Exchange Rate Volatility and Trade Balance in some Selected Sub-Saharan African Countries

(1995-2013)

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B. Sc. Ed (Economics) Ife

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2015

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CERTIFICATION

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DEDICATION

This work is dedicated to God Almighty for His Exceeding Grace, Favour and Strength throughout my academic pursuit.

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TABLE OF CONTENTS **PAGES**

Title page i

Certification ii

Authorization iii

Dedication iv

Acknowledgements v

Table of Contents vii

List of Tables xii

List of Figures xiii

Abstract xv

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study 1

1.2 Statement of the Research Problem 3

1.2.1 Research Questions 6

1.3 Objectives of the Study 7

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1.4 Justification of the Study 7

1.5 Scope of the Study 9

1.6 Organization of the Study 9

CHAPTER TWO: LITERATURE REVIEW

2.1 Review of Theoretical Literature 10

2.1.1 The Partial Equilibrium Model of Risk Averse 10

2.1.2 The General Equilibrium Model of Risk Averse 11

2.1.3 The Sunk Cost 12

2.1.4 Marshall Learner Condition 12

2.1.5 The J-Curve Effect 13

2.2 Empirical Literature Review 14

2.2.1 Evidences from Country Specific (Developing and Developed Countries) 14

2.2.2 Evidences from Cross Section of Countries outside Sub-Saharan African Countries 20

2.2.3 Evidences from Sub-Saharan African Countries 30

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2.3 Summary of Findings 33

CHAPTER THREE: METHODOLOGY

3.1 Theoretical Framework 38

3.2 Conceptual Framework 40

3.3 Model of Analysis 42

3.3.1 Model Specification 44

3.3.2 Direction of Causality between Exchange rate Volatility and Trade Balance 45

3.4 Measurement of Variables and Source of Data 46

3.5 Estimation Techniques 48

3.5.1 Panel Unit Root 48

3.5.2 Panel Cointegration 48

3.5.3 Lag Selection Criteria 49

CHAPTER FOUR: TREND AND PARTTERN OF EXCHANGE RATE AND TRADE BALANCE

4.1 Trend Analysis of Trade Balance and Exchange Rate Volatility (pooled) 50

4.2 Trend Analysis of Trade Balance and Exchange Rate Volatility in Central African Republic 54

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4.3 Trend Analysis of Trade Balance and Exchange Rate Volatility in Cameroun 57

4.4 Trend Analysis of Trade Balance and Exchange Rate Volatility in Cote d'Ivoire 60

4.5 Trend Analysis of Trade Balance and Exchange Rate Volatility in Gambia 63

4.6 Trend Analysis of Trade Balance and Exchange Rate Volatility in Ghana 66

4.7 Trend Analysis of Trade Balance and Exchange Rate Volatility in Gabon 69

4.8 Trend Analysis of Trade Balance and Exchange Rate Volatility in Equatorial Guinea 72

4.9 Trend Analysis of Trade Balance and Exchange Rate Volatility in Nigeria 75

4.10 Trend Analysis of Trade Balance and Exchange Rate Volatility in South Africa 78

4.11 Trend Analysis of Trade Balance and Exchange Rate Volatility in Togo 81

4.12 Trend Analysis of Trade Balance and Exchange Rate Volatility in Uganda 84

4.13 Trend Analysis of Trade Balance and Exchange Rate Volatility in Zambia 87

4.14 Summary 90

CHAPTER FIVE: ESTIMATION AND DISCUSSION OF RESULTS

5.1 Properties of Data 91

5.1.1 Descriptive Statistic 91

5.1.2 Panel Unit Root Test 94

OBAFEMI AWOLOWO UNIVERSITY

5.1.3 Lag Length Selection Criteria 97

5.1.4 Panel Co-integration Test 99

5.2 Measurement and Testing of Exchange Rate Volatility 101

5.3 Effect of Exchange Rate and Exchange Rate Volatility on Trade Balance 105

5.4 Direction of Causality among Trade Balance, Real Exchange Rate and Exchange Rate Volatility 109

5.4.1 Causal Effect of Real Exchange Rate and Exchange Rate Volatility on Trade Balance 111

5.4.2 Causal Effect of Real Exchange Rate and Trade Balance on Exchange Rate Volatility 111

5.4.3 Causal Effect of Exchange Rate Volatility and Trade Balance on Rate Real Exchange 112

5.5 Channels through which Real Exchange Rate and Exchange Rate Volatility affect Trade Balance 114

CHAPTER SIX: SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 Summary 119

6.2 Conclusion 122

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6.3 Policy Recommendations 122

6.4 Contribution to Knowledge 123

6.5 Limitation to the Study 123

REFERENCES 124

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LIST OF TABLES

Table 2.1:	Summary of Empirical Literature Review	34
Table 3.1:	Measurement of Variables and Source of Data	46
Table 5.1:	Descriptive Statistics of Variables	93
Table 5.2:	Panel Unit Root (with individual intercept)	95
Table 5.3:	Panel Unit Root (with individual intercept and trend)	96
Table 5.4:	Lag Length Selection Criterion	98
Table 5.5:	Panel Co-integration test	100
Table 5.6:	Estimation Result of ARCH/GARCH Model for Real Exchange Rate And Diagnostic Statistics	104
Table 5.7:	Result of Estimation of Equation 12 to Test the Effect of Real Exchange Rate and Exchange Rate Volatility on Trade Balance	108
Table 5.8:	Wald Coefficient Test	108
Table 5.9:	Panel Vector Autoregressive Result	110
Table 5.10:	Summary of Causality Test	113
Table 5.11:	Impulse Response of Trade Balance, Real Exchange Rate and Exchange rate Volatility to one S.D (1995-2013)	115

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Table 5.12: Variance Decomposition 118

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LIST OF FIGURES

Figure 3.1: Transmission Mechanisms among Trade Balance, Real Exchange Rate and Exchange Rate Volatility 41

Figure 4.1: Trend of Trade Balance in Sub-Saharan African Countries 52

Figure 4.2: Trend of Exchange Rate Volatility in Sub-Saharan African Countries 53

Figure 4.3: Trend of Trade Balance in Central Africa Republic 55

Figure 4.4: Trend of Exchange Rate Volatility in Central Africa Republic 56

Figure 4.5: Trend of Trade Balance in Cameroun 58

Figure 4.6: Trend of Exchange Rate Volatility in Cameroun 59

Figure 4.7: Trend of Trade Balance in Cote d'Ivoire 61

Figure 4.8: Trend of Exchange Rate Volatility in Cote d'Ivoire 62

Figure 4.9: Trend of Trade Balance in Gambia 64

Figure 4.10: Trend of Exchange Rate Volatility in Gambia 65

Figure 4.11: Trend of Trade Balance in Ghana 67

Figure 4.12: Trend of Exchange Rate Volatility in Ghana 68

Figure 4.13: Trend of Trade Balance in Gabon 70

Figure 4.14: Trend of Exchange Rate Volatility in Gabon 71

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Figure 4.15: Trend of Trade Balance in Equatorial Guinea 73

Figure 4.16: Trend of Exchange Rate Volatility in Equatorial Guinea 74

Figure 4.17: Trend of Trade Balance in Nigeria 76

Figure 4.18: Trend of Exchange Rate Volatility in Nigeria 77

Figure 4.19: Trend of Trade Balance in South Africa 79

Figure 4.20: Trend of Exchange Rate Volatility in South Africa 80

Figure 4.21: Trend of Trade Balance in Equatorial Togo 82

Figure 4.22: Trend of Exchange Rate Volatility in Togo 83

Figure 4.23: Trend of Trade Balance in Uganda 85

Figure 4.24: Trend of Exchange Rate Volatility in Uganda 86

Figure 4.25: Trend of Trade Balance in Zambia 88

Figure 4.26: Trend of Exchange Rate Volatility in Zambia 89

Figure 5.1: Trend of Residual 103

Figure 5.2: Impulse Response graph 116

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ABSTRACT

The study examines and appraises exchange rate volatility and trade balance in some selected sub-Saharan African countries. It also determines the effect of real exchange rate on trade balance and investigates the joint impact of real exchange rate and exchange rate volatility on trade balance. These are with a view to determining the relationship among real exchange rate, exchange rate volatility and trade balance in some selected sub-Saharan African countries from 1995 to 2013.

Secondary data were used for the study. Annual data on gross domestic product, real exchange rate, export, import and world gross domestic product covering the period from 1995 to 2013 were sourced from the World Development Indicators (WDI) of World Bank. Data on exchange rate volatility was generated using Generalised Autoregressive Conditional Heteroscedasticity (GARCH 1, 1). Both descriptive statistics and econometrics techniques of analysis were employed in a panel setting. Under descriptive techniques, tables and graphs were used while Generalised Autoregressive Conditional Heteroscedasticity, Generalised Method of Moment (GMM) and Panel Vector Autoregressive (PVAR) were adopted as the econometric tools.

The result from the trend and pattern analysis shows that in aggregate term, Sub-Saharan African countries had witnessed a negative balance of trade over the study period, while Cote d'Ivoire experienced positive trade balance during the period of study. In addition, the region also experienced volatile movement in exchange rate. Furthermore, the GARCH econometric result reveals that GARCH (1, 1) model was the right model for modelling exchange rate

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volatility in sub-Saharan African countries. The addition of the coefficients of variance was less than one (0.671744 < 1). The GMM estimates reveals that real exchange rate had a significant and negative effect on trade balance ($t = -26.29$, $p < 0.05$). Similarly, world gross domestic product had a negative and significant effect on trade balance ($t = -2.284$, $p < 0.05$). On the other hand, the study found that exchange rate volatility ($t = 20.673$, $p < 0.05$) and gross domestic product ($t = 5.633$, $p < 0.05$) both have positive and significant impact on trade balance in the region. Also, panel vector autoregressive result reveals that real exchange rate and exchange rate volatility ($F = 5.9953$, $p < 0.05$) jointly Granger cause trade balance.

The study concluded that real exchange rate and exchange rate volatility are very important in determining trade balance in Sub-Saharan African countries.

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CHAPTER ONE

INTRODUCTION

1.1. Background to the Study

Exchange rate volatility has been defined as the risk associated with the unexpected movements in exchange rate (Ozturk, 2006). In an open economy, foreign exchange rate policies are among the most important macro-economic indicators, because of the fact that they affect the business world's investment decision (Genc and Artar, 2014). In developing countries, especially sub-Saharan African countries' exchange rate volatility has been attributed to changes in macro-economic variables such as unemployment rate, inflation rate, price, interest rate, balance of payment etc, which became more volatile in the 1980s and early 1990s due to the Structural Adjustment Program (SAP) of International Monetary Fund (IMF) embarked upon by many of these countries (Adubi and Okunmadewa, 1999).

In modern times, real world scenarios have also been changing just like the number and extent of the studies in this area. Some of the changes (inflation rate, interest rate, balance of payment, etc) have worsened the exchange rate fluctuation whereas some of them have improved it. Specifically, one of the policies of structural adjustment program (SAP) of International Monetary Fund; that is international trade liberalization, also in connection with the huge increase in cross-border financial transactions has actually increased exchange rate volatility (Kafle, 2008). For example, the currency crisis of late 1980s and early 1990s in the developing countries is a solid foundation for increasing exchange rate volatility. However, several other changes have occurred over the previous years that have also served to reduce fluctuations in exchange rates. For instance, proliferation of multinational companies (MNCs),

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the currency stabilization effort of the apex banks of different countries and monetary authorities, the rapid spreading of credit and hedging instruments in financial markets and protection of agro-based industries may have reduced the exchange rate volatility to a great extent (Insah 2013).

Theory explains that exchange rate volatility creates uncertainty with regard to the prices exporters would have to pay and receive in the future (Clark, 1973). In recent times, the trends in the world economy as the movement of goods and services, labour, technology and capital throughout the world regardless of the geographical boundaries affect the economies of countries. Trade transactions involving more than one region normally require the conversion of a currency to another currency. Whether or not the demands for traded goods are sensitive to exchange rates fluctuation has long been recognized as a central issue in international transmission and adjustment.

The fall of the Bretton Woods system of fixed exchange rate has led to significant fluctuation in both real and nominal exchange rate (Flood and Rose, 1999). Since the inception of floating (flexible) exchange rate regime in 1973, the effect of exchange rate volatility on the volume of international trade has been a subject of concern both theoretically and empirically. Immediately after the Bretton Woods system ended, one concern was whether real exchange rates were truly flexible in a way that supported real adjustments. At that time, the debate focused on the point that if both nominal exchange rates and domestic prices were flexible, real exchange rates would not move enough to correct external imbalances. As a consequence, trade adjustment would need to occur solely through changes in the aggregate demand of trading partners and nominal exchange rate movements would be ineffective in addressing real trade imbalances. Kenen and Rodrick (1986), however, were early proponents of the view that

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changes in nominal exchange rates would induce relative price adjustments, and would help economies adjust their international imbalances. More than twenty-eight years later, the strength of the exchange rate instrument in trade-balance adjustment is again hotly debated.

Globalization also has affected the relationship between the trade balance and the real exchange rate in several ways. Foremost, the growth of trade taking place within industries makes the trade balance more sensitive to real exchange rate movements. On the other hand, a higher degree of vertical specialization and more global supply chains act to reduce this sensitivity (Kharroubi, 2011). The relative importance of these effects varies across countries.

In Africa, trade balance in percentage term, export growth exceeds import growth for Africa overall and in most country group (Morrissey, 2004). However, as import GDP ratio was initially higher than export GDP ratio; this does not translate into an improvement in the trade balance. These show that there is a clear danger from relatively rapid liberalization, as import supply is more immediately responsive than export supply. This problem is most pronounced for countries exporting primary commodities subject to weak and volatile world prices. Kenya, for example, has tended to experience an increasing trade deficit. Oil exporters have fared reasonably well and maintained a surplus as a group, although this was significantly reduced in the late 1990s, and agriculture exporters have fared better than may be expected. Countries dependent on mining exports, however, have not fared well in the 1990s. Furthermore, in line with developments in the global economy, exports from sub-Saharan Africa have been volatile (due to exchange rate), particularly industrial metals and oil exporters which are more sensitive to global business cycles. Indeed, in the third quarter of 2012, as global imports plunged, so did export volumes in sub-Saharan African countries, in particular that of the region's metal

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exporters decreases by 43 %(-43 percent) and oil exporters decreases by 36 % (-36.8 percent) (World Bank 2013).

1.2. Statement of Research Problem

One of the negative effects of the rising wave of globalization and financial integration for all open economies is the rise in exchange rate volatility with significant

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