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Growth Effects of Financial Integration and Financial Deepening in Selected SSA Economies: a Panel-Data Approach

Olaniyi Evans

Abstract

This paper investigates the growth effects of financial integration and financial deepening in selected SSA economies, using a panel dataset of 10 SSA countries from 1970-2012. We use ratio of net FDI inflow to GDP (proxy for financial integration), ratio of gross capital formation to GDP (proxy for investment) and ratio of domestic credit to GDP (proxy for level of financial deepening) as documented in Gregorio (1998). We also incorporated the random effects and Wald tests. The study finds that financial integration and financial deepening play positive and significant roles in boosting the economic growth of SSA countries. It also emphasizes that these countries have been relatively successful over the last decade in attracting international capital inflows which have been crowding out domestic investment. This fact reinforces the fact that SSA economies which open themselves to the world economy need at first abolish domestic distortions to reap the benefits of globalization. It is even more imperative to upgrade the essential frameworks for sound, efficient, and inclusive financial systems. It is up to SSA's financial sector stakeholders – bankers, donors, and policymakers – to pilot financial sector reforms in a way that amplifies SSA's opportunities, learning both from their own experience over the past 50 years and the experience in other emerging and developed economies.

1. Introduction

An efficient financial system is one of the pillars of vibrant and sustainable economic development. Levine (2005) suggests that financial institutions can foster economic growth through easing the exchange of goods and services through the provision of payment services, mobilising and pooling savings from a large number of investors, acquiring and processing information about enterprises and possible investment projects, thus allocating savings to their most productive use, monitoring investment and carrying out corporate governance, and diversifying, increasing liquidity and reducing intertemporal risk. Each of these functions can influence saving and investment decisions and hence economic growth. Therefore, financial deepening is imperative not only for fostering economic growth, but also for dampening the volatility of the growth process. Financial systems can alleviate the liquidity constraints on firms and facilitate long-term investment, which ultimately reduces the volatility of investment and growth (Aghion et al., 2010). The magnitude of the financial sector is usually closely linked to the general economic performance of the country.

In recent times, research has delved into these issues from an open economy standpoint. Identical benefits to those associated with financial deepening may come from financial integration with the global economy. In other words, financial integration may lead to efficient capital allocation, higher investment and growth. There are direct and indirect channels through which the impact of financial integration works and is transmitted to the real economy. Directly, it is argued that financial openness affects economic growth through enabling access to foreign financial markets, increasing financial service efficiency and helping in diversification of risks and consumption smoothing. Thus while inducing additional capital investment, it also fosters macroeconomic discipline. Indirectly, the process of international financial integration facilitates the transfer of technological know-how, promotes trade and enhances specialization (Ahmed, 2011).

Since it is believed that having access to a broader base of capital is a key requirement for economic growth, then financial integration is necessary because it can expedite flows of

capital from developed economies with rich capital to Sub-Saharan African economies with limited capital. Such capital inflows can significantly reduce the cost of capital in capital-poor SSA leading to higher investment. According to Levine (2001), financial integration strengthens domestic financial sector making way for more efficient capital allocation and higher investment and growth opportunities. In the presence of financial integration, efficiency gains are generated among domestic firms because they have to compete directly with foreign rivals (Kose et al., 2006).

At this moment of rapid and positive economic transformation in Sub-Saharan Africa, financial integration has emerged as an increasingly key factor that can help lift the region to the next stage of development. Sub-Saharan Africa has been one of the world's economic bright spots in recent years, posting the second-fastest rate of growth after emerging Asia in 2012. Regional output is expected to expand by 5 percent in 2013 and 6 percent in 2014. Going forward, sustaining this performance will require deepening financial integration as a key way to support the process of economic growth and development.

Over the past few years, SSA countries have been deepening and broadening their investor base by tapping international markets with Eurobonds for long-term financing to cash in on the lower rates.¹³ SSA countries have issued Eurobonds thus far: South Africa, Seychelles, Republic of Congo, Côte d'Ivoire, Ghana, Gabon, Senegal, Nigeria, Namibia, Zambia, Tanzania, Rwanda and Mozambique. The proceeds were either expended on debt restructuring (Côte d'Ivoire, Seychelles, Republic of Congo, Gabon) or infrastructure funding. Nigeria, being the biggest sub-Saharan Africa market, has had its local bonds included in the GBI-EM Index, where the five local Nigerian naira-denominated bonds account for approximately 1.84% of the overall weighting. With the exception of South Africa, which has Eurobonds in several currencies, all Eurobonds have been issued in USD with maturities typically around 10 years and the majority is listed at the London Stock Exchange. Comparing foreign- and local-currency-denominated debt, Eurobonds embodies only a trifling share of the total outstanding debt in most countries (African Development Bank, 2013).

After going through cycles of nationalising and privatising their banking systems, more than half of SSA's countries have a banking market with a sizeable share of foreign-owned financial institutions. Foreign banks have several advantages that are exclusive to SSA: international banks can help promote governance, bring in much-needed technology and help exploit economies of scale in their small economies.

Nevertheless, taking into account the indispensability of finance for economic development, the shallowness of SSA's finance is disquieting. SSA financial systems are diminutive, both in absolute and relative terms. Africa's financial systems are typified by very limited outreach, with less than one in five households having access to any formal banking service. Minimal bank branch, low ATM penetration numbers and high documentation requirements to open an account, high minimum balance requirements and annual fees represent significant barriers to deposit customers. As indicated by high interest spreads and margins and high overhead costs, banking is inefficient and expensive in SSA (World Bank, 2007).

Corporate bond markets outside South Africa and Nigeria are either nonexistent or at an embryonic stage (Mu, Phelps and Stotsky, 2013). Next to a lack of size, Sub-Saharan African stock markets, with the exception of South Africa, are characterized by a high degree of illiquidity. Shares are rarely traded and turnover ratios are low by international standards. Activity is impeded by outdated trading, clearing and settlement systems, which can take months to complete a single transaction. Trading is often limited to a few stocks which represent the majority of market capitalisation (Andrianaivo and Yartey, 2009). Portfolio equity investment in SSA revolves around the most functional and liquid stock markets: South Africa, Nigeria, Kenya and Zimbabwe (Masetti, 2013). Even South Africa, the only country for which recent data on portfolio flows are available, experienced a volte-face of non-resident portfolio inflows in May and June 2013. Besides, capital account restrictions are still in place in many SSA countries. While there has been a focus on opening capital accounts toward developed countries, the potential of regional financial integration has been much less exploited (World Bank, 2007).

Table 1 Key Challenges in the Financial Sectors and Implications for SSA Economies

	KEY CHALLENGES	IMPLICATIONS
1.	Disconnect between the financial sectors and the real sectors	Weak productive sectors, deficient in necessary support from the financial sectors
2.	Dominance of oligopolistic deposit money banks in the financial system	Weak competition amongst deposit money banks, skewed interest rate structures and sticky interest rate regimes
3.	Weak non-bank financial institutions	Shortage of long-term funds in the financial sectors; with overbearing influence on interest rate structures
4.	Poorly developed capital market (low listing and market capitalization)	Paucity of long-term funding and over-dependence on banks for project financing
5.	Poor integration in the payments and settlement system	Process and informational inefficiencies, prohibitive costs of doing business
6.	Illiquidity, shallowness of the financial sector, paucity of instruments and lack of market breadth and depth which fuels market volatility	Financial sector instability, loss of investor's confidence, poor intermediation of financial institutions and over-reliance on public sector deposits
7.	Monetary and fiscal policy instability and policy somersaults	Financial sector instability, minimal level of financial intermediation and loss of investors' confidence
8.	Poor risk management framework	Volatile financial system leading to potential systemic distress, proliferation of toxic assets and non-performing loans.

9.	Foreign exchange supply gap (and excessive dependence on primary exports as source of foreign exchange)	Exchange rate instability, speculation, dollarization of the economy
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The complexities of financial integration with its economic benefits and costs have brought plentiful challenges for policy makers in SSA. Planning monetary and fiscal policies is much more baffling in the countries engaged in international financial integration compared to closed economies as more facets including external factors can swing these economies. It is therefore crucial for policy makers in SSA to ascertain the policy fundamentals that may enable countries to take advantage of the benefits, while minimizing the risks, associated with financial integration.

With rapid capital flows around the world, the currency and financial crises in 2007 and 2010 were inevitable. Consequently, developing countries in SSA that welcomed excessive capital flows were vulnerable to the financial disturbances as well. Because of the recent financial crises, there has been a heated debate among both academics and practitioners concerning the costs and benefits of financial integration. Up to date, this on-going debate about the costs and benefits of financial integration has not yet been settled or moved toward an agreement (Kose et al., 2006). As well, studying the relationship between financial deepening and economic growth is a vital one, considering the continuing progress in SSA financial sectors, especially at the aftermath of the global financial crisis. This study, therefore, combines a set of financial deepening and financial integration indicators in order to determine the growth effects of financial deepening and financial integration in SSA using panel data from 1970 to 2012.

For this purpose, the next section discusses recent literature on financial development and economic growth on one hand and financial integration and economic growth on the other. Then, in section 3 the harrod-domar and the two-gap models are discussed with relevance to this study. Section 4 is the empirical results and analysis. Section 5 concludes.

2. Literature Review

2.1 Financial Deepening and Economic growth

The connection between financial development and economic growth has been a matter of much debate. Financial systems have long been recognized to play an important role in economic growth and development. An inclusive overview of available cross-country empirical studies published to date on the impact of financial deepening on the economic growth reveals that the results of such studies have rather been mixed. Authors like Calderón (2002), Christopoulos and Tsionas (2004), Wadud (2005), Harb and Mouawiya (2005), Gries, et al (2009) , Rachdi and Mbarek (2011) have made substantial contribution to knowledge in this area.

Calderón (2002) employed the Geweke decomposition test on pooled data of 109 countries to examine the nexus between financial development and economic growth. He finds that financial deepening contributes more to economic growth in the developing countries than in the industrial countries. As well, financial deepening drives economic growth through both capital accumulation and productivity growth, with the latter channel being the most robust.

Christopoulos and Tsionas (2004) explored the nexus between financial depth and economic growth, using panel unit root tests and panel cointegration analysis. They find a unique cointegrating vector between growth and financial development. The empirical confirms no short run causality between financial deepening and output.

Wadud (2005) investigated the nexus between the level of financial development and economic growth for India, Pakistan and Bangladesh. He employed a cointegrated vector autoregressive model to evaluate the long-run relationship between the variables relating to “bank-based”, “capital market based” and economic growth. They find that the direction of the relationship is from financial development to economic growth.

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Harb and Mouawiya (2005) examines the relationship between financial development and economic growth in the Middle East using panel cointegration, Granger causality, and variance decompositions. They find that, in the long run, financial development and economic growth may be related to an extent. In the short run, the panel causality tests indicate real economic growth as the driving force behind financial development while individual countries' causality tests fail to indicate any clear evidence of the direction of causations.

Gries, et al (2009) tests for causality between financial deepening, trade openness, and economic development for 16 Sub-Saharan African countries. Using the Hsiao-Granger method, they find only limited support for the hypothesis of finance-led growth.

Rachdi and Mbarek (2011) explored the direction of causality between finance and growth using panel data cointegration and GMM for a sample of 10 countries, 6 from the OECD region and 4 from the MENA region during 1990-2006. Their empirical analysis confirms a long-term relationship between financial development and economic growth; the causality is bidirectional for the OECD countries and unidirectional (economic growth - financial development) for the MENA countries.

2.2 Financial Integration and Economic Growth

Beforehand, many scholars have explored empirically the relationship between financial integration and economic growth. Different methodologies employed have resulted in different results, some contradictory to past experiences where some in support as the case may be. The empirical evidence suggests enormous heterogeneity across countries, regions, financial factors, and directions of causality.

Chen and Quang (2012) investigate the particular conditions under which international financial integration is growth-enhancing. Relying on non-linear panel techniques, they find that countries that are able to reap the benefits of IFI satisfy certain threshold conditions regarding the level of economic, institutional and financial development, and

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the inflation rate. Their results also reveal a differentiated behaviour of foreign direct investment and portfolio liabilities compared to debt liabilities.

Mougani (2012) examines the impacts of international financial integration on economic activity and macro-economic volatility in African countries. The results of the empirical analysis show that the impact of external capital flows on growth seems to depend mainly on the initial conditions and policies implemented to stabilize foreign investment, increase domestic investment, productivity and trade, develop the domestic financial system, expand trade openness and other actions aimed at stimulating growth and reducing poverty.

Schularick and Steger (2006), using a generalized methods of moment (GMM) dynamic panel estimation, investigated empirically the nexus between international financial integration and economic growth by looking at the evidence from the first era of financial globalization from 1880-1913. Their results suggest that international capital market integration fostered economic growth significantly in the historical period, but no longer does so today. Their explanation of these diverse experiences is very simple. They think that the neoclassical model provides a valid description of the historical period, but appears unsuitable to explain the contemporary world economy. Their results reinforce the conclusion that those economies which open themselves to the world economy need at first abolish domestic distortions to reap the benefits of globalization. More specifically, it seems especially important to establish good property rights in all economies participating in the world economy.

Lane (2009) investigate the links between international financial integration and Japanese macroeconomic performance. He argued that the nature of financial globalisation in recent years should be more beneficial than in previous phases, especially with the greater openness and improved health of the domestic financial sector.

Zenasni and Benhabib (2013) examines empirically the links between international financial integration and economic growth for the case of three North African countries using the dynamic panel system GMM estimator proposed by Blundell and Bond (1998)

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over the period 1980-2010. The estimation shows that the effects of financial integration on economic growth is positive in the three studied countries, which means that financial integration can stimulate the evolution of financial systems and improve the economic situation in North Africa.

Osada and Saito (2007) studies the effects of financial integration on economic growth using an international panel data of 83 countries from 1974-2007. They show that the effects of financial integration on economic growth differ considerably, depending on the type of external assets and liabilities as well as on the characteristics of countries. They break down external liabilities into FDI and equity liabilities and debt liabilities, the former has a positive impact on economic growth, while the latter, especially public debt, has a negative impact. They also find in general that countries with good institutions and developed financial markets benefit more from financial integration, and countries in Western Europe and North America as well as those in East Asia are more likely to meet these conditions. Moreover, they provide some evidence that financial integration has an additional, indirect effect on economic growth through its impact on other determinants of growth such as the volume of international trade and the development of domestic financial markets.

McLean and Shrestha (2002) research international financial integration and economic growth at a cross-country level with a particular emphasis on the composition of capital flows. In line with conventional wisdom, they find that both foreign direct investment and portfolio inflows augment economic growth. By contrast, bank inflows appear to have a negative effect on growth, even though this result is less robust to changes in equation specification than the results for FDI and portfolio inflows.

Ahmed (2011) examines the issues of international and regional financial integration and its impact taking a sample of 25 SSA countries. He uses various indicators of financial openness, including stock-size based measures of total foreign assets and liabilities as a share of GDP and more disaggregate flowsize measure such as foreign direct investment

and portfolio flows to GDP. His findings suggests that financial capital market integration aids growth indirectly through promoting domestic financial markets. He does not observe a robust link between financial openness and economic growth in SSA region. Further, the study reports evidence suggesting that good institutions, higher level of human capital, and stable macroeconomic environment play an important role in mitigating the negative impacts of international financial openness.

Friedrich, Schnabel and Zettelmeyer (2010), using the methodology by Rajan and Zingales (1998) based on industry-level data from a sample of low and middle income countries, show that the effect of financial integration on growth is not only statistically significant, but also economically important. They opine that the experience of emerging Europe conforms to neoclassical growth theory, which predicts that openness to foreign capital should allow countries to grow faster towards their steady state income levels. They suggest that political integration can considerably increase the benefits of financial integration. Furthermore, their results suggest that financial integration works best when accompanied by a process of political integration with more advanced countries. They propose that the European model might also be replicable elsewhere.

2.3 Methodological Issues in Review

More than a few different econometric methodologies have been employed to uncover this finance and growth nexus. The empirical evidence suggests vast heterogeneity across countries, regions, financial factors, and directions of causality. Varied methods employed to explore this finance-growth nexus among others are causality, cointegration, VAR, VECM, GMM, also static and dynamic panel data. Different methodologies used have resulted in differing outcomes, some at odds with past experiences where some in support as the case may be. Clearly, the previous studies carried out have not clearly resolved the issue as most of them observed that financial deepening and financial integration did not promote economic growth while others support the view that they did promote economic growth. Moreover, a keener examination of these previous studies reveals that

conscious effort has not been made to explore the growth effects of financial deepening and financial integration conjointly in SSA.

Thus, this study fills the aforementioned gaps by exploring the growth effects of financial deepening and financial integration conjointly in SSA, using panel data approach.

3. Analytical Framework

3.1 Harrod-Domar Growth model

Harrod-Domar Growth model dealt with conditions for stable growth in an economy. It assumes that aggregate demand and supply would be in balance when investment (I_t) in any period equals the change in national income ($Y_t - Y_{t-1}$) times the capital to output ratio (k). The capital to output ratio indicates the value of capital required to produce one unit of output in a single time period. At equilibrium in a closed economy, intended investment would equal intended savings (S_t), which gives the initial equilibrium condition.

$$I_t = S_t = k(Y_t - Y_{t-1}) \quad (1)$$

Divided by Y_t

$$\frac{I_t}{Y_t} = \frac{S_t}{Y_t} = \frac{(Y_t - Y_{t-1})}{Y_t} \quad (2)$$

Define:

$$s = \frac{S_t}{Y_t} \quad \text{Savings rate} \quad (3)$$

$$g = \frac{(Y_t - Y_{t-1})}{Y_t} \quad \text{Growth rate} \quad (4)$$

$$s = k \times g \quad \text{or} \quad g = \frac{s}{k} \quad \text{Harrod-Domar growth equation} \quad (5)$$

The rate of growth is determined jointly by the national savings ratio and national capital to output ratio. The more a nation can save and invest the quicker it can grow!

3.2 *Two-gap model*

The two-gap model (Chenery and Strout, 1966) remains the most influential theoretical underpinning of the financial integration-growth literature. In this model, developing countries face constraints on savings and export earnings that hamper investment and economic growth. International capital flows are meant to fill the gap between investment needs and domestic savings.

The two-gap model is an extension of the Harrod-Domar growth model. The second "gap" (in addition to the savings gap) is found by introducing foreign trade and rephrasing the model such that:

$$g = \frac{s}{k} + \frac{b}{k} \quad (6)$$

The two-gap model deals with the interactions between the savings constraint and the foreign exchange constraint in the determination of economic growth in an economy. The savings constraint refers to the situation when the growth of an economy is limited by the availability of domestic savings for investment, and the foreign exchange constraint refers to the growth of an economy being limited by the availability of foreign exchange for importing capital goods. The two-gap theory purports that investment and development are restricted by level of either domestic saving or import purchase capacity.

In short, these models consider the availability of capital goods as the constraining factor to enhance economic growth in less developed countries. In this sense, foreign flows may spur growth by raising investment. In other words, international capital flows fills the gap created by insufficient savings or exports. We would expect capital to flow from capital rich to capital poor countries, as is suggested by developments in the Heckscher-Ohlin approach to trade by Mundell (1957), because capital is scarce in developing countries

which should lead to profitable investment opportunities for capital in developing countries. On this view there should be no outflows from SSA.

Following the seminal empirical work of King and Levine (1993), the relationship between finance and growth had been a subject of considerable academic interest and intense policy debate. The bulk of cross-country evidence appears to suggest that financial development had a positive impact on economic growth. Financial deepening may exert an indirect positive effect on the financial integration-growth relationship through the conduct of interest rate and exchange rate management, where the effectiveness of these policies depend on the absorptive capacity of the local financial markets (Nkusu and Sayek (2004). Substantial international capital flows puts upward pressure on the real exchange rate that can be translated into higher prices. The presence of a broad and deep financial system provides the necessary instruments that could effectively sterilize these undesirable impacts. In other words, financial integration functions effectively when international capital flows are better managed in the context of deeper and more efficient financial systems. Therefore, it appears plausible that one of the underlying reasons that financial integration is less effective in spurring development than is expected may be due to the failure of financial systems in ensuring an efficient allocation of capital flows. International capital flows help to augment domestic savings or directly increase productivity of capital-promoting economic growth (Domar, 1946).

4. Model Specification and Methodology

Following the important work of Gregorio (1998), the following model is employed in an attempt to determine the impact of financial integration and financial deepening on SSA economies:

$$\text{GDPC} = \eta_0 + \eta_1 \text{FDI} + \eta_2 \text{INV} + \eta_3 \text{CPS} \quad (7)$$

GDPC = Gross Domestic Product per Capital

FDI = Ratio of net FDI inflow to GDP (proxy for financial integration)

INV = Ratio of Gross Capital formation to GDP (proxy for investment)

CPS = Ratio of Domestic Credit to GDP (proxy for financial deepening)

GDP per capita is gross domestic product divided by midyear population. An approximation of the value of goods produced per person in the country, equal to the country's GDP divided by the total number of people in the country.

Foreign direct investment is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital; reinvestment of earnings; other long-term capital; and short-term capital as shown in the balance of payments. The FDI included here is total net; that is; net FDI in the reporting economy from foreign sources less net FDI by the reporting economy to the rest of the world.

Gross capital formation consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements; plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and work in progress.

Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises.

The a priori expectations are: $\eta_0, \eta_1, \eta_2, \eta_3 > 0$. This implies that the ratio of the ratio of FDI to GDP, ratio of gross capital formation to GDP and Ratio of Domestic Credit to GDP have positive relationship with per capita GDP.

Panel data is most appropriate for this study because panel data allows controlling for unobservable heterogeneity through individual country effect. The regression model can take the form of the Fixed Effects Model, Random Effects Model and the Pooled Ordinarily Least Square model in order to establish the most appropriate regression with the highest explanatory power, which is better suited to the data set employed in the study i.e. a balanced panel (Greene, 2003). Following the various methods of panel data analysis, the question of which is the most appropriate method arises. Therefore, some means of selecting the most suitable method among the different approaches especially between the Fixed Effects Model and Random Effect Model is needed. In literature, a basic test that has been employed by most empirical studies to choose the most appropriate method is the Hausman Chi-square (Judge et al., 2007). The Hausman specification test is the conventional test of whether the fixed or random effects model should be used. The question is whether there is significant correlation between the unobserved unit of observation specific random effects and the regressors. If no such correlation exists, then the Random Effects Model may be more appropriate. Conversely, when such a correlation exists, the Fixed Effects Model would be more suitable.

The source of the data for this study is the World Development Indicators. We first picked all the countries in SSA, and then proceeded to eliminate countries whose data were not up to date. Consequently, the final sample set consists of a balanced panel of 10 countries from SSA from 1970 - 2012. Regrettably but inevitably, we could not analyze the impact of portfolio investment and institutional development due to lack of data.

5. Empirical Estimation and Results

To select the most suitable method between the Fixed Effects Model and Random Effect Model, we employ the Hausman Chi-square test. The results of the the Hausman Chi-square test are shown in Table 2.

Table 2 Correlated Random Effects - Hausman Test

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	234.153229	3	0.0000

If we are to go by the identification test i.e. the Hausman’s Chi-square statistics, the random effects result is more reliable. Therefore, we use the results of the random effects model in analyzing our panel data.

Next, it is important to disentangle how much of the impact on growth is through increasing CPS, and how much through increasing the FDI. To examine this issue, equation $GDPC = \eta_0 + \eta_1 CPS + \eta_2 INV$ is estimated in Table 3.

Table 3 $GDPC = \eta_0 + \eta_1 CPS + \eta_2 INV$

Dependent Variable: GDPC

Method: Pooled EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	993.2338	179.3758	5.537166	0.0000
INV	2.033720	1.148064	1.771434	0.0772
CPS	3.376344	0.636259	5.306554	0.0000

Table 3 shows that INV and CPS have positive relationships with GDP per Capital as given by the random effects model. CPS has a very significant impact.

Then in Table 4, we estimated $GDPC = \eta_0 + \eta_1 FDI + \eta_2 INV$. INV and CPS have positive relationships with GDP per Capital as given by the random effects model. FDI has a very significant impact.

Table 4 $GDPC = \eta_0 + \eta_1 FDI + \eta_2 INV$

Dependent Variable: GDPC

Method: Pooled EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1083.282	416.0992	2.603422	0.0096
FDI	5.936571	2.380653	2.493673	0.0130
INV	0.475354	1.189947	0.399475	0.6897

In Table 4, the coefficient of INV decreases drastically and becomes more insignificant when CPS is replaced by FDI. Thus, this finding supports the hypothesis, confirmed by most of the theoretical literature, that net inflows of FDI have a fairly strong crowding out effect on domestic investment.

Table 5 $GDPC = \eta_0 + \eta_1 FDI + \eta_2 CPS + \eta_2 INV$

Dependent Variable: GDPC

Method: Pooled EGLS (Cross-section random effects)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	946.8980	85.47572	11.07798	0.0000
FDI	5.172975	2.322891	2.226955	0.0265

INV	2.047992	1.171113	1.748758	0.0811
CPS	4.806081	0.622040	7.726322	0.0000

Table 5 shows the estimation of $GDPC = \eta_0 + \eta_1 FDI + \eta_2 CPS + \eta_2 INV$. Both FDI and CPS have positive significant impact on GDP per Capital as given by the random effects. INV is also positive, but insignificant. To confirm this result, we carry out Wald Test on the coefficients of FDI and CPS.

Table 6 Wald Test

Wald Test:

Pool: Untitled

Test Statistic	Value	df	Probability
F-statistic	257.6066	(2, 426)	0.0000
Chi-square	515.2133	2	0.0000

Null Hypothesis: $C(1)=C(3)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0)	Value	Std. Err.
C(1)	7.324950	2.202928
C(3)	0.018338	0.000968

Restrictions are linear in coefficients.

Conclusive from the random effects model and Wald tests, FDI and CPS have significant

and positive impact on GDP per capital. This means that, first, financial integration have positive and significant impact on the economies of SSA. This is in line with McLean and Shrestha (2002), Zenasni and Benhabib (2013), Friedrich, Schnabel and Zettelmeyer (2010) who all show that the effect of financial integration on growth is not only statistically significant, but also economically important.

Secondly, financial deepening has positive and significant impact on the economies of SSA. This, as well, is in line with Calderón (2002), Christopoulos and Tsionas (2004), Wadud (2005) and Rachdi and Mbarek (2011) who affirms financial deepening as a driving force behind economic growth and development.

6. Summary, Conclusion and Recommendations

Using a panel dataset of 10 SSA countries from 1970-2012, this study examines the effects of financial integration and financial deepening on SSA economies. We use ratio of net FDI inflow to GDP (proxy for financial integration), ratio of gross capital formation to GDP (proxy for investment) and ratio of domestic credit to GDP (proxy for level of financial deepening) as documented in Gregorio (1998). We also incorporated the random effects and Wald tests.

This study emphasizes that financial integration and financial deepening play positive and significant roles in boosting the economic growth of SSA countries. It also emphasizes that these countries have been relatively successful over the last decade in attracting international capital inflows which have been crowding out domestic investment. This fact reinforces the earlier conclusions that those economies which open themselves to the world economy need at first abolish domestic distortions to reap the benefits of globalization. It is even more imperative to upgrade the essential frameworks for sound, efficient, and inclusive financial systems. This calls for more institution building as well as cautious and context-specific government intervention to help financial market participants develop

financial services to the frontier of commercially sustainable possibilities. It is up to SSA's financial sector stakeholders – bankers, donors, and policymakers – to pilot financial sector reforms in a way that amplifies SSA's opportunities, learning both from their own experience over the past 50 years and the experience in other emerging and developed economies. Finally, according to the World Bank, (2007), eliminating intra-regional capital account restrictions can help overcome the scale problem for financing large projects, such as those in infrastructure. While reducing dependence on international capital markets to a certain degree, such intra-regional capital account liberalisation seems less risky than complete capital account liberalisation vis-à-vis international investors.

REFERENCES

Aghion, Philippe, George-Marios Angeletos, Abhijit Banerjee, and Kalina Manova. 2010. "Volatility and Growth: Credit Constraints and the Composition of Growth." *Journal of Monetary Economics* 57: 246–265.

Beck, T., A. Demirguc-Kunt, and M. S. Martinez Peria. 2008. "Banking Services for Everyone? Barriers to Bank Access and Use around the World." *World Bank Economic Review* 22 (3): 397–430.

Calderón, C. (2002) The Direction Of Causality Between Financial Development And Economic Growth, Central Bank Of Chile's Working Paper No. 184, 20 P.

Chenery, H. B. and Stout, A. (1966): "Foreign Assistance and Economic Development". *American Economic Review*. 55, pp.679-733 [23]

Chenery, H. B. and Watanabe, T. (1958): "International Comparisons of the structure of Production". *Econometrica*. 26, pp. 487-521. 17

Christopoulos, D. K., Tsionas, E.G. (2004) Financial Development And Economic Growth: Evidence From Panel Unit Root And Cointegration Tests, *Journal Of Development Economics*, 73(1): 55-74.

Domar, D. (1946), "Capital Expansion, Rate of Growth and Employment," *Econometrica*, Vol. 14.

Geweke, J. (1982) Measurement Of Linear Dependence And Feedback Between Time Series. *Journal Of The American Statistical Association* 77(378): 304-24.

Gries, T, Kraf T, M, Meierrieks, D. (2009) Linkages Between Financial Deepening, Trade Openness, And Economic Development: Causality Evidence From Sub-Saharan Africa. *World Development* 37(12) 1849–1860

Harb, Nasri And Al - Awad, Mouawiya (2005) " Financial Development And Economic Growth In The Middle East " *Applied Financial Economics*,15,1041- 1051.

Harrod, R. F. (1939), "An Essay in Dynamic Theory," *Economic Journal*, Vol. 49, No. 1.

J. Gregorio (1998) Financial Integration, Financial Development and Economic Growth Center for Applied Economics, Department of Industrial Engineering, Universidad de Chile

Olaniyi Evans (2013) Growth Effects of Financial Integration and Financial Deepening in Selected SSA Economies: a Panel-Data Approach

Kose, M. Ayhan, Eswar Prasad, Kenneth Rogoff and Shang Jin-Wei. 2009. Financial Globalization: A Reappraisal. IMF Staff Papers, forthcoming.

Levine R. (2005), "Finance and Growth: Theory and Evidence," *Handbook of Economic Growth*, in: Aghion P. and S. Durlauf (ed.), vol 1, 865-934.

M. Nkusu and S. Sayek (2004) Local Financial Development and the Aid-Growth Relationship International Monetary Fund (IMF)

World Bank. 2007b. Financial Sector Integration in Two Regions of Sub-Saharan Africa. Washington, DC: World Bank.