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# ENHANCING ECONOMIC GROWTH IMPACT OF FINANCIAL DEVELOPMENT AND HUMAN CAPITAL THROUGH CAPITAL FLOWS IN SUB-SAHARAN AFRICA

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This paper investigated the role of capital flows in shaping the relationship among financial development, human capital and economic growth in selected sub-Saharan African (SSA) countries. This study examined two different forms of capital flows; portfolio equity and foreign direct investment, and their influences on the linkages of financial development, human capital, and growth. We deployed data on eleven SSA countries covering the period between 1999 and 2014 using difference generalized method of moments. Human capital has a direct positive impact on growth only when measured in terms of its efficiency, irrespective of the measures of financial development and capital flows. We obtained mixed results on introducing capital flows irrespective of the choice of financial development and human capital measures; positive and negative impacts almost equally dominated the results albeit largely statistically insignificant and negligible coefficients. Overall, capital flows, especially, foreign direct investment dampens growth through the financial development and human capital.

*Keywords*: Human Capital, Capital Flows, Financial Development, Economic Growth, SSA
*JEL Classification*: E44, G20, O16

## 1. INTRODUCTION

Over the last two decades, the pattern of growth in sub-Saharan Africa (SSA) has been on an upward trend and even higher than some developed countries. The region recorded steady and positive average annual growth values ranging between 1.6% and 4.9% over the last two decades (WDI, 2016). The SSA countries continue to pay more attention to maintaining this remarkable growth, which is subject to some underlining

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factors, including among others, capital flows and financial development. Capital flows have been identified in the literature as one of the key sources of capital accumulation. Many developing countries such as in SSA have tried to liberalize their capital accounts in order to spur growth especially through foreign investment and portfolio equity. Through liberalization, the movement of capital across countries would be enhanced thus impacting growth positively. In addition, this allows the free movement of capital around the world to explore the most productive activities.

Many studies have argued that capital flows can efficiently promote growth in developing countries when there is a well-developed domestic financial sector. For instance, Agbloyor et al. (2014) who examined the role of the domestic financial market in private capital flows and economic growth in Africa noted that different components of private capital flows affect growth negatively while a strong domestic financial market plays a significant role by transforming the negative impact into a positive outcome. Thus, private capital flows can only promote growth when there are strong domestic financial markets. Other studies such as Alfaro et al. (2004), Brambila-Macias and Massa (2010) and Kendall (2012), lend support for the role of a strong financial sector in capital flows-growth nexus. Also, financial globalization has contributed to the worldwide economic interdependencies and creating positive externalities in emerging and developed economies thus fostering economic development. However, during the economic and financial crisis, financial globalization may cause high capital flow volatility which in turn has a deepening effect on economic growth. Thus in times of macroeconomic fluctuations, financial globalization is not a blessing for the economy due to stimulation of capital flows volatility and negative impact on the economic development of the countries from Central and Eastern Europe - CEECs (Carp, 2014).

Further human capital plays a significant role in the economic growth process of any country. In essence, human capital can benefit from capital flows to enhance their effectiveness in promoting economic growth. In many SSA countries, human capital development is still a big challenge. According to World Economic Forum report (2017), SSA has the largest human capital development gap in the world. The region relies on 53% of human resources relative to North America with 74%. This implies that the region needs to mobilise resources to improve its human capacity and skills. For instance, Eggoh et al. (2015) established that spending on education and health exert a negative effect on economic growth as well as inconsequential impact of human capital indicators in Africa. This points to the fact that, countries in SSA need to explore different means to improve the intellectual skills of their growing population. Given the importance of human capital, many studies have explored its effect on economic growth. These include Sachs and Warner (1995), Gyimah-Bempong and Wilson (2004), Temel (2013), De Silva and Sumarto (2015), Chen and Fang (2017), Ogundari and Awokuse (2018), and Ono and Uchida (2018) among others. However, this study examines the extent to which high foreign capital inflows can spur growth through the enhancement of human capacity development. The human capital could be promoted in a situation where policy focus is directed towards knowledge creation, development of innovative ideas

and skills. This prompts the role of intermediary agents in attracting foreign capital flows and maximizing its efficiency by using it to foster human capacity development. By these, if the capital flow is attracted to the sector of the economy where a greater number of people can be engaged in the productive activities and also exposed to training, innovative ideas and skills, this in fact, could enhance growth significantly in the end. Thus, the role of financial development relies on its efficiency in promoting growth through the attraction of capital flows with high positive spillover effects on the larger part of the labour force. In addition, it is apparent that the structure of the financial system is critical to capital flows on one hand and human capital development on the other hand. It is in this regard that we intend to explore the possibility of how financial sector can play a "dual role" in attracting beneficial capital flows that can promote human capital thereby enhancing growth using both quantity and quality measures of financial development and human capital.

The value addition of this study to the existing literature relies on the roles the different forms of capital flows play in the relationship among financial development, human capital, and growth. Though, there has been a number of measures introduced by previous studies for a better understanding of what human capital and financial development entail, shaping the understanding of the nexus resulted in the idea of introducing different proxies of capital flows to explore the extent to which human capital and financial development can impact economic growth. In this paper therefore, we suggest that the role of capital flows in explaining human capital (volume and efficiency) and structure of the financial sector is pertinent for a better understanding of the growth process. Thus, specifically, we explore the use of foreign direct net inflows and portfolio equity net inflows to explain the role of foreign capital flows in the relationship of financial development, human capital and growth.

We deploy data on eleven SSA countries covering the period between 1999 and 2014 using difference generalized method of moments. The rest of the paper is organized as follows: The second section focuses on the theoretical foundation of foreign capital flows, financial development, human capital development and economic growth relationship. The third section examines methodology and model specification, while the fourth section presents the empirical results and then discussion. Section five highlights the concluding remarks as well as the policy implications of the study.

## 2. THEORETICAL FOUNDATION

The linkage among capital flows, human capital, and economic growth can be captured in the framework of endogenous growth model termed the AK model. The model accounts for the potential role of financial variables such as financial development and capital flows, on growth at equilibrium (i.e. steady-state growth) through their impact on accumulation of both human and physical capital. The AK model version presented in this section relies heavily on Pagano (1993) - that applied it in demonstrating the potential impacts of financial development on growth and Bailliu

(2000) - that applied it in demonstrating the potential impacts of capital flow through financial development on growth. However, the framework is further extended to account for both human capital and capital flows.

In a typical closed economy AK model, the overall production of the economy is given as:

$$Y_t = AK_t. \tag{1}$$

The aggregate output is a linear function of aggregate capital stock in the economy. Following the Lucas (1998) form of production function, $K_t$ is assumed to combine physical and human capital which are reproducible with similar technology. Thus (1) can be expressed in its explicit form as follows:

$$Y_t = AX_tH_t, \tag{2}$$

$$K_t = f(X_t, H_t). \tag{3}$$

$K_t$ is divided now divided into physical and human capital components. Where $X_t$ captures the capital stock and $H_t$ represents the human capital. Also, there is no population growth in this model and only one good is produced in the economy which can be consumed or invested. Capital stock is assumed to depreciate at a rate of $\delta$ per period, growth investment equals

$$I_t = X_{t+1} - (1 - \delta)X_t. \tag{4}$$

Financial intermediaries perform the function of transforming savings into investment in this model. The financial intermediaries absorbed resources saved by households which generate less than the amount saved in term of investment. Let us assumed that households saved $\alpha$ of their income which in turn available for investment while $1 - \alpha$ is assumed to be retained by the financial sector as a form of reward for the services rendered. The transaction cost can be viewed as the spread between the lending rate and borrowing rate charged by the financial sector. Thus, equilibrium in the capital market requires that:

$$\alpha S_t = I_t. \tag{5}$$

Considering equations (1), (2), (3), (4) and (5), the growth rate of aggregate output can be presented as follows:

$$g = AH\left(\frac{I}{Y}\right) - \delta = AH\alpha s - \delta. \tag{6}$$

where $s$ captures the gross saving rate in the economy. The steady-state growth rate of

a closed economy AK model with financial intermediation is captured by Equation (6). From Equation (6), the growth can evolve through increased financial intermediation and human capital investment. The channels through which it affects growth can be identified. First, financial development can promote growth when there is efficiency in the distribution of saving to investment as well as human capital. Increased intermediation through financial services by financial sector can increase their efficiency and thus reduce the spread between their lending and borrowing. In the end, the proportion of savings, $\alpha$ allocated to investment will increase and in turn promote growth, $g$. Second, financial development promotes growth through an increase in financial intermediation in the allocation of capital. In other words, if more funds are allocated to the projects with higher returns, then capital investment increases through increases in the overall productivity of capital thereby promoting growth.

According to Greenwood and Jovanovic (1990), an increase in financial intermediation allows financial sector to gain more exposure and experience in identifying better and high-yielding projects. That is, they are able to mobilize more funds which can be appropriated to projects with high returns. In addition, Bencivenga and Smith (1991) explain the risk-sharing in the role of financial sector in the endogenous growth model whereby financial intermediation allows individuals to pool liquidity risks which can improve growth by redistributing a larger proportion of saving towards more capital accumulation and reducing redundant capital liquidation. Third, through financial intermediations, more funds can be made available to human capital development through saving. Meaningful investment in the development of human capacity will complement accumulation of physical capital thus making growth faster than expected. The efficiency of human capital in the production process is all-encompassing as the accumulation of physical capital only may not be enough to achieve desired growth. Thus, financial development can serve as a better catalyst for growth if the fund allocated to human and physical capital is efficient.

This proposition can be extended to an open economy framework where foreign capital flows can be captured in the model. The assumption of no foreign capital flows is now relaxed, therefore foreign investors are allowed to invest in this economy and assumed also that they explore the financial intermediaries to invest their foreign funds. On net basis, large capital inflows create a large pool of savings in the domestic economy. In the presence of foreign capital flows, the capital market equilibrium can be expressed as:

$$\alpha^*(S_t + NFCF_t) = I_t^*. \tag{5'}$$

$NFCF_t$ captures the net foreign capital flows. The steady-state growth rate capturing foreign capital flows is expressed as

$$g^* = A^*H^*\left(\frac{I}{Y}\right) - \delta = A^*H^*\alpha^*\frac{S_t+NFCF_t}{Y} - \delta = A^*\alpha^*s^* - \delta. \tag{6'}$$

The steady-state growth rate of the AK framework including human capital, financial sector services (intermediation) and foreign capital flows, is captured by equation (6'). This can be compared with a steady growth rate of the AK model in the closed economy. This comparison will shed more light on the role of capital flows in growth process of the endogenous growth model. Foreign capital flows can stimulate growth if it generates more investment in both physical and human capital. Therefore, $g^*$ will be greater than g (i.e. $g^* > g$) when $s^*$ is greater than $s$ ($s^* > s$). The savings rate can only increase during mobility of foreign capital when the net foreign capital flows is positive (i.e. $NFCF > 0$) and thus if the capital inflows are channeled towards significant investment and human capital development while avoiding crowding out of domestic financed investment then growth would be enhanced.

In addition, capital flows are associated with positive externalities because it is not only funds that will be available for investment but also human capacity development and more physical capital accumulation. For instance, one of the channels of capital flows is through foreign direct investment. There are many benefits that come with foreign investment which include: increased competition in the host-country industry thereby making local firms more productive; increased worker and management training which can be added advantage to local firms if there is an employee switching and technology transfer.

The proposition of this simplified model is that the level of domestic financial development matters a lot for efficiencies of capital flows and human capital. A country with a more developed financial sector tends to attract more capital and thus has large savings compared to a country with less developed financial. More so, if both countries have access to the same amount of net capital inflows, the AK model predicted that the country with a more developed financial sector will record a higher growth rate compare to the other country. This is because financial sector plays a significant role in converting foreign funds into a productive investment for meaningful projects investment.

## 3. METHODOLOGY

To examine the validity of the proposition of our theoretical model (AK model) on the role of capital flows, human capital development as well as the role of financial sector in the economic growth of sub-Saharan African countries, this study employs a dynamic panel model given the structure of our dataset. The methodology accounts for country, specific effects and potential endogeneity issues arising from explanatory variables. Taking a cue from our theoretical framework above, we specify our baseline equation as follows:

$$y_{i,t} = \alpha_1 + \alpha_2 cap_{i,t} + \alpha_3 hum_{i,t} + \alpha_4 nfcf_{i,t} + \alpha_5 open_{i,t} + \alpha_6 fd_{i,t} + \lambda_i + \pi_{i,t} + \varepsilon_{i,t}. \quad (7)$$

The number of countries used is captured by $i = 1, \ldots, N$; the period is captured by

$t = 1, \ldots, T$. From our specification (7), $y_{i,t}$ is the log of real gross domestic product per capita (GDPPC), the proxy for economic growth. This measures aggregate output in the economy in real term. $cap_{i,t}$represents physical capital proxy by investment as a ratio of GDP; $hum_{i,t}$ accounts for volume of human capital (school enrolment and life expectancy) and efficiency of human capital (total factor productivity); $nfcf_{i,t}$ captures net foreign capital flows (foreign direct investment net inflows and portfolio equity net inflows); $open_{i,t}$ measures trade openness, $fd_{i,t}$ measures both volume of financial development (Private credit by deposit money banks and other financial institutions to GDP (%) and Private credit-deposit money banks to GDP (%)) and efficiency of financial development - Bank overhead costs to total assets (%) and Bank net interest margin (%). $\lambda_i$ is a country-specific fixed effect and $\pi_{i,t}$ is the country-specific shocks and varies over time. $\varepsilon_{i,t}$ is an error term. The descriptions and sources of the variables are presented in Table 1. The study used a generalized method of moments (GMM) approach developed by Arellano and Bond (1991) and Blundell and Bond (1998) to examine Equation (7) for sub-Saharan Africa. This approach is more suitable to examine the hypothesis compared to pooled OLS, fixed and random effects because of its distinctive advantages over other methods of analysis above. Some of these advantages are highlighted as follows. First, the approach is appropriate with panel data with a structure of "large $N$, small $T$" but if $T$ is large, panel autoregressive distributed lags (PARDL) will be more suitable because number of instruments in the system GMM may explode with T. In a situation where $N$ is small, cluster-robust standard errors and Arellano-Bond autocorrelation test may not valid (Roodman, 2009). Second, it allows for the combination of a set of equations in first differences with appropriate lagged levels of variable as instruments as well as include an additional set of equations in levels with the lagged first differences as instrumental variables. Third, the approach addresses the prominent problem of endogeneity which is commonly found with panel data. Lastly, the approach addresses the problem of weak instruments by accounting for different forms of the lagged dependent variable into the matrix of instrumental variables. Thus, Equation (7) is transformed into a dynamic growth model in a GMM framework without any interaction as follows:

$$\Delta y_{i,t} = \alpha_1 + \Delta\alpha_2 y_{i,t-1} + \alpha_3 \Delta cap_{i,t} + \alpha_4 \Delta hum_{i,t} + \alpha_5 \Delta nfcf_{i,t} + \alpha_6 \Delta open_{i,t} + \alpha_7 \Delta fd_{i,t} + \varepsilon_{i,t}, \quad (8)$$

where $\varepsilon_{i,t} = \lambda_i + \pi_{i,t}$. (9)

We assume that $E(\lambda_i) = E(\pi_{i,t}) = E(\lambda_i, \pi_{i,t}) = 0$. Thus, $E(\pi_{i,t}, \pi_{j,s}) = 0$ for each $i, j, t, s$ with strictly exogenous variables uncorrelated with current and past errors. By, first differencing the equation $\lambda_i$ evaporated. This shows that a potential source of omitted variable bias in the estimation is eliminated. $y_{i,t-1}$ captures the initial levels of economic growth and other explanatory variables capture differences in steady-state growth rates across countries as explained in the endogenous growth model (see Bailliu, 2000). The role of human capital in terms of volume and efficiency matters for

sustainable economic growth in the developing region like SSA. The human capital focuses on development of labour skills and capacities to increase productivity (see Solow, 1956; Romer, 1990; Aghion and Howitt, 1992; Becker and Hall, 2013; Oyinlola and Adedeji, 2019). The financial markets in developing countries are dominated by banks thus financial development variable focuses on the banking sector. Rojas-Suarez and Weisbrod (1995) explained that most household income shares for savings are kept with banks in form of bank deposits as well as making loan available for firms in form of external finance. The indicators for capital flows were considered because they capture the sum of equity capital, reinvestment of earnings, other long term capital and short-term capital as well as net inflows from equity securities instead of direct investment which include shares, stocks, deposit receipt among others (see Opperman et al., 2017). In addition, the transmission mechanism of the variables towards promoting growth is captured through interactive terms presented in Eq. (11):

$$\Delta y_{i,t} = \alpha_1 + \Delta\alpha_2 y_{i,t-1} + \alpha_3 \Delta cap_{i,t} + \alpha_4 \Delta hum_{i,t} + \alpha_5 \Delta nfcf_{i,t} + \alpha_6 \Delta open_{i,t} + \alpha_7 \Delta fd_{i,t} + \alpha_8 \Delta(fd * hum)_{i,t} + \alpha_9 \Delta(fd * nfcf * hum)_{i,t} + \varepsilon_{i,t}. \quad (11)$$

**Table 1**. Definitions and Sources of Variables

| Variable | Definition | Source |
|---|---|---|
| BNM | Bank net interest margin (%) | Beck et al. (1999, updated in 2013 |
| BOC | Bank overhead costs to total assets (%) | Beck et al. (1999, updated in 2013 |
| PCD | Private credit by deposit money banks and other financial institutions to GDP (%) | Beck et al. (1999, updated in 2013 |
| PCB | Private credit-deposit money banks to GDP (%) | Beck et al. (1999, updated in 2013) |
| GOVT | Final consumption expenditure excluding military expenditure (constant 2010 US$) | World Development Indicators, 2016 |
| FDIN | Foreign direct investment, net inflows (% of GDP) | World Development Indicators, 2016 |
| LPEI | Log of portfolio equity, net inflows (BoP, current US$) | World Development Indicators, 2016 |
| GDPPC | GDP per capita constant 2010US dollar | World Development Indicators, 2016 |
| CAP | Gross fixed capital formation (% of GDP) | World Development Indicators, 2016 |
| LE | Log of life expectancy at birth, total (years) | World Development Indicators, 2016 |
| SCH | Log of school enrollment, secondary (gross), gender parity index (GPI) | World Development Indicators, 2016 |
| OPN | Trade openness (as a ratio of GDP) | World Development Indicators, 2016 |
| TFP | Log of total factor productivity | Federal Reserve Economic Data, 2016 |

*Source:* Authors' compilation.

## 4. EMPIRICAL RESULT

Table 2 reports the descriptive statistics of the series used in our regressions. It shows that all the average values of the series exhibit increasing trends as indicated by their positive values. The values of standard deviation of the volume measures of financial development show wide dispersion relative to efficiency measures of financial development. This implies that efficiency measures are highly stable compared to the volume measures. This explains the structure of financial system in SSA countries where there is no stability in the flow of funds to finance drivers of growth such as human capital development which may then retard growth process. Also, among the human capital measures, total factor productivity appears to be more stable relative to others. Considering the two measures of foreign capital flows, FDIN appears to fairly stable compared to PEI. This explains the extent of capital flows into SSA countries which are susceptible to fluctuation thus having implications for the drivers of growth. In conclusion, GOVT appears to be highly unstable among all the series whereas TFP is the most stable series.

**Table 2.** Descriptive Statistics

| Variables | N | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| BNM | 164 | 5.765 | 2.522 | 1.902 | 16.050 |
| BOC | 164 | 5.161 | 2.516 | 0.208 | 17.470 |
| PCD | 162 | 35.450 | 37.010 | 3.882 | 150.200 |
| PCB | 162 | 29.250 | 22.220 | 3.882 | 101.500 |
| GOVT *(Billion)* | 168 | 53.300 | 95.030 | 2.200 | 330.000 |
| FDIN | 176 | 3.162 | 3.288 | -0.610 | 20.380 |
| PEI *(Billion)* | 161 | 0.633 | 2.298 | -4.707 | 14.960 |
| GDPPC*(thousand)* | 176 | 2.780 | 2.664 | 0.325 | 8.838 |
| CAP | 175 | 21.940 | 7.427 | 5.459 | 54.140 |
| LE | 176 | 56.500 | 7.231 | 43.530 | 74.190 |
| SCH | 141 | 0.929 | 0.249 | 0.397 | 1.422 |
| OPN | 175 | 82.620 | 37.640 | 30.730 | 209.900 |
| TFP | 176 | 0.986 | 0.093 | 0.694 | 1.286 |

*Source:* Authors' compilation.

Table 3 presents the results from difference GMM estimation without interaction term and efficiency of financial development. Thus, only capital flows, volume, and efficiency of human capital and volume of financial development are considered through a step-wise method beginning with baseline equation. In the process, different proxies of human capital, financial development and capital flows are subsequently included in the estimation. In columns (1)-(4) we allow for alternative measures of human capital (SCH, LE and TFP), volume measures of financial development (PCD and PCB) and portfolio equity net inflow (LPEI). Similar procedure was followed in columns (5)-(8), where

second measure of net foreign capital inflow, foreign direct investment net inflow (FDIN) was introduced.

The results indicate that the initial level of growth plays a significant role in determining the subsequent level of growth in the economy as shown by the coefficients of the lagged dependent term ranging from 0.67 to 0.76 and is statistically significant in all the models. Also, the coefficients of physical capital are largely negative and statistically insignificant in all the regressions. Generally, this implies that the level of physical capital is not sufficient to drive growth as expected in sub-Saharan Africa. This is further supported by its negligible coefficients across the models and it demonstrates the existing scantiness of capital stock required to spur growth in the region.

On trade openness, which captures the magnitude of foreign business receptiveness by a country, the coefficients are mainly negative and statistically insignificant across the models. This shows how activities that benefit from openness of countries in the region accrues to smallest part of the population in SSA. Also, the coefficients are economically insignificant. A greater number of people could not benefit from this openness due to technological challenges during production and poor international market accessibility. In addition, the coefficients of government consumption are positive and statistically significant in all the regressions. This shows the extent to which government consumption promotes growth suggesting that growth could between the range of 0.11%-0.17% with a 1% increase in government consumption. This is an indication of the extent of the size of public sector in most African countries. Thus, the role of fiscal policy through government spending is important to the growth process in SSA.

The succeeding discussions will now focus on the direct impact of financial development, human capital and net foreign capital flows. First, we examine the results from models that include portfolio equity net inflow. Generally, the coefficients of portfolio equity (LPEI) are positive but only statistically significant in Models 1 and 3. However, the coefficients are very small across the models. Nonetheless, this indicates that capital inflow is necessary for growth in SSA. Thus, more capital inflows provide more funds for local investment. The coefficients of the measures of human capital are positive, but statistically significant only for its efficiency. This suggests that productivity goes beyond the quantity (volume) of human capital but involves human capacity efficiency. Therefore, SSA countries should focus more on efficiency in capacity development for meaningful growth. In addition, the coefficients of volume measures of financial development (PCD and PCB) are positive and not statistically significant but negative for PCD in Model 6. The coefficients are very small. This shows that the direct impact of these measures of financial development has not played a supportive role in the expansion of output in the real sector due to high interest rate. Second, the discussion shifts to foreign direct investment net inflow (i.e. FDIN) in Models 5-8. From these models, the signs of FDIN are mixed; negative when human capital was introduced into the models as volume but positive when its efficiency measure is introduced, but overall, not statistically significant. This suggests that foreign capital inflows have not created direct palpable ripple effect on economic growth in the

SSA countries.

**Table 3**. Dynamic Panel Data Analyses-Difference GMM without Interaction

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| L.GDPPC | 0.759*** | 0.678*** | 0.742*** | 0.681*** | 0.665*** | 0.683*** | 0.671*** | 0.675*** |
| | (0.084) | (0.112) | (0.090) | (0.110) | (0.114) | (0.072) | (0.102) | (0.071) |
| CAP | -1.30e-04 | -9.5e-04 | -1.4e-04 | -9.5e-04 | 1.27e-03 | -1.34e-03 | 1.12e-03 | -1.34e-03 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.001) | (0.002) |
| OPN | -2.0 e-04 | 3.54 e-04 | -1.9 e-04 | 3.57 e-04 | -3.0 e-04 | -2.9 e-04 | -2.7 e-04 | -3.0 e-04 |
| | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.001) |
| GOV | 0.106*** | 0.167** | 0.107*** | 0.166** | 0.106** | 0.169*** | 0.117** | 0.169*** |
| | (0.037) | (0.067) | (0.038) | (0.067) | (0.050) | (0.047) | (0.048) | (0.048) |
| SCH | 0.107 | | 0.114 | | 0.0522 | | 0.0569 | |
| | (0.080) | | (0.080) | | (0.080) | | (0.084) | |
| LE | 0.116 | | 0.126 | | 0.0906 | | 0.0856 | |
| | (0.144) | | (0.138) | | (0.177) | | (0.168) | |
| LPEI | 0.017* | 0.007 | 0.017** | 0.0074 | | | | |
| | (0.009) | (0.010) | (0.096) | (0.009) | | | | |
| FDIN | | | | | -0.002 | 0.001 | -0.002 | 0.001 |
| | | | | | (0.002) | (0.001) | (0.002) | (0.001) |
| TFP | | 0.274*** | | 0.275*** | | 0.235*** | | 0.235*** |
| | | (0.059) | | (0.058) | | (0.061) | | (0.058) |
| PCD | 3.16 e-04 | 4.54e-05 | | | 0.001 | -5.92e-05 | | |
| | (0.000) | (0.001) | | | (0.001) | (0.001) | | |
| PCB | | | 5.8 e-04 | 4.01e-05 | | | 0.001. | 1.28 e-04 |
| | | | (0.001) | (0.001) | | | (0.001) | (0.001) |
| Observations | 92 | 122 | 92 | 122 | 99 | 135 | 99 | 135 |
| Number of Crossid | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Hansen_Test | 8.124 | 6.034 | 8.580 | 2.767 | 7.501 | 9.192 | 7.754 | 9.602 |
| Hansen Prob | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sargan_Test | 66.910 | 101.800 | 66.710 | 101.900 | 64.450 | 67.470 | 64.900 | 68.000 |
| Sargan Prob | 0.345 | 0.069 | 0.351 | 0.067 | 0.461 | 0.237 | 0.445 | 0.224 |
| Ar(1) Test | -2.280 | -2.150 | -2.267 | -2.164 | -2.343 | -1.907 | -2.315 | -1.903 |
| Ar(1) P-Value | 0.023 | 0.032 | 0.023 | 0.030 | 0.019 | 0.057 | 0.021 | 0.057 |
| Ar(2) Test | 1.073 | 0.375 | 1.038 | 0.370 | 1.492 | 0.920 | 1.458 | 0.920 |
| Ar(2) P-Value | 0.283 | 0.708 | 0.299 | 0.712 | 0.136 | 0.357 | 0.145 | 0.358 |
| No. of Instruments | 71 | 89 | 71 | 89 | 72 | 67 | 72 | 67 |

*Note:* Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 4**. Dynamic Panel Data Analyses-Difference GMM without Interaction

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| L.GDPPC | 0.791*** | 0.694*** | 0.793*** | 0.695*** | 0.719*** | 0.690*** | 0.716*** | 0.694*** |
| | (0.063) | (0.101) | (0.065) | (0.099) | (0.087) | (0.075) | (0.087) | (0.075) |
| CAP | -4.4 e-04 | -0.001 | -3.8 e-04 | -0.001 | 0.001 | -0.002 | 0.001 | -0.002 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.001) | (0.002) |
| OPN | -7.12e-05 | 3.55 e-04 | -8.07e-05 | 3.56 e-04 | -2.4 e-04 | -2.5 e-04 | -2.2 e-04 | -2.5 e-04 |
| | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.001) |
| GOV | 0.126*** | 0.172*** | 0.122*** | 0.172*** | 0.128*** | 0.178*** | 0.132*** | 0.174*** |
| | (0.042) | (0.065) | (0.042) | (0.066) | (0.048) | (0.046) | (0.048) | (0.046) |
| SCH | 0.109 | | 0.102 | | 0.050 | | 0.060 | |
| | (0.084) | | (0.083) | | (0.076) | | (0.081) | |
| LE | 0.067 | | 0.072 | | 0.045 | | 0.042 | |
| | (0.129) | | (0.129) | | (0.156) | | (0.155) | |
| LPEI | 0.015 | 0.008 | 0.016 | 0.007 | | | | |
| | (0.010) | (0.011) | (0.010) | (0.011) | | | | |
| FDIN | | | | | -0.0020 | 3.48 e-04 | -0.002 | 2.23 e-04 |
| | | | | | (0.002) | (0.001) | (0.002) | (0.001) |
| TFP | | 0.241*** | | 0.242*** | | 0.225*** | | 0.215*** |
| | | (0.065) | | (0.066) | | (0.069) | | (0.061) |
| BNM | 3.70 e-04 | -2.0 e-04 | | | -4.4 e-04 | 6.23 e-04 | | |
| | (0.001) | (0.001) | | | (0.001) | (0.002) | | |
| BOC | | | 3.54 e-04 | 2.91e-05 | | | -3.6 e-04 | -4.1 e-04 |
| | | | (0.001) | (0.001) | | | (0.000) | (0.001) |
| Observations | 94 | 124 | 94 | 124 | 101 | 137 | 101 | 137 |
| Number of Crossid | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Hansen_Test | 1.506 | 5.995 | 5.279 | 4.874 | 5.560 | 7.759 | 3.331 | 3.727 |
| Hansen Prob | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sargan_Test | 68.790 | 100.500 | 68.440 | 100.700 | 64.950 | 70.080 | 65.230 | 67.950 |
| Sargan Prob | 0.288 | 0.081 | 0.298 | 0.079 | 0.444 | 0.175 | 0.434 | 0.225 |
| Ar(1) Test | -2.235 | -2.291 | -2.225 | -2.286 | -2.272 | -2.040 | -2.290 | -1.971 |
| Ar(1) P-Value | 0.025 | 0.022 | 0.026 | 0.022 | 0.023 | 0.041 | 0.022 | 0.049 |
| Ar(2) Test | 1.231 | 0.684 | 1.210 | 0.697 | 1.513 | 1.064 | 1.520 | 1.053 |
| Ar(2) P-Value | 0.218 | 0.494 | 0.226 | 0.486 | 0.130 | 0.287 | 0.128 | 0.292 |
| No. of Instruments | 71 | 89 | 71 | 89 | 72 | 67 | 72 | 67 |

*Note:* Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4 is slightly different from Table 3 as we introduced the efficiency measures of financial development. There are no significant changes in the results except in the efficiency measures. In these models (1-8), the signs of financial development are mixed: the coefficients are negative in models 2, 5, 7 and 8 and positive in models 1, 3, 4 and 6.

Overall, the efficiency measures are not statistically significant which shows the ineffectiveness of financial development in its intermediation role to spur growth in the region. In sum, irrespective of the measures of financial development and foreign capital inflows in Tables 3 and 4, human capital measures influence economic growth positively but significant only with the efficiency measure.

The next discussion is on results presented in Table 5 following the earlier step-wise approach but now includes interaction terms. The results in this table basically focus on volume measure of financial development (PCD and PCB). On the whole, the results in Table 5 show that financial development promotes human capital-growth nexus when human capital is measured by efficiency, that is, total factor productivity. The narrative changes when human capital measure is in terms of volume; the financial development interactions with school enrollment is positive and negative for life expectancy but generally with statistically insignificant negligible coefficients. This implies that financial development (in terms of volume) retards the human capital-growth nexus when human capital is measured in terms of volume while promoting the nexus when it is measured in terms of efficiency. Though, on the whole, the coefficients are inconsequential suggesting that intermediation role financial sector needs to improve for it to enhance human capital-growth relationship.

From models (1-4), the signs of one of the measures of capital inflows, portfolio equity, (LPEI), interacted with financial development measures (PCD and PCB) and human capital (SCH, LE, and TFP) are largely positive except in Model 1 (LPEIPCDSCH) where it was negative. On the average, portfolio equity turns positive the hitherto negative growth induced financial development embedded human capital. This shows that capital flows has a positive relationship with financial development-human capital-growth nexus though not significantly. Results reported in Models 5-8 show that capital inflows (FDI in this case) dampens financial development-human capital-growth relationship but significant when interacted with life expectancy (with a positive sign) and total factor productivity (with negative sign). Economically, the results give an insight to extent to which capital inflows have not significantly promoted human capital development in SSA. The plausible reason for this outcome could be attributed to the structure of financial system that tends to support a framework where these capital inflows are attracted into sectors that have limited impact on and feedback to the capacity of human capital deployed. The results show clearly the reason why human capital development continues to be a big challenge for SSA countries.

As explained earlier, we performed this procedure again in Table 6 but now with interaction of financial development measured in terms of efficiency (BNM and BOC). Mainly, the results reported show that financial development retards the human capital-growth relationship but effectively when human capital is measured by school enrolment. However, the narrative changes when human capital is measured as efficiency, it was negative when interacted with BNM and significant in Model 2 and the same in terms of sign when interacted with BOC but positive in Model 8 and not

statistically insignificant. By and large, we come to the conclusion that financial development dampens the human capital-growth nexus but only promotes growth when BOC is interacted with school enrolment. The major reason may be attributed to the system of financial sector where their activities such as high-interest rate, discourages development human capital in terms of acquisition of knowledge and skills.

On the role of capital inflows, we first consider the interaction of LPEI with BNM and all the three measures of human capital. The results show that foreign capital flows through financial development (BNM) dampens the human capital-growth relationship however positive when LE enters. Our observation when BOC was introduced indicates that LE interaction was the only measure with positive sign though they are not statistically significant. On the flipside, FDIN was considered as a measure of foreign capital flows financial development measures and human capital measures. The interaction of FDIN with BNM and all three measures of human capital is first discussed. The results reported indicate that foreign capital flows via financial development promote human capital-growth relationship when measured in terms of school enrollment but dampen the relationship when measured in terms of life expectancy and total factor productivity. A similar narrative is observed when BOC was introduced which suggests that financial development (in terms of efficiency) enhances the nexus only when human capital is measured in terms of school enrollment. Generally, one can conclude that the role of foreign capital flows coupled with structure of the financial system has not spurred human capital-growth nexus as expected in the SSA countries.

**Table 5.** Dynamic Panel Data Analyses-Difference GMM with Interaction

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| L.GDPPC | 0.769*** | 0.695*** | 0.740*** | 0.690*** | 0.677*** | 0.682*** | 0.671*** | 0.680*** |
| | (0.093) | (0.105) | (0.109) | (0.106) | (0.117) | (0.072) | (0.130) | (0.075) |
| CAP | -0.001 | -0.001 | -0.000 | -0.001 | 0.001 | -0.001 | 0.002 | -0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.002) | (0.002) | (0.002) |
| OPN | -1.8e-04 | 3.54e-04 | -1.2e-04 | 3.34e-04 | -3.2e-04 | -4.0 e-04 | -2.2e-04 | -3.67e-04 |
| | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.001) |
| GOV | 0.113** | 0.157** | 0.110** | 0.158** | 0.104* | 0.167*** | 0.120** | 0.168*** |
| | (0.046) | (0.065) | (0.043) | (0.064) | (0.059) | (0.048) | (0.049) | (0.048) |
| SCH | 0.088 | | 0.056 | | 0.026 | | 0.057 | |
| | (0.083) | | (0.084) | | (0.141) | | (0.123) | |
| LE | 0.224* | | 0.187 | | 0.117 | | 0.044 | |
| | (0.127) | | (0.145) | | (0.187) | | (0.184) | |
| LPEI | -0.732 | 0.009 | -0.064 | 0.010 | | | | |
| | (0.517) | (0.008) | (0.540) | (0.006) | | | | |
| FDIN | | | | | -0.003 | 7.98e-04 | -0.005** | 6.41e-04 |
| | | | | | (0.002) | (0.001) | (0.002) | (0.001) |
| TFP | | 0.262*** | | 0.234*** | | 0.176* | | 0.126 |
| | | (0.066) | | (0.079) | | (0.103) | | (0.107) |
| PCD | 0.013 | 8.22e-05 | | | 0.006 | -8.71e-05 | | |
| | (0.009) | (0.001) | | | (0.009) | (0.001) | | |
| PCB | | | 0.011 | 1.41e-04 | | | -0.007 | -1.06e-04 |
| | | | (0.009) | (0.001) | | | (0.015) | (0.001) |

**Table 5.** Dynamic Panel Data Analyses-Difference GMM with Interaction (cont')

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| PCDSCH | 3.54 e-04 | | | | 0.001 | | | |
| | (0.001) | | | | (0.003) | | | |
| PCDLE | -0.003 | | | | -0.001 | | | |
| | (0.002) | | | | (0.002) | | | |
| PCBSCH | | | 0.002 | | | | 3.55e-04 | |
| | | | (0.003) | | | | (0.003) | |
| PCBLE | | | -0.003 | | | | 0.002 | |
| | | | (0.002) | | | | (0.004) | |
| PCBTFP | | | | 0.001 | | | | 0.010*** |
| | | | | (0.002) | | | | (0.003) |
| PCDTFP | | 3.47e-04 | | | | 0.006* | | |
| | | (0.001) | | | | (0.004) | | |
| LPEIPCDSCH | -0.054 | | | | | | | |
| | (0.045) | | | | | | | |
| LPEIPCDLE | 0.003 | | | | | | | |
| | (0.002) | | | | | | | |
| LPEIPCBSCH | | | 0.016 | | | | | |
| | | | (0.036) | | | | | |
| LPEIPCBLE | | | 4.73e-05 | | | | | |
| | | | (0.001) | | | | | |
| LPEIPCDTFP | | 0.024 | | | | | | |
| | | (0.032) | | | | | | |
| LPEIPCBTFP | | | | 0.020 | | | | |
| | | | | (0.065) | | | | |
| FDINPCDSCH | | | | | -1.10e-05 | | | |
| | | | | | (3.79e-04) | | | |
| FDINPCDLE | | | | | 6.28e-06 | | | |
| | | | | | (1.40e-05) | | | |
| FDIPCBSCH | | | | | | | -2.47e-05 | |
| | | | | | | | (3.15e-04) | |
| FDINPCBLE | | | | | | | 2.60e-05* | |
| | | | | | | | (1.46e-05) | |
| FDINPCDTFP | | | | | | -7.59e-04 | | |
| | | | | | | (5.05e-04) | | |
| FDINPCBTFP | | | | | | | | -0.001** |
| | | | | | | | | (5.1e-04) |
| Observations | 92 | 122 | 92 | 122 | 99 | 135 | 99 | 135 |
| No of Crossid | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Hansen_Test | 0 | 0.904 | 0 | 0.422 | 0 | 2.465 | 0 | 3.398 |
| Hansen Prob | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sargan_Test | 64.650 | 103.800 | 66.100 | 104.100 | 66.980 | 62.780 | 68.230 | 63.220 |
| Sargan Prob | 0.384 | 0.053 | 0.337 | 0.050 | 0.375 | 0.378 | 0.335 | 0.363 |
| AR(1) Test | -2.306 | -2.194 | -2.341 | -2.184 | -2.412 | -1.860 | -2.419 | -1.855 |
| AR(1) P-Value | 0.021 | 0.028 | 0.019 | 0.029 | 0.016 | 0.063 | 0.016 | 0.064 |
| AR(2) Test | 1.120 | 0.359 | 1.017 | 0.357 | 1.443 | 0.939 | 1.402 | 0.926 |
| AR(2) P-Value | 0.263 | 0.720 | 0.309 | 0.721 | 0.149 | 0.348 | 0.161 | 0.354 |
| No. of Instruments | 74 | 91 | 74 | 91 | 76 | 69 | 76 | 69 |

*Note:* Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 6.** Dynamic Panel Data Analyses-Difference GMM with Interaction

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| L.GDPPC | 0.794*** | 0.697*** | 0.822*** | 0.706*** | 0.653*** | 0.690*** | 0.692*** | 0.697*** |
| | (0.057) | (0.103) | (0.065) | (0.097) | (0.085) | (0.072) | (0.092) | (0.075) |
| CAP | -0.001 | -0.001 | -0.001 | -0.001 | 0.002* | -0.002 | 0.001 | -0.002 |
| | (0.000) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.001) | (0.002) |
| OPN | -1.00e-04 | 3.01e-04 | -1.23e-04 | 3.68e-04 | -4.39e-04 | -2.24e-04 | -2.12e-04 | -2.51e-04 |
| | (2.45e-04) | (4.91e-04) | (2.64e-04) | (4.85e-04) | (3.55e-04) | (5.05e-04) | (2.68e-04) | (4.86e-04) |
| GOV | 0.123*** | 0.171** | 0.117*** | 0.168** | 0.145*** | 0.179*** | 0.150*** | 0.171*** |
| | (0.038) | (0.069) | (0.041) | (0.068) | (0.039) | (0.048) | (0.048) | (0.047) |
| SCH | 0.115 | | 0.061 | | 0.140 | | 0.082 | |
| | (0.100) | | (0.094) | | (0.101) | | (0.056) | |
| LE | 0.107 | | 0.073 | | 0.303 | | 0.043 | |
| | (0.157) | | (0.130) | | (0.247) | | (0.154) | |
| LPEI | -0.048 | 0.002 | -0.446 | 0.020 | | | | |
| | (0.160) | (0.010) | (0.287) | (0.008) | | | | |
| FDIN | | | | | 0.008** | 3.82e-04 | -0.001 | 2.80e-04 |
| | | | | | (0.004) | (0.001) | (0.002) | (0.001) |
| TFP | | 0.425*** | | 0.254* | | 0.266** | | 0.185* |
| | | (0.084) | | (0.153) | | (0.103) | | (0.099) |
| BNM | 0.039 | -9.54e-04 | | | 0.164 | 9.18e-05 | | |
| | (0.081) | (7.83e-04) | | | (0.119) | (0.002) | | |
| BOC | | | 0.017* | -7.53e-05 | | | 0.012 | -2.74e-04 |
| | | | (0.009) | (8.27 e-04) | | | (0.012) | (7.15 e-04) |
| BNMSCH | 0.001 | | | | -0.015* | | | |
| | (0.002) | | | | (0.009) | | | |
| BNMLE | -0.010 | | | | -0.041 | | | |
| | (0.021) | | | | (0.030) | | | |
| BOCSCH | | | 0.007* | | | | -0.002 | |
| | | | (0.004) | | | | (0.005) | |
| BOCLE | | | -0.004* | | | | -0.003 | |
| | | | (0.002) | | | | (0.003) | |
| BNMTFP | | -0.029*** | | | | -0.003 | | |
| | | (0.008) | | | | (0.016) | | |
| BOCTFP | | | | -0.004 | | | | 0.006 |
| | | | | (0.022) | | | | (0.019) |
| LPEIBNMSCH | -0.342 | | | | | | | |
| | (0.422) | | | | | | | |
| LPEIBNMLE | 0.009 | | | | | | | |
| | (0.014) | | | | | | | |
| LPEIBOCSCH | | | -0.111 | | | | | |
| | | | (0.458) | | | | | |
| LPEIBOCLE | | | 0.032 | | | | | |
| | | | (0.021) | | | | | |
| LPEIBNMTFP | | -0.857 | | | | | | |
| | | (1.338) | | | | | | |
| LPEIBOCTFP | | | | 0.616 | | | | |
| | | | | (1.214) | | | | |
| FDINBNMSCH | | | | | 7.87e-04** | | | |
| | | | | | (3.97e-04) | | | |
| FDINBNMLE | | | | | -4.1e-04*** | | | |
| | | | | | (1.29e-04) | | | |
| FDINBOCSCH | | | | | | | 0.001* | |
| | | | | | | | (7.37e-04) | |
| FDINBOCLE | | | | | | | -5.50e-06 | |
| | | | | | | | (9.23e-05) | |
| FDINBNMTFP | | | | | | -7.78e-04 | | |
| | | | | | | (0.004) | | |
| FDINBOCTFP | | | | | | | | -3.91 e-04 |
| | | | | | | | | (0.004) |

**Table 6.** Dynamic Panel Data Analyses-Difference GMM with Interaction (con't)

| Variables | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|---|---|---|---|
| Observations | 94 | 124 | 94 | 124 | 101 | 137 | 101 | 137 |
| No of Crossid | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| Hansen_Test | 0.000 | 5.426 | 0.000 | 2.240 | 0.000 | 4.684 | 0.000 | 2.127 |
| Hansen Prob | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sargan_Test | 72.590 | 108.100 | 67.730 | 104.600 | 68.810 | 70.000 | 69.760 | 67.790 |
| Sargan Prob | 0.191 | 0.028 | 0.319 | 0.047 | 0.318 | 0.177 | 0.290 | 0.229 |
| Ar(1) Test | -2.256 | -2.275 | -2.230 | -2.297 | -2.405 | -2.036 | -2.448 | -1.981 |
| Ar(1) P-Value | 0.024 | 0.023 | 0.026 | 0.022 | 0.016 | 0.042 | 0.014 | 0.048 |
| Ar(2) Test | 1.334 | 0.556 | 1.260 | 0.676 | 1.729 | 1.175 | 1.723 | 1.173 |
| Ar(2) P-Value | 0.182 | 0.578 | 0.208 | 0.499 | 0.084 | 0.240 | 0.085 | 0.241 |
| No. Of Instruments | 75 | 91 | 75 | 91 | 76 | 69 | 76 | 69 |

*Note:* Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We went further to examine the validity of the statistical inferences of the estimated coefficients in our models presented in Tables (3-6) by relying on the diagnostic tests for the overall model specification. The tests for over-identification restriction and instrument validity as captured by Sargan statistic show that the null hypothesis cannot be rejected at 5% level of significance. Also, the z-statistic for the Arellano-Bond AR(2) test for second-order autocorrelation shows that there is no presence of second-order autocorrelation. Lastly, we accepted the rejection of the null hypothesis of first-order non-autocorrelation AR(1) tests as shown by the level of statistical significance.

## 5. CONCLUSION

This study focuses on the specific role played by foreign capital flows in the relationship among financial development, human capital development, and economic growth in 11 SSA countries between 1999 and 2014. We explore this role by considering alternative measures of financial development and human capital which is classified as "volume" and "efficiency". This is to establish if capital flows have implications for this relationship in this region.

The findings from our empirical examination indicate that the existing level of growth determines to a large extent, the level of growth in the SSA region. In addition, the results show that human capital has a direct positive impact on growth irrespective of any measures of financial development and foreign capital flows but statistically significant only when measured in terms of efficiency (TFP). This further confirms the role of efficiency in the productive activities rather than volume. The results show mixed signs for the different measures of financial development but only positive and significant in Model 3 in Table 6. On the whole, the positive signs dominate the results irrespective of measures of financial development which implies that there is a positive relationship between financial development and growth though mostly statistically

insignificant. This shows that financial sector needs to improve on its services for a meaningful intermediation role in the economy.

The findings when international capital flows were interacted with financial development and human capital measures, mixed results emerge where positive and negative impacts equally dominate the results though they are mainly statistically insignificant and possess negligible coefficients. These are indicative of how poor international capital flows coupled with inefficient financial system, failed to promote drivers of growth such as human capital through an innovative ideas and skills development. This implies that the region still has a long way to go to achieve desired development.

These findings should concern policymakers in shaping the kind of policies and framework they proffer to enhance growth in the economy. Thus, the international capital flows should be attracted and integrated to the real sector which has a large workforce thereby creating an opportunity for the development of human capacity. In addition, the role of financial sector cannot be neglected as its role determines to a large extent how the capital flows can be directed to the real sector of the economies in the region. Finally, it is suggested for future research in this area to focus on other forms of capital flows such as remittances to examine if recipient targeted capital flows could change the observed narrative of ineffectual capital flows in addition to pursuing specific country analysis for better policy implementation since these countries' financial system and real sectors differ.

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