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FOREIGN CAPITAL INFLOWS AND SOURCES OF ECONOMIC GROWTH IN EMERGING AND DEVELOPING ECONOMIES: ROLE OF FINANCIAL DEVELOPMENT

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ABSTRACT

In the contemporary era of globalization, foreign capital inflows play a pivotal role in enhancing economic growth and investment potential, while also bridging the savings investment gap in developing countries. The study investigates the impact of foreign capital inflows on fundamental sources of economic growth, namely, physical capital, human capital, and total factor productivity, while examining the moderating role of financial development. Using panel data of emerging and developing economies from 1990-2023, the study analyzes the effects of four major types of inflows, which are foreign direct investment, foreign portfolio investment, foreign remittances, and foreign aid. Results indicate that foreign direct investment exerts a positive impact on sources of growth, whereas foreign aid negatively affects them. Remittances contribute positively to both human and physical capital, while foreign portfolio investment negatively impacts physical capital and TFP. Furthermore, findings reveal a mutually reinforcing relationship between financial development and foreign inflows. The study recommends that policies promoting foreign direct investment, reducing aid dependency, and strengthening financial sector development are crucial for enhancing the contribution of foreign capital inflows to key sources of economic growth.

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INTRODUCTION

The phenomenon of globalization is the outcome of the growing impact of various forces on human activities. Such activities might revolve around economic, political, technological, cultural, biological, and civil facets (Acheampong, 2019). With the increasing pace of globalization, foreign capital inflows (FCI) have gained increased importance, especially in emerging and developing economies (EDE). Financial integration of the latter in international markets has gained momentum over the last two decades. During the 1980s and early 1990s, FCI in these EDE were relatively low but began increasing rapidly in the mid-1990s. Numerous studies have emphasized the significance of FCI for developing countries, particularly for bridging the saving-investment gap. Among different inflows, foreign direct investment (FDI), financial portfolio investment (FPI), foreign remittances (FR), and foreign aid (FA) are rendered key inflows for ensuring economic growth and development (Nwaogu and Ryan, 2015). As far as different FCI to developing countries are concerned, FDI inflows stand at $435 billion in 2023; however, the volume of foreign remittances, with its figure of $656 billion in 2023, is higher than the volume of FDI. It is worth noting that foreign remittance flows to some developing regions, particularly South Asia, have surpassed the combined total of FDI and foreign aid in 2023 (World Bank, 2024). Hence, according to the relative importance, FDI is the second largest source of external finance after foreign remittances in EDE. FDI is followed by foreign aid and FPI as sources of external finance.

All types of FCI contribute to income and economic growth through a variety of channels, such as through their impact on human capital, physical capital, and Total factor productivity (TFP). Foreign remittances may increase savings in the country, which helps in the development of financial markets. It can also be used to finance entrepreneurial activities. It acts as insurance against negative income shocks of households through financing different household expenditures and subsequent improvement in the living standards of individuals (Bano et al., 2018). Foreign remittances help in improving human capital formation through increasing expenditures on education and health. On the contrary, these foreign remittances can generate motivations for leisure, which lead to moral hazards and the resultant decrease in labor force participation, which may hamper economic growth (Chami et al., 2005). As far as FDI is concerned, it is instrumental for developing economies where companies need funds and expertise to expand their international business. FDI boosts economic growth via capital accumulation by the provision of new inputs and via TFP by the diffusion of foreign technology in the recipient economy's production function (Choong et al., 2010). Moreover, FDI increases the present knowledge stock in the host economy through both training of labor and skill acquisition, which enhances human capital. Similarly, foreign aid can also help developing countries in achieving economic growth and development (Azam et al., 2015).

Rajan and Subramania (2008) stated various mechanisms by which aid could contribute to different sources of economic growth, i.e., aid increases the investment in human and physical stock of capital and increases the capacity for importing capital goods and technology. It may boost TFP through the transfer of technology, which boosts the productivity of capital. However,

some authors argued that foreign aid may hamper economic growth. Brautigam and Knack (2004) are of the view that a high level of aid erodes institutional quality, and increases rent-seeking and corruption; therefore, negatively affecting economic growth. Foreign aid can make a nation aid-dependent rather than economically independent.

Foreign portfolio investment comprises transfers of financial assets like bonds and cash across international borders to earn profit. It is believed to have a positive impact on employment and human capital development. However, it can affect macroeconomic variables negatively through different channels. Huge financial shocks result in sudden swings of capital inflows, which lead to rapid depreciation in the exchange rate, making imports more expensive, and also increasing the prices of food and basic amenities. This weakens the purchasing power of people. Hence, people invest less in education, which results in decreasing human capital (Demirgüç-Kunt and Levine, 1996). However, it is argued that liberalizing constraints on FPI tends to enhance liquidity in the domestic stock market, which can positively affect TFP growth (Levine and Zervos, 1998).

Over the years, financial development has been believed to be instrumental for economic growth through the accumulation of physical capital and advancement in technology achieved by encouraging savings and efficiently channeling productive investment. It also facilitates and encourages FCI and helps optimize the allocation of capital in developing economies. Besides, financial development can help reduce income inequality and poverty through financial inclusion of the vulnerable groups, specifically the poor, facilitating risk diversification with resultant reduction in vulnerability to shocks. Higher investment and productivity can also result in higher income generation in developing countries. Financial development also has a crucial part in the relationship between financial capital inflows and economic growth. Economies can reap potential gains from these inflows when it is coupled with a reasonable level of financial development (Lee and Chang, 2009).

The present study attempts to examine the impact of FCI on three main sources of economic growth, i.e., physical capital, human capital, and total factor productivity (TFP) in developing countries. Because the analysis of only one source of economic growth or only one component of FCI is not inclusive in investigating the in-depth relationship between FCI and economic growth. This study contributes to the literature in two aspects. Firstly, there are numerous studies examining the relationship between FCI and economic growth, but only a few have analyzed the impact of any single foreign capital inflow on any one source of economic growth, i.e., human capital, physical capital, and TFP, in the context of developing countries. Secondly, this study incorporates the mediating role of financial development (FD) in the relationship between FCI and three main sources of economic growth, a channel that has gained much less recognition in the literature. The relationship of FD with economic growth is not new in the literature. There have been various studies on economic growth, FCI, and financial development, but a rare focus has been on the interactive role of financial development. Thus, this study contributes to the literature by incorporating the role of FD in the relationship between FCI and sources of economic growth for 71 EDE over the time period 1990-2023. Therefore, three different econometric models have been formulated for three main sources of economic growth. Each model has been estimated using the dynamic panel system Generalized Methods of Moment (GMM) technique for each type of foreign capital inflow, i.e., FDI, FPI, foreign aid, and remittances.

Literature Review

The role of FCI in economic growth has long been debated in the literature. There exist two opposing views in this regard. On the one hand, it is argued that FCI are necessary for the economic growth of developing economies (Gupta, 1975) because they supplement domestic savings and complement domestic resources. It also helps in reducing the foreign exchange gap and makes access to the foreign market easier. They also provide access to advanced technology and enhance managerial skills (Acheampong, 2019). On the other hand, the opposing view is that FCI is fully substituted and consumed instead of complementing domestic resources. It may also result in the import of useless technology, unequal domestic income distributions, and inefficient and corrupt governments in the developing economies (Griffin and Enos, 1970).

Financial development has an important part in transmitting the impact of foreign inflows on economic growth and its sources in developing countries because FCI can be utilized in either consumption or investment. And the extent to which the external money is used in investment may depend on the level of financial development of the domestic economy. Because financially developed institutions help firms and individuals to invest in the most productive sectors. Adjasi et al. (2012) and Alfaro et al. (2004) concluded that only those economies with a developed financial sector significantly gain from FCI.

As far as empirical literature is concerned, FCI is believed to have mixed effects. In an analysis for 31 developing countries, Hansen and Rand (2006) reported that FDI impacts GDP growth through technology spillover and knowledge transfers. Moreover, FDI helps in the formation of human capital, contributes to international trade integration, facilitates in creation of more competitive business environments, and enhances enterprise development. In their panel data analysis, Demirgüç-Kunt and Levine (1996) are of the view that FPI has a positive influence on economic growth. Whereas, Durham (2004) recommended that if FPI is uncontrolled, it would deter economic growth. Considering the relationship between remittances and economic growth, Chami et al. (2005) have reported a negative relationship between remittances and GDP growth in a panel analysis of 113 economies. Similarly, Amuedo-Dorantes and Pozo (2004), using data from thirteen Latin American economies, indicated that remittances have a negative effect because of exchange rate appreciation. On the contrary, in a time-series analysis for Pakistan, Bano et al. (2018) have reported a positive impact of foreign remittances on three sources of economic growth, namely, physical capital, human capital, and TFP. Moving on with the impact of foreign aid on the economy, Bulíř and Hamann (2008) have shown that foreign aid has not helped against the negative shocks of income in 76 economies studied over 1975-2003. In the same way, Rajan and Subramanian (2008) also concluded the adverse effect of foreign aid on the competitiveness of the economy, hence on economic growth. On the contrary, Islam (1992) has reported the positive impact of foreign aid on economic growth for Bangladesh.

Focusing on the role of financial development in empirical literature, Bailliu (2000), while conducting a panel data analysis of 40 developing economies, has shown that FCI is more favorable for the economic growth of those economies that have gained a

particular level of development in the banking sector. According to Borensztein et al. (1998), the positive effect of FDI on economic growth is conditional on some threshold level of human capital in the host country. Similarly, Adjasi et al. (2012), by analyzing data of 32 African economies, argued that the significant influence of FDI on economic growth depends on the existence of better functioning and better developed local financial markets.

METHODOLOGY AND DATA

The growth accounting technique is used as the baseline specification for analyzing sources of economic growth. It breaks down economic growth into changes in factor inputs and the residual, which reflects technological progress. In general, the growth accounting framework is instrumental for analyzing fundamental sources of economic growth. Beginning with the production function:

$$Y_t = A_t f(K_t, H_t) \quad (1)$$

Here, Y_t denotes the output, K_t denotes the stock of physical capital, A_t is TFP and H_t is human capital. Differentiating the above production function according to time, the growth rate of the output can be decomposed into its sources, such as improvement in the productive efficiency (A/A) and the increase in factor inputs, physical capital (K/K), and human capital (H/H) as:

$$\frac{\dot{Y}}{Y} = \frac{\dot{A}}{A} + (1-\alpha_h)\frac{\dot{K}}{K} + \alpha_h \frac{\dot{H}}{H} \quad (2)$$

Equation (2) assumes constant returns to scale. Using this growth accounting framework, this study incorporated three independent equations for three sources of economic growth, namely, physical capital, human capital, and TFP. Three equations for these three sources of economic growth are estimated separately for each component of the FCI, and the mediating role of financial development is also estimated in the study. Symbolically, the general form of the model is as follows:

$$SEG_{it} = f(FCI_{it}, FD_{it,} X_{it}) \quad (3)$$

Equation 3 depicts that sources of economic growth (SEG) are functions of foreign capital inflows (FCI), financial development (FD), and other control variables (X). Equation 3 has different variants in relation to both the dependent variable and the independent variables. With regard to the dependent variable, the benchmark model is written as:

$$K_{it} = f(FCI_{it}, FD_{it,} X_{it}) \quad (4)$$

$$HC_{it} = f(FCI_{it}, FD_{it,} X_{it}) \quad (5)$$

$$TFP_{it} = f(FCI_{it}, FD_{it,} X_{it}) \quad (6)$$

Equations 4, 5, and 6 show that physical capital (K), human capital (HC), and total factor productivity (TFP) are functions of FCI, FD, and other control variables. Now with regard to the independent and control variables, the vectors of independent, intermediating, and control variables are presented as follows:

$$FCI = \begin{bmatrix} FDI \\ FPI \\ FR \\ FA \end{bmatrix} \qquad FD = \begin{bmatrix} DEPTH \\ ACCESS \\ EFFICIENCY \\ STABILITY \end{bmatrix} \qquad X = \begin{bmatrix} Y \\ TO \\ GCE \\ RIR \\ PCI \\ INF \\ EE \\ RER \end{bmatrix}$$

Given the above-mentioned vectors of the variables, the following models are estimated in order to analyze the relationship between FCI and sources of economic growth by incorporating the role of financial development.

$$K_{it} = \delta_0 + \delta_1 K_{i\,t-1} + \delta_2 Y_{it} + \delta_3 FCI_{it} + \delta_4 FD_{it} + \delta_5 (FCI^{*} FD)_{it} + \delta_6 GCE_{it} + \delta_7 TO_{it} + \delta_8 RIR_{it} + \mu_{1it} \quad (9)$$

$$HC_{it} = \theta_0 + \theta_1 HC_{it-1} + \theta_2 PCI_{it} + \theta_3 FCI_{it} + \theta_4 FD_{it} + \theta_5 (FCI^{*} FD)_{it} + \theta_6 INF_{it} + \theta_7 EE_{it} + \mu_{2it} \quad (10)$$

$$TFP_{it} = \varepsilon_0 + \varepsilon_1 TFP_{i,t-1} + \varepsilon_2 HC_{it} + \varepsilon_3 FCI_{it} + \varepsilon_4 FD_{it} + \varepsilon_5 (FCI^{*} FD)_{it} + \varepsilon_6 TO_{it} + \varepsilon_7 RER_{it} + \mu_{3it} \quad (11)$$

Here (i) shows cross sections, i.e., 71 EDE, and (t) shows the time period, i.e., (1990-2023). K_{it} is physical capital used as gross fixed capital formation (% of GDP), HC_{it} is the human capital index, TFP_{it} is the total factor productivity, FCI_{it} is specific foreign capital inflow including FDI_{it},(net inflows) as % of GDP, FPI_{it}, which is foreign portfolio investment taken as portfolio investment (net BoP, % of GDP) FR_{it} as foreign remittances (% of GDP) and FA_{it} is foreign aid taken as net ODA, FD_{it} is index of financial development, Y_{it} is the GDP growth, INF_{it} is inflation (consumer prices, annual %), TO_{it} is the trade openness taken as trade (% of GDP), GCE_{it} is the government consumption expenditure (% of GDP), RIR_{it} is real interest rate, PCI_{it} is GDP per capita growth, RER_{it} is real exchange rate, EE_{it} is government education expenditures (% of GDP). This study has estimated three independent models for each source of economic growth using the dynamic panel system GMM estimation technique. The impact of each type of FCI is estimated separately on human capital, physical capital, and TFP. The study also focuses on the moderating role of financial development in the relationship between FCI and sources of economic growth by adding the interaction term of FD with each type of FCI.

The dependent variables include human capital, physical capital, and TFP. Physical capital is measured by Gross fixed capital formation, while, index of human capital per person, based on years of schooling and returns to education, is used for measuring human capital. A major source of data is the World Development Indicators by the World Bank. Data on human capital and TFP are taken from Penn World Tables (PWT) 10.0. Whereas the index of financial development is taken from the Global Financial Development Database.

FDI can be instrumental in increasing not only domestic investment but also human capital and TFP. However, studies have argued about both the positive and the negative impact of FDI on domestic investment. FDI may be a source of an incentive to domestic investment or it could replace domestic investment owing to competition in the host economy market with small firms unable to compete with the multinational corporations, or local markets do not have the absorptive capacity (Aigheyisi, 2017). FDI may also help in fulfilling capital shortage in the capital-scarce economies (Alfaro et al., 2004). Furthermore, multinational firms can provide training and education, bring new skills, knowledge, and equipment to host economies (Azam et al., 2015). However, some studies show that most skilled labor from host economies is employed by multinational firms, and the domestic firms are deprived of their services (Ajide and Lawanson, 2012).

FPI can play a positive role in the development of efficient domestic capital markets, which results in multiple benefits for the host economy. For example, increased FPI will lead to more liquidity in the capital market and the consequent broader and deeper market (Levine & Zervos, 1998). This further leads to good access to financing at low capital cost, which is important to support the economic activity (Bekaert et al., 2003). FPI inflows

into stock markets help to alleviate any financial constraints faced by firms (Errunza, 2001). Multiplier effect propagates the effect of growth in the stock market by wealth effect, as capital inflows serve as a catalyst to growth and contribute toward the increased creation of wealth. Ultimately, this improved access to financing provided by the free flow of FPI contributes to efficient allocation of the capital (Ighoroje and Emmanuel, 2020).

As far as the impact of remittances on domestic investment is concerned, it can be positive or negative depending on people's preferences either for consumption or for investment expenditures. Foreign remittances can increase investment if the basic needs of recipients are already being met. On the contrary, the impact of remittances on domestic investment is negative if these remittances are mainly used for consumption purposes (Bano et al., 2018). Moreover, remittances sent by the migrants to their households can also be invested in the education of family members of migrants (Ustubici and Irdam, 2012). Many studies confirmed that remittances can affect economic growth through TFP. It might affect TFP by improving the domestic productive sector size, which creates dynamic production externalities, and also by affecting domestic investment productivity through the import of hi-tech machinery and equipment (Chami et al., 2005). Direct import of intermediate capital goods and highly personified technology and machinery can also explain the causality from remittances to TFP (Kumar et al., 2018). As far as foreign aid is concerned, it is also an important component of external financing. In general, foreign aid can be conducive to economic growth through various mechanisms such as (i) increasing investment; (ii) improving the ability to import technology or capital goods; (iii) enhancing the productivity of capital and promoting endogenous technical change (Ang, 2010). Financial development is instrumental for investment decisions as it opens more possibilities and incentives for investment for business firms. A developed financial sector will not only allow business enterprises to finance more investment projects but also enhance the productivity of investment (Levine, 1997). Similarly, a well-developed financial system can efficiently mobilize resources, which will increase investment in human capital by investing in health, education, and welfare activities (Sehrawat and Giri, 2017). Having access to financial services enhances the productivity and welfare levels of both producers and consumers (Lee and Chang, 2009). FD improves economic growth through human capital by providing the required finances for investment in education. The interaction of FCI and FD can take either a positive or negative value because the level of FD could determine whether FCI has a negative or positive impact on sources of growth. According to the finance welfare hypothesis, the level of FD affects the accumulation of physical and human capital, which enhances economic growth (Acheampong, 2019). FD seeks to attract FCI, which improves economic growth. Recent studies have established a relationship between different facets of FD, such as financial efficiency, financial globalization, and financial depth, with economic growth (Shapoval, 2021).

RESULTS AND DISCUSSION

Before presenting the regression results, Table 1 presents descriptive statistics of the variables used in the study. Estimated results for equation 9 on physical capital are given in Table 2. Four sets of results are reported for each type of FCI. The probability values of F-statistics in all models confirm the overall significance of the models used in the study. The probability values of the under-identification test in all models are highly significant, which shows none of these models is under-identified. Moreover, Hansen J statistics are included to check the validity of instruments, and the probability value of Hansen-J statistics in all models indicates that the null hypothesis is accepted, which confirms that all included instruments are valid. The estimated coefficient of lagged physical capital is positive and significant at 1% level of significance in all four regressions.

Focusing on the results of FCI and beginning with FDI, the coefficient is positive and significant in its impact on physical capital, with a size of 1.43. This is in line with growth literature, which states that FDI contributes to growth by increasing investment volumes. The studies by Aigheyisi (2017) and Al Khatib et al. (2012) also confirm the significant and positive effect of FDI on investment. Contrary to the results of FDI, FPI has a negative and significant impact on investment with a coefficient value equal to -13.06, which means that when FPI increases by 1% then investment decreases by 13.06%. According to recent empirical literature, during the time of financial instability, such as the Global Financial Crisis of 2008, investors of foreign equity reallocated huge amounts of the portfolio capital from the emerging countries to the advanced countries (Fratzscher et al., 2012). Foreign remittances also have a significantly positive relationship with investment.

Table 1. Descriptive statistics of variables.

Variable	Observations	Mean	Maximum	Minimum	Std. Dev
PC	4,135	22.29	93.55	-2.42	8.55
HC	3,661	2.11	3.62	1.02	0.597
TFP	2,684	0.97	2.21	0.20	0.24
FDI	4,829	3.64	161.82	-55.23	6.55
FPI	3,226	0.71	3.09	-0.80	0.12
FR	4,195	5.15	235.9	0	10.93
FA	4,735	0.07	1.39	-0.02	0.11
FD	3,122	0.24	0.73	0.0001	0.13
Y	5,120	3.54	149.97	-64.04	6.79
TO	4,587	78.19	347.99	0.02	39.02
GCE	4,254	15.70	147.7	0.91	8.95
RIR	3,334	6.44	628.3	-97.69	17.15
PCI	5,120	1.72	140.4	-64.99	6.65
EE	2,164	4.16	44.33	0.62	2.05
INF	4,365	35.46	23773.13	-18.10	455.10
RER	3,530	969.87	43281.21	0.23	3682.91

Source: Authors' own calculations based on data from World Development Indicators and Penn World Tables.

Table 2. Estimates of the physical capital model.

Independent Variables	FDI		FPI		FR		FA	
	Coef	S.E	Coef	S.E	Coef	S.E	Coef	S.E
$L.HC_{it}$	0.709***	(0.036)	0.710***	(0.042)	0.725***	(0.038)	0.732***	(0.033)
FDI_{it}	1.433***	(0.426)	-	-	-	-	-	-
FPI_{it}	-		-13.060*	(7.626)	-	-	-	-
FR_{it}	-		-	-	0.129**	(0.060)	-	-
FA_{it}	-		-	-	-	-	-0.244*	(0.146)
FD_{it}	9.670**	(4.232)	6.945***	(2.362)	3.909*	(2.162)	11.088***	(4.173)
$FDI_{it}*FD_{it}$	0.182**	(0.074)	-	-	-	-	-	-
$FPI_{it}*FD_{it}$	-		31.087*	(17.797)	-	-	-	-
$FR_{it}*FD_{it}$	-		-	-	0.718**	(0.319)	-	-
$FA_{it}*FD_{it}$	-		-	-	-	-	4.189***	(1.141)
TO_{it}	1.744**	(0.802)	2.883*	(1.758)	1.206*	(0.697)	1.514**	(0.626)
GCE_{it}	-0.165**	(0.068)	-0.359***	(0.119)	-0.192**	(0.086)	-0.157***	(0.062)
RIR_{it}	0.007	(0.021)	0.011	(0.026)	0.016	(0.015)	-0.010	(0.012)
Y_{it}	0.295*	(0.160)	0.406**	(0.165)	0.425***	(0.155)	0.326**	(0.131)
F-Statistics	70.19***		47.07***		56.24***		69.13***	
Under-identification Test	23.579***		23.501***		25.059***		30.536***	
Hansen J Statistic	0.2179		0.3975		0.8302		0.3587	

Note: ***, ** and * denote the significance at 1%, 5% and 10% respectively; Dependent Variable: Gross Fixed Capital Formation (GFCF).

The results show that physical investment rises by 0.129% with a 1% increase in the inflow of foreign remittances. Other studies, such as Ojapinwa and Odekunle (2013), Bano et al. (2018), and Mushtaq et al. (2020) also provide evidence that remittances have a positive and significant impact on physical capital investment. Because, inflow of external capital into EDE encourages productive investment through enhancing credit accessibility at both macro and micro levels. On the other hand, foreign aid has a significant negative impact on investment having coefficient value of 0.244. This shows that with 1% increase in foreign aid, investment decreases by 0.244%. These results are in line with studies done by Hansen and Tarp (2001) and Maria and Ezenekwe (2015), who also found a negative and significant impact of foreign aid on investment. Foreign aid discourages domestic savings in developing economies and is mainly diverted for consumption purposes instead of investment (Niyonkuru, 2016). Griffin and Enos (1970) argued that aid reduces domestic savings and hence does not add to the investment.

Moving to financial development (FD), our second focused variable, it is clear from Table 2 that FD consistently has a positive and significant effect on physical capital in all four estimations, with coefficient sizes ranging from 3.909 to 11.088. This is in line with the literature on endogenous growth, which describes that a well-developed financial system has a positive impact on economic growth through the channel of investment. Similar findings are reported by Muyambiri and Odhiambo (2017), confirming a positive relationship between FD and investment. It is pertinent to note that the interaction effect of FDI and FD on physical capital is also positive and significant, with a coefficient size equal to 0.182, which shows that FD strengthens the positive impact of FDI on physical capital. Aigheyisi (2017) and Esfandyari (2015) also found a positive and significant impact of the interaction of FDI with FD on investment. Similarly, the coefficient of interaction of foreign remittance and FD also has a significant positive relation with investment, having a coefficient value equal to 0.718. This is also confirmed by an empirical study done by Ojapinwa and Odekunle (2013), which showed that remittances are more conducive to economic growth if the financial sector of the economy is more developed.

Though FPI has a negative impact on physical capital in Table 2 but the interaction term of FPI and financial development is positive and significant, with a coefficient size equal to 31.087. When EDE implements capital account liberalization and allows the inflow of foreign equity capital, this promotes integration with the global equity market and finances a new stock of capital with foreign funds. As economies become financially developed and move from financial autarky in order to become integrated, investment in physical capital increases correspondingly. As financial integration decreases the cost of capital equity, which expands the portfolio of the positive NPV investment in the economy, for the cash flow from new investment is discounted now under a low pricing factor (Levine and Zervos, 1998; Bekaert et al., 2003). Similarly, the interaction effect of foreign aid and financial development is also positive and significant, with a coefficient value of 4.189. This is also confirmed by the argument of Nkusu and Sayek (2004) and Ang (2010), which states that the development of the financial sector influences the positive impact of foreign aid on economic growth. Minasyan and Nunnenkamp (2016) also argued that foreign aid is effective in those economies that have well-structured and well-developed financial sectors and institutions.

As far as control variables are concerned, GDP growth is significantly and positively related to investment in all specifications, with a coefficient size ranging from 0.295 to 0.435. This is in accordance with accelerator theory and also previously verified by many studies in the literature, such as Ajide and Lawanson (2012). The public sector plays an important role in economic activity via government expenditures. The results show a negative and significant impact of government expenditures on investment in all four specifications, with coefficient sizes ranging

from -0.395 to -0.192. Hence, private investment is crowded out in this context. The study by Rossiter (2002) also found that private investment is crowded out by public expenditures.

The next explanatory variable is trade openness, which has a significant and positive impact on investment having coefficient size ranging from 1.206 to 2.883. Trade openness can play a substantial role in increasing the physical capital through boosting export performance and also by diversifying import capability of EDE. Furthermore, reducing trade barriers will result in encouraging the transfer of ideas, which then promotes competition in the input market, leading to an increase in the stock of physical capital in the country. Empirical results are also aligned with the study of Mohsen (2015), who also confirmed a positive and significant impact of trade openness on investment. The coefficient of interest rate ranges from -0.010 to 0.016, though it is not statistically significant in all four specifications. The real rate of interest is regarded as an important determinant of investment according to neoclassical theory. There are many frictions present in the implementation of monetary policy in EDE, which may make the real interest rate insignificant for investment.

The 2nd source of economic growth is human capital. Results of estimation for the human capital model are given in Table 3. The estimated coefficient of one period lagged HC has a positive and significant impact on the current value of HC at 1% significance level throughout four regressions. The coefficient of FDI is positive and statistically significant, with a coefficient value of 0.984. According to Mahmood and Chaudhary (2012), a minimum human capital level is needed for attracting FDI in the host economy. Similarly, multinational firms could provide training and education, bring new skills and knowledge, and introduce new techniques in host economies. The positive impact of FDI on human capital is also confirmed by studies of Gittens and Pilgrim (2013) and Azam et al. (2015). Likewise, FPI also has a positive and significant impact on human capital. This result of positive and significant impact of FPI on human capital for developing countries is also confirmed by the studies of Ighoroje and Emmanuel (2020) and Nwafor (2020). Foreign remittance is also positively and significantly related to human capital. The value of the estimated coefficient of remittance is 0.966. Remittances help in mitigating financial constraints that are faced by households, thus boosting investment in human and physical capital. Edwards and Ureta (2003) and Ustubici and Irdam (2012) also validate the positive impact of foreign remittances on the formation of human capital. In contrast to the other three sources of capital inflows, foreign aid has a significant negative impact on human capital. This is in accordance with the study of Ustubici and Irdam (2012). The coefficient of financial development is statistically significant and has a positive impact on human capital in all specifications, with coefficient values ranging from 0.010 to 0.035. According to Sehrawat and Giri (2017), a well-developed financial system could mobilize the resources more efficiently, which increases investment in human capital via health expenditure, education expenditures, and welfare activities. This is confirmed by the study of Sethi et al. (2020), who also found a positive impact of financial development on human capital in emerging economies. As far as interaction terms of financial capital inflows and financial development are concerned, the interaction term of FDI and financial development has a positive and significant effect on human capital having coefficient value equal to 0.317. According to Tan and Law (2012), the introduction of modified financial derivatives can help attract FDI through multiple channels, such as better access to credit for the private sector and increasing the level of monetization in the economy. Also, when an economy has a well-developed financial sector, the welfare benefits from FDI tend to outweigh the negative effects. Similarly, the interaction term of FPI with financial development also has a positive relationship with human capital, but its impact is insignificant having coefficient value as 0.144. But the interaction effect of foreign remittances and financial development is positive and significant for human capital, with a coefficient value equal to 0.497. Though foreign aid is negative in its impact on human capital but interaction term of foreign aid and financial development on human capital is positive and statistically significant having coefficient value of 0.768. It means that if the financial sector is well-developed, then it produces financial instruments that can effectively mitigate the negative impact of foreign aid on human capital. This is also confirmed by studies of Nkusu and Sayek (2004) and Ang (2010).

Table 3. Estimates of the human capital model.

Independent	FDI		FPI		FR		FA	
Variables	Coef	S.E	Coef	S.E	Coef	S.E	Coef	S.E
$L.HC_{it}$	0.992***	(0.004)	0.995***	(0.004)	0.985***	(0.004)	0.989***	(0.005)
FDI_{it}	0.984*	(0.558)	-		-	-	-	-
FPI_{it}	-	-	0.416**	(0.213)	-	-	-	-
FR_{it}	-	-		-	0.966**	(0.446)	-	-
FA_{it}	-	-	-	-	-	-	-0.090*	(0.048)
FD_{it}	0.019**	(0.010)	0.024**	(0.010)	0.035**	(0.015)	0.010*	(0.560)
$FDI*FD_{it}$	0.317***	(0.103)	-	-	-	-	-	-
$FPI*FD_{it}$	-	-	0.144	(0.567)	-	-	-	-
$FR*FD_{it}$	-	-	-	-	0.497**	(0.210)	-	-
$FA*FD_{it}$	-	-	-	-	-	-	0.768**	(0.387)
PCI_{it}	0.485***	(0.091)	0.196***	(0.057)	0.396	(0.559)	0.112*	(0.069)
EE_{it}	0.253**	(0.116)	0.552***	(0.144)	0.319*	(0.183)	0.307*	(0.167)
INF_{it}	0.872**	(0.449)	0.201	(0.137)	0.187*	(0.109)	0.148*	(0.085)
F-Statistics	14384.66***		9929.25***		9790.63***		11260.04***	
Underidentification Test	42.122***		46.943***		37.714***		25.691***	
Hansen J Statistic	0.4947		0.8031		0.5086		0.9440	

Notes: ***, ** and * denote the significance at 1%, 5% and 10% respectively; Dependent Variable: Human Capital (HC).

Among other determinants of human capital, per capita income is positive and statistically significant, indicating that 1% increase in per capita income leads to a 0.485% increase in human capital. It is in accordance with the study of Anand and Ravallion (1993), who argued that income level is one of the key determinants of human capital. Similarly, government educational expenditures also have a positive and significant effect on human capital in all four regressions. According to the results in Table 3, inflation exerts a positive impact on human capital, which is significant in three of the four estimations. This is in line with the overlapping generations model OLG, which states that higher inflation undermines TFP which making the work less attractive. In a period of inflation crisis, the real economy will decline, and hence, human capital will become more attractive. The young generation will assume high inflation as temporary and decide to work later and study now. Hence, human capital will increase (Petrucci, 1999).

Moving to the third source of economic growth, namely, TFP, the results are given in Table 4. The estimated coefficient of lagged TFP is positive and significant in all four regressions. The coefficient of FDI is statistically significant and positive, indicating that FDI enhances TFP. This result is in line with the neoclassical growth theory. Woo (2009) and Arisoy (2012), also confirmed the positive impact of FDI on productivity growth. However, the estimated coefficients of all three other types of FCI, including FPI, foreign remittances, and foreign aid, are statistically significant and negative. As FPI inflows are speculative and short-term, and are driven by attempts of foreign investors to diversify the risk and to get instant liquidity. Therefore, FPI may be counterproductive because it hinders economic growth via externalities emanated during both sudden reversals and surges (Choong et al., 2010). Baharumshah and Thanoon (2006) also confirmed the negative impact of FPI on TFP growth. The coefficient of foreign remittances is also negative and significant in impacting TFP. It may be because remittances are mainly spent on consumption-related activities rather than production (Bano et al., 2018). Alternatively, remittances are spent with an altruistic motive instead of a profit motive (Ferdaous, 2016). Our findings are consistent with the findings of Ustarz and Issahaku (2017). Besides, foreign aid is negatively and significantly impacting TFP. This negative relationship is also confirmed by studies of Kumar et al. (2018) and Ang (2010).

The coefficient of financial development is statistically significant and has a positive impact on TFP in all specifications, with a coefficient value ranging from 0.123 to 0.159. The development of the financial sector could impact TFP through different channels. FD encourages technological innovation because of easy access to financial resources (Khan, 2006). Also, a well-established financial sector may help in boosting the marginal productivity of the capital via efficiency improvement effects (King and Levine, 1993).

Focusing on the interaction terms of FD with different foreign capital inflows, the coefficient value of the interaction term of FDI and FD is positive and significant. Alfaro et al. (2004) concluded that economies with better-established financial institutions and markets significantly benefit more from FDI inflows. Similarly, when FPI interacts with financial development, its impact on TFP becomes positive but insignificant. While, interaction of foreign remittances and FD is significantly positive. If the financial sector is better developed and well-functioning, then foreign remittances are expected to pass through the banking process before going to households for spending (Giuliano and Ruiz-Arranz, 2009). This finding is also confirmed by Jayaraman and Choong (2012). Finally, the interaction term of foreign aid and FD is also positive but insignificant.

Moving to control variables, the real exchange rate shows a significant positive impact on TFP in Table 4. This result is consistent throughout all four regressions, with a coefficient size ranging from 0.115 to 0.165. This implies that exchange rate depreciation results in enhancing TFP in EDE. This is in line with theoretical work done by Matsuyama (1992) and empirical confirmation by Yanikkaya (2003). Similarly, as postulated by theorists, human capital has a positive and significant impact on TFP with a coefficient size ranging from 0.102 to 0.140. A study by Rath and Parida (2014) confirmed this positive relationship of human capital with TFP for South Asian countries. The findings reveal that skilled and educated labor is more capable of utilizing new production techniques and thus enhances the overall efficiency of the economy. Our findings are also confirmed by Yan and Yudong (2003), who concluded that human capital significantly contributes to TFP. The estimated coefficients for trade openness are positive under all four regressions, though only one of them is significant. Higher trade openness promotes specialization in production, leading to a positive impact on TFP.

Table 4. Estimates of the total factor productivity model.

Independent Variables	FDI		FPI		FR		FA	
	Coef	S.E	Coef	S.E	Coef	S.E	Coef	S.E
$L.TFP_{it}$	0.703***	(0.074)	0.700***	(0.082)	0.698***	(0.079)	0.746***	(0.084)
FDI_{it}	0.458**	(0.199)						
FPI_{it}			-0.448**	(0.193)				
FR_{it}					-0.561***	(0.220)		
FA_{it}							-0.447*	(0.241)
FD_{it}	0.123*	(0.074)	0.126*	(0.068)	0.159**	(0.080)	0.133*	(0.077)
$FDI*FD_{it}$	0.175*	(0.108)						
$FPI*FD_{it}$			0.348	(0.319)				
$FR*FD_{it}$					0.879***	(0.297)		
$FA*FD_{it}$							0.446	(0.988)
HC_{it}	0.102**	(0.049)	0.118**	(0.048)	0.109**	(0.047)	0.140***	(0.051)
RER_{it}	0.132**	(0.062)	0.115*	(0.063)	0.165***	(0.064)	0.143**	(0.064)
TO_{it}	0.035*	(0.020)	0.019	(0.021)	0.032	(0.021)	0.023	(0.020)
F-Statistics	14.34***		13.23***		17.97***		13.99***	
Under-identification Test	34.247***		30.966***		32.410***		30.055***	
Hansen J Statistic	0.3619		0.4600		0.6967		0.3653	

Notes: ***, ** and * denote the significance at 1%, 5% and 10% respectively; Dependent Variable: Total Factor Productivity (TFP);
Source: Author's own calculations using Stata-14 software.

Table 5. Comparative analysis of FCI, FD and sources of growth.

Foreign Capital Inflows	Sources of Growth		
	Physical Capital	Human Capital	TFP
Foreign Direct Investment (FDI)	Significant & positive	Significant & positive	Significant & positive
Foreign Portfolio Investment (FPI)	Significant & Negative	Significant & positive	Significant & Negative
Foreign Remittance (FR)	Significant & positive	Significant & positive	Significant & Negative
Foreign Aid (FA)	Significant & Negative	Significant & Negative	Significant & Negative
Financial Development (FD)	Significant & positive	Significant & positive	Significant & positive
FDI*FD	Significant & positive	Significant & positive	Significant & positive
FPI*FD	Significant & positive	Insignificant & Positive	Insignificant & Positive
FR*FD	Significant & positive	Significant & positive	Significant & positive
FA*FD	Significant & positive	Significant & positive	Insignificant & Positive
Dominant Impact	FDI	FDI	FDI

Table 5 summarizes all these results to provide comparisons. FPI and foreign aid have a negative relationship with physical capital. Hence, they are not good for investment because of aid dependency and the volatile nature of FPI and aid. While FDI and remittances have a positive impact, which means that they are beneficial for physical capital formation. However, the magnitude of the impact of FDI is more than the remittances, so FDI inflows are more beneficial for investment in the case of EDE. Whereas, for human capital being the second focused source of economic growth, foreign aid has a negative impact, which shows that aid is not good for the formation of human capital. Aid may make an economy aid-dependent instead of making it economically independent. On the other hand, FDI, FPI, and remittances all have a positive impact on human capital, which shows that they are beneficial for the formation of human capital in EDE. However, the magnitude of the impact of FDI is greater than the magnitude of the impact of remittances and FPI, which shows that FDI is more beneficial for investment in human capital. Endogenous growth theory argued that FDI leads to an increase in economic growth by transferring technology from developed to developing economies and also increases knowledge and human capital skills through labor and managerial training. In contrast, for TFP as a source of growth, only FDI has a positive impact. All other types of foreign capital inflows have a negative influence on TFP in EDE. Hence, the dominant impact shows that FDI is more beneficial for all sources of growth in the case of EDE. However, financial development has a positive effect on all three main sources of economic growth, and the combined impact of FCI with FD on all sources of growth is also positive. It shows that FD plays a significant role in linking the impact of all types of FCI on human capital, physical capital, and TFP. A better developed financial system can efficiently channelize FCI into productive investments and hence boost the growth of the economy.

CONCLUSIONS

The study presents a comprehensive analysis of the impact of different FCI, namely, FDI, FPI, foreign remittances, and foreign aid, on sources of economic growth, physical capital, human capital, and TFP for emerging and developing countries. There are mixed results because FCI in all its forms is not conducive to sources of economic growth. The estimated results of the physical capital model showed that FDI and foreign remittances increase physical capital, whereas FPI and foreign aid have a negative impact on physical capital due to their volatile nature. However, the results of the human capital model indicated that FDI, FPI, and FR have a positive influence on human capital, while foreign aid has a negative impact on human capital. The results of the TFP model showed that only FDI exerts a positive influence on TFP, while FPI, foreign remittances, and foreign aid all have a negative impact on TFP. Summarizing these empirical findings, foreign aid is having detrimental impact on all sources of economic growth, while FDI is most conducive to all, physical capital, human capital, and economic growth. It is worth noting that financial development throughout has a positive impact on all three sources of economic growth. Not only financial development itself, but the interaction effect of each type of FCI on financial development has a positive influence on human capital, physical capital, and TFP. In the presence of financial development, the negative impact of any FCI can be reduced, implying that financial development is instrumental for focused sources of economic growth.

Based on the findings of the study, it is recommended that policymakers should focus on attracting more FDI as compared to other components of FCI and should devise investor-friendly policies. On the contrary, given the negative impact of foreign aid on all sources of economic growth, countries should reduce their aid dependency and should attract other favorable sources for financing growth. Currently, many EDEs are facing rigidities in their financial sectors, which can be reduced by switching to a more market-based financial system. Moreover, policies should be made to develop the financial sector of economies so that they can reap more benefits from FCI, as financial development plays an important part in channelizing these inflows into productive investments.

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