Online ISSN : 2249-4588
Print ISSN : 0975-5853
DOI : 10.17406/GJMBR

Global Journal of Management and Business Research: C

Finance

Price and Exchange Rates

Impact of Foreign Exchange

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Electronic Payment System

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VOLUME 17 ISSUE 6 VERSION 1.0

Global Journal of Management and Business Research: C
Finance

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Volume 17 Issue 6 (Ver. 1.0)

Open Association of Research Society

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

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Framingham Massachusetts Pin: 01701,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
2nd, Lansdowne, Lansdowne Rd., Croydon-Surrey,
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Packaging & Continental Dispatching

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22 USD (B/W) & 50 USD (Color)

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200 USD (B/W) & 250 USD (Color)

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Global Journal of Management and Business Research

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Global Journal of Management and Business Research: C
Finance
Volume 17 Issue 6 Version 1.0 Year 2017
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Nexus between Stock Price and Exchange Rates: Empirical Evidence from Sri Lanka

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Abstract- The purpose of this study is to examine the relationship between stock price and exchange rate in Sri Lanka. Monthly, All Share Price Index (ASPI) and exchange rate of US dollar and Euro from January 2005 to December 2016 were retrieved from Colombo Stock Exchange (CSE) website and Central Bank of Sri Lanka's monthly publication of Selected Economic Indicators. Unit root test, co-integration test and causality test were applied to test the relationship between stock price and exchange rates. The unit root test proves that in the first differences, there is no unit root. Cointegration test shows that there was no long-run stable equilibrium relationship and causality test revealed. There was no direction of causality stock price to exchange rate and exchange rate to stock price.

Keywords: *exchange rate, all share price index, US dollar, Euro.*

GJMBR-C Classification: *JEL Code: H54*

THE NEXUS BETWEEN STOCK PRICE AND EXCHANGE RATES EMPIRICAL EVIDENCE FROM SRI LANKA

Strictly as per the compliance and regulations of:

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Koperunthevy Kalainathan [α], Pratheepan, T [α] & Selvamalai, T [σ]

Abstract- The purpose of this study is to examine the relationship between stock price and exchange rate in Sri Lanka. Monthly, All Share Price Index (ASPI) and exchange rate of US dollar and Euro from January 2005 to December 2016 were retrieved from Colombo Stock Exchange (CSE) website and Central Bank of Sri Lanka's monthly publication of Selected Economic Indicators. Unit root test, co-integration test and causality test were applied to test the relationship between stock price and exchange rates. The unit root test proves that in the first differences, there is no unit root. Cointegration test shows that there was no long-run stable equilibrium relationship and causality test revealed. There was no direction of causality stock price to exchange rate and exchange rate to stock price.

Keywords: exchange rate, all share price index, US dollar, Euro.

I. Introduction

Stock market gets an important role in an economy because its contribution to Gross Domestic Product (GDP) is high. The stock price is an indicator of the stock market's well-being and reflects the listed companies future corporate performance also. Macroeconomic variables and companies internal factors are the two major branches which determine stock price. Therefore, the decisions regarding macroeconomic policies have a casual relationship with stock prices (Wickremasinghe, 2011; Kalainathan and Kaliaperumal, 2013).

After the introduction of floating exchange rate system, the foreign exchange market gets attention by the financial economists. This exchange rate is one of the important factors that has tremendous influences in both the short term and long term period on an economy. On the other hand, foreign exchange market and stock market activities are closely observed by the economists as a result of adoption of the floating rate system and open economic policy. The foreign direct investment was increased. This is the reason behind two effects; both the stock market and exchange rate are inter-related and may cause economic growth or economic crisis. So, the link between these two markets is by a reference to portfolio approach to exchange rate determination (Bahmani-Oskooee & Sohrabian, 1992). In this approach, wealth is one of the determinant factors of exchange rate. At the same time, increases of stock price cause to increase the public wealth and create the demand for money and therefore, interest rates (Bahmani-Oskooee&Saha, 2015).

Further, to get more foreign investment, domestic currencies are appreciated.Conversely, the depreciation of domestic currency increases exports and increases the profits of the exporting organizations' stock prices. In addition to that, the depreciation of domestic currency leads to increase the production cost because of the imported raw materials and lead to low profits. Therefore, the exchange rate and stock prices may move in either direction.

The empirical studies regarding the relationship between stock prices and exchange rates show contradictory results. In Sri Lankan context also, the relationship between stock price and exchange rate shows contradictory results. Wickremasinghe (2011) proved that there is both short and long term relationship between stock price and exchange rate and Amarasinghe and Dharmaratne (2014) argue that stock return is not a significant factor for exchange rate changes. Wickremasinghe (2012) also proved that most of the variance of stock price explained by Indian rupees with other currencies with a little variation. Therefore, this study focuses on the relationship between stock price and exchange rate in Sri Lanka.

II. Literature Review

The financial economist started to examine stock market activities and exchange rates and its relationship from late 1970s because of the introduction of floating exchange rate system. From that period, many previous studies focused on the relationship between stock prices and exchange rate in both developed and developing countries. However, the relationship between these two variables is still debatable because the interaction between stock market and exchange market creates profit for their investors and the previous studies show contradictory results for decision making.

Further, the relationship between stock price and exchange rates were explained by the classical economic theory with flow-oriented and portfolio balance model. While exchange rates determine the stock price, the discount rate is also being affected. This discount rate determines the corporate value, exchange rate and future cash flows (Dornbusch & Fisher, 1980). In addition, the exchange rate variation determines capital flows and in this situation, capital structure,

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Global Journal of Management and Business Research (C) Volume XVII Issue VI Version I Year 2017

profitability, corporate value, stock prices, and cash flows are being affected (Branson *et, al.,* 1977). Further, the exchange rate fluctuations impact on the corporate cost of capital also (Phylaktis & Ravazzolo, 2000).

Aggarwal (1981) used the monthly data of aggregated index of stock price and effective exchange rate of the US dollar from 1974-1978 and proved a negative relationship between stock price and exchange rate. But, a contradictory result was showed by Soenen and Hennigar (1988). After the Asian financial crisis of 1997, Granger, Huang and Yang (2000) studied the interaction between stock price and exchange rates of nine East Asian counties of Hong Kong, Japan, Malaysia, Indonesia, South Korea, Singapore, Thailand, Philippines and Taiwan by using Gregory Hansen cointegration test and Granger causality test and proved a mixed result. In Japan and Thailand exchange rate influences on stock price positively and in Taiwan it is negatively influenced. Feedback effect shows in Indonesia, Malaysia, Philippines and Korea and there is no any pattern in Singapore.

Nieh and Lee (2001) investigated the same variables in G-7 countries by using daily data from 1993-1996 and proved a short-term relationship between stock price and exchange rates and thus last one day for certain G-7 countries. But, the same relationship was investigated in Bangladesh, India, Pakistan and Sri Lanka by using Engle-Granger and Johansen's cointegration techniques. The result of the study revealed that there is no any long-run equilibrium relationship between stock price and exchange rate (Smyth &Nandha, 2003). In New Zealand, the relationship between five exchange rates and performance of stock market was analyzed. Cointegrating VAR approach used to prove the weekly data from 1999-2005 and the results revealed that there was a bi-directional causality between the selected five exchange rates and a couple of share market indices (Obben, Pech&Shankur, 2006). The bi-directional relationship was also proved in Bangladesh, Sri Lanka, Taiwan and Japan also (Muhammad & Rasheed, 2003; Yau&Nieh, 2006).

Tudor and Popescu-Dutaa (2012) comparatively investigated Granger causality between stock prices and exchange rates movement in 13 developed and emerging markets from 1997 to 2012. The results of the Granger causality test prove that Korean stock market Granger causes the USD exchange rate. But, the Brazil exchange rate has an impact on next month stock market index returns. During the Asian financial crisis, seven Asian countries were included for Granger causality and Johansen cointegration test to find out the relationship between stock price and exchange rates using daily data from 1988-1998 and it was concluded that there is no long-run equilibrium relationship between stock price and exchange rate (Pan *et al.,* 2007). The same result that there is no long-run relationship between stock price and exchange rate, was also proved by Ismail and Isa (2009); Rahman and Uddin (2008, 2009); Kutty (2010); Zhao (2010); Alagidede, Panagiotids and Zhang (2011); Wickremasinghe (2012); Buberkoku (2013); and Unlu (2013) by using Johansen cointegration test and Granger Causality test.

Some contradictory results were also found in some studies. Richards et al., (2009); Tian and Ma (2010); Harjito and McGowan (2011); Katechos (2011); Lean *et al.,* (2011); Lee *et al.,* (2011); Parsva and Lean (2011); Eita (2012); Inegbedion (2012); Aslam and Ramzan (2013) analyzed and proved that there is a long-run relationship and variables that are cointegrated. When considering the prior studies, there are some contradictory results observed in Sri Lanka and other developed and emerging markets. These results revealed that the relationship between stock price and exchange rate yields mixed results.

III. Methodology

a) Data

The monthly data of exchange rate of US dollar and Euro were retrieved from the Central Bank of Sri Lanka's monthly publication of Selected Economic Indicators and the stock price of Colombo Stock Exchange (CSE) from the CSE web site (cse.lk) from January 2005 to December 2016. The stock price used in this study covers the All Share Price Index (ASPI) of the listed Companies in Sri Lanka.

b) ADF Test for Unit Root

Dickey and Fuller extended their initial unit root test in 1981 to eliminate the problem of autocorrelation by allowing extra lagged terms of the dependent variables as an explanatory variable. The three possible types of models of ADF test are given bellow.

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{k} \beta_i \Delta Y_{t-i} + u_t \quad (1)$$

$$\Delta Y_t = \alpha_0 + \delta Y_{t-1} + \sum_{i=1}^{k} \beta_i \Delta Y_{t-i} + u_t \quad (2)$$

$$\Delta Y_t = \alpha_0 + a_1 t + \delta Y_{t-1} + \sum_{i=1}^{k} \beta_i \Delta Y_{t-i} + u_t \quad (3)$$

For the purpose of estimating co-integration model, among these three models, the study allows model (3) where constant and deterministic trend are included. The model (2) and model (3) can be written as Equation (4) which is the general case for both the models.

$$\Delta Y_t = \sum_{i=0}^{p} \alpha_i t^i + \delta Y_{t-1} + \sum_{i=1}^{k} \beta_i \Delta Y_{t-i} + u_t \quad (4)$$

In generalized model (4), p allows to take only 0 and 1. If p is equal to zero (p=0), the model (4) allows only constant term in the above model (4) and if p is equal to one (p=1), the model (4) allows only constant and deterministic trend in the above model.

Ng-Perron Test for Unit Root

Before coming to Ng-Perron Test, consider the following model;

$$\Delta\tilde{y}_t = \sum_{i=0}^{p}\alpha_i t^i + \delta\tilde{y}_{t-1} + \sum_{i=1}^{k}\beta_i\Delta\tilde{y}_{t-i} + u_t \qquad (5)$$

Where $\tilde{y}_t$ denotes the de-trended data of Y_t. This model (5) is the modified version of ADF test which is known as ADF-GLS test (ADF- Generalized Least Square) also known as ERS test (Elliot, Eothenberg& Stock, 1996). This ERS test achieves local asymptotic power that is approximately the same as the feasible point-optimal test. Ng and Perron (1995, 2001) built on de-trended data$\tilde{y}_t$ obtained from the ADF-GLS test and modified the Phillips-Perron test (1988). Ng-Perron (2001) considered two modified feasible point optimal tests and derived their limiting distributions.

$$\mathrm{MP_T^{GLS}} = \left[\bar{c}^2 T^{-2}\sum_{t=1}^{T}\tilde{y}_{t-1}^2 - \bar{c}\,T^{-1}\tilde{y}_T^2\right]\Big/ s_{AR}^2 \qquad \text{if } p = 0 \qquad (6)$$

$$\mathrm{MP_T^{GLS}} = \left[\bar{c}^2 T^{-2}\sum_{t=1}^{T}\tilde{y}_{t-1}^2 - (1-\bar{c})T^{-1}\tilde{y}_T^2\right]\Big/ s_{AR}^2 \qquad \text{if } p = 1 \qquad (7)$$

Where

$$s_{AR}^2 = \sum_{t=k+1}^{T}\hat{e}_{tk}^2 \Big/ (T-k)\left(1-\sum_{i=0}^{k}\hat{\beta}_i\right) \qquad (8)$$

And

$$\bar{c} = \begin{cases} -7 & \text{if} \quad p = 0 \\ -13.5 & \text{if} \quad p = 1 \end{cases}$$

As study mentioned earlier in ADF test part, this study is concerned with constant with linear trend given in test statistics model (7) since the study objective is to identify the stable equilibrium between stock market price and exchange rate in Sri Lanka from January 2005 to December 2016. Other three test statistics of Ne-Perron are given as follows:

$$\mathrm{MZ_\alpha^{GLS}} = (T^{-1}\tilde{y}_T^2 - s_{AR}^2)\left(2T^{-2}\sum_{t=1}^{T}\tilde{y}_{t-1}^2\right) \qquad (9)$$

$$\mathrm{MSB^{GLS}} = \left(2T^{-2}\sum_{t=1}^{T}\tilde{y}_{t-1}^2 \Big/ s_{AR}^2\right)^{1/2} \qquad (10)$$

$$\mathrm{MZ_t^{GLS}} = \mathrm{MZ_\alpha^{GLS}} * \mathrm{MSB^{GLS}} \qquad (11)$$

Table 1: Asymptotic critical values for Ng-Perron unit root test for the model with constant trends ($p = 1$ and $\bar{c} = 13.5$)

Percentile	$\mathbf{MZ_\alpha^{GLS}}$	$\mathbf{MZ_t^{GLS}}$	$\mathbf{MSB^{GLS}}$	$\mathbf{MP_T^{GLS}}$
0.01	-23.8	-3.42	0.143	4.03
0.05	-17.3	-2.91	0.168	5.48
0.10	-14.2	-2.62	0.185	6.67

Source: Ng-Perron (2001)

Table.1 shows the asymptotic critical values for the Ng-Perron unit root test statistics in case of allowing constant with the trend of the model. If the absolute calculated critical values of $\mathrm{MZ_\alpha^{GLS}}$ and $\mathrm{MZ_t^{GLS}}$ for a series of a variable are less than their absolute asymptotic critical values given in above table and if the calculated values of MSB^{GLS} and MP_T^{GLS} are greater than their asymptotic critical values given above table at a particular significance level, then the study fails to reject the null hypothesis that the series has a unit root. ε = white-noise error term.

c) Co-integration

The co-integration technique is used to test the existence of an equilibrium relationship between the exchange rate and stock price. The study investigates co-integration by using both Engel and Granger (1987) method and Johansen and Juselius (1990).

- Engel and Granger Co-integration

If two or more series are integrated of order one I (1) but a linear combination of them is integrated order zero I(0) and thus stationary, then the series is said to be cointegrated. When a series is cointegrated, then there exists a long-run stable equilibrium relationship among the variables.

Let us consider the following relationship,

$$Y_t = \beta_0 + \beta_1 X_t + u_t$$

Where, the series of Y_t and X_t non-stationary is at level. For the co-integration, the residual of above model should be a stationary series.

$$\hat{u}_t = Y_t - \hat{\beta}_0 - \hat{\beta}_1 X_t$$

If $\hat{u}_t \sim I(0)$ there does exist co-integration and if $\hat{u}_t \sim I(1)$ does not exist co-integration among the variables Y_t and X_t.

- Johansen and Juselius Co-integration

The Johansen and Juselius (1990) maximum likelihood approach was applied to examine the cointegration between variables. The approach is suitable for identifying the number of cointegrating relations between selected variables. Most of the previous literatures suggested that the variables are integrated of the same order, so the results state that the test may be sensitive to the lag length. Therefore, the Johansen method suggest as a common procedure to determine cointegration vectors in non-stationary time series of a traditional vector autoregressive (VAR). This model can be shown as an error corrective form as follows:

$$\Delta y_t = C + \sum_{i=t}^{k-1} \Gamma \tau_t \Delta y_{t-1} + \Pi y_{t-1} + \mu_t$$

Where:

$y_t = vctor\ of\ non-stationary\ variable$

$\Gamma\ and\ \Pi = coefficient\ matrices$

$C = constant\ term$

d) Causality Test

If co-integration exists between stock prices and exchange rate, the Error Correction Model (ECM) was checked to affirm the short-run disequilibrium by using the following formula:

$$\Delta ASPI_t = \beta_0 + \sum_{i=1}^{q} \beta_{1i} \Delta ASPI_{t-1} + \sum_{i=1}^{q} \beta_{2i} \Delta EX_{t-1} + \alpha_1 Z_{t-1} + \varepsilon_{1t}$$

$$\Delta EX_t = Q_0 + \sum_{i=1}^{r} Qi_{1i} \Delta EX_{t-1} + \sum_{i=1}^{r} Q_{2i} \Delta ASPI_{t-1} + \lambda_1 Z_{t-1} + \varepsilon_{2t}$$

If co-integration does not exist between these two variables, the following equations are used to test the Granger Causality.

$$\Delta ASPI_t = \beta_0 + \sum_{i=1}^{q} \beta_{1i} \Delta ASPI_{t-1} + \sum_{i=1}^{q} \beta_{2i} \Delta EX_{t-1} + \varepsilon_{1t}$$

$$\Delta EX_t = Q_0 + \sum_{i=1}^{r} Qi_{1i} \Delta EX_{t-1} + \sum_{i=1}^{r} Q_{2i} \Delta ASPI_{t-1} + \varepsilon_{2t}$$

Where:

ASPI = All Share Price Index

EX= Exchange Rate

Z_{t-1}= error correction term obtains from the co-integrating equation

$\alpha_1\ and\ \lambda_1$ = expected to capture the adjustment of $ASPI_t$ and EX_t towards long-run equilibrium

IV. Results and Discussion

Table 2: Ng-Perron unit root test (with constant and trends)

Variable	MZ_{α}^{GLS}	MZ_{t}^{GLS}	MSB^{GLS}	MP_{T}^{GLS}	Decision
ASPI	-5.65209	-1.57614	0.27886	15.9139	Unit root
EURO	-8.86568	-2.03195	0.22919	10.5610	Unit root
USD	-9.83070	-2.12475	0.21613	9.68769	Unit root
ΔASPI	-68.8978*	-5.86921*	0.08519*	1.32311*	No Unit root
ΔUSD	-68.1874*	-5.83864*	0.08563*	1.33790*	No unit root
ΔEURO	-70.9267*	-5.95297*	0.08393*	1.29423*	No unit root

Notes: ASPI, EURO and USD stand for all share price index, number of Sri Lankan rupees per EURO, and number of Sri Lankan rupees per US dollar respectively; Δ indicates the first difference of these variables. Both a constant and linear time trend is used as deterministic components in this unit root test.

Table.2 shows the results of Ng-Perron unit root test for the variables ASPI, EURO and USD at level and first differencing level of the series. The results given in Table.2 conclude that the level of series of all three variables has a unit root but there is no unit at first differencing level of series. This means that all these three variables are non-stationary at level of series but it turns to be a stationary series at first differencing level of series.

For applying Engel & Grange Co-integration model, the series of variables should be integrated with the order one I (1). For applying Johanson & Jelious Co-integration model, all series of variables should follow the same order of integration. Since it satisfies both the conditions the study applies in both Engel and Granger Co-integration and Johanson & Jelious Co-integration to validate the results more.

Table 3: Engel & Granger Co-Integration Test

Variables Dependent	Independent	tau-statistic	p-values
ASPI	USD	-1.3173	0.8262
ASPI	EURO	-1.2320	0.8720
USD	ASPI	-1.0384	0.8946
EURO	ASPI	-2.2026	0.4259

Note: MacKinnon (1996) p-values

In Table 3, the results of Engel and Granger Cointegration test are given for the four cases. According to the p-values, the study fails to reject the null hypothesis that there is no cointegration between both the variables. This means that there was no long-run stable equilibrium between the stock market price and exchange rate for the period from 2005 and 2016 in Sri Lanka.

Table 4: Johansen & Juselius Cointegration Test for Variables ASPI & USD

Null Hypothesis	Trace Statistic	Prob	Max-Eigen Statistic	Prob
r = 0	7.2871	0.5445	7.1343	0.4734
r ≤ 1	0.1527	0.6959	0.1527	0.6959

Note: MacKinnon-Haug-Michelis (1999) p-values

Table 5: Johansen & Juselius Cointegration Test for Variables ASPI & EURO

NullHypothesis	Trace Statistic	Prob	Max-EigenStatistic	Prob
r = 0	11.4176	0.1871	8.5701	0.3237
r ≤ 1	2.8475	0.0915	2.8475	0.0915

MacKinnon-Haug-Michelis (1999) p-values

The results of Johansen &Juselius cointegration are given in Table 5 for the variable ASPI and USD, and in Table 5 for the variable ASPI and EURO. The Trace statistics and Max-Eigen statistics revealed that there was no co-integration relation between ASPI and USD as well as between ASPI and EURO. These finding is the same as to the finding of Engel Granger cointegration. Since there was no cointegration relationship between these variables, the study avoids the Error Correction Model analysis. Further, this study simply uses the Granger Causality test which results are given in Table 6.

Table 6: Pairwise Granger Causality Test

Causality From	To	F-Statistic	p-values	Nature of Causality
ASPI	EURO	0.0707	0.7706	No causality
EURO	ASPI	0.0853	0.7907	
USD	ASPI	0.0806	0.7768	
ASPI	USD	2.1653	0.1434	

Table 6 shows the results of pairwise Granger Causality Test at lag order one where the study fails to add more lag in terms of AIC criteria. These results explain that there was no causality direction any of the variables given in table. This means that there is no causality relationship between the stock market and exchange rate in Sri Lanka during 2005 and 2016.

V. Conclusion

This paper examined the relationship between the stock price and exchange rates in Sri Lanka. Fist unit root test was applied to identify the unit root of the time series data. The results prove that all data were unit root in level of series and there was no unit root at first differencing level. Then, both the Engel & Granger cointegration and Johansen & Jeselius Cointegration test was applied to test the long-run equilibrium relationship and both Engel & Granger cointegration and Johansen & Jeselius Cointegration conclude that there was no long-run stable equilibrium relationship between the stock market price and exchange rate in Sri Lanka. The Granger Causality test results revealed that there was no direction of causality from the stock market price to exchange rate and exchange rate to stock market price.

Most of the investors believe that the exchange rate changes reflect in the stock prices. But, the empirical results in Sri Lanka reveal that there is no relationship between the stock prices and exchange rate. Sri Lanka is a developing country and the stock market is also an emerging market. Compared to the developed countries' capital, its market capitalization is very low. Therefore, the results may differ from well-developed capital markets.

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Global Journal of Management and Business Research: C
Finance
Volume 17 Issue 6 Version 1.0 Year 2017
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Electronic Payment System and Customers' Retention in Banks: Implications for Entrepreneurial Development in Nigeria

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Abstract- This paper delved into the relationship between Electronic Payment System and Customers' Retention in Banks for entrepreneurial development in Nigeria. It was discovered that virtually every transactions performed in the banks today make use of the electronics, irrespective of the class whether literate or illiterate. Yet, customers' keep increasing day by day and not forgetting that the machines put into use go faulty almost every time which have to be repaired almost immediately to avoid customers' being disappointed. The research engages comparative analysis of selected banks in Nigeria based on their long standing in the industry, competitiveness, and their level of ICT compliance. However, questionnaire was drawn to capture the grey area of EPS, customers' retention, entrepreneurial development in banks. A total of 200 respondents answered the questionnaire, SPSS was used to analyze the respondents' outcome and the result showed positive and significant relationship between Electronic Payment System and Customers' Retention.

Keywords: electronic payment system (EPS), banks, customers' retention, entrepreneurship, nigeria.

GJMBR-C Classification: JEL Code: F65

ELECTRONIC PAYMENT SYSTEM AND CUSTOMERS RETENTION IN BANKS IMPLICATIONS FOR ENTREPRENEURIAL DEVELOPMENT IN NIGERIA

Strictly as per the compliance and regulations of:

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Ayokunle Olumide ODUSINA[α] & ONAKOYA, Samuel Adekunle[σ]

Abstract- This paper delved into the relationship between Electronic Payment System and Customers' Retention in Banks for entrepreneurial development in Nigeria. It was discovered that virtually every transactions performed in the banks today make use of the electronics, irrespective of the class whether literate or illiterate. Yet, customers' keep increasing day by day and not forgetting that the machines put into use go faulty almost every time which have to be repaired almost immediately to avoid customers' being disappointed. The research engages comparative analysis of selected banks in Nigeria based on their long standing in the industry, competitiveness, and their level of ICT compliance. However, questionnaire was drawn to capture the grey area of EPS, customers' retention, entrepreneurial development in banks. A total of 200 respondents answered the questionnaire, SPSS was used to analyze the respondents' outcome and the result showed positive and significant relationship between Electronic Payment System and Customers' Retention.

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I. Introduction

The most significant development of the millennium which has substantially influence business operations in the world is the emergence of the information age. The remarkable progress achieved by information and communication technology (ICT) has made it possible for information to be digitalized and transmitted faster and cheaper in mega or tetra bytes. (Alabi, 2005). The application of ICT in Nigerian banks is done through the power and connectivity of personal computers locally and globally. Woherem (2000) claims that only the bank that overhand the whole of their payment and delivery system and apply ICT to their operations are likely to survive and prosper in the new millennium. Payment involves the transfer of funds from one person to another, thus a payment system rules and technology that make the exchange of payment possible in a banking system. A number of means of Electronic Payment System abound thereby leaving customers' with the choice of whichever they prefer and the knowledge to ICT today allow customers to choose whichever platform they like. The ability of banks also to engage in proper maintenance culture gives room for customers' retention thereby providing a means of survival for small and medium scale entrepreneur. Nigeria used to be cash based economy with over 90% of funds residing outside the banking sector as against the developed world where the money in circulation is 40% and 9% in the United Kingdom and United States respectively.

Before the emergence of modern banking system, banking operation was manually done, and that solely account for the inefficiency in handling transactions. This manual system involves posting of transactions from one ledger to another without the aid of computer system. Computations which should be done through computer or electronic machines were done manually, which sometimes lead to miscalculations due to human errors, which results in extension of closing hours when account is not balanced on time. (Siyanbola 2013 in Abubakar 2014). Ever since the introduction of Electronic Payment System, studies have shown that it enhanced services delivery in the banking industry and brought a great development in the Nigerian Banking Industry. However, a lot of problems are associated with the introduction of this electronic payment system out of which the following falls: low internet penetration, money laundry, and high cost of maintenance of e-payment machines, improper customers' identification and account verification of online purchases, literacy and concerns on risks. Studies by Ovia (2005), Mahdi and Zhila (2008) and Gonzaliz (2008) have revealed that, at least 50% of the over 800 banks in Africa offer one form of Electronic Payment Service or the other. It can be observed from the empirical review that little effort has been made in Nigeria on conducting a study that test the link between Electronic Payment System and customers' satisfaction. This also makes it important to find out empirically, the perception of Nigerian customers on internet banking services.

It is against this backdrop/background that this paper tends to investigate Electronic Payment System and Customers' Retention in banks for Entrepreneurial development in Nigeria. The motivation for this study stems from the fact that only limited empirical studies have so far been carried out in this area particularly in Africa. Conducting research of this nature using the

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Global Journal of Management and Business Research (C) Volume XVII Issue VI Version I Year 2017

Nigerian environment as a developing nation will reduce the knowledge gap to the barest minimum.

The following Research Questions are considered for the study:

1. What actually motivate customers' decision to stay with the bank they are operating with?
2. Does electronic banking lead to customer satisfaction?
3. Will quick resolution of banking errors encountered through electronic means influence customers retention in banks?
4. Does the introduction of electronic form of banking transaction increase customers' base of a bank?
5. How do banks sensitize customers especially the illiterates on the use of electronic form of banking transactions

The paper is organized as follows: Section 1 introduces the topic, sections 2 deals with literature review, 3 with methodology while 4 and 5 deals with analysis and conclusion respectively.

II. Literature Review

The Federal government of Nigeria through its agencies and the banking sector has taken significant strides in the last 15 years to modernise the payment system. The system has been unexploited, problematic and constrained by diverse challenges ranging from lack of adequate legal backing, credibility of the human element, integrity of data transmitted, to interconnectivity and interoperability (CBN 2010). The Nigeria payment system is predominantly cash based due to a culture informed largely by ignorance, illiteracy and lack of appreciation of other non-cash instruments (Ovia 2005). The development of Nigeria's national payment system has thus witnessed some remarkable achievements in the last ten years, evolving from paper payment systems to electronic payment instruments. The pace of development is described as high in terms of achievements within its short life span and the challenges encountered. The technological infrastructure put in place by the private stakeholders such as the banks and switching companies for the EPS, is also seen as current and of high standard, comparable to some payment infrastructures in other developed countries. For instance, the use of chip and pin electronic cards, currently used in Europe and just taking off in America, started in Nigeria five years ago. The CBN guided by the economic policies of the government and in collaboration with the bankers committee has introduced several measures to modernise the payment system in Nigeria with mixed results. (Briggs & Brooks 2011)

Computerization of the Nigerian Banking Industry is a kind of electronic banking, which involves an electronic form of money transmission. Electronic Banking Services are fully automated such that all transactions are concluded in a jiffy. It involves the use of computer network in dispensing cash and transfer of funds. But most customers however, still patronize bank branches in person and find interactions with human teller as very important. Customers enjoying electronic payment services are still not satisfied with the quality and efficiency of the services because of the huge logjam, breakdown and epileptic functioning of the machines. Some banks are lackadaisical about repairing these machines when they breakdown whereas there are a lot of experts around who can be called upon to repair and maintain them. Most customers are afraid they might be hooked up in a corner making them to loose their money. This is expressed in the number of times customers visits bank, their waiting time in banks, their queuing period also pose a lot of challenges to customers. Security of both bank staff and customers is also major source of concern as most of them are afraid the armed robbers may attack the bank.

The world has witnessed an upsurge of electronic payment instruments meant to facilitate trade and simplify payments, before the introduction of electronic payment into Nigerian banking system; customers had to walk into the banking hall to do transactions of all kind. They had to queue up and spend more hours to talk to a teller to make their transactions. Inconveniences caused by these long queues discourage most customers who sometimes renege from the queues in annoyance. For many years, bankers, IT experts, entrepreneurs, and others have advocated for the replacement of physical cash and the introduction of more flexible, efficient and cost effective retail payment solutions (Siyanbola 2013 in Ahmadu Abubakar 2014). Success in the electronic banking era is measured in the eyes of the customers. A bank has to profitably meet the needs of customers and continuously improve its ability in doing so. It has to be effective, accurate, reliable, helpful and understanding thereby retaining existing customers' and adding more customers. More so these days that banks saddle the responsibility of marketing to staff, it is not always easy to loose customers that are hard to win because of mal-functioning of machines and ill-satisfaction of customers.

Agboola (2001) studied the impact of computer automation on the banking services and discovered that electronic banking has tremendously improved the services of some banks to their customers. He made a comparative analysis between the old and new generation banks and discovered variation in the rate of adoption of the automated devices.

The 21st century has witnessed a dramatic evolution in the financial service industry as a result of the rapid advancement in technological transformation which has become known as e-developments. These changes have engulfed all areas of financial intermediation and financial markets such as e-finance, e-money, e-banking, e-brokering, e-exchange, e-supervision etc. This new information technology (IT) is turning into the most important factor in the future development of banking, influencing bank's marketing and business strategies. As a result of rapid advances in IT and intensive competition in the banking sector, the adoption of e-banking is being increasingly used as a channel of distribution for financial services (Mahdi & Mehrdad, 2010 cited in Ahmad Abubakar 2014)

Ahmadu Abubakar (2014) studied the effects of Electronic Banking on Growth of Deposit Money banks in Nigeria using all the deposit money banks in the country spanning between 2006 -2012. The study result showed that there exist a significant relationship between mobile banking and total deposits, internet banking and total assets of deposit money banks in Nigeria. However, the study further found out that there is no significant relationship between internet banking and total deposits, mobile banking and total assets of deposit money banks in Nigeria.

Dauda & Akingbade (2011) in their research Technology Innovation and Nigeria Banks performance: the assessment of employee's and customer's responses sampled fifteen banks in Nigeria and found out that there is a significant relationship between the use of the ICT and customers' satisfaction. They went further to test the relationship between technology innovation and Nigeria banks employees' performance and the realised that there is a significant and positive relationship between technology innovation and banks employees' performance.

Adeoye and Lawanson (2012) tested Customers Satisfaction and its Implications for bank Performance in Nigeria using a commercial bank in the Country 'Union Bank' with several interview from Individual and customers of the bank and resolved that Electronic Banking in Nigeria is yet to create any significant impact on service delivery, which will consequently lead to improved customer satisfaction.

Customer satisfaction leads to customers' retention and this is a measure of how products or services meet or surpassed customer expectations. In a competitive market like the banking industry, it consists of various strategies aimed at keeping, meeting or exceeding customers' expectations. Saha and Zhao (2005) see customers' satisfaction as a collection of outcome of perception, evaluation and psychological reactions to the consumption experience with a product / service. In other words, it is a result of a cognitive and affective evaluation where some consumption standard is compared to the actually perceived performance. Thus, if the performance perceived is less than expected, customers will be dissatisfied, and where the perceived performance exceeds expectations, customers will be satisfied and this would lead to positive behaviours or outcome (Saha and Zhao, 2005 and Yau, 2007). A satisfied customer tend to be loyal (Timothy et-al, 2007), takes less time, are less sensitive to prices (Gan et-al, 2006) and pay less attention to competitors advertising (Stum and Thiry, 1991). Umorok (2009) in his study noted that satisfied customers would not only continue their patronage, but would keep on referring prospect to the firm and that such continuous patronage is likely to lower the retention elasticity of the firm. Recent environmental changes, especially the rapid growth of competition and the changing consumer landscape, increased customer choice. Due to these changes businesses have witnessed a strategic move away from offensive marketing aimed mostly at getting new customers to defensive marketing focused on customer retention (Lee-Kelley et al 2002 in Mohammed Alnsour 2013). Customer retention is a critical factor in achieving customer satisfaction. (Danseh et al., 2012). It is an effective tool that banks can use to gain a strategic advantage and survive in today's banking competitive environment (Pal, 2011). Keeping the customer has become regarded as equally as, if not more important, than creating a new customer. There is a growing recognition that customers can be managed overtime since they have a life-cycle were they acquired, retained and can be grown in value (Ang and Buttle, 2006)

III. Methodology

This section deals with the methodological phase of the study that facilitates the data gathering and analyses. The research design for this study literally anchors on the types of data employed in the study and its sources and also setting the framework for data analysis. In this study, the exploratory method is adopted whereby questionnaires were used. The sampling design employed is probability simple random sampling technique, which is used to select respondents consisting of lecturers, students, businessmen/women, artisans, politicians, bank workers and civil/public servants. The inclusive criteria in this study were made up of selected commercial banks in Nigeria. The justification for choosing these banks is based on their long standing in the industry, competitiveness and their level of ICT compliance (Guaranty Trust Bank Plc, First Bank Plc and Skye Bank Plc). This research work is largely quantitative but also made use of qualitative technique based on views, perceptions and opinions of respondents on how best electronic payment system influences customers' satisfaction & retention.

More so, questionnaires are distributed to two hundred and fifty (250) targeted respondents operating in our banks, whereas only two hundred (200) were returned and used for the purpose of the presentation and analysis of the data, yielding a response rate of 80 percent. This response rate considered large enough and sufficient for statistical reliability and generalization

(Tabachnick & Fidell, 1996; Stevens, 2002 and Ansari, 2014). This high response rate undoubtedly improved the validity and reliability of the questionnaires since the greater the response rate is, the more accurate its estimate parameters in the population sampled (Pallant, 2002). Also, to guarantee the utmost precision of this work, the use of Statistical Package for Social Sciences (SPSS) software was employed. The mean and standard deviation of the administered questionnaire from both groups is shown in the appendix.

The multiple regression equation employed for the study is as shown below:

$$Y = a_0 + b_1(X_1) + b_2(X_2) + \cdots + b_n(X_n) + \mu \qquad (3.1)$$

Where;dependent variable (i.e. customers' satisfaction); regression constant; slope/gradient; independent variables (i.e. benefits from electronic payment system); and random variable.

The data shall be analyzed quantitatively using descriptive statistical analysis. Tables would be presented to calculate and interpret respondent's opinion from the questionnaire. Both descriptive and inferential statistics tools were employed in the analysis of data. Percentage ranking was used in the presentation of primary data. The method of data analysis in this research work is the qualitative in nature both values will be attached to it to make it quantitative method.

The t-test is defined as:

$$t = \frac{\rho}{\left(1-\rho^2\big/ n-2\right)^{\frac{1}{2}}} \qquad (3.2)$$

The t-test represented by Equation (ii) is based on $n-2$ degrees of freedom.

Thus, the Analysis of Variance (ANOVA) is employed as a statistical method to investigate the influence of predictors (benefits from electronic payment system) on dependent (customers' retention) variables. The ANOVA test is based on F-test statistics for the reject of the null hypothesis "the predictor has no significant influence on the dependent" if the calculated F-Statistic is greater than tabulated F-Statistic i.e. Fc > F_T (Reject the null hypothesis). The F-test is expressed as:

$$F = \frac{RSS\big/(k-1)}{ESS\big/(n-k)} \qquad (ii)$$

Where RSS = Regression Sum of Square = Explained Variation $= \sum(\hat{y}-\bar{y})^2$; ESS = Error Sum of Square = Unexplained Variation $= \sum u^2$; $(k-1) and (n-k)$ are the degree of freedom; k is number of predictors; and n is total number of sample.

IV. Data Presentation, Analysis and Interpretation

Table 4.1: Benefits from Electronic Payment System and Customers' Retention

	Cost of Credit	Cash Risk	Informal Sector Control	Inefficiency and Corruption Control	Customers' Retention
Cost of Credit Significant (2-tailed)	1 .	0.832 0.000**	0.401 0.000**	0.309 0.002**	0.245 0.014*
Cash Risk Significant (2-tailed)	0.832 0.000**	1 .	0.442 0.000**	0.325 0.001**	0.256 0.010*
Informal Sector Control Significant (2-tailed)	0.401 0.000**	0.442 0.000**	1 .	0.489 0.000**	0.216 0.031*
Inefficiency and Corruption Control Significant (2-tailed)	0.309 0.002**	0.325 0.001**	0.489 0.000**	1 .	0.647 0.000**
Customers' Satisfaction Significant (2-tailed)	0.245 0.014*	0.256 0.010*	0.216 0.031*	0.647 0.000**	1 .

* Significant at the 0.05 level
** Significant at 0.01 level

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Table 4.2

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.330	4	13.583	18.684	.000[a]
	Residual	69.060	95	.727		
	Total	123.390	99			

a. Predictors: (Constant), Inefficiency and Corruption Control, Cost of Credit, Informal Sector Control, Cash Risk

b. Dependent Variable: Customers' Retention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.836	.600		-3.059	.003
	Cost of Credit	.031	.124	.035	.252	.802
	Cash Risk	.069	.126	.077	.544	.588
	Informal Sector Control	-.205	.112	-.172	-1.831	.070
	Inefficiency and Corruption Control	1.544	.198	.695	7.807	.000

a. Dependent Variable: Customers' Retention

Interpretation

The estimated result for electronic payment system and customers' retention derived is presented in table 4.1 above which revealed the impact of electronic payment system and customers' retention. The table reports the partial correlation of electronic payment system (i.e. cost of credit, cash risk, informal sector control, inefficiency and corruption control) and customers' retention. From the table, the partial correlation between customers' satisfaction and these three variables (cost of credit, cash risk and informal sector control) were found significant at 5% critical level while inefficiency and corruption control is significant at 1% critical level. Also, the table also shows the partial correlation of individual benefits from EPS with varying critical level.

Furthermore, the analysis of variance (ANOVA) table, table 4.2 reports that benefits from EPS (proxy by its target i.e. cost of credit, cash risk, informal sector control, inefficiency and corruption control and bank performance) has significant impact on customers' retention. In assessing the partial significance of the estimated parameters (benefits from EPS) for the considered variables, the t-statistics results are also presented in the table below table 4.2 tagged "coefficient". The table reports that cost of credit, cash risk and inefficiency and corruption control have positive influence on customers' satisfaction while informal sector control has negative impact on customers' retention. In addition, the result shows that inefficiency and corruption control is significant with customers' satisfaction at 5% critical level while informal sector control is significant at 10% critical level. Thus, cost of credit and cash risk was insignificant with customers' retention at 5% and 10% critical level. Invariably, the F-statistic result shows that all the incorporated benefits from EPS and customers' retention are simultaneously significant at 5% critical level.

V. Conclusion and Recommendations

This study investigates electronic payment system and customers' retention in developing economies with specific reference to Nigeria. The result of the study indicates a strong and positive relationship exist between EPS and customers' retention. Result further showed that EPS increases the ability to hold cash for transactionary, precautionary and speculative motive. EPS also reduces the volume of customers transacting business in the banking hall.

On the other hand, this study reveals that EPS caused lavish spending; increased crime rate and the illiterates sing EPS paved way for fraud on EPS.

By and large, the study EPS and customers' retention despite its shortcomings makes life easier for customers viz-a-viz cost reduction, time saving, easy access to cash even at odd time (mid-night for emergency), error on ATM has equally reduced.

From the study, it is recommended as a way of enhancing the efficiency of EPS for e-payment in developing economies with specific reference to Nigeria:

a. There should be continuous training, seminar and workshop. This will increase the knowledge of bank workers, customers in ICT skills.
b. Bankers Committee should work in hand with government to improve the level of supply power as the high cost of generating power affects the smooth deployments and running of EPS
c. The management team of all banks are advised to see to improving the internal control of their banks so as to reduce the fraud perpetrated through the use of EPS
d. There should be continuous sensitization of the populace of the use of EPS so that the queues, stress, logjam etc experienced of EPS will reduce and eventually eradicated
e. Government should come up with policies and regulatory framework that will favour both the governed and the govern so as to give everybody a sense of belonging in the society.

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Global Journal of Management and Business Research: C
Finance
Volume 17 Issue 6 Version 1.0 Year 2017
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Drivers of Commercial Banks' Profitability in Sri Lanka

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Keywords: *profitability, bank size, adequacy of capital, liquidity, credit risk and operational efficiency.*

GJMBR-C Classification: *JEL Code: E59*

DRIVERS OF COMMERCIAL BANKS PROFITABILITY IN SRI LANKA

Strictly as per the compliance and regulations of:

Drivers of Commercial Banks' Profitability in Sri Lanka

Janaki Samuel Thevaruban

Abstract- Profitability of the banking sector is central as the wellbeing of the industry is closely associated with the wellness of the whole economy in general. Thus a proficient and productivity banking sector is able and better placed to endure negative economic stocks. This study investigated drivers of Commercial banks' profitability in Sri Lanka.The study explored the effects of bank size, adequacy of capital, liquidity, credit risk and operational efficiency on commercial banks' profitability. The study adopted a descriptive design helped to establish the factors, which influence the Sri Lankan commercial banks' profitability. The study used secondary data from11 commercial banks from the years 2012 to 2016. The study employedmultiple regression analysis and Pearson correlation test so as to arrive at the findings. Capital plays a key role in driving commercial banks' profitability and higher levels of capital adequacy increases profitability of commercial banks, findings reveal. The study also concluded that an increase in nonperforming loans increase credit risk which adversely affects profitability. The study finally concluded that high levels of liquidity provides adequate funds to lend which in turn increase interest income hence banks' profitability and that poor operational efficiency through poor management of expenses reduces the profitability of commercial banks. The study recommended that managers of commercial banks in Sri Lanka to develop concrete polices to ensure minimum amount of nonperforming loans being kept and that banks should effectively manage their operational expenses and costs to ensure that they are efficient to maximize profit. The study also recommended that regulatory authorities like the Central Bank of Sri Lanka should develop effective policies on capital adequacy, liquidity and credit risk management to ensure that banks are in a position where they can enhance their profitability.

Keywords: profitability, bank size, adequacy of capital, liquidity, credit risk and operational efficiency.

I. Introduction

The banking sector all around the world has some profound changes, as innovations in technology and the inevitable forces driving globalization which create both opportunities for growth and challenges for banking industry to remain profitable in the increasingly competitive environment during the last years. These major transformation in environment resulting in significant impacts on bank performance, growth of investment, industrial expansion and economic development. Tektas et al.(2005) said that the profitability and overall financial performance of commercial banks are very vital for the smooth operation of the financial system of the country. Further, Jrancis (2007) found that the financial sector has been regulated as all of other countries financial sector and it contributes to a big share for the healthiness of the country's financial system. Therefore the profitability is necessary for a bank to maintain ongoing activities and for its shareholders to obtain fair returns. The external and internal factors have been affecting the profitability at Commercial banks over time. Therefore the determinants of bank profitability have attracted the interest of academic research.

Ranjan and Zingales (1998) stated that given the relation between the well-being of the banking sector and the growth of the economy.Further Levine (1998)found that knowledge of the underlying factors that influence the financial sector's financial performance. Therefore essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers' associations, governments and other financial authorities. Knowledge of the factors would be careful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of Sri Lankan commercial banks. The importance of bank financial performance can be appraised at micro and macro levels of the economy. At the micro level, profit is the essential prerequisite of a competitive bankers' institution and the cheapest source of funds. It is not mainly a result but also a necessity for successful banking in a period of growing competition in the financial markets. Hence the basic aim of every bank management is to maximize profit, as an essential requirement for conducting business. At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contributes to the stability of the financial system. Flemini et al(2009) identified that banks' profit provide an important source of equity especially if re-invested into business. This should lead to safe bankers and such as high profit could promote financial stability.

Globally, banking as an industry has been very competitive and innovative. As a result, the banking industry underwent tremendous technological advancement. Sri Lankan banking industry has been in the forefront among their South Asian country parts in adopting these innovations. Performance of the banking industry got more prominent to face the growing level of competition.

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In the light of increased global trend of disintermediation, and its influence on banking industry in Sri Lanka, profitability has attracted the interest of academics, management of bank and regulatory bodies. Regulator's role has also earned more prominence both locally and globally in light of negative shocks experienced by commercial banks. The regulatory framework itself has introduced the Integrated Risk Approach assisting the sustainability of profitability of commercial banks. The directions given by the regulator will ensure to keep the pace of economy of the country at a sound level by making commercial banks are more strengthened. This study is leveled at the investigation of drivers of commercial banks'profitability in Sri Lanka.

a) *Research Problem*

According to Mahil (2009), result of the simultaneous unstable financial markets and changes in interest rates make assets and liabilities essential in prudent portfolio management. Thepreceding development therefore but operates in the industry under considerable pressured to improve up on their profit margin by finding effective strategies for managing their asset and liability. Portfolio which if not done will lead to a sharp reduction in profit. The rewards from such process improvements in the sector would spread across firm, industry and economic levels.Commercial banks are the most dominant financial institutions in Sri Lanka. One of the major goals of these Commercial banks is profitability. It will influence the banks' stability as well as goodwill. At present, financial sector in Sri Lanka became highly developed and the competition is fierce. Therefore itleads to understanding of the drivers of Commercial Banks profitability. Process would have a positive impact not only leads to Sri Lankan commercial banks performance but also for the economic development of the country.

The commercial banks in Sri Lanka have to earn profit. If continuously banks earn losses or low net profit ratio it will lead banks towards pitfall. Therefore, identifying the divers of profitability is more important. This leaves a wide knowledge gap that this study seeks to fill in. This study builds upon their initial literature and studies by explicitly examining the divers which are influencing the profitability of commercial banks in Sri Lanka.

b) *Research Question*

What are the drivers of profitability ofthe Commercial Banks in Sri Lanka?

c) *Objective of the Study*

This research is sought to find out the divers of the Commercial Banks'profitability in Sri Lanka.

d) *Significance of the Study*

This research study is significant because it deals with issues of Sri Lankan commercial banks. In the present scenario, thedrivers of profitability are important for the banking industry due to increased importance of decisive factors of commercial banks' profitability in Sri Lanka. It will help to assess the risks and manage the risks by taking appropriate actions. So, to understand the appropriate and correct diversdriving the profitability are helpful for the commercial banks in Sri Lanka to manage risks. This research study might contribute and form the basis for further researches into the application of innovative profitabilitydriving factors, strategies to minimize risks by similar industry players. This can go a long way in coming up with even better more efficient strategies that are specific to different bank sizes markets in which they operate and balancing of the different divers appetites that maybe present within the different banks. Further mainly the study contributes to identify the divers that positively and negatively affect the profitability of commercial banks in Sri Lanka. And this study is complement and addition to the existing pool of literature that examined the drivers affecting profitability.

II. Literature Review

a) *Theoretical Underpinnings*

i. *Portfolio Theory*

Nzonangang and Atemnkeng (2006) said that the portfolio theory approach is most relevant and plays an important role in bank profitability determinants studies. According to portfolio balance model of assets,densification the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector rates of return on all assets held in the portfolio, vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profit depends on the feasible set of assets and liability determined by the management and the unit costs incurred by the bank for producing each component of assets.(Nzongang and Atemnkeng,2006)

ii. *Signaling Theory*

The Signaling Theory emanated from Arrow (1972) and Spence (1973). Signaling Theory presupposes that best performing or profitable firms supply the market with positive and better information (Bini et al., 2011). In addition, the Signaling Theory is one of the theories, which have a clarification for the association between profitability and capital structure (Alkhazaleh and Almsafir, 2014). This theory presupposes that a superior capital structure is an optimistic signal to market worth of the organization (Adeusi et al., 2014). The Signaling Theory further postulates that majority of the profitable firms signal their competitive power through communicating new and important information to the market. Thus, information is disclosed by means of specific indicators or ratios which, very often, measure specific conditions on which to enter into or renew the agency contract (Bini et al., 2011).

According to the Signaling Theory, the management of bank signals good future expectation by increasing capital. This indicates that less debt ratio necessarily mean those banks perform better than their identical (AlkhazalehandAlmsafir, 2014). In addition, the theory argues that managers who strongly believe that bank can outperform other banks in the industry will want to relay such information to various stakeholders in order to attract additional investments. Thus, the Signaling Theory affirms that when a bank's performance is excellent, directors will signal the banks' performance to its stakeholders and market by making various disclosures which poor performing firms cannot make. By enhancing more disclosure most managers will wish to receive high benefits and a good reputation which may increase the value of the firm and eventually profitability (Muzahem, 2011).

b) Empirical Studies

Abnell and Mondes (2004) found that well capitalized banks have low bankruptcy costs and higher interest margin on assets. Regarding bank specific variables, the net internal margin reacts positively to operating costs and the loan toasset ratio has a positive impact on interest margin and profitability.

Naceur (2003) discussed that high net interest margin and profitability are likely to be associated with banks with high amount of capital and large overheads. Further he noticed that other determinants such as loans have positive and banks'size has negative impact on profitability.

Athanasoglou et al. (2006) identified that determinants of bank profitability in the South Eastern European region considering the credit institutions for the period 1998-2002 suggested some implementation of the findings. They found that all bank specific determinants have significant effect on banks' profitability.

Kasmidou et al. (2006) studied the impact of bank- specific characteristics, macroeconomic conditions and financial market structure on the profit of UK owned commercial bank during the period 1995-2002. The results showed that the strength of capital of these banks have a positive impact on profitability; and other important factors being the efficient management of expenditures and size of the bank. These bank specific determinants are robust to the inclusion of additional macroeconomics and financial market measures of banks' performance, which adds little to the explanatory power but it seemshowever that had positive impact on profitability.

A study by Maigua and Mouni (2016) examined the effect of interest rate determinants on banks' performance. A sample size of 26 banks was used in the study and multiple regression analysis to analyze data. The study results found that inflation rates, discount rates and exchange rates positively affected the banks' performance whereas reserve requirement ratio negatively influenced the banks' performance. It was concluded that exchange rates, inflation rates and high discount rate lead to banks' higher performance.Further, high levels of reserve requirement lowered the banks' performance.

Alemu (2015) examined determinants of commercial banks profitability of eight banks in Ethiopia from 2002 to 2013. The study used multiple linear regressions and the fixed effect regression model to analyze data. The study established that size of banks' capital adequacy and gross domestic product have a positive and statistically significant relationship with profitability of banks. The findings of the study also indicated that liquidity risk, operational efficiency, funding cost and banking sector development have a negative and statistically significant relation with profitability. Finally, the study identified that the relationship between efficiency of management, efficiency of employees, inflation and foreign exchange rate were statistically insignificant.

Abebe (2014) assessed the internal and external determinants of financial performance of Ethiopia's banks using panel data for a period from 2002 to 2013. The study used the fixed effect regression model. The regression results established that capital structure, income diversification, operating cost had a significant negative relationship with performance while bank size had positive significantassociation with performance.

Nahamg and Araghi (2013) studied the internal factors affecting the profitability of city banks during the years 2009-2012. Internal factors affecting the profitability of banks including, deposit amounts the payment facilities, credit risk management, cost management and the amount of liquidity. They identified that there is a direct relationship between profitability of the banks with credit risk management and cost management and the amount of deposits, loan payments and the amount of liquidity are negatively and significantly related.

Velnampy and Nimalathasan (2007) found that sales is positively associated with profitability ratios except Return on Equity (ROE), and number of depositors are negatively correlated the profitability ratiosexcept ROE. Similarly, number of advances is also negatively correlated to the Return on Investment(ROI) and Return on Asset (ROA).

Nishanthani and Nimalathasan (2013) examined the determinants of profitability of listed manufacturing companies in Sri Lanka for the period 2006-2010. The

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results revealed that the profitability of manufacturing companies is less satisfactory on the basis of result and analysis of selected manufacturing companies have different ranking based on each profitability indicators such as Gross Profit Ratio, Operating Profit Ratio, Net Profit Ratio, Return on Investment and Return on Capital Employed.

III. Methodology

This research is sought to examine the determinants of commercial banks' profitability. The study employed a descriptive also ensures absolute explanation of the state of affairs and make sure that there is no bias in data collection and enables data collection from a significant target population at a cost effective manner. Therefore a descriptive design helped to establish the drivers that influence the commercial banks profitability in Sri Lanka. The population of the study is all commercial banks in Sri Lanka. From this population researcher has considered 11 Commercial Banks in Sri Lanka. Secondary data was collected from annual published financial statements of 11 licensed commercial banks (See Appendix I) for the period of 5 years from 2012 to 2016. Data from the financial statements are prepared based on standardized Sri Lankan accounting standards. The data collected was edited and sorted for completeness and then analyzed using multiple regression analysis and Pearson Correlation by using SPSS.

Drivers of profitability as the independent variable with the proxies of size of the bank as measured by natural log of total assets, Capital Adequacy, Loan to assets Ratio, Credit Risk and operating efficiency. Profitability as the dependent variable with proxy of Return on Assets.

The regression model used in the study is as follows:

$ROA = \beta_0 + \beta_1 (BS) + \beta_2 (EA) + \beta_3 (LAR) + \beta_4 (CR) + \beta_5 (OE) + \varepsilon$

Where:
ROA = Return on Assets
BS = Size of the bank as measured by natural log of total assets
EA= Capital Adequacy
LAR = Loan to Assets Ratio
CR = Credit Risk
OE = Operating Efficiency
$\beta 0$ = Constant
$\beta 1 - \beta 5$ = Coefficient of the regression equation
ε = Probable error

IV. Data Analysis

a) Measures of Central Tendency

Table 01: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
ROA	-0.0342	0.1168	0.021871	0.0194654
Size (Natural log)	12.0259	22.7838	17.118738	2.0861805
EA	.0011	0.6430	0.069095	.0797539
LAR	.002	.7655	.543061	.1098630
CR	.0000	.3974	.061035	.0695568
OE	.0013	.8459	.056699	.0873597
Number of observations	55			

As it can be seen from the table 01, the mean value of ROA of the commercial banks in Sri Lanka is discovered to be 0.022.The averages of the prognosticators named SIZE, EA, LAR, CR and OE are found to be 17.119, 0.069, 0.543, 0.061 and 0.057 respectively. The minimum value of credit risk of the commercial banks is found to be 0.00. It is an indication that some commercial banks completely write off the value of their non-performing loans. The average OE is revealed to be 0.0567 and it signalsthe good operational efficiency among the commercial banks in Sri Lanka.

b) The association between Predictors and the Outcome Variable

Table 02: Correlation Matrix

	ROA	Size	EA	LAR	CR	OE
ROA	1					
Size	-.009	1				
EA	-.089	-.345**	1			
LAR	.041	-.095	.125	1		
CR	-.225**	-.242**	.114	-.001	1	
OE	.034	-.210**	.417**	.179*	.164*	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The findings on table 02 indicate a negative correlation between the predictors named size of the bank, capital adequacy (EA), credit risk (CR) and the outcome variable of ROA (Return on Assets). Results also indicate a positive insignificant correlation between the prognosticators of loan to asset ratio (LAR), operational efficiency (OE) and the outcome variable as measured by ROA. This finding shows a weak negative correlation between bank size and ROA, capital adequacy (EA) and ROA,and credit risk (CR) and ROA. Further, weak positive correlation is discovered between loan to asset ratio (LAR) and ROA and operating efficiency (OE) and banks' profitability as measured by ROA.

c) Regression Analysis

Regression Analysis consists of the model summary, the ANOVA and the results of the regression coefficients.

i. *Regression Model Summary*

Table 03: Model Summary

Model	R	R square	Adjusted R Square	Std. Error of the Estimate
1	.469[a]	.220	.199	.0174208

a. Predictors: (Constant), OE, Size, EA, CR, LAR

Table 3 shows that the R-square value is 0.220, which indicates that, independent variables explain 22% of the variation in the dependent variable. Hence, 78% of the variation is explained by the variables not considered by the regression model.

ii. *Anova*

Table 04 shows the Analysis of variance (ANOVA) results.

Table 04: Anova

Model	Sum square	df	Mean Square	F	Sig.
Regression	.016	5	.003	10.642	.000[b]
Residual	.057	189	.000		
Total	.074	194			

a. Dependent Variable: ROA
b. Predictors: (Constant), OE, Size, EA, CR,LAR

Table 04 shows that the regression model is significant in explaining the determinants of banks' profitability since F- value is significant at 0.01 level.

iii. *Regression Coefficients*

Table 05: Regression Coefficients

Model	Un standardized Coefficients	Standardized Coefficients	t	Sig.
Constant	0.41		3.727	.000
Size	-.001	-.128	-1.855	.065
EA	-.051	-.269	-3.643	.000
LAR	.021	.787	4.289	.000
CR	-.075	-.603	-5.357	.000
OE	-.034	-.155	-.791	.425

a. Dependent Variable: ROA

Results on table 05 generates the following equation:

$$Y = 0.41 - 0.001_{Size} - 0.051_{EA} + 0.021_{LAR} - 0.075_{CR} - 0.034_{OE} + \varepsilon$$

Table 05 indicates results of regression coefficients. Results indicate an existence of a negative but insignificant relation between size of the bank, operational efficiency (OE) and banks' profitability as shown by the beta values of -0.001 and -0.034 respectively. The results on the table 5 also indicate an existence of a significant negative relation between predictors named capital adequacy (EA), credit risk (CR) and banks' profitability as indicated by beta values -0.051 and-0.075 respectively. The results also show an existence of a positive significant relation between liquidity (LAR) and commercial banks' profitability as indicated by beta value of 0.021at $P<0.01$.

V. Discussion of the Findings

The study found that bank size negatively influences the profitability though the effect is insignificant. This indicates that there is a negative link between bank size and the banks' profitability. Similarly, Lipunga (2014) also established that size of the bank, management efficiency and liquidity had an impact on ROA. According to Alkhazaleh and Almsafir (2014),large banks are assumed to have more advantages as compared to their smaller rivals and have a stronger bargaining capability and making it easier for them to get benefits from specialization and from economies of scale. Even though the findings are not in line with that of Alkhazaleh and Almsafir (2014).

The study found that management efficiency negatively influences the profitability though the effect is insignificant. Chinoda (2014) in his study found that management of expenses had a negative association with Zimbabwean banks' profitability. Addition, low operating costs leads to greater profitability of commercial banks. Other costs like the provisions made towards bad debts and doubtful debts influence performance and are likely to lead to probable annual loss on assets (Chinoda, 2014).

The study also found that credit risk significantly influences banks' profitability. This means that any increase in credit risk level will lead to a decrease in commercial banksprofitability. Tariq et al. (2014) also supports that raise in credit risk increases the marginal cost of loans, obligations, and equity leading to the enlargement of the cost of finance for the bank. According to Roman and Tomuleasa (2013), a higher ratio of NPLs to total loans and an absolute deterioration of credit portfolio quality negatively affect commercial banks' profitability in Sri Lanka.

The study also found that capital adequacy significantly influences on Commercial banks' profitability in Sri Lanka. This finding indicates that a decrease in capital adequacy ratio increases banks'profitability. According to Roman and Tomuleasa (2013) capital adequacy aims at determining the ability of the banking sector to absorb any losses generated by risks and occurrence of uncertain macroeconomic events. According to Bizuayehu (2015), the capital adequacy ratio is utilized in protecting the bank's fund depositors as well as promoting efficiency and stability of financial systems. Kyalo (2013) established that capital invested has a significant influence on profitability.

The study found that liquidity significantly and positively influences Commercial banks' profitability in Sri Lanka.This means that high level of liquidity in the banking sector directly influence banks' profits. In agreement with this finding, Alemu (2015) established that liquidity risk had a statistically significant relationship with banks' profitability. According to Chinoda (2014), the availability of liquidity influences profitability since it enhances the capacity of the bank to acquire cash, in order to fulfill present and essential needs. Therefore, for commercial banks to gain public assurance, they should have sufficient liquidity to meet the demands of loan holders' and depositors' needs.

This study is aimed at establishing thedrivers of banks' profitability. Independent variables included bank size, capital adequacy, liquidity, credit risk and efficiency in the banks' operations and dependent variable was profitability measure using return on assets. The study reviewed the Portfolio and signaling theories to explore profitability.

The descriptive statistics results established that mean profitability proxies by ROA of the commercial banks in Sri Lanka was 0.0218 and the average size of commercial banks was 17.12. The study also revealed that the average capital adequacy (EA) for the commercial banks was 0.069 and the average loan to asset ratio (LAR) was 0.543. The average credit risk (CR) for the commercial banks was 0.06956 and the average operating efficiency (OE) ratiowas 0.0567. It is an indication of good operational efficiency among the commercial banks in Sri Lanka. Correlation results established show a weak negative correlation between bank size, capital adequacy and credit risk (CR)and profitability and a weak positive correlation between loan to asset ratio operating efficiency and profitability among commercial banks in Sri Lanka.

The regression model results established that the independent variables explained 22% of variation in dependent variable. The findings found that regression model was significant since the F-value is significant at 99% confidence level. The study further revealed a negative but insignificant relation between size of the bank, operational efficiency and profitability and a significant negative relation between credit risk, capital adequacy and profitability. Finally, the study established a significant positive relation between liquidity and banks' profitability in Sri Lanka.

VI. Conclusion

The study found that capital adequacy negatively and significantly affects the commercial banks' profitability in Sri Lanka. This means that high capital adequacy shows willingness and ability to tolerate with abnormal and operational losses. Based on this finding, the study concludes that capital plays a key role in determining commercial banks profitability and higher levels of capital adequacy decreases profitability of commercial banks in Sri Lanka.

The study found that credit risk negatively and significantly affects commercial banks'profitability. This indicates that a higher ratio of non-performing loans lead to the deterioration of credit portfolio quality which negatively affects commercial banks in Sri Lanka. Based on this observation, the study concludes that an increase in nonperforming loans increase credit risk which adversely affects profitability.

The findings of the study established that liquidity significantly influences profitability of commercial banks in Sri Lanka. This indicates that an increase in commercial banks liquidity provides adequate funds for lending which in turn increases interest income and profitability. The study thus concludes that high levels of liquidity provides adequate funds to lend which in turn increase interest income hence banks' profitability.

The findings of the study revealed that size of the bank and operational efficiency negatively influences banks' profitability. Though, the relationship is statistically insignificant. The study also concludes that failed operational efficiency through poor management of' expenses reduces the profitability of commercial banks in Sri Lanka.

VII. Recommendations

The study concluded that an increase in nonperforming loans increase credit risk which adversely affects the profitability of commercial banks in Sri Lanka. Based on the conclusion, this study recommends that managers of commercial banks in Sri Lanka to develop concrete policies to ensure minimum level of nonperforming loans being kept. Such policies would help to control and mitigate credit risks hence increase the banks' profitability.

The study also concluded that capital adequacy and credit risk significantly affect the profitability of commercial banks in Sri Lanka. Therefore, the study recommends that regulatory authorities like the Central Bank of Sri Lanka should develop effective policies on capital adequacy, liquidity and credit risk management to ensure that banks are in a position where they can enhance their profitability as well as to handle negative shocks.

The study also concluded that failed operational efficiency through poor management of expenses reduces the profitability of commercial banks. Therefore, the study recommends that banks should effectively manage their operational expenses and costs to ensure that they are efficient enough.

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Appendix I

Bank of Ceylon
Peoples' Bank
Commercial bank of Ceylon PLC
DFCC Vardhana Bank
Hatton National Bank
National Development Bank
Nation trust Bank
Pan Asia BankingCorporation
Sampath Bank
Union Bank of Colombo

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Global Journal of Management and Business Research: C
Finance
Volume 17 Issue 6 Version 1.0 Year 2017
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Impact of Foreign Exchange Volatility on Foreign Direct Investment in Nigeria [1999-2016]

By Dr. Chineze Obi
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Abstract- This paper investigated the impact of foreign exchange volatility on foreign direct investment in Nigeria from 1999- to 2016. The research design adopted in this research is the ex-post facto research design involving the collation of relevant data from statistical bulletins in respect of the variables in the study. Ordinary least squares were used to estimate the partial coefficients of the independent variables. The findings of this study suggest that fluctuations in exchange rate have a positive and significant impact on foreign private investment in Nigeria. This may be attributed to the competitive levels of the Nigerian foreign exchange market, leading to the avoidance of excessive volatility. The result indicates that exchange rate fluctuations has positive and significant impact on Nigeria's foreign private investment which supports the argument that FDI investment in Nigeria is determined by exchange rate as well as technology, entrepreneurial skills, source of capital an overall.

GJMBR-C Classification: JEL Code: F31

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Strictly as per the compliance and regulations of:

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I. Introduction

The major foreign earnings of Nigeria is from oil; hence, volatility of crude oil prices in the world market has made the Nigerian economy highly susceptible to the ever changing exchange rates thus affecting the prices of goods and services in the Nigerian economy. According to Nzekwe (2006) Nigeria's failure to diversify its economy which would have helped cushion the effect of the constant changes in oil prices stems in part from weaknesses in the nation's small and insular private sector. This has had a heavy toll on our foreign reserves and invariably, our balance of trade and balance of payment.

As stated by Obadan (2006) a proper foreign exchange rate management in many ways strives to balance the level of imports with that of exports of goods that the country has comparative advantage. Such balance is necessary for an economy to develop to levels beyond subsistence. However, lack of government support for the real sector of the Nigerian economy as a result of it focus on foreign exchange earned from oil has also contributed immensely to the abysmal performance of the all other sectors especially the manufacturing sector. Manufacturers, who account for substantial contributions to Nigeria's gross domestic product before now have been unable to produce hence the fewer jobs, are created.

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The Nigerian economy is in dire need of effective foreign exchange rate management that will diversify the economy, break the dominance of the oil sector, and give more opportunities to other sectors of the economy such as the manufacturing, agriculture, solid mineral mining etc and ultimately improve its balance of payment. In this way, a stable foreign exchange management can assist policy makers and planners to reduce risks in cause by fluctuations in exchange rate. An appreciation of exchange rate in Nigeria result to an increase in cost of production in Nigeria's economy. This has resulted to the huge deficit recorded in the country's balance of trade and of payment i.e. Nigeria imports more than it exports which has earned the country the status of a dumping ground for just about anything from foreign countries.

An examination of literature on exchange rate indicates that most studies are on exchange rate volatility and its impact on these macro-economic indices. Where the study is not on volatility of exchange rate, it involves uncertainty in foreign exchange market on the domestic output of nations macro-economic and institutional factors impact on stock market indices, development of government bond markets, on alternative wage-setting regimes, exchange rate and inflation, exchange rate volatility, stock prices and lending habits of banks. This seminar is an attempt to examine the impact of foreign exchange rate on foreign private investment in Nigeria.

The remainder of this paper is organized as follows: Section two contains the review of related literature; section three; the methodology; section four; presentation and analysis of data; while in section five; the conclusion and recommendations.

II. Review of Related Literature

The choice of whether a country becomes unitary system, confederation or a federation is a political decision. This political decision once made, have implications for political government, fiscal management and economic development as well as the attainment of social stability (Okunrounmu, 1996). According to Aigbokhan (1997) and Olowonomi (2000) a very important goal of any government is efficient allocation of resources and efficient distribution of

Global Journal of Management and Business Research (C) Volume XVII Issue VI Version I Year 2017

national wealth (Afolabi, 1999). Nigeria, after about 50 years of independent is still engulfed in the problem of how to share centrally generated revenue among the Local Governments, States and Federal Government. The volatility of oil production and revenue due to conflict in the Niger Delta Region plus the excruciating impact of the recent global financial crisis- with drop in commodity prices (including oil prices), aid flows and FDI respectively makes it important to look deeper into alternative sources of revenue. The tax alternatives is a viable option however, it much be practiced vis-à-vis it impact in attracting foreign investment into Nigeria.

Numerous empirical studies have demonstrated a positive correlation between the openness of an economy and its economic growth among developing countries (Syrquin and Chenery 1989; Borensztein, De Gregoria and Lee, 1995 and Wei, 1993). Edwards (1993) and Harrison (1996) provide reviews of the early studies. By the openness of an economy, they referred to a business and regulatory environment that are friendly toward trade and foreign investment. Despite the overall enthusiasm toward the positive impact of openness and trade in recent years, there are only a limited number of studies that analyzes the economic mechanism involved in the process. Some suggest that economic openness affects growth by inducing more investment (Baldwin and Seghezza, 1996). Many others emphasize the role of technological progress associated with more trade and more foreign investment of an economy (Tong, 2001).

Trade can promote technology progress in developing countries. For example, more trade induces more Research and Development (R&D) spending in domestic firms so that they can be more competitive in the market place. In addition, firms in developing countries can acquire new technologies embodied in new machines and new products they purchased from foreign sources. Similarly foreign direct investment can facilitate technology progress in developing countries. Foreign direct investment carried out by Multinational Corporations (MNCs) is believed to be one of the most important vehicles for the international diffusion of technology (Tong, 2001)

There are two reasons why FDI is very important for developing countries to acquire new technologies. First, MNCs are more advanced in technology. A substantial portion of the world's total research and development is carried out within the large MNCs. Therefore; MNCs often possess the much-needed new and advanced technologies. Second, through direct involvement of foreign businesses, MNCs domestic affiliates and other domestic producers can acquire new technology more directly and more effectively Tong (2001).

The benefits from FDI are not limited to new technology. Other direct benefits include the productivity increases in MNCs, local affiliates, new management skills brought in by the MNCs, and a potential market expansion brought about through foreign investors. Foreign investment can also increase the productivity in the host economy indirectly through its influence on both the industrial structure of the host economy and the conduct and performance of domestically owned firms. This is accomplished through increased competition in local economy, more investment in capital and human capital, training of labor and management, training of local suppliers of intermediate products, and transfer of knowledge (Blomstrom and Persson (1983); Frischtak and Newfarmer (1992); Blomstrom (1991)).

As a result of foreign investment and foreign knowledge inflow, local affiliates of MNCs can achieve productivity increase and therefore higher growth. At the same time, the firms can also realize more export as they become more and more competitive. Empirical studies suggest that the presence of MNCs in developing countries and the associated investment have important impacts on the export of their local affiliates in the host economy (Aitken, Hanson, and Harrison (1997), Lipsey (1995), and Naujoks and Schmidt (1995).

Foreign direct investment (FDI) is an integral part of an open and effective international economic system and a major catalyst to development. Yet, the benefits of FDI do not accrue automatically and evenly across countries, sectors and local communities. National policies and the international investment architecture matter for attracting FDI to a larger number of developing countries and for reaping the full benefits of FDI for development. The challenges primarily address host countries, which need to establish a transparent, broad and effective enabling policy environment for investment and to build the human and institutional capacities to implement them .OECD (2002)

With most FDI flows originating from Organization for Economic Co-operation Development (OECD) countries, developed countries can contribute to advancing this agenda. They can facilitate developing countries' access to international markets and technology, and ensure policy coherence for development more generally; use overseas development assistance (ODA) to leverage public/private investment projects; encourage non-OECD countries to integrate further into rules-based international frameworks for investment; actively promote the OECD Guidelines for Multinational Enterprises, together with other elements of the OECD Declaration on International Investment; and share with non-members the OECD peer review-based approach to building investment capacity (OECD, 2002).

Policymakers believe that foreign direct investment (FDI) produces positive effects on host economies. Some of these benefits are in the form of externalities and the adoption of foreign technology.

Externalities here can be in the form of licensing agreements, imitation, employee training and the introduction of new processes by the foreign firms (Alfaro, 2006). According to Tang, Selvanathan and Selvanathan (2008), multinational enterprise (MNEs) diffuse technology and management know-how to domestic firms. When FDI is undertaken in high risk areas or new industries, economic rents are created accruing to old technologies and traditional management styles. These are highly beneficial to the recipient economy. In addition, FDI helps in bridging the capital shortage gap and complement domestic investment especially when it flows to a high risk areas of new firms where domestic resource is limited (Noorzoy, 1979).

Nigeria is one of the economies with great demand for goods and services and has attracted some FDI over the years. The amount of FDI inflow into Nigeria has reached US$2.23 billion in 2003 and it rose to US$5.31 billion in 2004 (a 138 % increase) this figure rose again to US$9.92 billion (a 87% increase) in 2005. The figure however declined slightly to US$9.44 billion in 2006. The question that comes to mind is do these FDIs actually contribute to economic growth in Nigeria? If FDI actually contributes to growth, then the sustainability of FDI is a worthwhile activity and a way of achieving its sustainability is by identifying the factors such as favourable tax rate which will contribute to the growth and enhancement of FDI into the host country.

The concern with exchange rate management policy in Nigeria could be traced back to 1960 when the country became politically independent, even though the Central Bank of Nigeria and the Federal Ministry of Finance had come into being two years earlier (Ogiogio, 1996). The Management of exchange rate can be traced to two divisions/phases; pre-Structural Adjustment era of 1960-1985 and post-Structural Adjustment era 1986 – till date. The above binary classifications occasioned a closely historical sequence of about five phases, namely: There was a fixed parity of a one-to-one relationship between the Nigerian pound (N£) and the British pound sterling (B£) until the British pound was devalued in 1967.

Again, in the period 1967-1974, there was a fixed parity with the USD. During this stage of Nigeria's exchange rate policy it became apparent that there were drawbacks in pegging the naira to a single currency which led to its abandonment. Another phase in Nigeria's foreign exchange management was the period 1974-1976. This period heralded an independent in exchange rate policy. Neglecting the peg policy of naira to a single currency of US dollar in 1974-1976, CBN opted to an independent exchange rate management policy that pegged the naira to either the US dollar or British pound sterling, whichever currency was stronger in the foreign exchange market.

From the period 1976 to 1985, the naira was peggedto an import-weighted basket of currencies. In this era, the naira was pegged to a basket of currencies which comprises the seven currencies of Nigeria's major trading partners; the American dollar (USD), the British pound sterling (GBP), the German mark, the French franc (CFA), the Dutch guilder, the Swiss franc (CHF), and the Japanese yen (JPY). The 1981-1985 global economic crises led to unavailability of exchange rate while naira was grossly over-valued against the US dollar and gave FGN two options; one is to continue with the overvalued naira as a result of fixed exchange rate while the second alternative is to adopt the IMF-World Bank imported SAP which enshrined market forces (free hands of DD and SS). The Federal Government of Nigeria chose the second option and introduced the Second-tier Foreign Exchange Market (SFEM) which later transformed to foreign exchange market (FEM) in September 1986 during IBB regime.

The fifth era in Nigeria's exchange rate management commenced during post-SAP era up to date. SFEM was established with immediate effect in September 26, 1986. The Nigerian forex market was liberalized with the introduction of an Autonomous Foreign Exchange Market (AFEM) and the Inter-bank Foreign Exchange Market (IFEM) in 1995 and 1999 respectively. The AFEM metamorphosed into a daily, two-way quote IFEM, October 25, 1999. From 16 July 2002, CBN has replaced IFEM with the Dutch Auction System (DAS) which has been in operation till date.

III. Methodology

The research design adopted in this research is the *ex-post facto* research design. This is the type of research involving events that have already taken place, data exists as no attempt is made to control or manipulate relevant independent variables apparently because these variables already exist in their final form.Consistent with the above therefore and in line with researches conducted in this area of finance in Nigeria where most data utilized were obtained from the Central of Nigeria Statistical Bulletin for the relevant periods the nature and sources of data for this type of research will be secondary data. In line with the objective of this paper, the model used in this paper follows the prior empirical works of ------:

$$FPI = a + b_1EXR + u$$

where;

FPI = Foreign Private Investment

EXR = Exchange rate

a = Constant of the regression function

b_1-b_3 = Coefficient of the independent variables

μ = Error term

IV. Presentation and Analysis of Data

a) Presentation of Data

Table 4.1: Presents the data for this study

Table 4.1: Exchange Rate, Foreign Private Investment in Nigeria (1999-2011)

Year	EXR	FPI	FPI/GDP
1999	53.76	1.0	0.02
2000	58.25	51.1	0.74
2001	70.58	92.5	1.14
2002	85.13	24.8	0.22
2003	106.68	23.6	0.18
2004	126.69	23.5	0.14
2005	143.78	-180.1	-0.81
2006	148.33	-194.6	-0.68
2007	155.75	-231.9	-0.70
2008	90.31	-560.5	-1.43
2009	97.44	-122.3	-0.28
2010	93.39	-167.8	-0.31
2011	89.82	-247.6	-0.39
2012	79.58	-325.9	-0.45
2013	74.20	-506.6	-0.63
2014	69.51	-542.4	-0.61
2015	70.83	-329.4	-0.35
2016	78.70	-44.8	-0.04

Source: CBN Statistical Bulletin (Various Years)

A cursory look at the table above reveals that in 1999, real exchange rate was N53.76 to 1USD. This was sustained from 2000 to 2004 when the real effective exchange rate was N126.69 in 2004, 2001 N70.58, 2002 (N85.13), 2003 (N106.68), 2004 (N126.69). The real effective exchange rate increased slightly in 2005 (N143.78), 2006 (N148.33) but rose slightly to N155.75 in 2007 to 1USD. In 2008, it fell to N90.31 and rose to N97.44 in 2009 and further rose in 2010 when it was N93.39 to 1USD. The real exchange rate was N78.70 to 1USD as at 2016.

As indicated from table, foreign private investments in Nigeria had shown a gradual and consistent increase from 1999 to 2016. The yearly increase was sustained until has been sustained from 1999 to 2002 when there was a decrease of N67 billion representing 60.99% from the previous year figure of N92.5 billion. In 2003, Nigeria witnessed it lowest foreign private investment in percentage terms over the period 1987 to 2011. The quantum of foreign private investment reduced by 171.20% from N23.6 billion in 2003 to N23.5 billion 2004, a further year decrease was observed from in 2005 to 2016. While in 2003, the quantum of foreign private investment decreased by 7.11%, 2004 (39.64%), 2005 (30.27%), 2006 (48.23%). In 2007, the rate of increase was 14.81%, increasing the previous year figure of N481, 239.10million by N71, 259.50million. The gradual increase continue in 2008 (6.12%), 2009 (6.90%), 2010 (1.21%) and 2011 (10.72%). At the end of 2016, foreign portfolio investment reduced to -N44.8 billion.

b) Test of Hypothesis

To test the hypothesis of this paper, a hypothesis was formulated which was stated in null and alternate forms, thus,

Ho: Exchange rate fluctuations in Nigeria do not have positive and significant impact on foreign private investment in Nigeria.

Ha: Exchange rate fluctuations in Nigeria have positive and significant impact on foreign private investment in Nigeria.

Table 4.2: Presents the results of the hypothesis stated.

Table 4.2: Regression Results (Dependent variable, FPI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	2.712829	0.836478	3.243156	0.0055
FPIGDP	341.8403	43.12082	7.927501	0.0000
C	-354.4491	78.73336	-4.501892	0.0004
R-squared	0.807389			
Adjusted R-squared	0.781707			
F-statistic	31.43857			
Prob(F-statistic)	0.000004			

Source: E-view Result

As revealed from the table, exchange rate fluctuations had positive and significant impact on Nigeria's foreign private investment. The probability value confirms the significance of the result. The coefficient of determination which measures the goodness fit of the model as revealed indicates that 78.0% of the variations observed in the dependent variable were explained by variations in the dependent variable.

Foreign direct investment is a form of lending or finance in the area of equity participation. It generally involves the transfer of resources, including capital, technology, and management and marketing expertise. Ekpo (1997) argues that the need for foreign capital to supplement domestic resources was felt by the developing economies, in view of growing mismatch between their capital requirements and saving capacity. Further, many developing countries view foreign capital as a key element in their development strategy against the other forms of foreign financing as it aids in upgrading technology in hi-technology concentrated industries. Results existing from literature suggest that foreign direct investment is not determined by the exchange rate regime but by an economies desire for source of capital, managerial expertise, and technology for both developing economies and economies in transition. According to Root (1984), foreign direct investment involves flows of capital, technology and entrepreneurial skills to the host economy where they are combined with local factors in the production of goods for local and for export markets.

V. Conclusion and Recommendations

The findings of this study suggest that fluctuations in exchange rate have a positive and significant impact on foreign private investment in Nigeria. This may be attributed to the competitive levels of the Nigerian foreign exchange market, leading to the avoidance of excessive volatility. The result indicates that exchange rate fluctuations has positive and significant impact on Nigeria's foreign private investment which supports the argument that FDI investment in Nigeria is determine by exchange rate as well as other motives such as technology, entrepreneurial skills, source of capital an overall. An effective foreign exchange rate management is expected to break the dominance of the oil sector, and give more opportunities to other sectors of the economy such as the manufacturing, agriculture, solid mineral mining etc and ultimately improve its balance of payment. FDI is an important avenue for investment in agricultural, manufacturing and transfer of technology to an economy. Though this study found that exchange rate fluctuation has positive impact on foreign direct investment in Nigeria, however, a stable foreign exchange management is recommended in Nigeria. This can assist foreign investors to reduce their risks in investment. This study thus recommends an aggressive expansion of the Nigerian economy especially investment in the real sectors of the Nigerian economy. This obviously will lead to less dependent on oil revenue which is determined by fluctuations in exchange rate prices.

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Dependent Variable: FPI
Method: Least Squares
Date: 08/23/17 Time: 12:52
Sample: 1999 2016
Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	2.712829	0.836478	3.243156	0.0055
FPIGDP	341.8403	43.12082	7.927501	0.0000
C	-354.4491	78.73336	-4.501892	0.0004

R-squared	0.807389	Mean dependent var	-179.8556
Adjusted R-squared	0.781707	S.D. dependent var	208.7575
S.E. of regression	97.53523	Akaike info criterion	12.14932
Sum squared resid	142696.8	Schwarz criterion	12.29771
Log likelihood	-106.3438	Hannan-Quinn criter.	12.16978
F-statistic	31.43857	Durbin-Watson stat	1.294339
Prob(F-statistic)	0.000004		

Global Journal of Management and Business Research: C
Finance
Volume 17 Issue 6 Version 1.0 Year 2017
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Les Déterminants de l'Attractivité des Pays de la Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC) à l'égard des IDE

By Guiswe Badoma & Abessolo Yves André

Abstract- In the light of recent theoretical and empirical work, this article analyzes the role of institutional adaptation on the attractiveness of CEMAC countries for FDI. The aim is to ascertain whether the most commonly tested institutional determinants play an attractive role in the CEMAC zone. More specifically, we try to evaluate first the importance of the role played by capital market on the attraction of FDI and, secondly, measure the relative importance of the role played by politico-sociocultural capital in Countries of the CEMAC. The institutional approach is then the theoretical foundation of our analysis. In order to account for the performance of the theory of institutional adaptation, we examine it in an econometric regression analysis of panel data. An equation of the determinants of the attractiveness of the CEMAC countries with regard to FDI is estimated by the generalized method of moments (GMM) in dynamic panel for the period from 1985 to 2015. At the end of this analysis, we obtained the results which confirm our initial hypothesis that the attractiveness of the CEMAC countries is explained more by market capital than by political-sociocultural capital.

Keywords: attractiveness, foreign direct investments, multinational firms, panel data, CEMAC.

GJMBR-C Classification: JEL Code: F65

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Guiswe Badoma [α] & Abessolo Yves André [σ]

Résumé- L'objet de cet article consiste, à la lumière des travaux théoriques et empiriques récents, à analyser le rôle de l'adaptation institutionnelle sur l'attractivité des pays de la CEMAC à l'égard de l'IDE. Il s'agit de vérifier si les déterminants institutionnels les plus communément testés jouent effectivement un rôle d'attractivité dans la zone CEMAC. Plus spécifiquement, nous cherchons à évaluer dans un premier temps l'importance du rôle que joue le capital marché sur l'attraction de l'IDE et dans un deuxième temps, mesurons l'importance relative du rôle que joue le capital politico-socioculturel dans les pays de la CEMAC. L'approche institutionnelle est alors le fondement théorique de notre analyse. Afin de rendre compte de la performance de la théorie de l'adaptation institutionnelle, nous examinons celle-ci dans une analyse de régression économétrique des données de panel. Une équation des déterminants de l'attractivité des pays de la CEMAC à l'égard des IDE est estimée par la méthode des moments généralisés (GMM) en panel dynamique pour la période allant de 1985 à 2015. A l'issu de cette analyse, nous avons obtenu les résultats qui confortent notre hypothèse de départ selon laquelle, l'attractivité des pays de la CEMAC est davantage expliquée par le capital marché que par le capital politico-socioculturel.

Motsclés: attractivité, investissement direct étranger (IDE), firmes multinationales, données de panel, méthode des moments généralisés, CEMAC.

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I. Introduction

Les pays de la CEMAC, comme la plupart des pays en développement recourent à certains modes de financement extérieur tels que l'aide publique au développement (APD) et l'emprunt extérieur dans le but de poursuivre leurs objectifs de développement socio-économique. Or, force est de constater que les objectifs de l'aide publique au développement et de l'emprunt extérieur dans les mécanismes de financement des programmes de développement des pays bénéficiaires amène à poser de plus en plus de questions (Campell 2001 ; Gabas, 2002 ; Brunel et al., 2005).

Au regard de ce constat, il apparaît que les pays de la CEMAC, dans le cadre de la globalisation, peuvent bénéficier de l'interconnexion croissante des marchés et le morcèlement géographique de la chaine de production en s'intégrant à l'économie mondiale et de promouvoir par ce biais leur croissance (Huffel, 2001). L'un des aspects par lequel se manifeste cette internationalisation est la mobilité internationale des firmes et l'expansion des investissements directs étrangers (IDE) (Wladimir, 1996). Les firmes multinationales (FMN) sont, aujourd'hui, les vecteurs les plus structurants des processus d'intégration et de transformation de l'économie et de la société mondiales (Rioux, 2012).

En effet, si les territoires ont besoin des firmes multinationales, les entreprises à leur tour ont besoin des territoires (Hatem, 2004).

Depuis quelques décennies, on remarque une croissance importante des flux d'investissements directs étrangers dans le monde. Ils sont passés de 202 milliards de dollars en 1990 à 331 milliards de dollars US en 1995, et ont atteint 1450 milliards de dollars US en 2013, la part des pays en développement dans le total mondial des flux d'IDE étant de 54%, en 2013 contre une moyenne de 17% sur la période 2002-2012. Cependant, la distribution géographique de ces investissements révèle une répartition inégalitaire. En Afrique, ils sont passés de 2,8 milliards de dollars US en 1990 à 9,6 milliards de dollars US en 2000, et ont atteint 54 milliards de dollars US en 2014 (CNUCED, 2015).

Cette tendance haussière peut s'expliquer par les améliorations sensibles observées en matière de gouvernance et la diminution du nombre des conflits armés (Tamokwe, 2010).

Globalement, l'augmentation des entrées d'IDE dans les pays en développement (PED) s'est surtout concentrée en Asie. Les pays africains restent, dans l'ensemble, encore à l'écart de ce mouvement puisqu'ils n'ont reçu que 4% du total des flux d'IDE vers les PED et 1% du total mondial malgré cette hausse sensible constatée ces dernières années. Ces niveaux restent encore plus bas en ce qui concerne les pays de la CEMAC (9,7 milliards de dollars US) et la dotation en IDE varie fortement d'un pays à un autre (CNUCED, 2015).

Notons que, c'est véritablement à partir des années 1998 que les flux d'IDE vers la zone CEMAC ont connu une forte évolution et ils ont été le fait des privatisations, des plans d'investissements dans les infrastructures, les télécommunications, etc. Ils sont passés de 9 milliards de dollars US en 2000 à 9.9 milliards de dollars US en 2014. En effet, pour la BEAC (2006), cette évolution, est due en partie à la privatisation du secteur de télécommunications depuis les années 2002 et qui a permis de drainer une masse importante de fonds. Toutefois l'année 2004 a permis aux pays de la zone CEMAC, à la faveur d'importantes opérations de fusion-acquisition, de retrouver un niveau d'IDE presque équivalent à l'année 2000, avec un montant d'IDE de 6.8 milliards de dollars US, ce qui place la zone au neuvième rang des bénéficiaires d'IDE en Afrique.

En effet, après la faiblesse des chiffres des années 1990 et 1991 et la chute des années 1994, 1995, 1996 et 1997 imputables à une contraction de l'IDE vers la République centrafricaine et le Gabon, les flux d'entrée d'IDE dans la zone CEMAC ont augmenté sensiblement, passant de 651 millions de dollars US en 1998 à 3109 millions de dollars US en 2008. Et depuis lors, les flux d'IDE vers la zone a continué de croître, exception pour l'année 2013 et ce jusqu'aujourd'hui où l'on enregistre pour l'année 2014 un montant de 9694 millions de dollars US. Cette augmentation des entrées de l'IDE dans la zone CEMAC s'explique principalement par quelques grands projets d'IDE au Cameroun et au Tchad. C'est ainsi que, les flux d'IDE dans la zone CEMAC sont fortement concentrés dans ces pays dont leurs parts comptent pour plus de la moitié. Cependant, la Guinée Equatoriale et le Congo ont également continué à recevoir des grandes quantités de flux d'IDE à partir de 2002. Dans le même temps, les stocks d'IDE dans les six pays de la zone n'ont jamais aussi cessé d'augmenter. Ils sont passés de 3197 millions de dollars US en 1990 à 21483 millions de dollars en 2006 après avoir connus des baisses pour les années 1994, 1995, 1996 et 1997. Et depuis 1998, ils n'ont plus jamais connus une régression jusqu'en 2014.

De ce qui précède, signalons que, comparativement aux flux d'IDE en direction des PVD, les IDE en direction des pays de la CEMAC sont restés modeste, ce qui nous pousse à nous poser des questions sur le pouvoir attractif de ces pays et la nature des facteurs d'attractivité mis en place.

Le débat actuel porte sur la nécessité d'améliorer la qualité des institutions pour attirer les IDE car de plus en plus, le choix de localisation des firmes se rattache à la qualité des institutions en plus des conditions économiques.

De ce fait, étudier les éléments déterminant l'attractivité de l'IDE dans la zone CEMAC peut avoir comme fondement théorique une approche institutionnelle.

Pour atteindre ainsi les objectifs que nous nous sommes fixés, nous émettons l'hypothèse selon laquelle, l'attractivité de l'IDE dépend de la façon dont les décideurs politiques dirigent les institutions et plus précisément, l'attractivité de l'IDE dans la zone CEMAC est davantage expliquée par le capital politico-socioculturel que par le capital marché. La vérification de cette hypothèse requiert la spécification d'un modèle d'évaluation.

II. Revue de la Litterature

Malgré l'importance des mouvements internationaux des capitaux, il n'existe encore aucun cadre théorique unifié permettant de comprendre les déterminants de l'attractivité des territoires vis-à-vis des investissements directs étrangers (Chakrabarti, 2001 ; Levasseur, 2003). La littérature existante sur les déterminants des IDE regroupe aussi bien des aspects propres aux firmes que des aspects propres aux politiques menées par les pays hôtes pour accueillir les IDE. Dans les années soixante dix, DUNNING proposait une approche globale des facteurs explicatifs de l'investissement direct dans laquelle apparaissent des éléments comme la concurrence imparfaite, les avantages comparatifs ou l'internalisation des coûts de transaction. Cependant, ce cadre s'avère aujourd'hui insuffisant pour expliquer la majeure partie des IDE. En effet, et en fonction de leurs stratégies, les firmes décident d'investir à l'étranger, lorsqu'elles peuvent combiner leurs avantages propres à ceux qui leurs sont offerts par les pays d'accueil.

Toutefois, deux grandes familles de facteurs, sur lesquelles se basent les firmes dans leur choix de localisation ont été citées dans la littérature: les déterminants économiques et les déterminants institutionnels (CNUCED, 1998). Le débat actuel porte alors sur la nécessité d'améliorer la qualité des institutions pour attirer les IDE car de plus en plus, le choix de localisation des firmes se rattache à la qualité des institutions.

a) Aperçu des déterminants institutionnels des IDE

De plus en plus, le débat sur le rôle des institutions dans le développement économique attire l'attention des chercheurs. Dès le début des années 1990, un intérêt remarquable a émergé dans l'étude des liens entre les institutions et l'IDE. Les bonnes institutions exerceraient une influence positive sur le développement à travers la promotion de l'investissement en général. Aujourd'hui, l'IDE représente une part considérable de la formation brut du capital dans les pays en développement (CNUCED, 2004). Selon Sachs (2003), le concept d'institutions est devenu l'objectif intermédiaire de toute réforme économique. D'où l'intérêt d'examiner le rôle des bonnes institutions dans la promotion de l'IDE. Il ressort des études récentes que le développement d'un pays s'explique principalement par ses institutions, ses ressources, ses politiques économiques, sa géographie et sa géopolitique (Rodrik, 1999; Acemoglu et al., 2001; Easterly (2005); Sachs, 2003; Glaeser et al., 2004).

Plusieurs études empiriques révèlent l'importance des institutions dans les modèles de comportement des IDE (Acemoglu et al., 2001, 2003; Asiedu, 2003; Asiedu et Lien, 2011; Busse et al, 2005). Selon ces auteurs, c'est la qualité des institutions qui a davantage expliqué la croissance des flux d'IDE vers les pays de l'Asie de l'Est que les facteurs économiques traditionnels tels que l'accumulation de capital, le progrès technique et l'offre de main-d'œuvre.

Les analyses récentes retiennent généralement comme mesures des institutions : la démocratie, la transparence, la corruption, le cadre judiciaire et réglementaire, la stabilité politique, l'efficacité du gouvernement et l'état de droit (Kaufmann et al., 2002; Rodrick et al., 2002; Acemoglu et al., 2003; Asiedu, 2003; Edison, 2003). Toutefois, ces mesures ne sont pas objectives dans la mesure où elles découlent les appréciations subjectives des experts nationaux ou des évaluations de la population collectées par des enquêtes effectuées par organisations internationales et non gouvernementales (Edison, 2003).

Concernant la qualité institutionnelle en Afrique, des études comme celle d'Asiedu (2003) à travers 22 pays de l'Afrique subsaharienne révèle que l'efficacité des institutions, la stabilité politique et économique et le faible niveau de corruption encouragent les entrées de capitaux privés.

Globerman et Shapiro (2002) analysent l'impact des indicateurs de gouvernance sur les entrées et sorties d'IDE. Ils trouvent que la bonne gouvernance a un impact positif à la fois sur les entrées et les sorties d'IDE, bien que l'effet sur les sorties d'IDE ne soit significatif que pour les pays relativement grands et développés. Bien plus, ils affirment que des bonnes institutions peuvent avoir un impact positif sur les sorties d'IDE parce qu'elles créent des conditions favorables pour que les entreprises multinationales émergent et investissent à l'étranger.

Daude et Stein (2007) trouvent que l'IDE entrant est fortement influencé par la qualité des variables institutionnelles. Ils trouvent que l'instabilité politique et la violence, l'efficacité du gouvernement, le fardeau de la réglementation, l'état de droit et la corruption ont un effet significatif sur l'IDE. Cependant, les indicateurs de la représentation et de la responsabilité politique ont un effet non significatif sur l'IDE entrant.

L'efficacité sur le plan juridique d'un pays d'accueil rassure les investisseurs étrangers car favorise la protection des droits de propriété et le respect des contrats. En effet, la protection des droits de propriété est capitale pour les firmes qui cherchent à implanter de nouveaux investissements à l'étranger. La protection des droits de propriété est une sorte d'assurance pour les firmes multinationales (Globerman et Shapiro, 2003). Ceci dit, les réglementations visant à protéger les droits de propriété, surtout les droits de propriété intellectuelle, sont susceptibles d'accroître l'attractivité du pays d'accueil aux yeux des investissements internationaux (Smith, 2001 ; OCDE, 2002). Toutefois, la protection des droits de propriété, les procédures administratives et les règlements relatifs à l'IDE peuvent former une barrière à l'investissement, particulièrement dans les pays en développement (Emery et al., 2000).

Des études empiriques soutiennent l'idée selon laquelle les investissements étrangers sont davantage attirés du fait du renforcement de la démocratie. La démocratie comme déterminant de la localisation des IDE dans la littérature économique est abordée dans le sens large du terme. Il est ainsi généralement représenté par deux grandes composantes : les droits politiques et les libertés civiles. Tandis que les droits politiques reflètent la capacité des citoyens à participer librement au processus politique (droit de voter, de postuler à des postes publics et d'élire des représentants), les libertés civiles quant à elles donnent la possibilité de développer des opinions, des associations et une autonomie personnelle sans interférences de l'Etat.

La corruption, est souvent perçue comme une dimension cruciale des institutions politiques et la cause majeure de la stagnation économique et de l'échec des programmes de réformes (OCDE, 2003). Dans une étude sur les investissements étrangers réalisée par des entreprises américaines, Wheeler et Mody (1992) n'ont pas trouvé de relation significative entre la valeur des IDE et la corruption d'accueil. Ils concluent que l'importance de la corruption est relativement faible comme un déterminant de localisation.

Un pays ayant une stabilité politique est attractif aux yeux des investisseurs étrangers, car permet la diminution de l'incertitude et les coûts non prévisibles associés. En effet, les investisseurs étrangers cherchent à s'assurer que l'avenir du pays est suffisamment prévisible afin que leur projet d'investissement ne soit compromis, ni par une instabilité politique, ni par des problèmes sociaux. L'incertitude politique, autrement dit risque pays, est un facteur qui décourage les investisseurs étrangers (Basu et Srinivasan, 2002).

b) Les déterminants ayant la dimension économique de l'attractivité des pays à l'égard des IDE

Pour choisir le pays d'implantation, l'investisseur étranger prend en compte le niveau de stabilité des variables macroéconomiques tels que : le taux de la croissance, l'investissement national, le taux d'inflation, le taux de change, etc. C'est ainsi que la stabilité macro-économique est souvent citée par les investisseurs comme un des facteurs essentiels de leur décision d'implantation. En effet, dans leurs décisions d'investissement, les firmes multinationales sont d'abord motivées par la taille et le taux de croissance des marchés d'implantation dont l'accès est facilité par l'absence de réglementations restrictives à l'entrée des investissements étrangers. Des études statistiques sur les déterminants des investissements directs étrangers montrent que la taille du marché dans les pays d'accueil, mesurée par le produit intérieur brut (PIB) par habitant, et sa croissance potentielle mesurée par le taux d'évolution du PIB, sont des éléments importants dans le choix d'une localisation. Toutefois, la contribution de la taille ou du taux de croissance des marchés en faveur de l'IDE est plus ou moins importante selon les stratégies visées par les investisseurs étrangers. En ce qui concerne les IDE expansionnistes ou de type horizontal, ils se présentent dans les pays à forte demande de consommation alors que les IDE de type vertical ne s'intéressent pas à la taille du marché puisque la production totale est destinée à la réexportation. Ceci n'empêche pas la firme à adopter à la fois les deux stratégies pour servir les différents marchés en divisant la production locale entre le marché local et les réexportations. C'est ainsi que Singh et Jun (1995) utilisent deux mesures pour tester l'impact de la taille du marché sur les flux des IDE : le PIB par habitant pour contrôler la taille du marché actuelle et le taux de croissance du PIB pour contrôler la taille du marché potentielle.

La stabilité des taux de change d'un pays d'accueil fait partie des facteurs d'attractivité à l'égard des IDE. Le taux de change est une variable très importante qui a une influence sur l'évolution des investissements étrangers ainsi que les échanges commerciaux réalisés par les IDE. C'est ainsi que Froot et Stein (1991) analysent le rôle de l'appréciation d'une monnaie sur la promotion des IDE dans le cadre d'un marché des capitaux imparfait. Pour ces auteurs, l'appréciation de la monnaie conduit à stimuler le patrimoine de l'entreprise tout en diminuant les coûts relatifs à l'investissement à l'étranger. Les études de Klein et Rosengren (1994) quant à elles montrent que la sous-évaluation du taux de change stimule la production des exportations et attire les investissements directs étrangers. Goldberg et Klein (1997) indiquent que, de manière générale, une dépréciation réelle de la monnaie du pays récepteur induit des entrées de capitaux, bien que l'IDE en provenance des États-Unis se comporte autrement. Plus fondamentalement, l'impact du taux de change réel dépend des objectifs des investisseurs étrangers. Ainsi, une production étrangère destinée à être réexportée introduit une relation de complémentarité entre IDE et commerce : une appréciation de la monnaie locale, parce qu'elle détériore la compétitivité, réduit ainsi les entrées d'IDE. Si la production doit au contraire servir en priorité le marché local, IDE et commerce deviennent substituables, et l'appréciation de la monnaie peut attirer des capitaux, soit par un effet d'augmentation du pouvoir d'achat local, soit par un effet de contournement des barrières commerciales, qui sont fréquentes lorsque le taux de change s'apprécie.

En ce qui concerne le taux d'inflation Urata et Kawai (2000) pensent que l'inflation augmente le coût de production et, partant, il a un impact négatif sur les flux d'investissement direct étranger.

Le degré d'ouverture d'une économie, mesuré par le niveau de développement du commerce extérieur c'est-à-dire la valeur des importations et des exportations par rapport au PIB, est considéré comme un facteur attractif des IDE. L'ouverture d'une économie au commerce met ainsi les investisseurs potentiels en confiance et aussi, met à leur portée de nombreuses occasions d'affaires car la capacité d'un pays en développement à attirer des IDE dépend dans une large mesure des facilités ultérieurement accordées à l'investisseur pour importer et exporter. L'ouverture économique augmente ainsi la productivité des projets d'IDE dans la mesure où elle permet aux entreprises un accès sans contrainte à tous les types d'intrants. Dans la littérature empirique, des études établissent une relation positive entre l'ouverture au commerce et les flux d'IDE comme l'ont démontré Morisset (2000) et Chakrabarti (2001). Noorbakhsh et al. (2001) soutiennent que la relation positive entre l'ouverture économique et les flux d'IDE implique que si les pays en développement désirent attirer plus d'IDE, ils devraient libéraliser encore plus leur commerce extérieur.

Aujourd'hui, le capital humain constitue un critère important de l'attractivité notamment dans les pays en développement. Toutefois les multinationales accordent de plus en plus d'importance à la qualité de la main d'œuvre car s'intéressent davantage à la production de biens intensifs en capital et en technologie. Les qualifications de la main d'œuvre, les possibilités de formation, le coût faible du facteur travail, le niveau d'instruction en générale et l'expérience professionnelle sont donc d'une importance capitale pour l'investisseur (Bissiriou et Kern 2005).

Le niveau d'infrastructures a une forte incidence sur l'attrait d'un pays en tant que destination d'investisseurs étrangers. Dans la littérature, les infrastructures ont un impact positif sur la localisation des activités des multinationales, dans la mesure où elles facilitent la réalisation des opérations de production et de distribution. Selon Bouklia-Hassane et Zatla (2001), des infrastructures insuffisantes ou des services d'infrastructures inadéquats pourraient constituer une barrière à l'entrée des IDE. En revanche, de bonnes infrastructures, particulièrement dans les domaines des transports et des télécommunications, sont présentées comme des déterminants potentiels des afflux d'IDE (Aubin, Berdot, Goyeau et Léonard (2006). En effet une infrastructure de bonne qualité est une condition nécessaire pour attirer les IDE en premier lieu et pour la réussite des IDE en second lieu (Asiedu, 2002).

De même, les firmes sont naturellement sensibles aux caractéristiques exogènes des territoires. Chaque pays, dispose des dotations naturelles influençant la productivité et le profit des entreprises. De même, la présence de terre à cultiver, de ressources minières, l'accès à la mer ou tout autre avantage naturel, permet d'expliquer certains choix de localisation en particulier pour les entreprises utilisant ces facteurs de production. Dans leurs travaux, Campos et Kinoshita (2003) démontrent que les dotations en ressources naturelles ont joué un rôle significatif dans l'attraction des IDE entre 1990 et 1998 dans les pays en transition. Morisset (2000) prouve que la capacité des pays africains à attirer les capitaux privés est largement liée à l'existence des ressources naturelles. C'est ainsi que les pays tels le Nigeria et l'Angola et dans une moindre mesure la Guinée Equatoriale, malgré leur instabilité politique et économique, ont réussi à attirer d'importants capitaux privés grâce à leurs ressources pétrolières.

III. Le Modele

En vue de placer les théories de l'IDE dans un modèle opérationnel testable, nous nous inspirons de Saskia. En effet, Saskia (1998) étudie les déterminants de l'IDE dans un cadre théorique inspiré de l'approche d'adaptation institutionnelle et trouvant son origine dans l'école de l'intégration. D'après Saskia, l'adaptation à l'investissement direct étranger désigne la capacité d'un pays d'attirer, d'absorber et de préserver l'investissement direct étranger. L'adaptation institutionnelle suggère qu'attirer l'investissement direct étranger est un processus dynamique. Pour attirer l'investissement direct étranger, les pays doivent le rechercher activement au lieu de protéger de façon passive les industries et les ressources naturelles locales. La théorie de l'adaptation institutionnelle à l'IDE nous explique pourquoi la répartition des flux d'IDE est si inégale, et souvent sans proportion avec les ressources naturelles des pays. La capacité de reconnaître les opportunités d'IDE et d'en profiter est alors ancrée dans les institutions du pays, ce qui explique le terme adaptation institutionnelle à l'IDE. Les institutions concernées par l'adaptation institutionnelle sont : le gouvernement qui représente le capital politique, les marchés ou capital marché, et le milieu socioculturel ou capital socioculturel (Saskia, 1998).

Dans la pratique, l'estimation de l'équation d'attractivité prend souvent en compte un ou plusieurs retards de la variable dépendante comme variables explicatives. Rien n'exclut l'existence d'une éventuelle corrélation entre les autres variables explicatives et l'effet fixe individuel. Les techniques économétriques standards comme les MCO ne permettent pas d'obtenir des estimations efficientes d'un tel modèle. D'où l'importance de la méthode des moments généralisés (GMM) en panel dynamique. La méthode des moments généralisés (GMM) en panel dynamique permet ainsi de contrôler les effets spécifiques individuels et temporels et de pallier les biais d'endogénéité des variables, de biais de simultanéité, de causalité inverse et de variables omises. La méthode GMM repose sur les conditions d'orthogonalité entre les variables retardées et le terme d'erreur, aussi bien en différences premières qu'en niveau. Lorsque le modèle dynamique est exprimé en différences premières, les instruments sont en niveau, et vice versa (Goaied et Sassi, 2012).

Généralement, deux tests sont associés à l'estimateur GMM en panel dynamique : le test de suridentification de Hansen et de Sargan qui permet de tester la validité des variables retardées comme instruments et le test d'autocorrélation d'Arellano et Bond où l'hypothèse nulle est l'absence d'autocorrélation de second ordre des erreurs de l'équation en différence (Goaied et Sassi, 2012).

Nous nous intéressons dans le cas de notre analyse, à l'estimateur GMM en système et pour lequel le test suridentification de Sargan est associé.

L'équation à estimer sera ainsi de la forme suivante:

$$y_{i,t} - y_{i,t-1} = (\alpha - 1)y_{i,t-1} + \beta X_{i,t} + \partial Z_{i,t} + u_i + v_t$$

Où $y_{i,t}$ représente la variable dépendante IDE/PIB dans le pays *i* et au temps *t*, X le vecteur des variables de la dimension Marché, Z le vecteur des variables de la dimension Politico-socioculturelle, u est l'effet spécifique pays, v est l'effet spécifique temporel. i et t représentent respectivement l'indice pays et l'indice temporel.

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Nous estimons finalement une équation à k variables exogènes de la forme suivante:

$$\frac{IDE}{PIB}_{i,t} = \gamma_0 + \alpha AGLOM_{i,t} + \beta_1 CRECO_{i,t} + \beta_2 COMM_{i,t} + \beta_3 PIBHAB_{i,t} + \beta_4 TINF_{i,t} + \beta_5 CHANGE_{i,t} + \partial_1 LIPOL_{i,t} + \partial_2 LICIV_{i,t} + \partial_3 TURB_{i,t} + \partial_4 INFR_{i,t} + \varepsilon_{i,t}$$

Avec : γ_0 la constante, $AGLOM_{i,t} = \frac{IDE}{PIB}(i, t-1)$, $\alpha, \beta_i = 1 \dots 5$ et $\partial_i = 1 \dots 4$, les paramètres et $\varepsilon_{i,t}$ le terme d'erreur.

L'équation de la fonction des variables de la dimension Marché étant:

$$DIMMAR = f(AGLOM, CRECO, COMM, PIBHAB, TINF, CHANGE)$$

AGLOM: IDE /PIB retardé d'une période (Agglomération)
CRECO: Épargne nationale brute (Crédit à l'économie)
COMM: Commerce extérieur (Ouverture commerciale)
PIBHAB: Produit Intérieur brute par habitant
TINF: Taux d'inflation
CHANGE: Taux de change réel

Et l'équation de la fonction des variables de la dimension Politico-Socioculturelle étant:

$DIMPOLSOC = f(LIPOL, LICIV, TURB, INFR)$

LIPOL : Indice global de droits politiques
LICIV : Indice global de libertés civiles
TURB : Taux d'urbanisation
INFR : Nombre de lignes de téléphones/100.

Présentation et description des différentes variables et signes attendus des coefficients des variables

La variable expliquée

Dans la spécification de notre modèle, la variable dépendante est mesurée par les flux net d'IDE entrants exprimés en pourcentage du produit intérieur brut (*IDE/PIB*). C'est un des indicateurs d'attractivité retenus par la CNUCED.

Les variables explicatives

Nous considérons deux types de variables explicatives : les variables de la dimension Politico-socioculturelle et les variables de la dimension Marché.

Les variables de la dimension Politico-socioculturelle

La dimension politique est mesurée par les indicateurs suivants:

- L'indice global de droits politiques (*LIPOL*). Il renvoie à la tenue d'élections justes, la présence de partis d'opposition qui peuvent jouer un rôle important, ainsi que le respect des droits des groupes minoritaires. Cet indice devrait donc avoir un effet négatif sur l'attraction des IDE.
- L'indice global de libertés civiles (*LICIV*). Il reflète le respect de la liberté d'expression, ainsi que celui du droit d'assemblée, d'association, d'éducation et de religion. Cet indice devrait influencer négativement les flux d'IDE.

La dimension socioculturelle est mesurée par les indicateurs suivants:

- Le taux d'urbanisation (*TURB*). Il s'agit du pourcentage de la population totale qui vit dans un milieu défini comme urbain. Comme les IDE se concentrent souvent dans les zones urbaines, on s'attend à une corrélation positive entre le degré d'urbanisation et l'attractivité des IDE. Le coefficient de corrélation aura le signe plus.
- Le stock d'infrastructures (*INFR*). Il s'agit de lignes téléphoniques reliant des équipements des clients au réseau téléphonique des centrales publiques. Il est attendu un signe positif de la relation entre les infrastructures et l'IDE.

Les variables de la dimension Marché

Cette dimension sera mesurée par les variables suivantes:

- L'agglomération *(AGLOM)* Elle correspond à la variable dépendante retardée d'une période $\frac{\mathrm{IDE}}{\mathrm{PIB}}(\mathrm{i}, \mathrm{t}-1)$, et permet ainsi de mesurer l'agglomération et la concentration des activités économiques. Les investissements existants dans un territoire attirent les capitaux étrangers, en ce sens, on s'attend à une corrélation positive entre les flux d'IDE et l'agglomération.
- Le crédit à l'économie (*CRECO*). Elle est mesurée par l'épargne nationale brute en pourcentage du PIB. C'est l'un des instruments par lequel le secteur financier contribue à l'attraction des investissements et à la mobilisation des épargnes par une offre attractive d'instruments et d'outils de placement. On s'attend à une corrélation positive avec les IDE.
- L'ouverture commerciale (*COMM*). Elle est mesurée par le commerce extérieur. Le commerce en pourcentage du PIB est la valeur totale des exportations de biens et services additionnée à la valeur totale des importations de biens et services, en pourcentage du PIB. On s'attend donc à ce que le coefficient ait le signe plus.
- La taille du marché (*PIBHAB*). Mesurée par le produit intérieur brut par habitant en dollars constants, cet indicateur est le plus adéquat pour comparer des économies entre elles et à travers les années. Il illustre l'importance de l'activité économique d'un pays ou encore la grandeur de sa richesse générée. On s'attend à ce que la corrélation du PIB par habitant avec l'IDE soit positive et le coefficient aura donc le signe plus.
- Le taux d'inflation (*TINF*). Le taux d'inflation est souvent perçu comme un indicateur d'instabilité

macroéconomique. Les investisseurs étrangers préfèrent ainsi investir dans une économie stable. Il est attendu que l'inflation ait une corrélation négative avec le volume des investissements.

- Le taux de change réel (*CHANGE*). C'est le taux de change réel de la monnaie locale en dollars américains (US). Il est une mesure de la compétitivité internationale. La volatilité des taux de changes peut à la fois décourager l'investissement étranger, et produire une incitation à se couvrir contre le risque de change par la localisation à l'étranger. Ainsi, à court terme une dépréciation réelle de la monnaie affecte négativement les IDE et l'effet à long terme peut se révéler positif.

Sources des Variables

Les données sont choisies et extraites du site de la banque Mondiale http://siteresources.worldbank.org/ DATASTATISTICS, de Freedom House sur le site http://www.freedomhouse.org/template.cfm?page=15 et de la CNUCED sur le site http://www.unctad.org//fdistatistics.

La période d'étude va de 1985 à 2015. L'échantillon est ainsi composé des six pays de la zone CEMAC (Cameroun, Congo, Gabon, Guinée Equatoriale, République Centrafricaine et Tchad).

IV. L'analyse Des Resultats et Interpretations

En utilisant la méthode des moments généralisés, nous procédons à une estimation du modèle en trois étapes à partir du logiciel Stata 12. La première prend compte les variables de la dimension Marché uniquement, la deuxième prend en compte les variables de la dimension politico-socioculturelle uniquement et la troisième prend en compte les variables des deux dimensions.

a) Les résultats des estimations du modèle

Le tableau qui suit donne les résultats des différentes spécifications que nous avons faites par la méthode des moments généralisés en niveau.

Tableau: Régressions du modèle en niveau

Idepib	(1)	(2)	(3)
idepib L1.	-0.1060747** (0.013)	0.2576877*** (0.0000)	-0.1107801** (0.015)
Creco	-0.1351745*** (0.0000)		-0.1526113*** (0.0000)
Comm.	0.1080195*** (0.0000)		0.108243*** (0.0000)
Pibhab	0.0006571** (0.037)		0.0011095*** (0.002)
Tinf	-0.0394134 (0.523)		-0.0428689 (0.499)
Change	0.0129955*** (0.004)		0.013615*** (0.004)
Lipol		-0.9723418 (0.478)	-0.1188155 (0.889)
Liciv		3.805674** (0.017)	-1.25058 (0.217)
Turb		0.0102188 (0.945)	-0.026321 (0.778)
Infr		-0.2825736 (0.840)	-2.268158** (0.016)

Cons	-8.558676*** (0.0000)	-10.24154 (0.382)	0.9373194 (0.899)
Wald chi2	(6) 426.91	(5) 31.15	(10) 423.12
Prob>chi2	0.0000	0.0000	0.0000

Source: Calcul à partir du logiciel Stata12

*NB: *** Significatif au seuil de 1% au plus, ** Significatif au seuil de 5% au plus, et * significatif au seuil de 10% au plus*

Soit la régression (1), avec prise en compte des variables de la dimension Marché uniquement. Les résultats de l'estimation montrent que le coefficient associé à l'indicateur de l'agglomération (idepib L1.) et à l'indicateur taille du pays d'accueil (pibhab) sont statistiquement significatifs à 5%. L'effet de l'agglomération sur l'attractivité est négatif tandis que l'effet de la taille du pays d'accueil est positif. Toujours d'après les résultats de cette estimation, l'ouverture au commerce (comm), le taux de change (change) et le crédit à l'économie (creco) sont statistiquement significatifs à 1%. L'ouverture au commerce et le taux de change ont un coefficient de signe positif alors que le crédit à l'économie est négativement corrélé à l'indicateur d'attractivité. Le coefficient de la variable taux d'inflation (tinf) a un signe négatif, dont du signe attendu. Globalement, la statistique de Wald chi2 (6) = 426.91 avec une probabilité nulle montrent que modèle est significatif et que le modèle est bien spécifié pour toutes les équations. De même, la validité des instruments est confirmée à partir du test de Sargan avec chi2=277,7251 de probabilité nulle.

Pour la régression (2) avec prise en compte des variables de la dimension Politico socioculturelle uniquement, les variables liberté politique (lipol), taux d'urbanisation (turb), infrastructure (infr) sont statistiquement non significatifs ni à 1%, ni à 5%, ni à 10%. Toutefois, la variable liberté civile (liciv) l'est à 5%. Quant à leur effet sur l'attractivité, les coefficients des variables lipol et turb sont de signe attendu tandis que les coefficients des variables liciv et infr sont de signe contraire à la prédiction. De même, la statistique de Wald chi2 (5) = 31.15 avec une probabilité nulle montrent toutefois que le modèle est significatif. Le test de Sargan montre que le nombre des instruments est tout de même valide.

Quant à la régression (3) avec prise en compte des variables de la dimension Politico-socioculturelle et de la dimension Marché, les résultats de l'estimation montrent que les coefficients associés à la variable ouverture commerciale (comm), à la variable taille du pays (pibhab), à la variable taux d'inflation (tinf), à la variable liberté politique (lipol) et à la variable liberté civile (liciv) sont tous de signe attendu. Toutefois, seules les variables comm et pibhab sont statistiquement significatifs à 1% alors les variables tinf, lipol et liciv sont statistiquement non significatifs. Quant aux variables agglomération (idepib L1.), crédit à l'économie (creco), taux d'urbanisation (turb) et infrastructure (infr), celles n'ont pas de coefficient de signe attendu. Les variables agglomération et infrastructure sont statistiquement significatives à 5%, la variable crédit à l'économie l'est à 1%, alors que la variable taux d'urbanisation n'est statistiquement significatif ni 10% ni à 5% ni à1%. De manière globale, le modèle est significatif avec une statistique de Wald chi2 (10) = 423.12 et une probabilité Prob>chi2= 0.0000. Le test de Sargan dans la troisième estimation valide le choix des instruments avec une chi2(160)=262,4119 de probabilité nulle.

b) L'interprétation des résultats

L'estimation du modèle de référence par la méthode des moments généralisés en niveau s'est faite en trois étapes selon qu'on a considéré la régression avec prise en compte uniquement des variables de la dimension Marché (1), la régression avec prise en compte des variables de la dimension Politico socioculturelle (2) et la régression prenant en compte les deux dimensions simultanément (3). De manière globale, les spécifications (1) et (3) sont les plus significatives d'après la statistique de *Wald chi2.* En effet, dans les régressions (1) et (3), la variable d'agglomération (idepib L1.) est significative à 5% même si a un coefficient de signe non attendu dans les deux cas. Toujours dans les régressions (1) et (3), les variables ouverture commerciale (comm) et taux de change (change) relevant du capital Marché sont statistiquement significatifs à 1% et le coefficient de chacune d'elle est de signe attendu et donc contribuent favorablement à l'attraction des IDE. La variable liée à la taille du pays (pibhab) relevant toujours du capital Marché explique significativement à 1% dans la régression (1) et à 5% dans la régression, l'attraction des IDE dans la zone CEMAC. Les coefficients sont également de signe attendu.

Par contre, dans les régressions (2) et (3), seules les variables liberté civile (liciv) de (2) et infrastructure (infr) de (3) sont statistiquement significatives bien que toutes deux ont des coefficients de signe contraire à la prédiction.

V. Conclusion

Etant donné que l'objet de ce travail est de contribuer à l'explication de l'attractivité des IDE dans les pays de la CEMAC, nous avons procédé à l'estimation du modèle en utilisant la méthode des moments généralisés en niveau. L'estimation se faite en trois étapes pour déceler les variables les plus significatives. La première a consisté à considérer le modèle avec prise en compte uniquement des variables du capital Marché, la deuxième a considéré le modèle en prise en compte des variables du capital Politico socioculturel et la troisième a pris en compte les variables du capital Marché et celles du capital Politico socioculturel. Les résultats montrent à chaque fois que les variables les plus significatives sont celles liées à l'ouverture commerciale (**comm**), à la taille du marché (**pibhab**) et à la compétitivité internationale (**change**). Bien plus, les coefficients de ces variables ont les signes positifs corroborant ainsi la prédiction. Ceci nous amène ainsi à dire que le capital Marché explique d'avantage l'attractivité des pays de la CEMAC à l'égard des IDE que le capital Politico socioculturel.

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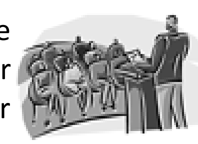

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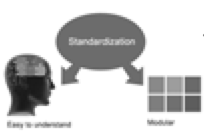

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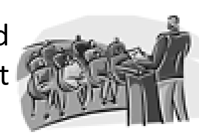

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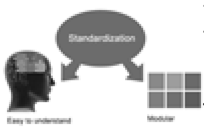

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10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

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12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

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- Do not give permission to anyone else to "PROOFREAD" your manuscript.

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- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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ISSN 9755853