THE INTERACTION BETWEEN FOREIGN DIRECT INVESTMENT, FOREIGN PORTFOLIO INVESTMENT AND ECONOMIC GROWTH: THE CASE OF SUB- SAHARAN AFRICAN COUNTRIES

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Abstract

There are contradicting arguments in the literature examining the influence of foreign investment on economic growth in Sub Saharan Africa. Some researchers claim that high level of volatility, rising current account deficit, lack of developed financial markets and low quality of regulatory framework would generate economic losses for developing countries in Sub Saharan Africa when they liberalized their capital flows. However, some studies focus on growth enhancing effect of foreign investment to be a remedy for low capacity of accumulated savings in Sub Saharan Africa. The current study brings new evidence about the role of foreign portfolio investment and foreign direct investment on economic growth for countries in Sub Saharan Africa. Due to the endogenenity issue, we have used panel VAR methodology to estimate three simultaneous equations system. By analyzing 25 Sub Saharan African countries over the 1990-2016 period, we found that foreign direct investment and foreign portfolio investment are complements and they have positive significant impacts on economic growth.

Keywords: Economic Growth, FDI, FPI.

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Doğrudan Yabancı Sermaye Yatırımları, Yabancı Portföy Yatırımları ve Ekonomik Büyüme Arasındaki Etkileşim: Sahra Altı Afrika Ülkeleri Üzerine

Öz

Sahra Altı Afrika'da yabancı yatırımların ekonomik büyümeyi etkilemesini inceleyen literatürde birbiriyle çelişen görüşler mevcuttur. Bazı araştırmacılar Sahra Altı Afrika'da yer alan gelişmekte olan ülkelerin sermaye akışlarını liberalleştirdikleri zaman, yüksek seviyedeki volatilite, artan cari hesap açıkları, gelişmiş finansal piyasaların yokluğu ve düzenleyici çerçevenin düşük kalitesinden dolayı ekonomik kayıplara uğrayacaklarını öne sürmektedirler. Oysa, bazı çalışmalar Sahra Altı Afrika'daki düşük seviye birikmiş tasarruflarına çare olmak için yabancı yatırımın ekonomik büyümeyi arttırıcı etkisine odaklanmıştır. Çalışma, Sahra Altı Afrika'daki ülkeler için yabancı portföy yatırımlarının ve doğrudan yabancı sermaye yatırımlarının ekonomik büyümeye etkisi konusunda yeni bulgular getirmektedir. Endojenlik sorunu nedeniyle, üç eşzamanlı denklem sistemini tahmin etmek için panel VAR metodolojisini kullanılmıştır. 1990-2016 arasında Sahra Altı Afrika'daki 25 ülkeyi analiz ederek, Sahra Altı Afrika'da doğrudan yabancı sermaye yatırımları ve yabancı portföy yatırımlarının tamamlayıcı olduğunu ve her ikisinin büyümeyi pozitif anlamlı etkilediğini bulunmuştur.

Anahtar Kelimeler: Ekonomik Büyüme, DYSY, YPY.

1. Introduction

Foreign direct investment (FDI) and foreign portfolio investment (FPI) are two different forms of capital inflows into the economy. Neo-classical theory emphasizes that the capital flows from where it is abundant to where it is scarce to exploit differences in rate of return. Therefore, according to this theory there should be convergence of income per capita across countries because capital flows should reduce capital cost, and increase investment (Fischer, 1997). Seminal papers by Mc Kinnon (1973) and Shaw (1973) argue that liberalization of financial system increases savings and economic output. On the other hand, Keynes' investment theory is structured

around the cost of investment; real interest rate, which determines the level of investment, thus, economic output. Real interest rate would go down if there is no control over the foreign capital inflows by the government. Therefore, there is particular consensus in the early literature regarding the positive influence of foreign financial capital on the economic performance of the host economy.

However, some studies (Akyüz, 1993; Bhagwati, 1998; Errunza, 2001) focus on the impacts of foreign capital inflows on boom bust cycles, asset price volatility, excessive debt accumulation. Krugman (1995) particularly emphasizes that foreign portfolio investments do not respond to market fundamentals but behave with herd instinct, and also emphasizes that enthusiasm in the 1990s for investing in developing countries was classic speculative bubble based on the expectation of speculative gains by riding on rising asset prices.

In the literature, most of the studies using both FDI and FPI as two different forms of capital flows, differentiate one from another on the ground of their impacts on economic development. Studies on contributions of FDI to general economy emphasizes its positive contribution to productivity of indigenous firms (Rappaport, 2000), economies of scale (Keller, 2001) and technology level in the country of destination (Borensztein et al. 1998).

FPI decreases the cost of equity capital motivating investors to undertake new investments contributing to economic growth (Bekaert and Harvey, 1998, 2000). Additionally, foreign investment might positively affect financial depth that would contribute to raising capital through the sale of shares reducing highly leveraged companies' high cost of servicing debt. Some studies on the relevant literature argue that foreign portfolio investment contribution to economic activity is contingent on absorptive capacity, financial development in destination countries (Durham, 2004; De Vita and

Kyaw, 2009; Choong et al. 2010).

The absorptive capacity is also emphasized in studies on FDI. The absorptive capacity might indicate human capital (Borenzstein et al. 1998), technological investment and infrastructure (De Mello, 1997 and Borenzstein et al. 1998), financial development (Alfero et al. 2004, 2010), content of trade policy (Balasubramanyam, 1996).

Scholars arguing about economic crisis in Mexico or East Asia (Krugman, 1995; Singh, 1997; Bhagwati, 1998) emphasize that sudden capital outflow in the fragile macroeconomic conditions exacerbated with massive capital inflows at the first hand would be devastative. There is particular literature on capital inflows in developing economies (dos Santos, 2011; Akyüz, 2012; Onaran, 2007) emphasizing mainly that foreign capital subsidizes current consumption rather than investment which, in turn, generates high current account deficit, real interest rates and low economic growth rate along with asset bubbles.

Some studies report negative contribution of FPI on growth while they show the presence of positive relation in rich countries subsample (Aizenman et al. 2007; Obstfeld, 2009). Using standard Solow economic growth model, Bender and Lowenstein (2014) argue that low-income countries relying on FPI for economic growth would experience debt crisis unless the imported foreign capital is used for export diversification or import substitution. However, Barro et al. (1995) showed that capital imports do not have any impact on the steady state per capita income by using standard Solow model.

Because sudden stop of FPI would result in defaults, bankruptcies, and drastic drop in consumption and production (Calvo, 1998; Rodrik and Velasco, 1999), FDI is considered to be the most stable capital inflow (Lipsey, 1999). There are conflicting empirical findings comparing economic growth impacts of both forms of foreign capital. Several studies show that FDI and FPI

positively impact economic growth (Reisen and Soto, 2001; De Vita and Kyaw, 2009). Some studies argue that even though FDI positively impacts economic growth FPI does not (Brambila-Macias and Massa, 2010), or have negative effect on it (Choong et al. 2010). There are also studies showing that both FDI and FPI negatively impact growth in the presence of highly volatile capital flows along with lack of solid financial institutions (Agbloyor et al. 2014).

In recent decades, FDI inflows and rate of economic growth have dramatically increased in the Sub-Saharan Africa (SSA) that might be argued due to trade liberalization adapted along with the Structural Adjustment and Economic Recovery Programs (ERP) in the region in 1980s , and decreasing political risks (Macias and Massa, 2010; Boateng et al. 2017). Despite these recent developments, some empirical studies show that even if return for investment increases and the infrastructure improves, SSA countries would not experience increase in FDI (Asiedu, 2002).

Some empirical studies find no evidence that FDI has a positive role on economic growth (Agloboyor et al. 2016; Akinlo, 2004) in the SSA, while some studies show the presence of positive impact (Adams, 2009; Ndambendia et al. 2010; Jugurnath et al. 2016). Moreover, some empirical papers on the nexus between FPI and growth in the SSA show that FPI positively affects economic growth (Alley, 2015) while some show that it does not affect growth (Ndong, 2015).

There are two contributions of the present study to the relevant literature. First, the paper explores the impact of both FDI and FPI on economic growth in the SSA. Second, it uses most recent data set comprising 27 years long observations on SSA countries. The structure of the paper is as follows. The next section introduces the theoretical perspective on the relationship between FDI, FPI and

economic growth. Third section presents data set, variables used in the study, econometric methodology and estimation results which is followed by the conclusion.

2. Theoretical Perspective

Since there is no quantitative theory in the literature analyzing the role of FDI, FPI and growth on each other, we propose a theoretical perspective to explain the bi-directional relationship between any pair of them.

Figure 1. The Interaction between FDI, FPI and Growth
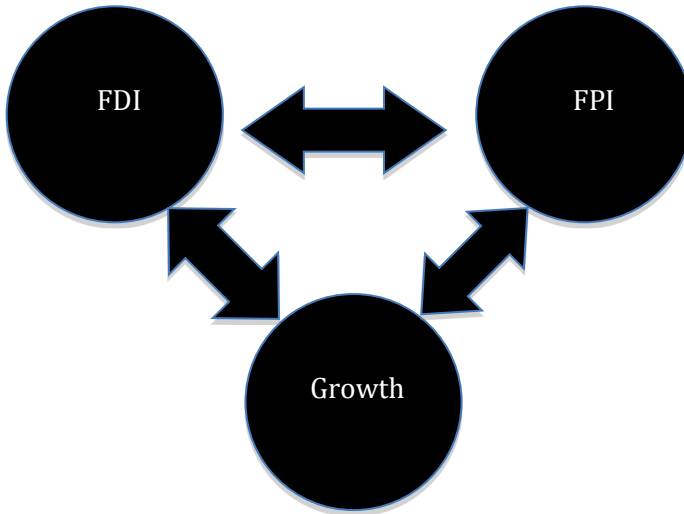
The FDI affects the economic outcome by directly affecting the goods and services produced in the country given a year and affecting the unemployment and wage level by employing from the local labor pool. However, there are indirect channels that foreign firm can contribute to the economy. First, foreign firm contributes to the stock of human capital and technology in the country by providing the local labor with training, cutting edge technological equipment, production technologies and organization methods. Moreover, foreign technology might spillover and become available

for domestic firms through labor mobility (Fosfuri et al. 2001) , technological spillover (Liu, 2008, Branstetter, 2006) and through positive externalities through forward linkages, towards upstream industries, (Javorcik, 2004; Blalock and Gertler, 2008) significantly contributing to the productivity and stock of technology in the country. There are studies in the literature showing that if the economy lacks certain conditions coined as absorptive capacity such as human capital (Borenzstein et al. 1998), technological investment and infrastructure (De Mello, 1997 and Borenzstein et al. 1998), financial development (Alfero et al. 2004, 2010) the technological spillover impact of the FDI might not emerge. Additionally, FDI-induced institutional improvement argument claim that the FDI might contribute to the institutional quality in the country (Long et al. 2015), which would then contribute to economic growth.

Hypothesis 1: An increase in FDI leads to increase in economic growth.

On the other hand, foreign firms might steal the market resulting in exit of domestic firms from the market. On the one hand, because of the supply shortage in the upstream industries resulted from market stealing effects by FDI might lead to the shortage in downstream industries leading to drop in economic activity and employment level in the country. On the other hand, positive externalities might overcome competition effect leading to U-shaped curve for number of domestic firms in the market (Barrios et al. 2004).

Hypothesis 2: An increase in FDI leads to economic decline.

Economic growth affects the size of the market impacts on FDI inflows, in particular horizontal FDI (Agarwal, 1980; Zhang and Markusen, 1999). Moreover, it is more likely that the technological

investments, which are large scale and requiring minimum scale would be undertaken in the growing economy that might contribute FDI inflows. Moreover, additional to demand channel the economies of scale (Pearce, 1999; Prasad et al. 2003) due to the large market size would generate cost efficiency and provides higher profits prompting FDI inflows.

Hypothesis 3: Economic growth induces FDI inflows.

2.1. The Interaction between FPI and Growth

Financial development enables the mobilization of savings, efficient risk sharing (King and Levine, 1993; Pagano, 1993) and emergence of risky, large scale technologies (Acemoglu, 1997), promotes the specialization and reduces transaction costs (Greenwood and Smith, 1997). Hence it is positively correlated with the foreign equity flows (Errunza, 2001; Henry, 2000) and contributes to economic growth. Therefore, contribution of the foreign portfolio investments on economic growth occurs through its impact on the financial development. Moreover, foreign investors might push for improvement in the institutional structure including legal structure such as trading regulations and push for technological infrastructure affecting the transmission and quality of information (Errunza, 2001).

Hypothesis 4: Foreign portfolio inflows induce economic growth.

Additional to pros, there are also cons of foreign equity flows in terms of its impact to the economy. For example, it might lead asset prices to deviate largely from its fundamental values, asset bubbles, and also unstable and volatile asset values generating economic downturns with reverse trends in the market. There is also a view arguing that the only impact of foreign equity investments on economic growth emanates from its impact on volatility rather than its direct impact on production (Durham, 2003). The legal structure,

corporate ownerships structure lead to better stock price performance, thus, lower impact on the volatility (Mitton, 2002) while the market development might decrease the price stabilizing impact of legal structure. Moreover, foreign equity investments in the countries without required absorptive capacity, which includes the legal institution (i.e. independence of jurisdiction, irremovability of judges), might fail to contribute to the economic growth. Foreign Portfolio Investment, in particular, might deter economic growth in corrupted countries (Durham, 2004).

Hypothesis 5: Foreign portfolio investment generates economic instability and reduces economic growth.

2.2. The Interaction between FDI and FPI

The direct interaction between two forms of foreign investment would be through their contribution to the economic growth. Provided that both contribute to the economic growth, enlarging market would increase the (horizontal) FDI inflows as well as foreign equity investments since economic growth and financial market development is correlated (Greenwood and Smith, 1997; Bencivenga et al. 1996). On the other hand, foreign investor's investing in the country would increase the savings channeled to the financial markets that might induce foreign equity flows. Additionally, the quality of the institutional structure might be improved by both foreign investments. Because FDI and FPI operate and coordinate (mostly) with different economic units at different stages of the production their impact on the quality of institutions would improve the overall quality of institutions in the country.

Hypothesis 6: FDI and FPI are complements.

FPI might impact the FDI through its impact on the volatility as

it is capital flows seeking short term profit and investors choosing FPI over FDI mostly are more exposed to liquidity shocks (Goldstein and Razin, 2002) . FPI by affecting the economic volatility might worsen the macroeconomic fundamentals and lead to the unstable economy that might affect the size of FDI in the country. On the other hand, if the transaction costs and entry barriers are high in the market, the foreign investor might prefer FPI over FDI (Goldstein and Razin, 2006) indicating the importance of market institutions thus generating conditions for substitution of FDI for FPI in the presence of underdeveloped financial markets.

Hypothesis 7: FDI and FPI are substitutes.

3. Empirical Analysis

3.1. Data and Variables

The analysis covers 25 countries in SSA over the period 1990-2016 as a case study. The variables that have been used in the analysis are as follows;

- lngdppc: The natural logarithm of GDP per capita, PPP (constant 2011 international $), which is taken from WDI (2018).

- FDI: Foreign direct investment, net inflows (% of GDP), which is taken from WDI (2018).

- FPI: Portfolio investment, net (BoP, current US$) divided by GDP (current US$), which is taken from WDI (2018).

We have decided to analyze Sub-Saharan Africa, because countries in Sub-Saharan Africa show different, mostly backward, economic and political institutions than most of the countries in the world. Additionally, these countries lack the technological infrastructure and experience asset price booms that imply certain

inter-linkages between different forms of foreign investments and the economic growth. This study uses the homogeneity within the region in terms of institutions and social structure (i.e., investors' preferences) that examines empirically the linkages between the variables.

3.2. Unit Root Test

According to the unit root test results in Table 1, all variables seem to be stationary at the level, since we know that lngdppc has constant and trend. Hence we will use levels of the variables in panel VAR analysis.

Table 1: Levin, Lin and Chu Unit Root Test

	Constant	Constant & Trend
lngdppc	0.884	-2.476*
FDI	-5.977*	-8.020*
FPI	-8.220*	-9.091*

Source: Authors' Own Calculations
Notes: The numbers are the t-values. Null hypothesis is that the variable has unit root. * denotes that p-value is less than 0.01.

3.3. Panel VAR Model

According to second section, we expect a two-way relationship between any pair of foreign direct investment, foreign portfolio investment and economic growth. Hence we need to estimate a system of three simultaneous equations.

Since all three variables are endogenous, we have used panel data vector autoregression methodology (Panel VAR) for the estimation. This technique treats all variables in the system as endogenous and allows for unobserved individual heterogeneity

(Love and Zicchino, 2006). The optimal lag-length for the panel VAR is found as one for the model. So, we have specified a first order panel VAR as follows;

$$y_{it} = \Gamma_0 + \Gamma_1 y_{it-1} + f_i + d_{c,t} + e_t \qquad \text{(Love and Zicchino, 2006)}$$

where y_{it} is a three-variable vector, which includes lngdppc, FDI and FPI. We introduced fixed effects, f_i, to allow for individual heterogeneity and country-specific time dummies, $d_{c,t}$, to capture aggregate, country-specific macro shocks (Love and Zicchino, 2006). Instead of mean-differencing procedure, we use forward mean-differencing (Helmert procedure) to eliminate fixed effects since mean-differencing procedure creates biased coefficients (Love and Zicchino, 2006; Abrigo and Love, 2016). Helmert procedure preserves the orthogonality between transformed variables and lagged regressors, so the latter can be used as instruments to estimate the coefficients by system GMM (Love and Zicchino, 2006; Abrigo and Love, 2016). Instead of an estimation tables with resulted coefficients and their standard errors, we present impulse-response functions as main tools of panel VAR analysis. The impulse-response functions present the reaction of one variable to the innovations (given shock) in another variable in the system, while holding all other shocks equal to zero (Love and Zicchino, 2006). The variables that appear earlier in the systems are more exogenous and the variables that appear later in the systems are more endogenous (Love and Zicchino, 2006; Abrigo and Love, 2016). The variables are ordered according to Granger causality analysis. We generate confidence intervals with Monte Carlo simulations to calculate the standard errors of the impulse-response functions (Love and Zicchino, 2006).

Variance decompositions indicate the percent of the variation in one variable that is explained by the shock to another variable, accumulated over time, as total effect.

In the literature there are several papers using panel VAR analysis for the endogenous variables in a dynamic simultaneous

system (Love and Zicchino, 2006; Assenmacher and Gerlach, 2008; Boubtane et al., 2013; Lof and Malinen, 2014).

3.4. Panel VAR Estimation Results

The results from Granger causality test in Table 1 justify using Panel VAR in the sense that all variables are endogenous since there exists two-way relationship between any two of them except lngdppc. Specifically FDI and FPI granger cause income per capita (Lngdppc) and FDI granger causes FPI and FPI granger causes FDI.

Table 2: Granger Causality Test

	lngdppc	FDI	FPI
lngdppc		0.003	0.000
FDI	0.409		0.000
FPI	0.759	0.001	

Source: Authors' Own Calculations
Notes: The numbers are the Prob > chi2 values. Null hypothesis is that the column variable does not Granger-cause row variable.

According to impulse response functions in Figure 2, one standard deviation shocks given to FDI and FPI have positive significant effects on income per capita (Lngdppc). So that FDI and FPI both lead to higher income per capita, hence growth. Our results support Hypothesis 1 and 4 that FDI leads to increase in economic growth by contributing to human capital, technology, infrastructure, financial development and institutional quality, and FPI leads to increase in economic growth by mobilizing savings, reducing transaction cost, improving institutional infrastructure and increasing the quality of information.

One standard deviation shock given to FDI has positive significant impact on FPI and one standard deviation shock given to FPI has positive significant impact on FDI. So that an increase in FDI increases FPI and an increase in FPI increases FDI. The result supports Hypothesis 6 that FDI and FPI are complements.

One standard deviation shock given to income per capita (lngdppc) does not have a significant impact on FDI or FPI. Hence the result does not support Hypothesis 3.

Figure 2: Impulse Response Function

According to variance decomposition at a horizon of ten years in Table 2, income per capita forecast error variance is explained mostly by FPI shock by % 70.93 and secondly by its own shock. FDI
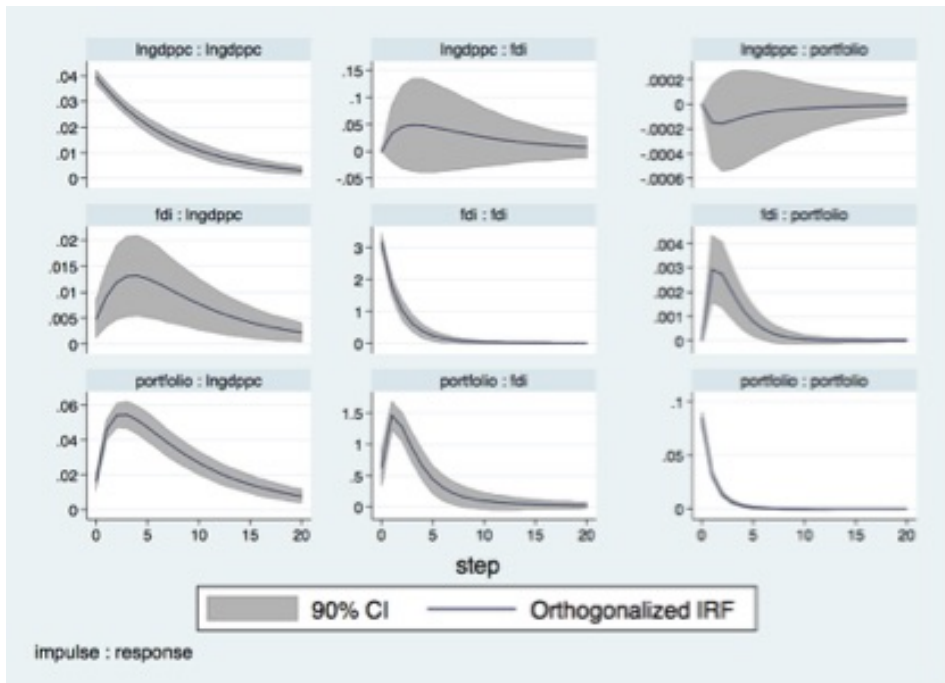
explains only % 4,40 of total variation in income per capita.

Table 2: Variance Decomposition

	lngdppc	FDI	FPI
lngdppc	0.2457	0.0440	0.7093
FDI	0.0007	0.7173	0.2819
FPI	0.0000	0.0026	0.9974

Source: Authors' Own Calculations

Notes: Percent of variation in the row variable (10 periods ahead) explained by column variable.

Based on the results above, both FDI and FPI increase economic output and lead to economic growth. This result supports Reisen and Soto (2001) and De Vita and Kyaw (2009), who found that FPI and FDI contributes positively to economic growth and contradicts Brambila-Macias and Massa (2010) and Choong et al (2010), who claimed that FDI positively affects and FPI negatively affects economic growth. Agbloyor et al. (2014) argue that both FDI and FPI negatively affect economic growth. These studies mostly argue that negative effect arise due to volatility in FPI and underdeveloped stock market.

These results confirm that external savings even in the short run, FPI, would increase the savings available in the country, increasing investment and economic growth. Most of the SSA countries are saving constrained due to low GDP and low saving rates, thus, capital accumulation, technological investment and economic output per capita would be very low under closed economy (Bakeart and Harvey, 2000). FDI and FPI seem to play important roles in enhancing economic growth in these countries.

Moreover, there is no substitution relation between FDI and

FPI. Both forms of capital inflows affect positively one another, which also indicate that there are indirect effects present in the system. For example; one standard deviation shock given to FDI (FPI) increases both economic output per capita and FPI (FDI), which also increases economic output.

The literature emphasizes that FPI leads to increase in volatility of stock market and exchange rate, and FPI leads to appreciation of national currency accompanying with increasing current account deficit and decrease in the profitable opportunities in the protected sectors (Bhagwati,1998; Singh, 1998; Krugman; 1995). Although the study does not separately investigate the interaction effects by including all factors above, the average impact of FPI seems to have more positive than negative effects on economic output per capita.

4. Conclusion

There are conflicting results found in the literature for the FPI's impact on the economic development in the SSA countries, while most of the studies emphasize that FDI contributes positively on economic growth. However, several studies share the observation that SSA countries lack of developed stock market, and FPI flowing into SSA countries has very volatile nature.

Studies on the nexus between foreign investment and growth in SSA countries emphasize that low savings rates, delayed consumption demand, low level of physical and human capital accumulation, lack of developed financial markets generate low economic growth potential. Therefore, SSA countries would benefit from foreign savings that might finance investments and enhance economic development.

Some studies in early literature on capital account liberalization argue about minimum level of checks on financial system to be constituted in pre-liberalization episode. They argue that regulation of financial markets, training of employees in financial institutions,

and laws and regulations prohibiting certain financial activities would make country less prone to economic crises that might occur after capital account liberalization. However, studies emphasizing the endogeneity of financial institutions argue that these institutions emerge through economy development process. These studies emphasize that economic loss incurred due to financial liberalization would diminish steadily, while economic development prompted by financial development would feedback on financial development.

The study aims to unravel the effect of foreign capital on growth in SSA. To this purpose the present study employs the data for 25 Sub Saharan African countries in over the 1990-2016 period. Because of the dynamic interrelations between two forms of foreign capital investment and economic growth, the Panel VAR econometric methodology is used. Panel VAR econometric methodology accounts the interrelations between co-evolving variables in dynamic system of econometric equations. The estimation results indicate that FDI and FPI are complementary and both forms of foreign capital enhance growth.

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