative and robust statistical impact on FDI, given a minimal change in FTA implementation.

To sum up, as the behavior of IQ and FINDI are similar, which are consistent with the literature (Aziz, 2018) *ceteris paribus*, the inference is that maybe the IQ and FINDI setups are not enough harmonized to associate the desired COMESA FTA policies on attracting the FDI.

Other control variables like the ORECMs show similar results as in the benchmark results with negative (except models [4], [5], and [7]) and insignificant influence on inward FDI. Likewise, the previous findings, but most robust, TOP plays favorable and highly significant effects on attracting FDI. In contrary to the previous result, HDI has a positive relationship with inward FDI across model specifications and significant static impact (models [1], [4], and [6]). These positive and statistical results of HDI consistent with previous empirical evidence (Blomstrom & Kokko, 2003; Eicher & Kalaitzidakis, 1997; Kar & Sinha, 2013). However, our result provides strong evidence that the valuability of human capital (proxied here by HDI) can stimulate inward FDI even if the institutional environment are not enabling, as per the earlier studies associate (Acemoglu & Robinson, 2005).

In summary, as our key variable of interest (FTA) exhibits a robust role in promoting inward FDI, other determinants factors, i.e., TOP, HDI, FINDI, must be considered to ensure an enabling environment for promoting FTA and create attractive policies for inward FDI. However, the mixed coefficients of FTA across models are consistent with the previous literature (Kahouli & Maktouf, 2015).

5. CONCLUSION AND POLICY IMPLICATIONS

The purpose of this paper is to examine the effect of the regional Integration processes for selected member states of COMESA on inward FDI during the period from 2000 to 2016. The importance of regional economic agreements has increasingly expanded beyond the traditional terms as a mean for trade-related issues to incorporate economic, political, development goals and policies. However, under alternative test (FGLS), we find COMESA FTA has a positive and robust influence on inward FDI. This finding is consistent with the result obtained by Kahouli and Maktouf (2015). However, the magnitude of the FTA interactions with both IQ and FINDI demonstrates an inverted-U significant relationship on FDI, evidencing that FTA has a negative and significant effect on FDI when interacting with IQ and FINDI. These interactions show these variables affect FDI as well as to understand the heterogeneity amongst member countries. The ORECMs variable shows a predictable adverse sign, which means that ORECMs can deter inward FDI but not significant. Notably, the integration in the region is stuck at the level of FTA. It is well understood that merely an FTA signature is not sufficient enough to create immediate

practical impact. The practice shows that an agreement did not take effect immediately on the year of the signature because policy harmonization and adjustments often need time to be implemented and incur effects accordingly.

Moreover, TOP and HDI are positively and strong statistically associated with inward FDI. These results are in line with a wide range of empirical literature (Asiedu, 2002; Kayalvizhi & Thenmozhi, 2018; Kottaridi et al., 2019; Okafor et al., 2015) and Curtis et al. (2013); Reiter and Steensma (2010) respectively. While FINDI is negatively and significantly affects inward FDI. The result reveals, also a weak positive impact of IQ on inward FDI. However, we find that does not contradict the previous literature, which surprisingly proved to be an encouraging factor for inward FDI (Darby et al., 2009; Dixit, 2009).

The empirical findings suggest that policymakers should consider FTA, TOP, HDI, and FINDI in their policy harmonization and implementation to ensure enabling an environment for promoting FTA and create attractive policies for inward FDI. However, the mixed coefficients of FTA across models, which are consistent with the previous literature, signify that there are an unnecessary administrative burden and inconducive policies that can create barriers from attracting FDI (Kahouli & Maktouf, 2015).

Due to data limitations, we restricted our analysis to 14 countries out of 22 countries. Therefore, it is essential to cover the whole region through including other control variables i.e., culture, bilateral agreements with China, USA, geographic location (coastal, landlock). However, the study did not test the causality as well as the type of FDI that FTA can effectively attract, and the further relationship of moderation or mediation, having considered that inward FDI and foreign aid are likely to increase the corruption in hosting countries unless some of the anti-corruption policy in place (Easterly, 2002; Moyo, 2009). The subsequent studies can address these concerns.

Table-9. Robustness check with FGLS.

Dependent variable: FDI							
Regressors	1	2	3	4	5	6	7
FTA	0.197** (2.30)	0.423 (1.03)	-0.125 (-0.28)	-0.362 (-1.42)	-0.642** (-1.98)	-0.160 (-0.28)	-1.164** (-2.11)
ORECMs	-0.016 (-0.37)	-0.024 (-0.54)	-0.052 (-0.80)	0.007 (0.17)	0.028 (0.29)	-0.005 (-0.10)	0.024 (0.33)
lnTOP	1.086*** (10.01)	1.153*** (10.61)	1.232*** (6.76)	1.057*** (9.69)	1.093*** (8.20)	1.091*** (10.17)	1.244*** (7.28)
lnHDI	1.310** (2.40)	0.819 (1.37)	0.334 (0.42)	1.103** (2.06)	0.329 (0.48)	1.269** (2.33)	0.331 (0.48)
lnIQ	0.084 (1.56)	0.065 (1.15)	0.077 (0.93)	0.460*** (2.60)	0.612*** (3.19)	0.085 (1.59)	0.115 (1.55)
lnFINDI	-0.377*** (-3.12)	-0.389*** (-3.03)	-0.293 (-1.39)	-0.358*** (-3.05)	-0.274 (-1.56)	-0.244 (-0.91)	0.093 (0.31)
FTA*lnHDI		0.427 (0.83)	-0.119 (-0.21)				
FTA*lnIQ				-0.408** (-2.34)	-0.549*** (-2.94)		
FTA*lnFINDI						-3.439*** (-4.03)	-0.500** (-2.07)
Constant	-3.650*** (-5.39)	-4.208*** (-5.58)	-4.911*** (-4.15)	-3.174*** (-4.65)	-3.797*** (-4.17)	-2.125 (-1.64)	-4.166*** (-3.57)
Fixed Effect	No	No	Yes	No	Yes	No	Yes
Observations	238	238	238	238	238	238	238
Number of ID	14	14	14	14	14	14	14

Note: Columns (1) represents the baseline model, Columns (2, 4, & 6) interactive terms with no year effect, while Column (3, 5, & 7) for interactive terms with year effects. The effect for years is only with IQ (column 5) and FINDI (column 7). z-statistics in parentheses.

Hausman Test: 17.03***

*, **, *** represent significance levels at 10%, 5% and 1% respectively.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Acknowledgement: All authors contributed equally to the conception and design of the study.

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