

PhD DISSERTATION

Isaac Kwesi Ampah

Szeged, 2020

UNIVERSITY OF SZEGED
FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION
DOCTORAL SCHOOL IN ECONOMICS

**CAPITAL FLIGHT AND EXTERNAL BORROWING IN SUB-SAHARAN
AFRICA: AN INVESTIGATION INTO RELATIONSHIPS AND
IMPLICATIONS**

PhD Dissertation

Supervisor

Dr. habil. Kiss Gábor Dávid
(Associate Professor)
University of Szeged
Faculty of Economics and
Business Administration

Author

Isaac Kwesi Ampah
University of Szeged
Faculty of Economics and
Business Administration
Doctoral School of Economics

Szeged, 2020

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original work undertaken under the guidance of my supervisor; and with the exception of references to other people's work which have been duly cited, this dissertation has neither in part nor in whole been submitted for another degree in this university or elsewhere.

Candidate Signature:.....

Date:.....

Name: Isaac Kwesi Ampah

Supervisor' Declaration

I hereby declare that the preparation and the presentation of this thesis was supervised in accordance with the supervision of thesis laid down by the University of Szeged.

Principal Supervisor's Signature:..... Date:.....

Name: Dr. habil. Kiss Gábor Dávid

DEDICATION

Giving all glory to God, I dedicate this dissertation to my wife, Grace and our pride:
Humphrey, Heartwell and Erica.

ACKNOWLEDGEMENTS

My utmost thanks go to the Almighty God for His guidance and protection throughout my studies and for making this dissertation a success.

I am particularly indebted to my supervisor, Dr. habil. Kiss Gábor Dávid, for his starring role, serious but substantial and motivational review comments, an unimaginably high level of trust, confidence and tolerance he had in me before my enrolment, and throughout the pursuit of my programme. It is his exceptional leadership, sacrifice and direction that urged me on to finish this dissertation on time.

May I also express my sincere appreciation to Dr. Prof. Éva Voszka, Dr. habil Udvari Beáta and Dr. habil Balázs Kotosz, who consistently conveyed in me the spirit of research and provided me with priceless life counselling and rich advice, especially during the early stages of writing this dissertation. Without their guidance and unrelenting support, this dissertation would not have been possible.

I owe prof. Ing. Daniel Stavárek, Head of Department of Finance and Accounting, Silesian University in Opava, Czech Republic and Dr Briglevics Tamás, Researcher at the National Bank of Hungary for their invaluable suggestions, comments and thorough editorial review which has in no small way improve the quality of this work.

I will do myself an injustice if I do not acknowledge the generosity of the Stipendium Hungaricum scholarship programme, which funded my entire studies. I must admit that, without this financial support, it would not have been possible for me to pursue this programme.

No amount of words can be sufficient enough to express my deepest gratitude to my wife, Mrs Grace Ampah, for her love, inspiration, spiritual and emotional support, and other sacrifices throughout the period of my programme. It is her boundless sacrifices that gave me the peace of mind to pursue this study and complete the dissertation in good time.

In fact, so many were the helping hands, especially my postgraduate colleagues and the entire faculty staff, that I cannot mention them all, but to all who contributed to this PhD reality, I pray that the good Lord bless you now and always. Thank you all.

LIST OF PUBLICATIONS

Prior to the submission, portions of this dissertation and other related studies have been published in peer-reviewed journals and conference proceedings while others are under review. This section lists these studies;

Peer-reviewed journal publications

- I. Ampah I. K. – David, K. G. (2019). Economic policy implications of external debt and capital flight in sub-Saharan Africa’s Heavily Indebted Poor Countries (HIPC). *Society and Economy*, 41(4), 523–542.
- II. Ampah I. K. – Kiss, G. D. (2019): Welfare implications of external debt and capital flight in sub-Saharan Africa. Evidence using heterogeneous panel data modelling. *Acta Economica*, *Accepted*.
- III. Ampah I. K. (2019): Borrowing from your debtors, how capital flight from SSA are financed by their external borrowing. *Prague Economic Papers*, *Under review*
- IV. Kiss, G. D. – Ampah, I. K. (2018): Macroeconomic Volatility and Capital Flights in Sub-Saharan Africa: A Dynamic Panel Estimation of some Selected HIPC Countries. *Mediterranean Journal of Social Sciences*, 9(5), 165.
- V. Udvari, B. – Ampah, I. K. (2018): Impacts of Aid for Innovation on Economic Growth in the Sub-Saharan African Countries. *Mediterranean Journal of Social Sciences*, 9(4), 99-108.
- VI. Ampah, I. K. – Kotosz, B. (2016): Wagner versus Keynes: the causal nexus between Government Expenditures and Economic Growth: An empirical study of Burkina Faso. *Journal of Heterodox Economics*, 3(2), 74-101.

Conference Presentations

- I. Ampah, I. K. – Kiss, G.D. – Balázs, K. (2018): Capital flight and external debt in Heavily Indebted Poor Countries in Sub-Saharan Africa: An empirical investigation. In Udvari B. – Voszka É. (Eds): *Challenges in National and International Economic Policies*. University of Szeged, Doctoral School in Economics, Szeged, pp. 135–159. <http://www.eco.u-szeged.hu/english/research/scientific-publications/challenges-in-national-and-international-economic-policies>.
- II. Ampah, K. I. - Kiss, G. D. (2017): External debt and capital flight: Is there a revolving door hypothesis in Ghana? In *DOKBAT 2017 - 13th Annual International Bata Conference for PhD Students and Young Researchers (Vol. 13)*. Zlín: Tomas Bata University in Zlín, Faculty of Management and Economics (pp. 21-34). Retrieved from <http://dokbat.utb.cz/conferenceproceedings/>. ISBN: 978-80-7454-654-9.
- III. Ampah, K. I., - Kiss, G. D. (2017). External debt and capital flight: is there a revolving door hypothesis in Ghana? In Kemal Cebeci - Slagjana Stojanovska (Eds): *MIRDEC International Conference on Social Science, Economics, Business and Education (Vol. 3)*. Hotel President, Budapest, Hungary. (pp. 105)
- IV. Ampah, K. I., - Kiss, G. D. (2017). The impact of the “revolving door hypothesis” for fiscal and monetary policies in sub-Saharan African countries: Empirical evidence from Heavily Indebted Poor Countries. In *Kemal Cebeci - Slagjana Stojanovska (Eds): MIRDEC International Conference on Social Science, Economics, Business and Education (Vol. 7)*. Holiday Inn Piramides, Madrid, Spain. (pp. 44)
- V. Ampah, K. I. (2019): Welfare in Jeopardy? *The damming effect of external debt and capital flight on general welfare in sub-Saharan Africa*. Estonian PhD Summer School (SVMJ.TK.008), Estonia.

ABSTRACT

Over the past three to four decades, the more sub-Saharan Africa countries (SSA) continue to borrow to finance their development needs; the more honestly acquired capital also leaves the region. This simultaneous occurrence of external borrowing and capital flight had propelled many to ask why countries in the region are borrowing heavily while at the same time, allowing capital to flee abroad. Employing a three, stand-alone empirical papers and dataset from 1990 to 2015, this dissertation examines the apparent positive relationship between external debts and capital flight and how their interaction translates into economic welfare and fiscal and monetary policies effectiveness in the SSA region.

Prior to the macro-econometric analyses, the various definitions of external debt and capital flight and how they have been measured in the literature was reviewed, and a working definition for both capital flight and external debt appropriate for the conduct of the study are provided. A general overview of the SSA economy, as well as a detailed insight into the trends in the SSA macroeconomic policy environment after independent, was also examined. Thereafter, a review of the magnitude and the trends of external debt and capital flight are detailed.

In the first empirical model, the relationship between external debt and capital flight was investigated employing the two-step system Generalized Method of Moments (GMM) and the Feasible Generalized Least Squares (FGLS) for the period 1990 to 2015. To ensure the robustness of the test results, the data set was split into the four various sub-regions within the study area, and estimation is carried out for each of the sub-region. The empirical evidence suggests that there is a dynamic relationship between external debt and capital flight signifying that increases in external debt lead to increase in capital flight and that if the external debt remains unchecked, it will continue to cause a substantial amount of capital flight. At the regional level, external debt remains positive and have statistically significant effects on capital flight for all the various regions in both short-run and long-run. The Pairwise Dumitrescu Hurlin panel causality test also indicates that in addition to debt-fueled capital flight, the SSA region also suffers from flight-fueled external borrowing suggesting that if foreign borrowing remains unchecked, it will continue to drive valuable capital out of the region. The findings from the variance decomposition analysis showed that apart from the previous value of capital flight, the

second most significant variable that contributes to innovations in the forecast error variance of capital flight is the total debt stock as a percentage of GDP.

The second empirical chapter also examines the welfare impact of external debt and capital flight in a panel of 24 SSA countries employing the Driscoll–Kraay standard errors for the period 1990–2015. As a robustness check, this study employs the Augmented Mean Group (AMG) estimator developed by Eberhardt and Teal (2010) and the Panel-Corrected Standard Error (PCSE) estimator to estimate the same dataset. The analysis presented in the study shows that both external borrowing and capital flight represent an essential constraint to the general welfare of people in the SSA region using the human development index. Also, the study found that the relationship between external debt and welfare is not always linear as assumed by the theoretical and empirical literature

The last empirical paper examines the incidence of the revolving door of external debt and capital flight on fiscal and monetary policy effectiveness in a panel of 24 countries in SSA employing the two-step system GMM model for the period 1990 to 2015. The results revealed that the revolving door of external debt and capital flight in the region has not only undermined both fiscal and monetary policies; it has also been a drag on the progress of heavily indebted poor countries in the SSA-region, particularly by undermining their domestic investment.

Policy implications that emanate from this study indicate the need to tackle the revolving nature of external borrowing and capital flight and take steps to halt all channels through which honestly acquired capital leaves the region

KEYWORDS

Sub-Saharan Africa (SSA); Heavily Indebted Poor Countries (HIPC); External Debt; Capital Flight; Welfare; Fiscal and Monetary policies; Driscoll and Kraay standard errors; two-step system Generalized Method of Moments (GMM); Feasible Generalized Least Squares (FGLS); Panel-Corrected Standard Error (PCSE).

JEL CLASSIFICATIONS: F32; F34; I31; O22

TABLE OF CONTENT

DECLARATION	iii
DEDICATION.....	iv
ACKNOWLEDGEMENTS	v
LIST OF PUBLICATIONS	vi
ABSTRACT.....	viii
KEYWORDS.....	ix
JEL CLASSIFICATIONS:	ix
TABLE OF CONTENT	x
LIST OF TABLES.....	xvii
LIST OF FIGURES	xix
CHAPTER ONE	1
INTRODUCTION	1
1.0 Background of the study	1
1.1 Statement of the problem	4
1.2 Objectives of the study	7
1.3 Hypothesis of the study	8
1.3.1 Relationship between external debt and capital flight	8
1.3.2 Implications of external debt and capital flight on welfare	8
1.3.3 Implications of external debt and capital flight on policy effectiveness	9
1.4 Significance of the study	9

1.5	Scope of the dissertation	10
1.6	Organisation of the Study.....	10
CHAPTER TWO		13
DEFINITIONS AND MEASUREMENT		13
2.0	Introduction	13
2.1	External debt	13
2.2	Capital flight.....	16
2.2.1	Definitions	16
2.2.2	Capital flight measurement.....	21
2.2.2.1	The Residual (Indirect) Method	22
2.2.2.2	Hot Money Measure	24
2.2.2.3	The Dooley Method.....	25
2.2.2.4	Mirror Stock Statistics / Asset Method	26
2.2.2.5	Trade misinvoicing.....	27
2.2.2.6	The methods and their drawbacks	28
2.3	Chapter summary	30
CHAPTER THREE		31
OVERVIEW OF SSA ECONOMY AND THE PATTERN OF EXTERNAL DEBT AND CAPITAL FLIGHT.		31
3.0	Introduction.....	31
3.1	Overview of SSA economy.....	31
3.1.1	Macroeconomic performance of SSA after independence (1965-1989) ..	35

3.1.2	Macroeconomic performance of SSA (1990-2015).....	38
3.2	Overview of capital flight in SSA.....	40
3.2.1	Volume and trend of capital flight.....	41
3.2.2	Capital flight compared with other financial Flows	45
3.2.3	Major routes of capital flight	46
3.3	Overview of external borrowing in SSA's.....	50
3.3.1	External debt before debt relief (1965-1994)	50
3.3.2	External debt during and after debt relief (1996-2015)	53
3.4	Chapter Summary.....	55
CHAPTER FOUR.....		56
EXTERNAL DEBT AND CAPITAL FLIGHT: VALIDATING THE REVOLVING- DOOR HYPOTHESIS.....		56
4.0	Introduction.....	56
4.1	Background of the study	56
4.2	Literature review	59
4.2.1	Theoretical literature.....	59
4.2.1.1	Indirect relationship between external debt and capital flight.....	59
4.2.1.2	Direct relationship between external debt and capital flight	61
4.2.3	Empirical literature	63
4.3	Methodology	67
4.3.1	Data sources and scope	67
4.3.2	Model Specification.....	68

4.3.3	Variable Justification and Apriori expected signs	72
4.3.4	Descriptive statistics of the selected variable	76
4.4	Estimation technique and initial diagnosis.....	78
4.4.1	Cross-sectional and time-specific fixed effects	79
4.4.2	Detecting outliers and influential observations	81
4.4.3	Serial correlation and Heteroscedasticity	81
4.4.4	Endogeneity	82
4.4.5	Cross-section dependence.....	83
4.4.6	Unit root test	86
4.5	Empirical results and discussion	88
4.5.1	Full sample SSA study.....	88
4.5.2	Regional Estimates	93
4.5.3	Variance Decomposition.....	95
4.5.4	Granger Causality Test	97
4.6	Chapter summary	98
CHAPTER FIVE		99
WELFARE IMPLICATION OF EXTERNAL DEBT AND CAPITAL FLIGHT		99
5.0	Introduction	99
5.1	Background of the study	99
5.2	Literature review	101
5.2.1	Capital flight and Welfare.....	102

5.2.2	External debt and Welfare	106
5.3	Stylized facts about welfare in SSA.....	108
5.4	Methodology	112
5.4.1	Theoretical Model Specification.....	112
5.4.2	Variable justification and apriori expected signs.....	115
5.4.3	Data source	116
5.4.4	Estimation technique.....	117
5.5	Empirical results and discussion	118
5.5.1	Descriptive statistics	118
5.5.2	Initial diagnostic and panel unit root test.....	121
5.5.3	Cointegration results	123
5.5.4	Estimated result and discussion	124
5.5.4.1	Hausman specification test	125
5.5.4.2	Driscoll – Kraay standard errors estimation results	126
5.5.4.3	Robustness check analysis.....	129
5.6	Chapter summary	130
CHAPTER SIX.....		131
IMPLICATION OF EXTERNAL DEBT AND CAPITAL FLIGHT ON ECONOMIC POLICY EFFECTIVENESS		131
6.0	Introduction	131
6.1	Background of the study	131
6.2	Literature review	133

6.2.1	Stylised facts about Fiscal and Monetary Policies in SSA.....	134
6.2.2	Implication of external debt and capital flight on economic policies.....	136
6.3	Methodology	138
6.3.1	Model specification.....	138
6.3.2	Data sources	141
6.3.3	Variable description and measurements	141
6.3.4	Descriptive statistics and initial diagnostics of the data	146
6.3.5	Initial diagnosis and unit root test.....	148
6.3.6	Estimation technique.....	150
6.4	Empirical results and discussion	152
6.4.1	Implication of external debt and capital flight on GDP growth	152
6.4.2	Implication of external debt and capital flight on investment	157
6.5	Chapter summary	160
CHAPTER SEVEN		161
SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS		161
7.0	Introduction	161
7.1	Summary of the study	161
7.2	Conclusions of the study	165
7.3	Contributions to the literature	168
7.4	Policy recommendations of the study	169
7.4.1	Policy recommendation from Chapter four	169

7.4.2	Policy recommendation from Chapter five.....	171
7.4.3	Policy recommendations from Chapter six.....	172
7.5	Limitations and directions for future research	173
	REFERENCE.....	174
	APPENDIX.....	192

LIST OF TABLES

Table 3. 1: Some economic indicators, 1965-1989	36
Table 3. 2: Some economic indicators, 1990-2015	38
Table 3. 3: Regional estimates of capital flight for 24 countries, 1990-2015.....	42
Table 3. 4: Capital flight, ODA and FDI, of SSA	45
Table 3. 5: Trade misinvoicing by decade (billion, constant 2015 \$)	48
Table 3. 6: External debt indicators of SSA before 1995	51
Table 4. 1: Sample review of the incidence of external debt and capital flight.....	64
Table 4. 2: Variables in the model: Measurement and Sources.....	72
Table 4. 3: Descriptive Statistics of Variables.....	77
Table 4. 4: The correlation matrix	78
Table 4. 5: Test for individual cross-sections and time-specific fixed effects	80
Table 4. 6: Wooldridge test for serial correlation in panel data.....	82
Table 4. 7: Modified Wald test for GroupWise heteroskedasticity	82
Table 4. 8: Tests of endogeneity	83
Table 4. 9: Serial correlation, heteroskedasticity and cross-sectional dependence	86
Table 4. 10: Unit Root Test	87
Table 4. 11: Estimated relationship between capital flight and external debt.....	90
Table 4. 12: Regional estimates of capital flight and external debt.....	94
Table 4. 13: Results of variance decomposition	96
Table 4. 14: Pairwise Dumitrescu Hurlin Panel Causality Tests.....	97
Table 5. 1: Review of studies on the impact of capital flight on welfare	104
Table 5. 2: Review of studies on the impact of external debt on development.....	107
Table 5. 3: Non-Poverty Indicators for SSA compared with the rest of the world	111
Table 5. 4: Inequality Indicators for SSA compared with the rest of the world.....	112
Table 5. 5: Variables definitions and measurements as well as their sources	117

Table 5. 6: Descriptive statistics	119
Table 5. 7: The correlation matrix	120
Table 5. 8: Serial correlation, heteroskedasticity and cross-sectional dependence	121
Table 5. 9: Pesaran (2007) Unit Root Test	122
Table 5. 10: Panel cointegration test, Westerlund (2007).....	124
Table 5. 11: Hausman specification test	126
Table 5. 12: Estimated impact of external debt and capital flight on welfare	127
Table 5. 13: Estimate impact of external debt and capital flight on welfare.	130
Table 6. 1: Summary statistics	147
Table 6. 2: Initial diagnostic tests	149
Table 6. 3: Unit root test result	150
Table 6. 4: Estimated impact of external debt and capital flight on annual GDP growth	155
Table 6. 5: Estimated impact of external debt and capital flight on Investment	158
Table A Names of selected sample countries in a regional context	192

LIST OF FIGURES

Figure 2. 1: Capital flight from the 24 countries (1990-2015)	28
Figure 3. 1: Map of SSA	32
Figure 3. 2: Estimates of capital flight for the 24 countries (1990-2015)	41
Figure 3. 3: Regional estimates of capital flight for 24 countries, 1990-2015	43
Figure 3. 4: Capital flight across SSA countries from 1970-2015.....	44
Figure 3. 5: Capital flight, ODA and FDI of SSA	45
Figure 3. 6: Major routes of capital flight.....	46
Figure 3. 7: SSA External debt before HIPC (billion current USD)	53
Figure 3. 8: External debt of the SSA during and after the HIPC initiative	54
Figure 3. 9: Interest payment on external debt during and after the HIPC initiative	55
Figure 5. 1: SSA's economic growth with the rest of the world (2000-2012)	109
Figure 5. 2: Trend of Headcount poverty incidence in the world (percentages)	110
Figure A: Trend of capital flight in selected study countries	193

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

External borrowing has become an inevitable practice in many developing countries, especially at their early stages of development as they are frequently faced with inadequate domestic resources for investment (Todaro – Smith 2006). For developing countries located in sub-Saharan Africa (SSA), Ayadi – Ayadi (2008) notes that borrowing from abroad is unavoidable since the required amount of capital to finance the optimal level of economic growth and development are not readily available. Also, due to the high level of current account deficits coupled with the vicious circle of low productivity, low income, and low savings for several countries in the region, capital inflow in the form of external borrowing from developed nations is a crucial requirement. Besides, borrowing from abroad is more preferred to domestic borrowing since the interest rates generally charged by the international financial institutions like the International Monetary Funds (IMF) and the World Bank is about half to the one charged by the domestic financial institutions (Safdari – Mehrizi 2011).

For this reason, many countries in the region have accumulated debt to a level that is currently described as unsustainable. From a level of US\$69.15 billion in 1970, the total external debt stocks of SSA excluding high-income countries rose up to US\$269.08 billion in 2010 despite all the debt cancellation program under the Heavily Indebted Poor Countries (HIPC) Initiative in 1996 and the Multilateral Debt Relief Initiative in 2006 (World Bank, 2017). Recently, external debt has resumed a renewed trend, especially from 2010 to 2015, increasing by US\$ 98.43 billion per annum (from US\$269.08 billion in 2010 to US\$422.60 billion), which is approximately 77 per cent higher than the increment realised during the previous decade (2000-2010). This massive and continuous accumulation of external debt, according to policymakers, is thwarting the continent's prospects and efforts in achieving increased savings and investment. Again, concerns are often raised that increasing external borrowing will create political pressures that will make the acceleration of inflation inevitable (Ajayi – Khan 2000).

Though the solution to the problem of external debt in the SSA region has been at the forefront of international discussion for the past three decades, Adepoju et al. (2007) noted that the insufficient internal capital formation in the region had forced governments to adopt a development policy framework that is highly dependent on foreign borrowing. For this reason, Valpy – Cobham (2000) notes that the high level of borrowing is partly responsible for the low level of portfolio, and foreign direct investment as private investors perceived the buildup in debt to be accompanied by distortionary measures such as heavy taxes, seigniorage or cut in productive public investment and other macroeconomic distortions in the domestic economy as means of covering the debt owed.

Gonçalves (1995) also remarks that the restrictive ability of government in building capital and investing in critical areas and other poverty-reducing programs in health, education, social services and job creation programs is because of the narrow tax base and worsening terms of trade associated with high debt servicing. Fosu (1996) added that the interest rate for which most of the loans were acquired are above the world interest rate. So, export earnings are always converted in defraying the cost of the loans acquired in most of the countries. Ajayi (1991) argues that the development framework centred on external borrowing did not only affect inflation, private investment, export and economic growth of countries in the region, it also resulted in the appreciation of the domestic currency and underdevelopment of the financial sector of the economy.

As the severity of external debt becomes more pronounced, there is considerable evidence that capital flight from the region is also increasing at a much higher pace. Recent estimates suggest that capital flight has grown even more rapidly and could amount to over twice the size of the external debt. Considering this emerging trend, a growing number of researchers have characterised the SSA region as “net creditor” to the world (Boyce – Ndikumana 2012; Ajayi 2015; Ndikumana – Boyce – Ndiaye 2015). For instance, the latest estimates of capital flight show that SSA has lost a total of \$1.4 trillion to illegal capital flight between the 1970-2015 periods. Including interest earnings on capital flight, the study which was conducted by Boyce–Ndikumana (2018) confirmed that the continent had lost a cumulative amount of \$1.8 trillion representing 65.6 per cent of their combined Gross Domestic Product as at 2015. Sadly, this amount is computed for only thirty (30) countries in the region.

This illicit outflow of capital also exceeds the stock of total external debt (\$496.9 billion) owed by these countries, making them a ‘net creditor’ to the other countries of the world. Again, this amount exceeds both the \$991.8 billion in Official Development Aid (ODA), \$628.3 billion in Foreign Direct Investment (FDI) and \$173.6 billion in Portfolio Investment for the same period (Boyce–Ndikumana 2018). From the Eurodad fact sheet, Ayayi (2015) added that more than 30 per cent of SSA’s annual GDP representing 150 billion per year leaves the region to secretive tax havens of which 80 per cent ends up in offshore financial centres. According to the UN-Economic Commission for Africa (2015), these estimates might even fall below the real values because accurate statistics do not exist for some African economies, and these estimates most at times ignore some forms of illicit financial resources that secret by nature and mostly impossible to be estimated, such as proceeds of drugs trafficking and firearms.

Some in the international donor community has regarded this outward movement of capital as compounding the problem of external debt management and has suggested that meaningful discussions of the solutions to foreign debt will need to wait until the issues of capital flight are dealt with (Eggerstedt – Hall – Wijnbergen, 1994). It is therefore believed that the study of capital flight in SSA is essential because of the economic problems such flights can create.

According to Ajayi – Khan (2000), the outflow of capital can result in a shortage of liquidity that could have been spent on vital and tradable sectors such as agriculture, industry, and infrastructure. The lost capital could have earned foreign exchange and generate more revenue through the multiplier effect if the resources have been invested. By diverting capital, capital flight keeps an economy below its domestic investment potential, which inevitably retards its growth and welfare and may also lead to upward pressure on the domestic interest rate to rise. Ayayi (2003) added that the outflow of capital also crowds out government ability to service its debt, which may lead to more external debt burden and more capital flight in the foreseeable future. Similarly, Fofack–Ndikumana (2015) indicated that the continuous outflow of honestly acquired capital through capital flight might send wrong signals to private investors about the resilience or potency of the domestic economy. This is especially the case when political elite or when multi-national corporation perpetuates it as it reflects lack of confidence in the economy. Also, the outflow of capital could cause depreciation of the domestic currency

if the government is operating a floating exchange rate system since the illicit outflow of the reserve may result in a reduction of foreign currency in the domestic economy. In addition, the shortage in the foreign reserve can intensify the exchange rate instability, which may lead to output volatility, particularly in nations where investment may be contingent upon imports of intermediate inputs. As a result, the monetary authorities may have to devote more resources to stabilise the exchange rate in the presence of capital flight and massive external borrowing since the outflow can worsen the contraction in the reserves of the domestic economy.

Ajayi (2003) also indicated that when the domestic economy experiences a balance of payment difficulty, the persistent capital erosion can exacerbate the problem into a crisis that can limit the importation of capital goods essential for the growth and development of the country and as well results in a more unfavourable balance of payments. If the government continues to import in this condition, this may affect the exchange rate by draining the foreign reserves.

1.1 Statement of the problem

For several decades, SSA economies continue to struggle with poverty, hunger, epidemics, child and infant mortality. Access to proper sanitation, healthcare, education, energy services and potable water still remains inadequate. Statistics from the World Bank Poverty and Equity Data portal shows that the region remains the only place in the world where the total number of people living under \$3.20 a day has increased persistently over the past two decades – from 383.2 million people in 1990 to 667 million people in 2015.

Ironically, the economic growth rate of many countries in the SSA region within the same period has been very remarkable, increasing at an average growth rate of about 5 per cent. Even during the economic and financial crisis in the year 2007 and 2008, the region grew by 6.2 per cent on average, a growth rate higher than that of Latin America and the Caribbean (4.87 per cent) and Europe and Central Asia (2.35 per cent). However, this robust and sustained growth rate is yet to provide households and vulnerable groups in the region adequate opportunity to improve their living standards and reduce the inequality in income and access to social services.

What is more disturbing is the steady rise in commodity and fuel prices and the massive reductions of official development assistance and foreign direct investment in the region after the global economic and financial crises. These reasons coupled with the balance of payment difficulties of most of the countries in the region have called for more resource mobilisation either locally or abroad to achieve the Sustainable Development Goals (SDG's) the region envisages. Schmidt-Traub (2015) estimates that Africa would need an extra capital of about \$614 billion–\$638 billion per year to achieve the economic growth rates that are compatible with the SDG's and beyond.

At the sectoral level, Nkurunziza (2015) also added that Africa would need to invest about \$93 billion a year in building new infrastructure and in the maintenance of existing infrastructure for ten years in addition to \$54 billion investment in developing small-scale and large-scale irrigation. The International Energy Agency (2012) estimates that the region will also need an additional \$25 billion per year on average on energy services to achieve universal access to modern energy services by 2030. UNCTAD (2014) added that the region needs to invest \$210 billion extra amount in building basic infrastructure, food security, health, education and climate change mitigation whiles Chinzana et al. (2015) estimates requires the region to invest an additional \$1.2 trillion investment required to meet the Goal 1 of the Sustainable Development Goals (SDGs).

The main question is if financial resources are that relevant to the growth and development of the region, why is capital from the region fleeing out, and why are countries in the region still borrowing when it is associated with an unproductive investment. More recently, the simultaneous occurrence of external debt and capital flight in the SSA region have taken centre stage in the African development and policy studies (Ndikumana – Boyce – Ndiaye (2015); Ndikumana – Boyce (2011); Fofack (2009); Boyce – Ndikumana (2008); Cerra – Rishi – Saxena (2005); Ndikumana, – Boyce (2003)). However, most of the studies are plagued with either one or several of the following issues;

- I. The problem of the cross-sectional dependence. All the empirical studies done to examine the incidence of external debt and capital flight in the region failed to capture the cross-sectional nature of the series used. According to Pesaran (2006), occurrences such as recessions, global financial or economic crises, as well as oil price shock, could hypothetically affect all countries, even though it might start

from one or two countries. These occurrences inevitably introduce some cross-sectional interdependencies across the cross-sectional unit, their regressors and the error terms. Unfortunately, the traditional panel data estimation methods such as the Fixed Effects, Random Effects, Mean Group estimations, Pooled Mean Group, and GMM estimators erroneously ignored these possible interdependencies among the cross-sectional unit and their regressors. Pesaran (2007), therefore noted that erroneously neglecting the cross-sectional dependence when it is present in the data, can lead to misleading inferences.

- II. The time frame for most of the work in the region has been short and not quite recent. The last datasets used in analysing the incidence of external debt and capital flight ended in 2010.
- III. Specific studies on HIPC countries in SSA countries in the region is also unavailable. Thus, this research bridges the gap among researchers in this area by examining the problem in HIPC countries in SSA.
- IV. Again, the implications of the revolving door of external debt and capital flight on poverty reduction, inequality as well as fiscal and monetary policy have arguably been neglected at the empirical level.

It is against this background this study seeks to investigate empirically the relationship between external debt and capital flight and the extent to which the simultaneous occurrence of it affect general welfare and fiscal and monetary policies in the SSA region. By estimating these relationships, the study hopes to contribute to the literature on how external debt and capital flight affects welfare functions, fiscal and monetary policies and consequently economic development in the region and also shed some light on how to move forward by offering possible solutions for dealing with the issues associated with external debt and capital flight.

The uniqueness of this dissertation is in fourfold. First, the study uses a more robust estimation technique that safeguards the regression against cross-sectional dependency, serial correlation, endogeneity and cross-sectional heteroskedasticity normally present in a panel dataset. Secondly, in estimating the impact on welfare, multidimensional

measurement of welfare that employs both monetary and non-monetary measure is used, and also the study allows for linear and non-linear effects of external debts to be captured. Thirdly, in estimating the fiscal and monetary policies, the study proposes a quantitative macroeconomic model that captures the consequences of the revolving door of external debt and capital flight on the efficacy of both fiscal and monetary policies in the SSA as well as HIPC recipient countries. The structural model allows one to understand better the various channels through which continuous accumulation of external debt and capital flight may hinder fiscal and monetary policies in the recipient country and hence their growth. Finally, the time frame for the dataset used in the analysis is also recent, from 1990 to 2015.

1.2 Objectives of the study

The main objective of this study is to examine the relationship and the level of causality between external debt and capital flight in SSA and the possible ways by which external debt and capital flight can affect general welfare and fiscal and monetary policy effectiveness in the region.

Specifically, the study seeks to:

- I. Investigate the relationship between external debt and capital flight for SSA countries.
- II. Investigate the implication of external debt and capital flight on general welfare for SSA countries and compare the results with HIPC countries within the region in general.
- III. Examine the economic policy implication of external debt and capital flight with a specific focus on the effectiveness of fiscal and monetary policies within the SSA region in general.
- IV. Provide policy recommendations based on the outcome of the study

1.3 Hypothesis of the study

In attempting to achieve the above-stated objectives, the following hypotheses (H) are formulated for testing.

1.3.1 Relationship between external debt and capital flight

Several empirical studies (see empirical literature in Chapter Four) have presented consistent and robust evidence showing that a substantial part of capital flight from SSA is financed by external borrowing. To authenticate this, within the context of SSA, the following hypotheses are formulated for testing.

H₁: External borrowing is significantly affected by capital flight

H₂: There is bi-directional causality between external debt and capital flight

1.3.2 Implications of external debt and capital flight on welfare

The countries in SSA entered the twenty-first century on the cusp of tremendous change in infrastructure, trade, better macroeconomic management, and a more stable political and governance system. At the turn of the new millennium, the SSA region has been among the fastest-growing regions in the global economy with the average annual growth rate increasing from 1.8 per cent at the end of the last decade (1980–1989) to about 5 per cent in the period 2000–2015. With this development, it is expected that the level of poverty in the region will reduce significantly, however, statistics from the World Bank Poverty & Equity Data portal (2018) shows that the region remains the only place in the world where the total number of people living under \$3.20 a day has increased persistently over the past two decades – from 383.2 million people in 1990 to 667 million people in 2015. This study, therefore, test whether the simultaneous occurrence of external debt and capital flight in the SSA region has any significant impact on the compounding poverty problem in the region. To do this, hypotheses H₃ and H₄ are formulated as;

H₃: External debt and capital flight do not have any significant impact on welfare in SSA.

H₄: External debt and capital flight do not have any significant impact on welfare in HIPC countries in SSA.

1.3.3 Implications of external debt and capital flight on policy effectiveness

Recently, policy documents from the UN-Economic Commission for Africa (2015), Africa Development Bank (2012) and even some theoretical literature (see section 6.2.2 in Chapter 6) have documents that the simultaneous occurrence of external debt and capital flight in the SSA have not only obstructed fiscal policies from achieving its targets; it has also impeded monetary policies effectiveness too. However, there have not been any empirical studies to confirm these postulations; therefore, this study investigates the impact of the simultaneous occurrence of external debt and capital flight on economic policy effectiveness in an attempt to authenticate or refutes the postulations. In doing so, the study specifies hypothesis H_5 as:

H_5 : External debt and capital flight do not have any significant impact on the effectiveness of external debt and capital flight.

1.4 Significance of the study

The justification of this dissertation is based on its relevance to contemporary economic policy considerations. The study will provide vital information that would be of help in formulating effective and efficient policies towards minimising macroeconomic imbalances and economic distortions caused by heavy debt obligation and capital flight to sustain the economic growth and development of the countries in SSA.

The study also serves as a basis for improving researchers and policymaker's general perspective on the behaviour of capital flight and external debt in the region and as well provide alternative measures for tackling issues associated with capital flight and external debt. The study will serve as a tool in revamping government policies towards loan procurement and debt servicing in the subregion.

Also, there exist few studies using panel analysis on the external debt - capital flight relationship. This study adds to the existing literature. In so doing the study addresses some of the methodological issues inherent in the literature.

Finally, this empirical study would point to several areas requiring additional research efforts aimed at the further development of capital flight and external debt models.

1.5 Scope of the dissertation

The time frame for this dissertation is restricted to 1990-2015. This time frame is relevant for the study as it captures the long-term impacts of the 1982 global debt crisis, the impact of Heavily Indebted Poor Countries Initiative in 1996, the improved (enhanced) HIPC initiative in 1999 and the Multilateral Debt Relief Initiative in 2006 as well as the effect of the 2008 financial crisis on external borrowing and capital flight in the SSA region.

Also, based on the consistent availability of balanced panel data, this study is generally limited to only 24 SSA countries. Countries included in the broad SSA data are Angola, Botswana, Burundi, Burkina Faso, Cameroon, Côte d'Ivoire, Democratic Republic of Congo, Republic of Congo, Ethiopia, Gabon, Ghana, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone, Sudan, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.

The econometric technique employed to explain the relationship between the parallel occurrence of external debt and capital flight as well as its impacts on welfare and fiscal and monetary policies are all robust estimators that are used in correcting the cross-sectional dependence, the serial correlation, the endogeneity and the heteroskedasticity in the datasets.

1.6 Organisation of the Study

This dissertation is divided into seven chapters, and they are structured as follows:

Chapter One: *Introduction*

This chapter focuses on the introductory aspect of the study, and it consists of background, the problem statement, the objectives of the study, the hypotheses, significance and scope as well as the organization of the study.

Chapter Two: *Conceptual Framework and Measurement Issues*

This chapter reviews all the various definition of external debt and capital flight and how they have been measured in the literature. Subsequently, a working definition for capital

flight and external debt appropriate for the conduct of the study were provided with measurement issues discussed and justified.

Chapter Three: *Overview of Macroeconomic environment and the pattern of external debt and capital flight in SSA*

In this chapter, an attempt was made to provide a general overview of the SSA economy, as well as a detailed insight into the trends in the macroeconomic performance of SSA. Also, the trends of external debt and capital flight in the region were also discussed. This was to provide a visual impression on the major trends of the key macroeconomic variables of the study

Chapter Four: *External debt and capital flight in SSA*

This chapter discusses the first empirical study which focuses on specific research objective I and hypothesis 1 and 2. This chapter applies standard panel technique that considers the time series properties and other dynamics of the data, permitting us to make credible claims about the long-run (equilibrium) and the short-run relationships between external debt and capital flight. The estimation process addresses the cross-sectional dependence, the endogeneity, serial correlation the cross-sectional heteroskedasticity problem associated with panel estimation.

Chapter Five: *Welfare implications of external debt and capital flight in SSA*

In line with the specific objective II and research hypotheses 3 and 4, employing the Driscoll and Kraay standard errors estimation method, the joint effect of external debt and capital flight on general welfare was also investigated, and the results are analysed for both SSA as a whole and HIPC countries in SSA.

Chapter Six: *Economic policy implications of external debt and capital flight in SSA*

To respond to specific objective III and evaluate hypotheses 5, the two-step GMM model was followed to examine the impact of external debt and capital flight on fiscal and monetary policies effectiveness in SSA countries within 1990 -2015.

Chapter Seven: *Summary, Conclusions and Recommendations*

As the final chapter that concludes the dissertation as a whole, a summary of the major findings, the conclusions are drawn in connection with the research objectives, and hypotheses and policy recommendations relevant for stemming both external borrowing and capital flight are outlined in this chapter.

CHAPTER TWO

DEFINITIONS AND MEASUREMENT

2.0 Introduction

Both external debt and capital flight are not easily elucidated concepts from the theoretical literature. According to the UN-Economic Commission for Africa (2015), the definition, estimates and measurement of capital flight are chiefly difficult and complex since the statistics used to compute them are by nature difficult to be observed. However, considerable effort has been made over the years on these topics. This section, therefore, reviews all the various definitions and measurement of these contentious variables as used in the literature and provide justification for the procedure used in computing these key variables for this study. This section is imperative because what is wrongly defined can only be measured appropriately by accident. The chapter is organized into two separate sections. The first section reviews the definitions of external debt. This is followed by the definition and measurement of capital flight in the second section.

2.1 External debt

While the definition of external debt has been a contentious issue in the theoretical literature, several authors have tried in providing a definition as to what in their opinion is external debt. Below are some of the definitions which have been put forward in the current economics literature:

- I. Falegan (1984) stated that external debt broadly comprises of all short-term government-guaranteed debt (thus; suppliers' credit, contractor finance and guaranteed private investments), medium and long-term debt along with their specific interest owned outside the domestic economy.
- II. Anyanwu (1994), regards external debt as debt instruments held by foreigners regardless of the currency of denomination. To him, external debt consists of non-equity elements of external liabilities, with a maturity of one year or less. He added that external debts have three major component parts, namely:
 - a. public debts: external obligations of national or state government.

- b. public guaranteed debt: whose repayment is guaranteed by a government or by an entity of the public sector in the government.
 - c. private non-guaranteed debts: External obligations that are not guaranteed for repayment by the government.
- III. Zaki (1995) noted that external debt refers to money borrowed by a country from foreign lenders, including commercial banks, governments of countries abroad or international financial institutions like the IMF or the World Bank. The loans, including interest, must usually be paid in the currency in which the loan was made.
- IV. The IMF in 2003 defines gross external debt as the outstanding amount of actual, not potential liabilities that are owed to foreigners by residents of a particular economy which requires payment(s) of principal and/or interest by the domestic economy at some point(s) in the future.
- V. Arnone – Bandiera – Presbiterio (2005) define external debt “as that part of a country’s debt that is secured from external sources such as foreign corporations, government or financial institutions”.
- VI. Ogeifun (2007) describes foreign borrowing as the amount borrowed to bridge the gap between domestic savings and investment. In this case, as the disparity between savings and investment becomes larger, then external debt accumulates, forcing the country to frequently borrow in an increasing amount in order to stay afloat.
- VII. Panizza (2008) defines external debt as money borrowed by a country from foreign lenders with a liability to pay back the debt plus interest on the debt in a currency in which the loan was made.
- VIII. The World Bank (2009) describes total external debt as a debt owed to non-residents by a particular country, which must be paid in foreign currency, goods, or services. In describing the composition of external debt, the World Bank indicated that external debt is composed of long term (public, publicly guaranteed, private nonguaranteed and IMF credit) plus short-term credit. The short-term

credit consists of all debt with a maturity of one year or less, which are owed to a non-resident of a particular economy.

- IX. According to Shabbir (2009), external debt is described as a ratio of the national debt owed to foreign financiers
- X. Dias (2010) indicated that external debt presents the outstanding amount of its actual or current liabilities that require a certain payment of principal sometime in future. It includes bonds, notes, loans, deposits, debt securities, currency and money market instruments etc.

From the definitions provided above, it is comprehensible that external debt can be defined from a narrow point of view that contains the following key features:

- I. External debt is generally money borrowed by a country; This is practically captured in all the definitions.
- II. The money is borrowed from foreign lenders including commercial banks, governments of the country(s) abroad or international financial institutions like the Bank for International Settlements (BIS), the IMF, the World Bank, and the Organization for Co-operation and Economic Development (OECD). Again, all the various definitions contain this notion about external debt.
- III. The amount borrowed, including interest, must usually be paid in the currency in which the loan was acquired as indicated in the definition provided by Zaki (1995); IMF (2003); Panizza (2008) and World Bank (2009).

This study, therefore, adopts a definition of external debt as *money borrowed by a country from foreign lenders, including the commercial banks, governments of countries abroad or international financial institutions like IMF or the World Bank. These loans, including the interest, must be paid in the currency in which the loan was made (Zaki 1995).*

2.2 Capital flight

2.2.1 Definitions

Okoli (2008) describes the concept of capital flight to be a highly emotional and ambiguous concept as it means different things to different people and even different things to the same person. Sometimes, it is seen as legal since the capital outflows, and the sources of funds are considered legitimate. While at the other end, it is considered illegal since the outflows representing the transfer abroad are out of reach of the domestic law enforcement and tax authorities. For instance, capital outflows from developed countries are often referred to as a foreign direct investment (FDI), since it is usually seen as responding to investment opportunities. In this case, the sources of the funds are genuine, and their transfer abroad is in consonance with the law. While at the other end, when capital moves out of a developing country, it is usually labelled as illegal since the outflow are considered out of reach of domestic law, and the capital or assets involved are illegally acquired.

But this distinction can be elusive as capital movement from developing countries that end up as a capital flight can be both 'licit' or 'illicit' (Mbewe, 2015). The licit capital flows occur when the flown capital is legally acquired, transferred or utilized, while the illicit capital flows are where the capital flowed are illegally acquired, transferred or utilized by the domestic economic agents (Kar –LeBlanc 2012). Also, the distinction is fairly due to the lack of a precise and universally accepted definition of capital flight in economic theory, and partly because of the way the term is used when referring to developed and developing countries (Ajayi 1997).

Due to these conflicting views on the nature of capital flight in the literature, there has been a various divergent definition with different meanings provided in the literature. In this section, all the various definitions are reviewed, and a working definition appropriate for this dissertation is adopted.

- I. Khan – Haque (1985) whose work on the capital flight was one of the earliest on the subject matter describes capital flight as a reaction of domestic and foreign investors to an asymmetric risk of expropriation. They indicated that capital flight occurs because domestic investors want to avoid the risk of expropriation in the domestic economy by investing abroad.

- II. Cuddington (1986) sees capital flight as short-term speculative capital outflows in the form of acquisitions of assets abroad and net errors and omissions in the BOP account of a country which are in response to some political or financial crises, a major domestic currency devaluation, a heavy tax, a hyperinflation or a perceived tightening of capital controls in the domestic economy. This definition means that capital moves to a place where investment is guaranteed with high returns in any part of the world, within a specified time frame (usually short) and quickly leave as soon as this objective is achieved, or the risk becomes high.
- III. Morgan Guaranty Trust Company (1986), on the other hand, argues that capital flight comprises the recorded and unrecorded acquisition of foreign assets by the non-bank private sector and the public sector. In the computation of capital flight, Morgan Guaranty Trust Company (1986) added that capital flight comprises gross external debts plus the net direct investment inflows minus the current account deficits and the net additions to the reserve. In this way, the short-term foreign assets of the domestic banking system are deducted from the reserve. On this computation, Cline (1987) added that the incomes which are not within the control of the authorities like tourism, cross-border transactions and reinvested income which is included in the net direct investment inflows by Morgan Guaranty Trust Company should be exempted from such estimates.
- IV. Dooley (1986) advocates a similar motivational interpretation of capital flight and defines it as “capital outflows inspired by the desire of citizens to obtain financial assets and earnings on those assets which remain external to the domestic authorities”.
- V. The second contribution by Khan – Ul Haque (1987) describes capital flight as the short-term capital flows plus the net errors and omissions in the country’s BOP account. This definition corresponds with the definition of Cuddington (1986) just that the latter looks at capital flight from the speculative point of view.
- VI. Kindleberger (1987) describes capital flight as “abnormal flows propelled from a country by anyone based on complex lists of fears and suspicions”. This definition emphasizes on the volatile and abnormal nature of the outflow.

- VII. Depler – Williamson (1987) defines it as the acquisition or retention of a claim on non-residents, motivated by the owner’s concern that the value of his/her assets would be subject to discrete losses or impairment if his/her claims continued to be held domestically. Again, the fear of expropriation risk, exchange rate depreciation, and domestic market distortions such as capital control, taxation and financial repression emphasized by Cuddington (1986) as the reason for short term movement of capital are emphasized by this definition.
- VIII. Lesserd – William (1987) denotes “capital flight” as capital that “runs away” or “flees” abnormal risks at home regardless of whether the flight is legal or not.
- IX. Pastor (1990) defines capital flight as resident capital outflow, where capital can be characterised by any asset abroad by domestic residents in avoiding national regulation.
- X. Smit – Mocke (1991) in their paper, “Capital Flight from South Africa: Magnitude and Causes”, defines capital flight to be money that flees from abnormal risks in the domestic economy.
- XI. Dooley – Kletzer (1994) defines capital flight as the accumulation of residents’ claims on non-resident that escape control by domestic governments. In this case, they escape taxation or any regulation, or in extreme cases appropriation. Capital flight by this definition is estimated by a calculation of gross external claims that generate income that is not reported in the BOP data. Here there is a problem of calculation.
- XII. Fernandez-Arias– Monteil (1996) view capital flight as an endogenous response to the perception of profitable investment opportunities in the originating country, the recipient country or both. The issue of capital flight is seen in the framework of lucrative investment prospects.
- XIII. In his own contribution, Reddy (1997) in his paper, “Capital Flight: Myths and Realities” argues that capital flight represents capital outflow with three components namely; abnormal legal outflows, extra-legal or illegal, and outflows emanating from criminal activities. Capital flight, to him, can be viewed in three ways; namely, gross capital flight, reverse capital flight and net capital flight. The

flaw in this definition is that the components are not watertight. For example, an illegal outflow could come back as an inflow through a legal channel. Moreover, the extra-legal or illegal ones are unreported and even if operated through banking channels, may not be formally traceable to the real owners of the assets.

- XIV. Trevelline (1999) defined capital flight as any cross-border transfer of money when the transfer is motivated either by the desire to flee a weak currency's limited investment opportunities or the desire to secret money away from government authority. This flow of money is invariably in the direction of the developed world, often, however, by way of tax haven countries. Therefore, it is not for investment motives.
- XV. Abalkin – Whalley (1999) also use the term to indicate “transfers of assets denominated in national currency into assets denominated in a foreign currency, either at home or abroad, in ways which are not part of normal commercial transactions”. Again, the definition emphasizes the abnormal aspect of it. It is, therefore, a narrow view.
- XVI. Chipalkatti – Rishi (2001) interpret capital flight as comprising of private capital outflows of any kind that result in the acquisition of external assets by the inhabitants of a country. This definition is based on the motivations of the holders of capital. It is based on the notion that a person's control over capital is not complete, but it is rather subject to complex and alterable social control.
- XVII. Helleiner (2001) defines capital flight as an outflow of capital from a country where capital is relatively scarce, and that is not part of normal commercial transactions.
- XVIII. Bonilla (2004) argues that capital flight is a mechanism investor use to apply the ‘discipline of the market’ to national economic policies. In this case, capital flight is seen as a vehicle for tax evasion, or medium through which rulers and their close associates sequester the proceeds of their corruption.
- XIX. Murphy (2004) in his paper, “Fiscal Paradise or Tax on Development” defines capital flight as the movement of cash and investments out of one's country to a

place in which they believe the assets will be safe for their use. Here the intention is to hide the capital from the prying eyes of the authority.

- XX. Ragusett – Beja (2004) defines capital flight as the “residual” capital outflow in their paper “The cost of capital flight”. What Thailand Lost. They indicated capital flight as the difference between capital (money) inflows into a country and the recorded money outflows. That is, they are looking at the “missing money” that has left the country without having been officially recorded as leaving.
- XXI. According to Ramachanrann (2006), capital flight means the flight of financial and capital assets and savings and wealth from a country.
- XXII. Ashman – Fine – Newman (2011) describes the phenomenon of capital flight as that of a rational market wherein the balance of risk and reward determines the portfolio choices economic agents make. More importantly, they redefine capital flight in the South African context as capital not entirely subject to the market mechanism and which has been influenced by the peculiar history of the apartheid era.
- XXIII. Ndikumana–Boyce (2010) defined capital flight as a residual of the BOP consisting of differences between recorded inflows of foreign exchange and its recorded uses of these foreign exchange.

It is, therefore, clear that the various definitions do not offer a complete framework to appreciate the phenomenon of capital flight in a clear and comprehensive way. Nevertheless, there are some clear connections in the various definition that one can clearly associate. This study found three ways of associating these various definitions:

- I. Capital flight represent an outflow of capital from the domestic economy into safe haven places abroad. In this case, capital flight is regarded as a measure of resident capital outflows. This can be found in the definitions provided by authors as Morgan Guaranty Trust Company (1986), Pastor (1990), Ragusett – Beja (2004) Ramachanrann (2006), Ndikumana–Boyce (2010). This definition is generally believed to be broad since it includes all reported and unreported increases in residents’ foreign assets both in public and private sector as capital flight. Some authors such as Cuddington (1986), Chipalkatti – Rishi (2001) and Abalkin –

Whalley (1999), chose to work with a narrow version of this definition where the capital flight is confined to only short-term capital of the private sector in addition to errors and omissions in the BOP account. This is what is known in the literature as hot money measure of capital flight.

- II. Capital flight defined as a response to discriminatory treatment of domestic capital. This definition assumes that domestic investors are aware of the differences in the risk involved in investing at home and abroad and they invest abroad because the conditions abroad seem favourable. This definition is mainly seen in the early writers of the subject such as Khan – Haque (1985), Dooley (1986), Khan and Ul Haque (1987), Deppler and Williamson (1987), Trevelline (1999) and Pastor (1990).
- III. Capital flight is seen as an illegal transaction which occurs when traders keep capital abroad by the falsification of trade documents. Capital flight can be transacted by deliberately under-invoicing exports and/or over-invoicing imports. Advocates of this definition include Bhagwati (1964), Bhagwati, Krueger, and recently, are authors like Kar (2010), Kar and Cartwright-Smith (2010) and Kar and Curcio (2011).

From the definitions provided above, this study interprets capital flight as “*Capital outflows from a country in a given period that is not recorded in the official government statistics (Ndikumana—Boyce, 2018)*”. This definition of capital flight is just a variant of the first definition of capital flight which is otherwise known as the broad or the residual definition of capital flight. The measurement of this definition is provided in section 2.2.2.1 and justification provided in 2.2.2.6.

2.2.2 Capital flight measurement

Just like the definition of the term, capital flight measurement has followed a similar trend. There are several approaches used in the literature to measure capital flight. The residual method introduced by the World Bank in 1985 and further modified by Morgan Guaranty Trust in 1986, the Hot money measure or balance of payment method

introduced by Cuddington's (1986), the Mirror stock statistics or the asset method by Collier et al., (2001) and the Dooley's method by Dooley in 1987 and later Deppler – Williamson (1987). All these methods have their strengths and pitfalls. In this section, all these major measurements are viewed, and the appropriate measurement relevant for this dissertation is adopted.

2.2.2.1 The Residual (Indirect) Method

The residual approach normally referred to in the literature as indirect measures or the broad measure (also noted as the “sources and uses” of funds approach) measures capital flight as the unrecorded capital outflows in other words “money missing” between a country and its interaction with the rest of the world. This method measures capital flight indirectly by comparing the inflows of foreign exchange recorded in the country's Balance of Payments (BoP) with its recorded uses of foreign exchange. The inflows are basically from net increases in external debt and foreign investment, while the recorded outflows are funds used to finance the current account deficit or make additions to the net reserves. The difference which is reported as ‘net errors and omissions in the BOP is expressed as capital flight. This approach was first developed by the World Bank in 1985 and further modified by Morgan Guaranty Trust in 1986, and currently, it is the most widely used measure in the literature. In its original form, capital flight as computed by the World Bank (1985) is expressed as;

$$KF = \Delta EXT + NFDI - (CA + \Delta RES)$$

Where ΔEXT is the change in total external debt outstanding, $NFDI$ is net direct foreign investment, CA is the current account deficit, and ΔRES is the net additions to the stock of official foreign reserves.

Over time, this measure of capital flight has gone through some modification. The first is from Morgan Guaranty Trust Company (1986). Morgan Guaranty Trust Company adjusted this World Bank's measurement of capital flight by omitting the acquisition of short-term foreign assets of the banking system and only regarding foreign assets of the non-banking private sector as the capital flight. In such estimation, Capital flight can be calculated as:

$$KF = \Delta EXT + NFDI - (CA + [(\Delta RES - \Delta B)])$$

where ΔB is the short-term foreign assets of the domestic banking system. All other variables are as defined before.

Unfortunately, Morgan Guaranty Trust (1986) was unable to prove the difference between the motivations from external claims by the banking system and that of the external claims by firms and individuals which happens to be the main reason for adjusting the definition of capital flight introduced by the World Bank. Cline (1987) also criticised the way Morgan Guaranty Trust measured capital flight. He argued that incomes from assets already held abroad, travel, income from tourism and border transactions which do not return to the country should not be used in the capital flight calculations. In his view, such incomes are beyond state control and should be excluded from the adjustment made to the current account deficit. He, therefore, proposed that in the computation of capital flight, income from Tourism and Border Transaction (ITBT) and travels re-invested investment income (RII) should be deducted from the current account.

Accordingly, Capital flight (CF) by Cline (1987), can be measured by:

$$KF = \Delta EXT + NFDI - [(CA - RII - ITBT) + (\Delta RES - \Delta B)]$$

Where RII represent reinvested investment income, and $ITBT$ is the income from Tourism and Border Transaction

As noted by Moghadam – Samavati–Dilts (2003), neither the original version of the residual method by the World Bank nor the amendments made by Morgan Guaranty Trust Company (1986) and Cline (1987) distinguish between the flow and stock of external debt as reported in the BOP statistics of the World Development Tables for the countries. According to Yalta (2009), the usage of stock and flow interchangeably in the literature has resulted in overestimation or underestimation of the amount of the capital flight. More recently, Ndikumana et al. (2015) have made three key extensions to the residual method algorithm presented by the World Bank (1985) to adjust the long-term debt stock for the fluctuations in the exchange rate by using currency compositions and other problems which later scholars raised on the residual method.

The first adjustment is related to the change in debt that will account for debt write-offs. In Boyce and Ndikumana, 2001 computation of capital flight for SSA, they calculated the change in external debt by adjusting the end-of-year debt stock to account for exchange rate fluctuations in the course of the year. They further extend the algorithm by adjusting the change in debt to incorporate debt write-offs. They make the second adjustment on trade misinvoicing, which they believe is currently displacing a lot of financial resources from the BOP but not adequately covered by the World Bank algorithm. The final extension made by Ndikumana et al. (2015) on the computation of the capital flight is related to the underreporting of remittances.

Based on Ndikumana et al. (2015) modifications, capital flight can be expressed as

$$KF = \Delta EXTADJ + NFDI - (CA + \Delta RES) + MISINV + RID$$

Where ***KF*** represent capital flight, ***ΔEXTADJ*** is the change in external debt adjusted for the fluctuations of exchange rate, ***NFDI*** is a net foreign direct investment, ***ΔRES*** represents net additions to the total external reserves, ***CA*** is the current account deficit, ***MISINV*** is the net trade misinvoicing and ***RID*** represent the unrecorded remittances.

2.2.2.2 Hot Money Measure

This method, also known as the “narrow measure,” is proposed by Cuddington (1986) and is based on the short-term speculative outflows out of a country. Unlike the World Bank (1985), Cuddington’s (1986) restricted the definition of capital flight to short-term assets of the non-bank private sector that are siphoned off abroad due to intermittent interest rate differentials, financial or political uncertainty, contractionary fiscal policy, a major domestic currency devaluation, a heavy tax, a hyperinflation or a perceived tightening of capital controls in the domestic. In this way, the errors and omissions in the World Bank (1985) residual approach was disintegrated, and the medium and long-term outflows are eliminated in the calculation of the capital flight. Also, the errors and omissions entry in the BOP is regarded as the statistical discrepancy in the BOP. The calculation is given by

$$KF = NEO + SKONB$$

Where **NEO** is the net errors and omissions, representing unrecorded capital outflow, and **SKONB** is the short-term capital outflows by the non-bank public.

In general, from Cuddington's perspective, capital flight is capital looking for an investment with guaranteed high returns, in any part of the world, within a specified time frame (usually short) and rapidly leaves as soon as this motive is accomplished. It, therefore, determines the magnitude of capital flight by summing up net errors and omissions and the non-bank private short-term capital outflows. By placing emphasis on short-term flows, the medium and long-term outflows are excluded, which makes the definition narrow (Gibson, 1993). Kant (1996), also emphasized on some criticisms of the hot measurement, among which are the errors and omissions (unrecorded capital flows, measurement and rounding errors), registration delays, and unreported imports. So, according to Chunchachinda – Sirodom (2013), estimating capital flight in this manner is called short-term movements of capital.

2.2.2.3 The Dooley Method

As the name implies, this method was propounded by Dooley (1986), and it sees capital flight as all capital siphoned off to another country and placed beyond the control of domestic monetary authorities such that it does not generate any investment income in the BOP of the exported country. This measure, therefore, includes all capital outflows owned by private individuals that do not receive and/or register any interest payments in the exported country's BOP. Also, the net errors and omissions and the difference between the World Bank data on the stock and flows of external debt as reported in the BOP statistics are added in addition to the difference in his estimate of the increase in private-sector foreign assets. According to Dooley (1986), the first step is to calculate the total stock of external assets, which is the sum of the stocks of recorded and unrecorded claims on non-residents, and is given as:

$$TKO = DEBT + NFDI - (CA + OFR + NEO + EDBOP)$$

where **TKO** denotes the total outflows of capital; **DEBT** refers to foreign borrowing as presented in the BOP; **NFDI** means net foreign investment flows; **CA** is the current

account deficit; **OFR** is official foreign reserves; **NEO** is net errors and omissions (treated as a debit entry), and **EDBOP** is the difference between the World Bank's report on the change in stock of external debt and the IMF balance of payment statistics on foreign borrowing;

From this stock, all external non-flight assets, that is, the recorded investment income generating a stock of foreign assets to is deducted. The non-flight stock of external claims, **NFEC**, is simply the capitalized value of the non-FDI investment income, **dINVINC**, using a composite market interest rate, **r**.

$$NFEC = \frac{dINVINC}{r}$$

The resulting residual is the estimate of the capital flight stock which can be derived as

$$KF = TCO - NFEC$$

In short, this is how the estimates are obtained using the Dooley (1986) method. This approach has been utilized by Khan (1989), and Deppler–Williamson (1987). However, Classen – Naude (1993) and Sheets (1996) show that the calculation of capital flight as proposed by Dooley (1986) is in fact partly based on the residual approach and gives rather an identical magnitude as the residual method although it uses a different concept of capital flight.

2.2.2.4 Mirror Stock Statistics / Asset Method

As the name indicates, this measure sees capital flight as assets owned by the resident of a country in foreign banks (Collier et al., 2001). This method is rather a short – cut measure of capital flight and its measurement may be seen as an indication of the minimum amount of assets held abroad, although resident may hold their assets in other forms next to bank accounts, for examples, in foreign equity holdings (Lensink et al., 2002). Early studies such as Khan—Haque (1987) used this method in their estimation.

2.2.2.5 Trade misinvoicing

Due to lack of data for some of the statistics related to the other measures of capital flight reported, some author resorted to calculating capital flight using the trade misinvoicing, also known as trade faking. This method was first used by Bhagwati (1964) and Bhagwati et al., (1974) when examining capital flight for 28 less developed countries in the world. They estimate the magnitude of capital flight by first estimating comparing the trade data from both the importing and exporting country; any discrepancy is assumed to be capital flight. The assumption is that good and services from country A imported by country B should be equal to the export of country A to country B. In this case, exporters are likely to involve in capital flight when their reported value to a particular country is lower than the value the imported country reported of the same goods and services. Likewise, when the value of the imported goods and services are higher when compared the value of the exporting country for the same good, then capital flight is assumed to have taken place.

To estimate the magnitude of capital flight using this measure, the first step is to compute both the export and import discrepancies of a country with their trading partners. In this case, the export misinvoicing is given as

$$EXPMIS = PM - (IMO * C.I.F)$$

where *EXPMIS* represent export misinvoicing, *PM* is the value of partner countries' imports as reported by partner countries, *IMO* is exports to other countries as reported by that country, and *C.I.F* represent the cost of freight and insurance. A positive sign on *EXPMIS* indicates the existence of export under-invoicing. Likewise, the import misinvoicing is measured as

$$IMPMIS = PX - (EXO * F.O.B)$$

where *IMPMIS* is the imports from other countries, and *EXO* is the other countries' exports as reported by those countries and *F.O.B* is free on board. A positive sign on *IMPMIS* indicates a net over-invoicing of imports, while a negative sign indicates a net under-invoicing.

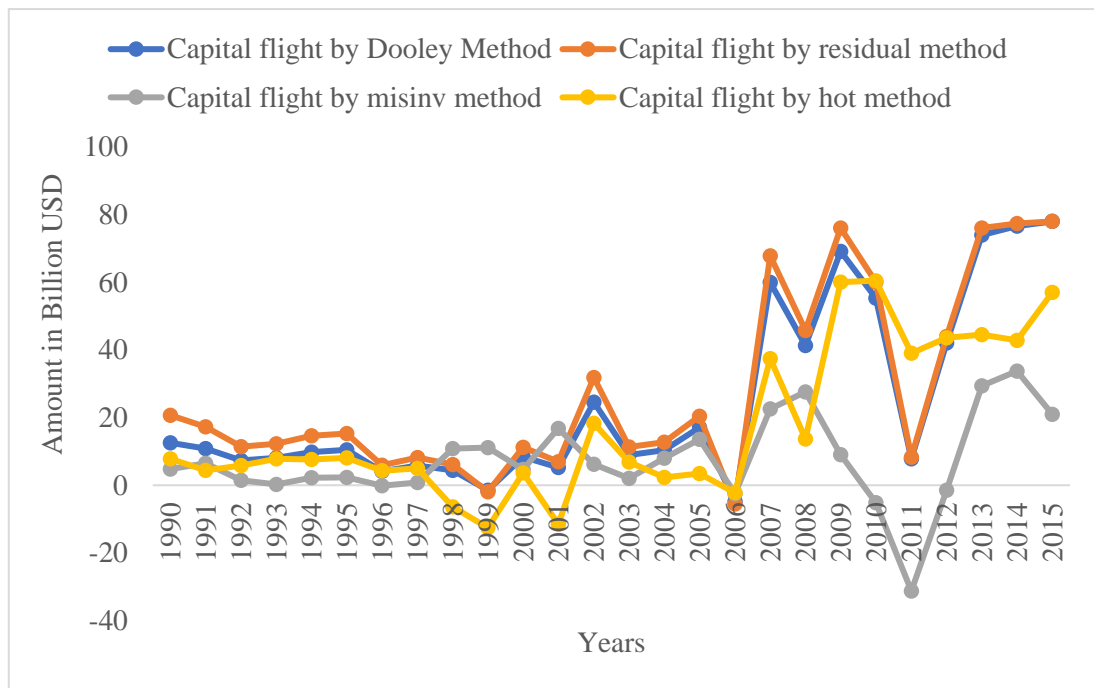
Capital flight is then obtained as the sum of both the export and the import misinvoicing.

$$KF = EXPMIS + IMPMIS$$

2.2.2.6 The methods and their drawbacks

All the empirical measures of capital flight discussed above are subject to criticism. Before highlighting the weakness, Figure 2.1 provides a graphical representation of the total estimated capital flight for the 24 study countries in the SSA from 1990-2015 using all the various discussed methods.

Figure 2. 1: Capital flight from the 24 countries (1990-2015)



Source: Computed by the Author using data from the World Bank

As shown in Figure 2.1, the estimates obtained by the Dooley and the residual method is almost the same, and this is the case for most study (Classen – Naude (1993) and Sheets (1996)). However, the residual method is highly reliant on the quality of the computed data in the balance of payment accounts. The statistics may not always be properly recorded for the private sector, which borrows from foreign creditors or abroad. Again, it treats all errors and omissions as an illicit movement of capital in the balance of payments. But these could be unrecorded transactions in the current account rather than errors and omission (Chang – Cumby, 1997) and also measurement and recording errors and lagged registration (Eggerstedt et al., 1993) can result in errors and omission in the balance of payment account.

The “Hot Money and the Dooley method” is conceptually wrong, some authors argue. These authors claim that the measurement failed to distinguish between normal and abnormal or illegal capital outflows. With respect to the hot money, it may be added that it is unclear why capital flight should consist of short-term capital movements only. It is clear resident may hold medium- or long-term assets.

The Mirror stock statistics may also suffer from being a narrow measure of total capital flight and may leave out potential large parts of the capital flight. Moreover, assets held at foreign banks are not always specified by ownership. Estimating capital flight through trade misinvoicing is, however, fraught with problems. As indicated by Ayayi (1997), even if estimates of over and under-invoicing were accurate and estimated, not all misinvoicing would represent funds used for capital flight since exporters may sometimes over-invoiced to benefit from export subsidies and also under-invoiced imports to benefit from a reduction in import tariffs (Ajayi, 1997).

This study, however, adopts the residual method in estimating capital flight and as well, incorporate all the modifications made by Boyce and Ndikumana (2018). This is to say that in spite of all the challenges with the usage of the residual approach otherwise, known as the World Bank approach, this study sees it as the best method for the computation of the capital flight. However, adjustments are made in areas often criticized. In this way, this study interprets capital flight as the difference between inflows of foreign currency and its recorded outflows with adjustments made for trade misinvoicing, under-reporting of remittances, inflation and exchange rate.

The updated version of the methodology described in Ndikumana – Boyce (2003), Ndikumana – Boyce (2010) and Ndikumana et al., (2015) described in Ndikumana and Boyce (2018) is used essentially for this dissertation. These updated versions include the following modifications made to the initial residual approach.

- I. This methodology included portfolio investment and other investment to the foreign inflows in addition to the change in the stock of external debt outstanding adjusted for exchange rate fluctuations and FDI.
- II. Adjustment for unrecorded remittances was also omitted from the computation of capital flight due to lack of data. In the computation of the adjusted exchange rate fluctuations as in the Ndikumana, Boyce, and Ndiaye (2015), the newly updated

methodology included an adjustment for the net change in interest arrears. This is because the year-to-year difference in the stock of external debt from the World Bank's International Debt database included 'net change in interest arrears.

- III. Trade misinvoicing is also computed by comparing a country's declared import and export statistics to those of its trading partners after **C.I.F** which represent additions to the cost of freight and insurance and **F.O.B** which is free on board is taken care of.

Based on this updated methodology, the revised algorithm for the computation of capital flight for this dissertation is given as;

$$KF_{it} = \Delta EXTADJ_{it} + FDI_{it} + PI_{it} + OI_{it} - (CA_{it} + \Delta RES_{it}) + MISINV_{it}$$

Where **KF** represent capital flight, **$\Delta EXTADJ$** is the change in the external debt stock adjusted for fluctuations in exchange rate and interest rate, **FDI** is a foreign direct investment, **PI** is portfolio investment, **OI** is other investment apart from FDI and PI, **ΔRES** represents net additions to the total stock of external reserves, **CA** is the current account deficit, and **MISINV** is the net trade misinvoicing. **i** represent country **i** while **t** represent year **t**.

This dissertation does not compute this algorithm by itself since the data is available at the University of Massachusetts and have been extensively collected by Ndikumana and Boyce, who are the early writers of capital flight in the SSA region.

2.3 Chapter summary

This chapter reviewed relevant literature on the definitions and measurement of capital flight and external debt. From the literature reviewed, it was clear that the definition of both external debt and capital flight was fiddly, resulting in a variety of definitions and different approaches in estimating their values especially with the case of capital flight. Reviewing the various definitions and measurements showed that each had its own flaws with each one of them giving only estimates. However, based on the underlying theories and the objectives informing this study, a specific definition and measurement for each of the concepts were chosen with justifiable explanations.

CHAPTER THREE

OVERVIEW OF SSA ECONOMY AND THE PATTERN OF EXTERNAL DEBT AND CAPITAL FLIGHT.

3.0 Introduction

The problem of external debt accumulation and capital flight from SSA has become pre-eminent in the current discussion based on the realisation that these outflows may hinder global efforts in assisting the region to mobilise enough resources. To better appreciate the nature and the impacts of these illicit financial outflows and external debt, this section provides a brief overview of the SSA economy and its economic performance since the turn of independence vis-à-vis the true state of external debt and capital flight in the region.

The chapter is organized into three sections. In the first session, an overview of the SSA economy, as well as the economic performance, are discussed to examine whether the various economic policies implemented by the region have had any significant impact on the continuous surge of external debt and capital flight currently happening in the region. In the second section, an overview of capital flight and the mode in which it occurs in SSA is reviewed. The final section focuses on the trend of external borrowing in SSA's.

3.1 Overview of SSA economy

As a region, SSA is the home of 54 independent Africa countries (As shown in Figure 3.1) that lies south of the Sahara Desert, and it is made up of 25 coastal countries, 16 landlocked countries, and six island countries. The Saharan desert is the desert that contrasts the region from the Arabic or the North African countries. In size, the region occupies about 23 million square kilometres of the land surface, making it five times larger than that of the 28 countries of the European Union and also the second-largest region in terms of land area after Asia. The region has over one billion people coming from over 3000 distinct ethnic groups, each with their own exceptional language and culture and is considered to be the home for the most diverse group of people on earth genetically.

Concerning natural resources, the region is also gifted with a large deposit of natural resources like gold, diamonds, metals, oil and other minerals. Nigeria, Angola, Gabon, Cameroon, Equatorial Guinea and Congo are major oil exporters in the world, while Botswana, Ghana and South Africa have diamonds and golds which are among the best in the world. Regarding high-grade bauxite, uranium, iron ore and copper, countries such as Guinea, Sierra Leone, Niger, Liberia, Zambia and Congo DR cannot be left out (Suma, 2007). It also occupies a wide dynamic latitude which contains deserts, forest, temperate climate, tropics, lakes, lowest point on earth and the longest river on earth.

Figure 3. 1: Map of SSA



Source: Africa Development Bank (2012)

In terms of politics, the region in the late 1800s became a target and attractive area for imperialism, especially for European countries seeking to increase their capital accumulation and trade. This process of trade and capital seeking of the Europeans led to the colonisation and further partitioning of the region into separate, and distinct territories or countries. Though the Portuguese were the first European to arrive at the shores of the region before the colonisation period, the British and the French took the majority of countries during the partitioning. The British took over present-day countries such as Botswana, Ghana, Kenya, Mauritius, Nigeria, Sierra Leone, Sudan, Tanzania, Uganda, Zambia, Zimbabwe and part of Cameroon, controlling about 30% of the current African continent, far beyond any other country in Africa. The French also capture present-day countries such as Benin, Burkina Faso, Senegal, Mauritania, Niger, Chad, Central African Republic, Republic of the Congo, Cote D'Ivoire and some part of Madagascar. Belgium also controlled the Democratic Republic of the Congo, Rwanda and Burundi while Portugal controlled Angola and Mozambique (Chandar— Caprio, 2007). Even though the countries, especially the francophone (colonies of France) and Anglophone (colonies of Britain) countries share some common features, till date there is some marked difference between them. For instance, the francophone countries are members of a single currency, the CFA franc that has a fixed exchange rate with the then French franc, but now the Euro. A similar arrangement with the pound sterling existed in the former British colony but was abolished after independence (Suma, 2007). The first language of the francophone countries is French, whereas the Anglophone countries speak English even currently.

Governance during the colonial era is predominantly an autocratic rule with the colonial masters solely responsible for decision making and governing the affairs of the people in the colonies. Even few years after the independence, especially during the 1960s, 70s and the 80s, governance in the region was close to autocracy than democracy because most of these countries were governed by small educated elites who lived mostly in the capitals (Collier—Gunning, 1999). Notwithstanding the major crisis with the colonisation, which lasted up to the 1960s, some civil wars such as the wars raged in Mozambique, Angola, Sudan, Liberia, Rwanda, Sierra Leone, Burundi, Guinea-Bissau, Ivory Coast, Chad and Uganda and recently the Darfur crises in Sudan and Boko Haram in Nigeria, the political economy of region appears to be relatively stable since post-independence. Today, most countries in the region can boast of a multi-party democracy electing their president

through the electioneering process and also committed to providing democratic governance to its citizenry. Also, the region frowns on any military take-overs or the use of any constitutionally unapproved means to take over governance in any country. However, the region has been noted to practice what is currently known as “weak democracy” because of the weak institutions, poor tax compliance, high levels of corruptions and ineffective collection of government revenues to finance expenditures (Darkoh, 2014). The mismanagement of the domestic economies is widespread and persistent. The lack of institutional capacities coupled with acute shortage of trained human resources in the region has constrained efficiency and the capacity to govern effectively, and the consequent reliant on expatriate advisers has not provided the needed solution to the region’s problems.

Regarding economic sustainability and growth, the region is the poorest in the world, and most of its member countries belong to “Third World” countries. In 2017 for instance, the annual GNI per capita using the PPP is \$ 3,489 compared with \$ 6,485 in South Asia, \$14,469 in Latin America and the Caribbean, \$13,737 in East Asia and Pacific, \$15,563 in Europe and Central Asia and \$16,472 in the Arab states (UNDP, 2018). About thirty-three countries in the region were classified as the least developed by the United Nations (UN-OHRLLS, 2012). At the same time, thirty-five nations of the region were categorised under the low human development indicator by the United Nation’s Human Development Index (HDI). The fifteen countries which were placed last in the 2011 HDI ranking were all from SSA (UNDP, 2011, pp. 127–130).

Agriculture, which is the pillar of the region’s economy, is still conducted chiefly at the traditional production way and has not seen any technological advancement. The production base is still narrow regarding both the size and variety of goods produced. Though the shares of services and industry in the region’s annual GDP have been rising, the majority of the labour force in many countries were absorbed in the Agricultural sector. Export is also centred on a few primary export commodities. The region is primarily characterised with recurrent droughts and famine, and facing devastating environmental degradation through desertification, deforestation and land degradation. Regarding social conditions, there is a lack of basic health, education and social infrastructure, making these countries the poorest in the world.

3.1.1 Macroeconomic performance of SSA after independence (1965-1989)

By mid-1960s, most of the French colonies, as well as countries in the British and Belgian colony have attained independence and economic performance of the region, though was considered low compared to other regions of the world, was beginning to pick up. Many countries experienced considerable progress, and indeed, the whole region performed well in most economic indicators starting from the mid-1960s. The general macro economy region was fairly strongly. Annual GDP growth rate grew at an average rate of about 5.0 per cent and also the per capita GDP growth rate was 2.0 per cent for almost a decade from the mid-1960s (see Table 3.1). Though the performance of the region was far below the rate attained in some East Asian countries, it exceeded the growth rate achieved by many developing countries in other parts of the world, and some scholars even considered it much better than that of South Asia and even some of the wealthiest among the First World regions in North America (Arrighi, 2002).

The stagnation and economic decline which later became the main characteristics of the region started after the oil and the sovereign debt crises in the late 1970s and was further worsened by the global economic crises in the early 1980s. Due to lack of technical expertise and the influx of wars and ethnic conflicts, the impact of the crises was very high. For instance, the average annual GDP growth rate, which reached a level of 5 per cent from 1965 to 1973, declined to only 3.2 per cent during the latter part of the 1970s. This growth rate further dropped to 2.1 per cent and later a negative GDP growth of -1.13 per cent in 1980 and 1983 respectively. Also, the real GDP per capita, which grew almost 2 per cent from 1965 to 1973, declined by 1.2 per cent annually from 1980 (Tarp, 1993). Apart from the poor growth of the economy, the productive sectors of the economy were also declining. The share of both agriculture and the industrial sector, which had registered progress of about 2.4 and 10.4 per cent respectively from 1965 to 1973 had fallen by 54 and 58 per cent respectively. The efficiency and level of investment, the terms of trade and domestic savings which have been favourable especially for the oil-exporting countries in the region have started deteriorating paving the way for continuous accumulation of long-term external debt, high budget and balance of payments deficits (Suma, 2007; Tarp, 1993).

In addition to the decline in growth performance and the productive sectors of the economy, the financial sector and in some cases, the external sector was either stagnant

or deteriorating. For instance, openness to trade as a percentage of GDP, which had reached 55.7 per cent from 1965 to 1973, started declining. By 1980-1989, trade openness has fallen to 44 per cent of GDP. (See Table 3.1). The total external balance computed as a percentage of GDP, which grew almost 0.35 per cent from 1965 to 1973, declined to -1.49 per from the late 1970s and further to -0.37 in the 1980s.

Table 3. 1: Some economic indicators, 1965-1989

Indicators	1965-73	1973-80	1980-89
GDP (Annual percentages)	4.8	3.2	2.1
GDP per capita (Annual percentages)	3.3	-0.3	-1.1
Inflation	7.5	6.8	19.0
Population Growth	2.6	2.8	3.2
Agricultural Production	2.4	1.1	2.0
Industrial Production	10.4	4.3	0.7
Service Production	3.4	4.2	2.3
Terms of trade (% of GDP)	-6.7	5.4	-4.9
Openness to trade (% of GDP)	55.7	52.2	44.4
Gross fixed capital formation (% of GDP)	-	18.83	18.33
Current account deficit (% of GDP)	-0.09	-1.54	-0.82
External balance (% of GDP)	0.35	-1.49	-0.37
Money and quasi money (M ₂) (% of GDP)	29.8	31.6	29.0
Domestic credit to the private sector (% of GDP)	28.4	27.7	29.0
Interest rate spread (%)	-	6.0	6.59
Government expenditure as % of GDP	-	-	11.9
Foreign direct investment (FDI) (% of GDP)	-	0.81	0.40

Source: Author's own computation from the World Bank online database

Current account deficit (% of GDP) also followed a similar trend from a better position in the late 1960s to a worse situation in the early 1980s. Domestic investment measured as gross fixed capital formation can also be described to exhibit stagnant nature with the figure as a percentage of GDP revolving around 18.83 and 18.33 from the 1970s to the 1980s. The implications of the economic distortions on the socio-economic conditions of the region were so severe that the decade 1980s was referred to as the “lost decade” for the region with regards to its development endeavours (Iyoha, 1999). By mid-1980s, there were high rates of population growth associated with low levels of government expenditures and investment; the living standards of the people are generally low, widespread poverty and hunger, inefficient use of state resources, weak governance institutions and human capacity were common among the countries.

To resolve these economic conditions and, subsequently, put the region on a sustainable path, several countries in the region accepted and enrolled on the World Bank and the IMF recommended Structural Adjustment and Economic Recovery Programmes to reverse the worsening economic trends of countries in the region. Essentially, the Structural Adjustment and Economic Recovery Programmes are programmes aimed at ensuring economic openness and market fundamentalism to ensure macroeconomic stability through policies of privatisation, deregulation and liberalisation. The implementation of the Structural Adjustment and Economic Recovery Programmes brought some remarkable transformation in policy orientation to the region's economies. Major gains can be noted as increased access of the private sector to foreign exchange and markets, export diversification leading to the emergence of non-traditional commodities, increased international trade openness and enhanced access to financial services (Adenutsi, 2014). However, the region failed to recover fully from the declining trend from the global financial and economic crises, and only a few countries came out of the programme successful in establishing conditions for rapid and sustainable economic growth. Nevertheless, a study by Sindzingre (2007) indicates that the region's experiences during the SAP and ERP programme propelled the good policies which have brought some remarkable turnouts in growth rates witnessed in the latter part of the 1990s and 2000s. Similarly, Sundaram et al. (2011) argued that the improved growth rates experienced by the countries in the region during the early 2000s are chiefly as the result of the economic and structural recovery programs the region gone through during the period of the crisis.

3.1.2 Macroeconomic performance of SSA (1990-2015)

Unlike the other regions in the world which managed to restore economic growth after the economic and financial crises in the early 1980s, stagnation and decline in economic activity continued in the region. Unfortunately, the World Bank and the IMF reformed programmes designed to champion economic policy implementation and to break the shackles of underdevelopment failed to address the key problems confronting the region. Rather, external liabilities of many countries in the region increased continuously with their debt stock growing up to unsustainable levels in the mid-1990s.

Table 3. 2: Some economic indicators, 1990-2015

Indicators	1990-94	1995-2006	2007-2015
GDP (Annual percentages)	0.63	4.76	4.69
GDP per capita	-2.11	2.01	1.87
Agricultural Production	1.34	4.20	4.2
Industrial Production	2.69	8.75	6.12
Service Production	2.26	4.95	5.89
Inflation	7.5	6.8	19.0
Terms of trade	-2.97	0.60	3.12
Openness to trade (% of GDP)	43.2	55.9	61.3
Gross fixed capital formation (% of GDP)	24.1	21.6	21.5
Current account balance (% of GDP)	-2.1	0.8	1.2
External balance (% of GDP)	-1.40	-1.43	-1.49
Money and quasi money (M ₂) (% of GDP)	32.4	33.6	38.4
Domestic credit to the private sector (% of GDP)	49.5	52.9	49.0
Government expenditure as % of GDP	12.8	12.5	14.4
Foreign direct investment (FDI) (% of GDP)	0.7	2.2	2.7

Source: Author's computation with data from World Bank online development

The nature of the failure of the IMF and World Bank policies in the region can be seen by the number of countries that accepted the Heavily Indebted Poor Country (HIPC) Initiative in 1993. By adopting the HIPC Initiative, the countries have accepted the fact that they are poor and cannot manage their debts sustainably, and hence need international support to address critical socio-economic problems (Adenutsi, 2014). As shown in Table 3.2, the average annual GDP growth rate, the annual GDP per capita, the share of agriculture, industrial sector and the service sectors as well as openness to international trade, all lags behind the level attained in the mid-1970s. Inflation, which averaged about 7 per cent in the mid-1970s, increased to an average of 10 per cent in the early 1990s. Similarly, total external balance expressed as a percentage of GDP also decreased from about 0.15 per cent during the mid-1970s to a -1.40 per cent in the early 1990s. As far as the financial sector is concerned, it can be argued that the region experienced some level of successes, even though the current account balance as a percentage of GDP worsened from -0.09 to -2.1. Generally, the broad money supply (M_2) measured as a percentage of GDP and domestic credit to the private sector as a percentage of GDP used as a proxy for the financial sector improve from 29.8 and 28.4 in the mid-1970s to 32.4 and 49.5 per cent respectively.

The overall macroeconomic environment of the region started to recuperate from the mid-1995. The average annual GDP growth per capita picked up a positive number for the first time in many years, and it has remained relatively high ever since. The rate of GDP growth has generally remained unchanged, averaging about 5 per cent since 1995. Even during the economic and financial crisis in the year 2007 and 2008, the region grew by 6.2 per cent on average, a growth rate higher than that of Latin America and the Caribbean (4.87 per cent) and Europe and Central Asia (2.35 per cent). The economic growth in the region is uniform, with over one-third of SSA countries recording 6 per cent or higher rates of growth while another 40 per cent is growing at a rate between 4 per cent and 6 per cent per annum. For instance, in the year 2009, the top countries in the world consisted with some countries of the region like Mauritania, Angola, Sudan, Mozambique and Malawi with the growth of 19.8%, 17.6%, 9.6%, 7.9% and 7.8% respectively. Other fast-growing countries in the region include Chad, Ethiopia, Burkina Faso, Rwanda and Niger.

The share of agriculture, the industrial and the service sector, which had deteriorated over the years have also made significant progress and recording higher values than even the mid-1970s. The financial depth, measured as broad money (M2) and private sector as a percentage of GDP, which had also started recovery in the early 1990s continue to spur up after 1995. In addition, all the other remaining macroeconomic indicators such as openness to trade (% of GDP), gross fixed capital formation (% of GDP), current account deficit (% of GDP), external balance (% of GDP) and government expenditure as % of GDP have all improved tremendously.

With regards to the current debt situation, the HIPC initiative is still providing debt relief and assistance to some countries in the region. Sponsored by the World Bank and the IMF with support from the African Development Bank, the SSA countries continue to receive benefits in the form of the multilateral debt relief initiative.

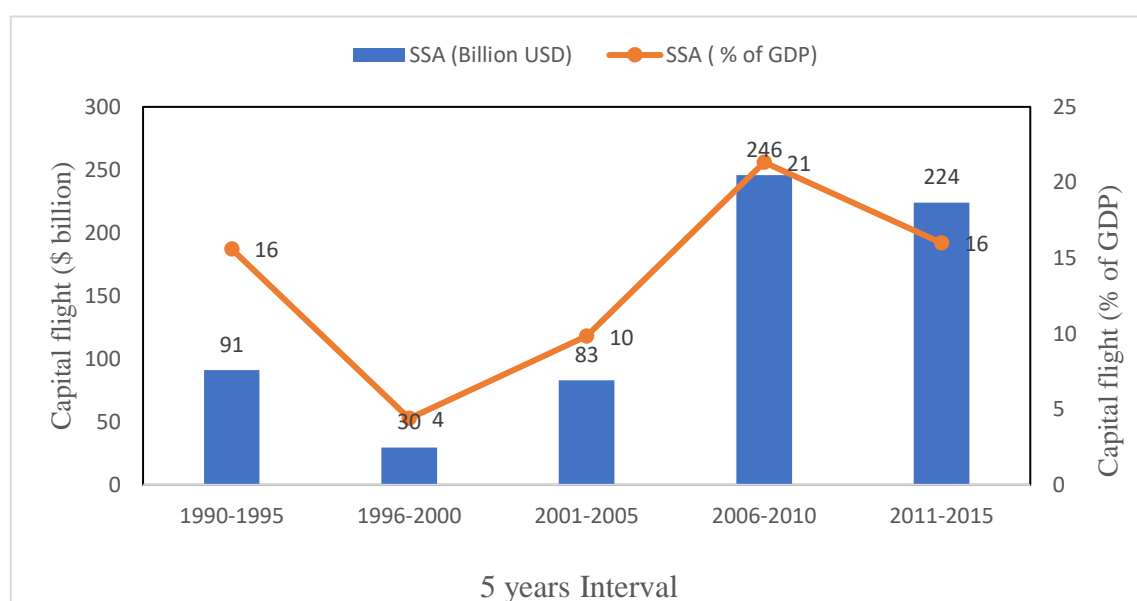
3.2 Overview of capital flight in SSA

Capital flight from the region are large both in absolute terms and in relation to the size of the economies as well as compared to other financial flows. The Eurodad fact sheet shows that the amount of illicit capital flight is more than \$150 billion per year, of which offshore financial centres comprise about 80 per cent (Eoroda, 2008; Ayayi, 2015). Ndikumana- Boyce (2018) sampled 30 countries from the Africa continent, and their study shows that within 1970-2015, the region alone has lost a total of \$1.4 trillion to illegal capital flight. Including interest earnings on capital flight, their study confirms that the continent has lost a cumulative amount of \$1.8 trillion, representing 65.6 per cent of their combined Gross Domestic Product as of 2015. Interestingly, this illicit outflow of capital exceeds the stock of total external debt (\$496.9 billion) owed by these countries, making them a 'net creditor' to the other countries of the world. According to the Global Financial Integrity (GFI), these estimates might even fall below the real values because accurate statistics do not exist for some African economies, and these estimates most at times ignore some forms of illicit financial flows that by nature are secret and cannot be properly estimated, such as proceeds of drugs trafficking and firearms.

3.2.1 Volume and trend of capital flight

Figure A in the Appendix and Figure 3.2 below shows the trend of capital flight estimates for the twenty-four (24) countries and SSA countries as a group considered for the study for the period 1990 – 2015. From Figure 3.2, although capital flight from the region followed some form of volatility (exhibiting both upward and downward trend), it has, however, remained relatively high. Also, during periods where the total capital flight remains relatively low, it rises fast after that. For instance, during the HIPC implementation period from 1996 to 2000, total capital flight from the region was low; however, in the following period, capital flight resume rising. As shown in figure 3.2, from approximately 30 billion USD in the period 1996-2000, capital flight rose sharply to about \$83 billion in the period 2001-2005, representing about 177 per cent increases. The figure again shoots up to \$246 billion in the 2006-2010 period, also recording about 196 per cent increases. In terms of capital flight as a percentage of GDP, as shown in the figure, the highest can be seen in the period 2006 to 2010, and according to Ndikumana—Boyce (2018), these surge is based on the growth of the financial sectors that most countries in the continent experienced. However, with most of the country experiencing higher growth after 2010 with the relatively stable macroeconomic and political environment and capital flight seems to be falling, it presupposes that capital flight in the region is not driven by higher growth and relatively stable political milieu.

Figure 3. 2: Estimates of capital flight for the 24 countries (1990-2015)



Source: Author's computation using data from Ndikumana—Boyce (2018)

The region's capital flight as a percentage of GDP also seems to follow the trend that the actual amount in billion USD did. For instance, in Figure 3.2, capital flight as a percentage of GDP had the lowest value in period 1996-2000 just as the case with capital flight estimated in billion USD. The same analysis can be said of the highest level too, with both estimates occurring in the period 2006-2010. The trend is also similar for almost all the sub-regions (in terms of values or as a percentage) with the exception of southern Africa (See Table 3.3). From Table 3.3, all the sub-regions seem to experience low capital flight during the HIPC implementation phase (1996-2000) and then after which the amount increases steadily with the exception of Southern Africa.

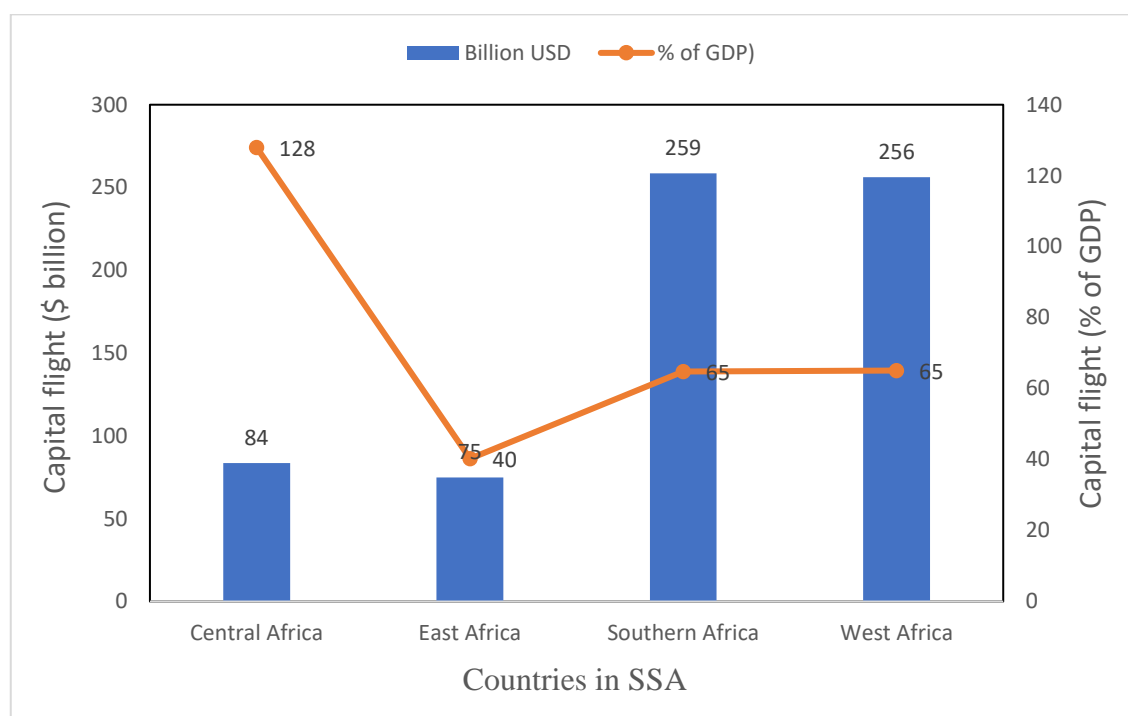
Table 3. 3: Regional estimates of capital flight for 24 countries, 1990-2015

	Billion (USD)					
	1990-1995	1996-2000	2001-2005	2006-2010	2011-2015	1990-2015
Central Africa	14.0	-2.6	17.1	29.0	26.0	83.6
East Africa	4.2	-8.8	19.5	14.6	45.4	74.9
Southern Africa	47.1	45.3	38.5	98.8	28.9	258.7
West Africa	25.8	-4.4	7.9	103.4	123.5	256.3
	(% of GDP)					
Central Africa	28	-5	30	44	31	128
East Africa	6	-10	16	6	22	40
Southern Africa	17	14	10	20	5	65
West Africa	15	-2	2	26	24	65

Source: Author's computation using data from Ndikumana—Boyce (2018)

Comparing across the subregion, whereas in terms of the absolute value estimated in billion USD, Southern Africa seems to have the largest amount of capital flight with \$259 billion, as shown in Figure 3.3. This is followed by West and Central Africa. Capital flight as a percentage of GDP is very high in Central Africa, reaching about 128 per cent and the least is found in East Africa with capital flight constituting about 40 per cent of the GDP.

Figure 3. 3: Regional estimates of capital flight for 24 countries, 1990-2015



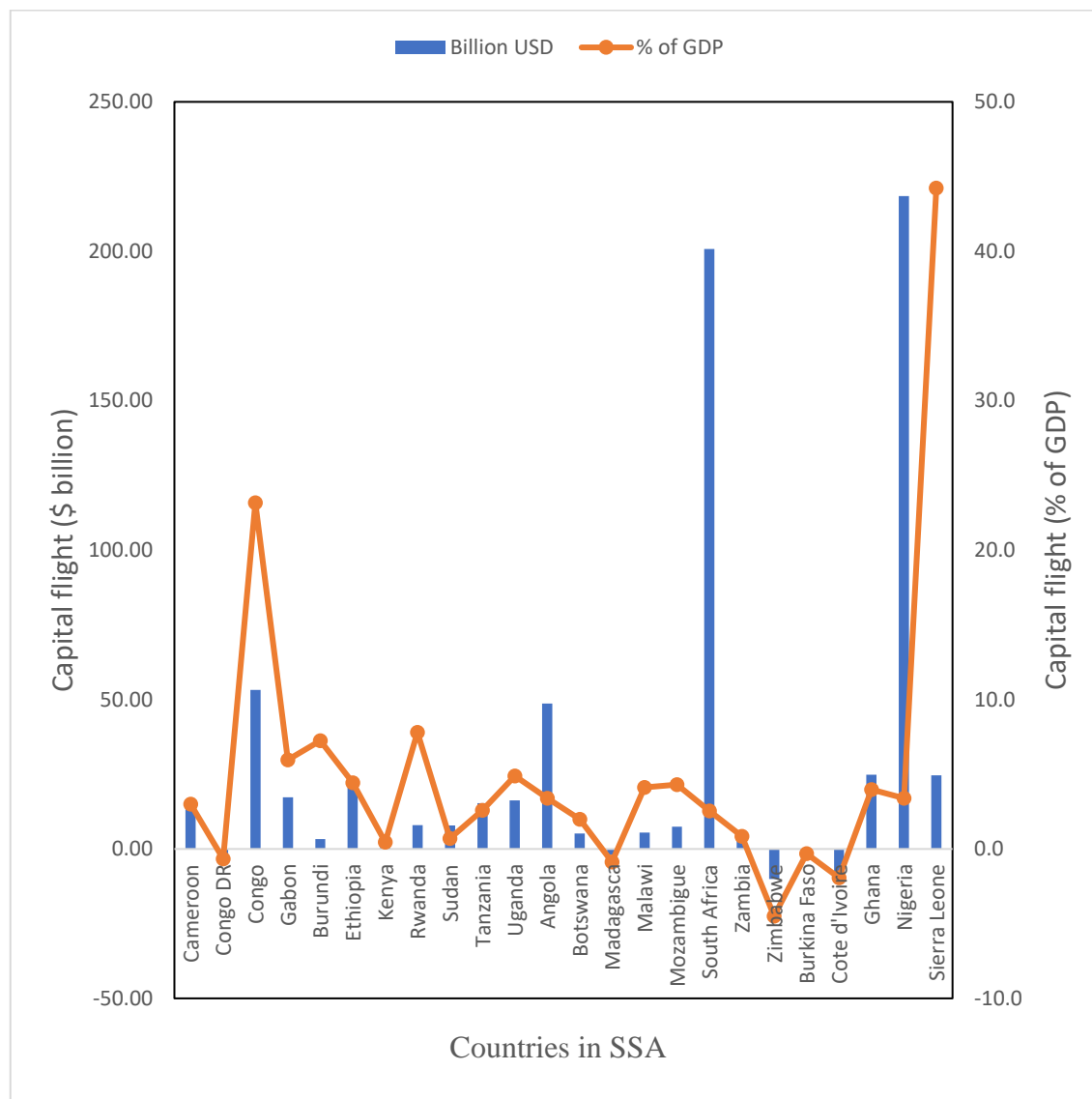
Source: Author's computation using data from Ndikumana—Boyce (2018)

Concerning the outflows in terms of value in billion USD among the countries in the region (as shown in Figure 3.4), Capital flight is positive across all the countries with the exception of Madagascar, Zimbabwe and Cote d'Ivoire. This means that countries in the SSA are experiencing net capital outflow. Nigeria has the largest amount and the worse capital flight incidence with a total capital flight of \$218.46, representing almost 32.4 per cent of the entire groups capital outflow. South Africa follows with a \$200.8 billion representing almost 29.8 per cent of the entire groups capital flight for the period 1990 to 2015. Apart from Nigeria and South Africa, two (2) other countries in the group that contribute substantially to capital flight are the Republic of Congo and Angola. The Republic of Congo leads with a remarkable average figure of \$53.24 billion, closely followed by Angola with \$48.70 billion. Zimbabwe and Cote-d'Ivoire had the lowest amount of capital flight with negative values, respectively indicating that these countries experienced net capital inflows.

Analysis of Figure 3.4 reveals that capital flight as a percentage of GDP seems to differ in countries experiencing high capital flight estimates in absolute terms differs. For instance, capital flight in Nigeria estimated in billion USD, which was the highest among the samples, only accounted for 3.4 per cent of GDP. The same can be said of South,

whose capital flight represent about 2.5 per cent of GDP even though in billion USD, it amounted to over \$200. Figure 3.4 also shows that Sierra Leone is experiencing the highest capital flight to GDP ratio from the sample of SSA countries considered in the study. For the period 1990 to 2015, Sierra Leone’s capital flight estimate accounted for 44 per cent of her GDP, probably as a result of the poor demand to the main driver of growth which is the Agriculture sector as well as slow down of the manufacturing sector. Sierra Leone is followed by the Congo Republic and Rwanda which represents an average of 23.2 and 7.8 per cent respectively, whereas Zimbabwe and Cote d’Ivoire capital flight represents negative -4.5 and -1.9 per cent of GDP respectively.

Figure 3. 4: Capital flight across SSA countries from 1970-2015



Source: Author’s computation using data from Ndikumana— Boyce (2018)

3.2.2 Capital flight compared with other financial Flows

Compared with other financial flows to the SSA, the total amount of capital flight (KF) is large relative to other cross-border flows, such as Foreign Direct Investment (FDI) or Official Development Assistance (ODA) known as foreign aid. As shown in Table 3.4, the 240 countries considered in the study attracted a total amount of \$559 billion in ODA and \$414 in FDI between 1990-2015. This amount is significantly less than the \$673 billion of capital flight over the same period and for the same countries.

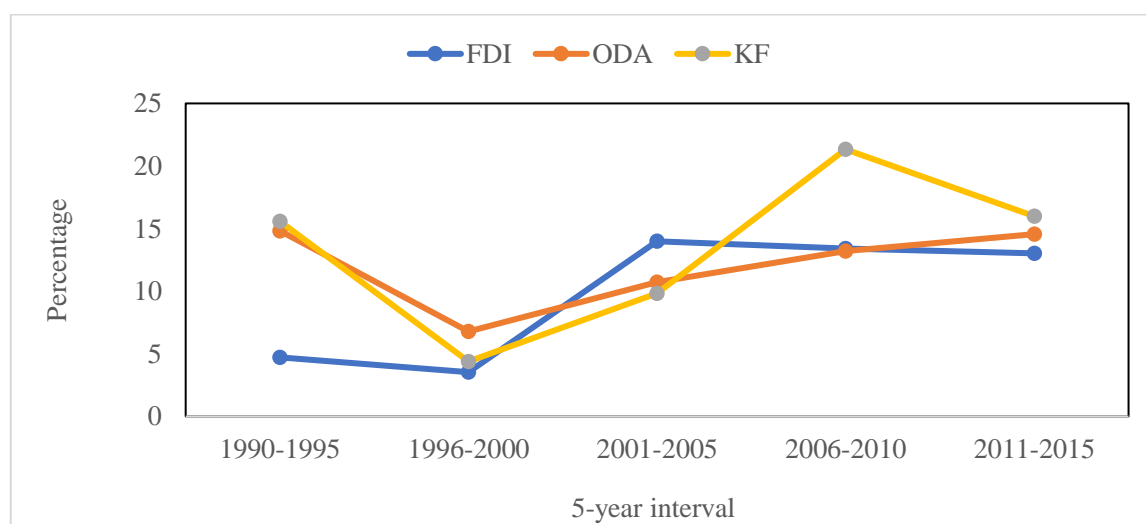
Table 3. 4: Capital flight, ODA and FDI, of SSA

	Billion \$			% of GDP		
	FDI	ODA	KF	FDI	ODA	KF
1990-1995	13	100	91	5	15	16
1996-2000	30	64	30	4	7	4
2001-2005	60	105	83	14	11	10
2006-2010	129	145	246	13	13	21
2011-2015	182	146	224	13	15	16
Total	414	559	673	49	60	67

Source: Author's computation using data from Ndikumana— Boyce (2018)

Figure 3.5 also shows a graphical representation of capital flight compared with ODA and FDI as a percentage of GDP, and it clearly depicts the severity of capital flight in the region as compared to the other sources of international financial flows. With the exception of the period 1996-2000 and 2001-2005, capital flight clearly exceeds both ODA and FDI.

Figure 3. 5: Capital flight, ODA and FDI of SSA

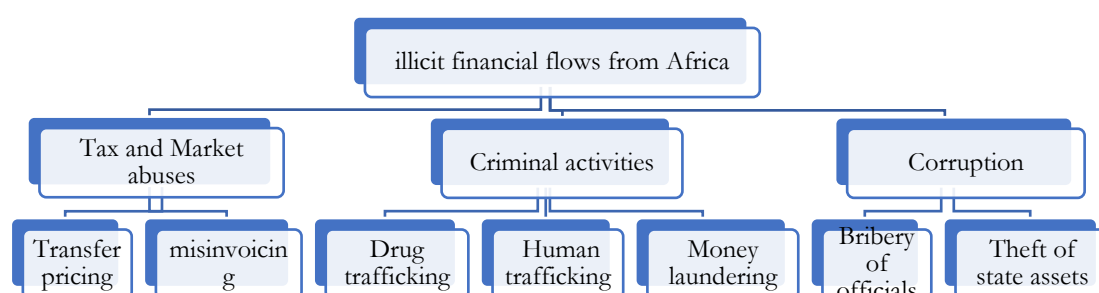


Source: Ndikumana—Boyce (2018)

3.2.3 Major routes of capital flight

Figure 3.6 shows the three main routes through which illicit capital flows in the region are moved out illegally. These routes are contained in the high-level panel discussion on illicit financial flows Conference report held in Accra by the African Union Commission/United Nations Economic Commission for Africa (AUC/ECA) in 2015.

Figure 3. 6: Major routes of capital flight



Source: UN-Economic Commission for Africa (2015)

The report identified tax and market abuses especially by the MNCs, criminal activities in the form of money laundering and human and drug trafficking and corruption as the main channel through which illicit capital resources in the region are moved out.

Capital flight emanating from tax and market abuses are mostly deliberate attempts by businesses especially multinational companies through abusive transfer pricing, and misinvoicing of trade and services, all for the sole aim of tax evasion or tax avoidance. Kar - Cartwright-Smith (2009) indicated this activity represents about 65 per cent of capital flight in the region. For instance,

With respect to transfer pricing and tax abuses

- In 2010, ActionAid examined the tax structure of Rotterdam-based SABMiller activities in Ghana. SABMiller is a global beer company which occupies a

dominant market share in the Africa market. They discovered that the beer company hid behind payments of management fees, royalties and interests on loans to reduce their tax bill in the African country by shifting profits into their tax havens, mostly in the Netherlands and Switzerland. ActionAid discovered that through their cross-border transfer, the African country continues to lose a total amount of £20 million (sterling) annually.

- In 2013, Action Aid again investigated the tax practices of the Associated British Foods (ABF) group, in Zambia. ABF is one of the world's largest multinational food companies. Their investigation revealed that the company dodged taxes from the Zambian government and completely paid no corporate taxes from 2007. The report revealed that through the company's tax avoidance schemes and special tax breaks, the Zambian government lost estimated tax losses of around US\$27 million over the period 2007–2012.
- In a related study, Acacia Mining Plc, a London based company, located in Tanzania is able to pay a dividend of about US\$ 444 million to its shareholders, yet they paid no company income tax because, in their annual accounts, they declared no profit from 2010 to 2015.
- In 2012, the Kenya Revenue Authority investigated Karuturi Global Ltd, an Indian based multinational company and revealed that Kuturi used transfer mispricing to avoid payment of corporate income tax amounting to about USD 11 million (EUR 8 million). In fact, this was the first time, a country in the region has sent any MNC in the region to court for transfer mispricing. Karuturi Global Ltd is the world's biggest producer of cut roses and operates in Kenya, Ethiopia and India. In a year, it is estimated to produce about 580 million roses.

Concerning misinvoicing,

- In 2012, Mozambique which transport cubic metres of logs and sawn timber to the world show in their accounts that the total export of cubic metres of logs and sawn timber is 260,385 cubic. Surprisingly, in the accounts of China alone, the total export of cubic metres of logs and sawn timber that the country received from Mozambique in the same year is 450,000 cubic metres.

- In 2013, A report by Chatham House indicated that Nigeria’s oil is always underestimated, with the quantities lost in a day estimated to be about 100000 barrels.
- The government of Guinea in 2008 granted a mining concession of about \$165 million to a multination company operating in their iron ore. Interestingly, when a new government was elected in government, it's realised that half of the rights to this same concession had been sold to another multinational for about \$2.5 billion which was not publicly disclosed. These differences clearly demonstrate how the governments in the region illegally flown state resource to their private account.
- A study by Ndikumana—Boyce (2018) shows how leakages and misrepresentation of international trade statistics in the official BOP statistics contribute enormously to illicit capital flight in the region. The study indicates that, between 1970-2015, net trade misinvoicing contributed a total of \$285.7 billion comprising of \$1028.3 billion of export under-invoicing minus \$742.6 billion in net import under-invoicing

Table 3. 5: Trade misinvoicing by decade (billion, constant 2015 \$)

	Capital flight	BOP residual	Export misinvoicing	Import misinvoicing	Net misinvoicing
1970-79	265.7	173.3	118.8	-26.4	92.4
1980-89	372.0	314.5	172.2	-114.7	57.5
1990-99	157.7	116.8	164.3	-123.4	40.9
2000-09	206.6	186.2	322.2	-301.9	20.3
2010-15	381.9	307.4	250.8	-176.2	74.6
Total:	1,383.90	1,098.30	1028.3	-742.6	285.7

Source: Ndikumana— Boyce (2018)

Capital flight from criminal activities in the region usually comes from human and drug trafficking, arms smuggling, as well as money laundering or stock market manipulation. For instance

- In 2015, the report of the high-level discussion of illicit financial flows in Accra indicated that United States authorities apprehended a case of money laundering totalling \$480 million involving Lebanese banks across Benin and Togo to European countries.

Bribery and abuse of office by public officials in the region is also a major route through which illicit capital flight in the region are flown out. Some cases can be cited as

- In 1994, Transparency International identified Mobutu Sese Seko, who was President of Zaire (in Today, the Democratic Republic of the Congo) from 1965 to 1997 to have stolen a total of \$5 billion and syphoned off this amount into his Swiss bank accounts
- In that same year, 1994, the same organisation (Transparency International) also discovered stolen assets of about \$2 to 5 billion, belonging to Sani Abacha, former President of Nigeria from 1993 to 1998.
- Gordon (2011) also shares details of how two sons of Abacha's were able to move \$39 million out of their fathers account in Citibank in London funds during an ongoing Nigerian government investigation when Abacha died in 1998.
- In 2014, Ajayi and Ndikumana, also shows how the son of the president of Equatorial Guinea, whose salary as a government minister came to the US \$8,000 a month, held ostentatious wealth around the world, including luxury estates in California and France.

3.3 Overview of external borrowing in SSA's

Despite the cost associated with external debt and the recent tightening of bilateral and multilateral loans agreement, most countries in SSA still resorts to borrowing from abroad for fiscal sustainability and also in financing the SDGs and the African Union Agenda 2063. Borrowing from abroad is not a new phenomenon for the region, and a review of the regions total debt reveals that external borrowing is not only massive but also increasing from year to year and a higher percentage of it is used to fund development infrastructural projects. However, due to the regions inability to achieve sustained growth and development targets coupled with the rapid rise in inflation, huge budget deficits and unsustainable balance of payments (BOP) deficits, most countries continually face external debt service problems (Fiagbe, 2015).

3.3.1 External debt before debt relief (1965-1994)

Before 1970, most of the countries in the SSA region experienced considerable progress. As a result, external borrowing was relatively low. However, in the year 1974 (one year after the oil price hike), external debt witnessed a rapid build-up increasing to US\$16 billion from US\$6.9 billion in 1970. Then, after the second oil price hike in 1979, external debt of the region quadrupled to over US\$ 60 billion in the latter part of the 1980s. This means that between 1970 and 1980, the external debt stock of the region has increased by US\$53 billion, which is about 700 per cent or at an average annual rate of 7.7 per cent. During the same period, the annual GDP per capita declined from 7.1 per cent in 1970 to negative 3 per cent in 1978 and stagnated at 1 per cent in 1979 to 1980 due to falling commodity prices. The stagnant nature of the GDP increased the pressure to borrow abroad, and that weakened the economic base for servicing the debt. External debt service rose from US\$ 643 million in 1970 to US\$6.6 billion in 1980, which is more than 900 per cent increase or at an average annual rate of 7.7 per cent.

Onyekwelu and Ugwuanyi (2014) attribute this increase in external debt and external debt service to poor domestic policies by countries in the region and liberal lending by foreign commercial banks causing the terms of trade and balance of payments (BOP) deficits to be unsustainable among several countries in the region. Muhanji (2010) and Fiagbe (2015) explained that after the oil crisis, most of the countries in the region experienced

widespread inflation pushing a lot of them to adopt contractionary monetary policies which resulted in an increase in real interest rates. The adverse impact of the high-interest rate on terms of trade, the balance of payment and exchange rate alignment compelled the World Bank to encourage countries in the region to borrow more to support the modernization of their export. Again, the oil prices hike both in 1973 and 1979 by the Organization of Petroleum Exporting Countries (OPEC) also made huge oil cash available for International Commercial Banks which increased their liquidity out of which large sums of money were made available to countries in the region without any due diligence.

Table 3. 6: External debt indicators of SSA before 1995

Year	Ext. Debt (billion USD)	Ext. Debt service (billion USD)	Total export (billion USD)	Export (% of GDP)	GDP per capita growth rate	Debt (% of GNI)	Debt Service (% of GNI)
1970	6.91	0.64	12.16	18.97	7.21	11.06	1.06
1971	8.72	0.72	12.72	19.36	4.73	13.75	1.20
1972	10.04	0.80	15.24	20.78	-0.01	14.08	1.17
1973	13.10	1.39	20.82	21.97	1.62	14.40	1.65
1974	16.38	1.26	33.05	26.42	5.04	13.65	1.01
1975	19.60	1.61	32.44	23.27	-2.79	14.85	1.23
1976	22.51	1.82	35.54	23.86	2.40	15.72	1.34
1977	31.40	2.11	43.53	26.49	-0.45	19.86	1.41
1978	40.94	2.58	45.70	25.26	-3.14	23.33	1.56
1979	48.44	3.60	61.38	27.78	1.16	22.98	1.78
1980	60.43	6.62	86.36	29.79	1.12	23.20	2.56
1981	68.99	7.57	73.53	21.47	-3.26	26.08	2.01
1982	76.02	7.67	62.47	20.07	-3.92	30.69	2.30
1983	85.52	8.08	56.32	19.39	-5.24	37.23	2.83
1984	89.28	9.84	57.80	20.44	-0.27	40.81	3.75
1985	103.78	10.80	57.48	22.56	-1.09	51.06	4.24
1986	116.92	9.51	60.05	20.98	-1.22	51.95	3.56
1987	142.00	8.58	75.69	22.63	-0.13	53.76	2.80
1988	143.76	9.79	77.02	21.38	1.60	51.45	3.14
1989	156.61	9.35	85.53	24.51	-0.31	53.96	2.88
1990	176.41	10.83	81.96	22.19	-0.43	61.15	3.44
1991	182.64	10.13	81.12	21.89	-2.36	61.60	3.19
1992	181.97	8.72	82.44	21.71	-3.09	62.38	2.84
1993	188.29	7.27	75.72	21.67	-3.61	67.34	2.55
1994	220.23	11.74	79.06	21.81	-1.52	81.00	4.07

Source: Author's computation using data from the World Bank (2018)

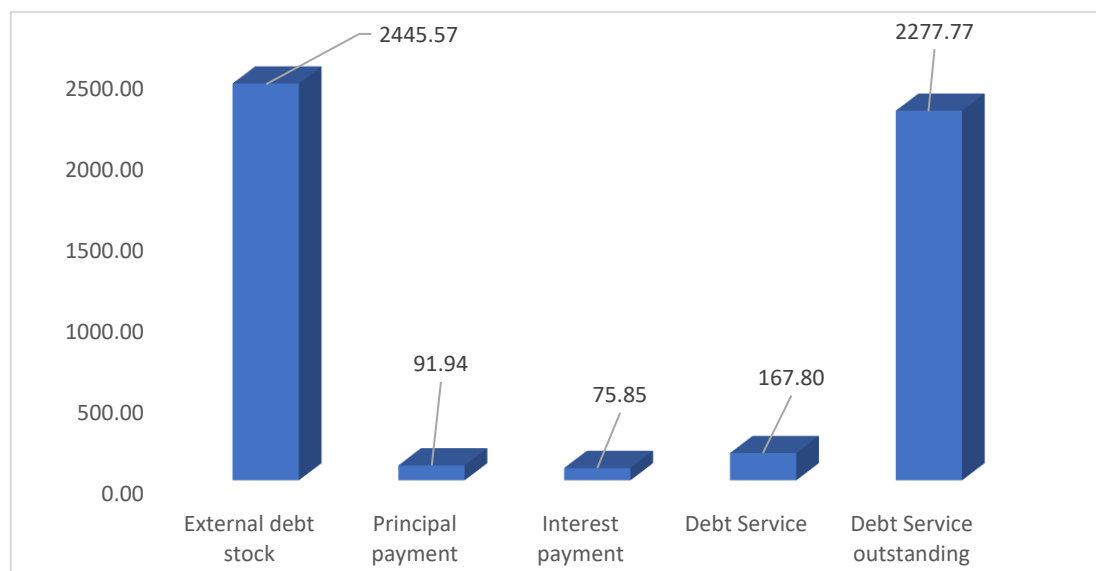
Based on the recommendation of the World Bank, most countries continued with the borrowing until the global financial crises in 1982 triggered the sudden end to the era of liberal lending resulting in the debt crises. However, based on the assumption that the global recession would be short-lived and that prices of non-fuel commodities would recover quickly, most of these countries still resorted to external borrowing. Therefore between 1980 and 1990, the total external debt tripled from US\$ 60 billion to US\$176 billion. Debt as a per cent of GNI ratio rose by 164 per cent from 23 per cent to 61 per cent, while export as a per cent of GDP falls from almost 30 per cent to 22 per cent. GDP per capita growth rate also fell from 1.12 per cent to negative 0.41 per cent within the same period indicating that as the region increases its debt stock annual GDP growth rate moved in the opposite direction.

To redeem the depressing nature of the economies in the region, the World Bank and the IMF in mid-1980s designed the Structural Adjustment Programs(SAP) as well as the Economic Recovery Program (ERP) to introduced economic policy implementation that will champion their macroeconomy in the short-run and usher the countries in the region onto medium and long-term path of sustainable growth. Regrettably, the implementation of the programme failed to address the key problems confronting the region. Rather, external liabilities of many countries in the region increased continuously with their debt stock growing up to unsustainable levels in the mid-1990s. As shown in Table 7, the external debt stock jump from US\$176 billion from 1990 to US\$220 billion in 1994. Debt as a percentage of GNI and debt service as a percentage of GNI ratio rose from 61 per cent to 80 per cent and 3.44 per cent to 4.0 per cent respectfully while GDP per capita growth rate continued to dip downwards from negative 0.43 per cent in 1990 to negative 3.6 per cent in 1993. Total export and export as per cent of GDP also fell respectively. Therefore, by the early part of 1990, most countries in the region begun to abandon the SAP and ERP program due to its failure in meeting outlined growth objectives and propelling the external debt of the countries unto unsustainable levels.

All in all, before the implementation of the HIPC in 1996, a cursory look at the regions external debt shows that the region received about \$2.4 trillion in loans and paid back \$168 billion in principal and interest between 1970 and 1995 indicating the SSA region had a remaining debt stock of about \$2.2 trillion as shown in Figure 3.7. Figure 2 in the

Appendix show the trend of external debt stock in Billion USD and as a percentage of GDP.

Figure 3. 7: SSA External debt before HIPC (billion current USD)



Source: Author's computation using data from the World Bank (2018)

3.3.2 External debt during and after debt relief (1996-2015)

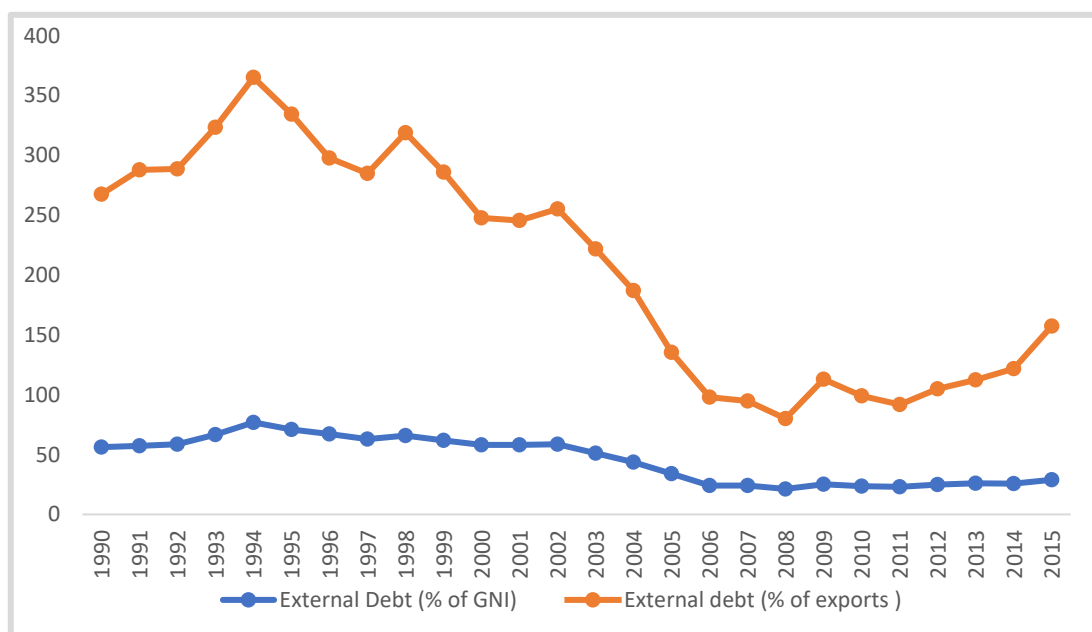
Since the beginning of the debt crisis in the 1980s, countries in SSA have been enjoying some form of debt relief from the international community. Among the debt relief measures used by the international community include debt-cancellation, debt-rescheduling, debt-refinancing, debt moratorium or reorganization of debt under the Paris Club Rescheduling, stock of debt reduction under the Brady Plan, ERP and SAP initiatives. These measures were, to some extent, effective in helping the beneficiary countries in reducing their debt stocks which enabled a lot of them re-enter the foreign financial market to mobilize funds (Suma, 2007). However, most countries in SSA that have undergone the debt program under the Brady Plan, ERP and SAP initiatives continue to face debt service obligations.

It was only in 1996 that the IMF, the WB and the regional financial institutions such as the African Development Bank (ADB) acknowledged the need for a comprehensive approach to the debt problems hence the adoption of the HIPC initiative. The initiative initially identified 33 countries in SSA out of the 41 countries in the world. The aim was to reduce the external debt of HIPC to the level that they would have the capacity to repay

and also to free resource for them to improve their economic and social performance. In three years to the implementation of the program, The IMF and the World Bank reconsidered the initial initiative and launched the Enhanced HIPC Initiative in 1999. Moreover, the HIPC Initiative was supplemented by the Multilateral Debt Relief Initiative (MDRI) in 2005 which has provided the debt relief up to 100% from multilateral debt, mainly from three institutions - the IMF, the WB and African Development Bank. As at 2018, the HIPC and related MDRI programs have relieved 36 participating countries of \$99 billion.

Figure 3.8 presents the debt dynamics of the SSA during and after the HIPC initiative. As shown in Figure 3.7, both external debt (% of GNI) and external debt (% of export), which was standing at 288 per cent and 76 per cent respectively in 1994 started falling during the implementation of the HIPC initiative. Both external debt indicators reached a record low in the year 2006, and 2008 after the implementation of the MDRI. However, the distortion caused by global economic and financial crises in the SSA economy has caused the two indicators to rise.

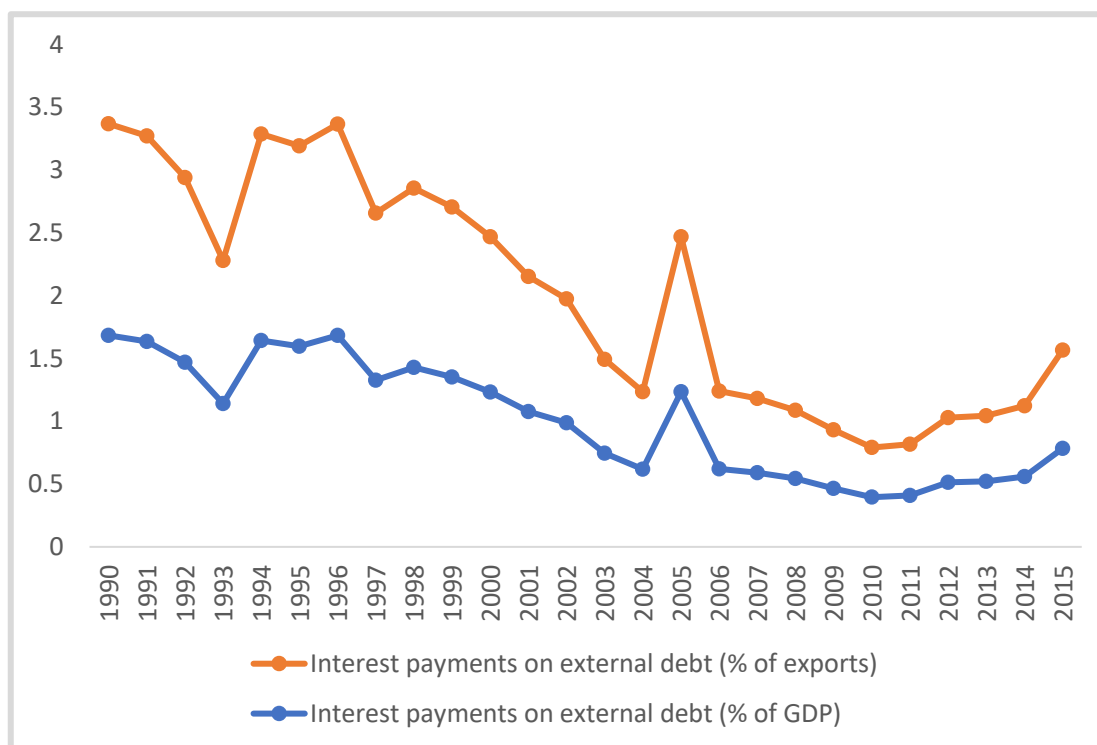
Figure 3. 8: External debt of the SSA during and after the HIPC initiative



Source: Author's computation using data from the World Bank (2018)

Along with similar trends in external debt stock as a percentage of GDP and export, the region experienced a massive reduction in the interest payment on the external debt until after the economic and financial crises in 2007 and 2008 as shown in Figure 3.9.

Figure 3. 9: Interest payment on external debt during and after the HIPC initiative



Source: Author's computation using data from the World Bank (2018)

3.4 Chapter Summary

From a macroeconomic viewpoint, the literature clearly indicates that not much has been achieved by the region in terms of real *per capita* income growth, investment and resource mobilisation, although some improvements have been made in recent years. Indeed, except in terms of financial market development and international trade, there is no strong evidence that the macroeconomic conditions of SSA have improved since the implementation of economic reform policies in the 1980s. Thus, by and large, the unfavourable economic and structural features of SSA countries which prevailed in the 1980s which called for the transformation are still prevalent today. The trend of capital flight and external debt also indicate that the two variables are increasing year by year in the region.

CHAPTER FOUR

EXTERNAL DEBT AND CAPITAL FLIGHT: VALIDATING THE REVOLVING-DOOR HYPOTHESIS

4.0 Introduction

Over the past three to four decades, the SSA countries continue to borrow to finance their development needs, the more honestly acquired capital also leaves the region. This simultaneous occurrence of both external borrowing and capital flight have propelled many to ask why countries in the region are borrowing heavily while at the same time, allowing capital to flee abroad. Employing the two-step system GMM and the Feasible Generalized Least Squares (FGLS), as well as, datasets from 1990 to 2015, this chapter investigates the apparent positive relationship between external debts and capital flight. A sample of 24 SSA countries for which relevant data are available was used. The study begins with background information in Section 4.1. Section 4.2 reviews the literature on the relationship between external debt and capital flight. In Section 4.3, the empirical models, estimation techniques and issues related to data are discussed. The empirical results are presented and discussed in Section 4.4. Section 4.5, the last section, provides the conclusion and the policy recommendations of the study.

4.1 Background of the study

The countries in SSA entered the twenty-first century on the cusp of tremendous change in infrastructure, trade, better macroeconomic management and a more stable political and governance system. At the turn of the new millennium, the region has been among the fastest-growing regions in the global economy with the average annual growth rate increasing from 1.8 per cent at the end of the last decade (1980–1989) to about 5 per cent in the period 2000–2015. Indeed, two countries from the region, precisely Angola and Equatorial Guinea, have consistently hit double-digit annual growth rates with additional twelve countries experiencing annual growth rate higher than the average growth rate of 6.1 per cent for developing countries (UNCTAD, 2014).

As shown in the 2007 report of the United Nation's Economic Commission of Africa, these impressive growth rates are evidence of massive investment from Official Development Assistance (ODA), Foreign Direct Investment (FDI) and external borrowing. External borrowing, for instance, has been increasing right after the turn of the new millennium. Before the century, the region went through the Heavily Indebted Poor Countries (HIPC) Initiative in 1996, and the enhanced HIPC initiative in 1999. Right after that, total external debt stock which was standing at US\$213.44 billion in 2000 started increasing and is currently amounting to US\$422.60 billion in 2015 amidst the debt cancellation program under the Multilateral Debt Relief Initiative (MDRI) in 2006. Interestingly, as the build-up in external debt was occurring, recent estimates suggest that capital flight from the region has grown even more rapidly, and could amount to over twice the size of the external debt (Boyce–Ndikumana, 2018). This simultaneous occurrence of external debt and capital flight has raised questions among researchers and some policy research. The question mostly asked by researchers is why will a developing country in SSA, which is so poor, keep borrowing while at the same time, allowing capital to flee?

Recently, the empirical literature has presented consistent and robust evidence showing that a substantial part of capital flight from the region is financed by external borrowing (Ndikumana and Boyce, 2011; Ndikumana et al., 2014). The evidence exemplifies the '*revolving door*' phenomenon where borrowed funds provide the resources to finance the capital flight while some of the subsequent borrowings are financed by the proceeds of capital flight (Boyce, 1992). The cross countries case studies also confirm that external borrowing constitutes the most important determinant of capital flight in the region. This is the case for all the papers that estimate time series econometric models that explicitly incorporate external debt. In the case of Burkina Faso, the results suggest that a one-dollar inflow of external debt leads to 20–40 cents in capital flight (Ndiaye – Siri, 2016). A positive link between external debt inflows and capital flight is also found in the cases of Ethiopia (Geda– Yimer, 2016) and Madagascar (Ramiandrisoa – Rakotomanana, 2016). In the case of Madagascar, external debt inflows are found to be the most robust determinant of capital flight. External debt contributes to up to 35 per cent of the variance of capital flight over the sample period.

If these results are as accurate as presented, then, as indicated by Fofack – Ndikumana 2015, Ajayi, 2003 etc., their simultaneous occurrence will not only result in a shortage of liquidity that could have been used for building infrastructure and capital investment in the domestic economy, it may also lead to upward pressure on the domestic interest rate restricting government agenda in the achievement of the SDGs. However, a critical review of these studies, especially the panel analysis, shows that most of the studies used static panel estimation (either the fixed effect or the random effect). Unfortunately, these estimators fail to capture the endogeneity and country-specific fixed effects of the variables. In addition, studies that use the dynamic panel estimation, most of them use the Generalized Method of Moments (GMM). Regrettably, this method has also been questioned on empirical grounds. According to Pesaran and Smith (1995), while the GMM estimator can efficiently deal with the endogeneity problem and country-specific fixed effects, it assumes that the time effects and the slope coefficients are homogenous across the across sectional unit as well as also make the assumption that the errors are cross-sectionally independent. Hoechle (2007), Ncanywa – Masoga (2018) and Pesaran (2007) emphasised that erroneously neglecting the cross-sectional dependence among the regressors and across countries when it is present in the data, can lead to misleading inferences.

This study investigates this relationship in the SSA countries employing a more recently developed dynamic estimation technique. The contribution of this study in understanding the relationship between external debt and capital flight is that it employs the newly developed two-step GMM model, which accounts for country-specific heterogenous time effects and deals with cross-sectional dependencies effectively.

4.2 Literature review

Concerns have been raised by economic analysts over the inability of SSA countries to effectively administer their debt management and capital flight policies, leading to a continuous upsurge in both external debt and capital flight. This parallel occurrence of external debt and capital flight in the region has invited theories and empirical investigations into assessing the relationship between them. The broad aim of this section is to present the review of existing theories and empirical literature on the relationship between them in order to understand better the nature, scope, and methodology informing their findings and conclusions. The section is organized into two sections. The first section reviews the theoretical literature on the relationship between external debt and capital flight, and the second section provides a brief review of the empirical studies examining them.

4.2.1 Theoretical literature

Theoretical work on the relationship between external debt and capital flight dates back several decades ago. Largely, one can identify two main schools of thought in the literature. The first group asserts that external debt and capital flight have no causal relationship, but their occurrence is influenced by common exogenous factors whilst the other suggests that the occurrence of one granger causes the other to occur.

4.2.1.1 Indirect relationship between external debt and capital flight

The indirect linkage is rooted in the premise that both external debt and capital flight are indicators of unfavourable or bad domestic economic conditions. So, their simultaneous occurrence does not have any direct causal resemblance, rather, they are being influenced by a common set of exogenous factors such as poor economic management, poor policy interventions, corruption, rent-seeking behaviour, weak domestic institutions etc. in the domestic economy. According to Morgan Guaranty Company (1986) which played a significant role in advancing this notion, when governance structure and mechanisms for administrative controls and prudential regulation are weak or fragile which is especially the case in Third World countries, money borrowed from abroad can end up being

embezzled by the elite members of the domestic economy. A typical example of this proposition is the case of Argentina in the late 1980s where resources lent to the government to finance development projects by commercial banks in New York, Zurich and Tokyo returned to the same banks as deposits (Dornbusch–de Pablo, 1989). In this way, both capital flight and external borrowings are manifestations and responses to unfavourable domestic economic institutions and conditions.

Another view from the indirect theory by Morgan Guaranty Company (1986) results from the perception that increases in capital inflows such as aid, FDI etc. lead to risky or unsound investment decisions especially by the private sector resulting in capital flight and over-borrowing. For instance, Khan – Haque (1985) using the standard intertemporal optimizing model of external borrowing and investment indicated that when domestic inflow increases until risk-adjusted marginal returns are equalized, foreign investors in the domestic economy perceive the risk of expropriation of their domestic investment. They are therefore motivated to move their privately-owned capital from the domestic economy into foreign countries where these investments are less risky. These outflows of capital from the domestic create a void between savings and investment, leading the government to borrow more. In this sense, uncertainty surrounding government policies are seen as the major cause of both capital flight and over-borrowing. This point was also obtained by Eaton (1987) when his study explained that the domestic investor expectation of increased tax as a result of the government guarantee debt resulted in more capital flight and external debt.

Boyce (1992) indicated that while this perspective on the linkages between external debt and capital flight explains the relationship for the domestic country, it leaves the option of why foreign creditors are willing to supply large sums of money to governments whose own residents were voting no confidence by shifting their capital abroad. Beja, Jr (2006) also wrote that this line of thinking also leaves the option of where lower borrowing results in deteriorating domestic economic conditions, which lead to greater capital flight.

4.2.1.2 Direct relationship between external debt and capital flight

According to Ayayi (1997), the direct linkages theory contends that external borrowing directly causes capital flight by providing the necessary resources. Cuddington (1987) and Henry (1986) showed that in Mexico and Uruguay, capital flight occurred contemporaneously with increased debt inflows, thus attesting to a strong liquidity effect in these countries. According to this theory, external resources acquired as loans can create conditions for individuals (most often the elite) to appropriate them as their own. In fact, according to Edser – Bayer (2006), the (borrowed money) may not even enter the country at all. Instead, only accounting entries are entered in the respective accounts of the financial institutions. Boyce (1992) further distinguishes four possible causal links between external debt and capital flight.

The first is the *debt-driven capital flight*. According to Boyce (2012), in a debt-driven capital flight, residents of a country are motivated to transport their assets to foreign countries due to excessive external borrowing by the domestic government. The outflow of capital is, therefore, in response to the fear of the economic consequences of heavy external indebtedness. So, the desire to avoid such taxes in the future causes individuals within the country to transport their capital abroad. The empirical literature also supports the prediction of a debt-driven capital flight in several studies (Ndikumana—Boyce, 2014, 2011, 2008 and 2003; Cerra—Rishi—Saxena, 2005). In the case of SSA, for every dollar borrowed, about half flees the continent in the same year, a tight relationship that suggests the presence of substantial debt-driven capital flight (Ndikumana—Boyce, 2014). Studies in other regions find similar results. Beja (2007) finds that about 55 cents out of each borrowed dollar financed capital flight in Indonesia and Malaysia over the 27 1970-2002 period, consistent with the ‘revolving door’ phenomenon.

The second is *debt-fueled capital flight*. According to Boyce (1992), in a debt-fueled capital flight, the external debt acquired provides both the reason and the resources needed for capital flight. Suma (2007), identify two processes that debt-fueled capital flight might occur. First, the domestic government acquires the foreign capital, then sell the resources to the domestic residents who later transfer it abroad either by legal or illegal means. Secondly, the government can lend the borrowed funds to private borrowers through a national bank, and the borrowers, in turn, transfer a part or all the capital abroad. In this case, external borrowing provides the necessary fuel for capital flight (Ajayi,

1997). In SSA, the empirical evidence does not only provide support to *debt-driven* capital flight but also debt-fueled capital flight. This can be found in studies such as Ampah—Gabor— Kotosz (2018); Ndikumana— Boyce (2014), Ndiaye, (2011), Ndikumana— Boyce (2011), Ajilore (2005) and Ndikumana— Boyce (2011). The evidence indicates that the incidence of debt-fueled capital flight in the SSA region is not only restricted to regional studies but also robust to country-level analysis. In other regional studies, Saxena—Shanker (2016) found external debt stock granger causing capital flight in India.

The *Flight-driven External Borrowing* is a situation where after the capital flight, which dries up domestic resources, a gap between savings and investment rises, so the government borrows more resources from external sources to fill the resource gap created in the national economy. This situation occurs due to the resource scarcity in the domestic economy; both the public and private sectors seek for a replacement of the lost resources by acquiring more loans from external creditors. The external creditor's willingness to meet this demand can be attributed to different risks and returns facing residents and non-resident capital. "The systemic differences in the risk-adjusted financial returns to domestic and external capital could also arise from disparities in taxation, interest rate ceilings and risk-pooling capabilities" (Lessard—Williamson, 1987). In 2009, Fofack tried to examine flight driven external borrowing in several countries in SSA, and the evidence indicates that there is a uni-directional causality running from ten countries using error correction granger causality test and datasets from 1970-2004. These countries Botswana, Chad, Ethiopia, Gabon, Lesotho, Mozambique, Swaziland, Togo and Zimbabwe.

Finally, the *Flight-fueled External Borrowing* occurs when the domestic currency siphoned out of the country through capital flight re-enters in the form of foreign currency that finances external loans to the same residents who transferred the capital. In other words, the domestic capital is converted to currency and deposited in foreign banks, and the same person leads their country to take a loan from that the same bank in which the deposit was made. This phenomenon is also known as round-tripping or back-to-back loans (Boyce, 1992).

4.2.3 Empirical literature

The empirical evidence on the relationship between external debt and capital flight is primarily focused on testing the existence of the revolving door hypothesis in developing countries. As shown in Table 4.1, several of the empirical studies (10 out of 14) within 2003 and 2018 alone involved cross-country/panel studies whilst the remaining four (4) were devoted to country-specific studies. Of the 14 cross-country/panel studies, eleven (11) pertains to the SSA out of which only six (Ampah—Gabor—Kotosz, 2018; Ndikumana—Boyce—Ndiaye, 2014; Ndikumana—Boyce, 2011; Ndikumana—Boyce, 2008; Cerra—Rishi—Saxena, 2005 and Ndikumana—Boyce, 2003), were strictly devoted to SSA group study. The cross-country/panel studies on the relationship between external debt and capital flight in SSA are not only relatively scarce but also relatively recent.

As shown in Table 4.1, most of the studies either the cross-country/panel studies or the country-specific studies are normally ranged between 1970 and 2015. With reference to the literature, the study by Cerra—Rishi—Saxena, (2005) and Ndikumana—Boyce—Ndiaye, (2015) are the most comprehensive in terms of coverage and time interval. From Table 4.1, it is observed that 11 out of the 14 empirical studies reviewed used both external debt and capital flight as a percentage of GDP, whilst in three other studies, the logarithm of external debt and capital flight were used. With regard to the computation of capital flight, 13 out of the 14 studies used the residual method; while Collier—Hoeffler—Pattillo (2004) used the mirror statistics. Also, in external debt computation, either the stock of external debt or net additions to external debt or both are used.

The general conclusion from the various empirical studies on SSA point to the fact that the direct effect of external debt on capital flight. For studies that examined the relationship using change in external debt as a percentage of GDP and capital flight as a percentage of GDP, the conclusion indicates that for every dollar of external loans acquired, up to about 44.7 (Cerra—Rishi—Saxena, 2005) to 96 cents (Ndiaye, 2011) leaves in the form of capital flight. In the SSA, the results indicate that for every dollar of external debt, 62 to 80 cents leave the SSA region. For studies that used the stock of external debt and capital flight as a percentage of GDP, the evidence indicates that a dollar

increase in external debt leads to about 1.54 (Saxena—Shanker, 2016) to 10 cents (Beja Jr, 2006). Table 4.1 provides a review of the sampled studies.

Table 4. 1: Sample review of the incidence of external debt and capital flight

Author(s)	Nature of examination	Country	Timeframe	Estimation Technique	Major Finding(s)
Ampah—Gabor—Kotosz (2018)	external debt and capital flight	26 HIPC Countries in SSA	1990-2012	PMG	A dollar borrowed adds 3.9 Cent to capital flight in a subsequent year.
Saxena—Shanker (2016)	external debt and capital flight	India	1990-2012	Two-Stage Least Square (2SLS)	A dollar sent abroad; 1.54 cents returned as debt
Abdullahi—Hassan—Bakar (2016)	External debt and capital formation	Nigeria	1980 – 2013	ARDL	A dollar borrowed adds 44.7 Cent to capital flight
Ndikumana—Boyce — Ndiaye (2014)	external debt and capital flight	39 Sub-Saharan Africa	1970 to 2010	GMM, Fixed Effect and Random Effect	63 to 73 cents out of each dollar borrowed in a five-year period were syphoned out as capital flight. In addition, each dollar adds 6 to 9 cents of additional capital flight in the subsequent five-year period
Ndikumana—Boyce (2011)	external debt and capital flight	33 Sub-Saharan African Countries	1970 to 2004	GMM, Fixed Effect and Random Effect	Up to 67 cents out of each dollar borrowed between 1970 and 2004 leaves the region as capital flight. Also, an increase in the stock of debt by one dollar leads to 2 to 4 cents of capital flight.

Ndiaye (2011)	external debt and capital flight			panel cointegration technique and GMM	for every dollar of external borrowing by an FZ country in a given year, 96 cents are channelled overseas as capital flight. In the short run, the figure is about 87 cents of capital flight to one dollar borrowing
Fofack (2009)	external debt and capital flight	40 Sub-Saharan African Countries	1970 to 2004	Error Correction Granger Causality Test	The error-correction indicates a revolving door of external debt and capital flight in a number of countries in the region.
Boyce—Ndikumana (2008)	external debt and capital flight	40 Sub-Saharan Africa	1970- 2004	OLS, Fixed Effects and instrumental-variable fixed-effects	Up to 62 cents out of each dollar borrowed abroad between 1970 and 2004 has left SSA in the form of capital flight. Furthermore, a one-dollar increase in the stock of debt resulted in 3 to 4 cents of capital flight in subsequent years
Cerra—Rishi—Saxena, (2005)	external debt and capital flight	134 developing countries	1970 to 2001	OLS and 2SLS	A dollar borrowed adds 44.7 Cent to capital flight (2SLS estimation method)

Beja Jr (2006)	external debt and capital flight	Southeast Asia	1970-2002	Two-Stage Least Squares (2SLS)	Each dollar of external borrowing adds 10 cents of capital flight in Thailand, 94 cents of capital flight in Indonesia, 55 cents of capital flight in Malaysia and 40 cents of capital flight in Philippines
Ajilore (2005)	external debt and capital flight	Nigeria	1970-2001	3SLS and two-way Granger causality tests	A per cent increase in external debt leads to 0.02 per cent increase in real capital flight. Likewise, a one per cent increase in capital flight leads to 0.26 per cent increase in debt.
Demir (2004)	external debt and capital flight	Turkey	1974-2000	Three Stage Least Squares (3SLS)	Up to 68 cents out of each dollar borrowed abroad leaves as capital flight. Also, about 56.4 cents of capital flights returned as external debt.
Collier—Hoeffler—Pattillo (2004)	external debt and capital flight	48 developing countries in Africa, Latin America, Asia Caribbean and Pacific islands	1971-1998	A panel estimation	A one-dollar increase in debt adds an estimated 3.2 cents to annual capital flight in subsequent years

Ndikumana—Boyce (2003)	external debt and capital flight	30 sub-Saharan African countries	1970–1996	fixed-effects regressions with pooled annual data	For every dollar of borrowing, roughly 80 cents flowed back as capital flight in the same year and an estimated 3.5 cents to annual capital flight in subsequent years.
------------------------	----------------------------------	----------------------------------	-----------	---	---

Source: Compiled by the Authors

In a nutshell, the relationship between capital flight and external debt have been the focus of many types of research and policymakers. Under conventional expectations, the bi-directional and a significant positive relationship between the two main variables, which is also known as the revolving door hypothesis seems to be a more common research finding.

4.3 Methodology

4.3.1 Data sources and scope

The study uses secondary data drawn mainly from the World Bank (World Development Indicators online database), the database of Political Economy Research Institute (PERI) at the University of Massachusetts, Amherst for the capital flight data and the Polity IV database for the Polity 2 data series. The dataset consists of time-series running from 1990 to 2015 and is sourced from 24 countries in SSA. These countries include Angola, Botswana, Burundi, Burkina Faso, Cameroon, Côte d’Ivoire, Democratic Republic of Congo, Republic of Congo, Ethiopia, Gabon, Ghana, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone, Sudan, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. The sample was chosen based on the consistent availability of data within the ambit of the study, and their reliability was assessed by crosschecking with other relevant sources before being used.

4.3.2 Model Specification

Until the 21st century, panel regression models have always been estimated using the traditional panel regression methods such as the fixed effects, the random effects, or the pooled Ordinary Least Square (OLS) models. However, contemporary econometric theorists have raised some serious questions on the use of such models in estimating econometric models. For instance, the pooled OLS is questioned on its restrictive nature since it imposes a common intercept and slope coefficients for all cross-sections, and thus disregards individual heterogeneity. The fixed-effects model, on the other hand, is but on the assumption of common slopes but a fixed individual country-specific intercept. Even though, the cross-sectional and the time effects can be observed through the introduction of dummy variables in the fixed-effect model, especially in a two-way fixed effects models; nevertheless, this estimator also suffers severe problems due to the reduction in the degrees of freedom according to Baltagi (2008). Additionally, the parameter estimates produced by the fixed effects model are biased when some regressors are endogenous and is associated with the error terms as demonstrated by Campos—Kinoshita, (2008). The random-effects model is comparatively less problematic as regards the degrees of freedom since it has an inherent assumption of common intercepts. However, the random-effects model considers the model to be time-invariant which means that the error at any period is not associated with the past, present, and future, known as strict homogeneity by Arellano (2003). The main issue is that, in real life, this assumption is very often invalid.

Focusing on the strict homogeneity assumption of the pooled OLS, the fixed effect and the random effect, many contemporary economists such as Holy—Raissi (2009), Samargandi et al. (2015) and Roodman (2006) have earmarks that the possible inter-dependences among the cross-sectional unit and individual economies of the world have made the error terms of most variables to be time-variant. Therefore, ignoring this dynamic nature of the data can lead to serious bias.

In recent times, a lot more of the empirical studies have focused on the dynamic nature of the datasets known in the literature as the dynamic panel estimation methods. However, according to Samargandi et al. (2015) and Roodman (2006), in the dynamic panel estimation, when there are a large number of countries compared to the time period, then the GMM-system estimator proposed by Arellano and Bover (1995) and the GMM-

difference estimator by Arellano and Bond (1991) works well. These two estimators are typically used to analyze micro panel datasets (Eberhardt, 2012). However, a wide range of recent literature has applied GMM techniques to macro panel data, including in the area of inequality and economic growth, GMM captures only the short-run dynamics, and the long-run relationships between the variables tend to be overlooked because these models are frequently restricted to short time series.

Pesaran—Shin (1999), Pesaran (1997) and Pesaran—Smith (1995) present the autoregressive distributed lag (ARDL) model in error correction framework as a comparatively new cointegration test. However, the emphasis is on the need to have consistent and efficient estimates of the parameters both in the long-run and short-run relationship. According to Johansen (1991) and Philipps—Bruce (1990), long-run relationships exist only in the framework of cointegration between variables with the same order of integration. Pesaran—Shin (1999) however, show that panel ARDL can be used even with variables with different orders of integration and irrespective of whether the variables under study are $I(0)$ or $I(1)$ or a mixture of the two. This is a significant advantage of the ARDL model, as it makes testing for unit roots unnecessary. Also, the short-run and long-run effects can be estimated concurrently from a data set with large cross-section and time dimensions. Finally, the ARDL model provides reliable coefficients despite the presence of endogeneity as it includes the lags of both the dependent and independent variables in the model (Pesaran et al., 1999). Unfortunately, the original version of the ARDL as proposed by Pesaran—Shin (1999), failed to check the cross-sectional dependency of the variables. Recently, a more developed autoregressive distributed lag (ARDL) model in an error correction framework that addresses cross-sectional nature has been introduced by the Chudik—Pesaran (2015). But, the necessary condition for the reliability and validity of this method is to have a sufficiently large time-series dimension of the data with at least thirty (30) time period.

The second estimator that is perfectly suited to dynamic modelling with individual effects, GroupWise heteroscedasticity, serial correlation, cross-sectional dependence and endogeneity (Hicks, 1994) is the Parks and Kmenta Feasible Generalized Least Squares (FGLS) estimation technique. This estimation technique is suitable whether the individual effects are fixed over time and cross-sections or are normally distributed random variables. It is however criticized as producing biased standard errors. Hence the panel-

corrected standard error (PCSE) technique of Becks—Katz (1995) is sometimes used as an alternative. The Becks—Katz (1995) PSCE technique produces OLS estimates with standard errors that correct the upward biased standard errors of the FGLS estimation. But unfortunately, the PCSE estimation technique is best suited to small and finite samples (Greene, 2003). OLS estimates are also known to be biased and inconsistent in dynamic models with one or more lags of the dependent variable as a regressor due to serial correlation (Nickel 1981). Hence the FGLS is still superior to the PCSE estimation technique in dynamic models characterized by individual effects, serial correlation, endogeneity of the regressors and GroupWise or other heteroscedasticity.

Another good estimator is the two-step system GMM estimator. The endogeneity problem is addressed by time demeaning the data to remove time effects. This is also known to correct moderate levels of cross-sectional dependence, as in this study (De Hoyos—Sarafidis, 2006). The cross-sectional specific effects are then eliminated using forward orthogonal deviations, thereby making it possible to use one period lags of the regressors as valid instruments since they are not correlated with the transformed error term (Love—Zichinno, 2006). Time demeaning and Helmert transforming the data preserves homoscedasticity, prevents serial correlation, controls for cross-sectional dependence and also preserves the orthogonality between transformed variables and lagged regressors (Arellano —Bover, 1995). Another advantage of this approach is that it is more resilient to missing data. It is computable for all observations except the last for each cross-section, hence minimizing data loss (Roodman, 2006).

Another relevant estimator that handles data with individual effects, GroupWise heteroscedasticity, serial correlation, cross-sectional dependence and endogeneity is the Driscoll – Kraay (1998) cross-sectional dependence robust standard errors in the context of a Fixed-Effects estimation in the estimation. Hoechle (2007) argued that the standard errors estimated by the Driscoll – Kraay (1998) are well standardized and the coefficient produced are more robust in the presence of heteroskedasticity, serial correlation and cross-sectional dependence which is particularly useful in this study. The Driscoll – Kraay (1998) estimation process comprises two stages. First, all variables both the dependent and the independent variables in the model are within transformed where Z_{it} which is $\in (Y_{it}, X_{it})$ is transformed as $Z_{it} = Z_{it} - Z_i + \bar{Z}$. Z_i is then given

$Z_i = T_i^{-1} \sum_{t=t_i}^{T_i} Z_{it}$ while \bar{Z} is also given $\bar{Z} = (\sum T_i)^{-1} \sum_i \sum_t Z_{it}$. This within transformation of the variables mimics the Ordinary Least Square (OLS) estimator of the form $y_{it} = x_{it} \theta + \varepsilon_{it}$. After that, the pooled OLS estimation with Driscoll and Kraay standard errors are applied to the within Ordinary Least Square (OLS) estimator to obtain the parameters.

Based on this underlining argument, the dynamic panel model of this study is, therefore specified as:

$$KF_{it} = \beta_0 + \beta_1 KF_{it-1} + \beta_2 EXT_{it} + \delta Z_{it} + \mu_i + \lambda_t + \varepsilon_{it} \dots\dots(4.1)$$

Where KF represents real capital flight, EXT represent the total external debt stock, and Z is a vector of the other control variables of capital flight other than the total external debt stock. u denotes unobserved country-specific effect, λ is the time-invariant effect and ε accounts for the stochastic error term. δ and β are the parameters to be estimated. The subscripts i stand for a particular country, while t is the time. The control variables contained in vector Z are drawn from both theoretical and empirical evidence in the literature, and they are mainly variables explaining the political and governance environment, the open macroeconomy, and the structure of the economy in general. Specifically, the control variables considered for the study are annual GDP growth rate, financial development measured by bank credit to the private sector as a percentage of GDP and political stability proxied by the Polity2 index from the Polity IV project database. Substituting the control variables into the main equation, equation (4.1) can be rewritten as

$$KF_{it} = \beta_0 + \beta_1 KF_{it-1} + \beta_2 EXT_{it} + \beta_3 AGDPgr_{it} + \beta_4 POLITY_{it} + \beta_5 FD_{it} + u_i + \lambda_t + \varepsilon_{it} \dots\dots(4.2)$$

Where $AGDPgr$ represents the annual GDP growth rate, $POLITY$ represents political stability, and FD is financial development. The coefficients, $\beta_1, \beta_2, \dots, \beta_6$, are the output elasticities to be estimated. All other variables are defined as before. The variable description and measurement, as well as their source, are presented in Table 4.2.

Table 4. 2: Variables in the model: Measurement and Sources

Variable	Definition	Source
Capital Flight (<i>KF</i>)	The total capital flight is defined as the real total capital flight expressed as a percentage of GDP	Database of Ndikumana & Boyce (2018)
External Debt Stock (<i>EXT</i>)	External debt measured as total stock of external debt as a percentage of GDP	WDI database
Gross Domestic Product (<i>AGDPgr</i>)	The annual GDP growth rate	WDI database
Political Stability (<i>POLITY</i>)	Political Stability is measured by the country's elections competitiveness and openness, the nature of political involvement in general, and the degree of checks on administrative authority. The estimate gives the country's score on the aggregate indicator, in units of a normal distribution, i.e. ranging from -10 to +10.	Polity 2 data series from the Polity IV database under
Financial Development (<i>FD</i>)	Bank credit to the private sector, as a percentage of GDP	WDI database

Source: constructed by the Author

4.3.3 Variable Justification and Apriori expected signs

Capital flight (KF)

The share of capital flight as a percentage of GDP is our dependent variable for this chapter. Capital flight is defined as unrecorded private capital outflows leaving the domestic economy, which is normalized as a percentage of nominal GDP (in constant 2015 US dollars) to allow for cross country comparisons. We hypothesize that the size of capital flight is due to higher expected returns overseas or to circumvent any risk or loss

as a result of changes in macroeconomic policy errors, political turmoil as well as asset diversification. In this dissertation, capital flight is measured by employing the methodology outlined by Ndikumana – Boyce (2018), which is a modified version of the World Bank (1985) residual method. This method computes capital flight as the variation between recorded capital inflows and its outflows which is normally referred to as errors and omission in the BOP account. Adjustments are made for trade misinvoicing, under-reporting of remittances, inflation and exchange rate. Capital flight is therefore estimated as

$$KF_{it} = CDEBTADJ_{it} + FDI_{it} - (CA_{it} + \Delta RES_{it}) + MISIN_{it} + RID_{it} \quad \dots\dots\dots (4.3)$$

Where *KF* represent capital flight, *CDEBTADJ* is the change in the stock of external debt outstanding adjusted for inflation and exchange rate fluctuations, *FDI* is a net foreign direct investment, *ΔRES* represents net additions to the total stock of external reserves, *CA* is the current account deficit, *MISIN* is the net trade misinvoicing, and *RID* represent unrecorded remittances. The subscripts *i* stand for a particular country, while *t* is the time. Ndikumana – Boyce (2018) presented a detailed analysis of how these indicators where measured.

External debt (EXT)

The World Bank (2018) defined the stock of external debt as a debt owed to non-residents, which are repayable in currency, goods, or services. It is measured as the sum of public, publicly guaranteed, and private nonguaranteed long-term debt, use of IMF credit, and short-term debt. Both theoretical and empirical literature has established that increases in external debt stock not only provides corrupt leaders with resources they can siphon off as capital flight, they also provide the motivations to do (Ayayi, 1997). In SSA, Hermes – Lensink (1992) indicated that for every dollar of external debt, roughly about 75 to 90 per cent are siphoned off as capital flight. Ndikumana – Boyce (2003) also found a similar result with about sixty per cent of net additions to external debt re-exported to overseas countries in the form of capital flight. In addition, the empirical literature indicates that increases in external debt stock increase the likelihood of a fiscal crisis, which encourages capital flight. This is because when the government increases her borrowing, domestic investors may perceive the build-up in the debt stock to be financed by distortionary

measures such as heavy taxes, seigniorage or cut in productive public investment. In response to the fear of economic distortion of such distortionary measures, investors are motivated to move their assets abroad to avoid such taxes. This is referred to in the literature as *debt-driven capital flight*. For this study, external debt is measured as the total stock of external as a percentage of GDP, and we hypothesized a positive relationship between total external debt stock and capital flight.

Annual GDP growth rate

Economic growth refers to the steady growth in the productive capacity of an economy over a given period of time. The empirical literature provides that capital flight is higher when a country's rate of economic growth is low. For instance, using data from 1970 to 1996, Ndikumana – Boyce, 2003 finds that annual growth rate differential between the SSA country and its OECD trading partners is a significant factor in determining capital flight from the region. In 2011, Ndiaye also reveals that the economic growth rate differential between the Franc Zone in Africa and France negatively affected capital flight even though this influence was not found to be statistically significant. Nyoni (2000), in a related study, also found capital flight from Tanzania to be negatively related to the annual growth rate differential between Tanzania and the United Kingdom. Recently, the empirical evidence is mixed with regard to the effect of a country's growth rate alone on capital flight, with a number of studies finding that the effect is either not significant or not robust to alternative specifications and estimation. This could also mean that the annual growth rate in itself could be influenced by some of the factors that cause the illicit financial flow, thereby making it difficult to isolate its peculiar effects. Following the literature, the annual percentage growth rate of GDP is used, and despite this challenge, this chapter expects the annual GDP to have a positive relationship with capital flight.

Financial development (FD)

Financial development is usually defined as a process that marks an improvement in the quantity, quality, and efficiency of the intermediary financial services (Abu-Bader—Abu-Qarn, 2008). Generally, financial development (*FD*) entails increasing financial intermediation, raising pension funds, expanding bonds and equity markets and tapping

international sources of capital. In this study, we expect financial deepening to either have a positive or negative impact on capital flight. For instance, if financial development is accompanied by increasing financial intermediation, raising pension funds, expanding bonds and equity markets and tapping international sources of capital. It is expected to reduce capital flight by providing opportunities for profitable savings domestically. On the other hand, if financial development comes with the deregulation of the domestic capital market where domestic capital can easily flow abroad as long as risk-adjusted returns are higher elsewhere, then financial deepening is expected to have a positive impact on capital flight (Ndikumana – Boyce, 2003). Lensink et al. (1998) find a robust and statistically significant negative effect of financial development on capital flight. Collier et al. (2001), also measuring financial development using the M2/GDP ratio finds that financial development has no statistically significant effect on capital flight. Following the literature, the domestic credit to the private sector by banks as a percentage of GDP is used as a proxy for financial development. Financial development is measured this way primarily because the SSA region’s financial markets are dominated by banks. The second reason for using private credit is because it is the standard metric for measuring developments in the banking system. High levels of financial development, all things being equal, are expected to either influence capital flight or reduce it.

Political Stability (POLITY)

Political Stability in this study is measured on how public institutions conduct public affairs and manage public resources. In line with Following Ndikumana et al. (2011), the Polity2 score, which captures the extent of institutional restraints on the decision-making process of the chief executive, the competitiveness of political participation, and the openness of executive recruitment, was used as a proxy for political stability. Political risk is widely believed to play a significant role in the capital haemorrhage experienced by SSA countries over the past decades. Fedderke—Liu (2002) and Collier et al. (2004) find that political stability is associated with lower capital flight. It does not necessarily follow, however, that durable regimes are associated with a better political environment, as illustrated by the case of the Congo (ex-Zaire) under Mobutu (Ndikumana—Boyce 1998). The index ranges from a score of -10 (autocratic rule) to a score of 10 (democratic rule). The autocratic rule is used as an indicator of an unstable government, which would

promote capital flight while the democratic rule is seen as a sign of a stable government that can reduce capital flight. The study, therefore, cannot assign an *a priori* expectation on the assumed relationship between capital flight and the political stability index, although it is hoped to be negative. Coding bias and the fact that this variable only captures the procedural aspects of democracy have been the major criticisms in the empirical literature, however, in a cross-country regression as in the case of this paper; it is an often-used proxy as it focuses more on national-level politics.

4.3.4 Descriptive statistics of the selected variable

Table 4.3 provides descriptive statistics relating to the variables used for the study. The mean values indicate the average value of the variables in the overall model. The standard deviation also captures the distribution of data around the mean value. It also shows the closeness of data to the average value over the period under consideration. The spread of the data is indicated by the range, and this is measured by the maximum and minimum values in each different model, and it is an indicator of the level of variations in the variables. The N, n, and T in Table 4.3 also represent the total observations, a total number of countries sampled and the total number of years for the study, respectively.

The mean of capital flight (*KF*) is 4.73 and ranges in value between -55.72 and 174.92. The wide difference between the minimum and maximum values also attests to the fact that capital flight in the region are not evenly distributed. While other countries made a lot of progress in reducing it, many other countries exported more capital flight over the study period. Total external debt stock (*EXT*) as a percentage of GDP also averaged 46.13, ranging from a maximum score of 278.98 and 0.16, also showing a high level of variations. The data also shows that within countries (cross-sectional dimension) observations attain as low as -27.72 and as high as 190.69 scores within the period under consideration, whereas between countries observation shows a much lower variation (low = 9.34 and high= 134.416).

Table 4. 3: Descriptive Statistics of Variables

Variable		Mean	Std. Dev.	Min	Max	Observations
	Overall		16.707	-55.717	174.918	N = 620
<i>KF</i>	Between	4.730	7.741	-3.125	33.478	n = 24
	Within		14.888	-51.296	146.170	T = 26
	Overall		33.655	0.156	278.979	N = 623
<i>EXT</i>	Between	46.132	25.182	9.339	134.416	n = 24
	Within		22.900	-27.723	190.694	T = 26
	Overall		5.834	-50.248	35.224	N = 624
<i>AGDPgr</i>	Between	4.018	1.804	0.934	7.466	n = 24
	Within		5.560	-51.850	33.623	T = 26
	Overall		5.177	-9	9	N = 624
<i>POLITY</i>	Between	0.526	3.893	-5.462	8.538	n = 24
	Within		3.501	-12.974	8.564	T = 26
	Overall		13.388	2.857	151.549	N = 624
<i>FD</i>	Between	24.052	10.846	9.480	62.147	n = 24
	Within		8.121	6.079	143.347	T = 26

Source: Author's computation using STATA 15

In addition to the wide disparity among external debt and capital flight, the annual GDP growth rate of the study countries for the period under investigation was also examined. The results indicate that, on average, SSA economies have grown by 4.018 per cent with a minimum growth rate of about -50.25 per cent and a maximum of 35.24 per cent for the period under investigation. This rather indicates an impressive performance of the African continent. The standard deviation from the mean growth rate was 5.83. This indicates a very less spread growth for the continent.

The domestic credits in the form of loans, trade credits, venture capital funds, gross microfinance loan portfolio (percentage of GDP) allocated to private sector investment as a percentage of GDP used as a measure of financial development also averaged 24.05

per cent with a maximum score of 151.55 per cent and the minimum been 2.86 per cent respectively. The high fluctuation between the maximum and minimum values of the variable indicates the weak financial portfolios earmarked for industrial development. The high standard deviation of 13.38 shows a high variation in the accessibility of financial resources by firms in the SSA region.

The total number of observations, as indicated in Table 4.2, is within 620 and 624 depending on the variable, and it consists of 26 years annual series and 24 countries. The cross-correlation matrix in Table 4.4 is also used to ascertain the correlation between capital flight and external debt, as well as the other control variables in the study. The result reports that the correlation among the variables is generally low (below 0.50).

Table 4. 4: The correlation matrix

	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
<i>KF</i>	1				
<i>EXT</i>	0.2205	1.000			
<i>AGDPgr</i>	0.0373	-0.1035	1		
<i>POLITY</i>	-0.0258	-0.1529	0.1271	1	
<i>FD</i>	-0.079	-0.1966	-0.0876	0.3657	1

Source: Author's computation using STATA 15

From the result, external debt and annual GDP growth rate are positively correlated with capital flight in the study countries. However, political stability and private sector credit as a percentage of GDP used as a measure for financial development variable are negatively related to capital flight. Except for the annual GDP growth rate, this correlation coefficient carries with the apriori expected signs specified in section 4.3.3

4.4 Estimation technique and initial diagnosis

The dynamic panel model specified in equation (4.2) rides on two main assumptions. First is the inclusion of capital flight which is the dependent variable as a regressor indicating the presence of autocorrelation. Secondly, the presence of a country-specific and time-invariant component of the error term indicating the error term takes a two-way error component. This does not mean that equation (4.1) is free from endogeneity problems since there is a possibility of a bi-direction causality between external debt and annual

GDP growth rate. Hence, the assumption of exogenous regressors could be violated. Again, SSA countries have distinctive social, economic and geographical features which need to be considered in the estimation process. The presence of these sources of persistence indicates the existence of serial correlation that would render the OLS parameter estimates biased and inconsistent. Therefore, to ensure valid, unbiased, consistent and precise prediction of the model in equation (4.2), there is a need for various tests to be conducted on this estimation model. As a result, the estimation procedure of the study shall follow these steps

- A. First, testing the time and cross-sectional properties of the data. In this way, the study checks for the time effect, individual cross-sectional effect, group-wise heteroskedasticity, endogeneity of the regressors, serial correlation, unit root and cross-sectional dependence. This was done to ensure that all the variables used for the estimation are relevant and also devoid of any diagnosis problems to avoid any spurious regression.
- B. Second, the study proceeds to test for the existence of cointegration if the variables are stationary after first difference.
- C. Thirdly, the relationships among the variables are estimated using a more robust measure following the diagnostic check.
- D. Fourthly, the study employed Granger-causality to test for the causality between external debt and capital flight.
- E. Finally, the variance decomposition analysis and the impulse response functions were conducted.

4.4.1 Cross-sectional and time-specific fixed effects

The pooled OLS is often criticised because it assumes that the coefficients in the models are the same over time and cross-sections. However, since the panel data set contains repeated observations over the same units collected over several periods, one can expect difference to occur either across time or among the cross-sectional unit. For instance, in the case of this study that examines the relationship between capital flight and external debt for 24 SSA countries across 26 years, though the SSA share a lot of similarities, it is clear that some features such as cultural, historical and geographical can differ across these countries or

the same for some countries. Also, individual countries may face similar or different issues year after year.

In the econometrics literature, these unobserved differences among the countries or across time-specific period is very important in the way the error term is specified and how the model is estimated. This is because, if the differences exist only for the cross-sectional unit but do not change over time, then it is important that the error term is specified in that way. Also, if the differences are time-variant but country-invariant or both time-variant and country-variant, it is important these individual unobserved characteristics are well specified in the error term so the estimation can capture it. Based on this intuition, this study tests the hypothesis that the error term is constant with an F-test. The F-test used for this test is given by Baltagi (2008) as

$$F = \frac{(SSR_{pooled} - SSR_{isdv}) / (N - 1)}{SSR_{isdv} / (NT - N - K)} \sim F_{N-1, T(T-1)-k} \text{ under } H_0 : \mu_1 = \dots = \mu_{N-1} = 0 \quad \dots (4.4)$$

Where SSR denotes the residual sum of squares from either pooled or Least Squares Dummy Variable (LSDV) regression. Table 4.5 shows the result for this study in relation to whether the cross-sectional specific or time-specific fixed effects as specified in equation (4.2) are valid. From the result, the null hypothesis that the unobserved heterogeneity is homogenous across the countries and time is rejected at 5 per cent for both cross-sectional specific or time-specific, indicating they are valid. This implies that equation (4.2) is correctly specified and the error term takes a two-way error component form. In this way, OLS estimators are biased.

Table 4. 5: Test for individual cross-sections and time-specific fixed effects

<i>Test</i>	<i>Test statistic</i>	<i>Prob.</i>	<i>Inference</i>
<i>Joint validity of individual cross-sectional effects</i>			
$H_0: \mu_1 = \mu_2 \dots \mu_{N-1} = 0$	F (23, 570) = 2.16	Prob (0.0015)	Cross-sectional specific effects are valid.
<i>Joint validity of time effect</i>			
$H_0: v_1 = v_2 \dots v_{N-1} = 0$	F (25, 545) = 1.74	Prob (0.0147)	Time-specific fixed effects are valid.

Source: Author's computation using STATA 15

4.4.2 Detecting outliers and influential observations

Outliers and influential observations could lead to biased results when it comes to regression analysis. Therefore, to deal with outliers and influential observations, the study employed the Cook's D outlier and influential observation test. In this test, each observation was examined and compared with the Cook's D statistic to determine whether these outliers have a greater influence on the model to be estimated. From the result of the pooled OLS regression, any observation which has a mean that is greater than 0.006 was dropped and not included. This is because values of Cook's D that are higher than $4/N$ are believed to be large, where N is the number of observations used in the OLS regressions and would have the tendency to bias the regression estimates. For this study, the $4/N$ was calculated to be 0.00641.

4.4.3 Serial correlation and Heteroscedasticity

Following from the econometric literature, most of the traditional panel data estimation models assume homoscedastic variance of the error term and constant serial correlation through the random individual effects. These theoretical assumptions have recently weakened the applications of several panel data models since the error term is usually associated with variance not constant across the observation, and they are also serially correlated across periods. These two problems (serial correlation and heteroskedasticity) are often estimation problems associated with time series and cross-sectional data, respectively. And since panel data comprises of time series and cross-section, it is by extension not free from these problems. According to Wooldridge (2008), the presence of serial correlation coupled with heteroskedasticity in panel estimations can render the estimated parameters inefficient, thereby making inferences from the estimation unreliable.

As a result, the study tests for their presence by adopting the Wooldridge (2008) test for serial correlation in linear panel models and the modified Wald test for heteroskedasticity. The results for serial correlation and heteroskedasticity are presented in Table 4.6 and 4.7, respectively. From the result in Table 4.6, the Probability value of 0.0000 rejects the null hypothesis of no first-order serial correlation, confirming the presence of autocorrelation in the panel model.

Table 4. 6: Wooldridge test for serial correlation in panel data

H_0 :	No first-order autocorrelation
	$F(1, 23) = 26.702$
	$\text{Prob} > F = 0.0000$

Source: Author's computation using STATA 15

Again, the Modified Wald test result for Groupwise heteroskedasticity presented in Table 4.7, reject the null hypothesis of Groupwise homoskedasticity as shown by the probability value of 0.0000, thus confirming the presence of heteroskedasticity in the model.

Table 4. 7: Modified Wald test for GroupWise heteroskedasticity

H_0 :	$\sigma^2(i) = \sigma^2$ for all i
	$\text{Chi2}(24) = 5891.33$
	$\text{Prob} > \text{chi2} = 0.0000$

Source: Author's computation using STATA 15

Having confirmed the presence of the two-panel data devils (heteroskedasticity and serial correlation), this study corrects for the presence of heteroskedasticity and serial correlation by running a robust command as part of our panel estimation techniques. This method gives standard errors of regression coefficients that are robust to heteroskedasticity. The inclusion of the lag of the dependent variable in the model as an explanatory variable also helps to solve the serial correlation problem.

4.4.4 Endogeneity

Endogeneity is said to occur in a multiple regression model when there is a correlation between any of the exogenous variables and the error term. Thus $\text{Cov}(X_j, u_{it}) \neq 0$ for some $j = 1, \dots, k$. The endogeneity problem is caused by omitted relevant variable, measurement error or simultaneity in the regression model.

Omitted variable bias occurs when OLS is applied to a regression model that excludes a key variable due to data unavailability, and the excluded variable has a correlation with one of the explanatory variables and in part, determines the dependent variable.

Measurement error often arises because of reporting and/or coding, but when the error is with the dependent variable, the zero mean assumption is not violated, thus, no endogeneity. But when the error occurs with the independent variable, endogeneity arises. Also, simultaneity arises when one or more of the explanatory variables is/are jointly determined with the dependent variable typically through an equilibrium mechanism. That is, simultaneity is said to occur when there is a reciprocal causal relationship between the endogenous and exogenous variables in the model.

This study employs the Durbin-Wu-Hausman chi-square test to check the validity of the null hypothesis that the regressors are exogenous. Rejection of the null hypothesis indicates the presence of endogeneity which would render OLS estimates inconsistent. The results are shown in Table 4.8. From the result, the null hypothesis that the regressors are exogenous is rejected by both the Durbin-Wu-Hausman test chi-square test for endogeneity and the Wu-Hausman F-test. This show by the significant nature of the p-values for each of the test signifying that the regressors and the error terms are correlated.

Table 4. 8: Tests of endogeneity

H ₀	:	variables are exogenous
Wu-Hausman F test	:	51.24355 F(1,569) P-value = 0.00000
Durbin-Wu-Hausman chi-sq test	:	47.58821 Chi-sq(1) P-value = 0.00000

Source: Author's computation using STATA 15

4.4.5 Cross-section dependence

Confirming the cross-section dependence is currently a pre-requisite for almost all panel analysis. This is due to the realization that events such as the oil price shocks, recessions, or the recent global financial and economic crisis can potentially affect all countries inducing a substantial cross-sectional interdependency across the cross-sectional unit, their regressors and the error terms (Eberhardt—Teal, 2011; Pesaran, 2006).

Unfortunately, the traditional panel data estimation methods such as the Fixed Effects, Random Effects, Mean Group estimations, Pooled Mean Group, and GMM estimators erroneously ignored these possible inter-dependences among the cross-sectional unit and their regressors. According to Pesaran (2007), erroneously neglecting the cross-sectional dependence among the regressors and across countries when it is present in the data, can lead to misleading inferences.

In this study, the study checks the cross-sectional dependence by employing the Pesaran (2004) *CD* (Cross-section Dependence) test. This test is computed by taking a variable series for particular country *i* (or residuals from an estimating equation for a particular country *i*) and correlating it with the variable series (or residual) for the other $N-1$ country. Doing that for all countries in the sample, we end up with $N(N-1)$ correlation coefficients from which we can obtain the average correlation and the average absolute correlation coefficients. The test is therefore based on simple average of all pair-wise correlation coefficients of the OLS residuals from the individual regressions in the panels.

Alternatively, these $N(N-1)$ correlation coefficients can be used to obtain a more formal test statistic (for example, the Pesaran *CD* statistic) which is given as

$$CD = \sqrt{\frac{2T}{N(N-1)}} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^N P_{ij} \right) \dots\dots\dots (4.5)$$

Where $N = 1, \dots, N$ cross-sectional unit and $T = 1, \dots, T$ panel's time dimension. P_{ij} is the average pairwise correlation of the variable series (or residuals), and under of null of cross-section independence, CD is distributed $N(0,1)$ for sufficiently large T and $N \rightarrow \infty$. At the 5% significance level, the null hypothesis of cross-sectionally independent errors is rejected if $|CD| \geq 1.96$. De Hoyos – Sarafidis (2006) explain, theoretically and empirically, the most commonly used test of cross-sectional dependence is the CD-test.

As a robustness check, the Friedman (1937) FR test and Frees (1995) FREE test statistics, which are mentioned in De Hoyos –Sarafidis (2006), are also used. The Friedman's (1937) FR test statistic is a nonparametric test, and it is based on the Spearman's correlation where coefficient can be thought of as the normal product-moment correlation coefficient that includes the proportion of variability, except that Spearman's rank correlation coefficient is computed from ranks. The test statistic is given as

$$FR_{test} = \frac{2}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^N r_{ij} \dots\dots\dots(4.6)$$

Where

$$r_{ij} = r_{ji} = \frac{\sum_{t=1}^T \{r_{i,j} - (T+1/2)\} \{r_{j,i} - (T+1/2)\}}{\sum_{t=1}^T \{r_{i,j} - (T+1/2)\}^2} \dots\dots\dots(4.7)$$

According to Hoyos – Sarafidis (2006), large values of FR_{test} implies the presence of nonzero cross-sectional correlations.

The Frees (1995) FREE test statistic is also based on the sum of the squared rank correlation coefficients. However, in the cases where the correlations coefficient alternates in sign, and there is a possibility of cancelling each other out causing the test unable to detect cross-sectional dependence, the Frees’ test is advantageous over the other two tests.

$$FREE_{test} = N\{FR_{test}^2 - (T-1)^{-1}\} \xrightarrow{d} Q = a(T)\{x_{1,T-1}^2 - (T-1)\} + b(T)\{x_{2,T(T-3)/2}^2 - T(T-3)/2\} \dots\dots\dots(4.8)$$

Where $FR_{test} = \frac{2}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^N r_{ij}$ $x_{1,T-1}^2$ and $x_{2,T(T-3)/2}^2$ are independent X^2 random variables with $T-1$ and $T(T-3)/2$ degrees of freedom. Table 4.9 reports the findings for this chapter.

From the results in Table 4.9, the tests for cross-sectional dependence of the error terms using the Pesaran (2004) CD test in both the individual variables and the group strongly rejects the null hypothesis of cross-sectional independence confirming that the data suffer from cross-sectional dependence.

As expected, the coefficient and the probabilities obtained from both Frees’ and Friedman’s tests reject the null of cross-sectional independence among the variables. For instance, in the case of Friedman's test of cross-sectional independence, the probability of 0.0210 rejects the null hypothesis of no cross-sectional dependence. Also, regarding the Free’s test, since $T \leq 30$, the test statistic figure of 2.364 obtained from the Q distribution exceed all the critical values obtained either at $\alpha = 0.01$ (0.7678), $\alpha =$

0.05(0.4923) or $\alpha = 0.1$ (0.3583) confirming the rejection of the null hypothesis of no cross-sectional dependence.

Table 4. 9: Serial correlation, heteroskedasticity and cross-sectional dependence

Variable	Pesaran CD test-value	p-value	Inference
<i>KF</i>	5.23	0.0000	
<i>EXT</i>	28.75	0.0000	
<i>AGDPgr</i>	16.89	0.0000	Cross-sectional dependence is valid.
<i>POLITY</i>	38.57	0.0000	
<i>FD</i>	26.86	0.0000	
Group			
Cross-sectional dependence			
Pesaran CD (2004) test for cross-sectional dependence	4.275	0.0000	Cross-sectional dependence is valid.
Friedman's test of cross- sectional independence	28.21	0.0210	Cross-sectional dependence is valid.
Frees' test of cross-sectional independence	2.364	alpha = 0.10: 0.3583 alpha = 0.05: 0.4923 alpha = 0.01: 0.7678	Cross-sectional dependence is valid.

Source: Computed using STATA 15

4.4.6 Unit root test

Although the unit root test is usually regarded as a time series problem, conducting unit root tests in panel datasets could also be appropriate in order to ensure that the variables under study are stationary. Gujarati (2003 pp. 713) stated that “ a stochastic process is said to be stationary if its Mean, and Variance are constant over time and the value of

Covariance between two time periods depends only on the distance between the two time periods and not on the actual time at which the Covariance is reported.” In order to ensure that variables are stationary and to prevent the occurrence of spurious regression, unit root test is conducted. The unit root tests normally employ in panel regression analysis includes Levin and Lin (LL) Test (1992), Im, Pesaran and Shin (IPS) Test (2003), Breitung’s Test (2000), Levin-Lin-Chu Test (2002), Maddala – Wu (1999) and the Fisher-Type Chi-square panel unit root tests. However, since cross-sectional dependence is detected in this study, these unit-root estimators cannot be used since they erroneously overlooked the issue of cross-sectional dependence. This study, therefore, adopts the cross-sectional augmented Pesaran – Shin – Smith (CIPS) test, by Pesaran (2007) to check the stationarity properties of the data.

The CIP test tackles the problem of cross-sectional dependence by augmenting the ADF regressions with the cross-section averages of lagged levels and first differences of the individual series. These cross-section averages are then presented as a proxy of the assumed single unobserved common factor. Averagely, the CIPs test just takes the cross-sectionally Augmented Dickey-Fuller (ADF) regression and estimate cross-section units using the panel OLS: The result is presented in Table 4.10.

Table 4.10 provides the results from conducting the ‘CIPS’ test. The results are reported with the Z_{tbar} statistic (and its corresponding p -value). The results confirm that the null hypothesis of no stationarity was rejected at levels for all the variables indicating that all the variables are I (0).

Table 4. 10: Unit Root Test

Variables	CIPS (intercepts only)	
	<i>Ztbar</i>	Prob.
<i>KF</i>	-3.521	0.000
<i>EXT</i>	-2.486	0.000
<i>AGDPgr</i>	-4.637	0.000
<i>POLITY</i>	-1.853	0.035
<i>FD</i>	-1.723	0.042

Source: Author’s computation using STATA 15

4.5 Empirical results and discussion

4.5.1 Full sample SSA study

Having confirmed the presence of cross-sectional dependence, serial correlation, heteroskedasticity, endogeneity among the regressors, and also established that the series are stationary at levels, this study proceed to estimate the relationship between external debt and capital flight using a heterogeneous dynamic model that preserves homoscedasticity, prevents serial correlation, corrects for cross-sectional dependence and also preserves the orthogonality between the transformed variables and their lagged regressors (Arellano et al. 1995).

In this chapter, three different approaches are adopted to ensure the robustness of the results. The initial technique used is the pooled-OLS technique. This estimation technique is often used as a starting point in applied analyses despite its potential biases resulting from the presence of individual heterogeneity, endogeneity and cross-sectional dependence. This study used this technique as a comparison to the other models that correct the aforementioned evils associated with the data.

The estimation models in addition to the pooled OLS adopted to estimate equation (4.2) that is plagued with cross-sectional dependence, serial correlation, heteroskedasticity, endogeneity among the regressors are the Parks and Kmenta Feasible Generalized Least Squares (FGLS) estimation technique and the two-step system GMM estimator. As shown in section 4.3.2, these two models are robust estimation models and can produce a reliable estimate in the presence of cross-sectional dependence and endogeneity.

For the two-step system GMM model, following Arellano — Bond (1991), the process starts with taking the first difference of equation (4.2), which is given in general terms as

$$KF_{it} - KF_{it-1} = \beta_1(KF_{it-1} - KF_{it-2}) + \beta_2(EXT_{it} - EXT_{it-2}) + \delta(Z_{it} - Z_{it-1}) + (\varepsilon_{it} - \varepsilon_{it-1}) \dots (4.9)$$

This equation (4.9) thus eliminates the unobserved country–fixed effects by taking the first difference of the equation (4.2) and in the process, deal with the inconsistency and biases. However, to address the possible simultaneity bias of the explanatory variables and the correlation between $KF_{it} - KF_{it-1}$ and $(\varepsilon_{it} - \varepsilon_{it-1})$, the study uses the lagged levels of the regressors as instruments in line with Arellano—Bond (1991). This is also known

to correct moderate levels of cross-sectional dependence (De Hoyos et al., 2006). The cross-sectional specific effects are then eliminated using the forward orthogonal deviations thereby making it possible to use one period lags of the regressors as valid instruments since they are not correlated with the transformed error term (Coulibaly, 2009).

In order to confirm that the two-step system GMM produces a valid estimate of the model, some additional diagnostic tests are conducted. These tests include autocorrelation test and test for the validity of the over-identifying condition. Results from the two-step system GMM estimation is deemed to be robust if there is no evidence of higher-order autocorrelation within the error terms. Therefore, the study adopts the Arellano-Bond test for second-order autocorrelation in first differenced errors to ascertain whether the idiosyncratic error terms are serially correlated. Moreover, it is required that the two-step system GMM results prove the validity of instruments used in the estimation. The validity of the instruments is premised on the fact that there must be a correlation between the endogenous explanatory variable and the instrument, and the instrument must be uncorrelated with the error term. Thus, the instrument must satisfy the condition of relevance and exogeneity. Hansen (1982) proffered a process for testing the validity of the instrument; however, the test becomes weaker if the number of instruments increases.

Table 4.11 reports the result using all the three estimators and some post-estimation test to ascertain the consistency of the estimated results. In the case of the pooled OLS and the FGLS, the adjusted R^2 and the Wald chi-squared is computed to examine the joint significance of the explanatory variables in the study. For the two-step system GMM, the Arellano-Bond second-order (AR (2)) test the null hypothesis of no period two serial correlation in the residuals. Additionally, the Hansen test for over-identifying restrictions indicates that the over-identifying restrictions in the model are valid, and as such, the model is not weakened by too many instruments.

Also, from Table 4.11, it can be observed that the results of the FGLS estimation, which includes a correction for the cross-sectional dependence are significantly not different from the two-step system GMM results. Though all the three estimators had the same expected signs for the lagged of capital flight, external debt and annual GDP growth rate, the coefficient values produce by the FGLS and the two-step system GMM seems to be smaller than the pooled OLS result. This means that, in the case of this chapter, after the

correction for serial correlation, cross-sectional dependence and endogeneity are done, the result seems smaller.

The outcome on the relationship between capital flight and external debt and other explanatory variables considered in the study namely: annual GDP growth rate, political stability and financial development measured by domestic credit to the private sector are discussed below.

Table 4. 11: Estimated relationship between capital flight and external debt

	Pooled OLS	FGLS	Two-step system GMM
<i>LaggedKF</i>	0.422 *** (0.039)	0.369 *** (0.039)	0.339 *** (0.019)
<i>EXT</i>	0.076 ** (0.030)	0.044 ** (0.022)	0.038 ** (0.018)
<i>AGDPgr</i>	0.276 ** (0.117)	-0.035 * (0.016)	-0.179 *** (0.049)
<i>FD</i>	-0.232 (0.079)	0.043 (0.069)	0.156 (0.097)
<i>POLITY</i>	-0.172 (0.211)	-0.124 * (0.018)	-0.022 * (0.011)
<i>Adj R-squared</i>	0.423		
<i>Wald test</i>		295.21 ***	
<i>AR (2)</i>			0.806
<i>Hansen test for over-identification</i>			1
<i>Diff. in Hansen test for exogeneity of instrument set</i>			1

Note: (*), (**), (***) denotes 10%, 5% and 1% levels of significance respectively. Figures in bracket () are standard errors.

Using the FGLS and the two-step system GMM results, the coefficient of lagged capital flight is positive and statistically significant at the 1 per cent level. Although the coefficient has been corrected downwards as compared to the pooled OLS estimation, it still denotes strong persistence behaviour of capital flight in SSA. This confirms earlier findings in the SSA that there is a positive relationship between past values of capital

flight and its current values. As displayed in Table 4.11, the coefficient of the lagged capital flight indicates that holding all the other regressors unchanged, about 0.422, 0.369 and 0.339 of its current values are motivated by the success of the previous year using the Pooled OLS, FGLS and the two-step system GMM respectively. The result confirms the study by Ndikumana–Boyce (2008); Ndiaye (2014); Geda – Yimer, (2015); Nyoni (2000) and other empirical studies cited in the empirical literature that capital flight has a tendency to persist over time. The possible reason may be due to the habit formation emphasized by the above authors.

The coefficient of the external debt stock as a percentage of GDP is positive and statistically significant in all the estimators, indicating that increases in external borrowing lead to increases in capital flight. This positive relationship between capital flight and external debt is expected and is also consistent with the literature. The literature indicates that external borrowing not only provides the needed funds for capital flight, it also provides the motivation to do so. The economic effect of external debt on capital flight in all the estimators clearly confirms this hypothesis. The estimated coefficient using the two-step system GMM and the FGLS implies that up to about 3.8 to 4.4 cents of each dollar borrowed abroad leaves the study countries in the form of capital flight. Ndikumana – Boyce (2011) noted two possible reasons for this to occur. First, in a developing country such as the case in this study, increases in external borrowing may inspire private investors optimism that future economic performance will be slower since the government will have reduced its expenditure to be able to service her debt, also signifying a lower return to their domestic investment. Second, private agents may expect that future debt service obligations will be accompanied by heavy taxes, reducing expected after-tax returns to domestic investment, again leading to higher capital flight. This result also concurs with the findings of (Ndikumana et al. (2014), Ndiaye (2011) and Ndikumana – Boyce (2011) for SSA.

As anticipated, the annual GDP growth rate, which is used to capture the impact of the macroeconomic environment, is appropriately signed. That is, the coefficient of the annual GDP growth rate is significantly negative at one per cent significance level using the two-step system GMM. Thus, the results indicate that, if the annual real gross domestic product increases by 1 per cent, capital flight will significantly fall by 0.179 per cent. This shows that an improvement in the production capacities of countries in SSA

signal the presence of attractive investment opportunities which inevitably encourage investors to undertake more domestic investments, thereby reducing capital flight. The result also confirms the hypothesis that capital flight is higher when the growth rate of the economy is low since low growth is an indication of low profitability of domestic investment and, therefore, capital will thus tend to flee the country. The negative and statistically significant effect of annual GDP growth and capital flight is consistent with the results by Lawanson (2007) and Alam and Quazi (2003) in their study for Nigeria and Bangladesh, respectively. Ndikumana – Boyce (2011) study also found a statistically significant negative relationship annual GDP growth rate and capital flight for 39 SSA countries. The results, however, contradict the findings by Ng'eno (2000). The findings by Ng'eno (2000) show a positive and statistically significant effect of capital flight on the annual GDP growth rate.

The result in Table 4.11 also shows that political stability is highly significant and has a negative relationship with capital flight, confirming the notion that bad institutional and political quality plays an important role in pushing away valuable capital from the domestic economy. The results specifically show that, if political governance improves by 1 per cent in the cases of political freedom, voice and accountability, and government effectiveness, there will be 0.022 to 0.124 per cent reduction in capital flight and this is statistically significant at a 10 per cent significance level. This result is generally good for the SSA on the need to keep a politically stable environment which is friendly for domestic investment. On the contrary, the result by Ali —Walters (2011), in their study on the “*Causes of Capital Flight from SSA*”, found political stability to be insignificant related to capital flight. The Arellano —Bond (1991) test for second-order serial correlation fails to reject the null of no autocorrelation. The Hansen (1982) test for over-identification fails to reject the null that the over-identification restrictions are valid while the Difference in Hansen test also fails to reject the null that the instruments used for the estimators are strictly exogenous. Hence the results of the two-step system GMM estimation with forward orthogonal deviations meet all post-estimation diagnostic requirements. All coefficient estimates compare favourably with the FGLS coefficient estimates. This shows that they are likely good estimates of the parameters under study.

4.5.2 Regional Estimates

In order to ensure the robustness of the test results, the data set is split into the four various sub-regions with the SSA area, and estimation is carried out for each of the sub-region. These regions are West Africa (WA), East Africa, Central Africa (CA) and Southern Africa (SA), and the results are reported in Table 4.12. The estimation is done using the two-step system GMM, and Table A in the Appendix also provides the names of the individual countries in the sub-regions.

Consistent with the full sample study, the coefficient measuring the effect of the lagged capital flight on current values of capital flight as reported in Table 4.12 is positive and statistically significant at 1 per cent significance level across all the region. This finding confirms the tendency for capital flight to persist over time due to the habit formation hypothesis. This is again consistent past studies such as Ndikumana—Boyce (2003).

Again, as shown in Table 4.12, the coefficient of the external debt in the two-step system GMM is positive and is statistically significant at 5 per cent level of significance for Southern Africa, Central Africa and West Africa. This is consistent with the result of the full sample study. From the results, a 1 percentage increase in external debt will induce capital flight by approximately 0.174 per cent, 0.382 per cent and 0.173 per cent respectively in the Southern Africa, Central Africa and West Africa region. This result indicates the crucial role that total external debt plays in the fight against capital flight in the SSA region as its coefficient is positive in the region model just as in the full sample model. One reason why the coefficient of capital flight may not be significant in East Africa is probably due to the amount of capital flight in East Africa in terms of absolute value and as a percentage of GDP since is the smallest as compared with all the other sub-region as shown in Table 3.3 and Figure 3.3.

Similarly, consistent with the full sample estimate, the coefficient of annual GDP growth rate maintained its negative sign and is statistically significant across Southern Africa, West Africa and East Africa. The negative effect of the annual GDP growth rate suggests the importance of sound macroeconomic management since weak macroeconomic policies or inefficient economic sectors seems to discourage domestic investors This result supports the empirical evidence provided by Boyce (1992) for SSA, Chipalkatti — Rishi (2001) for India, Quazi (2004) for Bangladesh and Beji (2007) for Indonesia,

Malaysia and Thailand. the coefficient of political stability is negative in all the sub-regions but statistically significant in Central and West Africa.

Table 4. 12: Regional estimates of capital flight and external debt

	SA	CA	WA	EA
	0.144	0.327	0.533	0.265
<i>LaggedKF</i>	(0.074) *	(0.122) ***	(0.082) ***	(0.090) ***
	0.174	0.382	0.182	0.173
<i>EXT</i>	(0.039) ***	(0.160) **	(0.117) **	(0.084)
	-0.070	0.325	-1.494	-0.104
<i>AGDP</i>	(0.055) **	(0.481)	(0.311) ***	(0.127) *
	-0.387	-1.304	-0.875	-0.570
<i>POLITY</i>	(0.326)	(0.678) *	(0.505) *	(0.361)
	0.089	0.344	0.196	1.508
<i>FD</i>	(0.086)	(0.509)	0.381	(0.570) ***
<i>AR (2)</i>	0.44	0.384	0.416	0.914
<i>Hansen test for over-identification</i>	1	0.98	1	1
<i>Diff. in Hansen test for exogeneity of instrument set</i>	1	0.98	1	1

Note: ***, **, and * denote significance at 1%, 5% and 10% respectively. Figures in bracket () are standard errors

4.5.3 Variance Decomposition

In order to examine the relative importance of each of the explanatory variable in explaining the variations in the capital flight, this chapter conducted the variance decomposition analysis. The variance decomposition of the forecast error provides complementary information for a better understanding of how the percentage change in a given variable is explained by the variation of other variables in the model. It tells the proportion of the movements in a particular variable due to its own shock, and the fraction explained by innovations in other variables (Enders, 2004). As a baseline estimation in E-views, this chapter applies the Cholesky decomposition method to decompose the relative variance shares after the residuals in the equations has been orthogonalized. The result is shown in Table 4.13.

The result in Table 4.13 shows that the largest source of variations in capital flight's forecast error variance is its own shocks. Its contribution ranges from 84 to 100 per cent in the first three periods. The second most significant variable that contributes to innovations in the forecast error variance of capital flight is the total debt stock as a percentage of GDP. In the fifth period, the variance in external debt stock influenced the forecast error variance of capital flight by 16 per cent. Domestic credit to the private sector as a percentage of GDP, annual GDP growth and political stability are other important sources of the forecast error variance. In the fifth year, these variables contributed about 0.161 per cent, 0.043 per cent and 0.065 per cent respectively.

In explaining the forecast error variance of external debt stock, it can be observed that the innovations of capital flight are next to its own shocks contributing about 12.18 per cent and 13.668 per cent in the fourth and fifth periods respectively. The other important variable for the forecast error variance of external debt stock seems to be the annual GDP growth rate. The source that contributed least to the forecast error variance of external debt is the innovations of the financial development measured by domestic credit to the private sector as a percentage of GDP throughout the periods. While looking at the decomposition of the forecast error variance of annual GDP growth rate, the study observed that the innovations related to external debt stock and capital flight contributed largely besides its own shocks. The least forecast error variance of the annual GDP growth rate seemed to be the innovations from financial development.

Table 4. 13: Results of variance decomposition

<i>Cholesky Ordering: KF EXT AGDPgr POLITY FD</i>						
Variance Decomposition of KF:						
<i>Period</i>	<i>S.E.</i>	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
1	13.937	100.000	0.000	0.000	0.000	0.000
2	15.816	98.313	1.282	0.047	0.051	0.308
3	16.485	93.984	5.001	0.044	0.066	0.904
4	16.744	87.855	11.037	0.043	0.065	1.000
5	16.850	82.795	16.042	0.043	0.065	1.056
Variance Decomposition of EX:						
<i>Period</i>	<i>S.E.</i>	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
1	8.894	6.324	93.676	0.000	0.000	0.000
2	12.918	8.300	91.586	0.008	0.091	0.014
3	15.760	10.405	89.339	0.153	0.062	0.041
4	17.899	12.188	87.350	0.279	0.094	0.088
5	19.586	13.668	85.569	0.368	0.235	0.161
Variance Decomposition of AGDPgr:						
<i>Period</i>	<i>S.E.</i>	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
1	5.6121	0.5038	15.3978	84.0984	0.0000	0.0000
2	5.7384	0.4979	15.1953	84.2119	0.0348	0.0600
3	5.8303	0.9068	14.8763	83.9203	0.1476	0.1490
4	5.8532	1.1240	14.7674	83.5288	0.3545	0.2253
5	5.8695	1.2541	14.7165	83.1227	0.5969	0.3097
Variance Decomposition of POLITY:						
<i>Period</i>	<i>S.E.</i>	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
1	1.5682	0.0516	1.0747	0.2439	98.6297	0.0000
2	2.2295	0.1477	0.5589	0.1222	99.1324	0.0388
3	2.6678	0.1806	0.4207	0.1740	99.1918	0.0329
4	2.9911	0.2326	0.3873	0.2420	99.1081	0.0300
5	3.2410	0.3035	0.3965	0.2984	98.9480	0.0536
Variance Decomposition of FD:						
<i>Period</i>	<i>S.E.</i>	<i>KF</i>	<i>EXT</i>	<i>AGDPgr</i>	<i>POLITY</i>	<i>FD</i>
1	3.8102	0.0318	0.0229	0.1834	0.0006	99.7613
2	5.4293	0.6423	0.3317	0.3281	0.0121	98.6858
3	6.5765	0.5410	0.7556	0.6973	0.0083	97.9978
4	7.4934	0.4221	1.0932	1.0498	0.0281	97.4069
5	8.2585	0.3529	1.3713	1.3323	0.1021	96.8415

Source: Author's computation using E-views 10

4.5.4 Granger Causality Test

The general idea of causality is that if a variable A is said to Granger-causes variable B, then it presupposes that variable B can be predicted very well not using only its past values but rather the past value of both A and B. This means that if a variable is said to homogeneously granger cause the other, then, it means that, the variable helps to make a more precise and better prediction of the other variable than using the past of the latter as a predictor alone. In testing the causality for this study, we use the Dumitrescu-Hurlin panel causality tests. This causality test allows all the coefficients to be heterogeneous across the cross-sectional unit. The Dumitrescu-Hurlin panel causality tests report two different statistics. The first statistics is the Wbar-statistic, which takes an average of the test statistics, while the Zbar-statistic shows the standard (asymptotic) normal distribution. The result is presented in Table 4.14.

Table 4. 14: Pairwise Dumitrescu Hurlin Panel Causality Tests

Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.
<i>EXT does not homogeneously cause KF</i>	3.6700	2.7939	0.0052
<i>KF does not homogeneously cause EXT</i>	3.8315	3.1083	0.0019
<i>AGDPgr does not homogeneously cause KF</i>	2.8819	-1.2511	0.2109
<i>KF does not homogeneously cause AGDPgr</i>	1.7063	-2.0325	0.0019
<i>POLITY does not homogeneously cause KF</i>	-2.8077	-1.1069	0.2683
<i>KF does not homogeneously cause POLITY</i>	1.5542	-1.3280	0.1842
<i>FD does not homogeneously cause KF</i>	2.5511	0.6085	0.5428
<i>KF does not homogeneously cause FD</i>	2.2399	0.0041	0.9968

Source: Computed using STATA 15

The Pairwise Dumitrescu Hurlin panel causality tests result in Table 4.14 suggest that the null hypothesis that the total stock of external debt does not homogeneously causes capital flight is rejected, implying external debt stock indeed cause capital flight. Also, the null hypothesis that capital flight does not homogeneously cause external debt stock is likewise rejected, implying capital flight in the study countries causes external debt stock. This means that there exists a bi-directional causality running from the total stock of external debt and capital flight. This means that, in addition to the *debt-fueled capital*

flight hypothesis, the result supports the *flight-fueled external borrowing hypothesis* for the SSA region. This confirms the conclusions reached by Fofack (2009), Ampah—Gabor— Kotosz (2018); Ndikumana— Boyce (2014), Ndiaye, (2011), Ndikumana— Boyce (2011), Ajilore (2005) and Ndikumana— Boyce (2011). The result from Fofack study indicates that for ten countries in SSA, there is bi-directional causality between external debt stock and capital flight. The results obtained in Table 4.14 can be explained in two possible ways. First, in a developing country context such as the case in SSA, if governments keep borrowing, domestic investors may assume that future economic performance will be much lower, indicating lower overall returns to investment. They can only respond to this by lowering their investment in the domestic economy and investing abroad perpetuating more capital flight. Secondly, domestic investors may expect that high future debt service obligations associated with high debt stock will force the government to raise more taxes to meet debt service commitments. These higher future taxes are expected to reduce returns to capital and hence may reduce incentives for investing in the domestic economy, leading to higher capital flight. The results in Table 4.14 again showed a uni-directional causality running from capital flight to the annual GDP growth rate.

4.6 Chapter summary

This chapter examined the relationship between capital flight and external debt in HIPC countries in SSA employing the two-step system GMM and FGLS estimator for the period 1990 to 2015. The empirical evidence presented in this chapter suggests that there is a positive relationship between external debt and capital flight in SSA signifying that increases in external debt lead to increase in capital flight and that if the external debt remains unchecked, it will continue to cause a substantial amount of capital flight. At the regional level, external debt remains positive and have statistically significant effects on capital flight for all the regions except East Africa. The result implies that creditors knowingly or unknowingly financed the export of private capital rather than investment in countries in SSA. Such lending is often motivated by political and strategic considerations. Again, it could also imply a lack of diligence on the part of creditors before the loans were approved. In terms of causality, the result confirms that data for SSA supports the debt-driven capital flight hypothesis, debt-fueled capital flight and flight-fueled external borrowing hypothesis.

CHAPTER FIVE

WELFARE IMPLICATION OF EXTERNAL DEBT AND CAPITAL FLIGHT

5.0 Introduction

Countries in SSA have experienced a progressive growth rate of over five per cent per year, on average, since their transition from the Heavily Indebted Poor Countries Initiative in 1996 and the Multilateral Debt Relief Initiative in 2006. Despite this growth, poverty and inequality in the region are still very high. Employing the Driscoll and Kraay standard panel estimation method and dataset from 1990 to 2015, this paper sets out to examine the implications of external debt and capital flight on the general welfare of the people. The study begins with background information in Section 5.1. Section 5.2 reviews the literature on the implications of external debt and capital flight on welfare and development, while section 5.3 focuses on stylized facts of SSA development framework. In Section 5.4, the empirical models, methodology and issues related to data are discussed. The empirical results are presented and discussed in Section 5.5. Section 5.6, the last section, summaries the study and provided some policy implications of the study.

5.1 Background of the study

For several decades, SSA economies continue to struggle with poverty, hunger, epidemics, child and infant mortality. Access to proper sanitation, healthcare, education, energy services and potable water still remains inadequate. Statistics from the World Bank Poverty & Equity Data portal (2018) shows that the region remains the only place in the world where the total number of people living under \$3.20 a day has increased persistently over the past two decades – from 383.2 million people in 1990 to 667 million people in 2015. Ironically, the economic growth rate of many countries in the region within the same period has been very remarkable, increasing at an average growth rate of about 5 per cent. Even during the economic and financial crisis in the year 2007 and 2008, the region grew by 6.2 per cent on average, a growth rate higher than that of Latin America and the Caribbean (4.87 per cent) and Europe and Central Asia (2.35 per cent). But this robust and sustained growth rate is yet to provide households and vulnerable

groups in the region fair opportunity to improve their living standards and reduce the inequality in income and access to social services. In the United Nations Office of High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLLS) 2012 report, about thirty-three (33) out of the forty-six (46) countries in the region were classified as the least (UN-OHRLLS 2012). At the same time, out of the thirty-eight which were placed last in the 2017 United Nation's Human Development Index (HDI), only six countries were not from the region.

What is more worrying is the simultaneous occurrence of massive external borrowing and capital flight occurring in the region. From a level of US\$69.15 billion in 1970, total external debt stocks of SSA excluding high-income countries rose up to US\$422.60 billion in 2015 amidst all the debt cancellation program under the HIPC Initiative in 1996 and the MDRI in 2006 (World Bank 2017). At the same time, a study by Ndikumana – Boyce (2018) also shows that within the same period, SSA countries alone have lost a total of approximately US\$1.4 trillion with compound interest reaching US\$1.8 trillion representing about 65 per cent of their combined economic size as measured by their GDP. These surges have received substantial attention in academia and the policy circles, especially based on the realization that the burden of these capital flows may hinder the region's ability to mobilize enough resources to finance the SDGs. So why is capital from the region fleeing out when it is most needed to finance its development, and why are countries in the region still borrowing when it is associated with unproductive investment remains a mystery that still attracts research interest.

More recently, the simultaneous occurrence of external debt and capital flight in the SSA region have taken centre stage in the African development studies (Ampah et al. 2018; Ndikumana et al. 2015). However, the implications of these revolving door of external debt and capital flight on poverty reduction, and inequality have arguably been neglected at the empirical level. It is against this background that this chapter examines the implication of external debt and capital flight simultaneously on welfare. The uniqueness of this paper is threefold. First, the study uses the Driscoll – Kraay standard errors, which is a more robust panel estimation technique that safeguards estimation against cross-sectional dependency, serial correlation, and cross-sectional heteroskedasticity in the dataset. Secondly, multidimensional measurement of welfare that employs both monetary and non-monetary measure is used in this study, and finally, in estimating the impact on

welfare, this study allows for linear and non-linear effects of external debts to be captured. The purpose is to contribute to the literature on how external debt affects welfare functions and consequently, economic development in the SSA region.

5.2 Literature review

Since 1776, when Adam Smith published his *Wealth of Nations* up to the post-colonial period in the 1960s, and the early 1970s, both economists and policymakers have used and treated economic growth as a proxy for welfare, however, both welfare and growth as a subject of scholarly work are not entirely the same. The diversity between them became clearer when several third world countries in Africa, Asia, and Latin America in the 1970s reached their growth targets and experienced relatively high rates of growth of per capita income but widespread poverty, inequality, and mass unemployment within these regions remained unperturbed (Todaro – Smith, 2015). Consequently, redistributing the gains of real per capita GDP to improve the quality of lives of people in terms of eliminating poverty and reducing the disparities in access to health, education, housing, security, and employment have become the central theme of everyday discussion of practical welfare.

In terms of definition, Felipe (2012) linked the definition of welfare to inclusive growth and argued that welfare is the growth that allows all members of society to participate in and contribute to the growth process on an equal basis regardless of their individual circumstances. Implicitly, this definition stresses that welfare should benefit all members of society, including the poor. Similarly, the World Bank (2012) also defines welfare as the growth rate that provides opportunities for society to become productive and creative. The Organization for Economic Cooperation and Development (OECD, 2014) also describes it to be growth that brings improvements not only in income but also in living standards and people's quality of life. Based on these definitions, this study treats welfare as growth that translates to the reduction of poverty and inequality.

Unfortunately, theoretical predictions explaining the impact of the simultaneous occurrence of external debt and capital flight together on welfare have not been an attractive area for researchers. However, the implications of external borrowing or capital flight on poverty reduction or welfare have invited some theoretical propositions in the

economics literature. In this section, we review some of these theoretical prepositions and possibly theorize how external debt and capital flight together affect economic welfare.

5.2.1 Capital flight and Welfare

Generally, four main theoretical channels have been identified in the literature. They include the investment diversion thesis, the tax-depressing thesis, the governance depressing thesis and the austerity thesis.

- I. **The investment diversion thesis** is based on the crucial role of domestic investment. It postulates that capital flight have a negative impact on welfare because when capital flees, the amount of money that could have been spent on vital sectors such as agriculture, industry, education, security, healthcare and infrastructure are potentially lost as an investment. This would have earned foreign exchange and generate more revenue through the multiplier effect if the resources had been invested. By diverting capital, this thesis indicates that capital flight keeps an economy below its domestic investment potential, which inevitably retards its growth and welfare (Ajayi, 2015). For instance, in SSA, an empirical study by Ndikumana (2014a) indicates that illicit outflow of capital has a statistically significant investment-inhibiting effect and later on economic growth for thirty-nine sampled countries. The study indicated that the affected countries would have generated an additional average growth rate of about 2.4 per cent from 1970 to 2010 or 3.0 per cent growth rate from 2000 to 2010 if the illicit capital outflows were invested. In oil-exporting countries in the region, the study concluded that additional growth would have been 3.9 per cent on average if the capital flight were invested. A similar study was also conducted by Nkurunziza (2015) using 35 Africa countries but this time on poverty reduction, and the result shows that investing flight capital could have increased the annual rate of poverty reduction by a range between 1.9 and 2.5 percentage points over the period 1990 to 2010.
- II. **The tax-depressing thesis** also hypothesizes that capital flight exerts a negative impact on welfare since it reduces the potential revenue available for any economy

as an asset held overseas cannot be influenced by domestic tax and monetary authorities and hence cannot, be taxed. A study by African Development Bank (AfDB) (2012) using the Incremental Capital-Output Ratio (ICOR) method and datasets from 2000 to 2008 indicates that countries in SSA could have improved their income per capita by an additional 3 to 5 per cent if they had invested the illicit outflow on profitable ventures. Also, headcount poverty would have reduced by 4 to 6 additional percentage points if these capital losses have been invested.

III. **The governance-depressing thesis** also indicates that illicit capital outflows affect welfare negatively because it complicates the effort of government in stabilizing the domestic macroeconomy and providing good governance, quality institutions and service to the ordinary people that will improve their welfare. Examining the implications of capital flight, Fofack – Ndikumana (2015) and Ajayi (1997) indicated that when valuable resources leak out of the domestic economy, it results in a shortage of liquidity that could have been used for building investment in the domestic economy, and this may lead to upward pressure on the domestic interest rate to rise. Also, the income that is created abroad by the flown capital cannot be taxed. As a result, government fiscal policy in the form of taxation is reduced (Ajayi 1997). In the same way, when domestic capital leaks out of the country, the bank credit channel of monetary policy is destabilized, making monetary policy objectives challenging to realize. Also, the continuous outflow depletes the foreign reserve so governments would have to spend resources to have the exchange rate stabilize. This means that continuous outflow of capital through capital flight can obstruct government fiscal, monetary and exchange rate policy from achieving its targets.

IV. Finally, the **austerity effect** of capital flight indicates that capital flight tends to have more severity effect on the poor as compared with the rich. This proposition rests on the notion that not every citizen has sufficient private capital or can misappropriate and syphoned off state resource abroad. Therefore, the potential

positive effect of capital flight is usually accrued to only a few privileged economic and political elite. But unfortunately, the negative consequences of higher cost of services, less foreign exchange reserve, weak governance structures and low development etc. are disproportionately felt among the various classes of the society with the poor and less wealthy feeling the impact the most. According to Ajayi (2015) and Ndikumana (2015), the austerity impact is further worsened when the illicit outflow of capital flight result in depreciation of the domestic currency. In such a situation, the few privileged economic and political elite who have their wealth in haven abroad are protected from its adverse effects while the poor suffer the consequences even though they played no part in causing it.

In Table 5.1, a brief review of some recent empirical studies examining the impact of capital flight on welfare is provided.

Table 5. 1: Review of studies on the impact of capital flight on welfare

Author(s)	Nature of examination	Country	Timeframe	Estimation Technique	Major Finding(s)
Nkurunziza (2015)	Capital flight and poverty reduction	35 Africa countries	2000-2010	Capital-Output Ratio (ICOR)	The average annual rate of poverty reduction could have been 1.9 per cent higher if the capital flight has been invested. Also, it will have generated an extra 2.5 percentage per year above the current rate of poverty reduction.
Ndikumana (2014)	Capital flight and investment	39 Sub-Saharan African	1970 to 2010	Iterated Reweighted Least	Capital flight has a negative effect on investment. Also, an

	and growth	countries		Square, GMM, Fixed Effect, and ICOR	additional growth rate of about 2.4 per cent from 1970 to 2010 or 3.0 per cent growth rate from 2000 to 2010 if the illicit capital outflows were invested.
Nguena (2014)	External Debt Origin, Capital Flight and Poverty Reduction	14 Africa countries	1983-2013	Two-Stage Least Square-instrumental variable	An essential part of the external debt exclusively from China is going back out of the continent as capital flight and this impact positively on the level of poverty in the continents
African Development Bank (2012)	Capital flight GDP per Capita and Poverty reduction	African countries	2000 to 2008	Incremental Capital-Output Ratio (ICOR) method	The result indicated that the sampled countries could have improved their income per capita by an additional 3 to 5 per cent if they had invested the illicit outflow on profitable ventures. Also, headcount poverty would have reduced by 4 to 6 additional percentage points

Source: Compiled by the Authors.

5.2.2 External debt and Welfare

Concerning the theoretical linkages between external debt accumulation and welfare, most of the recent discussion has focused on the debt overhang theory and the crowding-out effect theory.

- I. **The debt overhang theory** postulates that external debt accumulation has a negative impact on growth and hence welfare because as debt accrues, potential investors perceived the build-up in debt to be financed by distortionary measures such as heavy taxes, seigniorage or cut in productive public investment. In response to the fear of economic distortion of such distortionary measures, investors are motivated to withhold their investment to avoid such taxes in the future or possibly invest less or direct their investment abroad. The withdrawal of such valuable investment keeps the economy below its domestic investment potential, which consequently dampens its growth and development. Secondly, a country with high indebtedness is considered as exhibiting signs of bad governance and as such risky to invest, so welfare-related investment, especially in education and health in such an economy is therefore reduced.

- II. **The crowding-out effect theory** argues that when external debt accrues, debt servicing also eat-up resources available for public investments in human capital and physical infrastructure and thus reduces the potential economic growth or welfare. Though both theories indicate an inverse relationship between high accumulated debt stocks on growth and hence welfare, according to Pattillo et al. (2011), a reasonable level of external borrowing by a developing country at the early stage of its development can enhance its welfare. However, at a later stage when the debt is being serviced, debt overhang sets which cripple investment and subsequently welfare.

Though both theories indicate an inverse relationship between external debt accumulation on welfare, according to Pattillo et al. (2011), a reasonable level of external borrowing by a developing country at the early stage of its development can enhance its welfare. However, at a later stage when the debt is being serviced, debt overhang sets which cripple investment and subsequently welfare. Table 5.2, therefore, provides a brief review of some empirical studies in this area.

Table 5. 2: Review of studies on the impact of external debt on development

Author(s)	Nature of examination	Country	Timeframe	Estimation Technique	Major Finding(s)
Zaghdoudi (2018)	external debt and human development	25 countries	2002 – 2015	Panel Smooth Threshold Regression (PSTR)	The results indicate that the relationship between external debt and HDI is non-linear with an optimal threshold of external debt of 41.7775%.
Zaghdoudi – Hakimi (2017)	external debt-poverty relationship	25 developing countries	2000-2015	system GMM and	The results show that in the long-run when external debt increases by one (1) per cent can increase poverty by 0.35 per cent. Also, a 1 per cent increase in GDP per capita raises poverty by 1.76 per cent.
Akram (2016)	Public debt and pro-poor economic growth	South Asian Countries (Bangladesh, India, Pakistan and Sri Lanka)	1975–2010	OLS, 2SLS and GMM	The result shows public external debt has an adverse impact on economic; however, in relation to pro-poor growth, the impact is not significant.
Lawanson (2014)	External Debt Accumulation and Capital Flight on Economic Growth	14 West African countries	1970 to 2008	Fixed effects and GMM	A percentage increase in the initial debt-to-GDP ratio is associated with a slowdown in per capita GDP growth between 0.12% and 0.19% per year. Also, the study confirmed the debt overhang hypothesis with per capita GDP becoming negative for debt levels above 60%

					to 74%.
Siddique – Selvanatha – Selvanathan (2015)	External Debt and Growth	40 Heavily Indebted Poor Countries	1970-2007	Panel ARDL	External borrowing has an adverse influence on GDP both in short and the long run.
Marchionne –Parekh (2015)	Growth, Debt, and Inequality	27 countries	1994-2010	OLS RE and FE	A non-linear inverted U-shaped between growth and debt

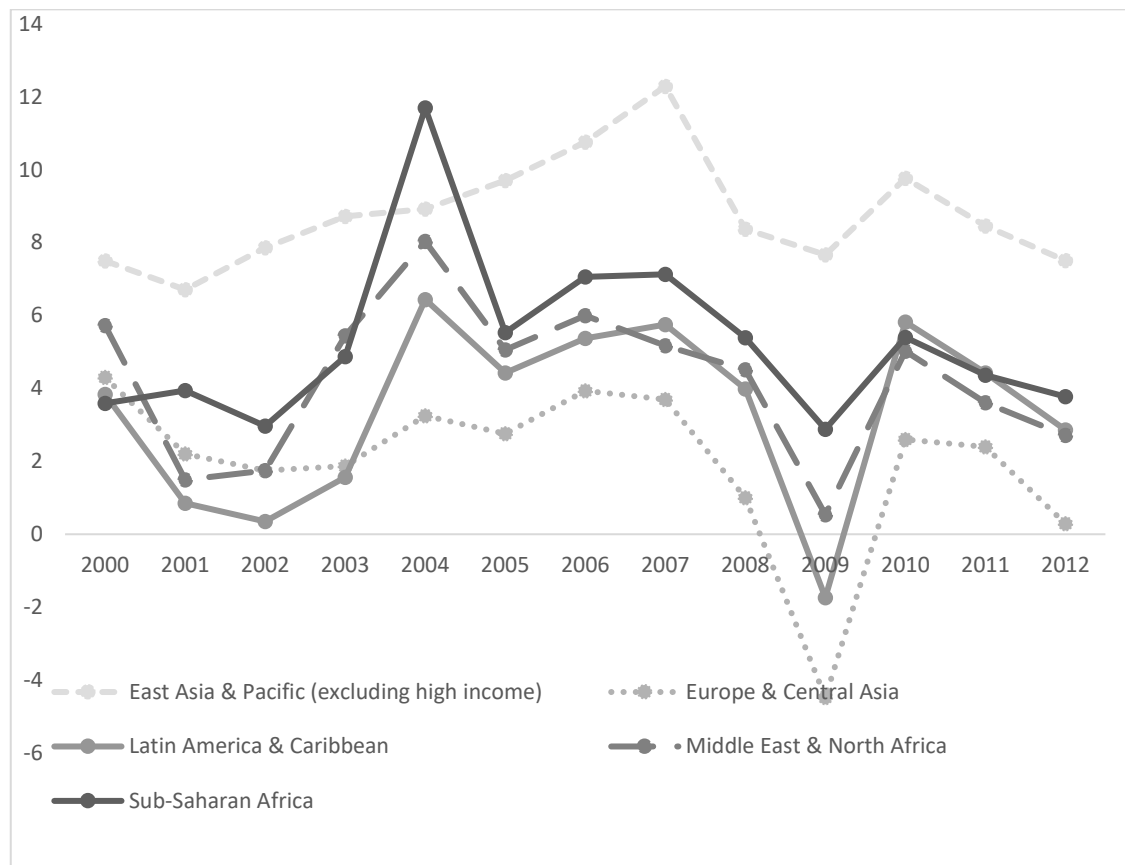
Source: Compiled by the Authors.

Based on the theories discussed, we can, therefore, hypothesise that the simultaneous occurrence of external debt accumulation and capital flight may have an inverse relationship with welfare. This is because both capital flight and external debt accumulation constitute diversions of resources which may result in a shortage of liquidity that could have been used for building investment and can as well complicate the effort of governments in stabilising the domestic macroeconomy and providing good governance to the ordinary people that will improve welfare.

5.3 Stylized facts about welfare in SSA

The economic growth rate of many countries in the SSA region has been very remarkable recently, increasing at an average growth rate of over 5 per cent (Ndikumana – Boyce 2018). Figure 5.1 displays the trends in the annual GDP growth of SSA between 2000 and 2012. The figure shows that since 2000, economic growth has been very impressive, averaging more than 5 per cent. The average growth rate for the region was notably higher at 5.28 per cent relative to 4.24 per cent for the Middle East and North Africa, 3.38 per cent of Latin America and the Caribbean and 1.97 per cent of Europe and Central Asia.

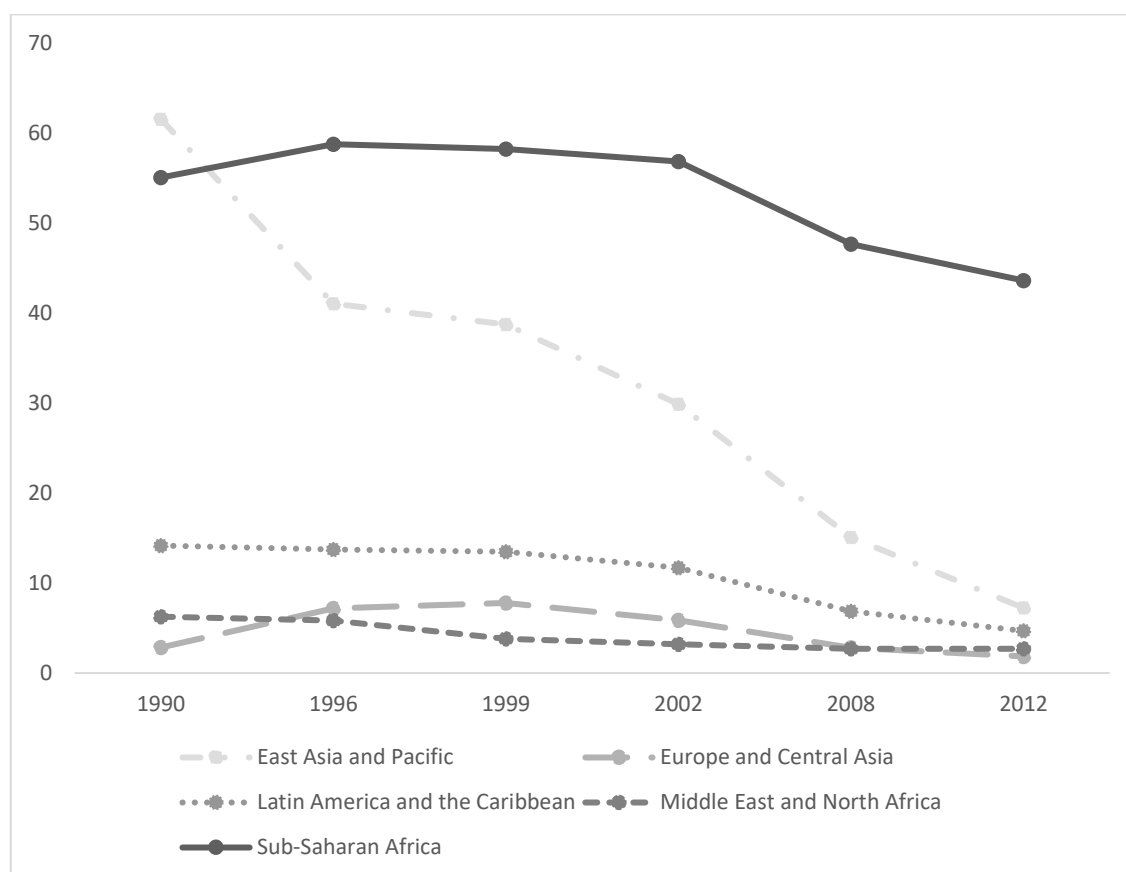
Figure 5. 1: SSA's economic growth with the rest of the world (2000-2012)



Source: World Bank online database, 2017.

Despite this remarkable macroeconomic growth, the region still falls short in its primary objective of poverty reduction and other targets in the Millennium Development Goals (MDGs) during the same period. A review of the World Poverty estimates indicates that the percentage of the population living in extreme poverty in the SSA region is still very high relative to the rest of the world as shown by the trend of headcount poverty incidence in Figure 5.2 even though it has reduced. At 44 per cent in 2012, the extreme poverty rate in SSA is almost seven times higher than the East Asia and Pacific rate of 7.25 per cent and nine times higher than that of South America and Caribbean rate of 4.69 per cent, as well as fifteen times higher than that of the Middle East and North Africa rate of 2.7 per cent. Optimistically, this rate means that almost one out of every two SSA still lives in extreme poverty. These figures suggest that the economic policies and reforms that propelled growth in the region have had little or no impact on the incomes of the poor.

Figure 5. 2: Trend of Headcount poverty incidence in the world (percentages)



Source World Bank PovcalNet database, 2018

The performance of SSA countries has also not been impressive, looking at the other measures of poverty. Table 5.3 compares the population using improved drinking-water and sanitation, gross enrolment rate in terms of population with secondary education, rural population with access to electricity and life expectancy at birth SSA with other regions in the world in 2015. As shown in Table 1, all the indices for SSA are consistently low as compared to the other regions of the world. For instance, the population with at least some secondary education in SSA is 33.9% for males and 25.3% for females compared with 85.7% for males and 78.1% for females in Europe and Central Asia. Population using improved drinking-water sources and improved sanitation facilities are also lagging behind all the region with SSA having as low as 57.7 for access to improved water and 28.1 for improved sanitation compared with 96.2 and 95.8 in Latin America and the Caribbean and Europe and Central Asia respectively. Also, the percentage of the rural population with access to basic energy facilities like electricity in SSA is very low compared with other regions of the world. Likewise, life expectancy in the region is also low.

Table 5. 3: Non-Poverty Indicators for SSA compared with the rest of the world

Countries/indicators	Population with at least secondary education (% ages 25 and older)		Population using improved drinking-water sources	Population using improved sanitation facilities	Rural population with access to electricity	Life expectancy at birth
	Female	Male				
Arab States	41.6	52.3	87.1	81.2	78.9	70.8
East Asia and the Pacific	64.1	73	93.5	74.6	94	74.2
Europe and Central Asia	78.1	85.7	95	95.8	100	72.6
Latin America and the Caribbean	57.8	58.1	96.2	85.6	90.5	75.2
South Asia	36.9	58.6	88.4	48.3	79.8	68.7
SSA	25.3	33.9	57.7	28.1	23.2	58.9

Source: UNDP online database, 2018

The records for inequality in the region have also not been good. Using the Coefficient of human inequality which shows the average inequality in the three basic dimensions of human development by the United Nations Development Projects indicate that the coefficient for SSA is 30.7 compared with 15.4 coefficient of East Asia and the Pacific countries and 11.6 for Europe and Central Asia. Also, using the inequality in life expectancy and education, the coefficient of the region is very high compared with other regions, as shown in Table 5.4.

Table 5. 4: Inequality Indicators for SSA compared with the rest of the world

Countries/indicators	The coefficient of human inequality	Inequality in life expectancy	Inequality in education
Arab States	24.8	15.7	32.6
East Asia and the Pacific	15.4	10.0	13.1
Europe and Central Asia	11.6	10.9	7.2
Latin America and the Caribbean	21.2	12.1	18.4
South Asia	25.6	21.4	37.7
SSA	30.7	30.8	33.7

Source: UNDP online database, 2018

5.4 Methodology

5.4.1 Theoretical Model Specification

The basic generalization from the literature presupposes that both external debt and capital flight have negative implications on welfare. However, according to Pattillo et al. (2011), a reasonable level of external borrowing by any developing country at the early stage of its development can enhance its growth. Based on this discussion, the theoretical framework for this chapter is premised on the hypothesis that external debt has both positive and negative implications on welfare within the SSA countries. Therefore, to generate any testable hypotheses about the direction of the effects of external debt and capital flight on welfare, an endogenous growth model in the form of a Cobb-Douglas production function is formulated as given in equation (5.1).

$$Y = AK^{\alpha}L^{\beta} \quad (5.1)$$

Where Y denotes the aggregate output or income at time t for country i , K is the aggregate capital stock at time t for the country i , L denotes labour force at time t while A denotes total factor productivity (TFP). α and β are the coefficients of elasticity for capital and labour, respectively. The TFP captures growth in output not accounted for by an increase in the physical input (capital and labour) in the model.

From the theoretical and the empirical literature, there are a large number of potential variables that can affect the TFP in this case. However, due to data availability and following the works of Lawanson (2014), Eberhardt – Presbitero (2015), Ndikumana (2014a) and Kaulihowa – Adjasi (2018), the study examined the following variables of interest resulting in:

$$A = f(EXT, KF, EXT * KF, POLITY, TRADE, GS) \\ = EXT^{\beta_2} EXTSQ^{\beta_3} KF^{\beta_4} EXT * KF^{\beta_5} POLITY^{\beta_6} TRADE^{\beta_7} GS^{\beta_8} \quad (5.2)$$

This study also includes the square of the external debt variable to capture the non-linear implication of external debt as well as include the interaction between external debt and capital flight ($EXT * KF$) to examine the impact of the parallel occurrence of external debt and capital flight on welfare. By substituting equations (5.2) into equation (5.1) and by specifying an extended Cobb-Douglas production function to represent the production technology of region, the study obtain;

$$Y_{it} = K_{it}^{\beta_1} EXT_{it}^{\beta_2} EXTSQ_{it}^{\beta_3} KF_{it}^{\beta_4} EXT * KF_{it}^{\beta_5} POLITY_{it}^{\beta_6} TRADE_{it}^{\beta_7} GS_{it}^{\beta_8} L_{it}^{\beta_9} \quad (5.3)$$

Where Y is the measure of welfare, K represent capital, L denotes labour, EXT represents external debt, KF is capital flight, $POLITY$ is political stability, $TRADE$ represents trade openness, and GS is the variable for government consumption expenditure. The derivation which is stipulated in the this chapter is based on the key assumption that both capital flight and external debt can be viewed as a total productivity variables in the production function due to its effect on the productivity of labour and capital, where the need to service debt and capital outflow will influence how capital and labour will be used in the production process (Eberhardt – Presbitero 2015).

The estimation model for equation (5.4) can, therefore, be specified as

$$Y_{it} = \beta_0 + \beta_1 K_{it} + \beta_2 EXT_{it} + \beta_3 EXT SQ_{it} + \beta_4 KF_{it} + \beta_5 EXT * KF_{it} + \beta_6 POLITY_{it} + \beta_7 TRADE_{it} + \beta_8 GS_{it} + \beta_9 L_{it} + \theta_i + \varepsilon_{it} \quad (5.4)$$

Where θ denotes unobserved country-specific effect, ε represent the usual stochastic error term. The subscripts i stand for a cross-sectional unit, while t represent the time period. All other variables are defined as before. Based on this econometric model, we can explicitly test the hypotheses of external debt leading to an *increase* or a *reduction* in welfare; as well as the impact of capital flight on welfare. Again, the linearity and non-linearity of external debt variable can be examined in addition to the interaction term looking at the effect on welfare from the simultaneous occurrence of external debt and capital flight.

We consider the model in equation (5.4) to be the long-run (equilibrium) economic growth model, and the nature of the relationship can be made to include dynamics (for example the inclusion of a lagged dependent variable as well as lags of explanatory variables). To estimate the turning point of the quadratic relationship in Equation (5.4) where the effects of external debt (EXT) switch from positive to negative is given in equation 5.5 as

$$\frac{\partial(Y_{it})}{\partial(EXT_{it})} = \beta_0 + 2\beta_1 EXT_{it} + \beta_3 KF_{it} = 0 \quad \dots\dots\dots(5.5)$$

The slope which represents the turning point is given as

$$EXT_{it} = \frac{-(\beta_0 + \beta_3 KF_{it})}{2\beta_1} \quad \dots\dots\dots(5.6)$$

In the event that external debt has a positive impact on welfare, $\frac{-(\beta_0 + \beta_3 KF_{it})}{2\beta_1}$ will be positive while $\frac{-(\beta_0 + \beta_3 KF_{it})}{2\beta_1}$ is negative when the impact becomes negative.

5.4.2 Variable justification and apriori expected signs

Dependent variable

Several measures have been introduced in the empirical literature in SSA to assess a countries' growth progress towards inclusiveness or welfare. Most often, only the income aspects of welfare are considered as most of the studies used the Gross Domestic Product (GDP) per capita and other poverty incidence indicators ignoring the non-monetary measures of welfare. In this chapter, the human development index (HDI) which in addition to GNI per capita, measure economic welfare by including two other basic aspects of human development, namely health and education was used. Health is measured by the HDI as life expectancy at birth while education or knowledge is measured by a combination of the adult literacy rate and the combined primary, secondary, and tertiary school gross enrolment ratio. The HDI is considered because it captures both the monetary and non-monetary aspect of welfare and also because it sees welfare as a multidimensional and not only related to income. Furthermore, several studies such as Kaulihowa —Adjasi (2018), Ganiyu (2016), Soumaré, (2015) and Gohou—Soumare, (2012) examining welfare in SSA employs this measure.

Control variables

The choice of the variables included in the total productivity is based on both theoretical and empirical evidence on the relationship between external debt, capital flight and welfare and these factors represent the general macroeconomic environment, the quality of political and governance institution, financial development and the general wellbeing. This study considers government spending, trade openness and political stability indicator apart from the main of interest (which is external debt and capital flight) as the control variables. The other relevant variables are the capital stock and the active labour force. Table 5.5 list the variables used and their sources.

For the labour input in this study, labour force participation rate which constitutes the percentage of the total population aged 15 to 65 years, who are active and economically productive and is expected to have a positive impact on welfare. The reason for choosing this variable is its authenticity in the empirical literature on growth (Jayaraman—Singh, 2007) as there can be no growth achievement without the involvement of labour as a

factor input. Solow (1956) and Swan (1956) also advised that labour force should be included in an endogenous growth model because of its impact on the workforce and this has been proven empirically in many types of research.

Similarly, the study expects the coefficient of capital to be positive on apriori and theoretical grounds. As mentioned in Barro—Sala-i-Martin (1992), countries that invest more tend to grow faster and are able to reduce poverty than those countries that save and invest less. In this regard, capital stock is expected to increase welfare (Kaulihowa – Adjasi (2018)). The study, therefore, expects the capital stock to exhibit a positive sign.

Government expenditure, according to the Keynesian proposition, is expected to raise welfare, however, due to its crowding-out effect on private investment and also its effect on inflationary pressures, it can result in the fall on welfare (Allen—Ndikumana, 2000). However, given that all things remain constant and following the Keynesian proposition, we expect government expenditure as a percentage of GDP to be positive.

From the literature, trade openness is often hypothesised to improve welfare through several channels, such as access to a variety of inputs for production, access to broader markets that raise the efficiency of domestic production through increased specialization, access to advanced technology from abroad and possibilities of catch-up. As documented in Dollar—Kraay (2004), trade openness could lead to improved economic growth that will ultimately lead to a fall in absolute poverty. This chapter is therefore built on the assumption that openness to trade enhances competition, promotes large markets, technology transfer and hence efficiency in production and hence may have a positive relationship with the welfare of the people

Conversely, Rodrick— Subramanian— Trebbi (2004) argued that institutional rules and good political governance promote sound macroeconomic management and the general wellbeing of countries' citizenry in a way that is equitable. Therefore, a strong political governance indicator is expected to strengthen welfare gains.

5.4.3 Data source

This chapter also uses data drawn from the World Bank (World Development Indicators), the UN online database, the Polity IV database and the database of Political Economy Research Institute (PERI) at the University of Massachusetts. The source for each of the variables is indicated in Table 5.5 below.

Table 5. 5: Variables definitions and measurements as well as their sources

Variable	Definition	Data Sources
Capital Flight (KF)	Capital flight is measured as the real capital flight of a country as a ratio of GDP	Political Economy Research Institute
External Debt	External debt used in this study is measured as the total stock of external debt as a ratio of GDP.	World Bank online database 2017
Human Development Index (HDI)	The HDI, as defined by the UNDP, is a composite summary index that measures a country's average achievements in three basic aspects of human development, namely health, knowledge, and standard of living.	UNDP database
Political stability (POLITY)	The governance indicator was measured by the Polity 2 data series from the Polity IV database. The indicator measures the competitiveness and openness of the country's elections, the level of its political participation, and the nature of checks on its administrative and supervisory authority.	Polity IV database using polity 2
Trade Openness (TO)	This is trade openness as a proportion of GDP, and it is measured as the sum of imports and exports of goods and services as a share of the gross domestic product.	World Bank online database 2017
Capital (K)	Gross fixed capital formation	World Bank, 2017
Labour (L)	Labour force participation rate, total (% of total population ages 15-64 (modelled by ILO estimate)	World Bank, 2017
Government spending (GS)	General government final consumption expenditure as a ratio of GDP	World Bank online database, 2017.

Source: Constructed by the author

5.4.4 Estimation technique

The data series employed in this chapter is subject to the properties of non-stationarity, cross-sectional heteroskedasticity, group-wise specific serial correlation and cross-section dependence. The latter has been a major worry recently in the empirical literature as the traditional panel data estimation methods such as the Fixed Effects, Random

Effects, Mean Group, Pooled Mean Group, and GMM estimators all impose a strong assumption that panel members are cross-sectionally independent. According to Pesaran (2006), Hoechle (2007) and Ncanywa – Masoga (2018), due to common shock such as recessions, oil price hikes, spill-over effects, etc. most panel members especially countries in a particular jurisdiction are dependent and erroneously ignoring this possible correlation may lead to biased estimates or even identification problems.

To guarantee a valid statistical inference, the estimation process was done following four main stages. In the first stage of the analysis, the individual time and cross-sectional specific effect, cross-sectional heteroskedasticity, group-wise serial correlation and cross-sectional dependence of the data was tested. The aim is to ensure that all the variables used for the estimation are integrated of order relevant for the estimation method and also devoid of any diagnosis problems to avoid any spurious regression. The second stage then tests the existence of cointegration among the variables to see if a long-run relationship exists among the variables. The third stage examines the empirical estimation of the model, followed by the robustness check analysis in the final stage.

5.5 Empirical results and discussion

5.5.1 Descriptive statistics

Table 5.6 provides summary statistics of the variables used in the study for the period 1990 - 2015. The statistics under consideration are the mean, the standard deviation and the minimum and maximum values of the variables. The mean captures the average value of the variables, whereas the standard deviation also shows the distribution of data around the mean value. Also, the range measured by the maximum and minimum values indicates the spread or the level of variation of the variables in the datasets.

Over the study period, the human development index for the twenty-four SSA countries understudy averaged 0.439. With a standard deviation of 0.110 per cent, this is indicative of very low variability in human development for the sample countries over the period. The results also show that the average of the capital flight of SSA as a ratio of GDP is 0.047. The minimum and maximum flow of capital flight of any country as a ratio of their GDP between the periods under consideration were between -0.557 and 1.749, respectively.

Also, from Table 5.6, the average external borrowing as a ratio of GDP in the region is 0.46, with some countries recording external borrowing as low as 0.02 and maximum of 2.749 per annum. The interaction term for external debt and capital flight also averaged 0.049. The minimum is -0.466, and the maximum is 1.874.

Table 5. 6: Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
HDI	624	0.439	0.112	0.133	0.706
Capital Flight (KF)	624	0.047	0.167	-0.557	1.749
External Debt (EXT)	624	0.461	0.337	0.02	2.790
External Debt square (EXTSQ)	624	1.156	2.364	0.002	33.770
Interaction term (EXT*KF)	624	0.049	0.173	-0.466	1.874
Capital (K)	621	17.893	7.277	2.424	52.939
Political stability (POLITY)	624	0.532	5.170	-9.000	9.000
Trade (TRADE)	624	62.552	28.280	10.831	165.646
Government Spending (GS)	624	0.157	0.100	-0.079	0.890
Labour (L)	624	0.721	0.116	0.479	0.915

Source: Computed using STATA 15

From Table 5.6, capital stock measured as the gross fixed capital formation as a percentage of GDP in the region is 17.80 per cent, with some countries recording capital stock of as low as 2.4 per cent and a maximum of 52 per cent per annum. The total force participation rate as a proportion of the total population aged 25-64 averaged 0.72. The minimum proportion for any country's population that formed the labour force participation rate is 48 per cent whilst the maximum is 91 per cent. This demonstrates the youthful nature of the population of SSA. This high proportion of labour force can

become a major source of strengthening economic growth if the youthful population is well equipped with skills and provided with adequate resources and opportunities to become resourceful in promoting growth.

The correlation matrix in Table 5.7 also indicates that correlation among the variables is generally low (below 0.50) except between the interaction of external debt and capital flight which correlates with capital flight (0.70). This is expected. Again, correlation is found between external debt and external debt square (0.89), which is also expected.

Table 5. 7: The correlation matrix

	HDI	KF	EXT	EXTSQ	EXT*KF	K	POLITY	TRADE	GS	L
HDI	1									
KF	-0.0363	1								
EXT	-0.3987	0.0744	1							
EXTSQ	0.2226	0.0576	0.8886	1						
EXT*KF	-0.2026	0.7038	0.315	0.2756	1					
K	0.2553	0.021	-0.1497	0.0107	-0.0295	1				
POLITY	0.3732	-0.0279	-0.2637	-0.137	-0.0941	0.0851	1			
TRADE	0.4453	0.0871	0.1051	0.184	0.0614	0.3079	0.1458	1		
GS	-0.0764	-0.0548	-0.0877	-0.0085	-0.0325	0.0639	0.0932	0.0884	1	
L	-0.4247	-0.0465	0.0852	0.0321	0.0596	0.032	-0.0374	-0.0974	0.1535	1

Source: Computed using STATA 15

5.5.2 Initial diagnostic and panel unit root test

Before estimation, the initial diagnostic tests were computed. These test statistics include the individual cross-sectional and time effects, serial correlation, GroupWise heteroskedasticity and cross-sectional dependence. The results are reported in Table 5.8.

Table 5. 8: Serial correlation, heteroskedasticity and cross-sectional dependence

Variable	CD test-value	Test-p value	Inference
HDI	73.9492	0.0000	
KF	4.6293	0.0000	
EXT	46.0279	0.0000	
EXTSQ	38.6081	0.0000	Cross-sectional dependence is valid.
EXT*KF	6.4097	0.0000	
K	21.6370	0.0000	
POLITY	39.5365	0.0000	
TRADE	20.4653	0.0000	
GS	29.2120	0.0000	
L	2.3917	0.0168	
Group			
Joint validity of individual cross-sectional effects			
Poolability test (F-test)	F(23, 588) = 128.3	0.0000	Cross-sections effect valid
Joint validity of time (period) fixed effects			
Poolability test (F-test) with time	F(25, 586) = 0.90	0.5999	Time effects are not valid indicating that the error term takes a one-way error component form.
Serial correlation			
Wooldridge test for autocorrelation	F(1, 23) = 223.865	0.0000	First-order serial correlation is present
Heteroskedasticity			
Modified Wald test for GroupWise heteroskedasticity	1264.93	0.0000	There is heteroscedasticity present
Cross-sectional dependence			
Pesaran CD (2004) test for cross-sectional dependence	13.071	0.0000	Cross-sectional dependence is valid.

Source: Computed using STATA 15

The cross-sectional dependence was first tested for each of the variables, followed by the group test and the test for the individual cross-sectional and time-specific fixed effects are tested using the F-test given by Baltagi (2008). The results are reported in Table 5.8. From the results, the null hypothesis that the unobserved heterogeneity is homogenous across countries is rejected but not the time heterogeneity. This means that cross-sectional specific effects are valid, but not time effects. Therefore, the error term takes a one-way error component form. The Wooldridge test for autocorrelation also rejects the null of no first-order serial correlation. Also, the Modified Wald test for GroupWise heteroskedasticity rejects the null of GroupWise homoscedasticity, implying a nonconstant variance across cross-sections. The tests for cross-sectional dependence of the error terms using the Pesaran (2004) CD test rejects the null of cross-sectional independence for both the individual variables and the group indicating enough evidence to conclude that the data series suffer from cross-sectional dependence.

Table 5. 9: Pesaran (2007) Unit Root Test

Variables	Levels		First Differenced	
	Statistic	Prob.	Statistic	Prob.
HDI	1.844	0.967	-3.725	0.0000
KF	-3.521	0.0000	-11.79	0.0007
EXT	-2.486	0.0006	-8.973	0.0000
EXTSQ	-0.872	0.192	-9.613	0.0000
EXT*KF	-6.405	0.0000	-13.08	0.0000
K	-3.558	0.0000	-9.609	0.0000
POLITY	-1.853	0.035	-9.527	0.0000
TRADE	-1.856	0.0320	-9.164	0.0000
GS	-2.017	0.0220	-10.30	0.0000
L	-0.392	0.317	-10.56	0.0000

Source: Computed using STATA 15

To determine the order of integration of the variables and being conscious of the fact that the cross-section dependence in the data series renders the standard panel unit root to suffer from significant size distortions, this study take preference to unit root methods that accommodate cross-sectional dependence to some extent due to the validity of individual effects and cross-sectional dependence of the error terms. To that end, this chapter uses the ‘CIPS’ test by Pesaran (2007). Table 5.9 provides the results from conducting the ‘CIPS’ test. The results are reported with the $Ztbar$ statistic (and its corresponding p -value). From the results, the null hypothesis of no stationarity was rejected at levels for all of the variables with the exception of the human development index and labour, which is $I(1)$.

5.5.3 Cointegration results

As a result of the non-stationarity of some of the key variables, this chapter performs a cointegration test to examine whether a long-run relationship exists among these variables. Given that there is cross-sectional dependence in the series, the first-generational cointegration tests such as Kao cointegration test (1999), Pedroni (2004) cointegration test and McCoskey—Kao (1998)—LM test for cointegration cannot be used. In this chapter, the cointegrating relationship between HDI and the other non-stationary variables was computed via a panel cointegration test proposed by Westerlund – Edgerton (2007), which is a second generational unit root test. This Westerlund error-correction-based panel cointegration tests with bootstrap p -values simultaneously and allows for cross-sectional dependence and a large degree of heterogeneity among the series. The underlying idea is to test for the absence of cointegration by determining whether there exists error correction for individual panel members or for the panel as a whole. The test provides four error-correction-based panel cointegration tests, and they are panel statistics (p_τ and p_α) which are based on pooling the information regarding the error correction along all the cross-sectional units, and they test the null hypothesis of no cointegration for all of the cross-section unit, and the second called the group mean statistics (G_τ and G_α) are the other two statistics that test the alternative that at least one unit is cointegrated. Table 5.10 reports the results of this cointegration tests; these are error correction-based panel cointegration tests developed by Westerlund – Edgerton (2007).

From the estimated result in Table 5.10, the null hypothesis of no cointegration is rejected at 1% level of significance for three of the four estimates employed by the Westerlund (2007) cointegration technique. This indicates that the variables chosen for the study are cointegrated.

Table 5. 10: Panel cointegration test, Westerlund (2007)

Statistic	Value	Asymptotic P-value	Bootstrap P-value
Group-mean statistics			
G_{τ}	-2.749	1.956	0.025
G_{α}	-18.076	3.715	0.000
Panel statistics			
p_{τ}	-6.261	2.551	0.995
p_{α}	-11.331	1.592	0.046

Source: Computed using STATA 15.

5.5.4 Estimated result and discussion

Given that cointegration exists among the variables, the next step is to estimate the impact of external debt and capital flight on welfare. The result of the initial diagnosis requires a robust estimator that is able to address the potential bias that might exist due to the serial correlation, the potential group-wise heteroskedasticity, and the cross-section dependence. As a result, this paper study adopts the Driscoll – Kraay (1998) cross-sectional dependence robust standard errors. Hoechle (2007) argued that the standard errors estimated by the Driscoll – Kraay (1998) are well standardized and the coefficient produced are more robust in the presence of heteroskedasticity, serial correlation and cross-sectional dependence which is particularly useful in this study.

The Driscoll – Kraay (1998) estimation process comprises two stages. First, all variables both the dependent and the independent variables in the model are within transformed after which he pooled OLS estimation with Driscoll, and Kraay standard errors are applied to the within Ordinary Least Square (OLS) estimator to obtain the parameters. This is discussed in section 4.3.2

As a robustness check, the paper employs the Augmented Mean Group (AMG) estimator developed by Eberhardt – Teal (2012) and the Panel-Corrected Standard Error (PCSE) estimator to accommodate the panel time-series models with heterogeneous slopes. The AMG estimator modified the Common Correlated Effects Mean Group (CCEMG) developed by Pesaran (2006) to allow for heterogeneous slopes and cross-sectional dependence with a common dynamic process. The AMG estimator is also superior to the Mean Group (MG) estimator by Pesaran – Smith (1995), which does not account for cross-sectional dependence. Following Pesaran (2006), the empirical setting takes a form of panel models with a heterogeneous slope of $i = 1, \dots, N$ and $t = 1, \dots, T$ such that:

$$y_{it} = \beta_i x_{it} + \mu_{it} \quad \text{where} \quad \mu_{it} = \alpha_{1i} + \lambda_t f_t + \varepsilon_{it} \quad \text{and} \quad x_{it} = \alpha_{2i} + \lambda_t f_t + \gamma_i g_t + \ell_{it} \quad \dots \dots \dots \quad (5.7)$$

Where x_{it} and y_{it} represent the independent and dependent variables, respectively, β represents a country-specific slope of the regressors, μ_{it} encompasses the unobservable and the stochastic residual components is the ε_{it} . α_{1i} denotes time-invariant heterogeneity within groups, and f_t captures unobserved common factors with heterogeneous factor loading λ_t that captures time-variant heterogeneity and cross-sectional dependence. Moreover, factors γ_i and g_t can be linear, non-linear, and non-stationary.

Also, in order to validate the results; this chapter computes the impact of external debt and capital flight on welfare using the HIPC countries in the dataset in addition to the SSA analysis. The main aim for splitting the dataset is to examine whether changes to the model or the dataset will have any meaningful or significant effect on the results.

5.5.4.1 Hausman specification test

Furthermore, to establish the consistency of the estimates obtained by the Driscoll–Kraay standard errors, the Hausman test was used to examine the suitability of a fixed or random effect. The result is presented in Table 5.11. As shown in the result, the estimated result from the random effect seems inconsistent. Therefore, the study uses a fixed effect model within the Driscoll–Kraay standard error estimates. This study will, therefore, presents the estimates from the fixed-effects estimation.

Table 5. 11: Hausman specification test

Test: Ho: difference in coefficients not systematic

chi2(9)	=		(b	B)	[(V_b - V_B) ^ (1)]	(b-B)
	=					26.24
						Prob>chi2 = 0.0011

Source: Computed using STATA 15

5.5.4.2 Driscoll – Kraay standard errors estimation results

As shown in Table 5.12, the data for both SSA and HIPC countries, all support the hypothesis that external debt and capital flight have a negative relationship with welfare measured using the Human Development Index. The coefficient for external debt indicates that a percentage increase in external debt accumulations reduces welfare by approximately 9.3 per cent for SSA countries and 8.6 per cent for HIPC countries. This result means that as the various countries in the region keep borrowing from abroad, the general welfare situation of the people becomes worse as compared to the previous year. This negative relationship supports the hypothesis of the debt overhang theory and the crowding-out effect theory. The debt overhang theory indicates that as external debt accrues, potential investors perceived the build-up in debt to be accompanied by distortionary measures and hence are motivated to withhold their investment to avoid such measures in the future. The crowding-out effect theory argues that high debt servicing associated with borrowing eat-up resources available for public investments, which eventually forces the government to compete with the private sector for the few resources in the domestic economy. This move by government cripples the private sector and forces them out. This result is also consistent with the findings by Lawanson (2014), Siddique et al. (2015), Fiagbe (2015), Pattillo et al. (2011), among others that the relationship between external borrowing to pro-poor growth is negative. However, it contradicts the findings by Ayadi and Ayadi (2008) in their comparative study of Nigeria and South Africa and Bentum-Ennin (2009) for Ghana. The result by Ayadi – Ayadi (2008) showed a positive and statistically significant long-run relationship between

external debt and economic growth for South Africa and an insignificant long-run relationship between external debt and economic growth for Nigeria.

Table 5. 12: Estimated impact of external debt and capital flight on welfare

	SSA			HIPC countries		
	Coefficient	Std. Err.	Prob.	Coefficient	Std. Err.	Prob.
EXT	-0.093	0.010	***	-0.086	0.012	***
EXTSQ	0.014	0.003	***	0.016	0.004	***
KF	-0.014	0.005	***	-0.022	0.012	*
EXT*KF	-0.012	0.005	***	-0.027	0.012	**
POLITY	0.003	0.001	***	0.002	0.001	*
K	0.001	0.000	***	0.002	0.001	***
TRADE	0.001	0.000	***	0.001	0.000	***
GS	-0.088	0.026	***	-0.039	0.018	**
L	-0.130	0.131		-0.336	0.158	
CONS	0.551	0.056	***	0.661	0.043	***

Source: Computed using STATA 15; (*), (**), (***) denotes 10%, 5% and 1% levels of significance respectively.

The statistically significant negative effect of capital flight on welfare using both the SSA and HIPC dataset means that over the years, capital flight remains one of the main factors that have significantly contributed to the low level of welfare in the SSA. Specifically, the results reveal that a percentage increase in illicit capital outflow leads to about 1.4 and 2.2 per cent reduction in welfare in SSA and HIPC countries respectively. This result implies that the observed improvement in economic growth in the region during the last decade could have translated to better improvement in welfare if African countries had

been able to keep all their capital onshore. This confirms the result by Nkurunziza (2015) that investing the flight capital in the region could have increased the annual rate of poverty reduction by 1.9 and extra 2.5 per cent per year above the current rate of poverty reduction. Also, as indicated by the AfDB (2012) that countries in SSA could have improved their income per capita by an additional 3 to 5 per cent if they had invested the illicit outflow on profitable ventures.

In addition to the decrease in welfare from external debt and capital flight, the coefficient of the interaction term between external debt and capital flight is negative and statistically significant for both datasets. Specifically, the results in Table 5.12 indicates that a percentage increase in external debts and capital flight leads to a reduction in welfare by 1.2 per cent in SSA and 2.7 per cent for HIPC countries all other things being equal. This result supports the hypothesis that the simultaneous occurrence of external debt and capital flight have a negative relationship on the general welfare of the people in the SSA region. The reason is that both capital flight and external debt accumulation constitute diversions of valuable resources from the domestic economy and this may result in a shortage of liquidity that could have been used for building investment in the domestic economy. Also, as discussed in the literature, external debt and capital flight both complicate the effort of governments in stabilizing the domestic macroeconomy and providing good governance, quality institutions and service to the ordinary people that will improve welfare.

The positive and statistically significant quadratic term of external debt for both datasets confirms that the relationship between external debt and welfare is a non-linear one. However, the relationship is rather concave contrary to theoretical expectation and other earlier studies such as Fosu (1996), whose study concludes that external borrowing impacts growth positively at lower levels of investment until investment to GDP ratio reaches a minimum threshold of 16 per cent. In this study, the threshold that the impact of external debt on welfare in the presence of capital flight turns from negative to positive is 49 per cent. This is calculated based on the equation specified in equation (5.5). This result implies that as external borrowing increases, welfare in the SSA region decreases until it becomes positive in the long-run, but this finding also confirms the results obtained by Fiagbe (2015) for the SSA region. Fiagbe's result is, however, not significant in the long run.

The results in Table 5.12 also confirm the a priori expectation that capital stock contributes positively to welfare in both SSA and HIPC countries in the SSA region since the coefficient of capital stock is positive and statistically significant. For SSA, the coefficient of 0.001 indicates that a 1 per cent increase in capital stocks increase welfare by in a 0.10 per cent. This means that in the long-run, a 1 per cent increase in investment in physical capital has the potential of stimulating welfare. This result is consistent with conclusions by Dollar—Kraay (2004), whose study found a positive relationship between capital stock and the general welfare in SSA.

Political stability also came out to be positive as expected and statistically significant across all the datasets. The coefficient of government spending was negative contrary to expectation in both datasets and is statistically significant across all the datasets. Also, the coefficient of the labour force participation rate was found to be negative contrary to theoretical expectation. However, it is statistically insignificant in both datasets and hence did not significantly influence welfare in both the SSA region or the HIPC countries in the region. This negative relationship could be due to excessive imports and corruption. Majority of the sampled SSA countries are import-dependent, implying that the governments of these SSA countries might have to spend more on imported consumables rather than locally produced goods and services.

5.5.4.3 Robustness check analysis

This section provides an alternative way of estimating the model as a robustness check. Due to the cross-sectional dependence and the possibility of heterogeneity in the slope parameter, this paper employs the AMG estimator developed by Eberhardt and Teal (2010) and the Panel-Corrected Standard Error (PCSE) estimator. The results are presented in Table 5.13. The dataset used is the SSA data, and the results indicate that both AMG and PCSE results are not too different from the estimates obtained with the Driscoll—Kraay standard errors for both datasets, especially in the case of the SSA. The only minor changes occurred with capital, labour force participation and government spending, and they are mainly related to the significance of these variables as used in the study. The findings are, therefore, robust across all the three techniques and all the datasets.

Table 5. 13: Estimate impact of external debt and capital flight on welfare.

	Augmented Mean Group (AMG)			PCSE		
	Coefficient	Std. Err.	Prob.	Coefficient	Std. Err.	Prob.
<i>EXT</i>	-0.026	0.004	***	-0.029	0.005	***
<i>EXTSQ</i>	0.004	0.001	***	0.004	0.001	***
<i>KF</i>	-0.011	0.006	**	-0.009	0.013	***
<i>EXT*KF</i>	-0.012	0.006	**	-0.009	0.014	**
<i>POLITY</i>	0.001	0.000	***	0.002	0.000	***
<i>K</i>	0.000	0.000	*	0.000	0.000	
<i>TRADE</i>	0.000	0.000	***	0.000	0.000	***
<i>GS</i>	-0.003	0.015		-0.004	0.012	
<i>L</i>	0.352	0.035		0.377	0.033	
<i>CONS</i>	0.695	0.026	***	0.711	0.024	***

Source: Computed using STATA 15; (*), (**), (***) denotes 10%, 5% and 1% levels of significance respectively.

5.6 Chapter summary

This paper examined the implication of the simultaneous occurrence of external debts and capital flight on Welfare in SSA employing the Driscoll and Kraay standard errors panel estimation method and datasets for the period 1990 to 2015. The analysis presented in this paper shows that both external borrowing and capital flight represent an essential constraint to the general welfare of people in the SSA region using the human development index and dataset from 1990-2015. Also, the study found that the relationship between external debt and welfare is not always linear as assumed by the theoretical and empirical literature.

CHAPTER SIX

IMPLICATION OF EXTERNAL DEBT AND CAPITAL FLIGHT ON ECONOMIC POLICY EFFECTIVENESS

6.0 Introduction

This chapter is devoted to examining the causal effects of the simultaneous occurrence of external debt and capital flight on the effectiveness of economic policy instruments in SSA. This is motivated by recent studies indicating that both capital flight and external debt can obstruct fiscal and monetary policies from achieving its targets. A sample of twenty-four countries for which relevant data are available was used. The study begins with background information in Section 6.1. Section 6.2 reviews the literature on the implication of external debt and capital flight on fiscal and monetary policies. In Section 6.3, the empirical models, methodology and issues related to the data and estimation are discussed. The empirical results are presented and discussed in Section 6.4. Section 6.5, the last section, provides the chapter summary.

6.1 Background of the study

Many researchers in academia, Civil Society Organizations (CSOs), and citizens around the world have hailed the accession of Africa countries from the international debt relief initiatives launched in the late 1990s as the end of poverty in their economic development process. Most especially, the countries that went through the Heavily Indebted Poor Countries (HIPC) Initiative in 1996, the enhanced HIPC initiative in 1999 and the Multilateral Debt Relief Initiative in 2006. Interestingly, the various assessments by the World Bank (WB) and the International Monetary Fund (IMF) have endorsed these level of confidence (Cassimon —Ferry – Raffinot — Van Campenhout 2013). For instance, the sustainability analysis from the completion point of the HIPC document from the IMF and the World Bank showed that the external debt of these countries would remain sustainable during the projection period of 2004 —2023 (Lala –Ranganathan – Libresco 2006).

While several countries have improved their growth rate mainly because of the effective fiscal and monetary policies adopted during the HIPC implementation period, the impact on poverty reduction and economic development have been limited. For instance, whereas the annual growth rate of the region improved from 1.8 per cent before the debt relief (1980–1989) to about 5 per cent after the debt relief (2000–2015), statistics from the World Bank Poverty & Equity Data portal shows that the total number of people living under \$3.20 a day has increased from 383.2 million people in 1990 to 667 million people in 2015. Even for the economic growth realised in these countries, Bayraktar – Fofack (2013) and Lala et al. (2006) described it to be significantly below the projected growth rates. At the same time, statistics of external debt relating to a number of these HIPC countries are currently showing an increasing trend (Bayraktar – Fofack 2013). This trend has raised concerns about the likelihood of another debt crisis in post-HIPC across the region. Although, several researchers have reiterated that the sectors that supported the growth of the economy during the HIPC implementation period had weak linkages with the other areas which are predominantly participated by the poor, current literature has attributed the problem to the growing capital flight and corruption in the region. As shown in chapter three and four of these, Africa countries alone have lost a total of US\$1.4 trillion with compound interest reaching US\$1.8 trillion representing about 65 per cent of their combined economic size as measured by their GDP. This amount exceeds the total external debt \$496.9 billion owed by these countries, making them as a group a ‘net creditor’ to the rest of the world.

According to Fofack (2009), the unexpected and massive increase in external debt in HIPC countries to a certain extent was understandable. Most especially given the recurrence of the balance of payments and the financial crisis in many of these countries after the post HIPC period, however, the continuous increase of capital flight is less apparent; in part, because majority of these countries that are confronted with massive outflows are also heavily capital-deprived. The implication is that the outflow of capital and high external debt repayment can result in a shortage of liquidity that could have been used for building infrastructure and capital investment in the domestic economy and this may lead to upward pressure on the domestic interest rate. Also, the income that is created abroad by the flown capital cannot be taxed. As a result, government fiscal policy in the form of taxation is reduced (Ajayi, 2003). In the same way, when domestic capital leaks out of the country, the bank credit channel of monetary policy is destabilised, making

monetary policy object difficult to realise. In addition, the continuous outflow of capital and massive external debt repayment raises uncertainty and risk. This is especially the case when the political elite perpetuate it, as it reflects a lack of resilience or confidence in the domestic economy (Fofack – Ndikumana 2015).

Interestingly, empirical studies examining the implications of the simultaneous occurrence of external debt and capital flight on the effectiveness of economic policies in the SSA region had been left almost untouched, a notable exception is a paper by Fofack and Ndikumana (2015) who worked on the implication of capital flight on monetary policies in SSA. Most of the literature has so far focused on discussing potential factors that may determine the occurrence and size of capital flight and external debt (Ndikumana, Boyce, – Ndiaye 2015; Ndikumana – Boyce, 2011), the implications of the capital flight on economic growth or impact of excessive borrowing on economic growth (Lawanson, 2011; Ajayi, 2003). In this paper, we extend the research to this relationship with a particular emphasis on both fiscal and monetary policies. The chapter contributes to the literature by proposing a quantitative macroeconomic model that captures the consequences of the revolving door of external debt and capital flight on the efficacy of both fiscal and monetary policies in the HIPC recipient countries in SSA. The structural model allows one to understand better the various channels through which continuous accumulation of external debt and capital flight may hinder fiscal and monetary policies in the recipient country and hence their growth. In addition to the contribution to the literature, this paper provides vital information that would be of help in formulating efficient and effective policies towards minimising macroeconomic distortions caused by massive capital outflows and external borrowing.

6.2 Literature review

In the last two or three decades, more and more African leaders have come to realize the need to diversify their economies and implement policies that stimulate investment and encourage private participation in economic activities. Part of the reason is that many leaders believed that stimulating capital accumulation in the durable sector would significantly influence the level of economic development in the region. In light of this proposition, the role of economic policy in stimulating capital accumulation has received

significant attention in the policy literature. The interest of the recent literature has been devoted to unravelling the transmission mechanism of fiscal and monetary policy as a critical ingredient in the pursuit of developmental agendas and in perpetuating capital outflow within the region. Little is, however, known about the potential effects of external debt and capital flight on the smooth functioning of economic policy in the empirical literature. Yet, the concurrent incidence of external debt and capital flight in the region can actually impede on the smooth conduct of economic policy in several ways. In this review, we look at what fiscal and monetary policies are and the implication of external debt and capital flight on fiscal and monetary policy effectiveness.

6.2.1 Stylised facts about Fiscal and Monetary Policies in SSA

Monetary policy is generally defined as the measures and the set of procedures used by monetary authorities to manage the supply of money, interest rates, and exchange rates and to influence credit conditions to achieve certain economic objectives. This area has witnessed significant research interest in the past few decades. This interest, which is mainly focused on unravelling the transmission mechanism of monetary policy, is, according to Meier — Muller (2005), due to the fact that better insights into the nature of the transmission mechanism have obvious benefits for policymaking (Fiador — Biekpe, 2015).

A number of channels have been identified in the literature as the likely pathways through which monetary policy affects the economy, namely: money, interest rate, Exchange Rate, Credit, Asset Price, and the Expectation channels. However, not all of these pathways are expected to be strong or active in the SSA countries given that their levels of financial development are less advanced compared to those in advanced or emerging economies where each of these channels was reported to be active (Kibwe, 2014). This is evidenced in the literature, for instance, Mishra — Montiel (2013) indicated out that the financial structure of many low-income countries, especially in SSA, is characterized by the less efficient markets for fixed income securities, equities, and real estates; the dominance of commercial banks as the formal financial intermediaries; and a small formal financial sector relative to the size of the economy. They have also learned that low-income countries tend to be at the periphery of the private international capital

markets while the portfolio behaviour forces central banks in these countries to intervene massively in foreign exchange markets. These distinctive features tend to have distinctive implications for the conduct, design, and effectiveness of the monetary policy in developing economies compared to advanced and emerging economies.

Following the structural adjustment programs, many central banks in SSA countries began using monetary policy instruments to achieve policy-related objectives. However, this was briefly interrupted in 2008–09 as governments adopted countercyclical policy responses to alleviate the impacts of the global financial and economic crises in 2008 and 2009 (Boyce — Ndikumana, 2012; Brixiova — Ndikumana, 2013). In practice now, many countries in SSA moved away from an exchange rate anchor towards greater exchange rate flexibility as a way of supporting external competitiveness. However, the need to get inflation under control has led central banks in SSA to adopt intermediate and operational targets such as monetary aggregates, private sector credit, the interest rate, the exchange rate, and foreign reserves.

Again, in contrast to the trend in other emerging market economies, only three countries in Africa have adopted the inflation targeting (IT) framework so far: Mauritius, in a modified form, in 1996; South Africa in 2002; and Ghana in 2007. In the absence of inflation targeting, the accumulation of reserves has been used in many countries in SSA to stabilize the official exchange rate. The basic reason is that reserve money is within the control of the central bank in many SSA countries (Kasekende — Brownbridge, 2011). Furthermore, the exchange rate has emerged as a significant channel of monetary transmission in SSA. Kenya, for instance, Cheng (2006), finds that interest rate shock has a significant impact on both price level and exchange rate but not on real output. According to the 2008 monetary policy review in Africa, the exchange rate stability is a policy objective for almost 19 countries. These countries are either concerned with external competitiveness, exchange rate smoothing, or both (IMF, 2008).

The term fiscal policy has been associated with the use of taxation and public expenditure to influence the level of economic activities in a particular country and also the level and growth of aggregate demand, output, and employment. It deals with deliberate government actions in spending money and levying taxes with the aim of influencing macroeconomic variables. This includes high employment creation, sustainable economic growth, and low inflation. The instruments of fiscal policy are government

spending and taxation. Therefore, depending on the economic situation of the country, the government or monetary authorities can employ either contractionary or expansionary fiscal policy. The contractionary fiscal policy reduces the aggregate demand, while expansionary fiscal policy increases the aggregate demand.

According to Kibwe (2014), until 2009, the fiscal policy adopted in most of the developing countries in SSA are pro-cyclical. A typical example is Kenya and Uganda. The literature offers at least three explanations to account for the procyclicality of fiscal policy in many countries in SSA. First, many developing countries tend to be disconnected from the international capital markets in bad times and thus, they are forced to reduce government spending and raise tax rates (Aizenman et al., 2000). Second, Riascos — Végh (2005) argue that developing countries tend to encounter credit markets that are incomplete as compare to those in advanced economies and thus leading to more procyclical tax rates during economic downturns. Lastly, weak domestic financial institutions in many developing countries are responsible for the adoption of the procyclicality of fiscal policy as they fail to make the public sector save in good times and dissave in bad times (Talvi —Végh, 2005; Alesina et al., 2008). It is, therefore, possible that a positive change to any of these conditions may help developing countries graduate from procyclical to acyclical or countercyclical fiscal policy.

At the empirical front, the flow of literature on the effects of fiscal policy on the economy has been sluggish but gained momentum after the financial crisis of 2008–2009, especially among advanced and emerging economies where monetary policy turned to be too blunt a tool to stimulate the economy. However, similar literature for developing countries is almost non-existent. This scanty availability of literature for developing countries, maybe because of the high frequency and non-availability of quality fiscal data (World Bank, 2015).

6.2.2 Implication of external debt and capital flight on economic policies

According to Ajayi — Khan (2000), Ayayi (2003), and Lawanson (2011), the incidence of external debt and capital flight simultaneously can impede not only monetary policies but also fiscal policies from achieving its targets. With the case of fiscal policy, Ajayi — Khan (2000) indicates that when capital flees, it reduces potential revenue available for

any economy as wealth held overseas are outside the regulation of the domestic tax authorities and cannot, therefore, be taxed. Thus, government fiscal policy in the form of taxation is reduced. In addition, the shortage of capital in the domestic economy also reduces government ability in building capital and investing in critical areas such as agriculture, education, industry, security, healthcare, infrastructure, and other poverty-reducing and job creation programs which inevitably undermines government expansionary fiscal policy in the form of increasing its spending. Furthermore, Ayayi (2003) added that the outflow of capital crowds out government ability to service its debt, which may lead to more external debt burden and more capital flight in the foreseeable future.

Fofack — Ndikumana (2015) also argues that the shortage of domestic resources resulting from capital flight or external debt repayment can also impede the smooth functioning of government monetary and exchange rate policy. With respect to monetary policy, Fofack — Ndikumana (2015) indicated that the continuous outflow of honestly acquired capital through capital flight might send wrong signals to private investors about the resilience or potency of the domestic economy. This is especially the case when political elite or when multi-national corporation perpetuates it as it reflects lack of confidence in the economy. Also, when the government keeps borrowing, potential investors may perceive the build-up in debt to be financed by distortionary measures such as heavy taxes, seigniorage, or cut in productive public investment. This perception, according to the authors, could raise uncertainties among private investors in the domestic economy, which may stimulate them to withhold their investment or possibly invest less or direct their investment abroad. In such a situation, an attempt by the central bank to influence private investment through interest or policy rate adjustment may not be productive.

With respect to the exchange rate, the authors argued that the outflow of capital could cause depreciation of the currency if the government is operating a floating exchange rate system since the outflow may result in a reduction of foreign currency in the domestic economy. In addition, the shortage in the foreign reserve can intensify the exchange rate instability, which may lead to output volatility, particularly in nations where investment may be contingent upon imports of intermediate inputs. As a result, the central bank may have to devote more resources to stabilize the exchange rate in the presence of capital flight and massive external borrowing since the outflow can worsen the contraction in the

reserves of the domestic economy. Ayayi (2003) also argued that if the domestic economy is experiencing a balance of payment difficulty, the persistent capital erosion can exacerbate the balance of payment problem into a crisis that can limit the importation of capital goods essential for the growth and development of the country and as well results in an unfavourable balance of payments. If the government continues to import in this condition, this may affect the exchange rate by draining the foreign reserves.

Though the implication of the parallel occurrence of external debt and capital flight in the region seems to be precarious with respect to economic policy's effectiveness, empirical studies examining the phenomenon have been neglected, with the only exception being Fofack — Ndikumana (2015). This study, which focused on capital flight and monetary policy, also ignored the critical role of external debt and other economic policies such as fiscal policy. It is against this background; this study is being conducted to investigate the simultaneous occurrence of external debt and capital flight on economic policy effectiveness.

6.3 Methodology

6.3.1 Model specification

Following the empirical studies of Canh (2018), Fofack — Ndikumana (2015), and Ndikumana (2014b), this chapter examines the implication of external debt and capital flight on fiscal and monetary policies effectiveness. This is done by estimating economic policy objectives as a function of external debt, capital flight, economic policy instruments and other control variables. This is specified in equation (6.1) as;

$$Y_{it} = \alpha_0 + \beta_1 F_{it} + \delta_2 K_{it} + \delta_3 Z_{it} + \lambda_{it} \quad \dots\dots\dots (6.1)$$

Where Y is the vector of the economic policy objectives, F represents capital flight and external debt, K signifies the vector containing economic policy variables and Z is a vector of other control variables of economic policy objectives other than capital flight and external debt and λ is the error term. The parameters β , δ and α are the coefficients of F , K and Z , respectively.

Over the years, it has emerged from most studies that maintaining macroeconomic stability, stimulating investment or promoting long term growth or exchange rate stability are the main reasons that the central government intervenes in economic activities with policies. Also, per the discussion in section 6.2.2, the linkages between external debt and capital flight and economic policy may arise from the impact of external debt and capital flight on the policy objectives. As indicated by Fofack — Ndikumana (2015), the continuous borrowing by the government in the SSA region, coupled with the increasing capital flight, sends wrong signals to the domestic investors to reduce their investment or shift their resources away from the domestic economy. In this way, attempts by the central bank to influence private investment or growth through interest rate adjustment or taxation will be ineffective. Also, the simultaneous occurrence of external debt and capital flight may cause depreciation of the domestic currency if the central government is operating a floating exchange rate system leading to growth or price volatility.

Based on this interpretation and data sets for the SSA region, the study considers domestic investments measured as the gross fixed capital formation as a percentage of GDP and annual GDP growth rate as the proxy variables for the economic policy objectives.

Therefore, Y can be written as

$$Y = f(AGDPgr, INV) \dots\dots\dots (6.2)$$

Where $AGDPgr$ refers to the annual GDP growth rate and INV represents domestic investment.

This paper also considers fiscal and monetary policies as the instrument for the economic policy variables and used discount rate or the central bank policy rate as the monetary policy instruments and fiscal balance as a percentage of GDP as the fiscal policy instruments. The choice of these proxies is due to their frequent usage in the empirical literature. Both Fofack – Ndikumana (2015); and Ndikumana (2014b) in their empirical study on capital flight and monetary policy used the discount rate or central bank policy rate as the measure for monetary policy while Muchai– Muchai (2016) when examining the relationship between fiscal policy and capital flight also used the fiscal balance as a percentage of GDP as a measure for fiscal policy. As a result, K can be represented as

$$K = f(MP, FP) \dots\dots\dots (6.3)$$

Where *MP* refers to the monetary policy measured as the discount rate and *FP* represents the fiscal policy measured as the fiscal balance as a percentage of GDP, the other control variables included in the study are also drawn from the literature. Specifically, the control variables considered for this chapter are political stability, private sector credit as a measure of financial deepening, foreign direct investment, government expenditure, and trade openness. Therefore, *Z* can be written as

$$Z = f(POLITY, FD, FDI, GS, TRADE) \quad \dots\dots\dots (6.4)$$

Where *POLITY* is a dummy variable for the Political Stability, *FD* represents financial deepening measured using the domestic credit to the private sector, *FDI* represents a foreign direct investment, *GS* is government consumption expenditure, and *TRADE* represents trade openness.

In order, to examine the effectiveness of the economic policy variables (in this case fiscal and monetary variables) on their policy objectives in the event that there are external debt and capital flight, this chapter integrates external debt and capital flight with the policy instruments and includes them as independent variables in the model.

Substituting equation (6.2) to (6.4) into (6.1) and specifying an extended form, the econometric model for this chapter can be represented in the following equations as;

$$AGDPgr_{it} = \alpha_1 + \beta_1 EXT_{it} + \beta_2 KF_{it} + \beta_3 MP_{it} + \beta_4 FP_{it} + \beta_5 MP_{it} * EXT_{it} * KF_{it} + \beta_6 FP_{it} * EXT_{it} * KF_{it} + \beta_7 POLITY_{it} + \beta_8 FD_{it} + \beta_9 FDI_{it} + \beta_{10} GS_{it} + \beta_{11} TRADE_{it} + \mu_{it} \quad \dots (6.5)$$

$$INV_{it} = \theta_1 + \phi_1 EXT_{it} + \phi_2 KF_{it} + \phi_3 MP_{it} + \phi_4 FP_{it} + \phi_5 MP_{it} * EXT_{it} * KF_{it} + \phi_6 FP_{it} * EXT_{it} * KF_{it} + \phi_7 POLITY_{it} + \phi_8 FD_{it} + \phi_9 FDI_{it} + \phi_{10} GS_{it} + \phi_{11} TRADE_{it} + \gamma_{it} \quad \dots (6.6)$$

Where μ_{it} and γ_{it} are the error terms of the models with *AGDPgr* and *INV* as the dependent variable. *MP* represents the central bank policy rate as a measure for monetary policy, and *FP* is the budget balance as a percentage of GDP is used as a measure for fiscal policy. The parameters α and β as well as θ and ϕ are the coefficients to be estimated for the annual GDP growth rate and investment model. All other variables are defined as before.

6.3.2 Data sources

This chapter also covers 24 SSA countries over the period 1990 to 2015. The variables under consideration in this chapter include the annual GDP growth rate, domestic investment, capital flight, external debt, trade openness, central bank policy rate, fiscal balance, financial development, foreign direct investment, central government expenditure, and political stability.

6.3.3 Variable description and measurements

Annual GDP growth rate (AGDPgr)

This variable is normally used as an indicator for measuring economic performance as well as an indicator for the real return of the economy. Schiller (1999) defined it as an increase in output or real GDP over time. In most of the empirical studies that investigate the effectiveness of fiscal or monetary policy in SSA, the annual GDP growth rate is an often-used indicator to represent the effectiveness of economic policy objectives (Canh (2018), Fofack — Ndikumana (2015), and Ndikumana (2014b)). Consistent with the literature, this chapter adopts the annual GDP growth rate as one of the indicators for economic policy effectiveness. The data is obtained from the World Bank Online Development Indicators (2018).

Domestic investment (INV)

Domestic investment is considered as one of the key determinants of economic policies drawing from the early growth theories. It is defined to include the construction of roads, railways, and others such as schools, offices, hospitals, commercial and industrial buildings, and private residential dwellings. In this study, investment is proxied by the real value of gross fixed capital formation (*GFCF*) as a percentage of GDP, and this measure has been used extensively in the empirical studies especially studies looking at the effectiveness of economic policy (see Fosu — Magnus, 2006). The data is obtained from the World Bank Online Development Indicators (2018).

Capital flight (KF)

Capital flight, like the previous chapter, represents unrecorded capital outflows, which is expressed as a percentage of real GDP (in constant 2015 USD) to allow for cross country comparisons. Capital Flight is estimated using the residual method incorporating the extensions from Ndikumana et al. (2018). The chapter expects a negative implication of this variable on any of the indicators of economic policy effectiveness.

External debt (EXT)

External debt also represents money borrowed by a country from her foreign lenders, which must be paid back in the currency in which it is borrowed in addition with interest. Like the previous chapters, external debt is measured as the total stock of external debt as a percentage of GDP, and it is hypothesized that there exists a negative relationship between external debt and economic policy targets with the exceptions of inflation

Central bank policy rate (MP)

The general banking literature is still far from settling on the best indicator for monetary policy stance. A number of studies have employed the growth rates of monetary aggregates or growth in credit. These approaches have, however, been criticized for being ineffective in the face of innovation and deregulation (Bernanke — Mihov, 1998). The central bank policy rate, which is the *de facto* indicator of the monetary policy stance for any country, is used for this study because it is the primary tool normally used by the central banks for implementing monetary policy in the SSA region. Also, recent empirical studies, such as Fiador – Biekpe (2015), Fofack — Ndikumana (2015) and Delis — Kouretas (2011), that focus on monetary policy and its effectiveness in the SSA have used the central bank policy rate as a monetary policy tool. Empirical studies such as Fofack — Ndikumana (2014), e Silva (2003) and Hermes — Lensink (2001) , whose studies focus on capital flight and monetary policy also used the discount rate or central bank policy rate as the measure for monetary policy.

Fiscal balance (FP)

Fiscal policy has conventionally been represented by three standard fiscal variables government expenditures, government revenues, and budget balance. Various empirical studies have examined growth effects of these variables in either a disaggregated or an aggregated analysis (Muchai– Muchai, (2016). However, most of these studies use the budget balance as a better measure of fiscal policy. For this reason, the study adopts the fiscal balance as a percentage of GDP as the measure for the fiscal policy and pre-empt its effect to be positive on both annual GDP growth and investment as theoretically indicated.

Political stability (POLITY)

In line with Ndikumana et al. (2011), the Polity2 score, which captures the competitiveness of political participation, the openness of executive recruitment, and the constraints placed on the chief executive, was used as a proxy for political stability. This dummy variable measures the competitiveness and openness of a country(s) election, the nature of political involvement in general, and the degree of checks on administrative authority and gives an aggregate score, in units of a standard normal distribution, ranging from -10 (full autocracy) to +10 (full democracy). Higher scores of polity2 indicate a higher degree of democracy and also signifies a more socio-politically stable environment where property rights and contracts are enforced through a properly functioning judicial system. Corruption levels are low, and there is reliability in the enforcement of domestic property rights, which will have a positive impact on private investment and hence economic growth. By expectation, the coefficient of this variable in the model is expected to be positive. The variable was sourced from the Polity IV database in 2018.

Financial Development (FD)

The role of financial deepening (FD) has been widely documented to be a growth-enhancing factor in SSA countries (see Khan, 2007). The effects of deepening the financial system of an economy are, normally believed to be, increase employment, augmentation productivity, boost exports, introduces modern techniques of management

and marketing skills, and eases the access to new technologies. The study uses net credit to the private sector as a percentage of GDP (Asiedu, 2006). Though the general perception of FD on host country is expected to have a positive impact on growth and productivity, the vast literature (Ajayi, (1999) and Ayadi, (2009)) has proven otherwise with inconclusive generalization. Despite this, a positive apriori expectation is considered for this study

Foreign Direct Investment (FDI)

This is one of the traditional sources of private external capital in the developing world. It usually comprises the transfer of modern technology and (new) knowledge to enable the recipient country to exploit the experience for accelerated growth and sustainable development. The macroeconomic impact of foreign direct investment is not automatically positive on growth but primarily dependent upon the nature and scope of foreign direct investment in terms of the scale, beneficiary sector, concentration of local firms in the sector, duration of business, and many other secondary conditions (Manning — Shea, 1989). In much the same manner, Epstein (1999), and Vo (2004) assert that FDI is favourable to economic prosperity only if the appropriate conditions such as adequate absorptive capacity and quality human capital exist in the beneficiary target country. A host of empirical studies, including studies from Borensztein *et al.* (1998), and de Mello (1999), found a positive and robust impact of foreign direct investment on economic growth. Other studies such as Bengelsdijk *et al.* (2008) also obtained evidence that foreign direct investment has no robust and significant impact on developing countries such as the case in the SSA countries. Schneider (2005) also find no relationship between foreign direct investment and economic growth in the least Developing countries. In related empirical studies, Durham (2004), and Kherfi—Soliman (2005), find a negative effect of FDI on growth in host developing or non-OECD countries.

Government spending (GS)

The relationship between government spending, investment and economic growth has received widespread attention in recent times. Economic literature suggests that government outlays could crowd out interest-sensitive investment, especially in the private sector. This can result in less investment in the productive areas of the domestic economy. Government spending may, therefore, not enhance growth with the above

explanation. There are empirical works to support this assertion (see Nketiah—Amponsah, 2009). However, if government spending is channelled to productive sectors of the economy, then it can stimulate growth. This study expects the coefficient of government spending to be positive, although there is ambiguity in both the theoretical and empirical literature concerning the impact of government spending on economic growth. General government final consumption expenditure as a percentage is used as a proxy for government expenditure, and the data set is sourced from World Bank online database (2018).

Trade Openness (TRADE):

Trade (the sum of imports and exports) as a percentage of GDP is a standard measure in the literature (Asiedu, 2006) and (Ayanwale, 2007) used to capture the openness of a country(s) trade. The fundamental liberalist argument is that openness to international trade has a potential positive implication for investment and long-run growth since openness enables countries to allocate resources more efficiently by promoting large-scale production, industrial research, innovative product development and entrepreneurial activities arising from international competition and easier access to larger product and capital markets globally. In the opinion of Grossman and Helpman (1991), countries that are more open to trade have a better chance to catch up with leading technologies of the rest of the world. On the other hand, openness to international trade compels local industries to face higher foreign competition usually resulting in domestic industries of capital-constrained developing countries losing their market share at home leading to capacity underutilisation and retrenchment thereby impeding economic growth. Indeed, Alesina *et al.* (2005) develop a theoretical model whereby there is an inverse relationship between openness to trade and country size. Chang *et al.* (2009) point out that openness to trade encourages the efficient utilization of resources through comparative advantage, allows the dissemination of knowledge and technological progress, and heartens competition in domestic and international markets. Based on this, this study anticipates a positive relationship between openness to trade and investment as well as growth. The data set is sourced from World Bank online database (2018).

6.3.4 Descriptive statistics and initial diagnostics of the data

Table 6.1 presents a summary of the descriptive statistics of the variables used in this chapter. The annual GDP per capita for the 24 countries that were studied averaged approximately 4.018 over the 26-year period. Some countries were, however, as low as -50.25 and others as high as 35.22 growth rate.

Also, the average of the domestic investment as a percentage of GDP is 17.89 per cent. The ratio ranges between 2.42 per cent and 52.94 per cent with a standard deviation of 7.28 for the same period. The disparity among countries in terms of their level of domestic investment relative to their GDP could be attributed to differences in their levels of growth. Low-income countries may be motivated to undertake intensive infrastructural investments so as to catch up with the relatively higher-income ones. The statistics related to the fiscal policy indicate that budget balance as a percentage of GDP had a mean of -3.30 and a standard deviation of 6.23. With respect to monetary policies, the discount rate or central bank policy rate had a mean of 27.24 with a maximum and a minimum value of 2.38 and 160.25 respectively and a standard deviation of 69.48.

The minimum level of external debt as a per cent of GDP stood at 0.156, with the maximum hitting 278.98 per cent for the same period. This is an indication that countries heavily depend on external borrowing to finance their activities. It, however, remains unclear whether these foreign loans are directed towards long term productive investments or for consumption.

Again, over the same period 1985-2015, the average capital flight for the countries under study averaged 4.73 per cent of GDP ranging from a maximum score of 174.92 and -55.72, showing a high level of variations. As it is mentioned before, *POLITY* is the threshold measure to determine whether a country is political and institutionally developed or underdeveloped. As it is anticipated, the largest mean level of polity2 is 9.0 while there are countries within the region with also -9.0 value.

The overall size of the financial deepening variable (measured by the *bank credit to the private sector*) has a mean of 24.05 and approximately 13.39 per cent standard deviation.

Table 6. 1: Summary statistics

Variable		Mean	Std. Dev.	Min	Max	Obs.
<i>AGDP</i>	Overall		5.834	-50.248	35.224	N = 624
	Between	4.018	1.804	0.934	7.466	n = 24
	Within		5.56	-51.85	33.623	T = 26
<i>INV</i>	Overall		7.277	2.424	52.939	N = 624
	Between	17.893	7.706	11.163	42.456	n = 24
	Within		7.678	-4.626	73.046	T = 26
<i>MP</i>	Overall		69.48	2.38	160.25	N = 531
	Between	27.24	37.65	6.35	181.32	n = 24
	Within		60.40	-147.37	1006.18	T = 23
<i>FP</i>	Overall		6.231	-49.631	39.366	N = 610
	Between	-3.308	2.550	-7.121	3.008	n = 24
	Within		5.700	-50.507	36.437	T = 25
<i>KF</i>	Overall		16.707	-55.717	174.918	N = 620
	Between	4.73	7.741	-3.125	33.478	n = 24
	Within		14.888	-51.296	146.17	T = 26
<i>EXT</i>	Overall		33.655	0.156	278.979	N = 623
	Between	46.132	25.182	9.339	134.416	n = 24
	Within		22.9	-27.723	190.694	T = 26
<i>POLITY</i>	Overall		5.177	-9	9	N = 624
	Between	0.526	3.893	-5.462	8.538	n = 24
	Within		3.501	-12.974	8.564	T = 26
<i>FD</i>	Overall		13.388	2.857	151.549	N = 624
	Between	24.052	10.846	9.48	62.147	n = 24
	Within		8.121	6.079	143.347	T = 26
<i>FDI</i>	Overall		4.926	-8.589	41.810	N = 624
	Between	2.956	2.279	0.463	9.467	n = 24
	Within		4.390	-9.880	37.120	T = 26
<i>TRADE</i>	Overall		28.280	10.831	165.646	N = 624
	Between	62.552	24.603	27.067	126.902	n = 24
	Within		13.956	-9.834	114.201	T = 26
<i>GS</i>	Overall		7.818	-0.791	89.865	N = 624
	Between	15.680	5.982	4.073	28.039	n = 24
	Within		5.189	-2.973	54.307	T = 26

Source: computed using STATA 15

The overall foreign direct investment also has a mean of approximately 2.956 per cent and a standard deviation of approximately 4.93 per cent. Trade as a percentage of GDP also averaged 62.55 per cent per annum for the group of countries considered under the study from 1990 to 2015. Some countries recorded minimum growth of trade as low as 10.83 per cent whilst others have a boom of 165.65 per cent within the same period. The difference in trade balance among the countries may be attributed to variations export commodities, the discovery of natural resources, notably oil, and diversification of export commodities in some of the countries and continuous reliance on traditional export commodities.

In terms of the government spending as a percentage of GDP, there is also an indication of a substantial variation across the countries in the sample, with a minimum of -0.79 for some countries, other countries in the region also had a maximum of approximately 89.87 per cent.

6.3.5 Initial diagnosis and unit root test

The estimation models, as specified in equation (6.4) and (6.5) assumes that there is no serial correlation and heteroskedasticity present in the error term, the regressors are assumed to be strictly exogenous and cross-sectionally independent, and there are no cross-sectional specific time and individual effects in the model. However, this is not always the case. Table 6.2 presents the initial diagnostics of the datasets. Tests for the joint validity of individual cross-sectional and time-specific effect reveal that both cross-sectional and time-specific effects are valid. This implies that the error term takes a two-way error component form, and the models specified in equation (6.7) to (6.9) is wrongly specified and estimating it with the OLS estimators are likely to lead to biased estimates. Also, the Wooldridge test for serial correlation rejects the null of no first-order serial correlation indicating the presence of the serial correlation. The modified Wald test rejects the null of Groupwise homoscedasticity, implying a nonconstant variance across the cross-sections. Again, tests for cross-sectional dependence using the Pesaran (2004) CD test strongly reject the null of no cross-sectional dependence, indicating that there exists cross-section dependence among the regressors and the error terms. The results of the Durbin-Wu-Hausman specification test for endogeneity also indicates that the

regressors and the error terms are correlated, meaning that the regressors in the model are endogenous.

Table 6. 2: Initial diagnostic tests

Estimation Model	Statistics	
Joint validity of the individual cross-sectional effect		
<i>AGDPGR</i>	$F(22, 478) = 4.03$	<i>Prob (0.000)</i>
<i>INV</i>	$F(22, 478) = 14.12$	<i>Prob (0.000)</i>
Joint validity of time effect		
<i>AGDPgr</i>	$F(25, 475) = 3.19$	<i>Prob (0.000)</i>
<i>INV</i>	$F(25, 475) = 4.19$	<i>Prob (0.000)</i>
Test for serial correlation		
<i>AGDPgr</i>	$F(1, 21) = 2.940$	<i>Prob (0.029)</i>
<i>INV</i>	$F(1, 21) = 74.436$	<i>Prob (0.000)</i>
Test for Groupwise heteroscedasticity		
<i>AGDPgr</i>	$\chi^2_{23} = 4449.06$	<i>Prob (0.000)</i>
<i>INV</i>	$\chi^2_{23} = 3976.82$	<i>Prob (0.000)</i>
Pesaran CD (2004) test for cross-sectional dependence		
<i>AGDPgr</i>	$CD = 7.619$	<i>Prob (0.000)</i>
<i>INV</i>	$CD = 2.427$	<i>Prob (0.015)</i>
Endogeneity test		
<i>Wu-Hausman Specification test:</i>	$F(1, 475) = 626.91746$	<i>Prob (0.000)</i>

Source: Author's computation using STATA 15

Table 6.3 also provides the result for the stationarity test for the variables considered for the study and the results as presented in Table 6.3 confirm that all the variables are also stationary at levels.

Table 6. 3: Unit root test result

Variables/Test	CIPS (intercepts only)	
	Statistic	C-value (5%)
<i>AGDPgr</i>	-4.637	0.000
<i>INV</i>	-2.990	0.000
<i>EXT</i>	-2.486	0.000
<i>KF</i>	-3.521	0.000
<i>MP</i>	-1.931	0.027
<i>FP</i>	-2.051	0.020
<i>POLITY</i>	-1.853	0.035
<i>FD</i>	-1.723	0.042
<i>FDI</i>	-2.102	0.018
<i>GS</i>	-2.017	0.0220
<i>TRADE</i>	-1.856	0.0320

Source: Author's computation using STATA 15

6.3.6 Estimation technique

These initial diagnostic results warrant the use of an estimation technique that accommodates heteroskedasticity and serial correlation among the error terms, corrects for cross-sectional dependence, and also preserves the orthogonality between transformed variables and lagged regressors.

The two-step system GMM is therefore used to estimate the models. As indicated in Chapter four, the endogeneity problem is addressed by time demeaning the data to remove the time effects. This is also known to correct moderate levels of cross-sectional

dependence as in this study (De Hoyos — Sarafidis, 2006). The cross-sectional specific effects are then eliminated using forward orthogonal deviations, thereby making it possible to use one period lags of the regressors as valid instruments since they are not correlated with the transformed error term (Love— Zichinno, 2006). Time demeaning and data transforming also preserves homoscedasticity, prevents serial correlation, controls for cross-sectional dependence and also preserves the orthogonality between transformed variables and lagged regressors (Arellano — Bover, 1995). Another advantage of this approach is that it is more resilient to missing data (Roodman, 2006).

However, before the estimation of the models, due to the presence of cross-sectional and time-specific effects as well as the persistent nature of the dependent variable as indicated by the serial correlation, equations (6.5) and (6.6) is re-written to include the lagged of the dependent variable as an explanatory variable and the error term is specified to include the time-specific and cross-sectional nature. This is presented in equations (6.7) to (6.10) as;

$$AGDPgr_{it} = \alpha_1 + \beta_1 AGDPgr_{it-1} + \beta_2 EXT_{it} + \beta_3 KF_{it} + \beta_4 MP_{it} + \beta_5 FP_{it} + \beta_6 MP_{it} * EXT_{it} * KF_{it} + \beta_7 FP_{it} * EXT_{it} * KF_{it} + \beta_8 POLITY_{it} + \beta_9 FD_{it} + \beta_{10} FDI_{it} + \beta_{11} GS_{it} + \beta_{12} TRADE_{it} + \mu_{it} \dots \quad (6.7)$$

$$INV_{it} = \theta_1 + \phi_1 INV_{it-1} + \phi_2 EXT_{it} + \phi_3 KF_{it} + \phi_4 MP_{it} + \phi_5 FP_{it} + \phi_6 MP_{it} * EXT_{it} * KF_{it} + \phi_7 FP_{it} * EXT_{it} * KF_{it} + \phi_8 POLITY_{it} + \phi_9 FD_{it} + \phi_{10} FDI_{it} + \phi_{11} GS_{it} + \phi_{12} TRADE_{it} + \gamma_{it} \dots \quad (6.8)$$

Where

$$\mu_{it} = \psi_i + \lambda_t + \nu_{it} \dots \quad (6.9)$$

$$\gamma_{it} = \tau_i + \sigma_t + \xi_{it} \dots \quad (6.10)$$

ψ_i is the individual cross-sectional effect, λ_t is the time-specific effect and ν_{it} is the idiosyncratic error term for the annual GDP growth rate model. τ_i is the individual cross-sectional effect, σ_t is the time-specific effect and ξ_{it} is the idiosyncratic error term for the investment model. All other variables are as defined before.

6.4 Empirical results and discussion

The estimated results are presented and discussed in this section. The results are presented in Tables 6.4 and 6.5. Table 6.4 presents the result for the annual GDP growth rate, while Table 6.5 presents the results for the domestic investment. Though the main estimation method of interest is the two-step system GMM, the study also computes the same model with the OLS estimator to confirm if there will be any difference in the results after the diagnostics problems are addressed. The general observation from the results in 6.4 and 6.5 indicates that the expected signs of the variables in the OLS model as well as the two-step system GMM are the same, except that many of them are not significant in the OLS estimation. However, the two-step system GMM that accommodates heteroskedasticity and serial correlation among the error terms and corrects for cross-sectional dependence, as well as preserves the orthogonality between the transformed variables and their lagged regressors, has many of the coefficients as significant. This presentation will, therefore, focus on the two-step GMM model, but will occasionally make inferences from the OLS estimator.

6.4.1 Implication of external debt and capital flight on GDP growth

From the results in Table 6.4, external debt as a percentage of GDP have the expected negative signs and exert statistically significant effects on annual GDP growth rate. The result indicates that a 1 per cent increase in external debt decreases the annual GDP growth rate by 0.045 per cent. Cohen (1993) asserted that this adverse effect of external borrowing on growth is caused not only through the impact of the debt stock but also via the flow of external debt service payments, which are likely to crowd out investment. The traditional neoclassical theory suggests that reasonable levels of external borrowing are expected to have a positive impact on growth. However, the negative relationship between total external debt and growth in this study may be due to the fact that these funds are not being utilized in productive investments. The result is also consistent with recent results obtained by Fofack—Ndikumana (2015), Saniadze (2015), Fiagbe (2015) and Lawrence (2014) for SSA and also for developing country(s) studies. The findings by Ayadi—Ayadi (2008), however, showed a positive and statistically significant long-run relationship between external debt and economic growth for South Africa but however found an insignificant long-run relationship between external debt and economic

growth for Nigeria. Again, Bentum-Ennin (2009), on the other hand, also found a positive and statistically significant long-run relationship between external debt and economic growth for Ghana, implying that Ghana is not suffering from a debt overhang problem.

The result for capital flight also indicates that total capital flight as a percentage of GDP has a very strong negative effect on the annual GDP growth rate. The coefficient on capital flight is significant and negative in both the two-step GMM and the OLS estimators. The GMM result suggests that a percentage increase in capital flight will reduce the annual GDP growth rate by 0.069 per cent. This negative and statistically significant effect of capital flight as a percentage of GDP on growth is consistent with the predictions of the theoretical literature by Ajayi—Khan (2000), Ayayi (2003) and Lawanson (2011) that capital flight raises uncertainty and risk, as it reflects a lack of confidence in the local economy sends wrong signals to domestic investors and also reduces potential revenue available for any economy as wealth held overseas are outside the regulation of the domestic tax authorities and cannot, therefore, be taxed. Comparing the magnitude of the coefficient with other empirical studies, it should be noted that this estimate is higher than other recent studies as a result of correcting the cross-sectional dependence problem which is neglected by other models. For example, Fofack—Ndikumana (2015) finds that the magnitude of the coefficient is between 0.002 to 0.01 per cent for the SSA region. Also, the empirical evidence by Lawrence (2014) also found the magnitude to be between 0.009 to 0.049 per cent. However, comparing the result with other long-time studies, this result seems to be lower. For instance, Ajayi (2001) finds that for Africa, the magnitude of the coefficient is 0.551, which is also measured for 1 per cent extra capital flight. At the same time, Beja in his study for the Philippines found that capital flight reduced the economic growth of the Philippines by a magnitude of 1 to 2.3 per cent (Beja, 2007).

The implication of external debt and capital flight on annual GDP growth becomes more interesting when integrated with the economic policy instruments. As can be seen in the result, the discount rate had a negative effect on the annual GDP growth rate. However, when integrated with external debt and capital flight, it tends out to have a positive and statistically significant effect on annual GDP growth rate. This positive relationship is particularly interesting since the policy rate is normally perceived as the cost of loanable funds and is usually expected to have negative effects on the level of investment and

hence growth. For instance, both the Keynesian and the rigid accelerator theories of investment, as well as the classical theory of interest rate, believes that the relationship between the discount rate and investment and growth should be negative. Usually, the reason is that at a lower rate of interest, the cost of borrowing investment funds is low, so domestic economic agents are motivated to increase their investment by going for more resources. This is also in line with the neoclassical investment model, which treated the real interest rate as a key component of the user cost of capital and therefore affected private investment and growth negatively. The evidence from this study means that when an economy in the SSA region is experiencing massive external borrowing and capital flight, an attempt by the central bank to reduce the policy rate to encourage investment or growth may not be effective. The result is consistent with the conclusions from Fofack—Ndikumana (2015) and Ayayi (2003) that monetary policies such as the exchange and policy rate are ineffective in the event of capital flight and external borrowing. Likewise, the evidence from the fiscal policy is also positive; however, when it is integrated with external debt and capital flight, it tends to have a negative and statistically significant impact. This means that an expansionary fiscal policy may also not lead to growth in the environment where there is massive external borrowing and capital flight since taxation may be low, and government participation in economic activity will cripple domestic investors out of business. This result means that in the event of illicit capital outflows and massive borrowing, an attempt by the government to increase annual GDP growth by increasing taxes in order to spend more or through interest rate adjustment in order to influence investment can be ineffective.

The positive and statistically significant effect of the bank credit to the private sector as a percentage of GDP is consistent with the predictions of the endogenous growth theorists as well as the supply leading view of the relationship between financial development and economic growth. Both the McKinnon-Shaw and the Endogenous growth theorists predict that financial deepening affects growth through investment. The endogenous growth theory emphasizes the role of the financial sector in promoting innovations, income distribution, and the speed of technological progress, thus contributing to long-term economic growth (King—Levine, 1993). The positive effect of the bank credit to the private sector as a percentage of GDP on the annual GDP growth rate could, therefore, be viewed from the positive influence of investment on economic growth. The coefficient of the financial development variable implies that a 1 per cent increase in bank credit to

the private sector increases the annual GDP growth rate by 0.232 per cent. The results accord with the findings of Khan—Qayyum (2006) for Pakistan and Quartey — Prah (2008) in Ghana but contradict the findings by Ezzo (2010) and Ahmed (2008) for Sierra Leone. Ahmed (2008) found a negative but significant relationship for Sierra Leone when private sector credit was used.

Table 6. 4: Estimated impact of external debt and capital flight on annual GDP growth

Variable	Two-step GMM			OLS		
	Coeff.	Std. Err	Prob.	Coeff.	Std. Err	Prob.
<i>LAGDPgr</i>	0.158	0.041	***			
<i>EXT</i>	-0.045	0.014	***	-0.011	0.009	
<i>KF</i>	-0.069	0.016	***	-0.011	0.018	
<i>MP</i>	-0.013	0.008		-0.008	0.003	**
<i>FP</i>	0.047	0.093		0.146	0.036	***
<i>MP*EXT*KF</i>	0.000	0.000	***	0.000	0.000	
<i>FP*EXT*KF</i>	-0.000	0.000	***	-0.000	0.000	
<i>POLITY</i>	0.373	0.357		0.172	0.044	***
<i>FDI</i>	-0.084	0.034	**	-0.108	0.011	
<i>FD</i>	0.232	0.042	***	0.057	0.018	***
<i>GS</i>	-0.216	0.064	***	-0.011	0.033	
<i>TRADE</i>	0.038	0.019	*	0.018	0.009	*
<i>INV</i>	0.150	0.087	*	0.039	0.04	
<i>AR (2)</i>	0.52		0.602			
<i>Hansen test</i>	120.98		0.844			

Source: Computed using STATA 15; ***, **, and * denote significance at 1%, 5% and 10% respectively.

Contrary to expectation, the coefficient of foreign direct investment is negative in both estimators and statistically significant in the two-step GMM model. The result indicates that a percentage increase in FDI reduces the growth rate by 0.08. This negative contribution of FDI could be a reflection of the high participation of foreigners in the

retail markets of most SSA countries rather than investment in the valued-added productive sectors of the FDI-receiving economy. In other words, on average, net FDI inflows have not been effective in contributing to economic growth in SSA over the past three decades, probably due to the low absorptive capacity of the recipient SSA countries.

Again, contrary to theoretical expectation, government spending came out to be negative and statistically significant in the two-step system GMM. This negative relationship could be due to excessive imports and corruption. Majority of the sampled SSA countries are import-dependent, implying that the governments of these SSA countries might have to spend more on imported consumables rather than locally produced goods and services. Also, the high level of public sector corruption could be responsible for the over-invoicing and financial loss to the state by way of over-payment of bills for the purchase of final goods and services by the government.

In other related results, the gross fixed capital formation as a measure of domestic investment is included as an explanatory variable in the annual growth rate model. This is to find out if countries that invest a substantial part of their GDP are likely to grow quickly or countries that fail to invest are will fail to grow. The result shows that a 1 percentage increase in investment as a share of GDP is associated with a 0.42 per cent increase in real GDP. This result validates the neoclassical growth theory by Solow (1956) and also consistent with the empirical findings by Schmidt—Hebbel — Solimano (1996). Economic theory holds that higher rates of savings and investments are important determinants of the long-run growth rate. The suggestion behind Solow's (1956) framework is that higher investments and savings rates lead to more accumulated capital per worker, and hence this results in an increase in economic growth but at a decreasing rate. Under endogenous growth theories that emphasize the broader concepts of capital (Rebelo, 1991), economic growth and investment tend to move together. The positive and significant impact is consistent with the findings by Kargbo — Adamu (2010) for Sierra Leone.

Trade openness is also positive and has a statistically significant effect on the annual GDP growth rate at the 5 per cent significance level. The positive relationship supports the fact that openness to trade may allow domestic firms to have access to international markets by exporting their commodities.

6.4.2 Implication of external debt and capital flight on investment

The results in Table 6.5 also show the implication of capital flight and external as well as other control determinants on investment. Consistent with the result of the annual GDP growth rate, the impact of external debt on investment is negative and statistically significant. The evidence indicates that a 1 per cent increase in external debt reduces domestic investment by 0.028 per cent. This negative relationship between external debt and investment as revealed is in line with the Krugman (1988) “debt-overhang” theory and the crowding-out effect. The debt overhang indicates that as external debt accrues, potential investors perceived that the build-up in debt to be accompanied by distortionary measures and hence are motivated to withhold their investment to avoid measures in the future. The crowding-out effect theory also argues that high debt servicing associated with borrowing eat-up resources available for public investments, forcing the central government to compete with the private sector for the few resources in the domestic economy which eventually crowds them and forces them out. This is consistent with results in the SSA region. Suma (2007) found that external debt to income has a negative impact on investment in Ecowas countries. Habimana (2005) also found that the debt to income has an adverse effect on investment in the case study of Rwanda. Amin—Audu (2006) found supportive evidence for debt overhang hypotheses in Nigeria. Maureen in Kenya (2001) using time series data for the period 1970-95 also found that external debt stock has a significant and robust negative impact on private investment.

As can also be seen from the results, capital flight has the expected negative effect on domestic investment. The coefficient on capital flight is negative and statistically significant. This clearly indicates that capital flight has a negative and strong effect on private investment. This result is consistent with the result of Fofack — Ndikumana (2015) that capital flight drains valuable capital from investment in the SSA region as theoretically predicted. The discount rate is also negatively related to domestic investment as the case in the annual GDP growth rate model, and just like the growth model, the interaction term of the discount rate with external debt and capital flight is positively related to investment. For the coefficient of the fiscal policy, it is also positive alone and negative when integrated with external debt and capital flight. The positive effect of the monetary policy interactions with external debt and capital flight and the negative effect from the interaction of external debt and capital flight means that until the issues of the

external debt and capital flight are addressed, any efforts aimed at stimulating investment through fiscal and monetary policies can be undermined and hence may not result in increased investment as expected.

Table 6. 5: Estimated impact of external debt and capital flight on Investment

Variable	Two-step GMM			OLS		
	Coeff.	St. Err	Prob.	Coeff.	St. Err	Prob.
<i>Lagged INV</i>	0.1537	0.0327	***			
<i>EXT</i>	-0.0280	0.0072	***	-0.0141	0.0088	
<i>KF</i>	-0.0537	0.0185	***	0.0127	0.0184	
<i>MP</i>	-0.0036	0.0080		-0.0096	0.0034	***
<i>FP</i>	0.3889	0.0331	***	0.1578	0.0353	***
<i>MP*EXT*KF</i>	0.0001	0.0000	***	0.0000	0.0000	
<i>FP*EXT*KF</i>	-0.0000	0.0000	**	-0.0000	0.0000	
<i>POLITY</i>	0.1599	0.0441		0.0000	0.0430	***
<i>FDI</i>	0.3236	0.0387		0.1327	0.0512	**
<i>FD</i>	0.1435	0.0223	***	0.0607	0.0178	***
<i>GS</i>	-0.1458	0.1803		-0.0021	0.0324	
<i>AGDPgr</i>	0.0324	0.0393	***	0.0180	0.0092	*
<i>TRADE</i>	0.2941	0.0188	***	0.0447	0.0233	*
<i>AR (2)</i>	0.724		0.74			
<i>Hansen test</i>	0.921		1			

Source: Computed using STATA 15; ***, **, and * denote significance at 1%, 5% and 10% respectively.

The coefficient of the political stability variable is rightly signed and corresponds to both the theoretical and empirical predictions on the effects of quality political institutions on

investment. As displayed in the result, the coefficient of political stability is positive and statistically significant in both the OLS estimation and the two-step GMM results indicating that holding all the other regressors unchanged, 1 unit improvement in the political environment of SSA reduces the uncertainties and risks associated with investment and boost investment by 0.16. The result confirms the study by Waguespack *et al.*, (2005); Cull — Xu, (2005) and other empirical studies cited in the empirical literature. The positive and significant effect of the political stability, therefore, suggests that for SSA countries to boost productivity and growth through investment, stronger and well-functioning political, judicial and economic institutions has to be developed and strengthen to encourage more investment in the region.

Consistent with the result for the annual GDP growth rate model, the coefficient of financial development maintained its positive sign and is statistically significant at 1 per cent significant level in both models. This result presupposes the need to develop the financial sector to promote loans, encourage interest rates reduction since this will have a beneficial effect on investment. Again, consistent with the annual GDP growth rate model is the result of the FDI. It is still negative, and it is significantly related to investment.

The annual GDP growth rate is also incorporated into the investment equation to find out whether economic growth has a positive and statistically significant impact on investment. The result indicates that the higher the growth of real income, the more the growth of its investment. Thus, there is evidence of the hypothesized “investment accelerator” effect of output.

Trade openness equally demonstrated a positive relationship with a domestic investment with statistically significant effect at 5 per cent. The results show that trade liberalization has positively helped boost domestic investment in the SSA. This positive relationship could be explained that the opportunity to easily import and export strongly influences domestic investment. The result in Table 6.5 indicates that government expenditure as a percentage of GDP is negatively related to private domestic investment as the case in the annual GDP growth rate contrary to expectation even though it is not significant.

6.5 Chapter summary

This paper examined the implication of the incidence of the revolving door of external debts and capital flight on fiscal and monetary policy effectiveness in SSA countries employing the two-step GMM regression model for the period 1985 to 2015. The empirical results revealed a negative growth and investment impact from the interaction of external debts, capital flight and fiscal policy. These results indicate that continuous upsurge in capital flight and external debt accumulation would reduce government ability to generate more tax revenue since flown capital cannot be taxed, hence reducing the government's ability to spend more. In addition, the loss of resources from the domestic economy as a result of high debt service ratio may result in a shortage of liquidity available for domestic investment, adversely, distressing the continent current and future growth prospects through government's expenditure. On the impact of the revolving door hypothesis of external debt and capital flight with monetary policies, the empirical results from the two-step system GMM regression model support the view that monetary transmission mechanism in the region has been undermined in achieving its intended purposes as a result of the increasing capital flight and external debts.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

7.0 Introduction

This chapter summarizes the entire study. It presents the summary, conclusions, contributions to the literature and the policy recommendations derived from the analysis of the data collected. By way of structure, Section 7.1 summarises the entire study with emphasis on the key findings. Section 7.2 concludes by drawing attention to how the study evaluated the research hypotheses and how the research objectives were achieved. The contributions of the study to the literature are also discussed in section 7.3, whilst the policy implications and recommendations of the key findings of the study follow in Section 7.4. The limitations of this study and some areas for future research are outlined in Section 7.5.

7.1 Summary of the study

Understanding the direction of causality between external debts and capital flight and, its implication on economic policies and welfare have been a challenge to those in the fields of development and the finance sector. Several researchers have tried to formulate models and undertake empirical works that could help in deepening the understanding of the relationships and the implications therein. However, the global economic and financial crises in 2007/2008 came as a wakeup call for all those in these fields to work harder for a better understanding of this causality and its implication in the domestic economy. The study set itself to meet three objectives. First, to examine both the dynamic relationship between external debt and capital flight in SSA and most importantly, to identify the direction of causality. Secondly, the study aims to investigate the implication of the simultaneous occurrence of external debt and capital flight on general welfare for SSA countries and compare the results with HIPC countries within the region in general. In the final section, the dissertation aimed to examine the economic policy implications of external debt and capital flight with a specific focus on the effectiveness of fiscal and monetary policies for SSA countries. In pursuance of these objectives, the dissertation was organised into seven chapters, of which this final one serves as the concluding one.

Chapter One introduces the study by presenting the background information, specifying the research problem, the research objectives and the hypotheses as well as the underlying significance informing the study. The scope, as well as the organisation of the study, was also discussed in Chapter One. The study proceeds with a discussion on the definition and how the key concepts that are used in the dissertation have been measured and they are presented in Chapter Two. Subsequently, a working definition for the major concepts appropriate for the conduct of the study is provided. Having resolved the pertinent definitional and measurement issues surrounding the main concepts in this dissertation, in Chapter Three, efforts are directed at providing a broad overview of macroeconomic performance and policy environment of SSA since independence in the 1960s. This is to provide an insight into understanding the observed trends in the macroeconomic performance as well as the composition and pattern of capital flight and external debt of SSA over the years.

Chapter four is the first of the three empirical chapters of the study. This chapter examined the relationship between capital flight and external debt in 24 countries in SSA employing the two-step system GMM and the FGLS estimators for the period 1990 to 2015. The choice of these estimators is due to the cross-sectional dependence and endogeneity nature of the datasets, and the task is executed at both the aggregated and the disaggregated levels. At the aggregated level, the causal relationship between external debt and capital flight is examined for the SSA countries as a whole, whereas at the disaggregated level, the data set is split into the four regions within the study area, and estimation is carried out for each of the sub-groups in the region. To compare whether addressing the cross-sectional dependence and the endogeneity problem has influenced the results, the pooled OLS was also used to estimate the model. The results of the FGLS estimation, which includes a correction for the cross-sectional dependence, are significantly not different from the forward orthogonal two-step system GMM results. Though all the three estimators had the same expected signs for most of the variables, the coefficient values produce by the FGLS and the forward orthogonal two-step system GMM seems to be smaller than the pooled OLS result. This means that, in the case of chapter 4, after the correction for the serial correlation, cross-sectional dependence and endogeneity, the result seems smaller.

The regression result presented in chapter 4 suggests that there is a positive relationship between external debt and capital flight in SSA region signifying that increases in external debt accumulation lead to increase in capital flight and that if the external debt remains unchecked, it will continue to cause a substantial amount of capital flight. At the regional level, external debt remains positive and have statistically significant effects on capital flight for all of the regions except East Africa, which had a positive relationship even though not statistically significant. This result implies that creditors knowingly or unknowingly financed the export of private capital rather than investing in SSA. Interesting, historical evidence from the region gives credence to many occasions where the creditors are aware (or may have been aware) of the misappropriation and mismanagement of the borrowed funds and the corrupt nature of the borrowing countries, yet the loans were advanced. In most case, such lending is often motivated by political and strategic considerations. Again, it could also imply a lack of diligence on the part of creditors before the loans were approved.

The Pairwise Dumitrescu Hurlin panel causality test also indicates that in addition to debt-fueled capital flight, the SSA region also suffers from flight-fueled external borrowing suggesting that there is bi-directional causality between external debt and capital flight. The findings from the variance decomposition analysis showed that apart from the previous value of each of variables (external debt or capital flight) that explains a significant portion of its own forecast error variance, the next important predictor is the other variable. Another significant contribution of this chapter is the influence of the annual GDP growth rate, which is used to capture the impact of the macroeconomic environment. The result also confirms the hypothesis that capital flight is higher when the growth rate of the economy is low since low growth is an indication of low profitability of domestic investment and, therefore, capital will thus tend to flee the country. The negative and statistically significant effect of annual GDP growth and capital flight is consistent with the literature.

In chapter five, the study examined the impacts of the simultaneous occurrence of external debts and capital flight on welfare in SSA employing the Driscoll and Kraay standard errors panel estimation method and datasets for the period 1990 to 2015. Before the estimation, the initial diagnosis statistics of the data was first examined in relation to the individual cross-sectional and time effects, serial correlation, GroupWise

heteroskedasticity and cross-sectional dependence. The stationarity properties and cointegration analysis were also done in this chapter. The analysis presented in the chapter shows that both external borrowing and capital flight represent an essential constraint to the general welfare of people in the region using the human development index as a measure of welfare and dataset from 1990-2015. Both external debt and capital flight had a significant negative impact on inclusive in both SSA as a whole and the HIPC countries within the region. As a robustness check, the chapter also employed the Augmented Mean Group (AMG) estimator developed by Eberhardt - Teal (2012) and the Panel-Corrected Standard Error (PCSE) estimator to estimate the data for the SSA region. Both AMG and PCSE results confirmed the negative impact of external debt and capital flight result obtained with the Driscoll–Kraay standard errors for both datasets. This result is particularly challenging given the need to reduce poverty and human inequality in the region, which is a prerequisite for the achievement of the SDGs. One important evidence also from this chapter is the impact of external debt on welfare in both the SSA region and the HIPC countries within the region. From the literature, external borrowing at the early stages of economic development in any developing country is expected to enhance its welfare. Then, at the later stage, when the debt is being serviced, due to debt overhang, external debt is then expected to cripple investment and subsequently reduce welfare. For this reason, this chapter decided to test this hypothesis by including the square of the external debt into the model. The evidence from the study indicates that for SSA and HIPC countries within the SSA region, external debt does not begin by impacting positively to welfare before changing to negative after debt overhang sets in, it immediately reduces growth contrary to theoretical prediction.

Chapter six examined the incidence of the revolving door of external debts and capital flight on fiscal and monetary policy effectiveness in SSA employing the two-step system GMM regression model for the period 1990 to 2015. The results indicate that continuous upsurge in capital flight and external debt accumulation, not only, reduce government ability to generate more tax revenue since flown capital cannot be taxed, it has also been a drag on the progress of countries in the SSA region particularly by undermining their domestic investment and annual GDP growth rate. This is a matter of concern, especially given the critical importance of domestic private investment for growth and development in the region.

7.2 Conclusions of the study

Based on the foregoing discussion, it can be concluded that the objectives of this study have been achieved in view of the fact that:

- I. the study investigates the relationship between external debt and capital flight for SSA countries
- II. Examine the implication of external debt and capital flight on welfare for SSA countries and compare the results with HIPC countries within the region in general.
- III. Analyse the impact of external debt and capital flight on economic policy effectiveness within the SSA countries.
- IV. Provide policy recommendations based on the outcome of the study

By achieving these underlying research objectives, the study, in effect, has responded to the pertinent research hypothesis stated in section 1.3 as follows:

- I. H₁: External borrowing is significantly influenced by capital flight in SSA countries.

With this hypothesis in mind, the empirical evidence presented in chapter four suggests that there is a positive relationship between external debt and capital flight in SSA signifying that increases in external debt accumulation lead to increase in capital flight and that if the external debt remains unchecked, it will continue to cause a substantial amount of capital flight. The results of the variance decomposition also indicate that apart from the previous values of capital flight and external debt, the most significant predictor of each of the variable is the other.

Therefore, based on the result, this study fails to reject the null hypotheses that external borrowing is significantly affected by capital flight in SSA countries. This means that there is a direct relationship between external debt and capital flight.

II. H₂: There is bi-directional causality between external debt and capital flight

To a very large extent, the evidence from the Pairwise Dumitrescu Hurlin panel causality test indicates that there is bi-directional causality between external debt and capital flight in SSA countries. This result is similar to the result obtained by Fofack (2009), Ampah—Gabor— Kotosz (2018); Ndikumana— Boyce (2014), Ndiaye, (2011), Ndikumana— Boyce (2011), Ajilore (2005) and Ndikumana— Boyce (2011). The result from Fofack study indicates that for ten countries in SSA, there is bi-directional causality between external debt stock and capital flight. Therefore, based on the evidence from the causality test, this study fails to reject the null hypothesis and, concludes that, overall, with reference to SSA, external debt and capital flight granger causes each other.

III. H₃: External debt and capital flight do not have any significant impact on welfare in SSA.

The evidence presented in Chapter five shows that both external borrowing and capital flight represent an essential constraint to the general welfare of people in the SSA region using the human development index as a measure of welfare and dataset from 1990-2015. From the results reveal, a percentage increase in capital flight leads to about 1.4 percentage reduction in welfare in SSA countries. In relation to external debt, the evidence from the study indicates that a percentage increase in external debt reduces welfare by approximately 9.3 per cent for SSA countries. In addition to the decrease in welfare from external debt and capital flight, the coefficient of the interaction term between external debt and capital flight also had a negative and statistically significant impact on welfare.

Consequently, this study rejects the null hypotheses that there is no significant impact of external debt and capital flight on welfare in SSA countries. Instead, it concludes that, with reference to SSA countries, external debt and capital flight exert a statistically significant negative impact on welfare.

IV. H₄: External debt and capital flight do not have any significant impact on welfare in SSA HIPC countries.

Just like the conclusion for hypothesis H₄, the evidence from the study in Chapter 5 indicates that external debt and capital flight are negatively related to welfare in HIPC countries in SSA. The results suggest that a percentage increase in external debt and capital flight decrease welfare in SSA HIPC countries by 8.6 and 2.2 percentage respectively. Therefore, this study also rejects the null hypotheses that there is no significant relationship between external debt and capital flight and welfare in SSA HIPC countries and conclude that, with reference to HIPC countries in SSA, external debt and capital flight exert a statistically significant negative impact on welfare.

V. H₅: There is no significant relationship between external debt and capital flight and fiscal and monetary policies effectiveness in SSA countries.

To accept or reject the above hypothesis, this study estimates economic policy objectives as a function of external debt, capital flight, economic policy instruments and other control variables, and this is presented in chapter 6. The economic policy objectives considered in this chapter is the annual GDP growth rate and domestic investment, and this is chosen based on the literature. The effectiveness of the economic policy is examined by integrating the external debt and capital flight with the economic policy variables and estimating the policy objectives as a function of these interactions and the other control variables.

The evidence from the estimation indicates that the discount rate, which is used to measure monetary policy had a negative and statistically significant effect on the annual GDP growth rate and domestic investment as expected. However, when it is integrated with external debt and capital flight, its effect changes from negative to positive. The fiscal policy, which had a positive effect on annual GDP growth and domestic investment, also changes from positive to negative when integrated with external debt and capital flight. This result means that in the event of illicit capital outflows and massive borrowing, any attempt by the government to increase annual GDP growth by increasing by adjusting fiscal policy in order

to spend more or through interest rate adjustment in order to influence investment can be ineffective.

Therefore, this study rejects the null hypotheses that there is no significant relationship between external debt and capital the efficacy of economic policy, but instead, concludes that external debt and capital flight exert a statistically significant negative impact on economic policy effectiveness.

7.3 Contributions to the literature

The result of this dissertation contributes to the existing literature on external debt, and capital flight relationship and its implications in the SSA region, notable among these contributions are as follows:

- First and foremost, this study is currently the most up-to-date study on the relationship between external debt and capital flight in SSA, taking into account the time span of the study, from 1990-2015. The time frame for most of the work in the region has been short and not quite recent. The last datasets used in analysing the incidence of external debt and capital flight ended in 2010. Therefore, as far as SSA as a region is concerned, this is currently the most representative and up to date macro-level study on the relationship and implication of external debt and capital flight.
- Secondly, this study is the most detailed on the relationship between external debt and capital flight in SSA, considering the empirical analyses undertaken therein. For instance, unlike all the other known related studies on external debt and capital flight, this study looks at the relationship for the various regions within the SSA region. Also, both variance decomposition analysis and Granger causality test were employed in examining the relationship between external debt and capital flight. This is new in the empirical literature.
- The third ground-breaking contribution of this study to the literature is the empirical analysis of the implication of external debt and capital flight on welfare and economic policy effectiveness. This is the first known attempt at an empirical

exercise in this endeavour and, more importantly, the first time that both fiscal and monetary policy effectiveness has been analysed together in relation to external debt and capital flight.

- Finally, this study is the only study in the analysis of external debt and capital flight in the SSA region that address the problem of cross-sectional dependence. All the empirical studies done to examine the incidence of external debt and capital flight in the region failed to capture the cross-sectional dependence nature of the series used.

7.4 Policy recommendations of the study

Taking cognisance of the empirical evidence presented in this study, the following recommendations are proposed to help reduce external debt and capital flight as well as help achieve the welfare agenda that the SSA countries seek. The recommendations are split into three sections based on the empirical chapters of the study.

7.4.1 Policy recommendation from Chapter four

In this section, the policy initiatives recommended includes a combination of better management of debt by African governments, how to prevent future capital flight, and how to induce repatriation of private assets now held abroad.

- First, the empirical evidence presented in chapter 4 indicates that external borrowing has failed the test of benefiting the people; it is rather increasing private assets held by individuals and government officials abroad. The positive relationship between external debt and capital flight simply means that creditors of loans to SSA economies are knowingly or unknowingly financing the export of private capital rather than investing in these countries. Therefore, the study recommends to external creditors or lenders of loans to countries in SSA to enforce rules for responsible lending or transparency in the disbursement of funds or ensure effective and results-based monitoring of development programs and projects for which loans are acquired for. This can be achieved by endorsing and adopting the practice of debt audit. The auditing of debt by both donors and

recipients will minimise the risks of leakage and misallocation of foreign debt. This will go a long way in establishing a culture of responsible lending and management of external debt in the SSA. Otherwise, a policy recommendation will be to insist that creditors that engage in irresponsible or politically motivated lending be made to bear the consequences of such debt.

- Secondly, in addition to greater accountability on the creditor side, it is equally important that countries in SSA should establish mechanisms of transparency and accountability with respect to decision-making processes regarding external debt. It is important that governments in the region guarantee that any external loans acquired will be invested in productive projects that give higher returns on investment. If these loans are invested in such productive projects, it is more likely to enhance the debt-servicing capacities of most of the countries in the region, and hence more likely to reduce the incidence of falling into additional debt crisis.
- Thirdly, countries in SSA needs to consolidate the regulatory framework and the overall business environment capable of inducing domestic investors to keep their legally acquired capital at home rather than syphoning it off abroad. This can be done by deepening the regions political and governance environment and ensuring a more stable macroeconomic environment. In addition to the regulatory framework, economic policies should be made to keep inflation as low as possible, stabilise the domestic currency and strengthen the international reserves base. These measures are key to macro-economic stability and investment, which should be at the heart of government policies. Also, governments in the region should create a wide menu of domestic financial assets in which domestic investors can invest their wealth. Additionally, domestic interest rates set above the world interest rate are sure to stimulate inflows.
- Fourthly, the study also recommends to governments in the region to take concerted effort to make the transactions costs and legal risks for moving capital abroad more costly. This can be done by strengthening and establishing a framework of collaboration among institutions responsible for preventing illicit financial outflows. These include the police service, the customs and border agencies, immigration services, revenue agencies, financial intelligence units,

anti-fraud/ anti-corruption/ anti-money laundering agencies, etc. In addition, governments in the region could use their foreign embassies and official representations abroad to create mechanisms for information sharing and dissemination on financial crime coordination. In this way, the various institutions and agencies of government responsible for preventing capital flight, are better informed early and are able to commence investigation at the earliest possible time when financial crimes are detected.

- Finally, the evidence from the study in chapter 4 could also suggest an additional rationale for the annulment of debts since the continuous accumulation of external debt may signal increased risks, to which private capital owners may respond by pulling out their capital. The respective governments need to discuss the possibility of debt annulment or debt rescheduling with international financial institutions, the World Bank, and other bilateral loan providers.

7.4.2 Policy recommendation from Chapter five

On the basis of the empirical evidence presented in chapter 5, the following recommendations are made.

- First, one significant conclusion drawn from the outcome of the estimation is that external debt impedes welfare in SSA indicating that massive external borrowing does not produce any congenial atmosphere for factor productivity growth, but rather, worsens the financing gap problem due to the capital flight problem. This evidence suggests that borrowed funds should be invested in self-sustaining projects that would eventually generate enough returns to defray the accrued interest and the principal amount borrowed. Therefore, a policy recommendation to countries in the region will be to ensure that borrowed funds especially external loans are not converted into expenditures on consumables, payment of workers' emoluments, refinancing of previous loans, or unnecessary projects.
- Secondly, the evidence from the impact of capital flight suggests the need to put in place policies at the domestic level that will allow the retention of capital flight in the SSA countries. Therefore, in addition to the earlier suggestions in section 7.4.1, the study suggests to the international communities, especially, the United

Nations and the World Bank to hold countries that are harbouring illicit funds from developing countries accountable for perpetuating illicit financial in order to prevent the rise of such havens for capital flight and other ill-gotten funds from the region.

- Thirdly, the findings of this study establish that trade openness, political stability and increase in domestic capital is important factors in the fight for welfare in the region. Therefore, in addition to maintaining political stability and better political environments that will promote investment in the region, SSA countries need to diversify their export commodities and wean their economies off heavy reliance on traditional export commodities. Also, the establishment of new industries and empowering the existing local ones through financial and technical support schemes to expand and produce commodities in which countries have a comparative advantage would help maximize export earnings and create employment opportunities to absorb the growing labour force that would contribute meaningfully to the developmental process.

7.4.3 Policy recommendations from Chapter six

- In addition to the recommendation made in relation to stemming capital flight and external debt, the evidence from the study suggest the need to improve the financial sector in Africa since it is positively related to growth and investment in the SSA region. Therefore, measures to accelerate the development of domestic and regional financial markets could also help to shift African investors' preferences in favour of domestic markets. In Kenya, for instance, the domestic-currency government infrastructure bonds issued have provided individual as well as corporate entrepreneurs with a significant source of finance for public infrastructure (Brixiova—Ndikumana, 2013). This instruments inevitably have help to keep Kenyan private capital at home, offer long-term savings opportunities, and provide the government with a mode of infrastructure financing that does not expose the country to exchange rate risk.

7.5 Limitations and directions for future research

This research is conducted to investigate the relationship between external debt and capital flight and analyse its implications on welfare and efficacy of economic policies in SSA. As a matter of fact, the analysis presented in this study cannot exhaust all the issues pertaining to this topic, as no single study is exhaustive enough. Notwithstanding this, this study will be enough for the academic purpose for which it is being carried out.

The major limitation of this study, which is typical of most studies in developing nations, is the quality and limited availability of annual series on some of the key variables used in the study. On account of this data limitation for this study, the richness of a large cross-country data could not be fully explored since only 24 out of the 54 countries in the SSA region were considered in the analysis. Also, this study is limited by the span of data in terms of time series, thus limiting some of the dynamics that could have been gained from individual country analyses of some of the phenomena being studied. As a result, estimation models such as the Dynamic Common Correlated Effects Estimator (DCCE) by Chudik—Pesaran (2015), which could have disintegrated the results into short-run and long-run could not be used due to data quality and availability.

Based on this limitation, it will be good if future research could use the DCCE to test the relationship between external debt and capital flight and its implication on welfare and effectiveness of fiscal and monetary policies by extending the datasets and the countries. Generally, the DCCE estimator requires at least 30 annual series. Secondly, lumping all the countries in SSA together in one model may also pose a limitation to this study since there is a possibility of sub-regional heterogeneity. Therefore, it would be quite interesting to have separate models for each region, especially for Chapter five and six.

REFERENCE

- Abalkin, A. – Whalley, J. (1999). The problem of capital flight from Russia. *World Economy*, 22(3), 421-444.
- Abdullahi, M. M. – Hassan, S. B. – Bakar, N. A. B. A. (2016): Analyzing the impact of external debt on capital formation in Nigeria: an autoregressive distributed lag approach. *Mediterranean Journal of Social Sciences*, 7(1), 173.
- Abu, N. – Karim, M. Z. A. (2016): The relationships between foreign direct investment, domestic savings, domestic investment, and economic growth: The case of Sub-Saharan Africa. *Society and Economy in Central and Eastern Europe*, 38(2), 193-217.
- Abu-Bader, S. – Abu-Qarn, A. S. (2008): Financial development and economic growth: The Egyptian experience. *Journal of Policy Modelling*, 30(5), 887-898.
- AfDB (2012): *African Economic Outlook, 2012. Promoting Youth Employment*. Paris: OECD Publishing. <https://doi.org/10.1787%2Faeo-2012-8-en>
- Ahmed, A. D. (2008): Financial liberalization, financial development and growth in sub-Saharan Africa's economic reform: An empirical investigation. *Centre for Strategic Economic Studies, Victoria University, Australia*.
- Ajayi, M. S. I. (1997): *An analysis of external debt and capital flight in the severely indebted low-income countries in sub-Saharan Africa*. International Monetary Fund.
- Ajayi, S. I. – Khan, M. S. (2000): *External debt and capital flight in sub-Saharan Africa*. International Monetary Fund. <https://doi.org/10.5089%2F9781557757913.071>
- Ajayi, S. I. (2003): External debt, capital flight, and growth in Nigeria. *The debt trap in Nigeria: Towards a sustainable debt strategy*, 105-152.
- Ajayi, S. I. (2003): External debt, capital flight, and growth in Nigeria. *The debt trap in Nigeria: Towards a sustainable debt strategy*, 105-152.
- Ajayi, S. I. (2015): Capital flight and economic development in Africa. *Capital flight from Africa: Causes, effects, and policy issues*, 55-80.

- Ajilore, O. T. (2005): External debt and capital flight in Nigeria: is there a revolving door? economic. *South African Journal of Economic and Management Sciences*, 8(2), 211-224.
- Akram, N. (2016): Public debt and pro-poor economic growth evidence from South Asian countries. *Economic research-Ekonomska istraživanja*, 29(1), 746-757.
- Alesina, A.— Spolaore, E.— Wacziarg, R. (2005): Trade, growth and the size of countries. *Handbook of economic growth* 1(1), 499-1542.
- Ali, A. — Walters, B. (2011): On Causes of Capital Flight from Sub-Saharan Africa. In *2011 Annual Conference, Central for the study of African Economies*. www.csae.ox.ac.uk/conferences/2011-edia/papers/679-ali-pdf
- Allen, D. S.— Ndikumana, L. (2000): Financial intermediation and economic growth in Southern Africa. *Journal of African economies*, 9(2), 132-160.
- Anyanwu, J. C. (1994). An analysis of the external debt burden of sub-Saharan Africa. In *African Debt Burden and Economic Development. Selected papers for the 1994 Annual Conference of the Nigerian Economic Society*,
- Arellano, M. — Bover. O. (1995): Another Look at the Instrumental Variable Estimation of Error-Components Models. *Journal of Econometrics*, 68, 29-52.
- Arellano, M. — Bond, S. R. (1991): Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies (New York)*, 58, 194, 277- 297.
- Arellano, M. (2003): *Panel Data Econometrics*, Oxford University Press.
- Arnone, M. – Bandiera, L.– Presbitero, A. F. (2005). External debt sustainability: Theory and empirical evidence. *Catholic University of Piacenza Economics Working Paper*, 33.
- Ashman, S. – Fine, B. – Newman, S. (2011). Amnesty International? The nature, scale and impact of capital flight from South Africa. *Journal of Southern African Studies*, 37(01), 7-25.

- Asiedu, E. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. *The World Economy*, 29(1), 63-77.
- Ayadi, F. S. –Ayadi, F. O. (2008): The Impact of External Debt on Economic Growth: A Comparative Study of Nigeria and South Africa. *Journal of Sustainable Development in Africa*, 10(3), 152-550.
- Ayanwale, A. B. (2007): FDI and Economic Growth: Evidence from Nigeria, *Discussion Paper No.165, African Economic Research Consortium*, Nairobi, Kenya.
- Baltagi, B. (2008): *Econometric analysis of panel data*, John Wiley and Sons, Chichester.
- Barro, R. J.—Sala-i-Martin, X. (1992): *Economic growth* (2nd ed.). New York: The McGraw-Hill International Editions.
- Bayraktar, N. – Fofack, H. (2013): Post HIPC Growth Dynamics in Sub-Saharan Africa: An Application to Ethiopia. *Journal of African Development*, 15(2), 61-90.
- Beja Jr, E. (2006): Capital flight and the hollowing out of the Philippine economy in the neoliberal regime. Retrieved from <https://mpa.ub.uni-muenchen.de/4830/>.
- Bentum-Ennin, I. (2009): External debt and economic growth in Ghana. *Oguaa Journal of Social Sciences*, 4(4), 4-16.
- Beugelsdijk, S.— Smeets, R.— Zwinkels, R. (2008): The impact of horizontal and vertical FDI on host's country economic growth. *International Business Review*, 17(4), 452-472.
- Bhagwati, J. N. (1964). On the Under-Invoicing of Imports”, *Bulletin of the Oxford University, Institute of Economics and Statistics*, 26(4), 389-97.
- Bhagwati, J. N., Krueger, A., & Wibulswasdi, C. (1974). Capital flight from LDCs: A statistical analysis. In *Illegal transactions in international trade* (pp. 148-154).
- Bonilla, R. (2004). Macroeconomic Policy, Structural Adjustment and Debt Relief. *International Development Research Centre (IDRC)*.

- Borensztein, E.— De Gregorio, J.— Lee, J. W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics*, 45(1), 115-135.
- Boyce, J. K – Ndikumana, L. (2001): Is Africa a net creditor? New estimates of capital flight from severely indebted sub-Saharan African countries, 1970-96. *Journal of Development Studies*, 38(2), 27-56.
- Boyce, J. K. – Ndikumana, L. (2008): *New Estimate of Capital Flight from Sub-Saharan African Countries: Linkages with External Borrowing and Policy Option*”, PERI Working Paper No. 166, University of Massachusetts Amherst, USA.
- Boyce, J. K. – Ndikumana, L. (2015): Strategies for addressing capital flight. *Capital Flight from Africa: Causes, Effects and Policy Issues*, 393-417.
- Boyce, J. K. (1992): The revolving door? External debt and capital flight: A Philippine case study. *World Development*, 20(3), 335-349.
- Brixiova, Z. – Ndikumana, L. (2013): The global financial crisis and Africa: The effects and policy responses. *The Oxford Handbook of the Political Economy of Financial Crises*, 711-735.
- Canh, N. P. (2018): The effectiveness of fiscal policy: contributions from institutions and external debts. *Journal of Asian Business and Economic Studies*.
- Cassimon, D. – Ferry, M. – Raffinot, M. – Van Campenhout, B. (2013): Dynamic fiscal impact of the debt relief initiatives on African heavily indebted poor countries (HIPC). *Document de travail DT/2013-01 (Université de Paris Dauphine)*.
- Cerra, V. – Rishi, M. – Saxena, S. C. (2008): Robbing the rich: capital flight, institutions and debt. *The Journal of Development Studies*, 44(8), 1190-1213.
- Chang, H. C.— Ho, C. H.— Ouyang, L. Y.— Su, C. H. (2009): The optimal pricing and ordering policy for an integrated inventory model when trade credit linked to order quantity. *Applied Mathematical Modelling*, 33(7), 2978-2991.
- Chang, K. P. – Cumby, R. E. (1991): Capital flight in sub-Saharan African countries. *African External Finance in the 1990s*. Washington, DC: World Bank, 162-85.

- Chinzara, Z. – Kedir, A. – Elhiraika, A. – Sandjong, D. (2017): Growth and development finance required for achieving sustainable development Goals (SDGs) in Africa. *African Development Review*, 29(S1), 15-26.
- Chipalkatti, N. – Rashi, M. (2001): External debt and economic growth in the Indian economy. *Oxford development studies*, 29(1): 31-45.
- Chudik, A. – Pesaran, M. H. (2015): Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. *Journal of Econometrics*, 188(2), 393-420.
- Claessens, S., Naude, D. – Mundial, B. (1993): *Recent estimates of capital flight* (p. 1186). Washington, DC: World Bank.
- Cline, W. R., (1987): Discussion of Chapter 3, in Donald Lessard and John Williamson (eds.) *Capital Flight and the Third World Debt*, *Institute for International Economics*, Washington, D.C.
- Collier, P. – Hoeffler, A – Pattillo, C. (2001): Flight capital as a portfolio choice. *World Bank Economic Review*, 15(1): 55–80.
- Collier, P. – Hoeffler, A. – Pattillo, C. (2001): Flight capital as a portfolio choice. *World Bank Economic Review*, 15(1), 55-80.
- Collier, P. – Hoeffler, A. – Pattillo, C. (2004): Africa's exodus: Capital flight and the brain drain as portfolio decisions. *Journal of African Economies*, 13(2), 15-54.
- Cuddington, J. T. (1986): *Capital flight: Estimates, issues, and explanations* (Vol. 58). Princeton, NJ: International Finance Section, Department of Economics, Princeton University.
- Cuddington, J. T. (1987): Capital flight. *European Economic Review*, 31(1-2), 382-388.
- Cuddington, J. T. (1987): Macroeconomic determinants of capital flight: an econometric investigation. *Capital Flight and Third World Debt*. Washington, DC: *Institute for International Economics*, 85-96.

- Cull, R.— Xu, L. C. (2005). Institutions, ownership, and finance: the determinants of profit reinvestment among Chinese firms. *Journal of Financial Economics*, 77(1), 117-146.
- De Hoyos, R. E. — Sarafidis, V. (2006). Testing for cross-sectional dependence in panel-data models. *The stata journal*, 6(4), 482-496.
- De Mello, L. R. (1999): Foreign direct investment-led growth: evidence from time series and panel data. *Oxford economic papers*, 51(1), 133-151.
- Delis, M. D.— Kouretas, G. P. (2011): Interest rates and bank risk-taking. *Journal of Banking & Finance*, 35(4), 840-855.
- Demir, F. (2004): A failure story: Politics and financial liberalization in Turkey, revisiting the revolving door hypothesis. *World Development*, 32(5), 851-869.
- Deppler, M. — Williamson, M. (1987): Capital flight: concepts, measurement, and issues. *Staff studies for the world economic outlook*, 39, 58.
- Ditzen, J. (2018): Estimating dynamic common-correlated effects in Stata. *The Stata Journal*, 18(3), 585-617.
- Dollar, D. — Kraay, A. (2004): Trade, growth and poverty. *The Economic Journal*, 114(493): 22-49.
- Dooley, M. P. — Kletzer, K. M. (1994): *Capital flight, external debt and domestic policies* (No. w4793). National Bureau of Economic Research. Cambridge, MA
- Dooley, M. P. (1986): Country-specific risk premiums, capital flight and net investment income payments in selected developing countries. *International Monetary Fund Departmental Memorandum*, 86, 17.
- Dornbusch, R. — De Pablo, J. C. (1989): Debt and macroeconomic instability in Argentina. *Developing country debt and the world economy* (pp. 37-56). University of Chicago Press.

- Driscoll, J. C. – , Kraay, A. C. (1998): Consistent covariance matrix estimation with spatially dependent panel data. *Review of economics and statistics*, 80(4), 549-560.
- Durham, J. B. (2004): Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth. *European economic review*, 48(2), 285-306.
- Eaton, J. (1987): Public debt guarantees and private capital flight. *The World Bank Economic Review*, 1(3), 377-395.
- Eberhardt, M. – Presbitero, A. F. (2015): Public debt and growth: Heterogeneity and non-linearity. *Journal of International Economics*, 97(1), 45-58.
- Eberhardt, M. – Teal, F. (2010): Productivity analysis in global manufacturing production. Discussion Paper No. 515, Department of Economics, University of Oxford.
- Eberhardt, M. – Teal, F. (2011): Econometrics for grumblers: a new look at the literature on cross-country growth empirics. *Journal of Economic Surveys*, 25(1), 109-155.
- Eberhardt, M. (2012): Estimating panel time-series models with heterogeneous slopes. *The Stata Journal*, 12(1), 61-71.
- Eggerstedt, H. – Hall, R. B. – Van Wijnbergen, S. (1995). Measuring capital flight: a case study of Mexico. *World Development*, 23(2), 211-232.
- Enders, W. (2004): *Applied econometrics time series* (2nded.). United States of America: John Wiley and Sons.
- Epstein, G. A. (1999): *UNCTAD's World Investment Report, 1999: A Critique of Neo-Liberal Globalisation?* Amherst: University of Massachusetts.
- Esso, L. J. (2010): Cointegration and causality between financial development and economic growth: Evidence from ECOWAS countries. *Journal of Economics and International Finance*, 2(3), 36-48.

- Falegan, S. B. (1984): Is foreign finance for third world economic development inevitable. *Conference on foreign debt and Nigeria's economic development, organised by the United Bank for Africa Limited, 5th—6th March.*
- Fedderke, J. W. — Liu, W. (2002). Modelling the determinants of capital flows and capital flight: with an application to South African data from 1960 to 1995. *Economic Modelling*, 19(3), 419-444.
- Felipe, J. (2012): *Welfare, Full Employment, and Structural Change: Implications and Policies for Developing Asia*. Anthem Press.
- Fernandez-Arias, E. — Montiel, P. J. (1996): The surge in capital inflows to developing countries: an analytical overview. *The World Bank Economic Review*, 10(1), 51-77.
- Fiagbe, A. K. (2015): *The Effect of External Debt on Economic Growth in Sub-Saharan Africa* (Doctoral dissertation, University of Ghana).
- Fofack, H. — Ndikumana, L. (2015): Capital Flight and Monetary Policy in African Countries. *Capital Flight from Africa: Causes, Effects and Policy Issues*, 130-163. Oxford University Press, Oxford.
- Fofack, H. (2009). *Causality between external debt and capital flight in Sub-Saharan Africa*. The World Bank. Retrieved from <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-5042>.
- Fosu, A. K. (1996): The impact of external debt on economic growth in Sub-Saharan Africa. *Journal of economic development*, 21(1), 93-118.
- Fosu, O. E. — Magnus, F. J. (2006): Bounds testing approach to cointegration: An examination of foreign direct investment, trade and growth relationships. *American Journal of Applied Sciences*, 3(11), 2079-2085.
- Geda, A. — Yimer, A. (2016): Capital flight and its determinants: The case of Ethiopia. *African Development Review*, 28(S1), 39-49.
- Gibson, H. D., — Tsakalotos, E. (1993): Testing a flow model of capital flight in five European countries. *The Manchester School*, 61(2), 144-166.

- Grossman, G. M.— Helpman, E. (1991): Trade, knowledge spillovers, and growth. *European economic review*, 35(2-3), 517-526.
- Habimana, A. (2005): *The effects of external debt burden on capital accumulation: A case study of Rwanda* (Doctoral dissertation, University of the Western Cape).
- Hansen, L. P. (1982): Large sample properties of generalized method of moments estimators. *Econometrica: Journal of the Econometric Society*, 1029-1054.
- Harrigan, J. — Mavrotas, G. — Yusop, Z. (2002): On the determinants of capital flight: A new approach. *Journal of the Asia Pacific Economy*, 7(2), 203-241.
- Helleiner, E. (2001). *States and the Reemergence of Global Finance: From Bretton Woods to the 1990s*, Ithaca: Cornell University Press.
- Henry, J. (1986): Where the money went: Third World debt hoax. *The New Republic*, 14, 20–23.
- Henry, L. (1996): Capital flight from beautiful places: the case of three Caribbean countries. *International Review of Applied Economics*, 10(2), 263-272.
- Hermes, N. — Lensink, R. — Murinde, V. (2004): Flight capital and its reversal for development financing. *External Finance for Private Sector Development* (pp. 207-233). Palgrave Macmillan, London.
- Hermes, N. — Lensink, R. (2001): Capital flight and the uncertainty of government policies. *Economics Letters*, 71(3), 377-381.
- Hoechle, D. (2007): Robust standard errors for panel regressions with cross-sectional dependence. *Stata Journal*, 7(3), 281.
- Holly, S.–Raissi, M. (2009). *The Macroeconomic Effects of European Financial Development: A Heterogeneous Panel Analysis*. Working Paper D.1.4
- Im, K. S. — Pesaran, M. H. — Shin, Y. (1997): Testing for Unit Roots in Heterogeneous Panels', University of Cambridge. *Working Paper*, 9526.
- International Energy Agency (2012). *World Energy Outlook 2012*. Paris.

- International Monetary Fund. (2003). *External Debt Statistical: Guide for Compilers and Users*: International monetary fund. Washington
- Jayaraman, T. K.— Singh, B. (2007): *Foreign direct investment and employment creation in pacific island countries: An empirical study of Fiji*. (ARTNET Working Paper No. 35/07.) Asia-Pacific Research and Training Network on Trade. Retrieved from <http://www.unescap.org>
- Johansen, S. (1991): Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica: Journal of the Econometric Society*, 1551-1580.
- Kant, C. (1996): *Foreign Direct Investment and Capital Flight*. International Economics Section, Department of Economics Princeton University.
- Kar, D. – Cartwright-Smith, D. (2009): Illicit financial flows from developing countries: 2002-2006. Available at SSRN 1341946.
- Kar, D. – LeBlanc, D. (2012). *Illicit financial flows from developing countries: 2002-2011*. Washington, DC: Global Financial Integrity.
- Kargbo, P. M. (2012). *Impact of foreign aid on economic growth in Sierra Leone: Empirical analysis*. WIDER Working Paper (No. 2012/07).
- Kaulihowa, T. – Adjasi, C. (2018): FDI and welfare dynamics in Africa. *Thunderbird International Business Review*, 60(3), 313-328.
- Khan, M. (1989). Flight of Capital from Pakistan. *Pakistan and Gulf Economist*, 21-27.
- Khan, M. S. – Haque, N. U. (1985): Foreign borrowing and capital flight: A formal analysis. *Staff Papers*, 32(4), 606-628.
- Khan, M. S. – Haque, N. U. (1987): Capital flight from developing countries. *Finance and Development*, 24(1), 2.
- Kherfi, S. — Soliman, M. (2005): FDI and economic growth in CEE and MENA countries: A tale of two regions. *International Business & Economics Research Journal (IBER)*, 4(12).

- Kindleberger C. P. (1987): Capital Flight- A Historical Perspective. *In Lessard and Williamson (eds) Capital Flight and Third World Debt Washington D.C. Institute for International Economics.*
- King, R. G.— Levine, R. (1993): Finance and growth: Schumpeter might be right. *The quarterly journal of economics*, 108(3), 717-737.
- Kinoshita, Y. — Campos, N. F. (2008): *Foreign direct investment and structural reforms: Evidence from Eastern Europe and Latin America* (No. 3332). International Monetary Fund.
- Lala, S. — Ranganathan, R. - Libresco, B. (2006): *Debt relief for the poorest: an evaluation update of the HIPC initiative*. World Bank Publications. <https://doi.org/10.1596/978-0-8213-6656-1>
- Lawanson, A. O. (2011): Impacts of external debt accumulation and capital flight on economic growth of West African countries. *Tanzanian Economic Review*, 1(1-2), 44-75.
- Lawanson, A. O. (2014): Impact of External Debt Accumulation and Capital Flight on Economic Growth of West African Countries. <https://www.africaportal.org/publications/impact-external-debt-accumulation-and-capital-flight-economic-growth-west-african-countries/>.
- Lensink, R. — Hermes, N. — Murinde, V. (1998): The effect of financial liberalization on capital flight in African economies. *World Development*, 26(7), 1349-1368.
- Lessard, D. R. — Williamson, J. (1987): *Capital flight and the third world debt*. Institute for International Economics.
- Levin, A. — Lin, C. F. — Chu, C. S. J. (2002): Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics*, 108(1), 1-24.
- Ljungwall, C. — Zijian, W. A. N. G. (2008): Why is capital flowing out of China? *China Economic Review*, 19(3), 359-372.
- Loayza, N.V — Rancière, R. (2006): Financial Development, Financial Fragility, and Growth. *Journal of Money, Credit and Banking*, 38(4), 1051-1076.

- Love, I.— Zicchino, L. (2006): Financial development and dynamic investment behaviour: Evidence from panel VAR. *The Quarterly Review of Economics and Finance*, 46(2), 190-210.
- Maddala, G. S. — Wu, S. (1999): A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, 61(S1), 631-652.
- Manning, R.— Shea, K. L. (1989): Perfectly discriminatory policy towards international capital movements in a dynamic world. *International Economic Review*, 329-348.
- Marchionne, F., — Parekh, S. (2015): Growth, Debt, and Inequality. *Economic Issues*, 20, 67-93.
- Mbewe, S. (2015). *Capital flight and the role of exchange rates in Nigeria, South Africa and Zambia* (Doctoral dissertation, University of Cape Town).
- Moghadam, M. R., Samavati, H., & Dilts, D. A. (2003). An examination of capital flight from East Asian emerging economies: paradise lost. *Journal of Asia-Pacific Business*, 5(1), 33-49.
- Morgan Guaranty Trust Company (1986). LDC capital flight. *World Financial Market*, 2, 13–16.
- Muchai, D. N. — Muchai, J. (2016). Fiscal policy and capital flight in Kenya. *African Development Review*, 28(S1), 8-21.
- Murphy, R. (2004). Fiscal Paradise or Tax on Development?" ([www \(File://A:\3world-files\boomerang.html\)](http://www.files.boomerang.html))
- Ncanywa, T. — Masoga, M. M. (2018): Can public debt stimulate public investment and economic growth in South Africa? *Cogent Economics & Finance*, 6(1), 1-13.
- Ndiaye, A. S. — Siri, A. (2016): Capital flight from Burkina Faso: drivers and impact on tax revenue. *African Development Review*, 28(S1), 100-112.
- Ndikumana, L. — Boyce, J. (2018): Capital flight from Africa: Updated methodology and estimates. PERI Working Paper, June.

<https://www.peri.umass.edu/236/hash/dbb27ffb11da95f2ed2a259b5794bcd/publication/26/>.

- Ndikumana, L. – Boyce, J. K. (2003): Public debts and private assets: explaining capital flight from Sub-Saharan African countries. *World Development*, 31(1), 107-130.
- Ndikumana, L. – Boyce, J. K. (2011): Capital flight from sub-Saharan Africa: linkages with external borrowing and policy options. *International Review of Applied Economics*, 25(2), 149-170.
- Ndikumana, L. (2014a): Capital flight and tax havens: impact on investment and growth in Africa. *Revue d'économie du développement*, 22(HS02), 99-124.
- Ndikumana, L. (2014b): Implications of monetary policy for credit and investment in sub-Saharan African countries. *Journal of African Development*, 18(2):1–18
- Ndikumana, L. (2015): Capital flight from Africa and development Inequality: domestic and global dimensions. In *Conference of the Institute for New Economic Thinking. Paris*.
- Ndikumana, L. – Boyce, J. K. (2003): Public debts and private assets: Explaining capital flight from Sub-Saharan African Countries. *World Development*, 31(1), 107-130.
- Ndikumana, L. – Boyce, J. K. (2010): Measurement of Capital Flight: Methodology and Results for Sub-Saharan African Countries. *African Development Review*, 22(4), 471-481.
- Ng'eno, N.K. (2000): Capital Flight in Kenya. In Ajayi — Khan (Eds.) *External Debt and Capital Flight in Sub-Saharan Africa*. Washington, D.C.: The World Bank, 300-321.
- Nguena, C. L. (2014): *External Debt Origin, Capital Flight and Poverty Reduction in the Franc Zone: Does the Economic Consequences of Sino-African Relationship matter?* (No. WP/14/016). AGDI Working Paper.
- Nketiah-Amponsah, E. (2009): Public spending and economic growth: evidence from Ghana (1970–2004). *Development Southern Africa*, 26(3), 477-497.
- Nkurunziza, J. D. (2015): Capital flight and poverty reduction in Africa. *Capital Flight from Africa: Causes, Effects and Policy Issues*, 81-110.

- Nyoni, T. (2000). Capital flight from Tanzania. *External Debt and Capital Flight in Sub-Saharan Africa*. Washington, DC: The IMF Institute, 265-299.
- OECD (2014): *All onboard: making welfare happen*. Available at <http://www.oecd.org/inclusive-growth/all-on-board-making-inclusive-growth-happen.pdf>.
- Ogbeifun, M. I. (2007). The Politics of External Debt Relief: Nigeria's Unique Experience. *African Journal of Stability and Development*, 1(1), 37-43.
- Onyekwelu, L., & Ugwuanyi, B. (2014). External Auditing Relevance In The Growth Of Banking Industry In Nigeria: An Emphasis On The Effect On Deposit Mobilization, European Centre for Research Training and Development UK. *European Journal of Accounting Auditing and Finance Research*, 2(3), 54-68.
- Panizza, U. (2008): *Domestic and External Public Debt in Developing Countries*. Paper presented at the United Nations Conference on Trade and Development (UNCTAD). Discussion Papers 188. New York City.
- Pastor Jr, M. (1990). Capital flight from Latin America. *World Development*, 18(1), 1-18.
- Pattillo, C. – Ricci, L. A. (2011): External debt and growth. *Review of Economics and Institutions*, 2(3), 30.
- Pesaran, H. – Shin, Y. (1999). An Autoregressive Distributed Lag Modelling Approach to Cointegration “chapter 11. In *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*.
- Pesaran, M. H. – Shin, Y. – Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the American Statistical Association*, 94(446), 621-634.
- Pesaran, M. H. (2004): *General diagnostic tests for cross-section dependence in panels*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=572504
- Pesaran, M. H. (2006): Estimation and inference in large heterogeneous panels with a multifactor error structure. *Econometrica*, 74(4), 967-1012.

- Pesaran, M. H. (2007): A simple panel unit root test in the presence of cross-section dependence. *Journal of applied econometrics*, 22(2), 265-312.
- Pesaran, M. H. (2015): Testing weak cross-sectional dependence in large panels. *Econometric Reviews*, 34(6-10), 1089-1117.
- Phillips, P. C. – Hansen, B. E. (1990): Statistical inference in instrumental variables regression with I (1) processes. *The Review of Economic Studies*, 57(1), 99-125.
- Polity, I. V. (2016): Political regime characteristics and transitions. Online Database. It is retrieved from <http://www.systemicpeace.org/inscrdata.html>.
- Quartey, P., & Prah, F. (2008): Financial development and economic growth in Ghana: is there a causal link? *African Finance Journal*, 10(1), 28-54.
- Ragusett, J. – Beja Jr, E. L. (2004): The Cost of Capital Flight: What Thailand Lost. *File://A:\cost% 20of% 20cap. htm*.
- Ramachandran, G. (2006). Is capital flight, a whopper. *The Hindu Business Line*.
- Ramiandrisoa, O. T, –Rakotomanana, E. J. M. (2016): Why is there capital flight from developing countries? The case of Madagascar. *African Development Review*, 28(S1), 22-38.
- Reddy, Y. V. (1997): Capital Flight: Myths and Realities. *Reserve Bank of India Bulletin*, 1(8), 635-642.
- Rodrik, D.— Subramanian, A.— Trebbi, F. (2004). Institutions rule: the primacy of institutions over geography and integration in economic development. *Journal of economic growth*, 9(2), 131-165.
- Roodman, D. (2006): How to do xtabond2: An introduction to. *“Difference” and “System” GMM in Stata.” Working Paper*, 103.
- Samargandi, N. – Fidrmuc, J. – Ghosh, S. (2013): Is the relationship between financial development and economic growth monotonic for middle-income countries. *Economics and Finance Working Paper*, (13-21).
- Saxena, M. S. C. – Rishi, M. – Cerra, M. V. (2005): *Robbing the riches: capital flight, institutions, and instability* (No. 5-199). International Monetary Fund.

- Saxena, S. – Shanker, I. (2016): Dynamics of external debt and capital flight in India. *Scholedge International Journal of Management Development*, 3(2), 49-60.
- Schmidt-Hebbel, K.— Serven, L.— Solimano, A. (1996): Saving and investment: paradigms, puzzles, policies. *The World Bank Research Observer*, 11(1), 87-117.
- Schmidt-Traub, G. (2015): Investment needs to achieve the sustainable development goals. *Paris and New York: Sustainable Development Solutions Network*.
- Schneider, B. (2003). *Measuring capital flight: estimates and interpretations*. London: Overseas Development Institute Working Paper 154.
- Shabbir, S. (2013): *Does external debt affect economic growth: Evidence from developing countries* (No. 63). State Bank of Pakistan, Research Department.
- Sheets, N. (1996): Capital flight from the countries in transition: some empirical evidence. *The Journal of Policy Reform*, 1(3), 259-277.
- Smit, B. W. – Mocke, B. A. (1991): Capital flight from South Africa: Magnitude and causes. *South African Journal of Economics*, 59(2), 60-77.
- Solow, R. M. (1956): A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70(2), 65-94.
- Suma, D. F. (2007). *The external debt crisis and its impact on economic growth and investment in Sub-Saharan Africa. A regional econometric approach of ECOWAS countries* (Doctoral dissertation, WU Vienna University of Economics and Business).
- Tagem, A. M. (2017): *Aid, taxes and government spending: A heterogeneous, cointegrated panel analysis* (No. 17/02). CREDIT Research Paper.
- Todaro, M. P., – Smith, S. C. (2015): *Economic Development, 12th ed.*, New York: Pearson Education.
- Tornell, A. – Velasco, A. (1992): The tragedy of the commons and economic growth: why does capital flow from poor to rich countries? *Journal of Political Economy*, 100(6), 1208-1231.

- Trevelline, M. J. (1999): The Sociological Reasons for Capital Flight. *Website\copy\new articles\The Sociological Reasons for Capital Flight. wpd.*
- UN- Economic Commission for Africa, (2015): *Illicit financial flow: report of the high-level panel on illicit financial flows from Africa.*
http://www.uneca.org/sites/default/files/PublicationFiles/iff_main_report_26feb_en.pdf.
- UNCTAD (2014): *World Investment Report 2014: Investing in the Sustainable Development Goals – An Action Plan.* United Nations publication. Sales No. E.14.II.D.1. New York and Geneva.
- United Nations Development Programme (UNDP), (2018): *Human Development Indices and Indicators: 2018 statistical update.* <https://doi.org/10.18356/2F656a3808-en>
- Vo, H. X. (2004): Host country income effects of foreign direct investment: an analytical framework. *Journal of Economics and Economic Education Research*, 5(3), 81-100.
- Waguespack, D. M.— Birnir, J. K.— Schroeder, J. (2005): Technological development and political stability: Patenting in Latin America and the Caribbean. *Research Policy*, 34(10), 1570-1590.
- Westerlund, J. – Edgerton, D. L. (2007): A panel bootstrap cointegration test. *Economics Letters*, 97(3), 185-190.
- World Bank (1985): *World Development Report.* Washington, D. C.
- World Bank (1988): World Bank Debt Table. External Debt of Developing Countries, Washington, World Bank.
- World Bank (2008): *The growth report: Strategies for sustained growth and inclusive development.* World Bank: Washington, DC.
- World Bank (2017): *World development indicators online Database.* World Bank Publications. Washington, DC. <https://doi.org/10.1596/2F26447>.
- World Bank (2018): *PovcalNet database.*
<http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx>

- World Bank (2018): *World development indicators online Database*. World Bank Publications. Washington, DC. <https://doi.org/10.1596/02F26447>.
- World Bank Poverty & Equity Data portal (2018): *Online database*. <http://povertydata.worldbank.org/poverty/home>.
- World Bank. (2009): *World Development Report*. World Bank. Washington. The United State of America.
- Yalta, A. Y. (2009): Capital Flight: Conceptual and Methodological Issues. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 27(1), 73-94.
- Zaghdoudi, K. (2018): Is the relationship between external debt and human development non-linear? A PSTR approach for developing countries. *Economics Bulletin*, 38(4), 2194-2216.
- Zaghdoudi, T. – Hakimi, A. (2017): Does external debt-poverty relationship confirm the debt overhang hypothesis for developing counties? *Economics Bulletin*, 37(2), 653-665.
- Zaki, R. (1995): *International Loans Crisis, the Submitted Causes & Solutions along with a draft for Arabic vision*. an abovementioned reference. Cairo. Egypt

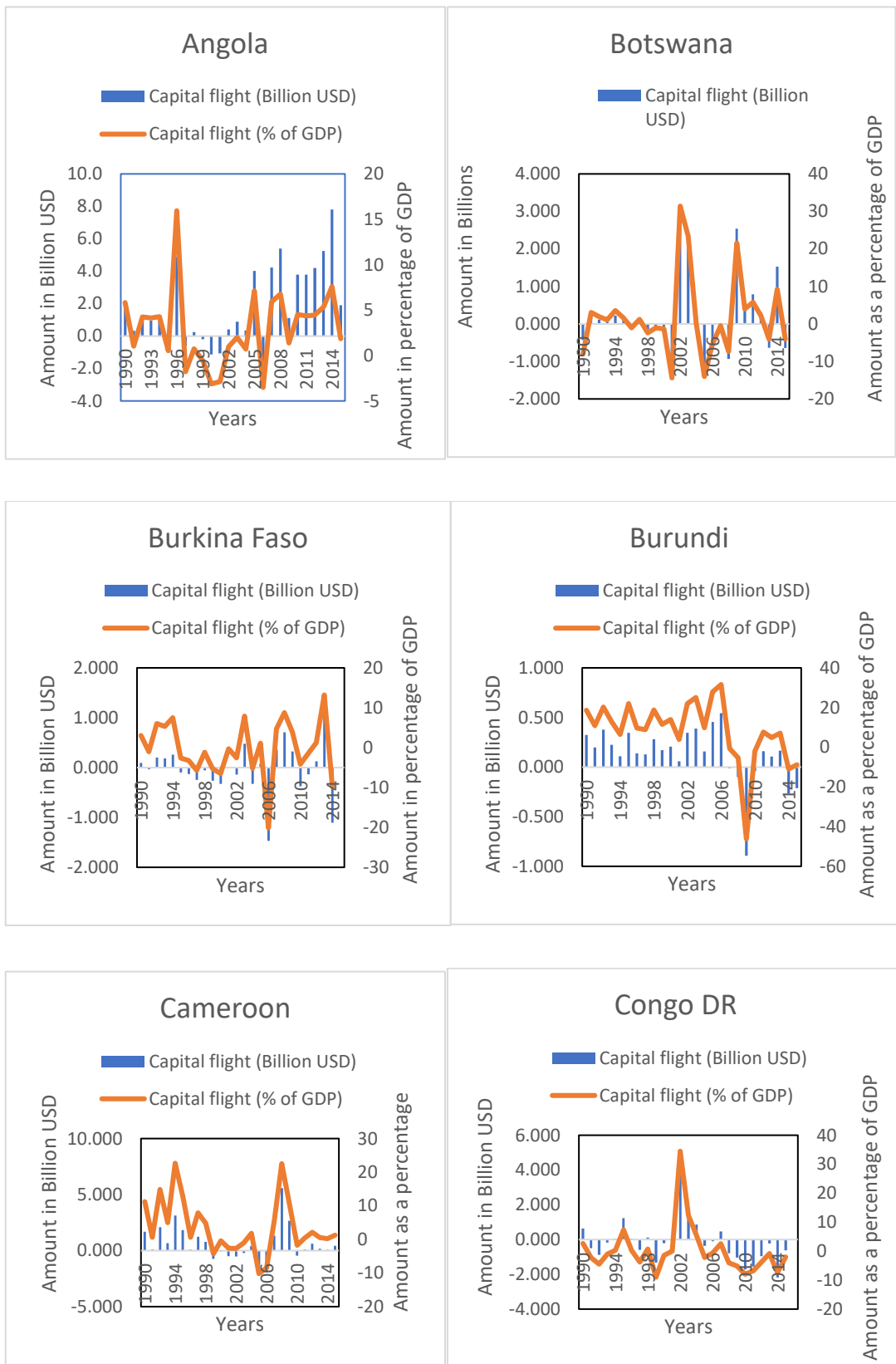
APPENDIX

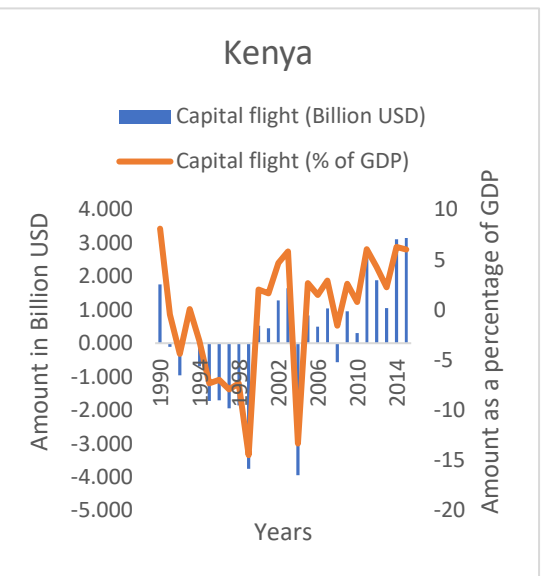
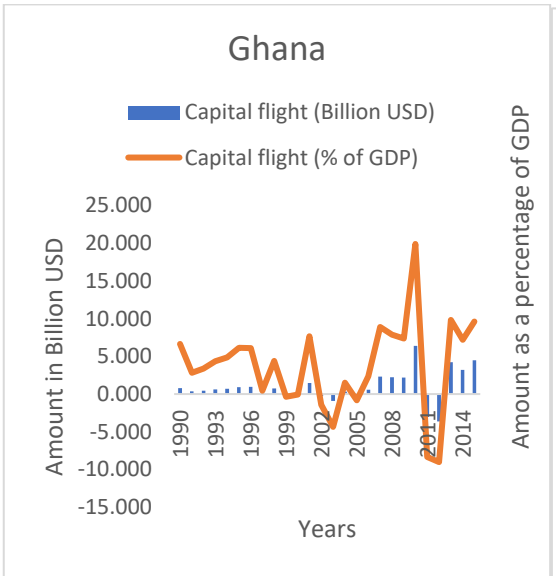
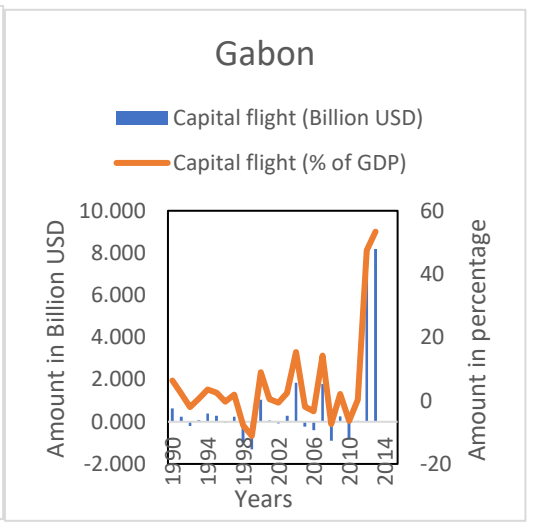
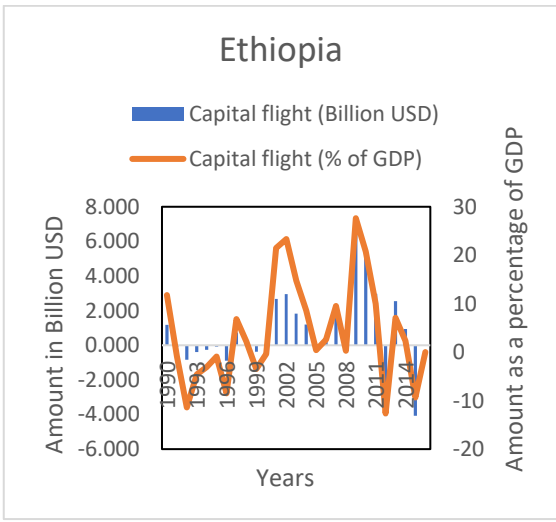
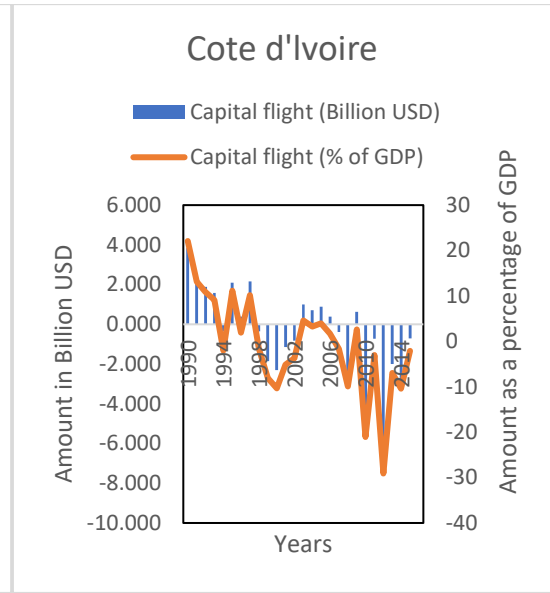
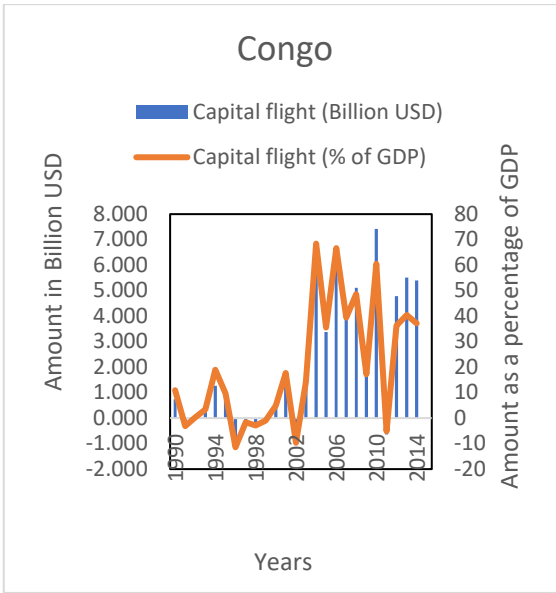
Table A Names of selected sample countries in a regional context

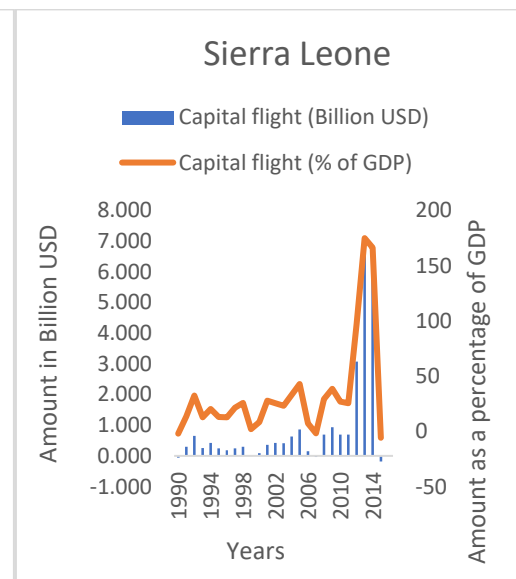
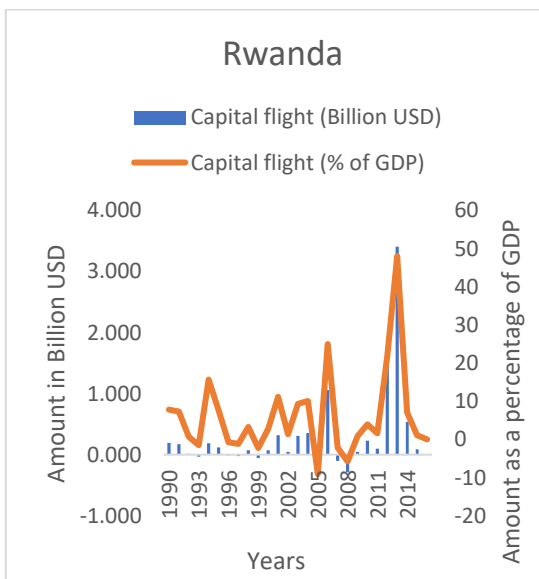
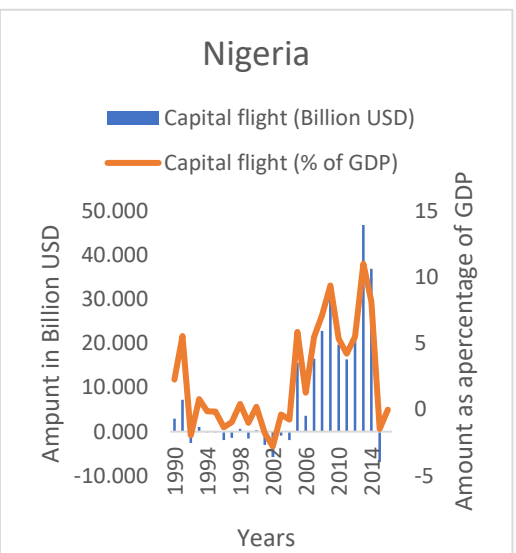
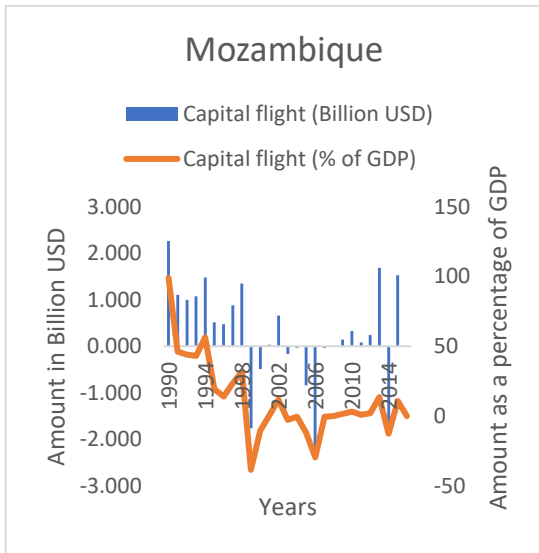
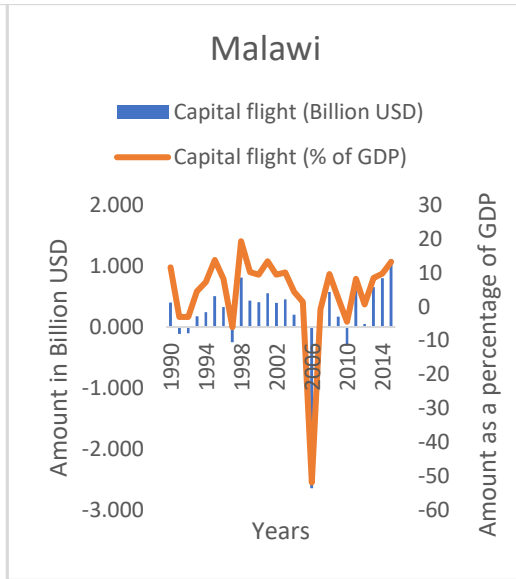
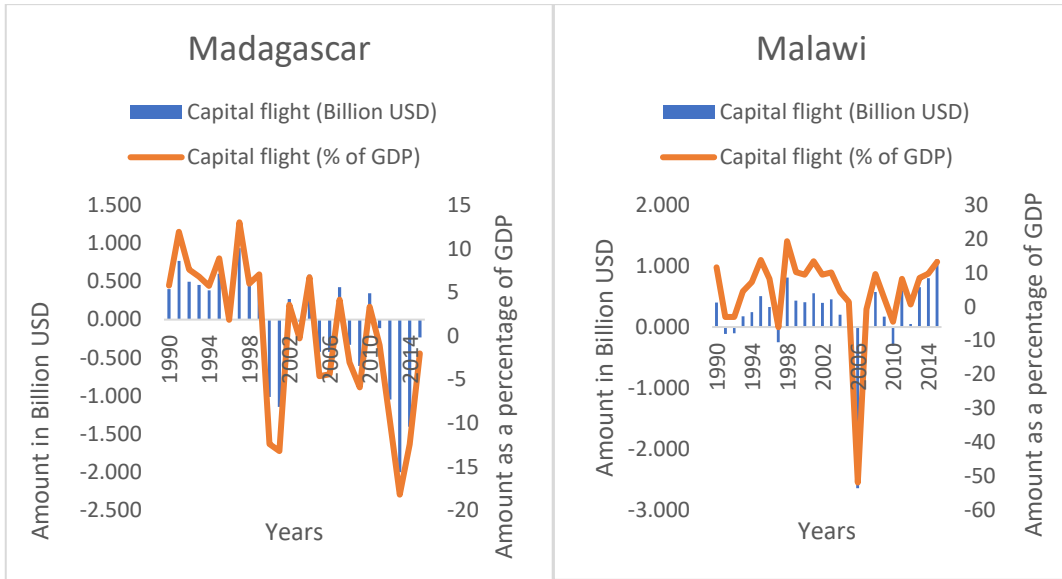
Central Africa (CA)	East Africa (EA)	Southern Africa (SA)	West Africa (WA)
Cameroon	Burundi	Angola	Burkina Faso
DR CON	Ethiopia	Botswana	Coted'Ivoire
Congo	Kenya	Mada	Ghana
Gabon	Rwanda	Malawi	Nigeria
	Sudan	Mozam	Sierra leone
	Tanzania	South Afri	
	Uganda	Zambia	
		Zimbabwe	

Source: Author's compilation

Figure A: Trend of capital flight in selected study countries







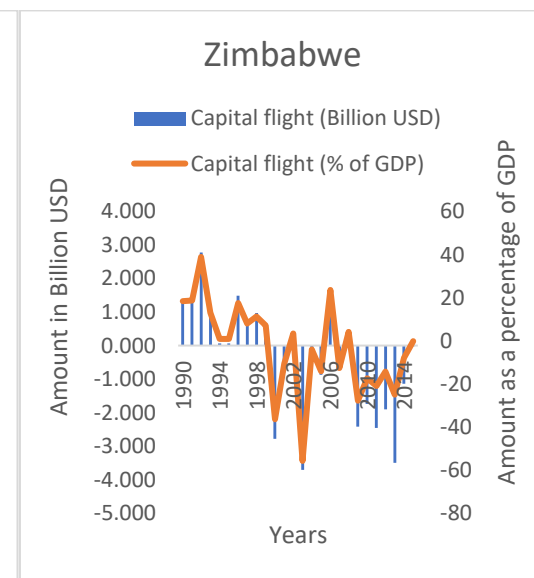
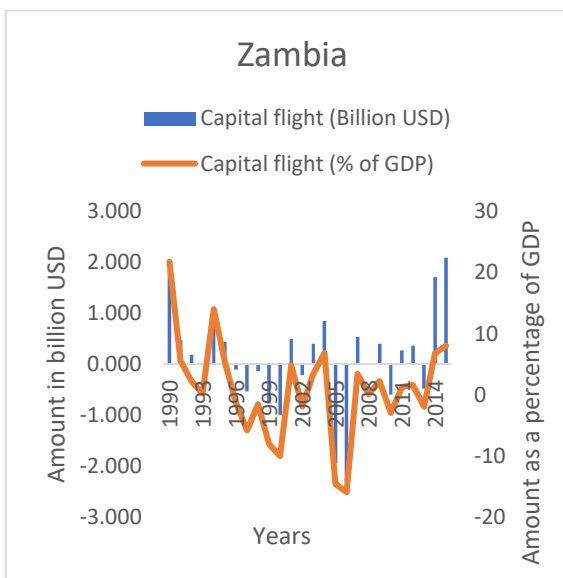
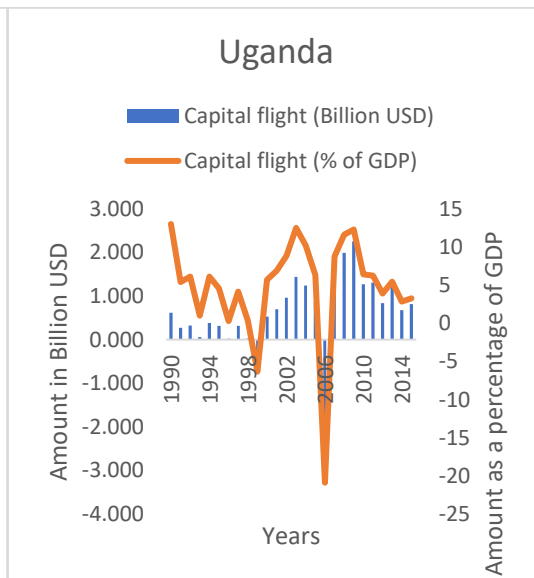
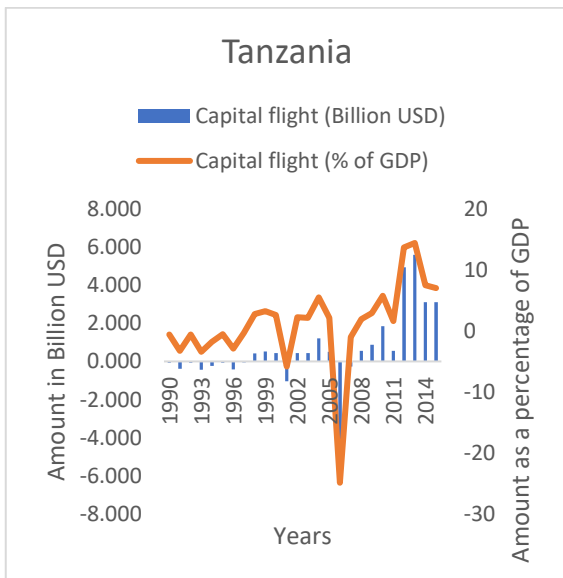
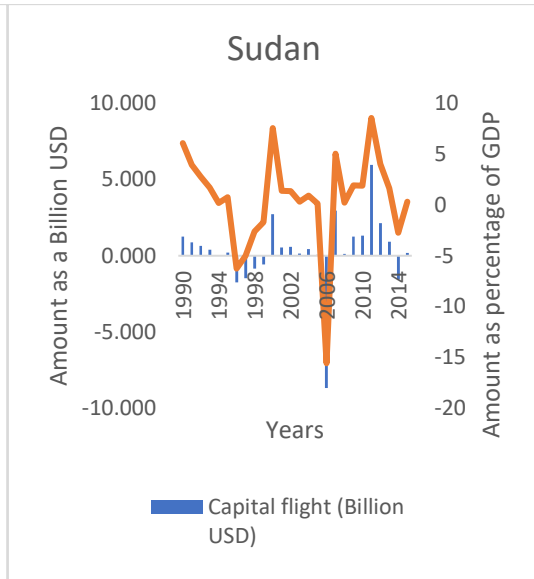
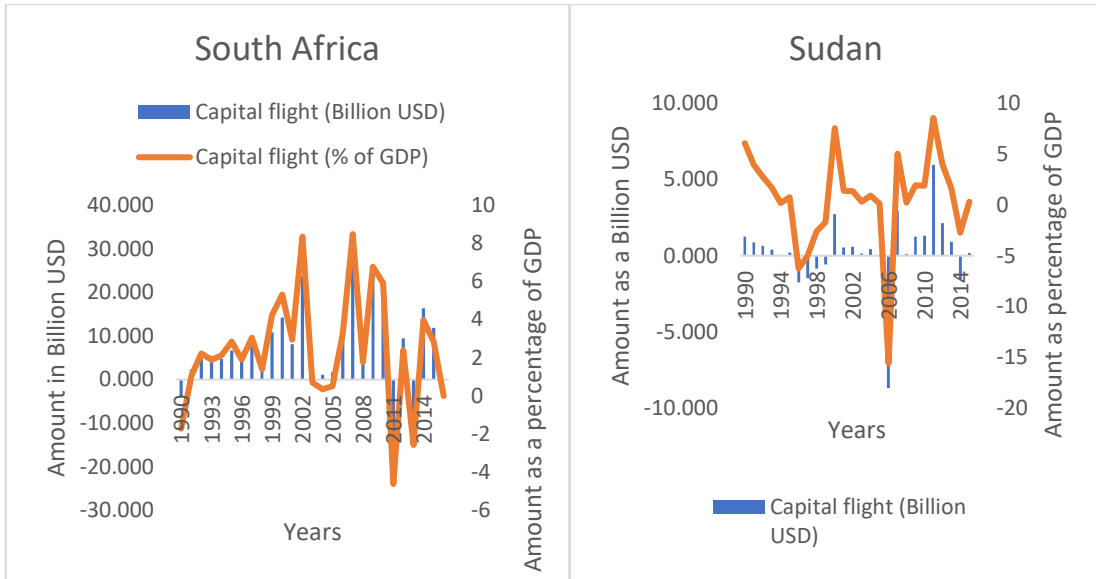


Figure : Trend of external debt in selected study countries

