Financial Integration, Foreign Direct Investment and Economic Growth in East Africa Countries: A Dynamic Panel Data Modelling Approach

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Abstract
This study examines the relationship between financial integration, foreign direct investment and economic growth using dynamic panel data modelling in the East African region during the study period ranging from 2000/01 to 2013/14. Arellano-Bover/Blundell-Bond estimation technique had been employed to estimate the model. From the Empirical result of this paper it was concluded that financial integration was found to affect the economic growth in the East African region negatively; whilst foreign direct investment was found to supportive to economic growth in the region. In addition it was revealed in the paper that there is a bi-directional relationship between financial integration and economic growth; and foreign direct investment and economic growth in the region. The researcher also discovered that there is a long run relationship between the variables. The policy implications of these results is so vital just in case that most of the variables can be maintained and controlled by each and every member of the East African countries. The researcher thus finally puts the policy implications based on these results. To maintain the economic growth in the region the researcher recommends to formulate good policies to further enhance foreign direct investment; and need to solve obstacles that hinder the integration process starting from the grass roots in order to gain the benefits of financial integration in the region.

Keywords: Financial Integration, Foreign Direct Investment, Economic Growth

1 INTRODUCTION
According to neoclassical growth theorists, financial integration facilitates efficient international allocation of capital via allowing the flow of resources from capital-rich countries to capital-scarce countries. The flow of resources into capital-scarce countries reduces the cost of capital, increasing investment and economic growth (Fischer, 1998; Obstfeld, 1998; Summers, 2000). It also provides indirect benefits such as allowing risk-sharing, fostering the development of domestic financial sector and leading to more stable macroeconomic policies (Obstfeld, 1994; Levine, 2001; Kose et al., 2009, 2010).

It is worth mentioning that for regional financial integration to take place there needs to be an abolition of restrictions on the free movement of capital within the region, i.e. a removal of exchange controls. Banks, insurance companies, and other financial institutions should be free to establish themselves anywhere in the region. There also needs to be, at the very least, some compatibility in financial regulation. Financial integration is therefore more complicated than trade integration since, unlike tangible goods; financial services suffer from problems of asymmetry of information and therefore require more intensive regulation. Like other developing economies, East African countries have developed many years ago, an economic policy aimed at promoting the development of its economy through East African integration. The East African countries experienced and signed different cooperation frameworks and treaties through especially the formulation of what we call the East African Community (EAC) to come up with Customs Union, Common Market, Monetary Union and finally Political Integration in which case Kenya, Uganda and Tanzania are the key players, and in recent years followed by Rwanda and Burundi. However, the implementation of the agreements and treaties remain relatively low and their impact on growth is ambiguous.

International investment flow, which is an important part of economic liberalisation process, is the most important point that attracts the attention of many researchers to study. International investments flows depend on the restrictions. This means, the integration of economies with financial liberalization process. Surely, investment flows is possible in two ways. First of them short run investment flows named as “Hot Money”. This kind of flows generally occurs from low interest rate economies to the high interest rate economies. Moreover, the main cause of this kind of flows interest rate volatility in international markets and this kind of flows intensified in stock markets. On the other hand, direct foreign investments are long run; and this provides advantages like economic growth, employment. Of course, these effects more positive and stable than short run investments flow.

As to the East African countries there are some integration treaties undertaken like East African Community (which comprises of Kenya, Uganda and Tanzania, Rwanda, Burundi and now South Sudan) in which case their goal being to work together on economic, social, cultural and political matters in order to become more competitive in the global market, improve the conditions for domestic industries and increase trade...
and investment in the region, which in turn will improve the quality of life for all East Africans. The East African Community (EAC) is one of the fastest-growing economic communities in the world. Between 2001 and 2009 it grew by an average of 5.8% a year, faster than any other economic bloc with the exception of ASEAN (6.1% growth over the past decade).

However, the effect of financial integration on economic growth from the cross country study perspective is mixed both theoretically and empirically. It is argued in some literatures that financial integration has positive growth effects whilst many other authors and researchers disbelieve the positive effects of financial integration arguing that it inflicts many costly disadvantages and offers very limited benefits especially to developing countries and emerging nations; and some other researchers even argue as if there is no relationship between financial integration and economic growth.

As is the case in financial integration a lot of controversy has been observed on the relationship between FDI and economic growth from the cross country study perspective as most of the studies either provide mixed results or fail to reach at any definite conclusions. Various empirical studies highlight a significant role of inward FDI in economic growth of the developing countries; but still other existing empirical literatures on FDI and economic growth nexus reported the relationship negative and even other reported as if there is no relationship between FDI and economic growth. This thus pave the way for academicians and policy makers to analyse this nexus further by using recent advances in panel data modelling.

So given these mixed relationships between FI, FDI and economic growth and the dearth of studies on East African Countries; the researcher intends to investigate (what it will be) the relationship of these variables on the case of East African Countries.

The main objective of this study is thus will be to assess financial integration, foreign direct investment and economic growth in East African Countries. And specifically the researcher will try:

- To assess the relationship between FI, FDI and economic growth in East African Countries
- To assess the causal relationship between FI and economic growth; and FDI and economic growth
- To determine co-integration relationship between FI, FDI and economic growth
- To forward some policy recommendations

2 LITERATURE REVIEW

2.1 The link between financial integration and economic growth

Evidences are mixed both theoretically and empirically on the link between financial integration and economic growth. Some researchers do believe the positive effects of financial integration of which the neoclassical growth model is amongst one. According to neoclassical growth model, financial liberalization facilitates efficient international allocation of capital via allowing the flow of resources from capital-rich developed countries to capital-scarce developing countries. According to these theorists the flow of resources into the developing countries reduces their cost of capital, increasing investment and economic growth (Fischer, 1998; Obstfeld, 1998; Summers, 2000); provides indirect benefits such as allowing risk-sharing, fostering the development of domestic financial sector and leading to more stable macroeconomic policies (Obstfeld, 1994; Levine, 2001; Kose et al., 2009, 2010). In an influential paper, Prasad, Rajan, and Subramanian (2007) show in a sample of 65 developing, non-transition countries that current account surpluses had a positive impact on growth between 1970 and 2004, implying that countries relying on foreign financing grew more slowly than countries relying on domestic savings, which contradicts the neoclassical view. Gourinchas and Jeanne (2007) refer to the negative correlation of capital flows and economic growth in developing countries as the allocation puzzle. Some of the earlier empirical analyses such as studies by Quinn (1997) and Klein and Olivei (2001), which are based on cross country regressions and use de jure measures of financial openness-mesures of legal restrictions on cross-border capital flows, report a positive correlation between financial integration and economic growth. A recent study by Abiad, Leigh, and Mody (2009) who show in a country-level panel regression framework that financial integration as measured by current account deficits had a positive growth effect between 1975 and 2004 in Europe, but not in the rest of the world. Thresholds in institutional quality and financial integration itself can explain only part of the differences between Europe and the rest of the world.

2.2 The extent of integration in East African countries

The East African Community (EAC) comprises of Kenya, Uganda and Tanzania [1917-1977] and re-emerged in 2000 after the ratification of the EAC treaty signed earlier in 1999 by member states of Kenya, Uganda and Tanzania [since July 2000]; Rwanda and Burundi joined the union in 2009 [since July 2009]; and now south Sudan and Somalia also become part of the union [2015]. The objectives of the EAC are to develop policies and programs aimed at widening and deepening co-operation among the Partner States in economic, social, cultural and political fields their mutual benefit. Within this framework partner countries also resolved to establish amongst themselves a customs union [Protocol, 2000 Implementation, 2005]; a common market [Protocol, 2009 Implementation, 2010]; subsequently a monetary union [Protocol, December 2013 Union by 2024 (?)] and
ultimately a political federation […with all deliberate speed…] to strengthen, regulate, and enhance an accelerated harmonious, equitable and sustained economic development. (Christopher Adam, 2014). This collaboration of efforts has so far yielded a customs union and the common market.

So far the EAC has launched several projects, at the regional/sectoral level, in support of deeper integration for the region. These include, amongst others: the Single Tourist Visa programme to facilitate free movement of tourists in the region so as to make the region a more attractive and competitive destination for middle class and high class families; the Lake Victoria Development Programme to coordinate and promote investment/information sharing among various stakeholders in the region as a way to transform the Lake Victoria Basin into a real economic growth zone; the East African Agriculture and Rural Development Programme to help foster agriculture development and achieve food security in East Africa; the East African Marine System (TEAMS) and the East African Sub Marine Cable System (EASSy) to lower the cost of inter and intra-regional communication; and the East African Civil Aviation Safety and Security Oversight Agency (CASSOA) whose mandate is to harmonize civil aviation regulations covering aviation safety, aerodromes and security (James Mackie et al., July 2010).

2.3 The link between FDI and economic growth
As the case in financial integration and economic growth, the relationship between FDI and economic growth is mixed both theoretically and empirically. The second generation of growth models – the so called ‘the new growth models or endogenous growth Models’ emphasize the role of FDI on economic growth of the nation. This was accompanied by Bashir (1999) who said that “endogenous” growth models were recently combined with studies on the diffusion of technology in an attempt to emphasize the major role played by FDI in the economy. Many empirics have been done on the relationship between FDI and economic growth in which case some reported such as Li and Liu (2005), Bengoa and Robles-Sanchez (2003) a positive one. On the other hand some other researchers such as Mencinger (2003) and Saqib et al. (2013) found that FDI had negative impact on economic growth while relatively few studies such as Lyroudi et al. (2004), Katerina et al. (2004), Yalta (2011), Mohamed et al. (2013) and Chowdhary and Kushwaha (2013) found that FDI inflows had no impact on economic growth.

2.4 The extent of FDI in East African countries
So far the level of foreign direct investment (FDI) in the EAC countries has more than tripled during the last decade from about $590 million in 2000 to around $1,7 billion in 2010 (World Bank, 2012). Compared to the FDI average of Sub-Saharan Africa (SSA) amounting to about 4, 3 % of GDP in 2009, FDI flows to EAC lie somewhat below this at 2,5 % of GDP in 2009 (World Bank, 2012). Although the level of FDI for the EAC is still relatively low, a considerable increase has taken place during the last decade. The majority of FDI has been targeted towards the sector of natural resources. In Tanzania, the export of gold currently accounts for over 1/3 of their total exports of goods and services. The oil production in Uganda is estimated to represent nearly 10% of GDP, and Kenya has recently been a location for important oil discoveries (World Bank, 2012). However, the region of EAC is facing a challenge in relation to stimulating investments that are directed beyond the sector of natural resources.

3 DATA AND METHODOLOGY OF THE STUDY

3.1 Data
The type of data was mainly secondary data which was collected at WDI database. The data was of annual data which covered from year 2000/01 to 2013/14. The study had covered the East African countries of Ethiopia, Kenya, Burundi, Tanzania, Uganda and Rwanda.

3.2 Methodology and Model specification
The model was of panel regression model which included six countries across 2000/01-2013/14 time periods. It is worth mentioning that (lags) values of the GDP growth would most likely has an effect on today’s GDP growth. So the researcher includes one lag value of the GDP growth to the independent variables list; and hence, the new model became the dynamic panel model (rather than the usual static model). Thus incorporating the variables, the dynamic panel data model would look like:

\[
GDP_{it} = \alpha + \gamma GDP_{it-1} + \beta_1 FI_{i,t} + \beta_2 FDI_{i,t} + \beta_3 CONTROLV + \nu_i + \epsilon_{it} \]

where \( GDP_{it} \) represents the logarithm of growth in real GDP per capita for countries; \( GDP_{i,t-1} \) = lag of the GDP growth; \( \gamma \) = the adjustment parameter ; \( FDI_{i,t} \) represents foreign direct investment that measures the inflows of capital accruing to country \( i \) in year \( t \); \( FI_{i,t} \) denotes financial integration measured by
the sum of net foreign assets and external liabilities as a percentage of GDP; \( \text{CONTRLVs} \): is a vector of control variable (country fundamentals and other variables); it contains: \( TO_t \): A variable which represents the Trade Openness which is measured by the sum of imports and exports in percentage of GDP; \( OER_t \): denotes the exchange rate variable calculated from nominal exchange rates and CPIs; \( KO_t \): measures the extent of openness in capital account transactions; \( FD_t \): Variable which is a measure of the development of domestic financial systems, it is calculated by the money supply as a percentage of GDP; \( RIR_t \): represents the real interest rate in the East African countries and is measured as nominal interest rate less inflation rate; and \( \nu_t \) and \( \epsilon_t \): are the error terms.

4 ANALYSIS OF THE RESULTS

4.1 Panel Granger causality tests

The Granger causality approach measures the precedence and information provided by a variable (X) in explaining the current value of another variable (Y). It says that Y is said to be granger-caused by X if X helps in predicting the value of Y. It relies on the use of F (or Wald) tests to analyse the existence of causality among the variables.

Table 3: Granger causality test result

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FI does not Granger Cause GDPG</td>
<td>72</td>
<td>12.1851</td>
<td>3.E-05</td>
</tr>
<tr>
<td>GDPG does not Granger Cause FI</td>
<td></td>
<td>4.68257</td>
<td>0.0125</td>
</tr>
<tr>
<td>FDI does not Granger Cause GDPG</td>
<td>72</td>
<td>5.94763</td>
<td>0.0042</td>
</tr>
<tr>
<td>GDPG does not Granger Cause FDI</td>
<td></td>
<td>20.6440</td>
<td>1.E-07</td>
</tr>
</tbody>
</table>

As can be seen from the above causality test it is revealed that there is a bidirectional relationship between financial integration and economic growth; and foreign direct investment and economic growth since the probability values are quite low and hence the null hypothesis of does not granger cause can be rejected. That is to mean that financial integration granger causes economic growth, economic growth Granger Cause financial integration, foreign direct investment Granger Cause economic growth, and economic growth Granger Cause foreign direct investment.

4.2 Panel Co-integration tests

Co-integration refers to the idea that for a set of variables that are individually integrated of order one; some linear combination of these variables can be described as stationary.

Table 4: Panel Co-integration test result

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF</td>
<td>-1.324289</td>
</tr>
<tr>
<td>Residual variance</td>
<td>8.195833</td>
</tr>
<tr>
<td>HAC variance</td>
<td>2.495669</td>
</tr>
</tbody>
</table>

It is discovered from the above co-integration test result that the probability value is 0.0927 in which case it can be said that the null hypothesis of no co-integration is rejected. Hence, it can be concluded that there is a long run relationship between the variables.
4.3 Arellano-Bond estimation result
Table 5: Arellano-Bover/Blundell-Bond estimates

| Variables                      | Coefficient | Std. Error | t-statistics | Prob.  
|-------------------------------|-------------|------------|--------------|-------
| GDP per capita growth         |             |            |              |       
| C                             | 8.70(083    | 2.03(752   | 4.27         | 0.000* 
| Lag GDP growth                | 0.94(4849   | 0.86(587   | 1.09         | 0.275 
| Financial Integration         | -2.127474   | 0.98(3105  | -2.32        | 0.021** 
| Foreign Direct Investment     | -0.44(7539  | 0.58(1726  | 2.80         | 0.005* 
| Financial Development         | -2.44(677   | 0.67(238   | -3.64        | 0.000* 
| Trade Openness                | 0.069219    | 0.48(1481  | 1.44         | 0.151 
| Capital Openness              | -0.1936281  | 0.22(0108  | -0.85        | 0.396 
| Exchange Rate                 | -0.002924   | 0.00(6863  | -4.26        | 0.000* 
| Real Interest Rate            | 0.0615705   | 0.02(8296  | 2.20         | 0.028** 

One-step results

<table>
<thead>
<tr>
<th>Wald chi2(8)</th>
<th>Prob &gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>53.20</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

* and ** denotes the rejection of the null hypothesis at 1% and 5% level respectively.

As can be seen from the above output the control variables such as financial development, real interest rate and official exchange rate are found to be significant in affecting the economic growth in East African countries whilst trade and capital openness found not to affect the growth in these regions. The coefficients of financial development, real interest rate and official exchange rate are found to be -0.237, -0.003 and 0.060 respectively whilst the coefficients of capital and trade openness are found to be -0.178 and 0.064.

Financial integration, as can be seen from the above Arellano-Bond estimation result, was appeared to be significant at 5% level with probability 0.021but with unexpected negative sign which is equal to -2.13. It’s unexpected negative sign to the theoretical expectation revealing that the real financial integration in the East African countries is quite low and/or null which thus contributes to the economic growth in these countries negatively. The coefficients of trade openness and capital openness which are important to financial integration are found to be insignificant. The coefficient of capital openness unlike trade openness shows even a negative figure in East African countries. To sum up at the moment the effect of financial integration on economic growth in the East African countries is negative to economic growth. So much has to be done to come up with more integration in East African countries of the study countries. Some researchers like Edwards (2001), Edison et al., (2002), Kraay (1998), Grilli et al. (1995), Gourinchas et al. (2007) have found a negative result. Quinn et al., (2002) use a cross-section of 58 countries to investigate the relationship between capital account liberalization and economic growth. Their study confirms the assertion that, capital account liberalization has a direct effect on economic growth for advanced industrial democracies but not for emerging market democracies. They identify that capital account liberalization in emerging market democracies without some form of welfare state, particularly political, legal, social and economic conditions may result in diminished growth. They also find that benefits of capital account liberalization are highest in advanced democracies, moderate in transitional polities but very negligible in developing democracies. On the other hand, Prasad et al. (2007) have found a positive result when the financial system is quite developed. Moreover, several studies (starting with Bekert, Harvey, and Lundblad, 2005) have found evidence of a beneficial effect of financial integration through equity market liberalization. Overall, the picture is still mixed at best, with scant or no evidence to suggest that financial integration supports economic growth in developing countries.

Going to foreign direct investment the researcher found it negative in affecting economic growth. The coefficient is found to be 0.44 with expected sign and is also significant at 1% margin of error with probability value of 0.005. This is a good result because foreign direct investment in the East African region is continuously increasing from time to time which is highly supportive to economic growth in these countries. In similar context, the share of foreign direct investment to the total GDP, when we see recent trends is showing an increasing trend from time to time which might be another reason for the coefficient of foreign direct investment to be positive. Researchers like Khondoker (2007) investigated the amount correlation between FDI and economic growth and indicated that developing countries can attract more FDI with high economic growth rate and investment friendly policies. Hence, one can observe that FDI inflows are attached towards an economy or to economy having high economic growth rate, on the other hand FDI inflows are also instrumentnal in increasing the growth rate in an economy. This theoretical implication indicates a bi-directional relationship between FDI inflows and economic growth rate. Coe et al. (1997), Mun et al. (2008), Heteş et al. (2009), Anwar et al. (2010), Chang (2010), Tiwari et al. (2011), Asghar et al. (2011), Lean et al. (2011) and Soumia et al. (2013) found that FDI inflows have had a positive impact on economic growth. However, relatively few studies such as Mencinger (2003) and Saqib et al. (2013) found that that FDI inflow have had a negative impact on economic growth. On the other hand Lyroudi et al. (2004), Mohamed et al. (2013) and Chowdhary et al. (2013) found that FDI inflows did not exhibit any significant relationship with economic growth.
5 CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

5.1 Conclusions of the study
The research output revealed that the significant variables (both study and control variables) are: financial integration, foreign direct investment, financial development, real interest rate and official exchange rate; whilst capital and trade openness found powerless in affecting the economic growth in the East Africa region. It has been reported that the study variables, financial integration and foreign direct investment, have found to negatively and positively affect the economic growth in the East African countries respectively. On the other hand, among the control variables, financial development and official exchange rate found to negatively affect the economic growth in the East African region; whilst real interest rate is found to positively affect the economic growth in the region. In addition, it is shown that there is a bi-directional relationship between financial integration and economic growth; and foreign direct investment and economic growth in the East African countries. The result also revealed that there is a long run relationship between the variables.

5.2 Recommendations of the study
As we all know both financial integration and foreign direct investment are of vital in maintaining the economic growth in the respective country. Though nowadays there is a tremendous growth in foreign direct investment in the East African region, much has to be done to attract more and more investors to come in to the region by making the environment conducive through removing entry barriers. Similarly the importance of financial integration, once better policy is formulated, is so vital to the economic growth of a certain country.

Depending on the research output it is revealed that financial integration do affect the growth of the East African countries negatively. So to make use of the real benefits of financial integration the integration barriers need to be tackled and the capital and trade barriers should be removed. In addition, the researcher revealed that foreign direct investment had a positive impact on the economic growth in the East African region; so to make this impact continue as such more integrations have to be undertaken by the respective East African countries especially by removing trade barriers and making the environment open to foreign investors.

6 REFERENCES


