

Impact of FDI on Organizational Development in Madagascar

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Abstract

The spectacular growth of FDI flow over the world has consistently become an attractive subject. FDI is considered an important element to fill the gap in job creation and promotion, and knowledge transfer to the host country. Recently however, policies and accompanying incentives to attract FDI have become questionable. This paper has considerably reviewed available literature on FDI and juxtaposed how organizations in Madagascar can benefit from FDI inflow. This research is considered descriptive in nature and made use of secondary. The interdependencies between FDI and OD were econometrically analyzed in using data on Madagascar within the period 1980 to 2015 (inclusive), Data was mainly assessed from INSTAT and Madagascar Central Bank, while other parts were collected from the website of the World Bank and other research papers and magazines. OLS was used in analyzing the data collected and the findings show strong relationship between FDI and OD, but the interdependency between the two variables are marginally significant.

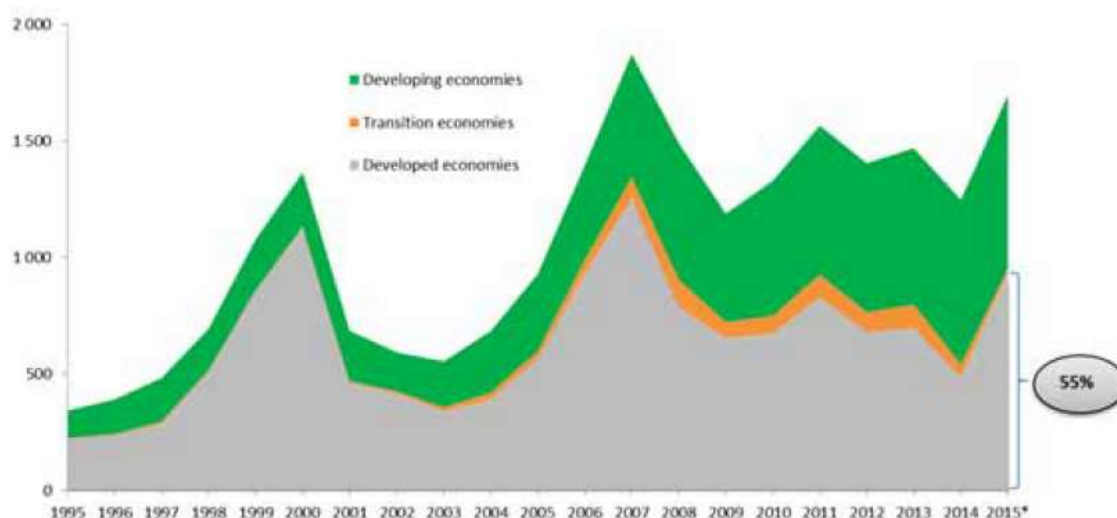
Keywords- FDI, OD, Economic growth, OLS

Introduction

The challenges of the 21st century cannot be wholly surmounted by a single country, relying only on domestic resources. Total dependence on domestic resources cannot assure an economy of the needed growth in organizations if these organizations can plunge into global prominence. It has been largely agreed that FDI has immensely contributed to economic growth of countries which have received them, in spite of the burden it seems to bring to local economies due to possible capital flight

The past decades have witnessed spectacular growth of FDI in the global economic landscape. In recent times, it has shown to claim to bring more benefits than international trade, or even world output. However according to the fragility of the global economy, so thus FDI flows performance, slowdown or speedup. World Bank (2013) points out that FDI has grown 17% per year on average over the last 10 years, even when accounting for dramatic decline after Global Financial Crisis. In 2014 however, according to UNCTAD, FDI inflow to developing countries reordered 4% higher than 2013 but total global FDI inflows dropped by 8%. It also noted that previously, FDI flow has only moved from developed countries to developing countries. It still occupied a huge part of FDI flow even later on when they were opened up to developing countries. As a matter of fact, FDI flow to developing countries continuously increased. FDI flow to developing countries was reordered greater than that of developed countries in 2012, according to UNCTAD. Available information further shows FDI flow to developed economies declined by 14% in 2014 while developing countries reached a new high of 5% higher in 2014. It should be noted that the United States has been considered the world's first largest recipient of FDI, from 2013; it gave way to China (with continuous increase of 3% since 2014). However among the top five FDI recipients in the world, three of them are developing economies. In spite of this remarkable economic phenomenon, developing Asian, African and Latin American countries remain faltered but this can be explained by high price of principal commodities export in these countries.

Figure 1. FDI inflows: global and by group of economies from 1995 to 2015 (Billions of US dollars)



Source: UNCTAD, 2016 (* Preliminary estimates)

Note: Excluding Caribbean offshore financial center

On the other hand, the faltered flow in Africa's economy could be explained by the damaged caused through colonization. However, in an attempt to overcome the economic slowdown among African countries economy, new economic policies and strategies were adopted to use their own resource capacities to attract foreign investors. FDI was not chosen only for the low interests it requires, which is typically more convenient than facilities granted by the World Bank and international Monetary Fund, but mostly because of the new window of opportunity in gaining access to the international market as well as the challenge within international companies around the world. FDI is one of the best means to facilitate the development of Africa to ameliorate their economics plights and hardships and open them to other horizons, yet with increased and wide competition is.

The reliance of economies on organizations (firms) for economic development implies some economies will do better than others. Similarly, the better a country's organization, the more investors that country can attract. Somehow, countries will differ from others based on the level of competition. Whiles for some, competition breeds creativity and grows brilliant ideas to attract foreign investments. In the case of Madagascar, being part of developing countries, the reason to attract FDI would differ but can be summarized as overcoming economic problems, bridging economic gaps and income inequality, and offering better future for its citizenry.

Overview of FDI in Madagascar

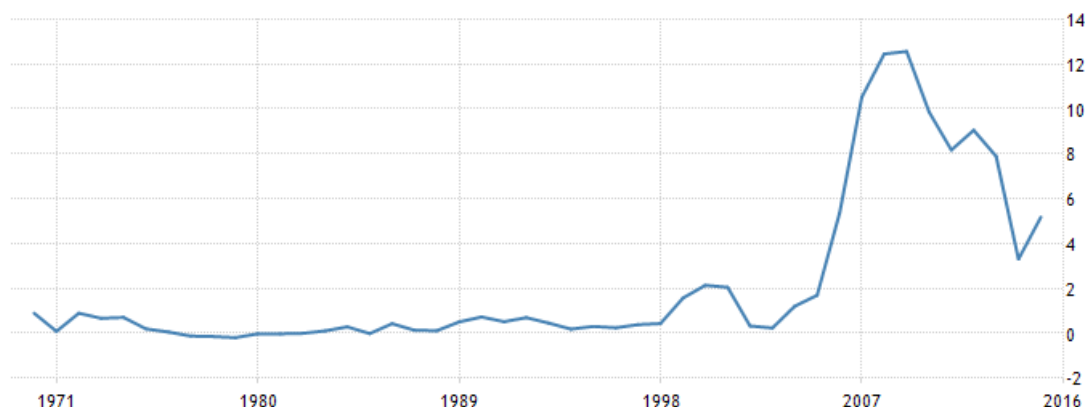
Basically known as the foreign ownership of production facilities in Madagascar, FDI gained the trust of the country and started operate with the companies from early 70's. Up to now, the average value for the country was recorded to be 2.1% with a minimum of -0.19% in 1979 against 15.13% in 2009 according to the World Bank and Madagascar Statistics National Institute (INSTAT). Apparently, the economic reform taken by the government brought an amazing change in the history of FDI to the mainland. In fact, the spectacular changes were mostly noticed from 2006 which represented an average of 5.3% against 10.5% of nominal GDP in 2007. During that period, FDI flows were mainly concentrated in two activities which are the financial activity and manufacturing activity (each represented 12% and 6%). Unfortunately despite the surge in FDI flow from 2006, the global economic crisis in addition to the major political crisis that crossed the country in 2009 entails 47% drop of the FDI flow compared to the previous year. Be that as it may, several investors delayed or even suspended their projects until new order of political stability. Even though the first semester of 2009 recorder an increase to USD 954 million, compared to the same period in 2008, which amounted to USD1.15 billion, represented a decrease of 17%.

And yet even after the election of a new president in 2014, investors still remain cold and hold their projects, which is urging the activity economic of the country to slowdown up to now. For instance in 2013, FDI flow

was 32.2% lower than in 2012, which can be explain mostly by the changing of the mining project management life cycle from planning into execution phase but also the country was still under transitional authority.

In 2014, Madagascar received only USD 290 million of FDI which is a drop compared with USD 500 million for the previous year.

Figure 2. Foreign Direct Investment net Inflow in Madagascar (% of GDP)



Source: World Bank

Notice that INSTAT Madagascar revealed that up to 2006 France was known to be the first and had the highest percentage of FDI flow over the country. However from 2006 to 2011, France has always been in the third place and back in the first place again in 2013. France has been operating in different activities sectors such as financial, manufacturing and telecommunication activities. Over the year, despite the change of the main source of FDI in Madagascar, France, Mauritius and Canada were always on the list. Mainly according to the analysis directed by the Federal Ministry for Economic Cooperation and development, the investor from European and American countries are interested in the production of agro-fuels whereas Asian countries are mostly focusing on food production.

According to Central Bank, FDI inflow was USD 1.12 billion or 11.8% of GDP against 10.5% in 2007. However, despite the 31% increase in 2007, compared to the previous year, there was 76% drop in 2008. During that period, FDI flow was divided as follows: 85.5% or USD 958.5 million to Industry sector, 7.71% to telecommunication which represented USD 86.5 million, and transportation activities received 2.22% or exactly USD 24.8 million of FDI flow. However, according to Central bank of Madagascar, FDI inflow in 2012 increased with an amount of USD 894 against USD 809 for the previous year, which can be explained by the temporarily closure of QMM/Rio Tinto due to security and economic problems.

In term of FDI stock, statistics from Central Bank pointed out that there was an increase of 56% between 2007 and 2008, which respectively represent USD 1.99 billion and USD 3.12 billion each. Moreover between 2005 and 2008, FDI stock increased continuously due to the mineral project of QIT Madagascar (RIO Tinto), and also the Ambatovy project (Nickel and cobalt). As same as FDI inflow, Industry sector as well represented the highest percentage of FDI stock (73%), followed by construction and public works with 5.6%, and 4.4% goes to telecommunication activities while financial services represented only 3.9%.

Among the several facts that drive the country to attract FDI was because it provides new technological management, promotes jobs, facilitates the production transfer but above all, it boosts the economy. However, due to the political faltered that damaged the country almost every 10 years, government after government make their best to help the country to stand out from the herd. So thus up to now, the economic activities in the country are stemming.

Despite the potential the country represents, the poor quality and the high cost of construction like roads, electricity, telecommunications, but also the limited resource and financing instruments are the main obstacle for foreign investors.

It is worth to point out that Madagascar has broadened the source of FDI during the period of reform, and according to INSTAT Madagascar, despite the challenges and the fragility of the economy, foreign investors might suspend their projects within a short period but after a solid economic growth and political stability, the volume of FDI share increased. FDI's share in the country gathered almost all the activities, but lately they have been focused on mining and manufacturing activities as we mentioned before.

There has been several articles analyzing the trend of FDI in Madagascar but none of their evidence has been conclusive in term of the effect of FDI on Madagascar's economic growth. To the best of our knowledge, our paper is unique in this respect.

Theoretical Literature

There is a large increase of empirical literature concerning FDI and economic growth. Although the evidence of the impact of FDI on Organizational Development does not always provide clear support, it is generally admitted that FDI have relationship with OD. To lighten that correlation, a wide range of literature is needed.

Due to the speed at which the developed countries are growing and changing economically, many agree that FDI is vital for developing countries. Alfaro et al (2004) points out that because of the debt issue such developing countries were facing in the 1980s, FDI received a warm welcome. However now it is more because of the thought that FDI can help them improve the bad shape of the economy. Lately, FDI put more interest in developing countries, as the United Nations (2005), assumed that while FDI inflow to developing countries increased by 40% compared to 2003, the one to developed countries dropped by 14%.

Moreover, the contribution of FDI towards developing countries is claimed to be crucial for their economy to develop faster and catch up with the developed economies. Leonid Melnyk et al. (2014) supported and argued that current successful economic growth of developing countries is explained by the "catching up effect" in technological development with developed countries. Generally speaking, the positive impact of FDI in one country can be explained by technological diffusion originating from firms receiving foreign capital and sharing to related companies in form of technical support of suppliers and employee training. Accordingly, Xolani (2011) stated that FDI can be a benefit for a developing country like South Africa, not only by supplementing domestic investment but in term of job creation, transfer of technology, increasing domestic competition and other positive externalities that come with the attraction of foreign investors.

Considering as the key element of globalization and the world economy, Smith (1997) Asiedu (2004), Quazi (2007), also added that FDI serves as a source of capital, stimulates domestic investment, creates employment, promotes the transfer of technology and enhances economic growth, (World Bank, 2002). Furthermore, Mencinger (2003), Alfaro, Chanda et al. (2010), pointed out that FDI should not only increase the economy but it is supposed to be more effective in boosting the host country's economic growth than domestic investment.

Due to the importance of FDI pointed out, each country has long sought to use different policies and agreements to stimulate FDI. As lower tax seems to attract FDI, African countries have used tax holidays, known as tax incentives (Hanson 2001), while Western European countries have instead allowed faster depreciation of capital or investment allowances (Morisset & Pirnia, 2001).

Meanwhile, some studies found evidence that FDI also negatively affects the host country's economy. Based on the literature from Blomstrom (1994), FDI flows can differently affect economic growth depending on certain set of parameters such as wealth of the country, level of human capital and trade policy regime (Borensztein et al, 1998), level of financial market development (Alfaro, 2003), level of government regulation (Busse and Groizard, 2006) and FDI entry mode (Neto et al, 2008).

Maria Carkovic and Ross Levine (2002) gave and evidence that the exogenous of FDI does not exert a robust, independent influence on growth. Furthermore, Ocaya, Ruranga and Kaberuka (2013) in their study of the relationship between FDI inflow into Rwanda and economic growth, after using Granger causality tests conclude that they are independent from each other. Moura & Forte (2009) argued that the way of use

of technology in FDI performing firms can have negative impact on economic growth through the labor force, while improving the human capital level can therefore boost economic growth (Ozturk, 2007). Concerning developing countries such as Africa, Mary-Ann Juma (2012) assumed that if FDI has not successfully enhanced economic growth in the past, then African policy makers should not expect a sudden improvement in its performance in the future. That evidence was lightened by Brecher and Diaz-Alejandro (1977) saying that foreign capital can lower the economic growth by earning excessive profit in a country with severe trade distortions such as high tariffs.

However, according to the previous literatures, we can cautiously state that despite the fact that FDI may not always be better for the host country, it takes part in the performance of the economy and yet many countries still actively attract it.

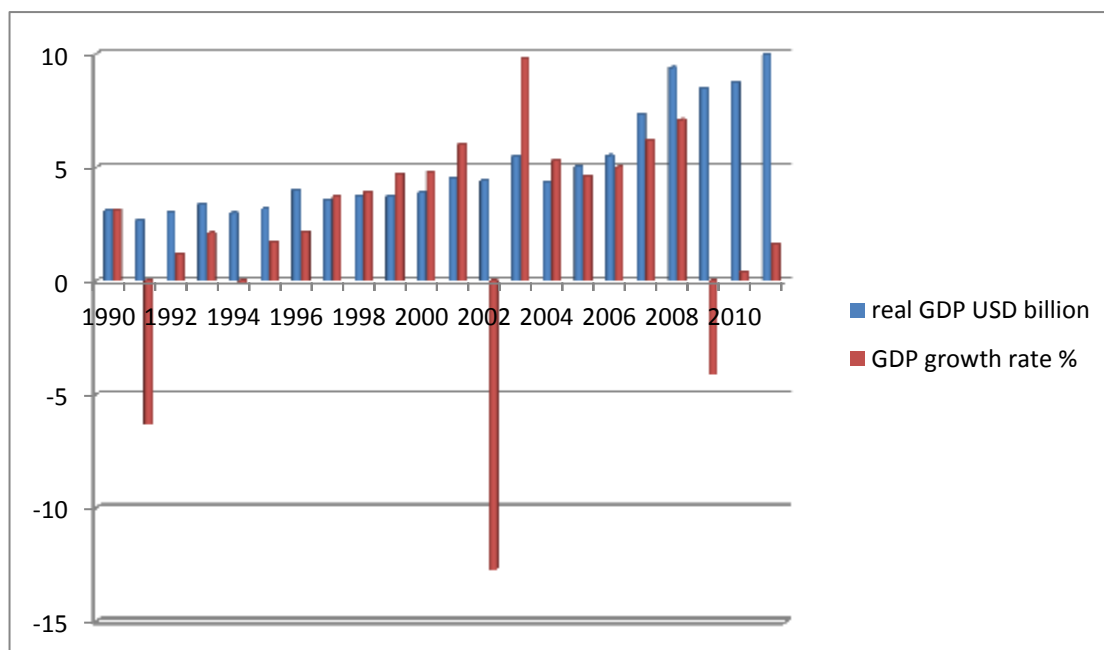
Implication of FDI on Economic growth in Madagascar

The crises that happen to the country almost every ten years resulted in a decline in economic growth. Be that as it may, economy activity slowdown, the financial aid for the country is interrupted and revenue from tourism slumped. Apart from that, the socio-political crisis that happened in the country brought nothing but drop of production, high inflation rate while tax income decreased. According to INSTAT Madagascar, Madagascar's GDP annual Growth Rate only gave the average of 1.92% from 1961 to 2015. However, it is worth noting that the International Monetary Fund (IMF) and World Bank reform in 1989 triggered an outstanding progress in the economy activities. The reform brought out a good result, as 1997 and 2011 GDP growth recorded an increase of 4.5% and debt ratio fell from 46% to 15.4%. Yet, the political crisis in mid-2002 affected immediately the economy activities of the country and caused a drop of 12% of real GDP, and inflation rate peaked to 15.8%. Within 6 months, the economy started to take place and rapidly the foreign investors returned to their projects. However in 2003, the real GDP reached 9% and the inflation rate decreased sharply (less than 2%). Compared to the following years, investment rate accounted 6.2% of GDP against 22.4 in 2004. The spectacular change was mostly driven from the new policy that the government build up which was the business-friendly economic and other financial policies but also the initiative taken by the government under the Heavily Indebted Poor Countries (HIPC).

Despite the continuous growth in 2005, real GDP growth decreased and recorded 4.6%, which is lower than the precedent years. This can be explained by the increase of world oil prices, expensive electricity and frequent blackouts caused by the financial crisis at the national Power and Water Company (Jiro sy Rano Malagasy said JIRAMA,). Although growth was up slightly in 2006, it was farther threatened by persistent structural problems linked to public finance management, the poor activities of the sector and the poor business climate that discouraged private investors. It shall be noted that the economy of the country depends mainly on agriculture activities (for instance in 2002 agriculture activities recorder 27% of GDP, with a total amount of USD 4.5 billion).

In general, between the two political crisis (2002 and 2009), Madagascar embarked on an ambitious transformation path that brought gradual improvement in social, economic and governance indicators, which recorded an average 5% of economic growth per year. After agriculture activity, transportation, industry also represents high percentage of GDP. For example in 2007, agriculture and transportation recorded 26.9% and 23.7% of GDP while industry represented 12% of GDP and public administration had 5% share.

Figure 3. Madagascar Real GDP and Growth rate



Source: INSTAT Madagascar, author

2009 has been another remarkable year for Madagascar. Political crisis which turned to an economic crisis spoiled again the efforts that have been made previously. Quickly the economic growth sharply declined, after peaking at 7.1% in 2008, GDP growth slumped to negative 4% in 2009 with an annual GDP of USD 20.50 billion and only USD 1,000 of purchasing power parity. However, the prudent fiscal and monetary policies kept the macroeconomic framework of the country under control, which gave reasonable fiscal and external balance but also financial indicator and exchange rate were relatively stable. Despite the suspension of Madagascar from African Growth and Opportunity Act (AGOA), South African Development Community (SADC) and IMF, the inflation rate remained around 9%, and foreign reserve was stable at around USD 1 billion in 2010.

After the crisis in 2009, overall investment dropped from 18.8% in 2010 it to 14.9% of GDP in 2011, as a result of the less development aids and also the end of the installation phase of the two big projects over the country. The extractive industries with production scaling up at large foreign-owned mines, and the recovery of tourism sector sustain the growth in 2010.

Concerning the low level of foreign trade despite the fact that Madagascar relies heavily on assistance from European Union members and international agencies as well as bilateral convention, the annual result revealed that the value of import is usually higher than the value of export. Imports are more from capita and consumer goods, petroleum and food product while leading export is mainly coffee, vanilla, shellfish, chromite and textile.

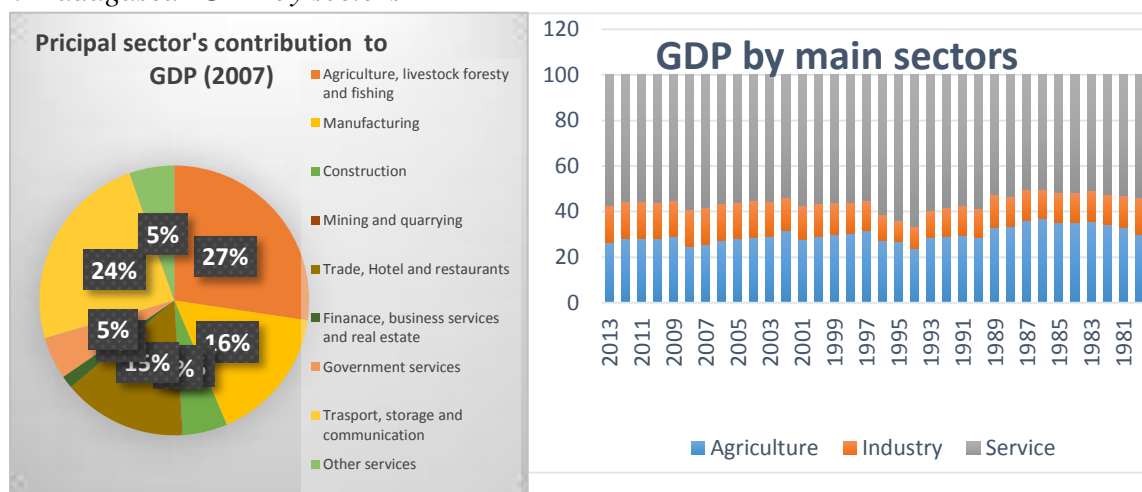
Triggered by the new government established in 2013, the economy activities continued to improve even only with a growth of 3% in 2014 which was slightly up from 2.4% in 2013. To be more specific, Madagascar's government revenue was 11% of GDP with 12.54% of government spending in 2013. During that period, growth was mainly relied into industries, agro-industry, banks, transport, livestock and fisheries. Poverty rate was above 53% with an inflation rate of 7.3%.

Private investments were also damaged from the crisis, which resulted in a decrease of 8% and 12% respectively. Due to that fact, if the percentage of unemployment in 2005 was only about 3.8%, it was really high in 2010 and reached 62.7%. As we mentioned before, Agriculture occupied a large percentage of Madagascar's economy. In 2013, if manufacturing and industry represented 16.15% of GDP and employed

3.7% of the population, agriculture occupied 26.37% of GDP and employed 80.4% of the population. However, compared to the other countries, the productivity remained low.

In addition to the natural disasters like cyclones, sever budget cuts on investment and maintenance, the infrastructure activity was totally deteriorated. The majority of roads in the country are unpaved, and almost 75% of the railways stopped working in the 1990s due to the rehabilitation of the equipment. Generally, the transport sectors used to be among the most active and contributed higher percentage to the GDP (27% in 2007).

Figure 4. Madagascar GDP by sectors



Source: INSTAT, World bank
Author's calculation

Despite the political crisis, financial activities started to progress by 2.5% after peaking at above 116.5% in 2012. Literally part of the sector service, the financial activities alone represent low percentage to GDP (1.5% in 2007). It may be explained by the lack of stock exchange and the shareholding culture.

The government effort along with the contribution from the different sectors to help the country to reduce the poverty and unemployment as well as reinforce the economic reform, an underestimating GDP growth of 2.8% is expected for 2016. Note that Madagascar has a large available labor force which can be used to attract foreign investors.

Food sector was supposed to have a high potential to attract FDI and provide more job for the farmers especially in palm oil, corn and sugar but unfortunately some complications concerning the land tenure deterred the investors.

Concerning the mining companies, there has been an improvement of the situation in 2013 which resulted in the potential return of the investors. In fact, Sherritt Company started the nickel and cobalt project with an estimated cost of Euro 4 billion. On the other hand, the oil field in the onshore Morondava basin started in 2014 and the Rhodia French Company intends to invest in the northwest of the country. In addition, after the election of new president, Madagascar was allowed to rejoin African growth and Opportunity (AGO) in January 2015, and also got USD 42.1 million from International Monetary Fund (IMF) to help the government to meet its balance of payment needs.

Furthermore, tourism sector was not excluded from the damage caused by the crisis. Due to the security problems and political issues that affected the country, investors in tourism sector are wary of entering the uncertain investment environment and cut their projects which caused a drop of more than 50% in 2009 compared with the previous year. Even though the income decreased about 61.7%, there was 8.05% increase in hotel which gives 6.38% increase of job creation in 2011.

Research methodology and analysis

Based on the previous literature and similar studies on FDI especially across the country, structural form of econometric model is not indefinable. By doing so, we will use linear regression analysis to determine the level of the impact of FDI on OD in Madagascar, but also the same model will be used to see the long-run correlation between the explanatory variable. For this instance, other macroeconomic variable will be used as independent variables to quantitatively gauge the causal relationship between FDI and OD. We will use panel of time series data and restrict our analysis within the period of 1980 to 2015 which includes 36 annual observations. The reason of using panel data was therefore to reduce multicollinearity (Basu and Yao, 2009).

In that case, following the linear regression model:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \quad (1)$$

We can introduce the correlation between the dependent variable and independent variable as following:

$$GDP_i = f(FDI, DI, CIN, EMR) \quad (2)$$

Accordingly

$$\ln GDP_i = \beta_0 + \beta_1 FDI + \beta_2 DI + \beta_3 CIN + \beta_4 EMR + \varepsilon_i \quad (3)$$

Meanwhile, the statistical methods to analyze the correlation of FDI and OD will include OLS, Unit root test as well as Granger causality test and Error correction model (ECM) if needed, so thus the linear model has been adjusted as follows:

$$\begin{aligned} \ln GDP = & \beta_0 + \sum_{i=1}^m \beta_{1i} \ln FDI_{t-1} + \sum_{i=1}^m \beta_{4i} \ln DI_{t-1} + \sum_{i=1}^m \beta_{2i} \ln CIN_{t-1} \\ & + \sum_{i=1}^m \beta_{3i} \ln EMR_{t-1} + \varepsilon_i \end{aligned} \quad (4)$$

Where the yearly grow of GDP or Gross Domestic Product is used as the proxy of Organizational Development.

Knowing that the development of one country rely on the capital accumulation, increasing investment in Madagascar is the key policy objective. Therefore, Foreign Direct Investment as part of it will be our first independent variable. Basically, FDI inflow will be the proxy of FDI.

Contributing to the operation and development of one country, the participation of Domestic Investment toward the country is necessary for our analysis. Through the analysis we can see whether the Domestic Investment in Madagascar has an impact on the Organizational development of the country, but also if FDI stimulates or slows down the domestic investment's performance. We use DI to denote it in our model. Note that since the rate of DI was not available for Madagascar, we calculated it by subtracting the value of FDI to GDP ratio to the gross fixed capital formation (GFCF). Basically, GFCF is the investment in private sector.

According to the literature review as well, FDI are assumed to bring impact by transferring technology and increasing the productivity to the host country. So thus, since the productivity is an important location factor to determine the economic performance, we are using the data from change in inventory as a proxy of the productivity and we nominate it as CIN in our model.

As the main objective of the paper is to analyze the effect of FDI on Organizational development in Madagascar, Employment rate is taken to measure the influence of FDI on labor markets. On our model, EMR denote the Madagascar employment rate.

Concerning the mathematical symbol, ε_i denotes residual variable while β_0 denotes constant and β_{1-n} represents the slope or the coefficients of the explanatory variable.

Moreover however, before we go to the examination of the dependencies between FDI and OD, the Unit Root Johansen Cointegration is first taking in consideration to run the existence of long-run relationship and remove the non-stationarity between the chosen variables. We are doing it so, using panel regression, that

we can see how the change in independent variables can affect the Organizational Development. Thereby, we formulate it in null and alternative hypothesis as:

H_0 : the effectiveness of FDI in sector does not affect the likelihood of successfully managing organizational change

H_1 : the effectiveness of FDI in sector affects the likelihood of successfully managing organizational change

Be that as it may, we can accept

H_0 if $\rho = 0$ and ADF > ADF critical value → accept null hypothesis which means basically that there is Unit Root, it means that the data is non-stationary.

H_1 is if $\rho \neq 0$ and ADF < ADF critical value → reject the null hypothesis because Unit Root does not exist, or using other words, the data is stationary.

Table 4.1. Unit Root Johansen Cointegration test

Null Hypothesis: Unit root (individual unit root test process)
Sample: 1980-2015
Included observations: 34 after adjusting endpoint ** 33 after adjusting endpoint
Series: GDP FDI DI CIN EMR

		Level		
Critical value*		1%	5%	10%
		-4.2505	-3.5468	3.2056
GDP	ADF Test	-1.78436		
	Coefficient	-0.151379		
FDI	ADF Test	-2.995545		
	Coefficient	-0.581423		
DI	ADF Test	-3.211055		
	Coefficient	-0.568455		
CIN	ADF Test	-1.940618		
	Coefficient	-0.330208		
EMR	ADF Test	-3.493214**		
	Coefficient	-0.650937		

Source: Author's calculation

*MacKinnon critical values for rejection of hypothesis of Unit Root

** Significantly low level at 5%, rejection of null hypothesis

Accordingly, all the equations were tested by the least squares method using automatic lag length selection. Apart from employment rate which is stationary at 5% level, the rest of the variables failed to reject the null hypothesis. That is to say that we have to run the stationary at first level to correct the error.

Table 4.2: Unit Root Johansen Cointegration test

Critical value*		Level		
		1%	5%	10%
		-4.2605	-3.5514	-3.2081
GDP	ADF Test	-4.750136		
	Coefficient	-1.505613		
FDI	ADF Test	-5.717390		
	Coefficient	-1.639564		
DI	ADF Test	-5.244716		
	Coefficient	-1.413131		
CIN	ADF Test	-5.296610		
	Coefficient	-1.577939		
EMR	ADF Test	-4.926382		
	Coefficient	-1.310421		

Null Hypothesis: Unit root (individual unit root test process)

Sample: 1980-2015

Included observations: 34 after adjusting endpoint ** 33 after adjusting endpoint

Series: GDP FDI DI CIN EMR

*MacKinnon critical values for rejection of hypothesis of Unit Root

Source: Author's calculation

The table above report the result of Unit root tests for all the chosen data. As can be seen, after running at first difference of trend and intercept, the results indicate that the ADF critical value at 5% is greater than the T-value for all the variables suffice to say that null hypothesis is rejected and all variables are stationary.

In spite of the significance of the value of T-statistics for our variables, we can proceed to run other tests. Besides the Unit Root test, as we aim to investigate the correlation between FDI and Organizational development, OLS now is adopted to estimate the long term relationship between the variables. In doing so, same as for Unit root test, we also reformulate the hypothesis in null and alternative as

H₀: FDI damage the country's economy

H₁: FDI led growth in behalf of knowledge transfer, job creation and tax payment

So thus we are going to use our model (3) to estimate how the explanatory variable impact our GDP

$$\ln GDP_i = \beta_0 + \beta_1 FDI + \beta_2 CIN + \beta_3 UMR + \beta_4 DI + \varepsilon_i$$

Table 4.3: Ordinary Least Square test

Dependent Variable: GDP
 Method: Least Squares
 Sample: 1980-2015
 Included observations: 36

Variable	Coefficient	T-Statistic	Prob.
C	6.12E+10	1.509309	0.1413
FDI	3.758393	2.866289	0.0074
DI	1.665563	1.677550	0.1035
CIN	10063322	1.640107	0.1111
EMR	-5.99E+08	-1.437224	0.1607
R-squared	0.703095	F-statistic	18.35267
Adjusted R-squared	0.664785	Prob. (F-statistic)	0.000000

Source: Author's calculation

After the result obtained using OLS estimation technique, we can see in equation the dependencies of Organizational Development with the other variables as follows:

$$\text{GDP} = 6.12\text{E}^{+10} + 3.758393\text{FDI} + 1.665563 \text{DI} + 10063322\text{CIN} - 5.99\text{E}^{+08}\text{EMR}$$

Be that as it may, if FDI changes with about USD 3.76 million then GDP will also increase by that amount. Thought Domestic Investment and Change in Inventories as well brings positive impact on the Organizational Development of the country. Alas, Employment rate have negative relationship with GDP. As can be analyzed by its coefficient value, a change of 6% of EMR will decrease the development of the country by 6% too.

Note that the coefficient of C represents the value of GDP, it means that holding the value of the explanatory variables used in the regression constant, USD 61.2 billion represents the value of GDP. Furthermore, all the variables can impact the GDP at 70% (the 30% represent the external factor that are not included in our equation).

After all, looking at the F-stat, the 0.00 value of F-stat is statistically significant at 5% which can be conclude by the rejection of the null hypothesis. Aside, $\beta_0 \neq 0$ can be explained that there is relationship between the GDP and the explanatory variables viz. FDI, DI, CIN, EMR.

Finding and Conclusion

As part of the main factors that recently influenced the world's economy expansion, FDI has now become an important tool in worldwide competition, as it also is clammed as a mechanism connecting national economy. Be that as it may, to confront contending hypothesis about Organizational development in Madagascar, we could run several tests using time series data (1980-2015). First of all, the cointegration tests were employed to estimate the log-rung relationship between the variables and we found that all variables were stationary at 5% of first difference of trend and pattern. Then we pursued by analyzing the correlation between the dependent variable and the explanatory variable, in which we manage to conclude that there is a strong positive relationship between OD and the explanatory variables.

Accordingly, we can assume that the performance of FDI in the country is necessarily needed to help the organization in Madagascar to develop by bringing new technology, affecting the labor market and

contributing to the tax payment. Known as job promoter, according to the analysis that we have done, FDI adds value to the sharing of employment to different sectors.

To conclude, the previous studies on the impact of FDI on OD in Madagascar have largely proved that there is strong relationship between Organizational Development and FDI, but also the evidence showed that FDI was a phenomenon needed to boost Organization Development of Madagascar. Nevertheless, we could understand from our work the main reason of the low level of FDI flow in Madagascar which can be explained by the weakness of juridical and bank system with high level of interest rate but not enough credit. But also, the high cost but low quality of energy (provided by only one company named JIRAMA), the high level of tax rate, the poor transparency of decision-making and the high cost of transport. Apart from the macroeconomic problems, we can see also the lack of understanding or even resistance to change.

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