



## **African Economic Conference 2009**

Fostering Development in an Era of Financial and Economic Crises

11 – 13 November 2009 • United Nations Conference Centre • Addis Ababa, Ethiopia

### **The Global Financial Crisis, Slowing Private Capital Inflows and Economic Growth in Rwanda and Burundi**

**Dr. Thomas Kigabo RUSUHUZWA**  
**Dr. Joseph BARICAKO**



African Development Bank Group



Economic Commission for Africa



African Economic Conference

# **The Global Financial Crisis, Slowing Private Capital Inflows and Economic Growth in Rwanda and Burundi**

**Dr. Thomas Kigabo RUSUHUZWA and Dr Joseph BARICAKO<sup>1</sup>**

Addis Ababa on November 11-13, 2009

---

<sup>1</sup> Dr KIGABO is currently Chief Economist of Rwanda National Bank. Dr BARICAKO is working with United Nations Economic Commission for Africa, Sub Regional office for Eastern Africa, Kigali. Views expressed in this paper are those of authors only and can not be attributed neither to the respective institutions of the authors nor to the African Economic Conference.

## Abstract

*The main objective of this paper was to investigate the impact of FDI on economic growth in Rwanda and Burundi, two member countries of the East African Community and CEPGL. The share of FDI in the two countries still limited and this can explain why its impact on economic growth is not significant. There is an interesting trend in Rwanda. The share of FDI in GDP significantly increased since 2006 due to good economic conditions and high level of macroeconomic and political stability, favorable growth prospects and investment environments achieved in Rwanda during these last years. Due to the current improvement in doing business in Rwanda, the country is expected to attract more and more foreign direct investment in few next coming years*

## **I. Introduction**

Since August 2007, the world is experiencing the worst global financial crisis since the past 60 years. This crisis initially affected advanced economies; emerging markets with well developed financial systems were also affected by cross-border financial linkages. One of the main consequences of the financial crisis is that the world economy is facing a deep recession. The global growth rate is expected to decline at 0.5% in 2009 from 3.5% in 2008 (IMF, January 28, 2009) before probably recovering somewhat in 2010. Though the impact of the global financial crisis is projected to be less severe in developing country, low income countries are now experiencing adverse effects of the global downturn through different channels include the reduction of exports, lower remittances, lower Foreign Direct Investment, reduction in aid and weakness in financial systems. Following WEO (2008) projection, FDI flows are expected to shrink by up to 30% in developing countries as consequence of the current global financial crisis, after two decades of growth. In 2008 for example, FDI inflows to developing countries grew by 7.2% compared to 20% in the previous year.

The objective of this paper is to analyze if the expected decline of FDI will impact significantly the economic growth in Rwanda and Burundi. For this purpose, the controversial link between FDI and economic growth will be deeply explored.

After this brief introduction, the remainder of the paper is organized as follows. Section 2 provides an overall background of the study. It outlines the salient features of the two countries and the literature review on FDI and growth. In section 3 the theoretical model is specified and estimates, Section 3 analyzes the empirical results and Section 4 gives concluding remarks.

## **II- Overall background of the study**

### **II. 1. Salient features of the two countries**

We selected the two countries in this study for several reasons. First of all, the two countries share the same history<sup>2</sup>. Former German and Belgian colonies, the two small central African countries share the same socio economic characteristics, particularly the geographic ones. They have almost the same geographic size (27834 and 26338 km<sup>2</sup> respectively and similar history characterized by different political conflicts. The two countries are members of CEPGL, COMESA and EAC<sup>3</sup>.

Since 2000, Rwanda has envisaged a set of policies with the goal of transforming the agrarian subsistence economy into a sophisticated knowledge-based society. These policies are defined in a framework called Vision 2020. The main socioeconomic objectives of Vision 2020 include transforming Rwanda into a middle-income country, with per capita income of about \$900 (from \$290 in 2000), and transforming the structure of the economy such that the industrial and services sectors will take over by 2020. It is expected that services will contribute 42 percent, industry 26 percent, and agriculture 33 percent of GDP. It is also expected that the population living under the poverty line will be reduced from 60 percent in 2000 to 25 percent by 2020, the population will grow, on average, 2.7 percent a year until 2020, the literacy rate will increase from 48 percent in 2000 to 90 percent in 2020, and average life expectancy will rise from 49 to 55 years (MINECOFIN 2000, vision 2020).

Important socio economic performances have been achieved in Rwanda after the genocide against tutsi and the country has built a solid foundation to its development in long term so that Rwanda is now the top global reformer and for the first time for an *African country* (World Bank, 2009). These good achievements during last few years are results of good leadership, committed to

---

<sup>2</sup> They are all former Belgian colonies since 1918 after German defeat in the World war.

<sup>3</sup> Rwanda decided to withdraw from ECCAS (CEEAC ). He is applying for Commonwealth membership while Burundi remains Francophonie member. The two countries joined EAC in 2007.

find durable solutions to Rwandan's people despite important challenges. Consequently, the country is safe, stable with little corruption and clear anti corruption policy. Rwandan economic growth remained strong, reaching 11.2% in 2008 against 7.9% in 2007, with an economic growth of 8% in average between 2004 and 2008. In 2008, the contribution of the three sectors (services, industry and agriculture) was 45%, 15% and 33% respectively (National Institute of Statistics of Rwanda, publication 2009).

In Burundi, the conflict started since many years ago continued as a rebellion wing was still fighting till 2009. The GDP growth rate reached 2.12% in 1988, at the eve of the first round of ethnic conflict in the North Country. The trend fluctuates, following the political disturbances. We mention here just the highlighted genocide episodes starting from 1988 prelude in Ntega and Marangara till the recent guerrilla wings to almost full country via the 1991 foretaste war starting in the capital suburb and extended in the full town afterwards. From -7.96% growth performances in 1993, the score slumped to -10.27% in 1996 and improved slowly to -2.87% in 2003.

The GDP per capita slumped to 83 US in 2004 from 180 US in 1992. The real GDP annual growth rate was 2.7% in 1992 from -5.7 and -10.3% respectively in 1993 and 1996. An improvement since 2000 (-0.9) was confirmed the two following years with positive values. The trend was unfortunately reversed in 2003 (-1.2) but the improvement kept up since then up to now despite the current crisis and negative spillovers from conflict.

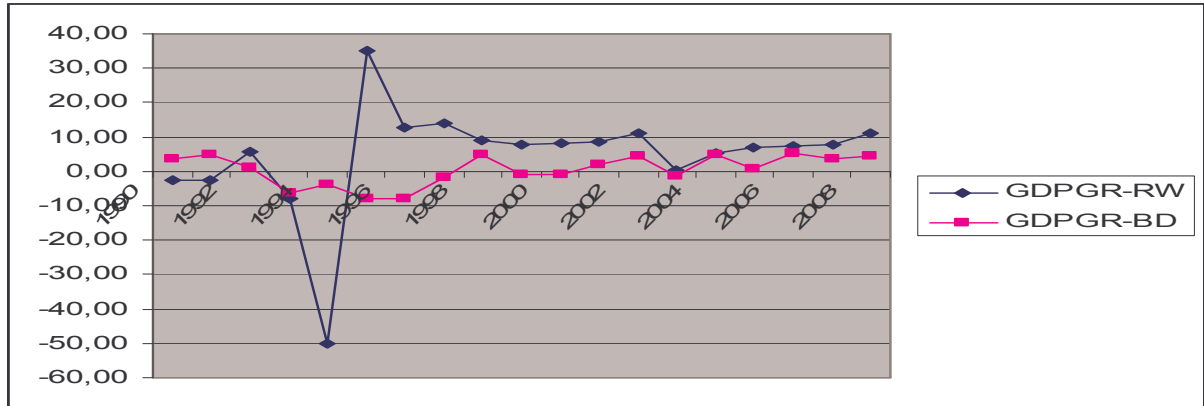
An econometric investigation from Collier (1999) showed how, during conflict times, economic growth slows down to an annual rate of 2.2% a year relative to the peaceful times (Easterly and Levine, 1997). If we apply this calculation to Burundi case, the 13 years of full conflict decreased economic growth of 28.6%<sup>4</sup>.

---

<sup>4</sup> This calculation does not consider cumulative effects of geometric progression while it should normally be used in such circumstances. Furthermore, the same data has been proposed by Hoeffler is standard mean with all related disadvantages.

At any rate, Burundi growth performances remain below the mean of Sub Saharan African Countries.

**Figure1: Real economic growth in Rwanda (GDPGR-RW) and Burundi (GDPGR-BD)**



## II. 2. Foreign Direct Investment and economic growth : Literature review

The impact of specific categories of private capital inflows on economic growth has been investigated in different studies, especially for developing countries. They focus both at microeconomic and macroeconomic level. At firm level, studies provide contradictory evidence on the FDI role for economic growth (Wilmore, 1986; Aitken and Harrison, 1999; Haddad and Harrison, 1993). At macro economic level, FDI is theoretically expected to impact positively on economic growth through the spillover effects. Industries in host countries could benefit from capacity building and technology transfer; through additional investment in the hosting country especially in economic sectors not significantly financed by domestic investment due to lack of technology, high skilled labor and high costs of production; through investment to deficient sectors with objective of promoting and sustaining a balanced sector growth and through the financing accumulation of productive capital for the future. Based on these expectations, numerous LDCs have relaxed or eliminated restrictions on incoming international

investments and offered more tax incentives and subsidies to attract capital inflows.

Following global changes in the 1990's, developing countries have favorably looked at various FDI, given their potential contribution to economic development of the host country. On a different note, different studies concluded to a negative impact of FDI on economic growth in the hosting country ( Singer, 1950; Prebisch, 1968) since outstanding benefits from FDI are driven by multinational company. Although FDI raises the volume of investment, increase their productivity as well as the consumption in the host country, it impacts negatively on economic growth through price distortions or/ and poor allocation of resources.

Contrary to this theoretical support of the link between FDI flows and economic growth, FDI flows do not contribute necessarily to economic growth; rather, it is attracted by favorable economic environment and opportunities. For another strand of literature, the positive impact of FDI on economic growth depends on the volume of FDI and the context of the host country (Balasubramanyan et al., 1996; Borensztein et al. 1998; Alfaro et al., 2003; Te Velde, 2006). The two factors include general policy factors, specific FDI policies, macroeconomic factors and firm specific factors.

Reisen and Soto (2001) measure the independent growth effect of bond flows as well as FDI, portfolio equity flows, official flows, short-term and long-term bank lending on a sample of 44 developing countries all over the world through the period 1986-97. They find that FDI and portfolio equity flows have a significant impact on growth. Short and long-term bank lending is found to affect negatively economic growth in the recipient country, except when local banks are sufficiently capitalized. Gheeraert and Malek Mansour (2005) find a significant positive relationship between growth and various measures of capital flows like FDI, equity investment, debt investment and flows in financial derivatives. For De Vita and Kyaw (2009), only developing countries that reached a minimum level of

economic development and absorption capacity are able to capture the growth enhancing effects of both forms of investment inflows. Carkovic and Levine (2002) analyzed the relationship between FDI and economic growth in 72 countries over the period 1960-1995 and concluded to the absence of that relationship for both developed and developing economies even allowing for the level of education, economic development, financial development and trade openness of the host country.

On a different note, any empirical consensus on the relationship between FDI and economic growth exists so far. The divergence is mainly related to the estimation techniques, the model specification, the choice of sample. The results differ according to countries specificities. Estimation techniques used in empirical literature can be divided in two groups. Early studies on the link between FDI and economic growth used the Ordinary Least Squares (OLS) technique. GDP growth was regressed on a number of variables including trade variable (export or openness) and FDI, using time series or cross section data (Balasubramanyam, Salisu and Sapford, 1996; Olofsdotter, 1998). Recent studies used the technique of bivariate Grange Causality. They allow for possibility of testing causality in both direction (Zhang, 2001; Choe, 2003, Chowdhury and Mavrotas, 2006; Folorunso Sunday, 2009). The major inconvenience of this estimation framework is that the number of variables limited at two. This constraint creates likely model specification's problem. To adress this problem, researchers have used multivariate cointegration technique to consider more variables in the system ( Basu, Chakraborty and Reagle, 2003; Hansen and Rand, 2006, Zhang, 2000, Cuadros, Orts and alguacil, 2004, Ramirez, 2000).

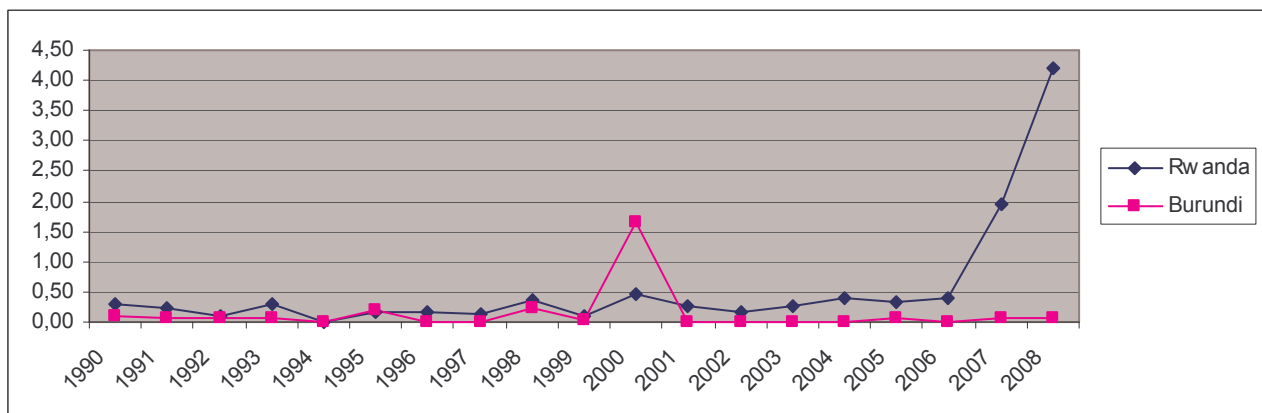
The findings from this set of estimation technique show that there is no consensus on how FDI can impact the economic growth. Based on different empirical researches this impact depends on different factors include the level of technology used in the production system in the host country, the level of skills of workforce, the level of financial sector and institution development, etc.

### II.3. Trends of FDI in Rwanda and in Burundi.

We analyze the trends of FDI in Rwanda and Burundi during the recent period (1990-2008). FDI in Rwanda varied between around 0% and 4.2% of GDP and between around 0% and 1.65% in Burundi. This indicates how the volume of FDI in the two countries still low. Therefore, its impact on economic growth is expected to be limited.

Contrary to Burundi, the share of FDI in GDP increased significantly since 2006 in Rwanda. The good economic conditions mixed with political stability are key factors for favorable growth prospects and investment environments in Rwanda, during these last years at least. These elements are major factors that usually attract large amount of FDI in a given country (United Nations, 2001). Following current improvement in doing business in Rwanda, it is expected that the country will attract more foreign direct investments in few next coming years. Indeed, Rwanda is now the top global reformer and for the first time for an African country. Rwanda has set an all time record for improved overall rankings (*World Bank, 2009*).

Figure 2: FDI (percentage of GDP) in Rwanda and Burundi.



### III. Model specification, data and methodology

The long term growth of output in each of the countries considered in the study is analyzed following the growth accounting methodology which decomposes the economic growth into the contribution of capital, labor and a residual interpreted as contribution of total factor productivity. To empirically investigate the impact of FDI on economic growth in the two countries we regress real GDP growth upon FDI, a measure of capital, a measure of the stock of human capital, the initial GDP and a vector of other explanatory variables that affect economic growth include the level of openness (OP), inflation as proxy for macroeconomic stability, the gross fixed capital formation as percentage of GDP ( GFC) which measures national investment, both public and private ( Johnson, 2006; Hansen and Rand, 2006).

A dummy variable capturing the conflict is used. It takes value 1 for the period 1990-94 and 0 otherwise for Rwanda. For the case of Burundi, it takes value 1 from 1993 to 2003 when the various rebel groups joined the peace process and 0 for the two separate periods: 1990-92 and from 2004 up to now. The sample period spans over 1985 to 2008 and data are mainly from World Bank World Development Indicators.

The basic specification of the model is as follows:

$$y_t = \beta_0 + \beta_1oda_t + \beta_2op_t + \beta_3fdi_t + \beta_4pa_t + \beta_5gfc_t + \beta_6d_{1t} + \varepsilon_t \quad (1)$$

Where y stands for real annual GDP growth; FDI, OP and GFC are respectively foreign direct investment, openness and gross capital formation and population for which the age is between 15 and 64 years as % of total population.

To determine the presence of an equilibrium type relationship among variables in the specified economic growth model we test for co integration by using the Johansen approach. The Johansen approach is more appropriate because it does

not a priori assume the existence of one co integration vector, it is not sensible to the choice of dependent variable in the co integration regression because in this approach all variables are assumed to be endogenous. The maximum likelihood framework of Johansen test procedure offers better properties than the traditional Engel and Granger approach, which is residual based.

We first assess the relationship between FDI and economic growth in Rwanda and Burundi by using the Granger causality test. This is one of ways to test bi-direction causality between the two variables.

**Table 1: Grange causality test GDP-FDI in Rwanda**

Null Hypothesis	Rwanda		Burundi	
	F-Statistic	Prob.	F-Statistic	Prob.
FDI does not Granger Cause Y	0.83851	0.4562	0.45241	0.61
Y does not Granger Cause FDI	0.06225	0.9400	0.087	0.72

Before testing the existence of co integrating relationships among different variables, we start by testing the existence of unit roots in all variables used in our model by using the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests. Contrary to ADF test the use of PP test allows for possibility of heteroskedastic error terms. The two tests indicate that all these variables are  $I(1)$ <sup>5</sup>.

As evidenced by the following table, the trace test indicates that there are 3 co integration equations in the case of Rwanda<sup>6</sup>.

---

<sup>5</sup> Details on these tests are available and could be received upon request.

<sup>6</sup> The same test identifies also 3 co integrated equations in Burundi. We have not reported the details as it is not different with the case of Rwanda.

**Table 2: Trace test of co integration case of Rwanda**

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.997471	174.7811	76.97277	0.0000
At most 1*	0.894664	73.12021	54.07904	0.0004
At most 2*	0.693651	34.85998	35.19275	0.0543
At most 3	0.469782	14.74845	20.26184	0.2411
At most 4	0.207917	3.962521	9.164546	0.4177

The table below reports the results from estimation of a Vector Error Correction Model (VECM) based on equation (1). These results show that human capital variable has a positive impact on economic growth in the two countries but not statistically significant at 5% level<sup>7</sup>. The aid as percentage of capital formation (ODA) has a positive and statistically significant impact on economic growth in the two countries. The level of economic openness has also a negative impact on economic growth in the two countries. Contrary to our expectation, the government capital formation has not significant impact on economic growth even if its coefficient is positive in Rwanda and Burundi. The dummy variable (D1) indicates how conflict or bad leadership is a negative factor of economic growth. It is agreed that a good leadership is a key factor for economic growth because growth requires committees, credible and capable governments and sustained growth does not just happen, it must be planned ( Commission on growth and Development, World Bank, 2008). The FDI has a positive impact on economic growth, but not statistically significant. This confirms the result from Granger causality test and was expected because FDI has to rich a certain level before impacting significantly the economic growth.

---

<sup>7</sup> The coefficient of this variable is statistically significant at 10% level in Rwanda.

**Table 3: Empirical results: the economic growth model for Rwanda and Burundi<sup>8</sup>**

<b>Variables</b>	<b>Rwanda</b>	<b>Burundi</b>
Constant	-0.2	2.9
ODA	0.03*	0.01*
OP	-0.99*	-0.51*

---

<sup>8</sup> \*: significant at 5%; \*\*: significant at 10%.

FDI	1.07	0.85
PA	0.71**	0.45
GFC	0.52	0.23
D1	-15.7*	-20.5*
$R^2$	0.89	0.84
F-statistic	5.20 (0.002)	8.52(0.000)
LM test: F-statistic	2.6 (0.12)	2.14 (0.25)
White test: F-statistic	0.44(0.83)	0.49 (0.79)

## Conclusion

The main objective of this paper was to investigate the impact of FDI on economic growth in Rwanda and Burundi, two member countries of the East African Community and CEPGL. The share of FDI in the two countries still limited and this can explain why its impact on economic growth is not significant. There is an interesting trend in Rwanda. The share of FDI in GDP significantly increased since 2006 due to good economic conditions and high level of macroeconomic and political stability, favorable growth prospects and investment environments achieved in Rwanda during these last years. These elements are identified as major factors that usually attract large amount of FDI in a given country (United Nations, 2001). Due to the current improvement in doing business in Rwanda, the country is

expected to attract more and more foreign direct investment in few next coming years. Indeed, Rwanda is now the top global reformer and for the first time for an African country. Rwanda has set an all time record for improved overall rankings according to *Doing Business (World bank, 2009)*.

## References

- 1- AFDB [2009], "Impact of the Financial Crisis of African Economies. An Interim Assessment".
- 2- Aitken, B, A. Harrison [1999], "Do domestic firms benefit from foreign direct investment? Evidence from Venezuela", *American Economic Review* 86, pp.605-618
- 3- Balasubramanyam, V.N at al. [1996], "Foreign direct investment and growth in EP and IS countries", *Economic Journal* 106.
- 4- Borensztein, E at al [1998], "How does foreign direct investment affect economic growth?", *Journal of international Economics* 45
- 5- De Vita and Kyaw [2009], "Growth effects of FDI and portfolio investment flows to developing countries: a disaggregated analysis by income levels", *Applied Economic Letters* 16.
- 6- Rodrick, E and A. Subramanian [2009], "Why Did Financial Global Disappoint", *IMF staff papers*
- 7- José Brambila Macias and Isabella Massa [2009], "The global Financial Crisis and Sub-Saharan African Countries: The effects of Slowing private capital inflows and Growth", ...
- 8- Lyroudi Katerina at al. [2004], "Foreign direct investment and economic growth in transition economies". *South Eastern Europe journal of economics*.
- 9- Reyadh Y. Faras, Khalifa Y. Ghali [2009], "Foreign direct investment and economic growth: the case of the GCC countries". *International Research Journal of finance and economics*.
- 10-Te Velde, D.W. [2006], "Foreign Direct Investment and Development": An historical perspective Background paper for *World Economic and social Survey* for 2006.
- 11-WEO [2008 ] p.3 , The Implications of The Global Financial Crisis for Low Income Countries, March