The relationship between Foreign Direct Investment(FDI) and GDP per capita in Rwanda

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Abstract.

Foreign direct investments have been identified as an important source of financing for developing countries. In this regard, Rwanda has actively attracted FDI by creating and sustaining a high conducive investment climate through important reforms which make it easier for businesses to get started, get loans, pay taxes, etc. The package for investment promotion includes among others: regulatory framework, registration facilities and requirements, change of registered businesses, closing businesses, disclosure requirements, and other facilities such as working permit, government's protection of investments, settlement of disputes, transfer of funds, special economic zone facilitations, public private partnership, etc. This paper investigated the relationship between the attracted FDI and the GDP per capita in Rwanda. The findings revealed that there is a strong positive relationship between the FDI inflows and the GDP per capita for the studied period which covers 2008 to 2012, thus a positive effect on the economic growth.

Key Words ***:*** *FDI, Investment, GDP, Poverty*

1. Introduction

An Investment is considered to be a Foreign Direct Investment (FDI) if non-resident entities or individuals hold 10% or more of the equity share in a resident entity, including all levels of Fellow Enterprises and Direct Investments of even less than 10 percent of shareholding(Rwanda National Bank, 2011).

Businesses that make a foreign direct investment are often called multinational enterprises (MNE). Sometimes FDI can provide better advantages for the MNE but not for the foreign country, and sometimes the other way around. For a foreign multinational enterprise to find it profitable to enter a domestic market some conditions need to be satisfied. This means that the profit needs to be higher than the costs such as communications, transportation, stationing personnel abroad, barriers due to language and customs. It's critical to identify the advantages for the multinational enterprise under which direct investments will occur. Dilby G. (2014) suggested three conditions that need to be present for a firm to find incentives for direct investment, Dunning explains this as OLI (ownership, location and internalization).

Ownership advantage – Superior management skills and technology is one advantage that a firm can take with them when venturing into another country and hence getting advantages compared to already established firms in the country.

Location advantage – Lower costs of input, expanded market accessibility and cluster-effects can give a firm advantage in terms of production.

Internalization specific advantages – If market solutions is too costly or non-rewarding, to internalize production stages can be an advantage due to external events will not affect the firm in the same way.

The firm makes a direct investment into the receiving country; this emerges as financial inflow for the receiving country and financial outflow for the investing country/firm. The two main forms of these are M&A (Mergers and acquisitions) also known as *brownfield investments*, and *Greenfield investments*. If MNE makes a greenfield investment, they will build a new factory in a small developing country, this means that the MNE would have to hire some local labor and

equipment. When the foreign money gets in the economic cycle, more jobs will be created. Once the new factory is up and running, it will pay taxes for profit and labor, create tax revenue from now possible added economic activity. The country's government can then use this new capital to promote better welfare, infrastructure and school systems that could create more growth in both physical and human capital (Joutsen T. et al., 2014).

2. Background of the study

The Government of Rwanda strives to promote a private sector development, aiming at fostering both local and foreign investment by undertaking reforms with the objective of making the country a favorable place for investment.

Rwanda's performance in the Doing Business Rankings in recent years has been exemplary, drawing attention from international observers and investors alike. The 2013 World Bank Doing Business Report has ranked Rwanda 52nd out of 185 countries. In the overall performance, Rwanda is still the best performing country in the East African region as well as 3rd easiest place to do business in Sub-Saharan Africa (1st is Mauritius which ranks 19th globally, 2nd is South Africa which ranks 39th globally, 3rd is Rwanda which ranks 52nd globally, 4th is Botswana at 59th globally and 5th is Ghana which ranks 64th globally.

Rwanda has been recognized for making improvements in two areas of regulations: *Enforcing Contracts (39th) and Getting Electricity (49th)*. The country made enforcing contracts easier by implementing an electronic filing system for initial complaints whereas the country eased getting electricity by reducing the cost of obtaining a new connection by 30%. Rwanda's ranking per indicator has improved. Looking at areas where Rwanda is still strong, the *Starting a Business* rank has remained the 8th easiest in the world, with Company registration taking only two procedures and the whole process of incorporation is concluded in just 6 hours. In ease of *Paying Taxes*, Rwanda is 25th easiest place globally (World Bank, 2013).

Between 2005 and 2012 Rwanda's real GDP per capita grew by 4.5% a year, reflecting a sustained expansion of exports and domestic investment, with inflows of foreign direct

investment also increasing substantially. In addition, the government strengthened the foundations of macroeconomic stability by implementing cautious fiscal policies supported by a number of structural and institutional reforms (National Bank of Rwanda, 2012).

3. Prior studies

There are a number of studies that have investigated the relationship between FDI and GDP. Demello (1997) lists two main channels through which FDI may be growth enhancing. First, FDI can encourage the adoption of new technologies in the production process through technological spillovers. Second, FDI may stimulate knowledge transfers, both in terms of labour training and skill acquisition and by introducing alternative management practices and better organizational arrangements.

A survey by Caves R. (1996) underpins these observations and documents that 11 out of 14 studies have found FDI to contribute positively to income growth and factor productivity. Both de Mello and OECD stress one key insight from all studies reviewed: the way in which FDI affects growth is likely to depend on the economic and technological conditions in the host country. In particular, it appears that developing countries have to reach a certain level of development, in education and/or infrastructure, before they are able to capture potential benefits associated with FDI. Hence, FDI seems to have more limited growth impact in technologically less advanced countries.

Zhang K.H. (1999) uses the traditional panel data causality testing method developed by Holtz-Eakin *et al.* (1988) in a data set of 80 countries. His results points towards bi-directional causality between FDI and growth, but he finds the causal impact of FDI on growth to be weak. He addresses the question of the two-way link between growth and FDI. Allowing for country specific co integrating vectors as well as individual country and time fixed effects they find a co integrated relationship between FDI and growth using a panel of 23 countries. He emphasises trade openness as a crucial determinant for the impact of FDI on growth, as they find two-way causality between FDI and growth in open economies, both in the short and the long run,

whereas the long run causality is unidirectional from growth to FDI in relatively closed economies.

Akinlo, A (2004) using a sample of 31 developing countries and using estimators for heterogeneous panel data, found a bi-directional causality between FDI/GDP and the level of GDP. They interpret this result as evidence in favour of hypothesis that FDI has an impact on GDP via knowledge transfers and adoption of new technology. MAhmoud Al-Iriani and Fatima Al-Shami (2007) testing for the relationship between FDI and growth in the six countries comprising the Gulf Cooperation and using heterogeneous panel analysis methods indicate a bi-directional causality. Their results support the endogenous growth hypothesis for this group of countries.

4. Methodology

Data was collected from the World Bank publications on GDP per capita of Rwanda and from Rwanda National Bank publications on FDI inflows of Rwanda which are in turn used to run a correlation analysis through SPSS Software Package. Through the correlation, the analysis of results follows regarding the effect of FDI on GDP per capita where FDI is recognizes as an independent variable and GDP per capita is recognized as a dependent variable.

5. Findings

The data is based of five years averages from 2008 to 2012.

GDP per capita in USD$ million from 2008 to 2012

YEAR	2008	2009	2010	2011	2012
GDP/ CAPITA	469.1961	504.1935	525.8549	574.8875	630.1084

Source : World bank

FDI Inflows in USD$ million from 2005 to 2012

YEAR	2008	2009	2010	2011	2012
FDI INFLOW	176.4	313.9	422.1	495.1	715.5

Source : - National bank of Rwanda, 2012

National bank of Rwanda, 2011

5.1 The correlation analysis

Correlations

		FDI Inflows	GDP per capita
FDI Inflows	Pearson Correlation	1	.988**
	Sig. (2-tailed)		.002
	N	5	5
GDP per capita	Pearson Correlation	.988**	1
	Sig. (2-tailed)	.002	
	N	5	5

**. Correlation is significant at the 0.01 level (2-tailed).

From the above SPSS correlation results between FDI inflows and GDP per capita in Rwanda, it can be seen that the correlation coefficient r= 0.988 which indicates a positive relationship between the studied variables. We therefore conclude that for each of the 5 year considered there is evidence that FDI inflows are related to GDP per capita with (r=0.988).

The positive relationship is attributed to many factors such as the improvement of investment climate and the awareness from the government of Rwanda for its scarce natural resources and landlocked by focusing on business regulation reform to attract foreign investment. It therefore results to private sector development as the key to creating jobs, bringing peace, generating wealth and ultimately eliminating poverty through t he increase of GDP per capita.

It is worth noting that the significant increase of FDI in Rwanda is explained by a macroeconomic and political stability brought about by several reforms in learning from the success stories of economies like Singapore since the early 2000s. From 2007 *Doing Business* report started being used as a tool to identify and learn from good practices in business regulation and to monitor improvement (World Bank, 2013).

5.2 Regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988[a]	.976	.968	11.3106781

a. Predictors: (Constant), FDI Inflows

After identifying the positive relationship from correlation analysis, comes the analysis of the strength of the relationship. With (R^2=0.968) implies that the variations in the GDP per capita are explained by the variations in the FDI inflows by 96.8% and the remaining 3.2% variations in GDP per capita are explained by other factors than the FDI inflows, thus, a positive relationship.

6. Conclusion

The findings of this paper confirm the strong and positive relationship between foreign direct investments (FDI) and the GDP per capita in Rwanda, which in turn yields a positive impact on economic growth. Along the years, the FDI inflows have been increasing, therefore resulting in an increase of GDP per capita. This is explained by the reforms undertaken by the government of Rwanda in making the country a favorable place for investments through the stability of macroeconomic and political environment.

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