

THE IMPACT OF POLITICAL LIBERALISATION ON FOREIGN DIRECT  
INVESTMENT INFLOWS IN GHANA, 1975-2013

KNUST

BY

OBENG FRANK, B. A. (Hons) Economics,

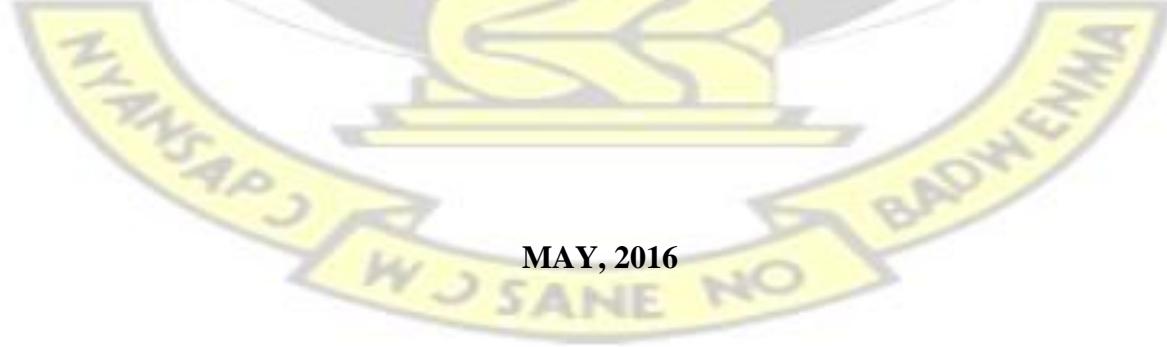


A Thesis Submitted to the Department of Economics, Kwame Nkrumah University of  
Science and Technology, in partial fulfilment of the requirements for the degree of

MASTER OF PHILOSOPHY IN ECONOMICS

Faculty of Social Sciences

College of Humanities and Social Sciences



## **DECLARATION**

I hereby declare that this thesis herein submitted in partial fulfilment of the requirements for the award of the Master of Philosophy (Economics) degree is my own production and has been duly undertaken under supervision except where due acknowledgement has been made in the text.

Obeng Frank .....  
.....

(PG9306413) Signature Date

Certified by;

Dr. Daniel Sakyi .....  
.....

(Supervisor) Signature Date

Certified by;

Dr. Emmanuel Buabeng .....  
.....

(2<sup>nd</sup> Internal Supervisor) Signature Date

Certified by;

Dr. Yusif Mohammed Hadrat .....  
.....

(Head of Department) Signature Date

## **ABSTRACT**

The study investigates the impact of political liberalisation on foreign direct investment inflows in Ghana for the period 1975-2013. The study adopts the autoregressive distributed lag bounds technique to cointegration to examine the possible long run relationship among the investigated variables and finds long run relationship. The empirical results show that political liberalisation has positive and significant impact on foreign direct investment inflows in both the long and the short run. It therefore provides evidence in support of the validity of the location hypothesis in the Ghanaian context. In the long run, economic growth and natural resources have positive and significant impacts on foreign direct investment inflows. Trade openness, infrastructural development and inflation have negative impacts on foreign direct investment inflows. Whereas trade openness' impact is insignificant, those of infrastructural development and inflation are significant. In the short run, economic growth, trade openness and natural resources have positive and significant impacts on foreign direct investment inflows. However, infrastructural development and inflation have negative impacts. Whilst inflation is significant that of infrastructural development is insignificant. The forecast error variance decomposition of foreign direct investment inflows results indicated that within the ten year period, variations in foreign direct investment inflows were high as a result of its own shocks and in terms of innovations in the explanatory variables infrastructural development contributed highest. This is then followed sequentially by natural resources, trade openness, economic growth, inflation and political liberalisation over the specified time period. The study recommends to policy makers to deepen Ghana's current democratic dispensation so to make her a preferred destination for foreign direct investment inflows.

## **DEDICATION**

This work is dedicated to Elder Eric Frimpong Kyei and Deaconess Mrs. Joyce Kyei of London for their unflinching support, love and inputting into my education.

**KNUST**



## **ACKNOWLEDGEMENTS**

Glory and adoration be to the Almighty God for His abundant love, grace and mercies throughout my academic life and for making this thesis a success. I would also like to take this opportunity to express my deepest appreciation and gratitude to Dr. Daniel Sakyi for his tremendous tutelage, constructive criticisms and suggestions which ultimately challenged my thinking, in substantially improving this piece. Warm gratitude goes to all lecturers and non-teaching staff of the Department of Economics for the various contributions they made towards my training.

I also wish to express my sincere gratitude to my wife, Regina Owusu Sekyere and to my two children; Emmanuel and Micheal, my dear parents, Mr. Thomas and Mrs. Charity Gyakye and my family members especially Mr. Kwabena Acheampong, Madam Augustina Addae Serwaa, Dr. Douglas Nnuro Frimpong of African Studies Department-UCC, Dr. Emmanuel Agyei Boateng of University of North Dakota, USA, Mr. Omane Akyeamfour, Mr. Osei Nyarko, Nana Kwame Asante and Ankaar Pascaline. I wish to render my sincere thanks to Rev. Stephen Akosah and Rev. Alexander Kofi Mireku together with their wives and all officers of The Church of Pentecost – Ejisu Area.

I received equally vital assistance from my friends and mates. My appreciation goes to persons like Mr Eric Osei Opoku, Frank Darkwa, Joseph Afriyie, Johnson Nkansah Amoako, Patrick Arthur Bonsu, George Korankye Boateng, Samuel Kwabena Obeng, Elliot Boateng, and Mary Amponsah and to all the 2013 MPhil Economics students of KNUST for their support throughout the programme. I accept total responsibility for any error of fact or interpretation in this study.

## TABLE OF CONTENT

CONTENT	PAGE
DECLARATION .....	II
ABSTRACT.....	III
DEDICATION .....	IV
ACKNOWLEDGEMENT .....	V
LIST OF TABLES .....	X
LIST OF FIGURES .....	XI
LIST OF ACRONYMS AND ABBREVIATIONS .....	XII
<b>CHAPTER ONE .....</b>	<b>1</b>
INTRODUCTION .....	1
1.1 BACKGROUND TO THE STUDY .....	1
1.2 PROBLEM STATEMENT .....	3
1.3 OBJECTIVES OF THE STUDY .....	6
1.4 HYPOTHESIS TESTING .....	6
1.5 SIGNIFICANCE OF THE STUDY .....	7
1.6 SCOPE OF THE STUDY .....	8 1.7
ORGANISATION OF THE STUDY .....	9
<b>CHAPTER TWO .....</b>	<b>10</b>
LITERATURE REVIEW .....	10
2.0 INTRODUCTION .....	10
2.1 THEORETICAL REVIEW .....	10
2.1.1 LOCATION HYPOTHESIS .....	10
2.1.2 ECLECTIC THEORY .....	11
2.1.3 INDUSTRIAL ORGANIZATION HYPOTHESIS .....	12
2.1.4 OUTPUT AND MARKET SIZE HYPOTHESIS .....	12
2.2 EMPIRICAL LITERATURE .....	13
2.2.1 CROSS COUNTRY STUDIES.....	13
2.2.2 COUNTRY-SPECIFIC STUDIES .....	18

2.3 HOW POLITICAL LIBERALISATION HAS BEEN MEASURED .....	21
2.3.1 POLITY2 (POL2) .....	21
2.3.2 POLITICAL RIGHTS (PR) .....	22
2.3.3 CIVIL LIBERTY (CL) .....	23
2.3.4 DUMMY VARIABLES .....	23
2.3.5 PRINCIPAL COMPONENT ANALYSIS (PCA) TECHNIQUE .....	24
2.4 OVERVIEW OF FDI INFLOWS AND POLITICAL LIBERALISATION IN GHANA .....	25
2.4.1 TREND OF FDI INFLOWS IN GHANA .....	25
2.4.2 THE TREND OF FDI NET INFLOWS (PERCENTAGE OF GDP), POLITY2, POLITICAL RIGHTS AND CIVIL LIBERTY STATISTICS IN GHANA .....	26
2.4.3 POLITICAL REGIME AND ITS FDI NET INFLOWS (PERCENTAGE OF GDP), POLITY2, POLITICAL RIGHTS AND CIVIL LIBERTY STATISTICS IN GHANA .....	29
<b>CHAPTER THREE .....</b>	<b>31</b>
METHODOLOGY .....	31
3.0 INTRODUCTION .....	31
3.1 MODEL SPECIFICATION .....	31
3.2 DATA TYPE AND SOURCES .....	32
3.3 JUSTIFICATION AND DEFINITION OF VARIABLES .....	33
3.3.1 FOREIGN DIRECT INVESTMENT (FDI) .....	33
3.3.2 POLITICAL LIBERALISATION (PCAPL) .....	33
3.3.3 ECONOMIC GROWTH (Y) .....	34
3.3.4 TRADE OPENNESS (TR) .....	35
3.3.5 NATURAL RESOURCES (NR).....	35
3.3.6 INFRASTRUCTURAL DEVELOPMENT (ID) .....	36
3.3.7 INFLATION (INF).....	36
3.4 ESTIMATION PROCEDURE .....	37
3.4.1 UNIT ROOT TESTS .....	38
3.4.2 THE ARDL BOUNDS TEST APPROACH .....	40

3.4.3 MODEL ADEQUACY AND RELIABILITY .....	43
3.4.4 ASSESSING THE ELASTICITY OF INNOVATIONS .....	43
<b>CHAPTER FOUR</b>	
.....	45
ANALYSIS AND DISCUSSION OF EMPIRICAL RESULTS .....	45
4.0 INTRODUCTION .....	45
4.1 DISCUSSION OF TIME SERIES PROPERTIES.....	45
4.1.1 RESULTS OF UNIT ROOT TEST .....	45
4.1.2 RESULTS OF THE ARDL BOUNDS TEST FOR COINTEGRATION .....	47
4.2 RESULTS OF THE ESTIMATED LONG-RUN MODEL .....	48
4.2.1 INTERPRETATION OF THE LONG-RUN RESULTS .....	49
4.3 RESULTS OF THE ESTIMATED SHORT-RUN DYNAMIC MODEL .....	53
4.3.1 INTERPRETATION OF THE SHORT-RUN RESULTS .....	54
4.4 RESULTS OF MODEL EFFICIENCY DIAGNOSTIC AND STABILITY TEST .....	57
4.5 RESULTS OF THE CONTEMPORANEOUS CORRELATIONS OF VAR ERROR TERMS .....	62
4.6 RESULTS OF FORECAST ERROR VARIANCE DECOMPOSITION .....	62
<b>CHAPTER FIVE</b> .....	68
SUMMARY, RECOMMENDATIONS AND CONCLUSION .....	68
5.0 INTRODUCTION .....	68
5.1 SUMMARY OF FINDINGS.....	68
5.2 POLICY IMPLICATIONS AND RECOMMENDATIONS .....	71
5.3 CONCLUSION .....	74
5.4 LIMITATIONS OF THE STUDY .....	75
5.5 DIRECTION FOR FUTURE RESEARCH.....	76
<b>REFERENCES</b> .....	77
<b>APPENDICES</b> .....	84
A. Results of the Descriptive Statistics of the variables	
B. Results of ARDL estimates	

- C. Results of the ARDL Bounds test for cointegration
- D. Results of the estimated long run coefficients and the error correction representation for the selected ARDL
- E. Results of the diagnostic tests and the stability test
- F. Results of forecast error variance decomposition
- G. Results of Principal Component Analysis
- H. Data used for the estimation



## LIST OF TABLES

TABLE	PAGE
2.1 Results of Political Regimes and their corresponding FDI inflows (% of GDP), Polity2, Political Rights and Civil Liberty data for Ghana (1975-2013).....	29
4.1 Results of the unit root tests.....	44
4.2 Results of ARDL Bounds test.....	46
4.3 Results of estimated long run model.....	46
4.4 Results of the estimated short run dynamic models.....	52
4.5 Results of the diagnostic tests and the stability test.....	56
4.6 Results of the contemporaneous correlations of VAR error terms.....	62
4.7 Results of the forecast error variance decomposition.....	62

## LIST OF FIGURES

FIGURE	PAGE
2.1 Trends in FDI Inflows from 1975 to 2013.....	24
2.2 Trends of FDI inflows (percentage of GDP), polity2, political rights and civil liberties of the Ghanaian economy from 1975 to 2013.....	26
4.1 Plot of the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ).....	60

# KNUST

## LIST OF ACRONYMS AND ABBREVIATIONS

ADF	Augmented Dicker-Fuller
AIC	Akaike Information Criterion
ARDL	Autoregressive Distributed Lag
CPI	Consumer Price Index
CUSUM	Cumulative Sum
CUSUMSQ	Cumulative Sum of Squares
ECM	Error Correction Model
EIU	Economist Intelligence Unit
ERP	Economic Recovery Programme
FDI	Foreign Direct Investment
FGLS	Feasible Generalized Least Squares
GDP	Gross Domestic Product

GIPC	Ghana Investment Promotion Centre
GLS	Generalized Least Squares
GMM	General Method of Moments
ICT	Information Communication Technology
IMF	International Monetary Fund
LDCs	Less Developed Countries
MENA	Middle East and North Africa Region
MNCs	Multinational Corporations
MNEs	Multinational Enterprises
NBQML	Negative Binomial Quasi-Maximum Likelihood
ODA	Overseas Development Assistance
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PCSE	Panel Corrected Standard Errors
PP	Phillips Perron
SBC	Schwarz Bayesian Criterion
UMCs	Upper Middle Income Countries
UNCTAD	United Nations Conference on Trade and Development
VAR	Vector Autoregression
VECM	Vector Error Correction Model
WDI	World Development Indicators

# KNUST





# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the study

Most African countries in an attempt to protect local industries imposed trade restrictions and controls on foreign capital inflows immediately after their independence in the late 1950s and early 1960s. Most of these African leaders did not open up to foreign direct investment (FDI) because they were not convinced about the potential benefits that FDI could bring to the continent. They rather saw it as neo-colonialism and contended that the inflows of FDI could lead to loss of political sovereignty and the suppression of growth of local economies through competition (Moss et al., 2004).

In the wake of the 1982 debt crisis, most African countries discovered that Western European banks were reluctant to renew, much less, increase their credits to third world governments. The effects of reduced flows of credit from foreign commercial banks were further heightened by a long term fall in the flow of Overseas Development Assistance (ODA) to the least developed countries (Asafu-Adjaye, 2005). In response to increase inflows of external resources, African countries along with other developing ones started to implement economic reforms to attract FDI.

FDI has been described as the net inflows of investment to acquire a lasting management interest and control (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor (UNCTAD, 2014). FDI serves as an inflow of foreign capital to make up for the shortfall in domestic capital formation, promotes transfer of technology, promotes transfer of advanced management practices, causes increases in government revenue, creates employment

avenues, helps improve balance of payment position and provides access to foreign markets (Asafu-Adjaye, 2005 and Elkomy et al., 2015). The enumerated advantages of FDI will enhance the integration of the recipient country into the global economy and bring up growth and development. In the new global economic era, FDI is considered to be a major contributor to the economic growth of any economy. Empirical researches showed that FDI is a major stimulant to economic growth in both developed and developing countries (Chowdhury and Mavrotas, 2003; Alkhasawneh, 2013; Insah, 2013; Melnyk et al., 2014; Abdoul and Hammami, 2015 and Chigbu et al., 2015).

Globally there are over 160 investment promotion agencies which are media that individual governments use to promote FDIs in their respective countries (Abdul-Salam, 2012). Because of this global competition, Ghana has made persistent efforts over the past years to attract FDI into the country through legal and institutional frameworks, promotional campaigns and forums. The various FDI liberalisation policies dating back from Pioneer and Companies Act of 1959 to Minerals and Mining Law, 1986 (PNDCL 153) did not bring any commensurable effect on FDI inflows in the 1970s and 1980s. In 1976 and 1979 Ghana recorded -US\$18.26 million and US\$2.8 million respectively. The amount of FDI inflows continue to fluctuate between US\$20.0 million and US\$243.7 million between the period 1990 and 2005. UNCTAD (2007) reported that Ghana's performance was low relative to other countries in the sub-region.

There has been a huge inflow of FDI into Ghana in recent times. Among the top five in Africa, South Africa, Nigeria and Ghana together pooled above US\$3 billion. Among the five countries Ghana ranked third followed by Congo and Algeria (UNCTAD, 2014). Ghana has

experienced a continuous rise in FDI inflows since 2006 with only a few dips in 2010 and 2013. FDI inflow for 2006 was US\$434.5 million and it was US\$3226.33 million in 2013 contributing to 2.13% of GDP in 2006 and 7.14% of GDP in 2013.

Economists have divergent views on the impact of political liberalisation on FDI inflows. Political liberalisation may have a positive impact on FDI inflows because democratic regime provides checks and balances on elected officials, ensures accountability of government in domestic and international public and consequently strengthens property right protection (Jensen, 2003 and Busse, 2004). On the other side, multinational corporations (MNCs) may like to invest in autocratic countries because leaders in autocratic countries are not accountable to domestic and international public and as such are in better stand to provide them with more generous incentive packages such as protecting them from pressures like higher wages from labour unions and unfriendly taxation schemes (Li and Resnick, 2003 and Tuman and Emmert, 2003). Moreover, it is easier for multinational corporations to exploit their oligopolistic or monopolistic positions when investing in autocratic countries (Li and Resnick, 2003 and Jokobsen and de Soysa, 2006). Others argue that there is no clear relationship (Buthe and Milner, 2006). Since Ghanaian economy has experienced series of autocratic and democratic governance over the years in its bid to liberalise politically and economically it will be prudent that the overall effect of political liberalisation on FDI inflows be empirically determined.

## **1.2 Problem statement**

Since the implementation of Economic Recovery Programme in 1983, Ghana has been making strenuous efforts to attract FDI by her various successive governments such that Ghana has

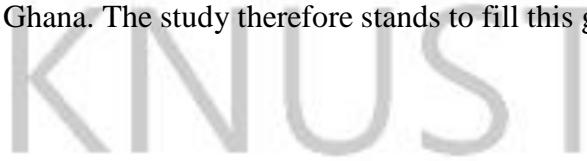
improved the business environment for both domestic and foreign investors, liberalizing investment rules and reducing trade barriers (UNCTAD, 2003). Currently, Ghana spends so much money in its electoral process both in the election of presidential and parliamentary candidates as well as its District Assembly elections in a bid to strengthen her democracy to continue enjoy political stability. The electoral commission of Ghana was allocated a sum of GH¢3,710,000.00, GH¢20,678,400.00 GH¢36,800,000.00 and GH¢48,006,292.00 in its presidential and parliamentary elections in 2000, 2004, 2008 and 2012 respectively as cited in the budget statement of the various years. Additional districts were created and this increased the districts from 110 in the year 2000 to 170 in 2012. Moreover, additional parliamentary seats in parliament were also increased from 230 in 2008 to 275 in 2012. These additional increment increases government spending and this contributed to the budget deficit of 11.8% of GDP recorded in the year 2012 (BOG, 2012).

Since 1975 the historical trend of FDI and political liberalisation can be divided into four main phases. The first phase (1975-1979) which is a non-democratic period is characterized by sluggish FDI inflows. This phase recorded an average of about US \$14.8 million per annum with the highest and the lowest inflows of US\$70 million in 1975 and -US\$18.26 million in 1976 respectively. For the same period the annual average FDI as a percentage of GDP was 0.43%. Those of polity2, political rights and civil liberty were averagely rated as 2.9, 1.0 and 3.1 respectively (Marshall and Jaggers, 2014 and Freedom House, 2014). The second phase (1979-1981) which is a democratic period had moderate FDI inflows. This democratic period which lasted for 27 months recorded an average of about US \$9.69 million per annum with the highest and the lowest inflows of US\$16.26 million in 1981 and -US\$2.80 million in 1979 respectively. The annual average FDI as a percentage

of GDP was 0.18%. Those of polity2, political rights and civil liberty were averagely rated as 5.8, 5.6 and 5.6 respectively. The third phase (1981-1992) which is a non-democratic period is characterized by oscillatory FDI inflows. The period witnessed an annual average of US\$10.74 million per annum with the highest inflows US\$22.5 million recorded in 1992 and the lowest inflows of US\$2 million recorded in 1984. The annual average FDI as a percentage of GDP was 0.14%. Those of polity2, political rights and civil liberty were averagely rated as 1.9, 1.7 and 2.8 respectively. The fourth phase spanning from 1993-2013 which is a post constitutional rule witnessed a huge influx and an unprecedented increase in FDI inflows into the country and subsequently brightened the image of Ghana's economy in the international financial markets. The period witnessed an annual average of US\$926.64 million with the highest and the lowest values of FDI inflows of US\$3293.43 million in 2012 and US\$58.9 million in 2002 respectively. The annual average FDI inflow as a percentage of GDP was 3.26%. Those of polity2, political rights and civil liberty were averagely rated as 7.5, 7.8 and 7.0 respectively.

The democratic period 1993-2013 had enormous FDI inflows, better quality of institutions, high degree of political rights and high degree of civil liberty enshrined for the citizens in Ghana. The study therefore seeks to explore empirically if the recent increasing trend of FDI inflows can be attributed to the Ghanaians' political liberalisation. The study is in line with location hypothesis associated with Thunen (1826) and which has been further integrated by Dunning (1977, 1979 and 1988) in his so called Eclectic Paradigm. The location theory postulates that there are advantages that make a place or location pleasing to the eye of foreign investors. The locational advantages can be political, social or economic factors that draw in FDI to a place. The study therefore focuses on one such locational advantage, which is political liberalisation. To the best of the author's

knowledge, the empirical evidence on the impact of political liberalisation measured by principal component analysis (PCA) technique involving polity2, political rights and civil liberty on FDI inflows has not been studied in Ghana. The study therefore stands to fill this gap.



### **1.3 Objectives of the study**

The main objective of this study is to investigate the impact of political liberalisation on FDI inflows in Ghana. The study specifically seeks to

- i. investigate the long and the short run relationship between political liberalisation and FDI inflows.
- ii. investigate the impact of other macroeconomic variables such as economic growth, trade openness, natural resources, infrastructural development and inflation on FDI inflows.
- iii. determine the contributions of innovations of the determinants of FDI inflows in explaining variations in FDI inflows.

### **1.4 Hypothesis testing**

In order to meet the objectives of the study, the following hypothesis would be tested:

- i.  $H_0$ : There is no significant relationship between political liberalisation and FDI inflows.  
 $H_1$ : There is significant relationship between political liberalisation and FDI inflows.
- ii.  $H_0$ : There is no significant impact of economic growth on FDI inflows.  
 $H_1$ : There is significant impact of economic growth on FDI inflows.
- iii.  $H_0$ : There is no significant impact of trade openness on FDI inflows.

- H<sub>1</sub>: There is significant impact of trade openness on FDI inflows. iv. H<sub>0</sub>:  
There is no significant effect of natural resources on FDI inflows.
- H<sub>1</sub>: There is significant effect of natural resources on FDI inflows.
- v. H<sub>0</sub>: There is no significant effect of infrastructural development on FDI inflows.
- H<sub>1</sub>: There is significant effect of infrastructural development and FDI inflows.
- vi. H<sub>0</sub>: There is no significant impact of inflation on FDI inflows.
- H<sub>1</sub>: There is significant impact of inflation on FDI inflows.

## 1.5 Significance of the study

The principal thrust of the study is to investigate the effect of political liberalisation on FDI inflows in Ghana. This study attempts to contribute to the empirics of the effect of political liberalisation on FDI inflows in three ways.

Firstly, the study shall enable government, policy makers as well as other stakeholders to come to realisation whether there is an impact of political liberalisation on FDI inflows in Ghana or not.

Knowledge of this finding will go a long way to guide the adoption of key policies to channel FDI inflows into productive areas of the economy which would eventually increase the economic growth process of the country.

Secondly, knowledge of the study would also be beneficial to the foreign investors and the multinational companies, as they would be guided as to whether to continue doing investment or otherwise in Ghana. A positive and significant impact of political liberalisation on FDI inflows will

increase the confidence level of the foreign investors and the multinational companies and as such FDI inflow increases. The argument holds that as FDI increases, it tends to increase the capital base of the economy, leading to an eventual rise in the income of the citizenry in the long run. A rise in income would also propel a rise in the consumption of firms' products.

Last but not least, this work would be very resourceful to other researchers interested in this area which could be used as a foundational rock for their research. In other words, a study of this nature would not only put in additional information in the existing gamut of knowledge but would serve as a baseline for analysis of any work of development oriented nature like this.

## **1.6 Scope of the study**

Generally, the study seeks to investigate the effect of political liberalisation on FDI inflows in Ghana. In this regard, the study captures theoretical and empirical discussions of political liberalisation and FDI inflows. Furthermore, the study highlights FDI inflows as well as Political liberalisation periods in Ghana. An annual time series data spanning the period 1975-2013 was used for the analysis. The period of study has the advantage of obtaining adequate degrees of freedom for the analysis. This is because it is long enough to adequately account for the various issues on political liberalisation, trade and investment policy reforms in the early 1980s, the recent increased in FDI inflows, the global financial crisis, the oil discovery process and economic growth of Ghana inter alia key economic events.

## **1.7 Organisation of the study**

The study is structured as follows. It proceeds to the second chapter by critically reviewing relevant literature on the subject matter as it relates to the global economy, developing countries and the Ghanaian economy. Chapter three captures the methodology and explores the econometric frameworks adopted for the study and provide an in-depth overview of the estimation procedures. The presentation and analysis of empirical results is captured in chapter four, whilst chapter five summarizes the study and draws conclusions and provides key economic policy recommendations.



# CHAPTER TWO

## LITERATURE REVIEW

### 2.0 Introduction

The chapter reviews the literature on the subject matter as it relates to the global economy, developing countries and the Ghanaian economy. The chapter is divided into three sections. The first section examines the theoretical literature, the second section explores the empirical literature and the third section presents an overview of FDI inflows and political liberalisation in the Ghanaian economy: the trend of FDI inflows in Ghana, the trend of FDI inflows (as percentage of GDP), polity2, political rights and civil liberty statistics in Ghana, descriptive statistics on FDI inflows (as percentage of GDP) and political liberalisation variables and lastly, how political liberalisation has been measured.

### 2.1 Theoretical Review

This section of the literature review centres on theories explaining FDI. Many theories have been propounded to explain the reasons why foreigners invest in the host economy. Extensive reviews of the main FDI theories range from location hypothesis, eclectic paradigm hypothesis, industrial organisation hypothesis and market size hypothesis among others.

#### 2.1.1 Location Hypothesis

The publication of the first volume of *Der Isolierte Staat* interpreted in English as *Isolated States* by Thunen (1826) gave way to the location theory. These are advantages that make a place or

location pleasing to the eye of foreign investors. The locational advantages can be political, economic or social factors that attract FDI inflows to a country. Some locational advantages are controllable by policy makers whereas others are not. Some of the controllable ones are good infrastructure, well educated population, cheap labour, political liberalisation, political stability, macroeconomic stability, low taxation system and many others. Notably among the uncontrollable ones is natural resources endowment. These locational factors enable the firm to increase its efficiency by decreasing costs of production and consequently enlarge income. Horst (1972) used this hypothesis to explain US FDI in Canada due to abundance of cheap labour resulting from low wages in Canada.

### **2.1.2 Eclectic Theory**

Dunning's eclectic theory was developed by Dunning (1977, 1979, 1988). This theory argues that multinational enterprises (MNEs) invest in foreign countries based on three advantages. The advantages are ownership, locational and internalisation. He integrated them by giving the name "OLI Paradigm". The ownership advantages are advantages to subdue the additional costs of operating in an unfamiliar environment. Examples of ownership advantages are firm-specific technology, trade mark or brand names, managerial skills and return to scale that enable MNEs to operate competitively with local enterprises in an unfavourable economy. As already indicated, locational advantages can be political, economic or social factors that attract FDI to a location and are specific to the location where FDI occurs. Moreover, the internalisation advantages are advantages that explain why MNEs decide to internalise their ownership advantages directly by investing or producing the product within the location itself instead of selling them to other firms.

### **2.1.3 Industrial Organization Hypothesis**

Hymer (1960) formulated this hypothesis and was widened by Kindleberger (1969) and Dunning (1988). The industrial organization hypothesis states that when a firm builds a subsidiary in a different country it is confronted with many demerits in contending with the local firms. These demerits come from differences in legal system, culture and other inter-country differences. For instance, multinational companies may have to offer greater remuneration in the host country than in the local firms, because employment with them is considered by local labourers as being more hazardous. Despite these demerits if the firm pursues in FDI, it must possess some intangible assets advantages such as patent-protected technology, managerial skills, well-known brand name and other firm-specific advantages.

### **2.1.4 Output and Market Size Hypothesis**

The relationship between FDI and growth reflects market size hypothesis by Dunning (1993). This hypothesis states that the volume of FDI inflows to recipient country reckons on its market size measured by the GDP of the country or by the sales of multinational companies in that country. A large market size provides relatively better chances for making profits hence, should attract more FDI inflows. Besides having an enormous market size, high-growth countries normally implement and enforce stable and good macroeconomic policies that attract foreign investors.

## **2.2 Empirical Literature**

This section reviews works on the impact of political liberalisation on FDI inflows in both developed and developing countries. The section is divided into two sub-sections, one that focuses on cross country studies and the other on country-specific studies.

### **2.2.1 Cross Country Studies**

Harms and Ursprung (2002) examined empirically the effect of democracy on FDI inflows in 62 developing and emerging market economies. They measured democracy by using the composite of political rights and civil liberty. The study covered the period 1989-1997 and employed a Two-step procedure with cross-sectional and panel data analyses. Their results indicated that democracy has positively significant impact on FDI inflows. They therefore concluded that multinational enterprises are drawn in to countries where political rights and civil freedoms are respected.

Jensen (2003) explored the impact of democratic governance and FDI inflows for 114 developed and developing countries. The time frame for his analyses spanned from 1970 to 1997. The study used both panel and cross-sectional regression analyses. The results revealed that democratic political institutions are linked with greater FDI inflows. Notwithstanding this, even when other political and economic factors are controlled, democratic regime attracts as much as 70 percent more FDI inflows than their authoritarian regime.

Li and Resnick (2003) investigated the linkage between democracy and FDI inflows using 52 developing countries spanning from the period 1982 to 1995. Employing panel regression

techniques their results depicted that when democracy and non-democracy related property rights are accounted for, democracy has significantly negative impact on FDI inflows. He also demonstrated that improvement in democratic rights lead to enhancement in property rights protection, which in turn upsurges FDI inflows.

Tuman and Emmert (2003) investigated the economic and political determinants of U.S. FDI in Latin America. This study centralised on fifteen (15) Latin American and Caribbean countries for the period 1979-1996. Their results revealed that market size, workers skill levels and political instability have statistically significant effect on U.S. multinational firms' investment behaviour. Furthermore, poor human rights record and military coups d'état are found to be positive and statistically significant on FDI inflows in U.S.

Busse (2004) explored the effect of democracy on FDI inflows in 69 developing and emerging countries. Political rights and civil liberty indicators were used to measure democracy. The study used annual time series data from 1972 to 1999 and employing panel data analysis the results indicated that MNEs are highly attracted to countries where civil liberties and political rights are guarded against unconstitutional acts. The Granger causality tests indicated that political rights causes FDI inflows, whereas civil liberties and FDI inflows are indecisive.

Busse and Hefeker (2005) explored the impact of political risk and institutions on FDI inflows for 83 developing countries. Using different econometric techniques such as cross country analysis and the panel analysis where fixed-effect model and the Arellano-Bond Generalised

Method of Moments (GMM) estimators were employed. Their study covered the period spanning from 1984 to 2003. Their results showed that absence of ethnic tensions, internal conflict, government stability, ensuring law and order and basic democratic rights are significant factors influencing FDI inflows.

Jokobsen and de Soysa (2006) examined whether foreign investors punished democracy in 99 developing countries. Their study covered the period from 1984 to 2001. They measured democracy by these three indicators: polity2, political rights and civil liberty. They employed panel corrected standard error (PCSE) method and the results showed that democracy has a long term significant negative effect on FDI inflows in those countries.

Pierpont et al. (2007) examined the influence of democracy and property rights on per capita inflows of FDI. The study used time series data from 1986 to 1997 across 54 developing countries spanning from Asia, Latin America, Eastern Europe, Middle East, North Africa and Sub-Saharan Africa. Employing econometric techniques such as fixed effects, random effects and Generalised Least Squares estimators, they found that democratic institutions and property rights protection significantly increase per capita FDI inflows to developing countries.

Etten (2008) examined whether or not there exists a relationship between democracy and the amount of FDI inflows. The study engaged 124 countries over the period from 1996 to 2005 and employed Negative Binomial Quasi-Maximum Likelihood (NBQML) method and the Kaufmann indices to measure democracy. The results revealed that not all of the Kaufmann indices show the

desired positive sign. Nonetheless, the positive effects outweigh the negative effects, resulting in the conclusion that a democratic country indeed receives higher FDI.

Asiedu and Lien (2010) investigated whether the natural resources in the recipient countries changed the axiom that the effect of democracy on FDI inflows is the same for resource exporting and non-resource exporting economies. The study covered the period from 1982 to 2007 using 112 developing countries from Africa and outside Africa. Employing linear dynamic panel-data model their results exhibited that democracy boosts FDI provided that natural resources endowment is less than some critical value. They also identified positive impact of democracy on FDI in 90 countries whereas negative impact in 22 countries.

Ponce (2010) examined democracy and FDI inflows nexus in 15 Latin American countries from 1985 to 2003 and in 11 Eastern European nations from 1991 to 2003. He measured democracy by political rights and civil liberties. Utilizing the panel data regressions the results unravelled that civil liberty has significantly positive impact on FDI inflows in both blocks.

Nieman and Thies (2012) explored the impacts of democracy, property rights and their interaction impact on FDI inflows. The study covered the period from 1970 to 2008 in 124 countries. The study employed non-nested hierarchical modelling strategy. The result demonstrated that the impact of property rights on attracting FDI is based on democratic institutions in the state. They also found that in the absence of democratic institutions, property rights protection exerts negative effect on FDI inflows.

Madani and Nobakht (2014) investigated the impact of political institutional quality on the level of political risks perceived by foreign investors and multinational corporations for 31 UpperMiddle-income Countries (UMCs). The study covered the period of 1990-2011. The Generalised Method of Moments estimator proposed by Arellano and Bond (1991) was employed. The empirical findings indicated that democracy exerts significantly positive impact on FDI inflows.

Pandya (2014) examined the impact of democratisation on FDI liberalisation. The research used time series data from 1970 to 2000 across 94 developing countries. The study employed econometrics techniques of fixed effects, random effects and generalized least squares estimator and found that democratisation positively and significantly contributes to greater FDI openness.

Dang (2015) investigated whether it is political liberalisation that attracts FDI inflows or the similarities of political regimes that attract FDI inflows. The study used cross sectional data from 2009 to 2010 in 245 countries. The study employed Heckman two-stage model to control for selection biases in the origin of FDI inflows. The empirical findings indicated that democracy has significantly positive impact on FDI inflows. Again, this positive relationship disappeared when controlled for a selection bias in which greater FDI inflows tends to come from democratic home countries.

Elkomy et al. (2015) explored the effect of political development on FDI inflows in 61 emerging and developing countries. The study used a panel data covering the period from 1989 to 2013. They measured political development by using the Economist Intelligence Unit's (EIU) Democracy Index with respect to the regime type; Authoritarian, Hybrid and Democracy. The study employed

panel data approach and was based on panel corrected standard errors (PCSE). The results showed that political development has significantly positive impact on FDI inflows in democratic countries. Feulefack and Kamajou (2015) examined the impact of quality of institutions on petroleum FDI inflows in 9 oil and 13 non-oil producing countries in Sub-Saharan Africa. The research covered the period from 2002 to 2011. The study engaged econometrics techniques of fixed effects regression. The results unravelled that quality of institutions does not have an impact on petroleum FDI inflows in oil producing countries. However, in non-oil producing countries, institutional quality has positive and significant effects on the inflows of petroleum FDI.

### **2.2.2 Country-Specific Studies**

Ekpo (1997) employed the ordinary least square technique to investigate macroeconomic determinants of FDI inflows in Nigeria. The study covered the period 1974-1994. He included political regimes as one of his explanatory variables and used a dummy variable to measure changes in political regimes. The study found that political regime is a significant factor in determining FDI inflows in Nigeria.

Tsikata et al. (2000) investigated factors that influence FDI inflows in Ghana from 1970 to 1997. Their research utilised both econometric time series techniques (Augmented Dicker-Fuller, Ordinary Least Squares and Error Correction Model) and survey with interview techniques. Their research results exhibited that among the factors accounting for the evolution of FDIs are the economic growth and the political stability.

Wafure and Nurudeen (2010) examined the determinants of FDI inflows in Nigeria. The study used time series data from 1977 to 2006 and employed Ordinary Least Squares technique. They included political regime as one of their explanatory variables. They measured political regime by the type of government dummy; military regime as 1 and civilian regime as 0. Their results revealed that democracy has significantly positive effect on FDI inflows.

Nyarko et al. (2011) explored the effect of exchange rate regime on FDI inflows in Ghana. The study used time series data from 1970 to 2008 and employed Ordinary Least Squares technique. They included democracy as one of their explanatory variables. They measured democracy by the type of government dummy; military regime and civilian regime as 1 and 0 respectively. Their results revealed that democracy has positive but insignificant relationship with FDI inflows.

Djokoto and Dzeha (2012) explored the determinants and the effects of FDI inflows in Ghana. The study engaged time series data from 1995 to 2010 and employed Ordinary Least Squares and cointegration technique. They included democracy as one of the explanatory variables. They measured democracy using polity2 variable. Their research results depicted that democracy has significantly positive impact on inflows of FDI.

Abdul-Salam (2012) examined the impact of socio-political instability periods featured by national elections on FDI inflows in Ghana. The study used time series data from 1992 to 2010 and employed ARDL cointegration technique developed by Pesaran et al. (2001). A dummy variable; election was used to measure the impact of socio-political instability. Election is assigned a value 1 in the periods elections were held in Ghana and 0 otherwise. The empirical results indicated that

socio-political instability exerts a negative influence on FDIs in the long run as well as the short run in Ghana.

Acheampong and Osei (2014) investigated the determinants of FDI inflows in Ghana. The research used a time series data spanning from 1980 to 2010. They employed Johansen Maximum Likelihood cointegration technique to test for cointegration among the variables. They included political instability among the explanatory variables and measured it as military presence in politics. Their research revealed that political instability has significantly negative effect on FDI inflows.

Chaib and Siham (2014) examined the impact of institutional quality in attracting FDI inflows in Algeria. Their research used a time series data covering from 1995 to 2011. They employed Johansen Maximum Likelihood cointegration technique to test for cointegration among the variables. Their research revealed that economic freedom, voice and accountability have significantly positive impacts whereas government effectiveness has significantly negative effect on FDI inflows.

Akbar and Akbar (2015) investigated the determinants of FDI inflows in Pakistan. The study used a time series data spanning from 2000 to 2013 and engaged multiple regression technique for their analysis. They included regime type among the explanatory variables. The study showed that regime type has significantly positive impact on FDI inflows. Notwithstanding this, they unravelled that FDI inflows are higher in the era of dictatorship as compare to the era of democracy.

Sikwila (2015) investigated the determinants of FDI inflows in Zimbabwe. The study used a time series data covering the period 1980-2012 and engaged Ordinary Least Square regression. He included political stability among the explanatory variables. The study showed that political stability has significantly positive effect on FDI inflows.

As can be seen from above, the literature reviews revealed that there are contradicting perceptions and findings on the impact of political liberalisation on FDI inflows. Specifically, none of these studies in Ghana has investigated the impact of political liberalisation measured by principal component analysis (PCA) which includes indicators of political rights, civil liberty and polity2 on FDI inflows.

### **2.3 How Political Liberalisation has been measured**

Political liberalisation corresponds to the event or the process of becoming a democracy (Giavazzi and Tabellini, 2005). Political liberalisation has been measured as polity2 by the Polity IV Project (Marshall and Jagers, 2014). Again, it has also been measured as political rights and civil liberty by the Heritage Foundation's subjective "Index of Economic Freedom" (Freedom House, 2014). In addition, it has also been measured by using dummy variables. Moreover, some researchers have also measured political liberalisation by employing Principal Component Analysis (PCA) technique.

### **2.3.1 Polity2 (POL2)**

Polity2 seeks to measure the quality of democratic institutions, on the basis of freedom of active and passive participation in elections, checks and balances on the executive, freedom of political association and respect of other basic political rights. It ranges from -10 which signify strongly autocratic to +10; strongly democratic (Marshall and Jagers, 2014).

Giavazzi and Tabellini (2005) used polity2 variable to measure political liberalisation. They defined political liberalisation as the event or the process of becoming a democracy. Sakyi (2011) used polity2 variable to measure political system. He defined political system as a combine measure of the extent to which a country is autocratic or democratic and it ranges from 10 (strongly autocratic) to +10 (strongly democratic). Batuo and Asongu (2012) also engaged polity2 variable to measure political liberalisation. They argued that polity2 variable was coded to record the regimes institutional authority features. The dataset recorded a democracy score from 0 to 10 for each country based on the openness of the political process. They defined political process as the extent to which citizens can effectively express preference about policies and leader through elections and the degree of restraints on the power of the chief executive. Nieman and Thies (2012) also used polity2 variable to measure democracy. They argued that democratic institutions are expected to provide a coherent logical basis for the creation, interpretation and enforcement of property right laws.

### **2.3.2 Political Rights (PR)**

Political rights enable people to participate freely in the political process including competing for public office, enjoying the right to vote and to elect representatives who have a decisive vote on

public policies. This measure is based on annual ranking of countries from 1 to 7. The highest rank is linked with the value 1 whereas the lowest rank is linked with 7. This variable is scaled from 1 to 7. The higher value signifies lower degree of rights and the lower value signifies higher degree of rights (Freedom House, 2014).

Busse (2004) used political rights variable from Freedom House to measure democracy. He explained political rights from the view point of Freedom House as explained above. Moreover, Dzunic (2006) employed political rights variable to measure political liberalisation. Again, Ponce (2010) employed political rights variable from Freedom House to measure democratic development. He expresses democratic development as the degree of state intervention.

### **2.3.3 Civil Liberty (CL)**

Civil liberty includes the freedom to develop views, institutions and personal autonomy without interference from the state. This measure is based on annual ranking of countries from 1 to 7. The highest rank is tagged with the value 1 whereas the lowest rank is tagged with the value 7. This indicator is measured on a scale from 1 to 7, with higher value indicating lower degree of liberty and lower value indicating higher degree of liberty (Freedom House, 2014).

Busse (2004) engaged civil liberty variable from Freedom House to measure democracy. He explained political rights from the view point of Freedom House as explained above. Dzunic (2006) employed civil liberty variable to measure political liberalisation. Ponce (2010) employed civil liberty variable from Freedom House to measure democratic development. He expresses democratic development as the degree of state intervention.

#### **2.3.4 Dummy Variables**

Dummy Variable is the quantitative representation of qualitative information. Ekpo (1997) employed dummy variable to measure democracy. He included democracy as one of the explanatory variables in his work “the macroeconomic determinants of FDI in Nigeria”. He measured democracy by the type of political regime dummy; assigning value 1 for military regime and 0 for civilian regime. Tsikata et al. (2000) also employed dummy variable to measure democracy. They included democracy as one of their explanatory variables when they investigated into the determinants of FDI inflows in Ghana. They measured democracy by the type of government dummy; military regime and civilian regime as 1 and 0 respectively. Moreover, Nyarko et al. (2011) also employed dummy variable to measure democracy. They included democracy as one of their explanatory variables when they investigated into the exchange rate regime’s effect on FDI inflows in Ghana. They measured democracy by the type of government dummy; military regime and civilian regime as 1 and 0 respectively.

#### **2.3.5 Principal Component Analysis (PCA) Technique**

Principal Component Analysis (PCA) is a variable reduction technique for the discovery of the structure of relationship among variables. A principal component is a linear combination of optimally-weighted observed variables (Smith, 2002). PCA technique was employed by Adams and Sakyi (2012) to extract a composite index using these three political indicators: polity2, political rights and civil liberty as a measurement for democracy. They argued that the use of PCA indicator does not only provide a composite indicator for democracy or for robustness issues, but

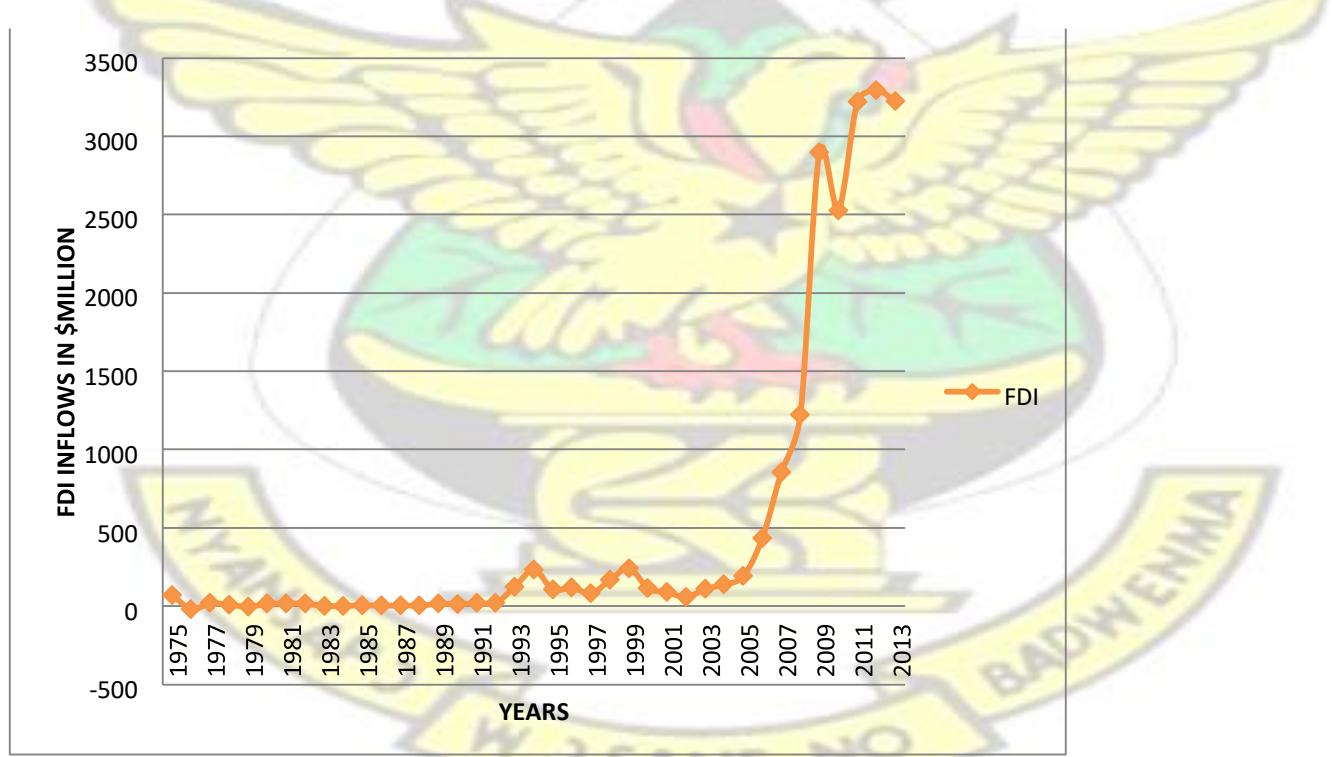
more relevantly helps to remove any multicollinearity problems that may hassle estimated regressions with the indicators of democracy.

## 2.4 Overview of FDI inflows and Political Liberalisation in the Ghana

This section reviews the trend of FDI inflows in Ghana, and the trend of FDI inflows (percentage of GDP), polity2, political rights and civil liberty statistics. It further provides descriptive statistics on FDI inflows (percentage of GDP) and political liberalisation variables.

### 2.4.1 Trend of FDI Inflows in Ghana

The figure below shows the trend of FDI inflows in Ghana from 1975 to 2013.



**Figure 2.1: Trend of FDI inflows from 1975 - 2013**

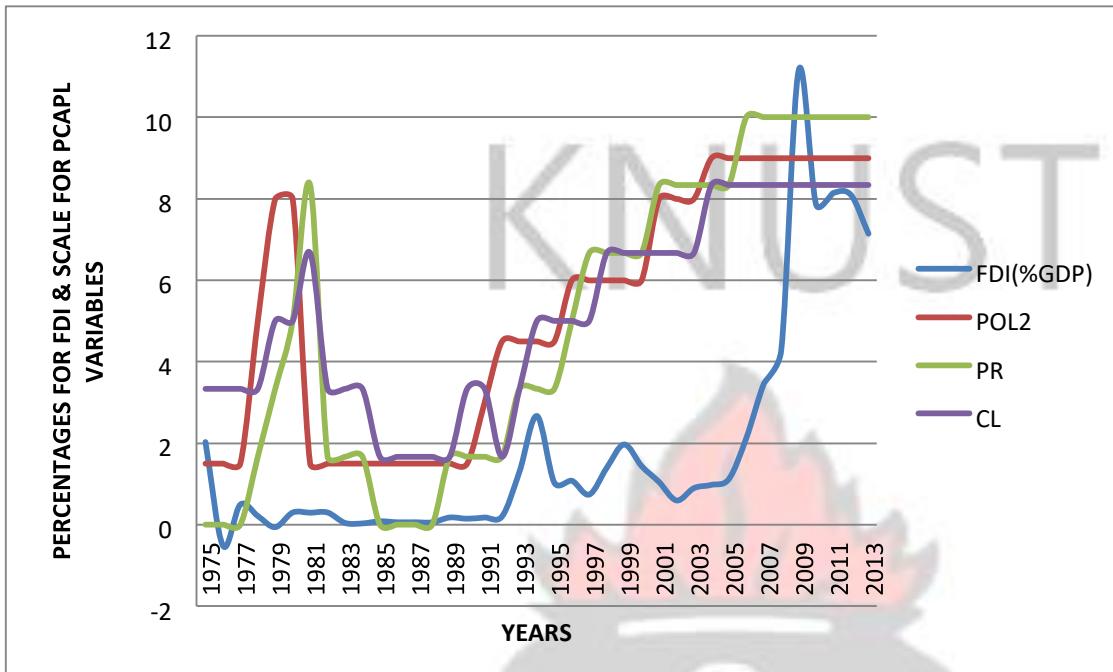
Source: Author's computation using data from UNCTAD, 2014.

From Figure 2.1, it is seen that FDI inflow has experienced uneven trend over the past years.

The period of 1975 to 1992 experienced very low FDI inflows since FDI inflows were below US\$100 million. However, there was a sharp rise in FDI inflows from US\$22.5 million in 1992 to US\$125 million in 1993. FDI inflows increased again to US\$233 million in 1994. This was followed by a decline in FDI inflows to US\$106.5 million in 1995. Again, FDI inflows increased slightly to US\$120 million in 1996. Ghana continued to experience low FDI inflows within the period of 2000 - 2005. FDI inflows continue to rise from 2006 through to 2009. Specifically, FDI inflows increased to US\$434.50 million, US\$855 million, US\$1,220 million and US\$2,897 million respectively. Notwithstanding this, FDI inflows fell in 2010 to US\$2,527 million and thereafter increased from 2011 to 2012 to US\$3,222 million and US\$3,293 million respectively. However, FDI inflows slightly fell to US\$3,226 million in 2013.

#### **2.4.2 The trend of FDI Net Inflows (Percentage of GDP), Polity2, Political Rights and Civil Liberty Statistics in Ghana**

The figure below shows the trend of FDI net inflows (Percentage of GDP), Polity2, Political Rights and Civil Liberty Statistics in Ghana from 1975 to 2013.

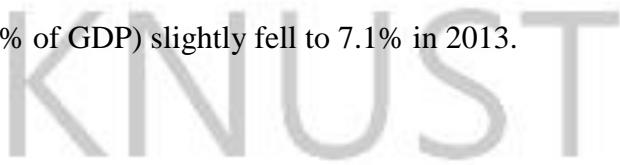


**Figure 2.2: Trend of FDI inflows (percentage of GDP) and Political Liberalisation variables of the Ghanaian Economy (1975-2013)**

Source: Author's computation using data from UNCTAD, 2014; Marshall and Jaggers, 2014 and Freedom House, 2014.

From Figure 2.2, it is observed that FDI inflows (% of GDP) in Ghana have experienced an uneven trend over the past years. The period of 1975 to 1992 experienced very low FDI inflows since FDI inflows (% of GDP) were below 1%. However, there was a sharp rise in FDI inflows (% of GDP) from 0.2% in 1992 to 1.3% in 1993. FDI inflows (% of GDP) increased again to 2.7% in 1994. This was followed by a decline in FDI inflows (% of GDP) to 1.0% in 1995. Again, FDI inflows (% of GDP) increased slightly to 1.1% in 1996. Ghana continued to experience low FDI inflows (% of GDP) within the period of 2001 - 2005 since FDI inflows (% of GDP) were below 1.2%. FDI inflows (% of GDP) continued to rise from 2006 through to 2009. Specifically, FDI inflows

(% of GDP) increased to 2.1%, 3.5%, 4.3% and 11.2% respectively. Notwithstanding this, FDI inflows (% of GDP) fell in 2010 to 7.9% and thereafter increased to 8.1% in 2011 and 2012 respectively. However, FDI inflows (% of GDP) slightly fell to 7.1% in 2013.



Polity2 exhibited a level scale trend of 1.5 from 1975 to 1977 respectively. It increased from 1978 to 1980. Specifically, polity2 was on a scale of 8 in 1979 and 1980 respectively. It fell continuously from 1981 to 1990 to a scale of 1.5 respectively. It increased continuously from 1991 through to 2013. Specifically, polity2 variable was on a scale of 4.5 from 1992 to 1995 respectively. It was on a scale of 6 from 1996 through to 2000 and a scale of 8 from 2001 to 2003 respectively. From 2004 to 2013, polity2 variable experienced the highest rating of 9 respectively.

A circular crest of KNUST is visible in the background, featuring a central figure and the university's name around the border.

Political rights also exhibited a level scale trend of 0 from 1975 to 1977 respectively. It increased continuously from 1978 to 1981. Specifically, political right increased from a scale of 1.7 in 1978 to a scale of 8.3 in 1981. Political rights variable fell to a scale of 1.7 from 1982 to 1984 respectively. It then fell again from 1985 to 1988 to a level scale trend of 0. It increased continuously from 1989 to 2013. Specifically, political rights variable was on a scale of 1.7 from 1989 to 1992, scale of 3.3 from 1993 to 1995, scale of 6.7 from 1997 to 2000 and a scale of 8.3 from 2001 to 2005. From 2006 to 2013, political rights variable was on the highest scale of 10 respectively.

Civil liberty variable also exhibited a level scale trend of 3.3 from 1975 to 1978. It increased continuously from 1979 to 1981. Specifically, civil liberty variable increased from a scale of 5 in 1979 to a scale of 6.7 in 1981. Civil liberty variable fell from 1982 through to 1989 with a scale

value of 3.3 in 1982 to 1.7 in 1989. It increased again to 3.3 in 1990 and 1991 respectively. It then fell to 1.7 in 1992. It increased continuously from 1993 to 2013. Specifically, civil liberty was rated on a scale of 3.3 in 1993, a scale of 5 from 1994 to 1997 respectively and a scale of 6.7 from 1998 to 2003. From 2004 to 2013, it experienced the highest rating of 8.3.

#### **2.4.3 Political Regime and its FDI Net Inflows (Percentage of GDP), Polity2, Political Rights and Civil Liberty Statistics in Ghana**

Since 1975 the political regime and its historical trend of FDI, polity2, political rights and civil liberty can be divided into four main phases. The first phase (1975-1979) which was a nondemocratic period was characterized by sluggish inflows, the second phase (1979-1981) which was a democratic period had moderate inflows, the third phase (1981-1992) which was a nondemocratic period was characterized by an oscillatory inflows, and the fourth phase (1992-2013) which was a post constitutional rule witnessed a huge influx and an unprecedented increase in FDI inflows into the country and subsequently improved the image of the Ghanaian economy in the international financial markets.

**Table 2.1 Table showing years of political regimes and their corresponding FDI inflows (% of GDP), Polity2, Political Rights and Civil Liberty Statistics for Ghana (1975-2013)**

Variable	1975-1979	1979-1981	1981-1992	1993-2013
FDI net inflows (% of GDP)	0.43	0.18	0.14	3.26
Polity2	3.5	5.8	1.9	7.5
Political Rights	1.0	5.6	1.7	7.8
Civil Liberty	3.7	5.6	2.8	7.0

**Source:** Author's computation from UNCTAD 2014, Marshall and Jagers 2014 and Freedom House 2014.

From Table 2.1, the first period of 1975-1979 saw a rather sluggish inflow of FDI into the economy.

The annual average FDI as a percentage of GDP was 0.43%. On a scale of zero to ten, Polity2 was averagely rated as 2.9, Political rights was averagely rated 1.0 and civil liberty was 3.1. The second phase (1979-1981) described as the moderate FDI inflow period recorded an annual average FDI as a percentage of GDP of 0.18%, that of polity2, political rights and civil liberty were averagely rated as 5.8, 5.6 and 5.6 respectively. The third period (1981-1992) was characterized by oscillatory inflows of FDI. The period witnessed an annual average FDI as a percentage of GDP of 0.14%. Those of polity2, political rights and civil liberty were averagely rated as 1.9, 1.7 and 2.8 respectively. The fourth period which spanned from 1993 to 2013 saw an unprecedented annual average FDI inflow as a percentage of GDP of 3.26%. Those of polity2, political rights and civil liberty were averagely rated as 7.5, 7.8 and 7.0 respectively.

In conclusion, the democratic regime, 1993-2013 has the highest annual average FDI inflow as a percentage of GDP, better quality of democratic institutions, higher degrees of political rights and civil liberties enshrined for its citizens.

# CHAPTER THREE

## METHODOLOGY

### 3.0 Introduction

The chapter discusses the methodology employed by the study. Highlights under the chapter include the types and sources of data, the econometric framework and estimation procedures as well as justification of the variables used.

### 3.1 Model specification

The research empirical analysis focuses on location theory. Therefore, the model is estimated as the following:

$$FDI = (PCAPL)^{\beta_1}(X')^{\beta_i} (\varepsilon_t) \dots \quad (3.1)$$

Where FDI represents net foreign direct investment as a percentage of GDP, PCAPL represents political liberalisation measured by Principal Component Analysis which includes polity2 (POL2), political rights (PR) and civil liberty (CL). X' represents vector of control variables drawn from the literature to have influence on FDI inflows. The control variables include economic growth, trade openness, natural resources, infrastructural development and inflation.  $\beta_1$  is the coefficient of political liberalisation and  $\beta_i$  are the coefficients of the control variables ( $i = 2, 3, 4, 5$  and  $6$ ).

Substituting the control variables into equation 3.1 yields

$$FDI = (PCAPL)^{\beta_1}(Y, TR, NR, ID, INF)^{\beta_i} (\varepsilon_t) \dots \quad (3.2)$$

Applying natural logarithm to equation (3.2) above yields the specified model below:

Where FDI and PCAPL have already been explained above,  $\ln Y$  represents the log of economic growth measured by real GDP,  $\ln TR$  represents the log of trade openness measured as trade as a percentage of GDP,  $\ln NR$  represents the log of natural resources measured as total natural resources rent as a percentage of GDP,  $\ln ID$  represents the log of infrastructural development measured as number of telephone lines per hundred of the population,  $\ln INF$  represents the log of inflation measured as consumer price index,  $\alpha_0$  is the constant term,  $\varepsilon_t$  is the error term assumed to be independently and normally distributed with zero mean and constant variance which captures all other explanatory variables which influence FDI but are not captured in the model,  $t$  denotes time,  $\ln$  is the natural logarithmic operator. The coefficients  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  and  $\beta_6$  are the elasticities of the respective variables. The following are expected  $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0$  and  $\beta_6 < 0$ . Natural logarithm is applied in order to reduce heteroscedasticity because log stabilises the variance of a series by reducing the variables scale of measurement (Jensen, 2003).

### 3.2 Data type and sources

The study makes use of secondary data since it is accurate for the analysis and readily available. Data for FDI inflows as a percentage of GDP is sourced from the UNCTAD (2014), data for political rights and civil liberty are obtained from the Heritage Foundation's subjective "Index of Economic Freedom" (Freedom House, 2014), Polity2 score is obtained from Polity IV index (Marshall and Jagers, 2014) and data for real GDP, trade openness, natural resources, infrastructural development and inflation are sourced from the World Bank Development

Indicators (2014). To examine the impact of political liberalisation on FDI inflows annual time series data spanning the period 1975-2013 is used.



### **3.3 Justification and Definition of variables**

#### **3.3.1 Foreign Direct Investment (FDI)**

FDI refers to the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital and short-term capital as exhibited in the balance of payments (UNCTAD, 2014). For the purpose of this study and to maintain some level of consistency in the data used, the FDI time series will depict that of net inflows as a percentage of GDP. The FDI inflow as a percentage of GDP is the dependent variable in the model. This variable has also been used by Jensen (2003), Adeoye (2009), Ponce (2010), Abdul-Salam (2012), Acheampong and Osei (2014) and Sikwila (2015).

#### **3.3.2 Political Liberalisation (PCAPL)**

Political Liberalisation is the event or the process of becoming a democracy (Giavazzi and Tabellini, 2005). Political liberalisation is measured by using Principal Component Analysis (PCA) technique. The following variables were used for the PCA: polity2, political rights and civil liberty. The highest variation of the original variables is contained in the first principal components (Smith, 2002). The first principal component normally has the maximum variance for any of the combination. In this case the first principal component is used as an aggregate measure of political liberalisation. The principal advantage for the construction of political liberalisation index by using

the PCA method is that the weights of the index are founded on the inner correlation of all the individual measures and therefore helps to remove any multicollinearity problems that may affect estimated regressions. Employing the PCA technique, a political liberalisation index represented by PCAPL is constructed for Ghana. The first principal component which is a linear combination of the original variables with maximum variance provides a good proxy for all the three indicators as it explains up to 93.5% of the variations in the original data. Also, since the first component explains 93.5% of the variation in the original variable, the study engaged the eigenvectors of the first principal component as weights in constructing political liberalisation index. The first principal component, polity2 (POL2) explains about 56.5 percent of the total variance. The second principal component, political rights (PR) also explains about 58.5 percent of the total variance and the third principal component, civil liberty (CL) explains about 58.2 percent of the total variance. Based on location hypothesis, we expect that improvement in political liberalisation will result in higher FDI inflows. Hence we expect positive relationship between the two variables. The result of the PCA is shown at appendix G. This variable has also been used by Adams and Sakyi (2012).

### **3.3.3 Economic Growth (Y)**

Economic growth can be defined as an increase in the capacity of an economy to produce goods and services, compared from one period of time to another (World Bank Development Indicator, 2014). The study uses real GDP to proxy economic growth. The choice of this variable is based on the fact that it is widely recognised as a good measure of economic value of a nation's output and income (Jakobsen and de Soysa, 2006). According to the output and market size hypothesis, a large market provides relatively better opportunities for making profits, and so should attract more FDI inflows. Moreover, high-growth economies usually implement and enforce stable and credible

macroeconomic policies that attract foreign investors (Jensen, 2003). To this end, economic growth variable is added as an explanatory variable in the model. The coefficient of economic growth is expected to be positive. Other works have also used this variable (Jensen, 2003; Jakobsen and de Soysa, 2006; Acheampong and Osei, 2014; Akbar and Akbar, 2015; Brima, 2015 and Sikwila, 2015).

### **3.3.4 Trade Openness (TR)**

Trade openness is defined as the sum of exports and imports of goods and services measured as a share of GDP (World Bank Development Indicator, 2014). A high trade openness value reflects a high incidence of trade, which implies high volumes of exports and imports as well as relatively low trade barriers of the country. The higher the degree of trade openness the more it is directed towards international market that would be more open to foreign capital. The expected coefficient of trade openness is positive. This variable has also been used by Tsikata et al. (2000), Jensen (2003), Busse (2004), Owusu-Antwi et al. (2013), Akbar and Akbar (2015) and Brima (2015) and Sikwila (2015).

### **3.3.5 Natural Resources (NR)**

Natural resources are the sum of oil rents, natural gas rents, coal rents (hard and soft), minerals rents and forest rents as a percentage of GDP (World Bank Development Indicator, 2014).

Location of production facilities near sources of raw materials reduces transportation cost and therefore the marketing cost (Jensen, 2003). In the same way, MNCs do engage in horizontal and vertical integration to enhance and capture both the input and output markets. Again based on

location hypothesis a country with high natural resources endowment is likely to attract FDI inflows. The expected coefficient of natural resources endowment is positive. This variable has also been used by Jensen (2003) and Abubakar and Abdullahi (2013).



### **3.3.6 Infrastructural Development (ID)**

The availability and quality of infrastructure is proxied by the number of main telephone lines per hundred people (World Bank Development Indicator, 2014). The use of the main telephone lines is because they are necessary to facilitate communication between the source and the recipient countries (Asiedu, 2006). Foreign investors consider the availability and quality of infrastructural development in their decisions on where to locate. On the one hand, the firms' operational costs increase and their profits reduce if the foreign investors are to provide these facilities by themselves in the recipient country. On the other hand, the provision and availability of these facilities in the recipient country decreases the operational costs of firms and therefore increases the firms' profitability. Therefore, more FDI projects are attracted to countries with more and quality infrastructure. The prior expected sign for the infrastructure development coefficient is positive. Other works have also used this variable (see Asiedu, 2002; Asiedu, 2006; Abosi, 2008; Adeoye, 2009; and Acheampong and Osei, 2014).

### **3.3.7 Inflation (INF)**

Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be constant or changed at specified intervals (World Bank Development Indicator, 2014). It can be inferred from

the Fisher Equation that real interest rate is the sum of nominal interest rate and inflation. Therefore, when inflation is low, nominal interest rate is also low. Hence, financial cost on foreign direct investment is low and the anticipated rate of return on investment is high. Therefore, foreign investors prefer to invest in more stable economies in order to maximise higher returns on their investment. Again, inflation is a measure of price instability over a period of time. A high rate of inflation indicates internal economic instability. It stands then that in a high inflationary period, operational costs of firms increase and there is uncertainty in terms of product and input pricing. Therefore, high inflation is disincentive for investment by foreign firms whereas countries with stable inflation attract more FDI inflows (Sneider and Frey, 1985).

The prior expected sign for inflation coefficient is negative. This variable has also been used by Sneider and Frey (1985), Adeoye (2009), Abdul-Salam (2012), Owusu-Antwi et al. (2013), Saleem et al. (2013) and Brima (2015).

### **3.4 Estimation Procedure**

The long and the short run relationships between political liberalisation and FDI inflows are studied by applying Autoregressive Distributed Lag (ARDL) Bounds approach to cointegration. The testing procedure involves the following steps. Firstly, the study investigates the time series properties of the data by using the Augmented Dickey–Fuller (ADF) and the Phillip-Perron (PP) tests developed by Dickey and Fuller (1979) and Philips-Perron (1988) respectively. The stationarity position of the data is checked using the unit root test. Then, cointegration test is performed using ARDL Bounds testing approach. Finally, the forecast error variance decomposition test is conducted.

### **3.4.1 Unit root tests**

Given the fact that all macroeconomic data acquired for the study are time series, there is the possibility of non-stationarity in the variables. Therefore as a first step in the estimation process, the study tested for the stationarity of the endogenous and exogenous variables within the framework of ADF and the PP test procedures. The study employed these two unit root tests to ensure reliable results of the test for stationarity due to the inherent individual weaknesses of the various techniques. These tests are similar except that they differ with respect to the way they correct for autocorrelation in the residuals. The ADF test is unable to discriminate between stationary and non-stationary series with high degree of autocorrelation. As such, the PP test is employed to solve this problem. Again the ADF test differs from the PP test in how they deal with heteroscedasticity in the errors. Whereas the ADF assumes the error terms are independent with a constant variance, the PP test assumes the error terms are weakly dependent and distributed heterogeneously therefore, providing robust estimates over the ADF.

A variable is considered stationary if its mean and variance are fixed over time and the covariance between the two time periods depends only on the distance between the two time periods. Unit root tests are meant to avoid a spurious regression, which is a common problem with macroeconomic time series data (Jensen, 2003). In addition, it is a pre-requisite for testing level relationship between two or more time series data. The ARDL Bounds testing approach for instance requires that the variables to be considered are integrated of order zero, one or mix of zero and one and the unit root tests help to confirm this. To this end, the stationarity properties of each of the variable under consideration are tested with and without a time trend and intercept. The automatic lag length

selection per the Akaike Information Criterion (AIC) was employed for the ADF and PP tests respectively.

The basic formulation of the ADF is specified as follows:

Where  $X_t$  denotes variables at time  $t$ ,  $\Delta$  is the first difference operator,  $\alpha_0$ ,  $\beta_1$ ,  $\beta_2$  and  $\lambda_i$  are parameters to be estimated and  $\varepsilon$  is the stochastic random disturbance term. The PP test is also specified as follows:

Where  $X_t$  denotes variables at time  $t$ ,  $\Delta$  is the first difference operator,  $\alpha_0$ ,  $\phi_1$ ,  $\phi_2$  and  $\omega_i$  are parameters to be estimated and  $\varepsilon$  is the stochastic random disturbance term. Thus, the ADF and the PP test the null hypothesis of the present of unit root in a series (the series is non-stationary) against the alternative hypothesis of no unit root (the series is stationary). If the t-statistic is less than the critical values in absolute terms, the null hypothesis fails to be rejected and implies that the series is non-stationary. Conversely, if the t-statistic is greater than the critical values in absolute terms, then the null hypothesis is rejected and implies that the series is stationary. If stationarity is achieved at the levels of the series the assumption is that the series is integrated of order zero  $I(0)$ . However, if stationarity occurs at the first difference of the series then the series is integrated of order one  $I(1)$ . Critical values for this t-statistic are given in MacKinnon (1991).

### **3.4.2 The ARDL Bounds Test Approach**

Having established that the time series properties of each of the variables in the specified model are integrated of order zero, one or mix of zero and one, the study further tested for cointegration among the variables of interest. From the related literature a number of methods were applied.

Common among these techniques are Engle-Granger (1987) test, Johansen (1988) and JohansenJuselius (1990). In recent times however, Autoregressive Distributed Lag (ARDL) approach, developed by Pesaran and Shin (1995 and 1999), Pesaran et al. (2001) has gained prominence. Since the Engle-Granger (1987) approach is limited to a bivariate model and hence not appropriate for models constituting more than two variables, this study will adopt the ARDL bounds technique to cointegration.

The choice of this method of analysis was borne from the fact that it is relatively simple and thus allows for the estimation of cointegration relationship using the ordinary least squares technique. Secondly, unlike Johansen Maximum Likelihood test, this method is able to test for the existence of a level relationship irrespective of whether the variables are integrated of order zero, one or mix of zero and one. It is not sensitive to the values of error parameters therefore making it proper for small sample estimation. It is proven to provide unbiased long run estimates with valid t-statistics even when some of the cointegrated variables are endogenous (Haug, 2002). Indeed, Banerjee et al. (1998) and Pesaran, et al. (2001) confirmed that the attractiveness of ARDL approach when carrying out cointegration in small samples is the fact that it is more efficient than other vector autoregressive (VAR) methods. The ARDL Bounds testing procedure fundamentally involves testing for cointegration, estimating the long run model and finally estimating the error correction

model. The first step in the technique requires establishing the existence of a long run relationship among the variables by estimating equation (3.6) using the ordinary least squares (OLS) method. An ARDL representation of equation (3.3) can be formulated into equation (3.6) as below:

Where  $\beta_1$  to  $\beta_7$  are the long run multipliers,  $\beta_0$  is the drift,  $\beta_8$  to  $\beta_{14}$ ,  $\rho$  and  $q$  are the order of lags and  $\epsilon_t$  is white noise error which is independent and identically distributed and all other variables are as formerly defined. The variables can be viewed as an ARDL of order  $(\rho, q_1, q_2, q_3, q_4, q_5, q_6)$ .

Then the Bounds test is conducted using the F-test for the joint significance of the coefficients of the lagged levels of the variables. In that regard, the null and alternative hypotheses to be tested are:

$H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$  (no long-run relationship)

$H_1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq 0$  (long-run relationship)

We denote the test which normalize on FFDI (FDI/PCAPL, Y, TR, NR, ID, INF)

After the estimation of the model, the F-statistic is then compared to the critical value bounds. The null hypothesis is rejected if the F-statistic is greater than the upper bound value. This implies a level relationship between the variables. On the other hand, if the F-statistic is lesser than the upper bound value, then the null hypothesis fails to be rejected and we therefore conclude that there is no long-run relationship between the variables. If however, the F-statistic falls between the lower and upper bound value, the result becomes ambiguous and in this case, more information would be needed to arrive at a conclusive inference (Pesaran et al., 2001).

Once the level relationship between the variables has been established, the long run model for FDI can then be estimated as:

where all variables are as formerly defined and  $\beta_i$  is the long run parameters. The final step involves estimating the error correction in equation (3.8) to generate the short run dynamic parameters.

Where all variables are as formerly defined and  $\delta_i$  are the short-run dynamic coefficients and  $ECM_t$  is the speed of adjustment to restore equilibrium in the dynamic model following a shock. The

ECM<sub>t-i</sub> coefficient shows how slowly or quickly variable returns to equilibrium and it is expected to be negative and significant.



### **3.4.3 Model adequacy and reliability**

Since the ARDL model is estimated by OLS, it is imperative to test if the model satisfies the classical assumptions of the least squares. For this reason, the researcher conducts diagnostic and reliability tests on the ARDL model. Therefore, functionality, normality, presence of serial correlation and heteroskedasticity tests are performed using Ramsey RESET test, Jarque Bera test, Breusch-Godfrey Lagrange Multiplier test and Breusch-Pagan-Godfrey test respectively. Finally, the researcher will test the computed relation for structural stability using the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of the recursive residuals (CUSUMSQ) tests by Brown et al. (1975) and Pesaran and Pesaran (1997). It will be done to ascertain if for the entire sample period the regression equation computed is stable or not.

### **3.4.4 Assessing the elasticity of innovations**

The third objective of the study aims at determining the elasticity of innovations of the determinants of FDI in explaining variations in FDI inflows by employing variance decomposition technique. The variance decomposition shows the percentage of a variable's forecast error variance traceable to its own innovations and innovations in other variables. Hence, it provides information about the relative importance of each variable in explaining the variations in the endogenous variables in the VAR model. In assigning variance shares to the variables, the residuals in the equations must be orthogonalised. Therefore, the study employed Cholesky variance decomposition technique that

orthogonalises innovations as suggested by Sims (1980). This technique requires a pre-specified causal ordering of the variables. The ordering of variables suggested by Sims (1980) starts from exogenous variable with the least correlation coefficient and ended by the most endogenous variable.



# CHAPTER FOUR

## ANALYSIS AND DISCUSSION OF EMPIRICAL RESULTS



### 4.0 Introduction

Chapter four presents and analyses the empirical results of the study. This chapter is organised into four broad sections. The first part discusses the time series properties of the data. It presents the unit root test and the bound test for cointegration. The second section critically elucidates the results of the estimated long run FDI equation using the ARDL approach. The third section presents and analyses the Error Correction Model (ECM) for the selected ARDL model. Lastly, the fourth section presents and analyses the results of the contemporaneous correlations of VAR error terms and the forecast error variance decomposition.

### 4.1 Discussion of time series properties

#### 4.1.1 Results of unit root test

The tests were done within the framework of the ADF test and PP test procedure. Each of the variables was tested in the levels and in the first difference forms as well as with and without a time trend. The automatic lag length selection per the Akaike Information Criterion (AIC) was used for both the ADF and the PP test. Table 4.1A and 4.1B present the results of the unit root tests.

**Table 4.1 Results of unit root test**

**Table 4.1A: Augmented-Dickey-Fuller (ADF) Unit Root Test**

VARIABLE	AUGMENTED-DICKEY-FULLER				LEVEL OF INTEGRATION	
	LEVEL		FIRST DIFFERENCE			
	TREND + INTERCEPT	INTERCEPT	TREND + INTERCEPT	INTERCEPT		
FDI	-2.598836	-1.026431	-8.162976***	-8.128503***	I(1)	
PCAPL	-4.786102***	-4.853544***			I(0)	
LNY	-0.993107	4.129154	-4.543154***	-3.615966***	I(1)	
LNTR	-1.654236	-1.327096	-3.311973*	-3.333245**	I(1)	
LNNR	-2.567444	-1.268159	-7.506416***	-7.513299***	I(1)	
LNID	-2.336569	-0.909926	-7.318429***	-7.422197***	I(1)	
LNINF	-4.806287***	-3.101734**			I(0)	

[\*\*\*] (\*\*) { \*} denotes the rejection of the null hypothesis of the unit root at [1%] (5%) {10%} significance level respectively.

Source: Computed from E-views 9

**Table 4.1B: Phillips-Perron (PP) Unit Root Tests**

VARIABLE	PHILLIPS-PERRON				LEVEL OF INTEGRATION	
	LEVEL		FIRST DIFFERENCE			
	TREND + INTERCEPT	INTERCEPT	TREND + INTERCEPT	INTERCEPT		
FDI	-2.626665	-0.944731	-8.158528***	-8.116568***	I(1)	
PCAPL	-5.844954***	-6.053407***			I(0)	
LNY	-1.085262	-1.615098	-4.571796***	-3.632837***	I(1)	
LNTR	-2.448465	-0.850070	-3.729404**	-3.838888***	I(1)	
LNNR	-2.846891	-1.180319	-7.537956***	-7.541482***	I(1)	
LNID	-1.860247	-0.851365	-7.238088***	-7.333117***	I(1)	
LNINF	-26.14001***	-26.63408***			I(0)	

[\*\*\*] (\*\*) { \*} denotes the rejection of the null hypothesis of the unit root at [1%] (5%) {10%} significance level respectively.

Source: Computed from E-views 9

The results of both the ADF and the PP testing for the variables reported in Table 4.1A and Table 4.1B indicated that political liberalisation (PCAPL) and inflation (INF) variables were found to be stationary at their levels since both the ADF and the PP test statistics were bigger than their critical

values at 5% significance level. It can be concluded that political liberalisation (PCAPL) and inflation (INF) are integrated of order zero, I (0). However, the remaining variables were non-stationary in their levels since both the ADF and the PP test statistics were lower than their critical values at 5% level of significance respectively. However, the variables became stationary after first differencing because both test statistics were more than their critical values at 5% levels of significance. The implication is that the remaining variables are integrated of order one; I (1). In light of the outcome of the unit root tests, it can therefore be concluded that the key condition of stationarity of variables prior to the application to the ARDL Bounds cointegration approach has been fully satisfied.

#### **4.1.2 Results of the ARDL Bounds test for cointegration**

Table 4.2 presents the results of the estimated bounds test for cointegration analysis when FDI is normalised [ $F_{FDI}$  (FDI|PCAPL, Y, TR, NNR, ID, INF)] on the key independent variables. The model which is ARDL (3, 3, 3, 3, 2, 2, 3) presents the basic specified model with the explanatory variables of political liberalisation, economic growth, trade openness, natural resources, infrastructural development and inflation. The finding depicts that the F-statistic of 7.555293 is greater than its corresponding upper bound critical value of 4.43. This implies the rejection of the null hypothesis of no cointegration at 1% level of significance. This indicates that there is enough evidence to substantiate the existence of a unique, non-spurious and stable level relationship between political liberalisation and FDI inflows in the Ghanaian economy for the periods of 1975 to 2013.

**Table 4.2 Results of ARDL Bounds Test**

Test Statistics	Value	k
F-statistics	7.555293***	6
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
1%	3.15	4.43

Source: Computed from E-views 9

#### 4.2 Results of the estimated long-run model

Given the results of the cointegration analysis, long-run relationship is established in the model and equation (3.6) is therefore estimated. Results are based on Akaike Information Criterion using a lag of three. As indicated in the table, some of the estimated coefficients have their expected theoretical signs while others do not. Whereas political liberalisation, economic growth, natural resources and inflation have their expected theoretical signs, trade openness, and infrastructural development do not have their expected signs.

**Table 4.3 Results of estimated long-run coefficients using the ARDL Approach ARDL (3, 3, 3, 3, 2, 2, 3)**  
**Selected based on Akaike Information Criterion (AIC)**      **Dependent Variable: FDI**

Variable	Coefficient	Standard Error	t-Statistic	Prob
CONSTANT	-255.146200***	72.036698	-3.541892	0.0053
PCAPL	5.345470*	2.945173	1.814994	0.0996
LNY	32.748403***	9.156376	3.576568	0.0050
LNTR	-1.312750	0.852870	-1.539215	0.1548
LNNR	13.480962**	5.424748	2.485085	0.0323
LNID	-4.375134***	1.282284	-3.411986	0.0066
LNINF	-6.256614**	2.160140	-2.896393	0.0159

[\*\*\*] (\*\*) {\*} denotes significance at [1%] (5%) {10} respectively

Source: Computed from E-views 9

#### 4.2.1 Interpretation of the long-run results

The coefficient of political liberalisation is significantly positive at 10% level. Specifically, an improvement in political liberalisation will cause FDI to increase by 5.35 approximately in the long run. This is in support of the location hypothesis. The following reasons explain the significant positive impact of political liberalisation on FDI inflows:

Firstly, there is some improvement in the political rights that people enjoy in Ghana. This improvement is seen notably in the areas of freedom of the citizenry to align themselves with any political party of their choice, sharing the visions and philosophies of political parties they have interest in and more importantly making attempts to form and forming parties as and when it will be deemed prudent and imperative. In addition, workers are free to form and join workers union. This has helped them in improving their ability to influence workplace decisions and its resultant increase in output and profitability of firms. It is not gainsaying that the political history of Ghana has metamorphosed dating from the dark ages of serious dynasty, anarchy and repressions through to the current era of multi-party democracy. The enjoyment of political rights as a result of political liberalisation tells the degree of how safe, politically and economically enabled environment the country has become, hence attracting FDI.

Secondly, there is some improvement in the civil liberty as well as the property rights protection in the country. Civil liberty such as freedom that the citizenry enjoys in terms of speech, expression of views on pertinent issues prevailing in the country, freedom in the area of giving constructive criticisms with the intention of putting the ruling government on its toes as well as property owing

rights have seen some improvement in the country over the years. The enjoyment of civil liberty as well as the property owing rights as a result of political liberalisation increases the confidence level of the foreign investors and as such led to increase FDI inflows in Ghana.



Thirdly, there has been some improvement in the institutional quality in the country. The exercises of separation of powers and the independency in the arms of government; executive, legislature and judiciary enshrined in the constitution of Ghana have helped to increase policy stability which also increases credibility of investment to the foreign investors. The constitution from which the institutions derive their powers is seen as the supreme document that supersedes all other powers of the land, and therefore no institution can act in contradiction to the rules as stipulated in the constitution. Consequently, investors and the corporate world are enticed to bring their resources and factors of production into the country, thus leading to an increase in FDI inflows in the country. Moreover, the establishment of Ghana Investment Promotion Centre (GIPC) in 1994 has also improved FDI inflows in Ghana. The main objective of GIPC was to encourage and promote investment. This Act sought to revise and consolidate the 1985 Investment Code thereby placing more emphasis on promoting private sector investment. The role of GIPC has helped to reduce bureaucracy and delays which has also translated into reduction in administration and production costs in doing business in Ghana.

The result is in support of Busse (2004) for 69 developing and emerging market countries of which Ghana was included, Wafure and Nurudee (2010) for Nigeria, Djokoto and Dzeha (2012) for Ghana and Elkomy et al. (2015) for 61 emerging and developing countries of which Ghana was included. However, this result differs from the findings of Nyarko et al. (2011) for Ghana their work exhibited

positive but statistically insignificant between political liberalisation and FDI inflows. Again, the result contradicts these works that had significantly negative effects between the two variables: Li and Resnick (2003) for 53 developing countries, Jokobsen and de Soysa (2006) for 99 developing countries.

The coefficient of the economic growth is positive and statistically significant at 1% significance level. Specifically, an increase in economic growth will increase FDI inflows by 32.75 approximately. This implies that an improvement in economic growth is vital to FDI growth in the long run in Ghana. The result is in support of the output and market size hypothesis. This result is in line with these previous works done in Ghana: Tsikata et al.

(2000), Abdul-Salam (2012) and Owusu-Antwi et al. (2013) and also in tandem with Akbar and Akbar (2015) for Nigeria. Notwithstanding this, the result differs from the findings of Anyanwu (2011) for African countries of which Ghana was included, Antwi and Zhao (2013) for Ghana and Abubakar and Abdullahi (2013) for Nigeria.

The coefficient of trade openness is negative but statistically insignificant. Specifically, an increase in trade openness will cause FDI to decrease by 1.31 approximately. However its impact is statistically not different from zero. This result coincides with these previous works; Asiedu (2002) for Sub-Saharan Africa and Non Sub-Saharan Africa of which Ghana was included among the Sub-Saharan African countries, Khan and Hye (2014) for Pakistan and Esew and Yaroson (2014) for Nigeria. However, this result differs from these previous works done in Ghana: Djokoto (2012) and Owusu-Antwi et al. (2013).

The coefficient of the natural resources endowment variable is positive and statistically significant at 5% level. Specifically, an increase in natural resources will cause FDI inflows to increase by 13.48 approximately in the long run. The result conforms to the location hypothesis. This result corroborates with Jensen (2003) for 114 developed and developing countries, Asiedu (2006) for 22 African countries of which Ghana was included, Owusu-Antwi et al. (2013) for Ghana and Brima (2015) for Sierra Leone. However, this result differs from the findings of Asiedu (2013) for 99 developing countries of which Ghana was included and Acheampong and Osei (2014) for Ghana.

The coefficient of the infrastructural development is negative and statistically significant at 1 percent significance level. Specifically, an increase in infrastructural development will cause FDI to fall by 4.38 approximately in the long run. This does not conform to the location hypothesis and it is counterintuitive as improved infrastructure should increase inward FDI. FDI and infrastructural development may be negatively related because the nation may not be investing in infrastructure that attracts FDI inflows. The results may also be caused by the proxy employed here to measure infrastructural development. Over the years, the number of telephone lines used has continually reduced. Added to this, other forms of communication devices such as mobile and internet usages have largely replaced the importance and the use of telephone lines by businesses and individuals. Therefore, the negative relationship found here must be approached with caution since it may be as a result of the proxy used to measure the level of infrastructural development and not necessarily because infrastructural development is FDI-inhibiting. This result corroborates with Abosi (2008), Owusu-Antwi et al. (2013) all for Ghana and Esew and Yaroson (2014) for Nigeria. However, this

result differs from the findings of Asiedu (2006) for 22 African countries of which Ghana was included and Acheampong and Osei (2014) for Ghana.

The coefficient of inflation is negative and statistically significant at 5% level. Specifically, an increase in inflation will decrease FDI inflows by 6.26 approximately in the long run. The result is in line with the Fisher Equation. It can be inferred from the Fisher Equation that when inflation is low, nominal interest is also low. Hence, financial cost on foreign direct investment is low and the anticipated rate of return on investment is high. Therefore, foreign investors prefer to invest in more stable economies in order to maximise higher returns on their investment. However, a high rate of inflation indicates internal economic instability. Therefore it increases the risk and uncertainty element facing foreign investors. The uncertainty in the macroeconomic environment will obviously discourage investors from investing. The result is highly expected because the Bank of Ghana has adopted price stability as its prime objective since 2002. Consequently, the economy has experienced drastic down trend of inflation from 26.67% in 2003 to 11.61% in 2013 whilst FDI inflows followed an upward trend from US\$110.02 million in 2003 to US\$3,226.33 million in 2013. This result corroborates with Abdul-Salam (2012), Djokoto (2012) all for Ghana and Brima (2015) for Sierra Leone. However, this result differs from the findings of Djokoto and Dzeha (2012), Owusu-Antwi et al. (2013) all for Ghana and Sikwila (2015) for Zimbabwe.

#### **4.3 Results of the estimated short-run dynamic model**

The result of the estimated short run dynamic model is shown in Table 4.4.

**Table 4.4 Results of estimated short-run error correction model using the ARDL Approach ARDL (3, 3, 3, 3, 2, 2, 2, 3) Selected based on Akaike Information Criterion (AIC)**

Dependent Variable: D(FDI)				
Variable	Coefficeint	Standard Error	t-Statistic	P-Value
D(FDI(-1))	-0.001480	0.152503	-0.009706	0.9924
D(FDI(-2))	-0.145189	0.124434	-1.166799	0.2704
D(PCAPL)	1.009041*	0.457988	2.203205	0.0522
D(PCAPL(-1))	1.729841**	0.623357	2.775040	0.0196
D(PCAPL(-2))	0.842568	0.606610	1.388979	0.1950
D(LNY)	1.447967***	0.392546	3.688656	0.0049
D(LNY(-1))	5.697975	7.329079	0.777448	0.4549
D(LNY(-2))	-26.208310***	6.419013	-4.082919	0.0022
D(LNTR)	2.634648**	1.068719	2.465239	0.0334
D(LNTR(-1))	-1.967259	1.163725	-1.690484	0.1218
D(LNTR(-2))	2.602569**	0.913607	2.848674	0.0173
D(LNNR)	2.079775*	1.120547	1.856036	0.0931
D(LNNR(-1))	3.204288***	0.801560	3.997562	0.0025
D(LNID)	-0.045613	0.748920	-0.060905	0.9526
D(LNID(-1))	-2.779330**	1.008116	-2.756955	0.0202
D(LNINF)	-0.765892*	0.378295	-2.024592	0.0704
D(LNINF(-1))	-0.901295**	0.325423	-2.769615	0.0198
D(LNINF(-2))	-1.330531***	0.376861	-3.530558	0.0054
ECM(-1)	-0.634657***	0.207757	-3.054805	0.0122
R-squared	0.990910			
Adj. R-squared	0.968185			
F-statistic	43.60390			
Prob (F-statistic)	0.000000			
Akaike Info. Criterion	1.666407			
Schwarz Bayesian Criterion	2.810060			

Source: Computed from Eviews 9

#### **4.3.1 Interpretation of the short-run results**

Both coefficients of the first period and the second period lags of FDI inflows had negative effects on the current FDI inflows. However, both effects are statistically insignificant and therefore do not have any significant impact on the current FDI inflows in the short run.

Political liberalisation's coefficient has positive impact on the FDI inflows and it is statistically significant at 10% level in the short run. This shows that improvement in political liberalisation will increase FDI inflows by 1.01 approximately in the short run. This result is attributed to some improvement in political rights, civil liberty and property owing rights and the enhancement in institutional quality in Ghana. These enhance the confidence level of the foreign investors about the safety of their investment in Ghana. The result corroborates with that of Burkhart and de Soysa (2003) for 120 developed and developing countries of which Ghana was included. Again, both the first period and the second period lags of political liberalisation have positive effects on the current FDI inflows. However, the first period lag of political liberalisation is statistically significant at 5% level. This shows that if political liberalisation in the last year increased, the current FDI inflows will increase by 1.73 approximately.

Notwithstanding this, the last two years' political liberalisation effect was not statistically significant.

The coefficient of economic growth has positive impact on the current FDI inflows in the short run and it is statistically significant at 1% level. This shows that improvement in economic growth increases the current FDI inflows by 1.45 approximately. In addition, first period lag of economic growth has positive effect on the current FDI inflows. However, this effect is statistically

insignificant. Contrary, the second period lag of economic growth has negative effect on the current FDI inflows at 1% level of significance. This means that if economic growth in the last two years increased, the current FDI inflows will decrease by 26.21 approximately.



The coefficient of trade openness has positive effect on the current FDI inflows and it is statistically significant at 5% level in the short run. This shows that improvement in trade openness will increase the current FDI inflows by 2.63 approximately. The result is in line with Djokoto (2012) for Ghana. In addition, first period lag of trade openness has insignificantly negative effect on the current FDI inflows. In contrary, second period lag of trade openness has significantly positive effect on the current FDI inflows at 5% level. This means that if trade openness in the last two years increased, the current FDI inflows will increase by 2.60 approximately.

The coefficient of natural resources has positive effect on the current FDI inflows and it is statistically significant at 10% level in the short run. This implies that if natural resources endowment increases, the current FDI inflows will increase by 2.08 approximately. Again, the first period lag of natural resources has significantly positive effect on the current FDI inflows at 1%. This means that if last year's natural resources increased, the current FDI inflows will rise by 3.20 approximately.

In the short run, the coefficient of infrastructural development has negative effect on the current FDI inflows and it is statistically insignificant. This means that improvement in infrastructural development will decrease the current FDI inflows by 0.05 approximately. However, its impact is statistically not different from zero. Again, the first period lag of infrastructural development has

negative effect on the current FDI inflows at 5% level of significance. This suggests that improvement in last year's infrastructural development will decrease the current FDI inflows by 2.78 approximately.

The current inflation coefficient has negative effect on the current FDI inflows and it is statistically significant at 10% in the short run. This shows that if current inflation increases, the current FDI inflows will decrease by 0.77 approximately. This is because a high rate of inflation indicates internal economic instability. Therefore, it increases the risk and uncertainty element facing the foreign investors. Again, both the first period and the second period lags of inflation have negative effects on the current FDI inflows. Both effects are statistically significant at 5% level and 1% level respectively. This means that if inflation in the last year and the last two years increased, the current FDI inflows will fall by 0.90 and 1.33 respectively.

In the above short run estimated model, political liberalisation (current and lag one), economic growth (current and lag two), trade openness (current and lag two), natural resources (current and lag one), infrastructural development (lag one) and inflation (current, lag one and lag two) have been found important or significant determinants of FDI inflows in Ghana.

#### **4.4 Results of model efficiency diagnostic and stability test**

From table 4.4, the F-statistic of 43.60390 with a probability value of 0.00000 indicates that the overall impact of the explanatory variables on FDI inflows is very significant. This implicitly suggests a high predictive power of the explanatory variables. For the model to be accepted, the value of ECM term should be negative and statistically significant. From table 4.4 the value of

ECM term is -0.634657 and its P-value is 0.0122 at 5% level of significance therefore, the model is accepted. The negative and significant value of ECM also confirms the existence of long run relationship among the data series. The value of the ECM term indicates the rate at which the disequilibrium in the short-run estimates is corrected for and brought back to equilibrium in the long run. The results show that on annual basis approximately 63.5% of the disequilibrium in the short-run estimates are corrected for and brought back to equilibrium in the long run. In other words, the result implies that the deviation from the long term growth rate in FDI is corrected by 63.5% in the model by the coming year. This finding shows that the speed of adjustment is relatively high in the model.

To assess the robustness of the estimated model, the study employed a number of diagnostic tests and the stability test to the error correction model. Therefore, functionality, normality, serial correlation and heteroscedasticity tests and the stability test are performed. This is shown in table 4.5 below.

**Table 4.5: Results of the diagnostic test and the stability test**

Diagnostic	Statistic
Functionality	Ramsey RESET Test F-statistic = 1.964272 P-value = 0.1946
Normality	Jarque Bera Statistic = 2.005040 P-value = 0.366954
Serial Correlation	Breusch-Godfrey LM Test F-statistic = 3.007012 Prob. F(3,4) = 0.1041
Heteroscedasticity	Breusch-Pagan-Godfrey Test F-statistic = 0.525621 Prob. F(28,7) = 0.9067

Stability Condition	CUSUM = Stable CUSUMSQ = Stable
---------------------	------------------------------------

Source: Author's computations from Eviews 9

Ramsey RESET test is employed to test for the functional form or the correct specification of the model. The results indicate the failure of rejecting the null hypothesis ( $H_0$ ) that the model has correct specification since the P-value of the F-statistic which is 0.1946 is more than 5%. It is therefore concluded that the model is correctly specified given the variables used and the time period.

Jarque-Bera normality test is performed to check whether the residuals of the estimates are normally distributed or not. The results indicate that the Jarque-Bera statistic has a probability value of 0.366954 which is more than 5%. Therefore, the null hypothesis ( $H_0$ ) that the residuals of the estimates are normally distributed fails to be rejected. We therefore draw a conclusion that the data series included in the VECM model are normally distributed.

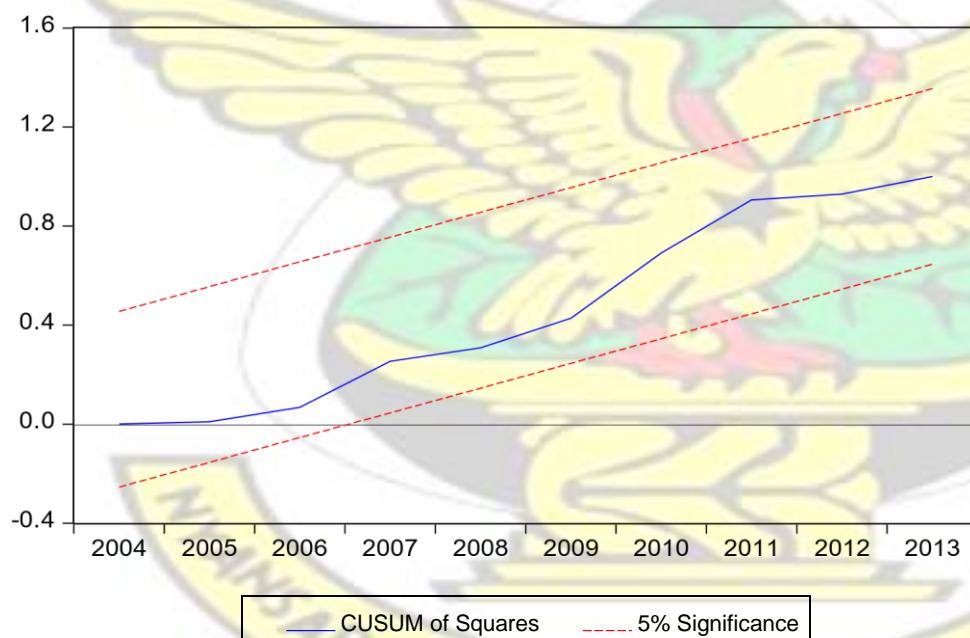
Breusch-Godfrey Serial Correlation LM Test is employed to test for the presence of serial correlation or autocorrelation among the data series. The null hypothesis ( $H_0$ ) which states that there is no serial correlation in the residuals fails to be rejected. From the results the Pvalue of the F-statistic is 0.1041, which is more than 5%. It can therefore be concluded that the data series in the model are free from serial correlation.

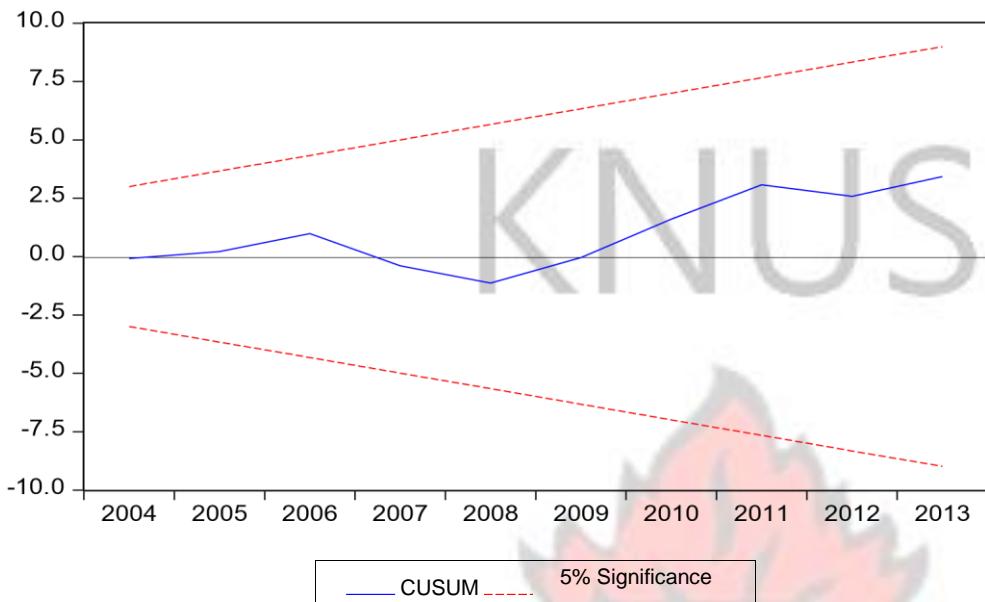
The presence of heteroscedasticity in the data series is tested. With this test, the Breusch-PaganGodfrey statistic is used. The results indicate the failure of rejecting the null hypothesis ( $H_0$ )

that the residuals of the estimates are not heteroscedastic since the P-value of the F-statistic which is 0.9067 is more than 5%. It can therefore be concluded that the data series in the model are homoscedastic.



Finally, according to Pesaran and Pesaran (1997), when examining the stability of both the longrun and the short run coefficients, CUSUM and CUSUMSQ are applied. The null hypothesis is that the coefficient vector is stable in every period and the alternative is simply that it is not. CUSUM and CUSUMSQ statistics are plotted against the critical bound of 5% significance. If the plots of these statistics remain within the critical bound of 5% significance level, the null hypothesis fails to be rejected and the vice versa.





**Figure 4.1: Plots of the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ)**

Source: Author's computation from Eviews 9

As shown in Figure 4.1 above, the plot of both the CUSUM and the CUSUMSQ residuals are within the boundaries. That is to say that the stability of the parameters has remained within its critical bounds of parameter stability. Therefore, the stability of the long-run coefficients is confirmed.

In summary, all the model diagnostic tests and the reliability test conducted on the residuals point to the fact that the data series passes all the tests of functionality, normality, serial correlation, heteroscedasticity and the stability test.

#### 4.5 Results of the Contemporaneous Correlations of VAR Error Terms

To proceed to estimate Cholesky variance decomposition proposed by Sims (1980), the ordering of the variables must be determined. The result is displayed in table 4.6 below. The result shows

that there is a high correlation between FDI and economic growth with correlation coefficient of 0.799548. This is then followed by natural resources with correlation coefficient of 0.738323, then infrastructural development with correlation coefficient of 0.533733, inflation with correlation coefficient of 0.502881, trade openness with correlation coefficient of 0.443241 and lastly by political liberalisation with correlation coefficient of 0.082681. Hence, Cholesky ordering takes the form: PCAPL, LNTR, LNINF, LNID, LNNR, LNY and FDI.

**Table 4.6: Contemporaneous correlations of VAR error terms**

VARIABLE	FDI	PCAPL	LNY	LNTR	LNNR	LNID	LNINF
FDI	1						
PCAPL	0.082681	1					
LNY	0.799548	0.019376	1				
LNTR	0.443241	0.188834	0.779600	1			
LNNR	0.738323	0.015222	0.861637	0.600215	1		
LNID	0.533733	-0.022000	0.844020	0.713816	0.688830	1	
LNINF	-0.502881	-0.177127	-0.697236	-0.607849	-0.421267	-0.579465	1

Source: Author's computation from Eviews 9

#### 4.6 Results of forecast error variance decomposition

From an estimated VAR model and in order to convey a sense of dynamics, Table 4.7 presents the forecast error variance decomposition proposed by Sims (1980) in a ten year horizon.

**Table 4.7: Variance Decomposition Results**

Period	Variance Decomposition of FDI						
	Percentage of Forecast Variances Explained by Innovations in						
	PCAPL	LNTR	LNINF	LNID	LNNR	LNY	FDI
1	4.110947	3.135613	2.237834	4.330206	3.616610	0.260863	82.30793

2	2.274393	2.638109	1.096741	42.66313	5.002694	0.129714	46.19522
3	2.024123	10.34837	2.817198	32.24584	9.624434	8.516027	34.42401
4	1.698658	17.55858	7.006504	23.80646	16.19907	9.020829	24.70991
5	1.461686	17.64235	8.982924	20.34053	17.93585	11.48611	22.15055
6	1.510487	17.69630	9.610555	18.69870	19.54530	11.66845	21.27021
7	1.506343	17.12462	9.936797	18.02198	20.33939	12.12236	20.94851
8	1.467174	16.64279	9.929567	17.59732	21.10232	12.09046	21.17037
9	1.472963	16.30084	9.874705	17.76277	21.11657	12.02004	21.45211
10	1.509611	16.29204	9.838957	17.87754	20.98682	11.81224	21.68279
Cholesky ordering: PCAPL LNTR LNINF LNID LNNR LNY FDI							

**Source: Author's Computation from Eviews 9**

From a quick look at the results, it is evident that within the ten year horizon the forecast error variance of FDI inflows is as a result of its own shocks. In the first horizon, the result shows that 82.31% of its forecast error variance is assigned to its own innovations. However, by period 2 through to period 7, innovations contributed 46.20%, 34.42%, 24.71%, 22.15%, 21.27% and 20.95% respectively to its forecast error variance. By eighth, ninth and tenth horizons the innovations from FDI inflows contributed 21.17%, 21.45% and 21.68% respectively to its forecast error variance. The overall innovation of FDI inflows ranges in between 20.95% - 82.31%. This implies that within the ten year period, changes in Ghana's FDI inflows were high as a result of its own shocks. In terms of contributions in innovations in the explanatory variables, innovations in infrastructural development to the forecast error variance of FDI inflows is the highest over the ten year horizon. In the same vain innovations in natural resources, trade openness, economic growth, inflation and political liberalisation contributed sequentially to the forecast error variance of FDI over the ten year horizon. Hence, innovations in political liberalisation contributed the least to the forecast error variance of FDI inflows over the ten year period.

The results showed that first period shocks in infrastructural development contributed 4.33% to the forecast error variance of FDI inflows. Innovations increased tremendously during the second period to 42.66%. The explanatory power of infrastructural development however decreased from the third through to the eighth period. Specifically, the contributions of innovations in infrastructural development to the forecast error variance of FDI inflows gradually fell to 32.25%, 23.81%, 20.34%, 18.70, 18.02% and 17.60% respectively. However, by the ninth and tenth horizons, innovations slightly increased to 17.76% and 17.88% respectively. The overall innovation ranges in between 4.33% - 42.66%. Therefore, the overall impact of the innovations in infrastructural development to the forecast error variance of FDI inflows is the highest among the explanatory variables.

The results showed that first period innovations in natural resources contributed 3.62% to the variations in FDI inflows. Innovations' contributions increased from the second through to the ninth period. Specifically, the contributions of innovations in natural resources to the forecast error variance of FDI inflows gradually increased to 5.00%, 9.62%, 16.20%, 17.94%, 19.55%, 20.34%, 21.10% and 21.12% respectively. Again, by the tenth period, innovations slightly decreased to 20.99%. The overall innovation ranges in between 3.62% - 21.12%. Therefore, the overall impact of the innovations in natural resources to the forecast error variance of FDI inflows is positioned at second among the explanatory variables.

The results revealed that first period innovations in trade openness contributed 3.14% to the forecast error variance of FDI inflows. Innovations' contribution decreased during the second period to 2.64%. Innovations increased from the third through to the sixth period. Specifically, the

contributions of innovations in trade openness to the forecast error variance of FDI inflows gradually increase to 10.35%, 17.56%, 17.64% and 17.70% respectively. Again, Innovations decreased from the seventh through to the tenth period. Specifically, the contributions of innovations in trade openness to the forecast error variance of FDI inflows slightly decreased to 17.12%, 16.64%, 16.30% and 16.29% respectively. The overall innovation ranges in between 2.64% - 17.70%. Therefore, the overall impact of the innovations in trade openness to the forecast error variance of FDI inflows is positioned at third among the explanatory variables.

The results revealed that first period innovations in economic growth contributed 0.26% to the variations in FDI inflows. Innovations' contribution decreased during the second period to 0.13%. Innovations increased from the third through to the seventh period. Specifically, the contributions of innovations in economic growth to the forecast error variance of FDI inflows gradually increased to 8.52%, 9.02%, 11.49%, 11.67% and 12.12% respectively. However, Innovations decreased from the eighth through to the tenth period. Specifically, the contributions of innovations in economic growth to the forecast error variance of FDI inflows slightly decreased to 12.09%, 12.02% and 11.81% respectively. The overall innovation ranges in between 0.13% - 12.12%. Therefore, the overall impact of the innovations in economic growth variable to the forecast error variance of FDI inflows is positioned at fourth among the explanatory variables. The results revealed that first period innovations in inflation contributed 2.24% to the forecast error variance of FDI inflows. Contributions of innovations in inflation decreased during the second period to 1.10%. Innovations increased from the third through to the seventh period. Specifically, the contributions of innovations in inflation to the forecast error variance of FDI inflows gradually increased to 2.82%, 7.01%, 8.98%, 9.61% and 9.94% respectively. However, Innovations decreased from the eighth

through to the tenth period. Specifically, the contributions of innovations in inflation to the forecast error variance of FDI inflows slightly decreased to 9.93%, 9.87% and 9.84% respectively. It can be seen that innovations in inflation and that of economic growth to the forecast error variance of FDI inflows exhibited the same trend. The overall innovation ranges in between 1.10% - 9.94%. Therefore, the overall impact of the innovations in inflation to the forecast error variance of FDI inflows is positioned at fifth among the explanatory variables.

The results depicted that first period innovations in political liberalisation contributed 4.11% to the forecast error variance of FDI inflows. Among the explanatory variables it was the second highest contributor to the forecast error variance of FDI inflows in the first period. Contributions of innovations decreased from the second through to the fifth period. Specifically, the contributions of innovations in political liberalisation to the forecast error variance of FDI inflows gradually decreased to 2.27%, 2.02%, 1.70% and 1.46% respectively. However, during the sixth period innovations slightly increased to 1.51%. Notwithstanding this, innovations' contributions fell to 1.51%, to 1.47% by the seventh and the eighth horizons. Moreover, innovations contribution slightly increased from the ninth to the tenth period. Specifically, the contributions of innovations in political liberalisation to the forecast error variance of FDI inflows gradually increased to 1.47% and 1.51% respectively. The overall innovation ranges in between 1.46% - 4.11%. Therefore, the overall impact of the innovation in political liberalisation to the forecast error variance of FDI inflows is the least among the explanatory variables.

From the above explanations, it is clear that the forecast error variance decomposition substantiate the significant role played by infrastructural development, natural resources, trade openness, economic growth, inflation and political liberalisation in accounting for fluctuations in Ghana's FDI inflows besides its own shocks over the ten year period considered.

**KNUST**

## **CHAPTER FIVE**

### **SUMMARY, RECOMMENDATIONS AND CONCLUSION**

#### **5.0 Introduction**

This chapter concludes the entire study. The chapter briefly sum up the main findings of the research, deduces the policy recommendations and provides detailed conclusion of the study.

## **5.1 Summary of findings**

This study sought to empirically investigate the impact of political liberalisation on FDI in the Ghanaian economy for the period 1975 to 2013. The study employed the ARDL bounds technique to cointegration to examine the possible long and short run relationships among the investigated series. Empirical findings analysed in the preceding chapter are summarised as follows:

The study found that political liberalisation has positive relationship with FDI inflows at 10% level of significance in the long run. This means that improvement in political liberalisation increases FDI inflows and therefore in support of the location hypothesis. The following reasons have been assigned for the significant positive relationship results. Firstly, there has been some improvement in the political rights as a result of political liberalisation in Ghana. Secondly, there has been some improvement in the exercise of civil liberty as well as property owing right laws as a result of political liberalisation in Ghana. Thirdly, there has been some improvement in Ghana's institutional quality. Again, in the short run, political liberalisation has significantly positive effect on FDI inflows at 10% level. Again, the first period lag of political liberalisation has significantly positive effect on the current FDI inflows at 5% level. This means that if last year's political liberalisation increased, the current FDI inflows will increase. However, the second period lag of political liberalisation has statistically insignificant positive effect on the current FDI inflows.

The study further unravelled that economic growth has positive impact on FDI inflows and statistically significant at 1% level in the long run. This means that enhancement in economic growth increases FDI inflows. This conforms to output and market size hypothesis. Moreover, in the short run, economic growth has positive and statistically significant effect on the current FDI

inflows at 1% level. In addition, the first period lag of economic growth has insignificantly positive effect on the current FDI inflows. In contrary, the second period lag of economic growth has significantly negative effect on the current FDI inflows at 1% level. This means that if last two years' economic growth improved, the current FDI inflows will fall.

The study again revealed that trade openness has negative but statistically insignificant relationship with FDI inflows in the long run. However, in the short run, trade openness exerts positively on the current FDI inflows and it is statistically significant at 5% level. This implies that if the trade openness improved, the current FDI will increase. In addition, the first period lag of trade openness has insignificantly negative effect on the current FDI inflows while the second period lag has significantly positive impact on the current FDI inflows at 5% level. This implies that if trade openness improved in the last two years, the current FDI inflows will rise.

The study further unearthed that natural resources has significantly positive relationship with FDI inflows at 5% level in the long run. This means that increases in natural resources endowment increases FDI inflows. This conforms to the location hypothesis. In the short run, natural resources endowment has significantly positive effect at 10% level. This implies that increases in natural resources leads to a rise in FDI inflows. Again, first period lag of natural resources has significantly positive effect on the current FDI inflows at 5% level. This suggests that if last year's natural resources endowment increased, the current FDI inflows will increase.

Furthermore, the study depicted that infrastructural development has significantly negative relationship with FDI inflows at 1% level in the long run. This means that improvement in infrastructural development decreases FDI inflows. This does not conform to the location

hypothesis. In the short run, there was an insignificantly negative impact of infrastructural development on FDI inflows. Moreover, first period lag of infrastructural development has significantly negative effect on the current FDI inflows at 5% level. This suggests that improvement in last year's infrastructural development decreased current FDI inflows.

The study also revealed that inflation has significantly negative impact on FDI inflows at 5% level in the long run. The results suggest that increases in inflation decreases FDI inflows. This conforms to the Fisher Equation. In the short run, inflation has significantly negative effect on FDI inflows at 10% level. In addition, both the first period and the second period lags of inflation have negative effects on the current FDI inflows. Both effects are statistically significant at 5% and 1% respectively. This means that if inflation in the last year and the last two years increased, the current FDI inflows will fall respectively.

Lastly, the forecast error variance decomposition of FDI inflows results indicated that within the ten year period, variations in FDI inflows were high as a result of its own shocks and in terms of innovations in the explanatory variables, infrastructural development contributed the highest. This is then followed sequentially by natural resources, trade openness, economic growth, inflation and political liberalisation.

## **5.2 Policy implications and recommendations**

The main objective of this study was to empirically investigate the impact of political liberalisation on FDI inflows in Ghana from 1975 to 2013. The overall impact of political liberalisation on FDI inflows was positive and statistically significant at 10% in both the long and the short run. Based

on the findings, the following policy implications as well as recommendations have been suggested towards deepening or strengthening political liberalisation and for that matter democracy in Ghana.

In the first place, the policy implication for Ghana is that the exercise of political rights is likely to improve FDI inflows. For example where workers have the right to influence decisions at the workplace, they tend to feel they own production and output. Hence, efficiency and productivity will be improved, which increases production and profitability and attracts FDI. It is therefore recommended that the exercise of political rights must be improved. For instance workers may be encouraged to form and join workers union as this will improve their ability to influence workplace decisions.

Secondly, another policy implication is that the exercise of the fundamental human rights and civil liberty including the property owing right increases FDI inflows in Ghana. It is therefore recommended that the existence of the fundamental human rights and the civil liberty including the property owing right should be deepened. Political liberalisation promotes and protects the rights and freedoms of the people to enable them to develop their full potentials. An improved human rights and the civil liberty require extensive public freedoms of information, association, movement, speech and property owing. The enhancement of the fundamental human rights and the civil liberty will bring higher inflows of FDI since foreign investors will have more confidence that the host country will respect their fundamental human rights and civil liberty.

Thirdly, another policy implication is that quality institutions improved FDI inflows in Ghana. This is because quality institutions reduce bureaucracy and delays, implying reduction in administration

related production costs. Quality institutions are also likely to be associated with lower levels of corruption. All these conditions are relevant for investment and hence, FDI inflows. It is therefore recommended that the quality of institutions should be improved. This may be in the form of ensuring that competent personnel are employed and their training and skills constantly improved. Also necessary tools such as Information Communication Technology (ICT) and others may be provided as remunerations are encouraged.

Last but not least, another policy implication is that the existence of the rule of law improved FDI inflows. It is recommended that the operation of the rule of law should be strengthened. The principle of rule of law ensures that there is absence of arbitrary power on the part of the ruler; every man is subject to the fundamental law administered by the courts of the land. The rule of law secures for citizens and foreign investors protection under their rights, their recognition of political and social norms of conduct; from which follow the mutual trust and confidence essential for co-operation in a democratic society. Moreover, there should be equity and fairness in the delivery of justice since this will go a long way to increase the foreign investors' confidence in Ghana's judicial system and as such will inculcate the belief that they would be given a fair trial in case they have problems with the indigenous.

The study again revealed significantly positive effect of economic growth on FDI inflows in both the long and the short runs. The policy implication is that foreign investors especially market seeking FDIs consider the economic growth of the country when deciding their investment location. They are motivated and attracted when they are sure that the host country can create the needed market for their products. It is therefore recommended that measures aimed at increasing gross

domestic product (GDP) should be put in place so as to boost the income of the people which will invariably translate into higher demand in order to attract continuous FDI inflows. For instance, improving upon the state of technical knowledge by entering into research and development will help to increase productivity and its resultant effect of increasing income of the people.

The study also unravelled significantly positive relationship between natural resources and FDI inflows in both the long and the short runs. The policy implication is that the endowment of natural resources increases FDI inflows in Ghana. It is recommended that policies should be put in place to ensure that natural resources are efficiently explored and utilized to diversify the economy in attracting more FDI inflows. To do this, where natural resources serve as raw materials for production for a potential FDI industry, tax incentives may be used to ensure its greater extraction and use in cost effective.

The study also demonstrated significantly negative impact of infrastructural development on FDI inflows in the long run. The policy implication is that infrastructural development through telephone lines might not be appropriate infrastructure that attracts FDI inflows. It is recommended that policy makers must ensure that appropriate infrastructure is provided to enhance FDI inflows. This may be in the form of roads, railways, ICT, research and development among others.

The study again revealed negative and significant relationships between inflation and FDI inflows in both the long and the short runs. The policy implication is that trade off between inflation and FDI inflows exists in Ghana. It is recommended that Bank of Ghana should intensify its objective of pursuing price stability to ensure low and stable prices to attract more FDI inflows.

### **5.3 Conclusion**

This study empirically investigated the impact of political liberalisation on FDI inflows in Ghana along with some key determinants of FDI over the period 1975-2013 and tested the famous location hypothesis. The econometric methodology employed was ARDL Bounds technique to cointegration.

The results of the study offered enough evidence of the existence of long run relationship among the variables of interest. Political liberalisation has positive and significant impact on FDI inflows in both the long and the short run. This therefore supports the validity of location hypothesis in the Ghanaian economy. Furthermore, economic growth has significantly positive effect on FDI inflows in the long run as well as the short run. Moreover, trade openness has negative and insignificant relationship with FDI inflows in the long run. However, trade openness has positive and significant impact on FDI inflows in the short run. Furthermore, natural resources endowment has significantly positive effects on FDI inflows in both the long and the short runs. In addition, infrastructural development has negative relationship with FDI inflows in both the long and the short runs. Whereas the long run impact is significant, the short run impact is statistically insignificant. Inflation has negative and significant impact on FDI inflows in both the long and the short runs. Last but not least, the variance decomposition of FDI inflows results indicated that within the ten year period, variations in FDI inflows were high as a result of its own shocks and in terms of innovations in the explanatory variables, infrastructural development contributed highest. This is then followed sequentially by natural resources, trade openness, economic growth, inflation and political liberalisation.

#### **5.4 Limitations of the study**

The purpose of this study is to empirically investigate the impact of political liberalisation on FDI inflows in Ghana from 1975 to 2013. But for the fact that official FDI data only starts from 1970 and two of the political liberalisation variables; political rights and the civil liberty data also start from 1973, the scope of the research would have encapsulated the Ghanaian economy from the year of independence. Despite this shortfall, the sample size of the study which covers significant periods of both democratic and autocratic governance is enough to come out with reliable results.

#### **5.5 Direction for future research**

It will be very prudent if further research looks at the effect of the interaction of political liberalisation and FDI inflows on economic growth in Ghana. Again, further research can also look at the impact of political liberalisation on economic growth in Ghana. Other researchers may also consider undertaken a panel data study on the impact of political liberalisation on FDI inflows.

## REFERENCES

- Abdoul, M., & Hammami, S. (2015). The Impact of Foreign Direct Investment Inflows and Environmental Quality on Economic Growth: An Empirical Study for the MENA Countries. *Journal of the Knowledge Economy*. Retrieved 30th February, 2016 from DOI 10.1007/s13132-015-0323-y
- Abdul-Salam, Y. (2012). Socio-Political Instability and FDI in Ghana: An ARDL Approach, *Journal of Economics and Sustainable Development*. Vol. 3(13): 72-80.
- Abosi, E. N. (2008). *Determinants of Foreign Direct Investment in Ghana (1975-2005)*. (Master's Thesis, United Nations African Institute for Economic Development and Planning, New York, United States). Retrieved 2nd December, 2014  
From: <http://www.unpan1.un.org/intradoc/groups/public//idep/unpan032753.pdf>.
- Abubakar, M., & Abdullahi, A. (2013). An Inquiry into the Determinants of Foreign Direct Investment Inflows in Nigeria, *European Scientific Journal*. Vol. 9(25): 21-32
- Acheampong, P., & Osei, V. (2014). Foreign Direct Investment Inflows into Ghana: Should the focus be on Infrastructure or Natural Resources? Short Run and Long Run. *International Journal of Financial Research*. Vol. 5(1): 42-51.
- Adams, S., & Sakyi, D. (2012). Globalisation, Democracy, and Government Spending in Sub-Saharan Africa: Evidence from Panel Data, In *Globalisation and Responsibility*, Zlatan Delic (Ed.), In Tech Press
- Adeoye, A. (2009). Macro-economic level corporate governance and FDI in emerging markets: Is there a close relationship? *Journal of Economics and International Finance*, Vol. 1(2): 30-43.
- Akbar, M. & Akbar, A. (2015). An Empirical Analysis of Foreign Direct Investment in Pakistan, *Studies in Business and Economics*, Vol. 10(1): 5-15.

Alkhasawneh M. F. (2013). The Granger Causality Relationship and Causality between Foreign Direct Investment and Economic Development in the State of Qatar, *International Journal of Applied Mathematics and Information Sciences*, No. 5, 1767-1771.

Antwi, S., & Zhao, X. (2013). The Impact of Foreign Direct Investment on Economic growth in Ghana: A Cointegration Analysis, *International Journal of Business and Social Research (IJBSR)*, Vol. 3(1): 64-74.

Anyanwu, J. C. (2011). Determinants of Foreign Direct Investment to Africa, 1980-2007. African Development Bank Group. Retrieve on 12th October, 2014.

Arellano, M. & Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations, *Review of Economic Studies*, Vol. 58(1): 277-320.

Asafu-Adjaye, J. (2005). What has been the Impact of Foreign Direct Investment in Ghana? *Institute of Economic Affairs*, Vol.1(9): 1-5.

Asiedu, E. (2002). On the determinants of Foreign Direct Investment to Developing Countries: Is Africa different? *World Development*, Vol. 30(1): 107-119.

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability, *The World Economy*, Vol. 29(1): 63-77.

Asiedu, E., & Lien, D. (2010). Democracy, FDI and Natural Resources, *Journal of International Economics*, Vol. 84(1): 99-111.

Asiedu, E. (2013). Foreign Direct Investment, Natural Resources and Institutions, International Growth Centre. Working Paper

Bank of Ghana (2012). *Bank of Ghana Annual Report*. Retrieved 24th October, 2014 from: [www.bog.gov.gh](http://www.bog.gov.gh).

Bannerjee A., Dolado, J., & Mestre, R. (1998). Error-Correction Mechanism Tests for Cointegration in Single Equation Framework, *Journal of Time Series Analysis*, Vol. 19(1): 267283.

Batuo, M. E., & Asongu, S., A. (2012). The Impact of Liberalisation Policies on Income Inequality in African Countries, *Munich Personal RePEc Archive (MPRA)* No. 43344. Accessed on 12th October, 2014 from [http://mpra.ub.uni-uenchen.de / 43344](http://mpra.ub.uni-uenchen.de/43344)

Brima, S. (2015). Macroeconomic Determinants of Foreign Direct Investment in Sierra Leone, *International Journal of Economics and Finance*, Vol. 7(3): 123-133.

Brown, R. L., Durbin, J., & Evans, J. (1975). Techniques for Testing the Constancy of Regression Relations over Time, *Journal of the Royal Statistical Society*, Vol. 37: 149-163.

Burkhart, R. E., & de Soysa, I. (2003). *Open Borders, Open Regimes? Testing Causal Direction between Globalization and Democracy*, Zentrum fur Entwicklungsforchung (ZEF), Discussion Papers on Development Policy No. 67, Center for Development Research, Bonn pp. 24

Busse, M. (2004). Transnational Corporations and Repression of Political Rights and Civil Liberties: An Empirical Analysis, *Kyklos*, Vol. 57(1): 45-66.

Busse, M., & Hefeker, C. (2005). Political Risk, Institutions and Foreign Direct Investment. *European Journal of Political Economy*, Vol. 23(2): 397- 415.

Buthe, T., & Milner, H. V. (2008). The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements? *American Journal of Political Science*, Vol. 52 (4): 741-762.

Chaib, P. B., & Siham, M. (2014). The Impact of Institutional Quality in attracting Foreign Direct Investment in Algeria, *Topics in Middle Eastern and African Economies*, Vol. 16(2): 142-163.

Chigbu, E. E., Ubah, C. P., & Chigbu, U. S. (2015). Impact of Capital Inflows on Economic Growth of Developing Countries. *International Journal of Management Science and Business Administration*. Vol. 1(7): 7-21.

Chowdhury, A., & Mavrotas, G. (2005). *FDI and Growth: A Causal Relationship*, United Nations University, WIDER, Research Paper No: 2005/25.

Dang, T. A. (2015). Similarities Attract: Political Regimes and Foreign Direct Investments. *Journal of Political Sciences and Public Affairs*. Vol. 3(2): 1-7.

Djokoto J. G. (2012). The Effect of Investment Promotion on Foreign Direct Investment Inflow into Ghana, *International Business Research*, Vol. 5(3): 46-57.

Djokoto J. G., & Dzeha, G. C. (2012). Determinants and Effects of Foreign Direct Investment Inflow into Ghana – Review of Literature, *Developing Country Studies*, Vol. 2(11): 25-35

Dickey D., & Fuller, W. (1979). Distribution of the estimators for Autoregressive time series with unit root. *Journal of American Statistical Association, Economic Review*, Vol. 84(5):13101329.

Dunning, J. H. (1977). Trade, location of economic activity and MNE: A search for an eclectic approach. In B. Ohlin, P. Hesselborn and P. Wijkman (eds). *The international allocation of economic activity*. Macmillan, London.

Dunning, J. H. (1979). Explaining changing patterns of international production: In defence of the eclectic theory, *Oxford Bulletin of Economics and Statistics*, Vol. 41(4).

Dunning, J. H. (1988). The eclectic paradigm of international production: A restatement and some possible extension. *Journal of International business studies*, Vol. 19(1).

Dunning, J. H. (1993). The Globalization of Business, Routledge, London.

Dzunic, M. (2006). Political Liberalisation and Economic Reforms – Mutual Effects, *Economics and Organisation*, Vol. 3(1), 95-104.

Ekpo, A. H. (1997). Foreign Direct Investment in Nigeria: Evidence from time series data, *CBN Economic and Financial review*, 35(1): 59-78.

Elkomy, S., Ingham, H. & Read, R. (2015). *Economic, Institutional and Political Determinants of FDI Growth Effects in Emerging and Developing Countries*. Lancaster University, Management School, Economics Working Paper Series.

Engle, R. F., & Granger, C. J. (1987). Cointegration and error-correction representation, estimation and testing. *Econometrica*, 55, 251-78.

Esew, N. G., & Yaroson, E. (2014). Institutional Quality and Foreign Direct Investment Inflows in Nigeria: A Prognosis. *Journal of Humanities and Social Science*, Vol. 19(6):37-45

Etten, E. V. (2008). *FDI and Democracy: A Gravity Analysis*. Final Report from ECORYS Research Programme. Retrieved on 24th February, 2015.

Feulefack, K. L., & Kamajou, F. (2015). Quality of Institutions and Foreign Direct Investment: The Case of Sub-Saharan Africa. *Applied Science Reports*, Vol 9(2): 70-79.

Freedom House (2014). Freedom in the World: The Annual Survey of Political Rights and Civil Liberties. New Brunswick: Transaction Publications.

Freedom House (2014). Freedom in the World Country Ratings, 1972-2013. From <http://www.freedomhouse.org/ratings/index.htm>. Accessed on 24th October, 2014.

Giavazzi, F., & Tabellini, G. (2005). Economic and Political Liberalisation, *Journal of Monetary Economics*, Vol. 52(1): 1297-1330.

Harms, P., & Ursprung, H. (2002). Do Civil and Political Repression Really Boost Foreign Direct Investment? *Economic Inquiry*, Vol. 40 ( 4): 651-663.

Haug, A. (2002). Temporal Aggregation and the Power of Cointegration Tests: A Monte Carlo Study, *Oxford Bulletin of Economics and Statistics*, Vol. 64: 399-412.

- Horst J. F. (1972). A Theory of Multinational Enterprise. University of Michigan Press: Ann Arbor.
- Hymer, S. H. (1960). The International Operations of National Firms: A Study of Direct Foreign Investment. Ph D. thesis Massachusetts Institute of Technology, Cambridge.
- Insah, B. (2013). Foreign Direct Investment Inflows and Economic Growth in Ghana, *International Journal of Economic Practices and Theories*, Vol. 3(2):115-121.
- Jakobsen, J., & de Soysa, I. (2006). Do Foreign Investors Punish Democracy? *Theory and Empirics Kyklos (Basel)*. 59 (3).
- Jensen, N. (2003). Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment. *International Organization* 57(3): 587-616.
- Johansen, S. (1988). Statistical Analysis of Cointegration Vectors, *Journal of Economic Dynamics and control*, 12(1): 231-254.
- Johansen, S., & Juselius, K. (1990). Maximum Likelihood estimation and Inference on Cointegration with Applications to the Demand for Money, *Oxford Bulletin of Economics and Statistics*, 52 (2): 169-210.
- Khan, R. E. A., & Hye, Q. M. A. (2014). Foreign Direct Investment and Liberalization Policies in Pakistan: An empirical analysis, *Cogent Economics and Finance*. Vol 2: 944667
- Kindleberger, C. P. (1969). American business abroad. *The International Executive*, 11(2): 11-12.
- Li, Q., & Resnick, A. (2003). Reversal of Fortunes: Democracy, Property Rights and Foreign Direct Investment Inflows in Developing Countries. *International Organization* 57(1): 175-214.
- MacKinnon, J. (1991). Critical Values for Cointegration Tests. New York: Oxford University Press.
- Madani, S., & Mahya N. (2014). Political Regimes and FDI Inflows: Empirical Evidence from Upper Middle Income Countries. *Journal of Finance and Economics*, Vol. 2 (3): 75-82
- Marshall, M. G., & Jaggers, K. (2014). Polity IV Project: Political Regime Characteristics and Transitions, 1800-2009, Center for Systemic Peace and Colorado State University. Accessed on 12th October, 2014 from <http://www.systemicpeace.org/polity/polity4.htm>
- Melnyk, L., Kubatko, O., & Pysarenko, S. (2014). The Impact of Foreign Direct Investment on Economic Growth: Case of Post Communism Transition Economies. *Problems and Perspectives in Management*, Vol. 12 (1): 1-24.

Ministry of Finance & Economic Planning. (2000). The budget statement and economic policy of the government of Ghana for the 2000 financial year. Accra: Republic of Ghana.

Ministry of Finance & Economic Planning. (2004). The budget statement and economic policy of the government of Ghana for the 2004 financial year. Accra: Republic of Ghana.

Ministry of Finance & Economic Planning. (2008). The budget statement and economic policy of the government of Ghana for the 2008 financial year. Accra: Republic of Ghana.

Ministry of Finance & Economic Planning. (2012). The budget statement and economic policy of the government of Ghana for the 2012 financial year. Accra: Republic of Ghana.

Moss, T. J., Ramachandran, V., & Sha, M. K. (2004). Is Africa's scepticism of foreign Capital justified? Evidence from East African survey data, *Centre for Global Development*, working paper, 41

Nieman, M. D., & Thies, C. G. (2012). Democracy, Property Rights and Foreign Direct Investment, *European Journal of Political Economy*, Vol. 23(2): 376-396

Nyarko, P. A. (2011). Effects of Exchange Rate Regimes on foreign direct investment inflows in Ghana, *International Journal of Economics and Finance*, Vol. 3(3): 277-286

Owusu-Antwi G., Antwi J., & Poku K. P. (2013). Foreign Direct Investment: A Journey to Economic Growth in Ghana – Empirical Evidence, *International Business and Economics Research Journal*, Vol. 12, No. 5.

Pandya, S. S. (2014). Democratisation and Foreign Direct Investment Liberalisation, *International Studies Quarterly*, 58(1): 475-488.

Pesaran, M. H., & Shin, Y. (1995). Long-run Structural Modelling. Cambridge, Department of Applied Economics, University of Cambridge. (DAE Working Paper No. 9419).

Pesaran, M. H., & Shin, Y. (1999). An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis. In S. Strom (Ed.), *Econometrics and economic theory in the 20th century* (Chapter 11). The Ragnar Frisch Centennial Symposium, Cambridge: Cambridge University Press.

Pesarn, M. H., Shin, Y., & Smith, R. J. (2001). Bounds Testing Approaches to the Analysis of Level Relationships, *Journal of Applied Econometrics*, Vol. 16(1): 289-326.

Phillips, P. C., & Perron, P. (1988). Testing for a unit root in time series regression. *Biometrika*, 75(2): 335-346.

Pierpont, B. (2007). *Democracy, Property Rights and FDI in Developing Countries: A Regional Analysis*, Macalester College. Accessed on 12th October, 2014.

Ponce, A. (2010). Foreign Direct Investment and Civil Rights: Testing Decreasing Returns to Civil Rights, *MPRA* No. 22020. Accessed on 12th October, 2014 from <http://mpra.ub.uniuenchen.de/22020>

Sakyi, D. (2011). Trade openness, Foreign Aid and Economic Growth in Post-Liberalisation Ghana: An Application of ARDL Bounds Test, *Journal of Economics and International Finance*, Vol. 3(3): 146-156.

Saleem, F., Zahid, A., Shoalb, B., Mahmood, M., & Nayab, S. (2013). Impact of Inflation and Economic Growth on Foreign Direct Investment: Evidence from Pakistan, *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 4(9): 236-244.

Sikwila M., N. (2015). Foreign Direct Investment: does it matter? A case for Zimbabwe. *Research in Business and Economics Journal*, Vol. 11(1): 1-12.

Schneider, F., & Frey, B., S. (1985). Economic and Political Determinants of Foreign Direct Investment: *World Development*, Vol. 13(1): 161-175.

Sims, C. A. (1980). Macroeconomics and Reality, *Econometrica*, Vol. 48(1): 1-48.

Smith, L. I. (2002). A Tutorial on Principal Component Analysis Accessed on 12th February, 2015.

Thunen, J. K. V. (1826). *Isolated State*, New York: Pergamon Press. Accessed on 12th October, 2014.

Tsikata, G. K., Asante, Y., & Gyasi, E., M. (2000). *Determinants of Foreign Direct Investment in Ghana*, Overseas Development Institute, Research Study, ODI, London, ISBN 08500034558

Tuman, J. P., & Emmert, C. F. (2003). The Political Economy of US Foreign Direct Investment in Latin America: A Reappraisal, *Latin America Research Review* 39(3): 9-28.

UNCTAD (2003). *World Investment Report 2003*. United Nations, New York and Geneva.

UNCTAD (2007). *World Investment Report 2007; Transnational Corporations, Extractive Industries and Development*. UNCTAD Database, 245.

UNCTAD (2013). *World Investment Report 2013, Global Value Chains - Investment and Trade for Development*. United Nations, New York and Geneva.

UNCTAD (2014). *World Investment Report 2014*, United Nations, New York and Geneva.

Wafure, O. G., & Nurudeen, A. (2010). Determinants of Foreign Direct Investment in Nigeria: An Empirical Analysis, *Global Journal of Human Social Science*, Vol. 10(1): 26-34.

World Bank (2014). *World Development Indicators Database*, CD ROM, Washington DC.



## APPENDICES

### APPENDIX A

#### DESCRIPTIVE STATISTICS

	FDI	PCAPL	LNY	LNTR	LNNR	LNID	LNINF
Mean	1.862538	2.56E-09	8.863405	3.856201	2.068092	4.018701	3.231094
Median	0.899455	-0.039970	8.783501	4.050447	2.038183	3.552309	3.217268
Maximum	11.15181	0.910588	9.895669	4.754008	2.942316	5.118872	4.811164
Minimum	-0.512999	-1.573628	8.246912	1.843773	1.408053	3.373940	2.166403
Std. Dev.	2.797546	0.391044	0.482123	0.729395	0.403291	0.663219	0.736800
Skewness	1.913044	-1.008440	0.547798	-0.941197	0.452868	0.460258	0.483480
Kurtosis	5.640425	8.838145	2.164620	3.144477	2.617114	1.455950	2.435863
Jarque-Bera	35.11753	61.99659	3.084558	5.791952	1.571306	5.251092	2.036554
Probability	0.000000	0.000000	0.213893	0.055245	0.455822	0.072400	0.361217
Sum	72.63897	1.00E-07	345.6728	150.3918	80.65560	156.7293	126.0127
Sum Sq. Dev.	297.3980	5.810777	8.832810	20.21664	6.180459	16.71465	20.62920
Observations	39	39	39	39	39	39	39



**APPENDIX B**  
**RESULTS OF THE ARDL ESTIMATES**

Dependent Variable: FDI  
Method: ARDL  
Date: 10/16/15 Time: 06:10  
Sample (adjusted): 1978 2013  
Included observations: 36 after adjustments  
Maximum dependent lags: 3 (Automatic selection)  
Model selection method: Akaike info criterion (AIC)  
Dynamic regressors (3 lags, automatic): PCAPL LNY LNTR LNNR LNID  
LNINF  
Fixed regressors: C  
Number of models evaluated: 12288  
Selected Model: ARDL(3, 3, 3, 3, 2, 2, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	0.363862	0.155306	2.342878	0.0411
FDI(-2)	-0.143709	0.123297	-1.165554	0.2708
FDI(-3)	0.145189	0.124434	1.166799	0.2704
PCAPL	1.009041	0.457988	2.203205	0.0522
PCAPL(-1)	0.188907	0.406103	0.465170	0.6518
PCAPL(-2)	1.729841	0.623357	2.775040	0.0196
PCAPL(-3)	0.842568	0.606610	1.388979	0.1950
LNY	1.447967	0.392546	3.688656	0.0049
LNY(-1)	1.721650	8.612143	0.199910	0.8456
LNY(-2)	-5.697975	7.329079	-0.777448	0.4549
LNY(-3)	26.20831	6.419013	4.082919	0.0022
LNTR	2.634648	1.068719	2.465239	0.0334

LNTR(-1)	-2.832484	1.298752	-2.180928	0.0542
LNTR(-2)	1.967259	1.163725	1.690484	0.1218
LNTR(-3)	-2.602569	0.913607	-2.848674	0.0173
LNNR	2.079775	1.120547	1.856036	0.0931
LNNR(-1)	3.271729	1.188962	2.751753	0.0204
LNNR(-2)	-3.204288	0.801560	-3.997562	0.0025
LNID	-0.045613	0.748920	-0.060905	0.9526
LNID(-1)	-5.510428	0.625365	-8.811538	0.0000
LNID(-2)	2.779330	1.008116	2.756955	0.0202
LNINF	-0.765892	0.378295	-2.024592	0.0704
LNINF(-1)	0.973089	0.361319	2.693154	0.0226
LNINF(-2)	0.901295	0.325423	2.769615	0.0198
LNINF(-3)	1.330531	0.376861	3.530558	0.0054
C	-161.9304	29.93687	-5.409064	0.0003

R-squared	0.990910	Mean dependent var	1.961811
Adjusted R-squared	0.968185	S.D. dependent var	2.876036
S.E. of regression	0.512995	Akaike info criterion	1.666407
Sum squared resid	2.631634	Schwarz criterion	2.810060
Log likelihood	-3.995333	Hannan-Quinn criter.	2.065573
F-statistic	43.60390	Durbin-Watson stat	2.551402
Prob(F-statistic)	0.000000		

\*Note: p-values and any subsequent tests do not account for model selection.

# KNUST

## APPENDIX C

### RESULTS OF THE ARDL BOUNDS TEST FOR COINTEGRATION

ARDL Bounds Test

Date: 10/16/15 Time: 06:12

Sample: 1978 2013

Included observations: 36

Null Hypothesis: No long-run relationships exist

---

Test Statistic

Value

K

---

F-statistic

7.555293

6

---

Critical Value Bounds

---

I0 Bound

---

I1 Bound

---

Significance

---

10%

2.12

3.23

---

5%

2.45

3.61

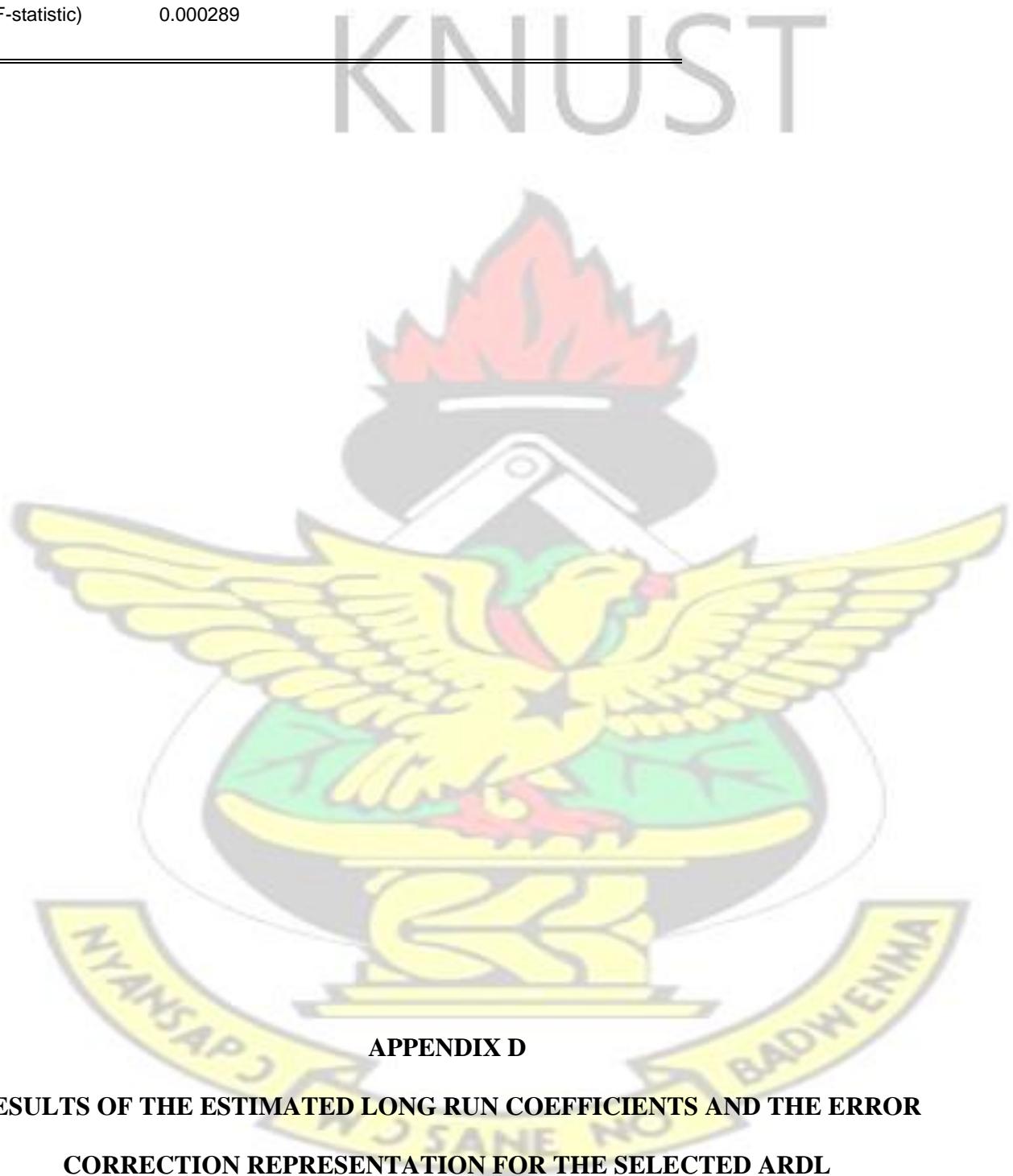
2.5%	2.75	3.99
1%	3.15	4.43

Test Equation:  
 Dependent Variable: D(FDI)  
 Method: Least Squares  
 Date: 10/16/15 Time: 15:01  
 Sample: 1978 2013  
 4Included observations: 36

Variable Coefficient		Std. Error	t-Statistic	Prob.
D(FDI(-1))	-0.001480	0.152503 0.009706		- 0.9924
D(FDI(-2))	-0.145189	0.124434	-1.166799	0.2704
D(PCAPL)	1.009041	0.457988	2.203205	0.0522
D(PCAPL(-1))	2.572409	0.912244	2.819869	0.0182
D(PCAPL(-2))	0.842568	0.606610	1.388979	0.1950
D(LNY)	1.447967	0.392546	3.688656	0.0049
D(LNY(-1))	20.51033	7.525424	2.725472	0.0214
D(LNY(-2))	-26.20831	6.419013	-4.082919	0.0022
D(LNTR)	2.634648	1.068719	2.465239	0.0334
D(LNTR(-1))	0.635310	0.753935	0.842659	0.4191
D(LNTR(-2))	2.602569	0.913607	2.848674	0.0173
D(LNNR)	2.079775	1.120547	1.856036	0.0931
D(LNNR(-1))	3.204288	0.801560	3.997562	0.0025
D(LNID)	-0.045613	0.748920	-0.060905	0.9526
D(LNID(-1))	-2.779330	1.008116	-2.756955	0.0202
D(LNINF)	-0.765892	0.378295	-2.024592	0.0704
D(LNINF(-1))	-2.231826	0.521434	-4.280170	0.0016
D(LNINF(-2))	-1.330531	0.376861	-3.530558	0.0054
C	-161.9304	29.93687	-5.409064	0.0003
PCAPL(-1)	3.392542	1.276021	2.658689	0.0240
LNY(-1)	20.78402	3.833595	5.421547	0.0003
LNTR(-1)	-0.833147	0.734407	-1.134448	0.2831
LNNR(-1)	8.555793	1.851161	4.621851	0.0009
LNID(-1)	-2.776712	0.636458	-4.362756	0.0014
LNINF(-1)	-3.970807	0.966742	-4.107410	0.0021
FDI(-1)	-0.634657	0.207757	-3.054805	0.0122
R-squared	0.961915	Mean dependent var		0.184578
Adjusted R-squared	0.866703	S.D. dependent var		1.405086
S.E. of regression	0.512995	Akaike info criterion		1.666407
Sum squared resid	2.631634	Schwarz criterion		2.810060

Log likelihood	-3.995333	Hannan-Quinn criter.	2.065573
F-statistic	10.10288	Durbin-Watson stat	2.551402
Prob(F-statistic)	0.000289		

---



ARDL Cointegrating And Long Run Form  
Dependent Variable: FDI

Selected Model: ARDL(3, 3, 3, 3, 2, 2, 3)

Date: 10/16/15 Time: 06:14

Sample: 1975 2013

Included observations: 36

#### Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI(-1))	-0.001480	.1.152503	-0.009706	0.9924
D(FDI(-2))	-0.145189	.1.124434	-1.166799	0.2704
D(PCAPL)	1.009041	.1.457988	2.203205	0.0522
D(PCAPL(-1))	1.729841	.1.623357	2.775040	0.0196
D(PCAPL(-2))	0.842568	.1.606610	1.388979	0.1950
D(LNY)	1.447967	.0.392546	3.688656	0.0049
D(LNY(-1))	5.697975	.1.329079	0.777448	0.4549
D(LNY(-2))	-26.208310	.1.419013	-4.082919	0.0022
D(LNTR)	2.634648	.0.068719	2.465239	0.0334
D(LNTR(-1))	-1.967259	.1.163725	-1.690484	0.1218
D(LNTR(-2))	2.602569	.1.913607	2.848674	0.0173
D(LNNR)	2.079775	.1.120547	1.856036	0.0931
D(LNNR(-1))	3.204288	.1.801560	3.997562	0.0025
D(LNID)	-0.045613	.1.748920	-0.060905	0.9526
D(LNID(-1))	-2.779330	.1.008116	-2.756955	0.0202
D(LNINF)	-0.765892	.1.378295	-2.024592	0.0704
D(LNINF(-1))	-0.901295	.1.325423	-2.769615	0.0198
D(LNINF(-2))	-1.330531	.1.376861	-3.530558	0.0054
CointEq(-1)	-0.634657	.1.207757	-3.054805	0.0122

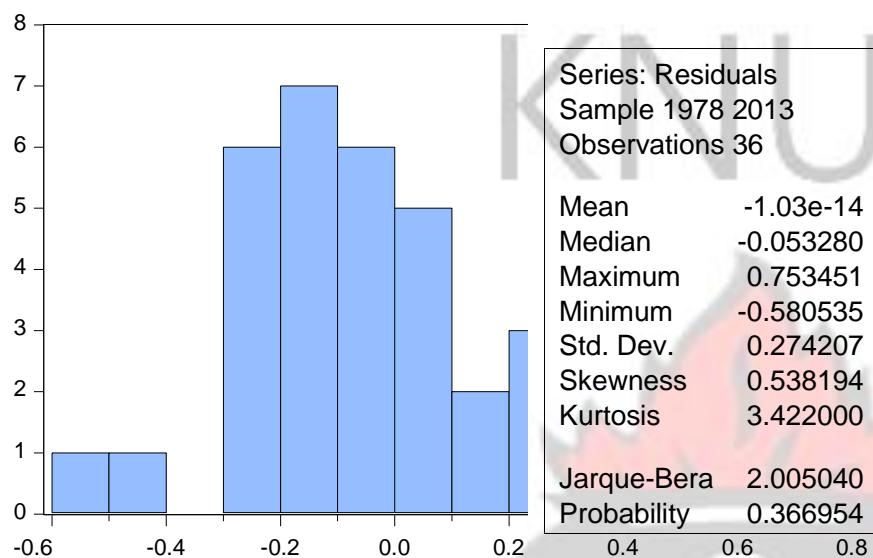
$$\text{Cointeq} = \text{FDI} - (5.3455 * \text{PCAPL} + 32.7484 * \text{LNY} - 1.3127 * \text{LNTR} + 13.4810 * \text{LNNR} - 4.3751 * \text{LNID} - 6.2566 * \text{LNINF} - 255.1462)$$

#### Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PCAPL	5.345470	.1.945173	1.814994	0.0996
LNY	32.748403	.1.156376	3.576568	0.0050
LNTR	-1.312750	.1.852870	-1.539215	0.1548
LNNR	13.480962	.1.424748	2.485085	0.0323
LNID	-4.375134	.1.282284	-3.411986	0.0066
LNINF	-6.256614	.1.160140	-2.896393	0.0159
C	-255.146200	.1.2036698	-3.541892	0.0053

## APPENDIX E

## RESULTS OF THE DIAGNOSTIC TESTS AND THE STABILITY TEST



Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.007012	Prob. F(3,7)	0.1041
Obs*R-squared	20.27068	Prob. Chi-Square(3)	0.7134

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 10/16/15 Time: 06:15

Sample: 1978 2013

Included observations: 36

Presample missing value lagged residual set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	0.030286	0.150153	0.201701	0.8459
FDI(-2)	0.105481	0.104588	1.008540	0.3468
FDI(-3)	0.024937	0.099364	0.250967	0.8090
PCAPL	-0.299522	0.395936	-0.756491	0.4740
PCAPL(-1)	0.184310	0.357744	0.515199	0.6223
PCAPL(-2)	-0.007642	0.492802	-0.015508	0.9881
PCAPL(-3)	0.158484	0.486303	0.325897	0.7540
LNY	-1.215860	5.431884	-0.223838	0.8293
LNY(-1)	3.224526	7.142938	0.451429	0.6653

LNRY(-3)	-4.407652	5.461745	-0.807004	0.4462
LNTR	0.116777	0.866956	0.134697	0.8966
LNTR(-1)	0.197136	1.042036	0.189184	0.8553
LNTR(-2)	-0.880731	0.978114	-0.900437	0.3978
LNTR(-3)	0.740295	0.826571	0.895622	0.4002
LNNR	-0.984276	0.967077	-1.017784	0.3427
LNNR(-1)	0.081765	1.027381	0.079586	0.9388
LNNR(-2)	-0.266571	0.703535	-0.378902	0.7160
LNID	0.229044	0.613015	0.373635	0.7197
LNID(-1)	0.043294	0.546759	0.079183	0.9391
LNID(-2)	0.157669	0.947936	0.166328	0.8726
LNINF	-0.045622	0.352980	-0.129249	0.9008
LNINF(-1)	0.188779	0.306314	0.616293	0.5572
LNINF(-2)	0.063450	0.259817	0.244210	0.8141
LNINF(-3)	-0.159746	0.322973	-0.494610	0.6360
C	7.010031	27.66926	0.253351	0.8073
RESID(-1)	-0.817848	0.348157	-2.349080	0.0512
RESID(-2)	-0.643838	0.370382	-1.738309	0.1257
RESID(-3)	-0.887567	0.370810	-2.393591	0.0479

R-squared	0.563074	Mean dependent var	-1.03E-14
Adjusted R-squared	-1.184628	S.D. dependent var	0.274207
1S.E. of regression	0.405291	Akaike info criterion	1.005082
Sum squared resid	1.149828	Schwarz criterion	2.280694
Log likelihood	10.90853	Hannan-Quinn criter.	1.450305
F-statistic	0.322180	Durbin-Watson stat	2.396845
Prob(F-statistic)	0.985085		

#### Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.525621	Prob. F(25,10)	0.9067
Obs*R-squared	20.44288	Prob. Chi-Square(25)	0.7232
Scaled explained SS		Prob. Chi-Square(25)	1.0000
	1.910211		

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 10/16/15 Time: 06:16

Sample: 1978 2013

Included observations: 36

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRY(-2)	1.541390	5.996729	0.257038	0.8045
C	5.361711	8.280722	0.647493	0.5319
FDI(-1)	0.033490	0.042959	0.779581	0.4537
FDI(-2)	-0.018710	0.034105	-0.548597	0.5953

FDI(-3)	0.008438	0.034419	0.245153	0.8113
PCAPL	0.011414	0.126682	0.090098	0.9300
PCAPL(-1)	0.012342	0.112331	0.109875	0.9147
PCAPL(-2)	0.066121	0.172424	0.383480	0.7094
PCAPL(-3)	0.075724	0.167792	0.451296	0.6614
LNRY	-0.105951	1.768218	-0.059920	0.9534
LNRY(-1)	-1.352461	2.382172	-0.567743	0.5827
LNRY(-2)	-0.354734	2.027268	-0.174981	0.8646
LNRY(-3)	1.157535	1.775539	0.651935	0.5291
LNTR	0.087305	0.295614	0.295334	0.7738
LNTR(-1)	0.100243	0.359243	0.279041	0.7859
LNTR(-2)	-0.049271	0.321894	-0.153067	0.8814
LNTR(-3)	0.062871	0.252709	0.248787	0.8086
LNNR	0.164815	0.309950	0.531746	0.6065
LNNR(-1)	0.003568	0.328874	0.010848	0.9916
LNNR(-2)	0.136282	0.221717	0.614669	0.5525
LNID	-0.055812	0.207156	-0.269418	0.7931
LNID(-1)	-0.108394	0.172980	-0.626626	0.5449
LNID(-2)	0.114017	0.278851	0.408883	0.6912
LNINF	-0.032677	0.104639	-0.312284	0.7612
LNINF(-1)	-0.079718	0.099943	-0.797631	0.4436
LNINF(-2)	-0.048005	0.090014	-0.533308	0.6055
LNINF(-3)	-	0.104242	-	0.7354
	0.036229		0.347542	

R-squared	0.567858	Mean dependent var	0.073101
Adjusted R-squared	-0.512498	S.D. dependent var	0.115379
S.E. of regression	0.141897	Akaike info criterion	-0.903914
Sum squared resid	0.201349	Schwarz criterion	0.239739
Log likelihood	42.27045	Hannan-Quinn criter.	-0.504748
F-statistic	0.525621	Durbin-Watson stat	2.135742
Prob(F-statistic)	0.906653		

Ramsey RESET Test

Equation: UNTITLED

Specification: FDI FDI(-1) FDI(-2) FDI(-3) PCAPL PCAPL(-1) PCAPL(-2)

PCAPL(-3) LNRY LNRY(-1) LNRY(-2) LNRY(-3) LNTR LNTR(-1)

LNTR(-2) LNTR(-3) LNNR LNNR(-1) LNNR(-2) LNID LNID(-1) LNID(-2)

LNINF LNINF(-1) LNINF(-2) LNINF(-3) C

Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	1.401525	9	0.1946
F-statistic	1.964272	(1, 9)	0.1946

F-test summary:

	Sum of Sq.	Df	Mean Squares

Test SSR	0.471463	1	0.471463
Restricted SSR	2.631634	10	0.263163
Unrestricted SSR	2.160171	9	0.240019

Unrestricted Test Equation:

Dependent Variable: FDI

Method: ARDL

Date: 10/16/15 Time: 06:17

Sample: 1978 2013

Included observations: 36

Maximum dependent lags: 3 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (3 lags, automatic):

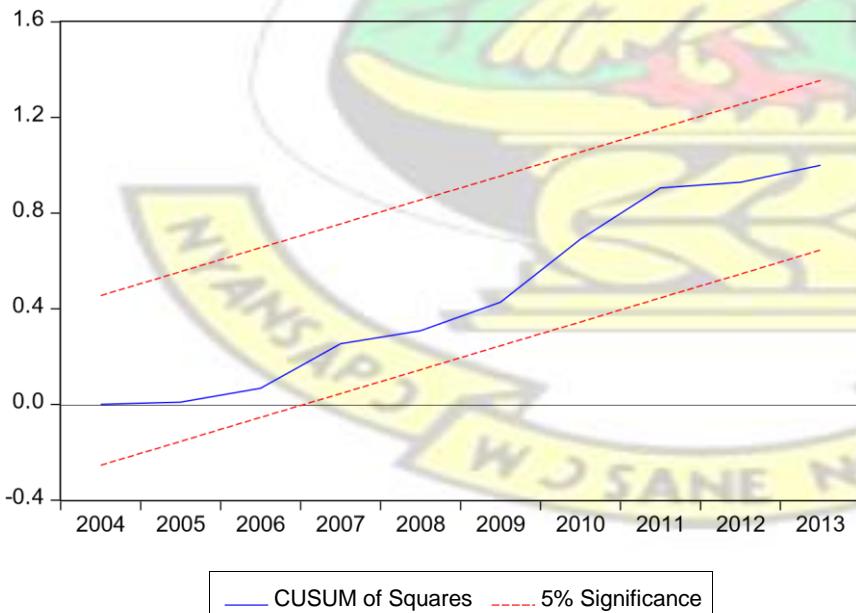
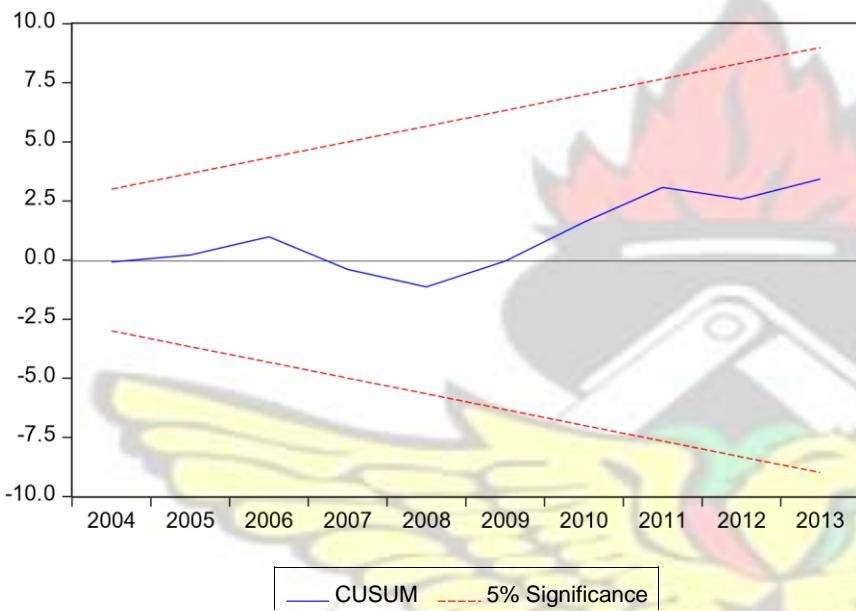
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	0.132579	0.221881	0.597524	0.5649
FDI(-2)	-0.090401	0.123741	-0.730568	0.4836
FDI(-3)	0.092890	0.124557	0.745759	0.4748
PCAPL	0.810386	0.459778	1.762558	0.1118
PCAPL(-1)	-0.114235	0.391477	-0.291806	0.7770
PCAPL(-2)	1.415143	0.636253	2.224182	0.0532
PCAPL(-3)	0.591731	0.606337	0.975912	0.3546
LNY	0.098027	6.203831	0.015801	0.9877
LNY(-1)	-0.195018	8.337643	-0.023390	0.9818
LNY(-2)	-3.848397	7.122702	-0.540300	0.6021
LNY(-3)	18.08925	8.434396	2.144700	0.0606
LNTR	1.759611	1.196462	1.470679	0.1755
LNTR(-1)	-2.173444	1.326472	-1.638514	0.1357
LNTR(-2)	1.321729	1.203037	1.098661	0.3004
LNTR(-3)	-1.747047	1.064841	-1.640664	0.1353
LNNR	-1.426240	1.167320	-1.221807	0.2528
LNNR(-1)	-2.013925	1.447318	-1.391488	0.1975
LNNR(-2)	-1.774040	1.275696	-1.390645	0.1978
LNID	-0.280321	0.734573	-0.381611	0.7116
LNID(-1)	-2.204719	2.433090	-0.906140	0.3885
LNID(-2)	0.569428	1.847475	0.308219	0.7649
LNINF	0.545717	0.393955	1.385226	0.1994
LNINF(-1)	0.448354	0.509163	0.880571	0.4015
LNINF(-2)	0.439396	0.452992	0.969987	0.3574
LNINF(-3)	0.775701	0.535025	1.449840	0.1810
C	-108.3848	47.71835	-2.271344	0.0493
FITTED^2	0.040019	0.028554	1.401525	0.1946

R-squared	0.992538	Mean dependent var	1.961811
Adjusted R-squared	0.970983	S.D. dependent var	2.876036
S.E. of regression	0.489917	Akaike info criterion	1.524546
Sum squared resid	2.160171	Schwarz criterion	2.712185

Log likelihood	-0.441820	Hannan-Quinn criter.	1.939063
F-statistic	46.04526	Durbin-Watson stat	2.210974
Prob(F-statistic)	0.000001		

\*Note: p-values and any subsequent tests do not account for model selection.





## APPENDIX F

### RESULTS OF THE VARIANCE DECOMPOSITION

Period	Variance Decomposition of FDI						
	PCAPL	LNTR	LNINF	LNID	LNNR	LNY	FDI
1	4.110947	3.135613	2.237834	4.330206	3.616610	0.260863	82.30793
2	2.274393	2.638109	1.096741	42.66313	5.002694	0.129714	46.19522
3	2.024123	10.34837	2.817198	32.24584	9.624434	8.516027	34.42401
4	1.698658	17.55858	7.006504	23.80646	16.19907	9.020829	24.70991
5	1.461686	17.64235	8.982924	20.34053	17.93585	11.48611	22.15055
6	1.510487	17.69630	9.610555	18.69870	19.54530	11.66845	21.27021
7	1.506343	17.12462	9.936797	18.02198	20.33939	12.12236	20.94851
8	1.467174	16.64279	9.929567	17.59732	21.10232	12.09046	21.17037
9	1.472963	16.30084	9.874705	17.76277	21.11657	12.02004	21.45211
10	1.509611	16.29204	9.838957	17.87754	20.98682	11.81224	21.68279

Cholesky ordering: PCAPL LNTR LNINF LNID LNNR LNY FDI



## APPENDIX G

### RESULTS OF THE PRINCIPAL COMPONENT ANALYSIS

Principal components/correlation                          Number of obs = 39

Number of comp. = 3

Trace = 3

Rotation: (unrotated = principal)                          Rho = 1.0000

Component	Eigenvalue	Difference	Proportion	Cumulative
2.80538	2.65247	0.9351	0.9351	Comp1
Comp2	0.152915	0.111215	0.0510	0.9861
Comp3	0.0416999	.	0.0139	1.0000

Principal components (eigenvectors)

Variable	Comp1	Comp2	Comp3
Unexplained			
pol2	0.5652	0.8235	0.0486
0 pr	0.5845	-0.3581	-0.7281
0.5822	-0.4400	0.6837	0



## APPENDIX H

### I. DATA USED FOR THE STUDY

YEAR	FDI	PCAPL	Y	TR	NR	ID
1975	2.030432841	-0.1860092	4246682511	37.78345835	4.302642	0.317943016
1976	-0.512998887	-0.1860092	4096766829	31.7566123	5.566966	0.329008998
1977	0.496344037	-0.1860092	4189931719	22.0443597	6.896038	0.332073888
1978	0.21579502	0.5794137	4545067634	18.0462308	4.780596	0.341829992
1979	-0.05897694	0.9105877	4430761850	22.3938778	7.069879	0.345041682
1980	0.299741459	0.7540819	4451661567	17.6211148	7.676649	0.348937843
1981	0.295993711	-1.573628	4295716859	10.0790345	6.099068	0.333716131
1982	0.300480055	-0.3425151	3998296446	6.32034307	6.790212	0.323370399
1983	0.044595083	-0.3425151	3815824683	11.5448987	6.273973	0.312120085
1984	0.032966571	-0.3425151	4145800765	18.8146352	4.80844	0.309491581
1985	0.085240727	0.1165356	4356889102	24.2438528	4.772988	0.300702523
1986	0.060849338	0.1165356	4583410740	36.7116814	4.087988	0.293575943
1987	0.061658676	0.1165356	4803180643	45.848165	4.913785	0.293820999
1988	0.060025039	0.1165356	5073511803	42.2455037	5.666541	0.291933161
1989	0.178228605	-0.0399702	5331544145	41.0858431	5.263855	0.302262221
1990	0.148256889	-0.3425151	5509021559	42.7281615	7.517987	0.302439869
1991	0.17819198	0.0525973	5799998499	42.4883211	5.161186	0.309863962
1992	0.203849798	0.7502545	6025004753	45.993567	6.185273	0.308699208
1993	1.306644721	0.2912039	6317217484	56.6691348	7.091609	0.306029981
1994	2.669433864	-0.0113411	6525685661	62.0211507	9.945385	0.306053915
1995	1.027918645	-0.0113411	6794049194	57.4230927	10.42694	0.37627396
1996	1.080012894	0.2272655	7106742655	72.2049457	10.69848	0.453639204
1997	0.740680302	0.0707597	7404967010	85.40184	9.789877	0.60070145
1998	1.396136651	-0.2317853	7753029398	80.5995449	8.652641	0.74254139

1999	1.970297465	-0.2317853	8094162423	81.7051032	5.991175	0.87410444
2000	1.438885282	-0.2317853	8393646433	116.048432	8.252933	1.129071002
2001	1.048444082	0.1385254	8729392290	110.045855	8.368747	1.267957444
2002	0.596048096	0.1385254	9122214943	97.4892439	10.36808	1.390047167
2003	0.89945482	0.1385254	9596570120	97.2871449	11.95786	1.43352626
2004	0.978509585	0.0993888	10133978047	99.6703345	10.31365	1.503807393
2005	1.121848764	0.0993888	10731883141	98.1715141	9.457799	1.503579727
2006	2.128823809	-0.057117	11418723662	65.9230152	8.033481	1.623649482
2007	3.455026424	-0.057117	12156343018	65.3540349	9.071477	1.671467192
2008	4.277935278	-0.057117	13181184012	69.514159	10.61162	0.622670422
2009	11.15180668	-0.057117	13707278823	71.5926292	12.931907	1.128626839
2010	7.855204332	-0.057117	14804825657	75.3777521	13.037173	1.14535768
2011	8.144199261	-0.057117	17026596445	93.8153981	18.959702	1.147110803
2012	8.089822586	-0.057117	18523201271	101.178644	18.705289	1.123455845
2013	7.141163966	-0.057117	19844237673	89.787184	18.832495	1.043915061

## CONTINUATION OF DATA USED FOR THE STUDY

YEAR	INF
1975	29.8245614
1976	56.0810811
1977	116.45022
1978	73.091667
1979	54.441288
1980	50.070139
1981	116.5036
1982	22.295566
1983	122.87451
1984	39.665314
1985	10.305441
1986	24.565416
1987	39.815068
1988	31.359268
1989	25.223692
1990	37.259066
1991	18.031439
1992	10.056117
1993	24.959842
1994	24.870255
1995	59.461554
1996	46.56102

1997	27.885209
1998	14.624167
1999	12.408669
2000	25.193219
2001	32.905409
2002	14.81624
2003	26.67495
2004	12.624574
2005	15.118186
2006	10.91517
2007	10.732728
2008	16.522143
2009	19.250714
2010	10.707568
2011	8.7268368
2012	9.1607783
2013	11.608333

Sources: World Development Indicators 2014 CD ROM, UNCTAD 2014, Marshall and Jagers 2014 and Freedom House 2014

## II. TABLE SHOWING THE SCALING OF THE POLITICAL LIBERALISATION

### VARIABLES

YEAR	PT	PR	CL	PCAPL
1975	1.5	0	3.333333	-0.1860092
1976	1.5	0	3.333333	-0.1860092
1977	1.5	0	3.333333	-0.1860092
1978	5	1.666667	3.333333	0.5794137
1979	8	3.333333	5	0.9105877
1980	8	5	5	0.7540819
1981	1.5	8.333333	6.666667	-1.573628
1982	1.5	1.666667	3.333333	-0.3425151
1983	1.5	1.666667	3.333333	-0.3425151
1984	1.5	1.666667	3.333333	-0.3425151
1985	1.5	0	1.666667	0.1165356
1986	1.5	0	1.666667	0.1165356
1987	1.5	0	1.666667	0.1165356
1988	1.5	0	1.666667	0.1165356
1989	1.5	1.666667	1.666667	-0.0399702
1990	1.5	1.666667	3.333333	-0.3425151
1991	3	1.666667	3.333333	0.0525973

1992	4.5	1.666667	1.666667	0.7502545
1993	4.5	3.333333	3.333333	0.2912039
1994	4.5	3.333333	5	-0.0113411
1995	4.5	3.333333	5	-0.0113411
1996	6	5	5	0.2272655
1997	6	6.666667	5	0.0707597
1998	6	6.666667	6.666667	-0.2317853
1999	6	6.666667	6.666667	-0.2317853
2000	6	6.666667	6.666667	-0.2317853
2001	8	8.333333	6.666667	0.1385254
2002	8	8.333333	6.666667	0.1385254
2003	8	8.333333	6.666667	0.1385254
2004	9	8.333333	8.333333	0.0993888
2005	9	8.333333	8.333333	0.0993888
2006	9	10	8.333333	-0.057117
2007	9	10	8.333333	-0.057117
2008	9	10	8.333333	-0.057117
2009	9	10	8.333333	-0.057117
2010	9	10	8.333333	-0.057117
2011	9	10	8.333333	-0.057117
2012	9	10	8.333333	-0.057117
2013	9	10	8.333333	-0.057117

Sources: Author's own computation