UNIVERSITY OF GHANA

DETERMINANTS OF FOREIGN PORTFOLIO INVESTMENT: EVIDENCE FROM SUB-SAHARAN AFRICA

BY

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DECLARATION

I hereby declare that this work is solely produced out of my own effort. It is not the work of any one or copied or submitted for award of any kind. All references used in the work have been fully acknowledged. I take responsibility for any error or omission thereof.

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CERTIFICATION

We hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

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DR LORD MENSAH DATE
(SUPERVISOR)

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PROF. K. A. OSEI DATE
(CO-SUPERVISOR)

DEDICATION

I thank God for having brought me this far and dedicate this dissertation to my family, whose support, patience and encouragement made this work successful.

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ABSTRACT

Motivated by the need to analyse the factors behind portfolio inflows of developing countries, this study aims to investigate the determinants of portfolio inflows (PI) of Sub-Saharan Africa (SSA). The study uses a panel data on 17 SSA countries over the period, 2005-2013. Net portfolio equity inflows as a percentage of Gross Domestic Product (GDP) is the dependant variable. The study employed a panel regression with domestic factors like market size, level of financial development, current account balance and trade openness. The explanatory variables like international interest rate and the growth rate of industrialised countries are also included as the external factors. By employing the Generalized Methods of Moment (GMM) dynamic panel estimation framework, the study finds that current account balance and financial development have negative relationship with portfolio inflows. The results also suggest that market size, past portfolio inflows and the growth rate of industrialised countries positively affect portfolio flows to SSA. We however found no significant impact of trade openness and international interest rate on portfolio flows to the sub-region. The study also investigates the impact of portfolio inflows on economic growth of SSA. Using the Vector Error Correction Model (VECM) over the period 2005-2013, finding revealed that, there is a long-run negative relationship running from portfolio inflows to economic growth. We also find no short-run relationship running from economic growth to portfolio inflows, but the reverse is true.

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LIST OF ABBREVIATIONS

ADF	-	Augmented Dickey–Fuller
AR	-	Autoregressive
CAB	-	Current Account Balance
ECM	-	Error Correction Model
EXCHR	-	Exchange Rate
FDI	-	Foreign Direct Investment
FINDEV	-	Financial Development
FPI	-	Foreign Direct Investment
GDP	-	Gross Domestic Product
GMM	-	Generalised Method of Moment
IMF	-	International Monetary Fund
INF	-	Inflation Rate
INST	-	Institutional Quality
LDCs	-	Least Developed Countries
LIBOR	-	London InterBank Offered Rate
OECD	-	Organisation for Economic Co-operation and Development
OLS	-	Ordinary Least Squares
PI	-	Portfolio Inflows
PS	-	Political Stability
SSA	-	Sub Saharan Africa
TO	-	Trade Openness
UNCTAD	-	United Nations Conference on Trade and Development
USA	-	United States of America

USI	-	Unites States Interest Rate
VECM	-	Vector Error Correction Model
WDI	-	World Development Indicators
WGI	-	World Governance Indicators
WGI	-	World Growth Rate of Industrialised Countries

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Following the transition to financial liberalization which took place in developing Countries in the 1980's, developing countries implemented a series of financial liberalisation programmes to ensure development in the financial sector. Hence, opportunities for profitable investment increased in the 1990's. Portfolio inflows (PI) of developing countries increased from $6.2 billion in 1987 to $46.9 billion in 1993 (UNDP, 2013). Different factors were responsible for the upsurge of portfolio flows to developing countries. The rise in private investment inflows of Sub-Saharan Africa in 2011 (USD 6.8 b) till 2013 (USD 12.2b) were indeed, as a result of the removal of global financial barriers as well as improved economic growth (IMF 2013). In contrast to SSA countries, Portfolio inflows (PI) of Asia were as a result of the economic growth records of the world. Thus, private capital flows may either be driven by internal factors at some point in time and at other times domestic factors can also determine capital movements.

Studies have attributed determinates of portfolio flows to two main factors. They are known as domestic and external factors. According to Fernandez-Arias (1996), foreign capital to developing economies is usually influenced by push factors like; low international interest rates and the growth rate of industrialized nations. The pull factors are thought to influence the allocation of investors' portfolio to developing countries together with the motives of the investor (Dunning, 1993). For instance while natural-resource-seeking investors seek to benefit from the natural resource endowments of the host country, market-seeking investors' aim at exploiting the opportunities of new markets in host countries in terms of their size and/or growth. Taylor and Sarnio (1997) identify external and domestic factors to be of equal

importance in explaining both equity and bond. The US interest rate is however considered to be the most important variable in explaining short-run bond flows. Some of the studies that have documented the pull factors of capital flows across countries include Chuhan, Claessens and Mamingi, (1998); Filer (2004) and Griffen, Nardari and Stulz (2002).

Portfolio investment is considered to be important especially to developing economies, as it brings with it technology, supplements foreign exchange and domestic savings for economic development (Dell'Ariccia et al., 2008; Obstfeld, 2009; Karimo & Tobi, 2013). Hence, developing countries across the globe have been making conscious efforts to attract more portfolio investment which is believed to be a stimulus for economic growth. While capital flows may contribute to the wellbeing of the recipient country, it also exposes the vulnerability of the recipient country to global financial crises (Pal, 2006; Rothenberg & Warnock, 2006; Kirabaeva & Razin, 2011). In the presence of weak institutions, particularly in the financial sector, international financial integration may dampen growth (Edison, Levine, Ricci, & Slok, 2002). Indeed, Kirabaeva and Razin (2011) observed that increasing openness to portfolio investment poses economic management challenges to countries that heavily rely on such flows due to its volatility compared to foreign direct investment (FDI).

Given the merits and the demerits associated with portfolio investment, it is important to investigate the factors that drive foreign portfolio investment (FPI) and its effect on the economic growth of the host economy. One hopes that if we establish the drivers of PI and its relationship with the economic growth of Sub-Saharan Africa, we would be able to shed greater light on how to manage PI in SSA.

1.2 Problem Statement

Lack of restrictions on trading of international financial assets has improved capital movements across borders in the past two decades. Investments by foreigners are believed to be geared towards growing economies of developing countries, including Sub-Saharan Africa which provides opportunities for profitable investment. However the recent global financial crises have drawn the attention of policymakers and researchers to the determinants and effects of these flows. Although both international portfolio theory and the neoclassical theory predicts potential benefits of cross border investment, empirical evidence of the real benefits on macroeconomic growth still remains a source of concern to both developing and developed countries (Prasad, Eswar, Kenneth, Shang-Jin & Ayhan, 2003).

Capital flows may be ordinarily beneficial to the investors and the host country as they reduce their risk and receives cheaper source of financing respectively. However there are negative impacts of volatility transmission among the world capital markets and economies in the event of a global financial crises since PI is prone to reversals and volatility. This is evident from the financial crisis in the 1980's, Latin America and East Asia in the 1990's and Argentina in 2001 and 2002 (Chen & Quang, 2012). After the financial turmoil in 2008, portfolio investment has since improved significantly in SSA. To the extent that countries such as Ghana, Kenya, Nigeria, Zambia, Senegal, Tanzania, Cote d'Ivoire, South Africa, and Angola, have recently been driven into the global capital markets (IMF, 2011 & 2013). However speculative activities of huge portfolio investors like mutual funds, portfolio managers and market makers which could undermine local stock markets particularly in SSA. Although PI of SSA on the whole has improved, they are not evenly distributed. PI has been concentrated in a relatively small number of countries like Botswana, Ghana Kenya, Nigeria, and Tanzania apart from South Africa which receives the majority of this inflows. Given that

the distribution and composition of PI varies substantially, it is important to identity the factors that drive FPI.

A good number of studies have associated portfolio flows to domestic and external factors. Opinions however, differ in terms of the relative contribution of "push" factors arising from changes in industrial economies (Calvo, Leiderman, & Reinhart, 1996; Fernaindez-Arias, 1995; Byrne & Fiess, 2011) and "pull" factors as to the changes in developing countries (Hernandez and Rudolph 1994; The World Bank, 1997; Mody, Taylor, Felices & Orskaug, 2008). Others (e.g Taylor and Sarnio 1997 also find these factors to be of equal importance. Hence, it is unclear how external factors and domestic factors influence portfolio flows.

Furthermore, while studies on determinates of portfolio flows abound for America, Asia and Europe (see for example Calvo et al., 1994; Agarwal, 1997; Gordon & Gupta, 2003; Garg & Dua, 2014), the case is not necessarily so for Sub-Saharan Africa. Additionally, empirical literature, including studies on Sub Saharan Africa by Delechat et al. (2009) and Brafu-Insaidoo and Biekpe (2013) concentrated on the pull factors of PI leaving no evidence for push factors.

Although the study by Delechat et al. (2009) includes a wide range of pull factors, the Ordinary Least Squares (OLS) methodology is used. This may generate bias and inconsistent results if the regressors are endogenous. The Generalised Moment Method (GMM) which overcomes such problems is employed for this study. Our study also provides a new contribution to the existing literature by focusing on the determinants of foreign portfolio equity, which has been the most important source of capital for SSA countries.

1.3 Research Questions

The following research questions emerged against the backdrop of the statement of the research problem to guide the researcher in the study

1. What are the domestic factors that influence portfolio inflows of SSA?
2. What are the external factors that drive portfolio inflows of SSA countries?
3. What is the impact of portfolio inflows on the economic growth of SSA countries**?**

1.4 Objective of the Study

The aim of the study is to ascertain the determinants of foreign portfolio investment in Sub-Saharan African countries. In specific terms the research objectives are to:

1. To determine the domestic factors influencing portfolio flows to SSA.
2. To ascertain the external factors driving portfolio inflows of SSA.
3. To determine the impact of portfolio inflows on economic growth of SSA countries.

1.5 Research Hypothesis

Pertaining to the statement of the problem discussed the main hypothesis of the study are as follows.

Main Hypothesis are:

$H0_1$: Domestic factors have no influence on portfolio flows to SSA.
$H0_2$: External factors do not determine portfolio inflows of SSA.
$H0_3$: FPI has no impact on the economic growth of SSA countries.

1.5 Significance of the Study

The significance of the study can be viewed along three strands: policy, practice (investors) and research.

Understanding the impact of portfolio investment on economic growth will help policy makers in Statutory Government Agencies and their counterparts in private firms who operate in real sectors of the economy as well as the financial markets in their decision to attract foreign capital. African countries continue to experience volatile economic growth (IMF, 2012). The study will provide feedback on the total effect of PI on economic growth of SSA. Thus policy makers will be able to improve the overall efficiency of PI and identify the need for reforms and strategies when making decisions about PI.

Again, this study will alert investors like portfolio investors, mutual funds, market makers and individual investors who operate in the financial and real sectors of the economy about their understanding of the factors that drive PI. Moreover Sub-Saharan African Markets are often considered to be risky. This however might not stem from the market not being fundamentally sound; it might just be that investors in general, both local and foreign do not know much about them. This study will therefore provide financiers with further information about potential investment and portfolio diversification opportunities and investment choices, especially where the variables that could positively affect their investments are well known.

Moreover, the overall objective of this study will be achieved in making contributions to literature by analysing the factors that influence portfolio flows of countries in Sub-Saharan Africa.

1.7 Organisation of the Study

The rest of the research is organised as follows:

Chapter two reviews related literature on the topic area. Chapter three provides insight on the scope and methodology of the research by highlighting on the models, study population,

source of data and statistical procedures for the study. It also presents the limitation of the study. Chapter four presents the analysis of the study, and disuses the findings of the research. Finally, chapter five gives the summary of the study, conclusions and recommendations based on findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter of the study highlights the key definition and reviews both theoretical and empirical works on the determinants of foreign portfolio investment. This chapter also reviews literature on the effect of PI on economic growth.

2.2 The Definition of Portfolio Investment

Portfolio investment usually involves the movement of capital across national borders and positions involving debt or equity securities, other than those included in direct investment or reserve assets (World Bank, 1993). World Bank (1993) defines portfolio flows to consist of bonds, equity (comprising direct stock market purchases and country funds) and money market instruments such as certificates of deposits and commercial papers. UNCTAD (1999) also defines portfolio flow as a cross border transaction of financial assets in securities, a company's assets or through the financial market. Portfolio investment therefore includes the transfer of assets by way of investing in securities such as bonds, bank loans, stocks, derivatives and other forms of credit (e.g. pledges and trade).

Investors are more interested in reaping the maximum return on their investment for a given level of risk and FPI normally have a shorter time horizon. Portfolio investment therefore tends to be volatile in nature. Whiles volatility may create opportunities for arbitrage profit and encourage market efficiency; it can also result to economic disturbance specially, in a boom or bust period.

2.3 Trends in Portfolio Inflows of Africa

Portfolio flows to developing countries as a whole have gone through a number of stages since the implementation of financial liberalisation initiatives in the 1980's. The African continent experience has not been different from this. The period from the mid-1990's to the early 2000's, the region recorded a steady increase in PI until the emergence of the Asian crisis in the late 2001. Africa recorded the highest percentage decline in PI during the Asian crises. The total inflow of PI to Africa declined from USD$11 billion to USD$3.2 billion between 1995 and 2008 (representing 441percent) (Klugman, 2011).

Table 2.1 Portfolio Inflows of Africa (current USD, billion)

2005	2006	2007	2008	2009	2001	2011	2012	2013 (e)	2014 (p)
6.3	22.5	14.4	-24.6	-0.3	21.5	6.8	22.0	12.2	23.9

Source: AfDB, OECD, UNDP 2014

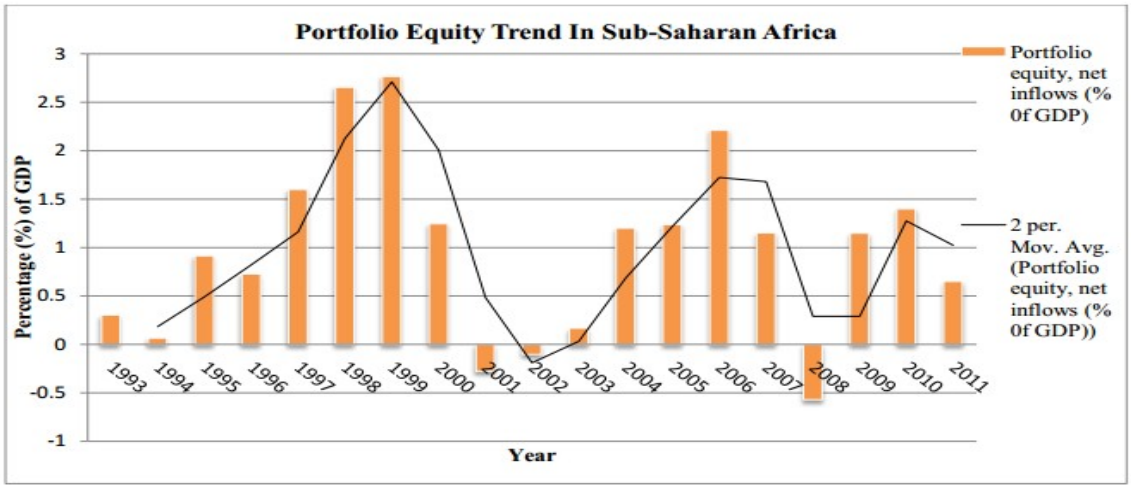
As shown in table 2.1 above, PI grew considerably to reach USD$22.5 billion in 2006. This positive trend however could not be sustained mainly due to the financial crises in 2007 and 2008. There was a sharp decline from USD$22.5 billion to USD$14.4 billion between 2006 and 2007 and even recorded a negative flow of USD$ -24.6 billion in 2008. By the close of 2011, PI to Africa reached USD 6.8 billion and has since been increasing marginally. The up surge in portfolio inflows to Africa countries from 2011 till 2013 was indeed, consistent with the removal of global financial barriers as well as improved economic growth particularly, in Sub Saharan Africa (IMF 2013).

2.3.1 Trends in Portfolio Equity Flows to Sub-Saharan Africa

In Sub-Saharan Africa, portfolio equity inflows have followed somewhat the same trend of volatility. World Bank defines portfolio equity as a composition of net inflows of equity securities other than those recorded as direct investment. Foreign portfolio equity (includes purchase of shares, stocks, depository receipts by foreign investors) registered a moderate increase in 1993 through to 1999, and fell somewhat in 2000 (see figure 2.1). This pattern was however, strongly influenced by the terrorist attack on the World Trade Centre in the United States of America (United Nations Economic Commission for Africa, 2013). Having taken off in 2002, it climbed to reach a peak of about US$17 billion in 2006 (representing

2.21 percent of GDP, of which 89 percent went to South Africa). It however, dropped sharply in 2007, following the global financial crises. The region experienced a significant decline of portfolio equity inflow in 2008, resulting to a loss of about -0.569 percent of GDP. Portfolio equity inflow, as a proportion of GDP gained momentum in the last quarter of 2008 reaching a new high level of about US$16 billion in 2010 (representing about 2 percent of GDP). There was however a downward trend due to the euro zone crisis in 2011. This led to heavy sell-offs in countries such as Kenya and Nigeria (Massa, Keane, & Kennan, (2012a).

Figure 2.1 Portfolio Equity Trends in Sub-Saharan Africa



Source: World Development Indicators Database, World Bank.

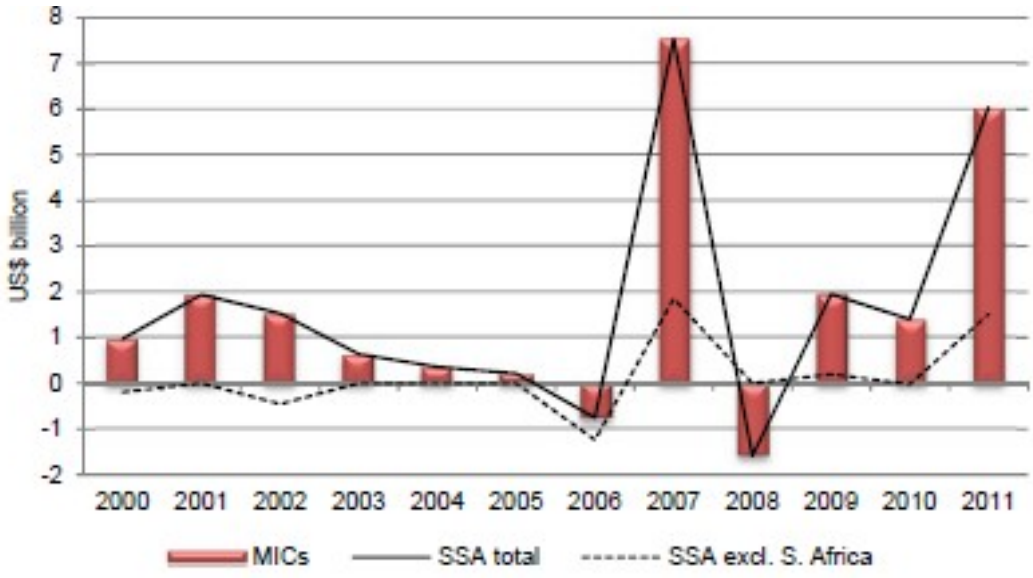
2.3.2 Bond Flows

Trends in bond flows to SSA have been similar to that of equity inflows. Bond flows over the period has been volatile following the global financial crisis in the late 2007. Bond flows increased to over US$7 billion in 2007 to register the highest amount of flow before the global financial turmoil. This surge was influenced by the Nigerian and Ghanaian economy, which issued bonds internationally for the first time. However, in 2008 there was a drastic decline in flows as bonds issues were withheld due to the global financial crises in 2007-2008. For instance, Tanzania withheld a debut of about US$ 500 million Eurobond and at the same time Kenya postponed its planned debut Eurobond of more than US$500 million,

whereas a US$300 million bond to be issued was also cancelled by Ghana (Brambila-Macias and Massa, 2010). There was a slight recovery from 2009 through 2011. Investment in bond grew to about US$2 billion in 2009 and US$6 billion in 2011. Except the flow in 2008, which were badly affected by the 2007 financial turmoil, the recent Euro debt crisis much less affected bond flows. Countries such as Senegal and Namibia for instance remained resilient and unshaken by the euro zone crises. These countries successfully issued bonds internationally for the first time (Massa et al., 2012a).

Current predictions seem to suggest that the rise in bond flows in the region will continue to rise. Indeed Nigeria issued Eurobond to fund power and gas sector in 2013, which was twice as much as it sold in 2011. In 2012, Zambia also issued US$ 750 million bonds at a yield of 5.4% to finance its infrastructures which is said to have been oversubscribed 15 times even though bond yields were lower compared to other European countries (e.g. Spain) (Wang et al., 2013).

Figure 2.2 SSA: Bond Inflows, Total and by Income group



Source: Wang et al. 2013

On the whole, bond inflows of SSA region have improved significantly, despite the slight volatilities that were record.

2.4 Theoretical Review

The theories underlying PI is looked at from the point of two classes of theories namely, push factor and pull factor theories.

2.4.1 The Push Factor Theory

This theory explains the cause of FPI to external factors other than what happens in the domestic country. Among the push factors, a prominent role has been attributed to slow economic growth rate and low interest rate of industrialised countries (Calvo and Reinhart, 1998). Additionally, the increasing appetite of investors towards international diversification may also push capital flows into emerging economies (Calvo et al., 1996). Empirically, scholars such as Calvo et al. (1993) and Fernandez-Arias (1994) attributed the increase in capital inflows of developing countries in the 1990's to the decline in the US interest rate. Another key push factor identified by these authors is the rise in the tax rate of multinational corporations.

While there are considerable numbers of literature which explain capital flows to emerging countries to be induced by a recession in industrialised countries, a contrast view has been provided once for developed countries. Jeanneau and Micu (2002) indicate that robust economic activities in industrialised countries are significant in explaining portfolio inflows of developing countries.

Another set of domestic factors in literature are the contagion effect. Contagion has gained much attention in literature since the Asian crises in 1997-1999. It generally explains circumstances between groups of countries. Masson (1999) identifies three transmission mechanisms of contagion. These are the monsoonal effect, the spill over effects and the shift or pure contagion.

The monsoonal effect (such as real interest rate of major developed countries) is believed to be factors that affect a number of countries simultaneously especially, countries in the same region or with similar economic conditions. The spill over effects generally results from trade and financial channels. Trade channels include market competition and import price changes whiles financial channels results from PI. Hence, a loss of competitiveness for country "A" for instance may cause a currency depreciation of country "B", suppose both countries are linked by commercial operations. On the other hand a simultaneous crises resulting from any of the above factors, is referred to as the pure contagion or shift contagion (Masson, 1999 and Forbes and Rigobon, 2002). For instance, a change in investors' sentiments may yield reversal of funds and trigger financial crises.

Forbes and Rigobon (2002) and Kleimeier and Sander (2003) assessed the contagion factors provided by Masson (1999). They provided evidence that the first two of Masson's factors may be channels where external shocks are usually transmitted and that, only the third factor could be contagion.

This theory has important implications for policy design toward sustainable portfolio inflows of SSA. For instance once it is established that lower interest rate leads to an increase in PI of developing countries, an increase in such rates may hinder the ability of these countries to

sustain such inflows. This raises an important issue for policy makers in host countries as to whether the domestic response is likely to effectively consider the possibility of reversal.

2.4.2 The Pull factor Theory.

The pull factor theory attributes the flow of capital to be as a result of the domestic fundamentals of the recipient country. These domestic factors include creditworthiness of a country, improvement in fiscal and monetary policies and neighbourhood externalities (interest rate and the price earnings ratio of the host country) (Calvo, et al, 1996). Haque, Mathieson and Sharma (1997) also identify an increase in domestic output and domestic money demand to be pull factors. Other domestic factors also include the performance of macroeconomic variables such as financial development, inflation, GDP growth rate, current account balance and gross domestic investment. Thus, to evaluate the level of sound economic policies and the sustainability of capital flows, investment environment, infrastructure as well as the quality of institutions are also included as key domestic factors.

Many scholars (Chuhan et al, 1994 and Ul-Haque, Kamar, Mark, & Mathiesan, 1996) have identified pull factors to be the main significant factors that explain capital inflows of emerging economies in the 1990s. The authors argue that financial liberalisation among other factors such as privatisation of public enterprise and improvement in macroeconomic conditions have improved the credit worthiness of developing countries leading to international capital mobility. Basu and Srinivasan (2002) also provides evidence from Africa that, well-structured economic reforms coupled with political and macroeconomic stability and natural resources have attracted foreign capital like FDI to these countries. Similarly Asiedu (2002) found that poor policy and restrictions in trade hinders capital flows to African

countries. Asiedu (2002) considers these factors to be paramount in explaining the proportion of foreign capital inflows of African countries

2.5 Empirical Review

This section presents empirical works that exist on portfolio flows in both developed and developing countries. It also looks at empirical literatures on other key factors that drive PI. Issues concerning the drivers of capital flows have gained prominence in economic discussions following the distinctive increase in FPI in developing countries in the late1980s and early 1990's.

Literature on Portfolio Flows in the Developed Countries

Miller and Whitman (1970) studied the determinants of capital flows using the stock-equilibrium model. They represented capital flows by combining flow adjustment components and stock adjustment components. The authors employed the United States of America quarterly data for the research. They noted that, interest rate differentials play a major role in determining cross border capital flows. They explain this to be as a result of investors respond to interest rate changes which is induced by interest rate differentials.

Similarly, Kreicher (1981) adopted the stock-equilibrium model to analyse the factors behind both capital inflow and capital outflow for four developed countries. He assumed in his model that economic agents want to hold a certain desired stock of capital. Therefore, if the stock level obtained is different from the desired stock it brings international capital movement. By employing domestic factors like interest rate and productivity index, he observed industrial production indices to be significant in determining capital outflows but not an important factor behind capital inflows of these countries in the sample of study. Domestic real interest rate was found to be significant in capital flow movement for two

countries. This explains investors' independent choices about capital allocation between external economies and domestic economies.

Additionally, Kouri and Porter (1974) examined the determinants of capital flows. The authors treated capital flows as a process of reducing high demand for money. The authors employed the stock-equilibrium model and the balance-of-payment theory. They noticed that, PI can be explained by income which is also an important factor in determining money demand. The authors therefore concluded that money demand and supply forces determine the capital flows of countries.

Brennan and Cao (1997) study on capital flows moved away from interest rate differentials and barriers of investment. In doing so the authors concentrated on the concept of informational advantage in the financial market. Using the independent variables; market returns and foreign market indices, they concluded that investors from developed and developing countries do not have any informational disadvantages on the U.S.A market or in the foreign market except those investors from the U.S.A Brennan and Cao however found portfolio inflows of 46 countries to be persistent in nature. They posit that investors in emerging markets are able to predict future market returns based on current portfolio inflows.

Siouronis (2002), employed volatility augmented gravity equation model to examine capital flow structure under the volatility of monetary variables. The author observed that distance does not play any significant role in cross-border capital flows for developed economies which is contrary to the findings of Portes and Rey (1999). The author however explains capital inflows of developing countries to be the distance factor. Further, the author test for market interest rate volatility, inflation volatility and exchange rate volatility on bond and

equity flows. Evidence was found in support of interest rate, exchange rate and inflation volatility to be significant in explaining bond and equity flows.

Although domestic and external factors are mostly considered in literature on emerging countries, Odedokun (2003), applied it to developed countries. The author examined the pull and push factors of capital flows of capital exporting countries. He focused on the push and pull factors which are widely used in literature about developing countries. These are: interest rates, economic growth, per capital income levels, and phase of economic cycles. The findings of his study suggest that, there is a significant and positive relationship between per capita income and portfolio flows. While economic growth was found not to play any significant role in FPI, high interest rate was significant in explaining capital flows. The author explains that a relatively increase in interest rate of the domestic country serves as a pull factor, while the relatively low interest rate in foreign countries serves as a push factor of capital flows. Hence capital flows can be explained by income and interest rate differentials.

Literature on Portfolio Capital Flows in the Developing Countries

The incidence of financial crises in 1994 and 1997 in Mexico and Asia respectively drew the attention of policy makers and researchers' attention to the factors behind capital flows movement to emerging and developing economies. While a number of domestic and external factors are widely considered in literature, findings remain inconclusive with regards to the relative importance of either pull and push factors.

Hernandez and Rudolf (1994) investigated the factors that drive portfolio investment of 22 developing economies. They adopted a panel regression with explanatory variables which

include real exchange rate variability, international rate of return, and external debt to GDP (net). Lagged domestic consumption and investment rates were also included. They find a significant relationship between domestic worthiness indicators and portfolio flows. They also provide evidence that international interest rate has no significant relationship with PI.

Similarly, the World Bank (1997) investigated the capital flows of twelve countries in East Asia and Latin America over the period, 1990-1995. The principal component analysis adopted for the study indicated a negative correlation between portfolio flows and the US interest rate for every first quarter over the period 1990-1993. The correlation became weaker and positive over the years 1993-1995, which is an indication of domestic factors having a greater influence in the later years.

In a study of eighteen emerging markets in Latin America and Asia, Chuhan, et al. (1996), investigated the factors that affect capital inflows of these regions. The study employed a panel regression with pull factors like secondary market debt prices, interest rate, price earnings ratios and credit ratings. They included the U.S.A output growth rate and interest rates as the push factors. The authors conclude that capital flows to Latin America and Asia are caused by both domestic and external factors. The importance of these factors however differs significantly for each group of countries. For instance domestic factor like credit ratings play a greater role in determining bond flows to Asian countries whereas the secondary bond market price is the important factor in Latin America. Equity flows to all the countries under study are explained by domestic stock market returns, however, price earnings ratios were identified to be important in explaining the capital inflows of Asian countries. Result from the study indicated a significant negative relationship between capital flows and U.S.A rate as well as the U.S.A output growth. This implies that, capital flows to

both group of countries increase with the declines in the U.S.A interest rate and a recession in the United States of America. Their results also revealed that, the U.S.A interest rates greatly affect capital flows than foreign industrial production. Nonetheless the overall effects of domestic factors were found to be highly significant in explaining capital inflows than external factors.

Mody, Taylor, and Kim (2001) examined the factors that drive capital flows using the cost of adjustment model. Following literature, they classified the factors into push and pull factors similar to those in Fernandez-Arias and Montiel (1996). The authors believe that capital flows could be explained by the following push factors; the U.S.A swap rate, interest rate and output growth. Further, factors such as the level of industrial production, consumer price index, short term interest rate, the level of domestic credit, credit ratings, the reserves to import ratio, short term debt to reserves ratio, and the stock market index employed as pull factors. By employing a vector autoregression framework and the above push and pull factors, they concluded that the pull factors play a majority role in explaining foreign capital flows and can help to explain a higher degree in forecast variance than that of the push factors contrary to the findings of Fernandez-Arias and Montiel (1996).

Gordon and Gupta (2003) also studied the determinants of portfolio flows to India by employing the Ordinary Least Squares (OLS) methodology. Portfolio equity flows to India were found to be influenced by domestic, regional and global factors according to this study. The study employed the international interest rates (LIBOR) to represent global variables and the lagged domestic stock market return as the domestic variable. Their findings indicate that both LIBOR (proxy for international interest rate) and lagged stock rate of return negatively affect PI of India. The authors explain this negative relationship to global investors' behaviour who matches their selling with a rise in the market and buying with a fall in the

market. Their analysis also indicates that, there is an inverse relationship between exchange rate and portfolio flows. For instance a fall in the value of the Indian currency in the previous month during the study period hindered equity inflows of India.

Hossain, (2013) investigated the factors behind capital flows to Least Developed Countries (LDCs) from 1991 through 2006. Following the work of Faria and Mauro (2009), the authors used the total GDP (size of the economy), GDP per capita (the level of economic development), openness (sum of imports and exports % of GDP), natural resources, human capital, private credit to (% of GDP i.e. financial development), institutional quality and indices of political system and legislative electoral competitiveness (LIEC) as the explanatory variables. By employing the Generalized Method of Moments (GMM) approach for his panel data analysis, the study conclude that macroeconomic stability, trade openness, regional variation and economic size and financial sector development are the key drivers of capital inflows of LDCs. The study however found no link between capital inflows and institutional quality or political environment in LDCs.

Sakuragawa and Watanabe (2010), also investigated the determinants of foreign direct and equity portfolio investments covering a panel data on 75 countries (OECD and emerging market countries). Their findings indicate a significant positive relationship between financial development and equity portfolio investment in OECD countries using the Generalized Method of Moments.

Similarly, Vo and Daly (2007) examined the determinants of international financial integration in the national financial structure. By adopting the data of Vo (2005) and the GMM their results provide a strong evidence of financial development, trade openness, and

economic growth as the factors which explains variation in the degree of international financial integration.

Although a lot of studies provide evidence to support the relative importance of pull factors, other studies also provide evidence against this proposition. Calvo et al. (1993) for instance investigated the role of push factors of capital flows for the period 1988 and 1991. The study used international reserves as a proxy for capital flows of ten Latin American countries. They adopted the structural vector auto regression methodology with explanatory variables such as the U.S.A interest rate, capital gains, and income volatility as the external factors. They find the variation in international reserve accumulation of almost all the countries in the sample to be influenced by the external factors included in the study. The authors came to the evidence that U.S.A interest rate (the main variable of the principal components) is inversely related to international reserve accumulation in the Latin American countries.

Fernandez-Arias (1994) studied the determinants of capital flows using a database covering 13 developing countries. They analysed the impact of domestic credit worthiness as the domestic factor and nominal interest rates of medium term U.S.A government bonds as the external factor that explains foreign capital mobility. The study used portfolio flows to represent capital flows and the secondary market price of commercial bank deposits as a proxy for a country's creditworthiness. His findings suggest that U.S.A interest rates accounts for about 63% of the variation in portfolio flows whilst 25% and 12% of it is explained by a country's creditworthiness and domestic investment climate respectively. Thus, external factors like the U.S.A interest rate significantly correlates with private capital flows than domestic factors such as creditworthiness and investment climate of recipient countries, which confirms the results of Calvo et al. (1993).

Although studies produced evidence in favour of either pull factors or push factors of capital movements, others studies find these factors to be of equal importance. For example, Taylor and Sarnio (1997) examined both pull and push factor determinants of international capital flows of Latin American and Asian countries. They adopted the U.S.A monthly data on portfolio from the study of Chuhan, et al. (1993). With the application of the Vector Error Correction Model, the authors found evidence that both pull and push factors are equally significant in explaining capital flows. External Factors were however found to play a greater role in the case of bond flows than domestic ones. Literature provides a lot of evidence in favour of pull factors explanation of capital flows to developing countries. Evidence on push factors however remains less prevalent

Studies on Portfolio Capital Flows to Sub-Saharan African Countries

In the study of Ahmed Arezki and Funke (2005), the authors investigated the factors behind the structure of capital inflows of developing economies. They estimated a dynamic panel for 81 economies (12 Asian, 42 African, 20 in the Western Hemisphere, and 7 other countries) from 1975 to 2002. Using the GMM, the authors conclude that higher growth rates and better institutions are positively related with portfolio inflows. They also found exchange rate volatility on PI to be insignificant.

Using a database over the period 2000-2007, Deléchat et al. (2009) sought to determine the drivers of capital inflows of 44 SSA countries. They analysed country specific factors behind different composition of capital flows using the two-stage least squares (2SLS) method. They find that, capital inflows of SSA, specifically portfolio flows, are directed to countries with developed financial markets. They also concluded that although oil exporting countries in the

region tend to receive more FDI than the non-oil exporters, it is not necessarily so with regards to portfolio flows.

Brafu-Insaidoo and Biekpe (2014) used a panel data to investigate the determinants of international capital flows of selected countries in Sub-Saharan Africa. Brafu-Insaidoo and Biekpe (2014) findings indicate that, globalisation of the domestic financial system and the domestic equity market positively and significantly influence international capital flows to SSA.

Montiel and Sharma (1997) examined the factors influencing capital inflows of SSA economies. The authors observed that SSA attracts only a small portion of global portfolio equity. They noted that, factors such as political risk institutional weaknesses and high transaction costs arising from corruption amongst others hinder capital flows to SSA. On the other hand trade openness was found to play a significant role in portfolio equity inflows of the sub-region. The authors concluded that, portfolio equity flows are determined by country specific characteristics of the recipient country and other external factors. Specifically, domestic characteristics like the economic growth rate, the rate of return, countries openness, the ratio of external debt to GDP and the volatility of the real effective exchange rate. The key external factor is the international interest rate.

Kavli and Viegi (2013) investigated the time varying relationship between portfolio flows to South Africa. Using a time varying parameter vector autoregressive (TVP VAR) model, results show that the time variation is highly significant on capital flows and a constant parameter model will give biased estimates. They also discovered that bond flows have become more sensitive to global risk after 2010 other than equity.

It is important to note that almost all studies on SSA considered a wide range of domestic factors that are thought to motivate portfolio inflows of SSA other than external factors. Although Montiel and Sharma (1997) considered international interest rate as a push factor, there has been a considerable change in the nature of portfolio investment of the sub region in recent times. There is therefore a need to investigate the external factors that might account for these inflows.

2.6 Other Drivers of Portfolio Flows

Other key drivers of portfolio flows include the following:

(I) ***Institutional, Political Factors and Investment Climate***

The nature of the political, institutional and investment environment of the recipient country affect investors' investment decisions. Relatively stable political environment and favourable business climate may attract more capital inflows since they have impact on investors' returns. Studies on developing countries (Dupasquier and Osakwe, 2006; and Li, 2008 and Cleeve, 2008) find that political instability is inversely related to foreign capital inflows. Von Furstenberg (1998) identified mutual confidence and a credible reputation as basis for trust in cross-border financial trade. Further, a study by Montiel and Sharma (1997) on PI note that portfolio equity flows is mainly dependent on a country's openness to foreign investors. Their study revealed that political instability and weak macroeconomic fundamentals significantly deter portfolio equity flows. Other constraints identified by their study include high transaction costs and institutional weakness.

Institutional quality is also found to increase portfolio flows (Alfaro et al. 2005a, 2005b and Faria, Minnoni & Zaklan, 2006). These studies find that weak property rights, arising from

conflict, and poor legal systems, have significant negative relationship with portfolio equity flows. Similarly La Porta, Lopez-de-Silanes, Shleifer, & Vishny (1997) and Edison, Levine, Ricci & Slok (2002) note that rules and laws governing property right are very important for cross-border capital mobility.

Financial innovation and capital account liberalization have been found to be an important contributor to the increase in cross-border financial trade among developed countries (Lane and Milesi-Ferretti, 2008) as well as developing countries (Prasad, et al.). Prasad et al. (2003) however, find evidence from Latin American countries that capital controls may not necessarily hinder capital flows. Thus countries may witness a small amount of capital flows though they may have few capital restrictions and vice versa. For instance, some developing countries like china and India have experienced an accelerating capital flows although until recently had capital restrictions (Sedik and Sun, 2012). Although some countries in Africa have few capital restrictions, they still witness a small amount of cross border capital flows (Prasad et al., 2003).

(II) ***Level of economic development and rate of return on investment***

The level of economic development relating to human resource and infrastructural development in a country plays a significant role in attracting foreign capital. Prasad et al. (2003) and Reiter and Steensma (2010) argue that capital inflows are significantly positively related to improvement in human development. Edison et al. (2002) for instance, observed that advanced economies are more integrated into the global financial market than less developed countries since developed countries tend be well educated than developing countries. In a study of 38 developing countries for the period 1975 to 2000, Nonnenberg and Cardoso de Mendonça (2004), find that foreign capital is positively correlated to the level of

education and other macroeconomic variables such as risk and average rate of economic growth. The recent surge in portfolio flows to SSA is said to be consistent with the economic growth prospect in SSA. IMF (2012 and 2013) reports that the continent is growing at a rate of about 5 percent (%) per annum above the global economic growth rate of 2.3 percent. Indeed Bhaskaran, Sundararajan, and Kohli (2005) conclude that, investors increasing appetite for higher rates of return will cause them to invest in countries where there are economic growth prospects and investment opportunities.

(III) ***Financial Development***

Studies by King and Levine (1993) and Prasad et al (2003) on capital mobility show that financial development is a determining factor in capital flows. Similarly, other studies (Mengistu and Adams, 2007; Cotton and Ramachandran, 2001; Botric and Škuflic, 2006 Zhang, 2001) results indicated that, financial development play an important role in portfolio flows. This proposition is based on the fact that financial development ensures the development of various financial instruments and products. Global investors seek to achieve maximum returns by reducing the variance of the overall portfolio. Hence, investors may not be only interested in their local markets but also international markets where they can buy into, to diversify the risk of their portfolio. This is shown in the work of Arfaoui and Abaoub (2010). They postulate that, developed financial systems are signs of huge market capitalizations, higher volumes of trade and shorter settlement periods. Such information guide potential investors' about investment decisions with regards to liquidity and size. It is expected that countries with developed financial systems have lower financial risk and are perceived to be credit worthy especially, when it comes to meeting short run obligations. Financial developed systems therefore play a vital role in attracting foreign capital. Contrary to majority of findings, Dutta and Roy (2008), provide evidence in support of a negative

relationship between financial development and foreign capital using a panel of 97 countries similar to the results of Walsh and Yu (2010).

(IV) ***Exchange rate and Currency Risk***

Different opinions are shed on the relationship between exchange rate and capital flows. Kyereboah-Coleman and Agyire-Tettey (2008) for instance, highlight on the effect of exchange rate on foreign capital flows particularly, FDI. They find exchange rate volatility to negatively affect foreign capital inflows which confirms the results of Persson and Svensson (1989). These results are built on the notion that an increase in the currency value of the recipient country may create opportunities for additional returns on the investment of foreign investors. On the other hand exchange rate variations are expected to negatively affect portfolio inflows since it represents a higher degree of uncertainties in the returns of foreign investors. On the contrary, empirical findings by Jeon and Rhee (2008) indicate that, there is a significant positive relationship between real exchange rate and capital flows similar to the findings of Ramiraz (2006). Other studies (Brahmasrene and Jiranyakul, 2001 and Dewenter, 1995) however, find no evidence for a positive or a negative effect of the exchange rate on capital flows.

(V) ***Global Liquidity and Interest Rate Differential***

In the study of Verma and Prakash (2011), they examined capital flows volatility and interest rate differentials for India. The authors, observed a positive relationship between financial flows to India and growth rate of industrialised countries. This is because higher output growth in industrialized countries is expected to generate greater profit on investment. Greater profit means greater funds and hence, more funds available for investment in developing countries. On the other hand, low economic growth rate in advanced economies

may result to capital flows to developing countries. This is because firms may not find it profitable to invest in their home countries. Contrary to the above findings, Calvo et al. (1993, 1996) and Taylor and Sarnio (1997) present that, low economic growth rate of industrialised countries leads to higher capital inflows of developing nations.

Interest rate differential between the host and the source country also determines capital flows. The traditional open economy macroeconomic models proposed by Mundell-Fleming suggest that, in a world where capital is mobile and exchange rates are fixed, capital flows occur so as to restore interest parity. Thus capital moves in or out of the country till the domestic and foreign interest rates equalizes. Investors invest their capital wherever the interest rates adjusted for risk are higher. While most of the studies in literature find that FPI are sensitive to domestic and/or foreign interest rates, Verma and Prakash (2011) find that FPI flows to India are not sensitive to interest rate differentials.

2.7 Effect of Portfolio Investment on Economic growth of Developing Countries

In a comprehensive study, Calvo et al. (1993) suggest that capital inflows to developing countries are non-debt creating source of foreign investment. Similar to Calvo et al. (1993) findings, Fernandez-Arias and Montiel (1996) argue that net capital inflows can increase the welfare of developing countries with low national savings. They argue that capital inflows of a country can increase current consumption of households to smooth out their consumption over time. Further Khan (2007) points out that, increase in investors' interest in Africa markets strengthens commodity prices and the receipt of debt relief, leading to higher growth rates and healthier external balances.

Using data from 1988 to 2001, Ferreira and Laux (2009) investigate the nexus between portfolio capital flows of 50 countries (both developed and developing countries). They find

portfolio capital flows to be positively related to economic growth. Again, Kose, Prasad and Terrones (2009) investigate the impact of FDI, portfolio equity and debt inflows on growth. They revealed that there is a strong positive correlation between FDI as well as portfolio equity inflows on economic growth although foreign debt was found to be negatively correlated with growth.

Other studies however, find evidence contrary to the above findings. For example, Reinhart and Reinhart (2008) examine the effect of FPI on economic growth in 181 countries over the period, 1960-2007. The authors established that an increase in capital inflows of emerging countries is associated with higher likelihood of financial and economic crisis. Based on a sample of 51 recipient countries (both developed and developing countries), Choong et al (2010) also analyse the effect of three different types of private capital flows on economic growth from 1988 through 2002. Their results indicate that whiles FDI positively correlates with economic growth; the inverse is true for foreign portfolio investment on economic growth.

Similarly, in the study of Durham (2004), the author investigated the effect of FDI and FPI on economic growth. By employing data on 80 countries from the period 1979 to 1998, they find a negative effect of either FDI or FPI on growth. They are however, quick to mention that the effect of both FDI and portfolio equity is dependent on the financial and institutional development of the recipient country.

2.8 Chapter Summary

Determinants of foreign portfolio investment have been a major research area following the Asian financial crises in the 1990's. While literature provides a lot of evidence in favour of

pull factors of portfolio flows, little or no evidence is provided in favour of push factors in the context of Sub-Saharan Africa. The pull and push factor theories have attempted to explain the factors that influence capital movements. The effect of PI on economic growth still remains inconclusive. While others provide evidence for a positive effect; others also conclude that PI negatively affects economic growth.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter explains the sample and variables, the sources of data, the tools used in collecting and analysing data, as well as the estimated model adopted for this study.

3.2 Sample and Target Population

The population of study consists of countries in Sub-Saharan Africa. The sample of this study consists of 17 Sub-Saharan Africa countries. These countries are; Ghana, Nigeria, Cameroon, Niger and Togo. Others are Burkina-Faso, Benin, Kenya, Mozambique and Uganda. Tanzania, Democratic republic of Congo, Senegal, Mali, Angola, Guinea Bissau and Zambia

are also included. The choice of countries included in the study is mainly based on data availability on our variables chosen for this study.

3.3 Nature and Source of Data

The study employs secondary data covering the period 2005-2013. World Development Indicators (WDI) database of the World Bank is the main source of data on net portfolio equity inflows (% of GDP), inflation rate, the level of financial development and GDP growth rate. Additionally, data on institutional quality, the US interest rate (annual %), trade openness and the economic growth rate of industrial countries are obtained from WDI database of the World Bank. Similarly, data on political stability is obtained from the World Governance Indicators (WGI) of the World Bank. Data on real effective exchange rate (annual %) and current account balance as a fraction of GDP is obtained from the Regional Economic Outlook database of International Monitory Fund (IMF).

The characteristics of the data allows for the employment of panel data methodology which involves the pooling of observations on a cross-section of units over the nine (9) year period. This provides results that are simply not detectable in pure cross-sections or pure time-series studies. A general model for a panel data that allows the researcher to estimate a panel data with great flexibility and formulate the differences in the behaviour of the cross-section elements is adopted.

3.4 Sampling procedure

The researcher employed purposive sampling to select data of SSA countries covering the period 2005-2013. Purposive sampling means judgment is used to select the respondents (Kumekpor, 2002). This method was employed because it enabled the researcher to select

samples that gave sufficient information about the dependent and independent variables for at least eight years.

3.5 The model

The starting point for the panel estimation model is based on the pull and push factor theories characterized by the inclusion of a lagged dependent variable among the explanatory variables. To capture the effect of domestic factors, we include previous net portfolio inflows, market size, trade openness, financial development and current account balance. For the push factors, U.S.A interest rate and output growth of industrialised countries are included.

In carrying out the empirical analysis, we follow literature by adopting the Vo (2005) approach of panel data, to investigate the determinants of portfolio flows to Sub-Saharan Africa by employing the system GMM dynamic panel model.

The Generalized Methods of Moment (GMM) dynamic panel estimation framework was introduced by Arellano and Bond (1991). “The fundamental identification condition for this model is the strict exogeneity of some of the explanatory variables (or the availability of strictly exogenous instrumental variables) condition on the unobservable individual effects” (Arellano & Bond 1991). Unlike the ordinary least square (OLS) method which assumes that the explanatory variables must be exogenous; $E\ [\varepsilon tx] = 0$ (Greene, 2012), GMM has the ability to measure errors in regressors and simultaneity or endogeneity of the explanatory variables. For instance, the GMM has the ability of overcoming conditions such as the presence of a lagged dependent variable and autocorrelation in the error term.

GMM is also considered to be useful for this study since we are analysing a panel data set. Other motivation for the choice of the GMM as captured by Edison, H. J., Levine, R., Ricci, L., & Sløk, T. (2002) includes the following:

a. It controls for endogeneity of the weakly exogenous variables that may arise from potential simultaneity or reverse causality in the model;

b. It also controls for country-fixed effects which is often captured in the error term of some estimation methods;

c. The GMM dynamic panel model exploits both the cross-sectional and time-series dimension of the data set, thereby increasing the degree of freedom.

The formulation of the regression model is as follows:

$$PI_{it} = \beta_o PI_{i,t-1} + \beta_1 GDP_{it} + \beta_2 INST_{it} + \beta_3 TO_{it} + \beta_4 INF_{it} + \beta_5 FINDEV_{it} + \\ + \beta_6 USI_{it} + \beta_7 WIG_{it} + \beta_8 EXCHR_{it} + \beta_9 CAB_{it} + \eta_i + \varepsilon_{it}$$

…… (3)

With $i = 1, \ldots.17$ and $t = 1, \ldots.9$.

$\beta_1 \ldots\ldots \beta_{10}$ are coefficients to be estimated using the Generalized Method of Moment (GMM).

ε_{it} is the error term, i and t represent country and time respectfully. $PI_{i,t-1}$ represents first lag of PI (net portfolio equity inflows as a percentage of GDP), GDP is GDP growth (annual %) and INST is institutional quality. Inflation is represented as INF, FINDEV is financial development, the US interest rate is indicated as USI and WIG represents the growth rate of industrialised countries. Additionally EXCHR is the code for exchange rate, TO is Trade Openness and CAB represents current account balance.

With regards to our third objective, we are interested in studying the effect of PI on economic growth whiles controlling for Financial Development (FINDEV), Trade Openness (TO),

Exchange Rate (EXCHR), Inflation Rate (INF), Current Account Balance (CAB) and Political Stability (PS). In order to do this, we use a panel cointegration regression on a panel data-set from the selected 17 economies across the SSA region over the period 2005-2013. The study uses Kao (1999) cointegration estimation technique. Kao (1999) presents ADF type tests that provide estimates of co-integrating relationships on the null hypothesis of no cointegration in panel data. Once there is the presence of cointegration which is one single long-term relationship as in our case, we estimate a Vector Error Correction Model **(**VECM) to analyse the joint behaviour of the series in the dynamic system.

3.5.1 Vector Error Correction Model (VECM)

VECM is estimated to analyse the joint behaviour of the independent variable in the dynamic system. The VECM is able to provide information on short-run and long-run adjustments of series. The short-term dynamics of the variables in the system are influenced by the deviation from equilibrium Aziakpono (2006).

The model is specified as:

$$\Delta Y_{it} = \alpha\beta' X_{it-1} + \Pi_i y_{i,t-1} \sum_{i=1}^{k} \Gamma_{it} \Delta X_{it-i} + \mu_0 + \varepsilon_{it} \quad \text{.....(4)}$$

Where ΔY_{it} is a $(n \times 1)$ vector composed of non-stationary variable (PI). X_{it} is a matrix of the independent variable, μ_0 is an unrestricted constant term and Γ_i and Π are $(n \times 1)$ matrix of coefficients for the independent variables. ε_t is a $(n \times 1)$ vector of error terms. Π provides

information on the number of cointegrating vectors that will contain all the long-run information on the process of X_{it}.

3.6 Measurement Variables

This section provides information on the variables included in the model for the data analysis. It provides definition of the variables, the proxies for the variables and the justification for their inclusion in the models.

3.6.1. Dependent Variable

For the dependent variable we used net portfolio equity inflows. These were expressed relative to current GDP. Data on net portfolio equity inflows is sourced from the World Bank Database. They define net portfolio equity inflows as net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts (American or global), and direct purchases of shares in local stock markets by foreign investors.

3.6.2 Definition and Measurement of explanatory Variables

This section explains both the control variables (inflation, institutional quality and exchange rate); other weakly exogenous variables that are believed to have influence on PI of SSA aside the main causative variables of interest (GDP) growth rate, current account balance, trade openness, financial development, political stability, US interest rate and the growth rate of industrialized countries) in the estimation models.

Market Size

The relationship between the market size of a host country or region and investment flows is accounted for in most empirical studies (Anderson, 1979; Dunning, 1980; Kim, 2000). Moreover, market size and national income level are found to be important drivers of investment flow to emerging economies, especially for market-seekers (Guerin, 2006). Market size and its potential are expected to be strongly significant for the inflow of foreign investment in Sub-Saharan Africa. In this study, the potential role of the market size of SSA is investigated using GDP Growth Rate. SSA GDP levels reflect the purchasing power and its market capability. Domestic output plays a significant role in attracting investment. This is because higher economic growth is associated with increasing economic activity and opportunities for investors hence, higher rate of returns. The study expects a positive sign for the economic growth coefficient as suggested by Vo and Daly (2007). In other words the larger the economic size, the more likely that SSA will receive foreign portfolio investment.

Institutional Quality

Studies that focus on institutions and capital flows highlight the importance of basic institutions, particularly property rights. Private property rights are market creation institutions (Rodrik, 2005), which is also represented as an indicator of investors' protection in literature. Indeed, weak property rights increase the risk of expropriation, which affect entrepreneurs' returns negatively. Empirically, property rights have been the rule of law score from the World Governance Indicators (Kaufmann, Kray & Mastruzzi, 2008). Among the six governance dimensions used by Kaufmann et al. (2008), this is the closest proxy for property rights protection. Using those proxies, better quality institutions are found to be positively and significantly correlated with foreign equity flows (Alfaro et al. 2005a, 2005b).

Contrary to majority of studies, Kim (2010) finds that countries with high level of corruption of government and low level of democracy have higher FDI inflows while being lower for those with greater political rights. Additionally, Li and Reuveny (2003) found that trade openness and portfolio investment negatively influence democracy. We however expect an improvement in countries' civil liberties (i.e. freedom of expression and belief, association and organization rights, rule of law and human rights, personal autonomy and economic rights) to reduce the cost of capital and encourage investment in these economies.

Trade Openness

Trade Openness is referred to as the sum of a country's total exports and total imports as a ratio of its gross domestic product (The Organization for Economic Cooperation and Development, OECD). The effect of capital controls depends on the kind of distortions they create (Asiedu and Lien, 2004). Trade openness plays a significant role in foreign capital movement (Asiedu, 2002 and Lane and Milesi-Ferretti 2003). This is because the increasing appetite of global investors implies that investors who focus on direct production may engage in in export-oriented activities and hence may not only be interested in the local market but also the international market. We use the sum of a country's total exports and total imports as a fraction of gross domestic product (GDP) to measure trade openness. We expect a positive sign for trade openness.

Inflation Rate

Inflation measures the growth rate of the consumer price index of a country. It indicates the stability of macroeconomic fundamentals. Therefore changes in the rate of inflation may indicate internal economic instability. Theoretically high inflationary periods increase the cost

of borrowing on investment projects, which may limit the amount of resources invested in such economies. Hence, productivity decreases which leads to slow economic growth (Khan and Senhadji (2000). High inflation in the context of capital flows is a disincentive for investment by foreign firms (Sneider and Frey 1985), since it reduces the gains realized from investment activities. Investors will therefore look for better opportunities in other countries where inflation is relatively lower. Since portfolio flows are normally short term investments, the effect of inflation may be smaller. A negative coefficient is expected for this variable as was identified by Barro (1996b).

Financial Development

Nasser and Gomez (2009) note that, financial development is important in foreign investment decisions. This is because it affects the cost structure of investment projects. Kinda (2010) observes that financial development is an engine of economic growth, providing better business opportunities for customers and firms. This is proxied by the ratio of domestic credit to the private sector to GDP. This indicator of domestic financial development is an important factor in driving international finance. High domestic credit to the private sector also implies abundance of domestic capital and as such, foreign capital may not be needed (Fernández-Arias and Hausmann, 2000). Financial development in the context of growth is very crucial since it dictates the ease with which entrepreneurs can access credit for productive activities. We therefore expect either a negative or positive sign.

Exchange Rate

Different opinions have been shed on the influence of exchange rate and currency risk on capital inflows: A case study by Kyereboah-Coleman and Agyire-Tettey (2008) on the volatility of real exchange rate highlights on the effect of exchange rate on foreign capital

flows particularly, FDI. They found a negative relationship between real exchange rate volatility and foreign capital inflow. Similarly Persson and Svensson (1989) observed that the volatility of exchange rate has negative influence on international trade and capital flows. Exchange rate variations are expected to negatively affect portfolio inflows since it represents a higher degree of uncertainty in the returns of foreign investors. On the contrary, empirical findings by Jeon and Rhee (2008) of firm level data on the U.S.A capital flows to Korea shows that, capital inflows have significant positive association with real exchange rate similar to the findings of Ramiraz (2006) and Cushman (1985). These results are built on the notion that an appreciation of currency in the recipient country may create an avenue for additional returns on the investment of foreign investors. Again, investors with higher risk tolerance may be attracted to this market and make speculations more interested, henceforth an increase in portfolio investment. Other studies (Brahmasrene and Jiranyakul, 2001 and Dewenter, 1995) however find no evidence for a positive or a negative relationship between the level of exchange rate and capital inflows. We however expect a negative sign for exchange rate. In the context of growth, Exchange rate volatility discourages trade and investment, which are important for growth.

International Interest Rate

International interest rates in particular, the U.S.A interest rate is found in several studies (e.g Chuhan, et al. 1996; Mody, Taylor, and Kim, 2001; Gordon and Gupta, 2003) to have a negative impact on portfolio flows. Thus a decline in the U.S.A interest rate will result to an increase in portfolio flows to emerging countries where rates of return are high. Contrary to the above findings, Hernandez and Rudolf (1994) find no relationship between international interest rates and portfolio flows. Several measures such as: U.S.A short term interest rate, the annualized ten-year U.S.A bond nominal yields, the real ex-post international interest rate,

that is the U.S.A dollar 3-months LIBOR minus the US-CPI 3 months inflation are used to represent international interest rate. The study employs the U.S.A annual interest rate. We expect a significant negative sign for USI.

World Income Growth Rate

As established in earlier literature, economic growth of industrialised countries expresses the economic cycle of lender countries. It is usually measured in real GDP or its rate of growth of USA or industrialised countries. A recession in developed countries is expected to increase capital inflows of emerging countries as investment at home becomes less attractive than investment abroad. Other studies also reveal that robust economic activity of source countries can either increase or reduce outflows of capital to emerging countries. According to Jeanneau and Micu (2002) robust economic activity in industrialised countries indicates that investors have high earnings to invest in both at home and abroad. Thus PI increases in emerging countries by this income effect. However expansion may also induce a substitution effect, so that investment abroad becomes less attractive thereby reducing PI in developing economies (Calvo et al. 1993). We expect either a positive or negative relationship between WIG and portfolio investment flows to SSA

Political Stability

Political and country risk refers to the extent to which a country is politically stable and free from any form of civil strife or terrorism. This factor is very important for growth flows since investors will not like to invest in countries where there is a possibility of losing their capital owing to political unrest such as wars and conflicts. Political and country risk in the study is measured by the World Banks estimate of political stability and absence of violence or terrorism. According to the index, countries with relatively stable political environment have

higher indices than fragile countries or those prone to conflict and terrorism. According to Alesina et al. (1996) GDP growth is significantly lower in countries where there is a high propensity of government collapse. Similarly Jong-aPin (2009) also finds that higher degrees of political instability lead to lower economic growth. A positive sign is expected for the political and country risk coefficient since a stable country is more likely to stimulate growth.

Current Account Balance

Current account balance in this study is a proxy for external vulnerability, which results from a mismatch between savings and investment. CAB is expected to have either positive or negative relationship with PI depending on how we perceive the variable. If we look at the variable as external vulnerability to a country, it might have a negative on PI. This is because a current account deficit implies unfavourable domestic economy condition, thus making a country less attractive to capital inflows from abroad (Hernandez et al. 2001). On the other hand, there could be a positive relationship between capital inflows and CAB, since current account deficit may imply a substantial demand for capital inflows from other countries to finance the deficits. Calvo et al. (1996) however, argue that widening the deficit of current account is one of the less desirable macroeconomic effects of large capital inflows to the debtor countries.

Past Portfolio Inflows

We introduced a one-period lagged value for net portfolio equity inflows as ratio of GDP to capture the ‘agglomeration’ effect. Existing theory, including the work of Kamaly (2002), postulates that past success in attracting foreign capital inflows has a significant influence on

the ability to attract foreign investments in the current period. We expect previous portfolio inflows to positively affect current portfolio inflows similar to the findings of Brennan and Cao (1997).

3.7 Estimation Strategy: Dynamic Panel Model Approach

We consistently estimate the equations using the Generalized Method of Moments (GMM) as proposed by Arellano & Bond (1991) and generalized by Arellano & Bover (1995) and Blundell and Bond (1998). Employment of difference GMM suffer from the problem of instruments weakness if the original series have unit root properties and may require us to drop some countries from investigation. Hence it is not appropriate because we lose a lot of observations. System GMM will enable us to use whole sample of countries, hence, more precise results could be obtained. Additionally the properties of this estimator are not hindered when "N" is so small that it is not possible to exploit the full set of linear moment conditions. Therefore the system GMM estimator displays the best features in terms of small sample bias and precision (Soto, 2009).

System GMM requires us to specify endogenous variables in the model. This variable in our case is the lagged dependent variable included in the right hand side of the regression. This helps to infer about the past history of portfolio flows which influences current flows. All the domestic and external determinants are treated as exogenous to portfolio flows. Hence, they can be used as instruments for the endogenous variables in the regression.

To eliminate the country specific fixed effects (4), we take the first difference of the equation. As pointed in Roodman (2007), the system GMM estimator combines the standard set equations in first-difference with a suitable lagged level as instruments, and an additional set of equations in levels with suitably lagged first differences as instruments. The GMM

requires the instrumental variables to overcome issues of endogeneity of the explanatory variables and the problem of correlation between the error term as well as the lagged dependent variable. Generally, the system GMM estimators have one–and–two step variants. The study adopts the two-step variants. In general the two-step system GMM is able to provide an asymptotically efficient estimator. Two-step System GMM, Windmeijer (2005) corrects standard error, small-sample adjustments, and orthogonal deviations are employed.

The two step variant uses residuals from the one-step estimates and is asymptotically more efficient than the one-step. The validity of the obtained results of system GMM estimation relies heavily on some assumptions to be fulfilled. System GMM requires the following assumptions to hold: no autocorrelation in error terms, exogeneity of instruments and also validity of imposed moment conditions for the difference and the system GMM. The hypothesis of autocorrelation of order one and two in differences of the idiosyncratic error term is rejected by Arellano-Bond test under 1% significance level. Joint validity of moment conditions is tested by Sargan test of over identifying restrictions. The test is produced by default after the estimation of regression. P-values of the test bigger than 0.05 support the hypothesis that imposed moment conditions about exogeneity of regressors are valid. Furthermore, Difference-in-Sargan test verifies whether each subset of instruments used in estimation is exogenous.

3.8 Post-estimation Tests

To check for the accuracy of the system GMM and the VECM estimators, we follow literature by conducting the following tests:

Sargan specification test

The Sargan specification test is required to test the overall validity of the instruments. Under the null hypothesis of valid moment conditions, it is asymptotically distributed as chi-square variable (Arellano and Bond, 1991; Arellano and Bover, 1995) and it's expected to produce consistent and efficient parameter estimates when employed in the GMM procedure (Blundell and Bond, 1998).

It is used to test the null hypothesis that the instrumental variables are uncorrelated with some set of residuals and are therefore acceptable instruments. The Sargan test is also known as the Hansen test or J-Test for Over-identifying restrictions.

Serially uncorrelated errors

The fundamental assumption of serially uncorrelated errors ε_{it} is assessed by testing the hypothesis that $\Delta\varepsilon_{it}$ are not second order autocorrelated. Rejection of the null hypothesis of no second order autocorrelation of the differenced errors implies serial correlation for the level error term and thus inconsistency of the GMM estimates.

Testing for stationarity

First and foremost, before carrying out the VECM, a panel unit-root test is undertaken to ascertain the stationarity of all the data-set. Testing for stationarity will help prevent distortions in estimated regression relations and spurious regressions due to time–series process (Greene, 2012). The study employed the Augmented Dickey-Fuller (ADF) test for unit-root on all the variables. It is conducted on the null hypothesis that all panels contain unit-roots; thus, all the panels are non-stationary. As a robustness check, we conduct the Phillips Perron test for unit-root to verify the results of the ADF test.

Cointegration tests

After testing for stationarity, panel cointegation is conducted in order to establish the evidence of cointegration relationships (but not their number) that may exist among variables. The presence of cointegration indicates there is a common behaviour among the variables under study regarding their long-term fluctuations. Kao (1999) cointegration test was adopted for the study. The test presents ADF type tests that provide estimates of co-integrating relationships on the null hypothesis of no cointegration in panel data. Kao (1999) expanded the DF and ADF unit root tests to panel cointegration. Once there is the presence of cointegration which is one single long-term relationship in our case, we estimated the long-run cointegrating vector.

3.9 Limitation of the study

The study is limited to only 17 countries in Sub-Saharan African although there are 45 countries in the sub-region. This is due to the problem of data availability for all the SSA country.

This study is also limited by the fact that GMM asymptotic distributions depend on regularity conditions that are not always satisfied and which can affect sample performance adversely, under such weak moment conditions, GMM estimates are not consistent but converge weakly to a nondegenerate limit distribution.

Moreover due to the fact that findings are obtained based on historical data, the future determinants of portfolio inflows of SSA are not reflected.

3.8 Chapter Summary

In summary, we have described the theoretical framework and theoretical foundations of the dynamic GMM estimation and the VEC models with which we aim to achieve the objectives of this research. The model is a regression model with ten (10) explanatory variables for our first and second objectives and seven (7) explanatory variables for our third objective. This chapter also describes the variables used in the estimation process and the sources from which the data was drawn. Basically, data was collected from the WDI and WGI databases of the World Bank and the International Monetary Fund (IMF).

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter contains the analysis and discussion of the results. It is made up of four subsections. The first sub-section consists of the descriptive statistics of the variables that are examined. The second sub-section describes the correlation amongst the selected variables. The third sub-section presents system Generalized Method of Moments regression results derived from our analysis and the forth sub-section presents the results of the VEC model.

4.2 Descriptive Statistics

The table below depicts that net Portfolio equity Inflows (PI % of GDP) of SSA stands at an average of 0.0042 for the period, 2005 – 2013. The positive value of PI indicates that, PI is encouraging in SSA. The Maximum value of PI has been observed at 0.15 while minimum value is observed at –0.06. The difference between the maximum and the minimum values, tells about the range of data. Standard Deviation for PI is 0.02525, which shows the deviation from the average mean value.

Table 4.1 below also indicates that, the mean value of GDP growth rate is 0.0582. The positive value shows that the growth rate of the sub region is encouraging. Standard deviation for GDP is 0.03313. The table (4.1) below also indicates that, the average value of institutional quality and Trade Openness are 2.8987 and 0.5319 respectively. Their positive values of mean also show that institutional and trade openness are encouraging in SSA. Standard deviation for institutional quality is 0.5268 while, trade openness stands at 0.1713.

Table 4.1 indicates that, apart from financial development which obtained a mean of 0.1623, the value for inflation, U.S.A interest rate, exchange rate, current account balance and

political stability of the sub region ranges from -0.535 to 0.8119. The negative values of current account balance and political stability indicates that the sub region faces current account deficit as well as political risk. Casual observation tends to show that for most of the cases, a higher mean is also associated with a higher standard deviation

Table 4.1 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
PI	141	-0.06	0.15	0.0045	0.02525
GDP	153	-0.02	0.23	0.0582	0.03313
INST	153	2	4	2.8987	0.52678
INF	153	0.02	0.26	0.0751	0.05345
PS	153	-2.27	0.61	-0.535	0.7775
FINDEV	153	0.01	0.38	0.1623	0.07488
USI	153	0.01	0.05	0.0275	0.01349
WIG	153	-0.04	0.03	0.0148	0.01974
EXCHR	150	0.07	1.21	0.8119	0.36345
CAB	153	-0.45	0.26	-0.0587	0.08956
TO	153	0.3	0.84	0.5319	0.1713

Source: Researchers own calculations

Table 4.1 shows the descriptive summary statistics for the key variables used in this study. As discussed in section 3.4, portfolio investment (PI) is net portfolio equity inflows (as a % of GDP. Gross domestic product (GDP) is the proxy for economic size, trade openness (total export and import % of GDP) and institutional quality (INST) is proxied by CPIA property rights using the rule-based governance rating (1=low to 6=high). Inflation (INF) represent economic instability, domestic credit to private sector (% of GDP) is financial development (FINDEV), US interest rate (USI) serves a proxy for international interest rate of return, world income growth rate (WIG), real effective exchange rate (EXCHR), political stability and the current account balance (CAB) which represents external vulnerability

Table 4.2 **Correlation Matrix**

	PI	GDP	INST	TO	INF	FINDEV	USI	WIG	EXCHR	CAB	PS
PI	1										
GDP	0.1618	1									
	{-0.0457}										
INST	-0.3808	0.0305	1								
	{-0.0001}	{-0.708}									
TO	-0.05	0.3014	-0.2487	1							
	{-0.5397}	{-0.0002}	{-0.0019}								
INF	0.1414	0.3171	-0.1327	0.1503	1						
	{-0.0812}	{0.0001}	{0.102}	{0.0637}							
FINDEV	-0.3439	-0.183	0.2244	0.2946	-0.2053	1					
	{0.0001}	{0.024}	{0.0054}	{0.0002}	{0.0112}						
USI	0.0536	0.1218	0.0434	-0.0607	0.036	-0.2776	1				
	{0.5109}	{0.1335}	{0.5939}	{0.4564}	{0.6591}	{0.0005}					
WIG	0.0238	0.2106	0.0098	0.0446	-0.0212	-0.1486	0.277	1			
	{0.7702}	{0.009}	{0.9042}	{0.5838}	{0.7951}	{0.0677}	{0.0005}				
EXCHR	-0.205	-0.4977	0.2339	-0.2916	-0.6327	0.2073	0.061	-0.0213	1		
	{0.011}	{0.0001}	{0.0036}	{0.0003}	{0.0001}	{0.0104}	{0.454}	{0.7943}			
CAB	0.1588	0.262	-0.4307	0.142	0.2472	-0.1858	0.1781	0.0992	-0.2433	1	
	{0.0499}	{0.0011}	{0.0001}	{0.0801}	{0.0021}	{0.0219}	{0.0276}	{0.2226}	{0.0024}		
PS	-0.3547	0.049	0.5138	0.219	-0.2335	0.1905	0.0716	-0.0172	0.1584	-0.2726	1
	{0.0001}	{0.5473}	{0.0001}	{0.0065}	{0.0037}	{0.0188}	{0.3793}	{0.8328}	{0.0506}	{0.0007}	

Source: Researcher's own calculations

Table 4.2 shows the correlation matrix for the variables in the regression model. The second column of Table 4.2 presents the coefficient of correlations and the corresponding p-values between PI and the variables under consideration. According to Kennedy (2008), correlation coefficients below 0.70 indicate weaker relationships hence, the avoidance of any potential multi-collinearity problems in the regression estimates. The correlation coefficients among the explanatory variables used are quite small which means that there are no collinearity problems.

From the results of Table 4.2, the relationship between PI and GDP, inflation, US interest rate, world's income growth rate and current account balance is positive. The coefficients of GDP and CAB are recorded to be highly statistically significant at 5 percent except inflation which is statistically significant at 10 percent level. The finding shows that PI is biased to the economies with large GDP growth. PI is also biased to the economies with high current account deficit. Thus, high current account deficit signals the need for external funds, hence, a positive relationship. On the other hand the coefficient of correlation between PI and WIG as well as the US interest rate is statistically insignificant. The correlation coefficient of exchange rate of the host economy, institutional quality, financial development and trade openness is negative. These are all statistically significant at 5 percent level except trade openness which is statistically insignificant.

4.4 Empirical Results and Discussion

The results of the baseline PI regression of the system GMM dynamic panel model are presented in Table 4.3 below:

Table 4.3: System GMM Estimation Result (2005-2013) Dependent variable: PI

PI	Coef.	Std. Err.	z	P>z
L1.	0.2626	0.0920	2.85	0.004

GDP	13.5928	6.1463	2.21	0.027
INST	0.0081	0.0192	0.42	0.673
TO	0.0000	0.0305	0.01	0.969
INF	-0.0043	0.0497	-0.09	0.931
FINDEV	-0.0015	0.0008	-1.84	0.065
USI	-0.1054	0.1573	-0.67	0.503
WIG	0.0993	0.0539	1.84	0.066
EXCHR	0.0056	0.0081	0.69	0.489
CAB	-0.0808	0.0324	-2.5	0.013
_cons	-0.3999	0.1942	-2.06	0.04

Observations: 153

Number of Groups: 17

Number of instruments: 46

Sargan test; chi2 (34): 4.967151

P-value: 1.0000

Wald test; chi2 (11): 998.01

P-value: 0.0000

AR (1) p-value: 0.1711

AR (2) p-value: 0.2233

Source: Researcher's own calculations

The regression result revealed that (from table 4.3) portfolio flows to SSA countries is jointly explained by domestic factors of the host country such as past portfolio flows, GDP growth rate, level of financial development and current account balance. The only external factor we find to explain PI of SSA is the growth rate of industrialised countries.

The result of the regression using the system GMM estimation for the independent variables individual effect on portfolio inflows of SSA reported on table 4.3 are explained one by one as follows;

a. Past Portfolio Inflows

The result from System GMM revealed that lag PI has a positive and significant effect on current portfolio investment of SSA nations at 5 percent level of significance. This finding suggests that portfolio flows has a tendency to persist over time. This may reflect a habit-formation effect, as investors gain experience in portfolio investment operations. At the same time, PI may contribute to the macroeconomic environment of the host country, in turn sparking further portfolio investment. The result from this technique support findings from existing studies, including the work of Kamaly (2002) and Brennan and Cao (1997).

b. Market Size

The impact of market size on PI of the region under consideration was found to be positive and significant at 5%. This is consistent with the result of Montiel and Sharma (1997) and Hossain (2013). These results imply that market size is an important factor in explaining PI of SSA countries. One of foreign capital's objectives is to have a large market share and to achieve this objective; PI produces huge quantities to benefit from economies of scale. Due to this factor, there is a huge market potential to attract portfolio investment in SSA. It can be argued that investors expect to make more profits through mass production with lower marginal costs of production in SSA countries with larger market sizes.

c. Financial development

FINDEV the proxy for financial development retains a negative and significant coefficient at 10% although the effect is negligible. That means, an increase in the amount of domestic credit to the private sector will reduce investors' interest to invest in SSA countries. In other words, the amount of credit for the private sector is a central indicator in explaining PI of the region. This outcome is similar to the results of Walsh and Yu (2010) and Anyanwu (2007) and contradicts the findings of Bailliu (2000).The result confirms the hypothesis that high level of domestic credit to the private sector is an indication of the abundance of domestic capital and as such, foreign capital would not be needed.

d. US interest Rate

Another variable of interest in the study was the US interest rate as a proxy for international rate of return. The results as shown in table 4.3, confirms the expected negative relationship between international interest rate and PI of SSA although it is statistically insignificant. Thus, portfolio flows to SSA countries are independent from international interest rate; hence it does not significantly induce PI in the sub region. A plausible explanation to this is that, foreign investors may be resource-seekers or market-seekers (Dunning, 1993) other than returns. For instance, in 2012, Zambia issued US$ 750 million bonds at a yield of 5.4% to finance its infrastructures which is said to have been oversubscribed 15 times even though bond yields were lower compared to other European countries (e.g. Spain) (Wang et al., 2013). The results are in line with the conclusions reached by Hernandez and Rudolf (1994).

e. World's Income Growth Rate (industrial countries)

Portfolio investment in SSA countries was found to be dependent on global economic cycles. The world economic growth rates of developed countries do have a statistically significant impact on portfolio inflows of SSA at a significant level of 10% (see Table 4.3). The positive

significant relationship between WIG and portfolio flows to SSA, confirms the income effect hypothesis that, during expansions in source countries, investors have higher earnings to invest in both at home and abroad. Thus robust economic growth of source countries, signals a larger willingness to invest in emerging markets since there are more funds in the developed markets. In this case investment into SSA is deemed complementary to the investment in the global stock markets. Thus a higher GDP growth of industrialised countries implies more funds available for investment in emerging economies. This confirms the results of Chuhan, at al. (1996) as well as Calvo and Reinhart (1998) and it's in contrast with earlier studies (eg. Calvo et al. (1993) and Hernandez and Rudolph (1995), which posited that low economic growth of lending countries led banks to seek external lending outlets.

f. Current Account Balance

The study find a significant relationship for PI in SSA and current account balance similar to the findings of Calvo et al. (1996) and Hernandez et al. (2001). The regression result revealed that, CAB is highly negatively correlated to PI at a 5 percent significant level. This means that high current account deficits denote unfavourable domestic economic condition, thus making SSA less attractive to investors. Although theoretically, in perfect markets, portfolio flows are used to finance higher deficits, the lack of contract enforcement in an international setting discourages investors to finance completely these debtor countries. This is because, such counties are perceived to have strong incentive for defaults.

g. Trade Openness

Trade openness retains the expected positive sign. The coefficient is however statistically insignificant, which is contrary to the theoretical expectation. The above result shows that trade liberalisation have no significant effect on portfolio investment in SSA. A plausible

explanation to this could be that foreign investors perceive trade liberalization reforms in the sub region as transitory and are therefore subject to reversals. The reason for the lack of credibility of reforms may be due to the ad hoc nature of these reforms in the past. Asiedu (2001) for instance present that trade policy are used as a macroeconomic instrument to manage balance of payment in Africa. Consequently trade restrictions were tightened when terms of trade deteriorated and were slackened when the terms of trade improved. Again Africa countries embark on trade liberalisation to meet aid conditionality. Hence, these reforms come to an end once aid ends. Our result confirms the findings of Montiel and Sharma (1997).

Control Variables

Inflation obtained a coefficient value of -0.0045. The negative value implies that inflation; a measure of macroeconomic stability, negatively impact portfolio inflows of SSA. This confirms the theoretical position in literature that inflation is a disincentive to investors since it reduces the gains realised from investment activities (Sneider & Frey, 1985).The result is however statistically insignificant.

The value of the coefficient of institutional quality is 0.0081. It also indicates a positive impact of institutional quality on PI as suggested in literature (Alfaro et al. 2005a, 2005b). One unit rise in this coefficient will raise the portfolio inflows of the sub region to 0.0081 units. However, this coefficient is insignificant, which confirms the results of Deléchat et al. (2009) on SSA.

Exchange rate surprisingly, obtains a positive coefficient of 0.005625. By implication, appreciation of SSA countries domestic currencies, increases portfolio flows to the sub

region. This result is consistent with the intuition that investors may perceive a higher level of uncertainty as an opportunity for investment return. Hence, an appreciation in the currency of the recipient country may create an opportunity for additional return on their investment (Ramiraz 2006). Additionally, investors with higher risk tolerance may be attracted to this market and make speculations more interested, henceforth an increase in portfolio inflows. Our result confirms the findings of Ahmed et al. (2005).

4.5 Post-estimation Test results

To check the accuracy of the system GMM estimator, we test for the presence of autocorrelation and the validity of the instruments employed in the estimation. The results of these tests are also reported in Table 4.3. The autocorrelation test is conducted on the null hypothesis that there is no autocorrelation in the data set. The results report a probability value (p-value) of 0.1711 (see Table 4.3) for the autoregressive order one [AR (1)] process. Since the reported value is greater than 0.05, we fail to reject the null hypothesis for AR (1). However, the test on the AR (1) process is not reliable due to problems associated with its construction in the system GMM model. More importantly, we carry out a similar test on the AR (2) process which is relatively reliable and also capable of detecting autocorrelation at levels. The AR (2) test results in Table 4.3 indicates a p-values of 0.2233. Since the result is greater than the conventional 0.05 benchmark, we fail to reject the null hypothesis of no autocorrelation. We can therefore conclude that there is no autocorrelation in the system GMM estimation model and therefore the estimator is efficient.

The Sargan test is also conducted to ascertain the validity of the instruments used in the system GMM estimation. The test is carried out on the null hypothesis that, the over-identifying restrictions are valid. Table 4.3 above result shows the probability value of

1.0000 which is greater than 0.05. Hence, we fail to reject the null hypothesis and conclude that the over- identifying restrictions are valid. This implies that the instruments used in the system GMM estimation are valid instruments and also the instruments as a group are exogenous.

4.6 Empirical Results of the Effect of Portfolio Investment on Economic Growth.

The empirical part of this study starts by diagnosing the data using tests such as unit root tests and Kao co-integration test. Consequently, an appropriate vector error correction model (VECM) is constructed based on annual data over the period 2005–2013. This model provides the long-run equilibrium relationship and the short-run dynamics of the series included in the study.

Unit-root test results

In order to determine the order of integration of the variables involved in this study, we first conduct a unit-root test to ascertain the stationarity or otherwise of the panel data-set. The unit-root test is conducted on the null hypothesis that all panels contain unit-roots. Table 4.5 below presents the results of the Augmented Dickey-Fuller (ADF) test for unit-root, which suggests some variable are non-stationary at their levels, but they are all stationary at their first difference. Thus, these variables are integrated of order 1, i.e. I (1). In order to check the robustness of the ADF test, we carry out the Philips-Perron (1988) test. The Philips-Perron test also confirms the ADF test that panel data-set is stationary at their first difference.

Table 4.4: Unit Root Tests

Variable	Level				First Difference			
	ADF		PP		ADF		PP	
	Statistics	Value	Statistics	Value	Statistics	Value	Statistics	Value
CAB	52.5969	0.0218	58.4191	0.0057	83.7808	0.0000	102.049	0.0000

EXCHR	25.2121	0.8625	29.2260	0.7007	72.8589	0.0001	78.8698	0.0000
FINDEV	29.7528	0.6759	42.2410	0.1568	63.1966	0.0017	75.3312	0.0001
GDP	81.8208	0.0000	79.6468	0.0000	126.352	0.0000	198.383	0.0000
INF	84.7976	0.0000	115.541	0.0000	111.084	0.0000	175.131	0.0000
PI	65.5373	0.0009	88.1921	0.0000	101.142	0.0000	169.303	0.0000
PS	65.4124	0.0010	82.0859	0.0000	80.4096	0.0000	123.439	0.0000
TO	63.9383	0.0014	70.2332	0.0003	104.503	0.0000	149.431	0.0000

Source: Researcher's own calculations

By conducting the unit root test, we proceeded to test for co-integration in order to determine whether there is a need to control for the long-run equilibrium relationship between variables in the econometric specifications. Hence, we use the panel co-integration tests induced by Kao (1999). Table 4.6 below reports the results of the panel co-integration test. The results clearly indicate that there exists a co-integrated relationship expanding in the long-run.

Table 4.5: Results of the Kao Cointegration Test; Least Squares Method

Test Statistics	**t-statistics**	**P-value**
Panel ADF-statistics	7.819455	0.0000
RESID(-1)	-9.976036	0.0000
R-squared	0.455019	
Adjusted R-squared	0.455019	

Source: Researcher's own calculations

The presence of cointegration is an indication of a long term relationship between GDP growth rate, portfolio inflows, political stability, trade openness, inflation, financial development, real effective exchange rate and current account balance. Having established that there is a long-term relationship between PI and its domestic induced factors as specified in the model, the Vector Error Correction Model was specified and the results are reported in Table 4.6.

Table 4.6: Error Correction Model of Portfolio Investment and Economic Growth

Dependent Variable: D(PI)
Method: Panel Least Squares
Sample (adjusted): 2008 2013
Total panel (unbalanced) observations: 88

		Coefficient	Std. Error	t-Statistic	Prob.
ECM	**(-1)**	-0.125152	0.072398	-1.728654	0.0883
D(GDP	**(-1)**	0.059859	0.078794	0.759683	0.4500
	(-2)	0.088779	0.070612	1.257286	0.2128
D(PI	**(-1)**	-0.711930	0.122072	-5.832039	0.0000
	(-2)	-0.409923	0.138134	-2.967587	0.0041
D(CAB	**(-1)**	0.093045	0.038276	2.430881	0.0176
	(-2)	0.002166	0.040974	0.052855	0.9580
D(EXCHR	**(-1)**	0.055038	0.025650	2.145741	0.0354
	(-2)	-0.043286	0.029694	-1.457740	0.1494
D(FINDEV	**(-1)**	0.000556	0.000529	1.050359	0.2972
	(-2)	0.000542	0.000533	1.016511	0.3129
D(INF	**(-1)**	-0.032954	0.037219	-0.885406	0.3790
	(-2)	-0.016373	0.040612	-0.403161	0.6881
D(PS	**(-1)**	0.000909	0.011731	0.077483	0.9385
	(-2)	0.013046	0.009320	1.399775	0.1660
D(TO	**(-1)**	0.002836	0.028749	0.098654	0.9217
	(-2)	0.042297	0.025802	1.639307	0.1056
	C	-0.000880	0.001850	-0.475530	0.6359

R-squared	0.549429	Mean dependent var	-0.001353
Adjusted R-squared	0.440005	S.D. dependent var	0.020112
S.E. of regression	0.015050	Akaike info criterion	-5.374619
Sum squared resid	0.015855	Schwarz criterion	-4.867891
Log likelihood	254.4832	Hannan-Quinn criter.	-5.170471
F-statistic	5.021087	Durbin-Watson stat	2.198431
Prob(F-statistic)	0.000001		

Source: Researcher's own calculations

The findings in table 4.9 above show that, the error correction coefficient (ECM) is negative and significant at 10% level of significance. The coefficient of the error correction term is -0.125152. This means that deviation of the variables from the long run equilibrium has a speed of adjustment at the rate of about 125% annually. The results from table 4.6 above indicate that, there is a long run relationship running from GDP, CAB, EXCHR, FINDEV, TO

and PS to PI.The long run impact of the explanatory variables on PI as shown by table 4.7 is illustrated using equation 4.1;

PI = 0.0291966689074 CAB + 0.0157813136224 EXCHR + 0.000348036621 FINDEV - 0.108607158912INF - 0.00284391365163PS + 0.025489330754TO - 0.07642966182… (4.1)

Equation 4.1 shows that INF and PS have a negative long run relationship with PI. CAB, EXCHR, FINDEV and TO however have positive impacts on PI.

In order to check the short run causality from GDP to PI which is the main variables of interest, we employ the chi-square value of the Wald statistic. The Wald test the hypothesis that the two coefficients of GDP cannot influence PI in the short run. The result in table 4.8 below shows that the coefficients of GDP although positive, do not jointly have any significant influence on PI in the short run. A plausible explanation is that, investors perceive growth rate of developing countries to be reversible and not sustainable. Thus, investors perceive economic growth of SSA countries not to be credible in the short run.

Table 4.7: Wald Test; Short run Causality from GDP to PI

Test Statistic	Value	df	Probability
F-statistic	0.794220	(2, 70)	0.4560
Chi-square	1.588439	2	0.4519

Null Hypothesis: C(20)=C(21)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)		Value	Std. Err.
	GDP (-1)	0.059859	0.078794
	GDP (-2)	0.088779	0.070612

Source: Researcher's own calculations

Table 4.8 Error Correction Model of Portfolio Investment and Economic Growth

Dependent Variable: D(GDP)
Method: Panel Least Squares
Sample (adjusted): 2008 2013
Total panel (unbalanced) observations: 94

		Coefficient	Std. Error	t-Statistic	Prob.
(ECM	**(-1)**	-0.801139	0.124279	-6.446302	0.0000
D(GDP	**(-1)**	-0.014053	0.134333	-0.104616	0.9170
	(-2)	0.170591	0.120601	1.414511	0.1613
D(PI	**(-1)**	-0.487575	0.210118	-2.320481	0.0230
	(-2)	-0.678990	0.235143	-2.887564	0.0051
D(CAB	**(-1)**	0.005209	0.063593	0.081918	0.9349
	(-2)	0.016952	0.069778	0.242937	0.8087
D(EXCHR	**(-1)**	-0.107874	0.043689	-2.469123	0.0158
	(-2)	-0.002778	0.051320	-0.054125	0.9570
D(FINDEV	**(-1)**	-0.000550	0.000915	-0.600887	0.5497
	(-2)	0.000959	0.000902	1.063598	0.2909
D(INF	**(-1)**	-0.176219	0.063431	-2.778118	0.0069
	(-2)	-0.068210	0.066771	-1.021559	0.3102
D(PS	**(-1)**	0.014844	0.018581	0.798867	0.4269
	(-2)	0.018152	0.016026	1.132648	0.2609
D(TO	**(-1)**	0.014238	0.049844	0.285659	0.7759
	(2)	0.074622	0.043508	1.715153	0.0904
	C	-0.003495	0.003137	-1.114012	0.2688

R-squared	0.540297	Mean dependent var	-0.002459
Adjusted R-squared	0.437469	S.D. dependent var	0.035305
S.E. of regression	0.026479	Akaike info criterion	-4.254486
Sum squared resid	0.053288	Schwarz criterion	-3.767472
Log likelihood	217.9609	Hannan-Quinn criter.	-4.057768
F-statistic	5.254368	Durbin-Watson stat	2.294366
Prob(F-statistic)	0.000000		

Source: Researcher's own calculations

The findings in table 4.7 show that the error correction coefficient (ECM) is negative and significant at 1% level of significance. The coefficient of the error correction term is -0.801139. This means that deviation of the variables from the long run equilibrium has a

speed of adjustment at the rate of about 80% annually. The long run impact of the explanatory variables on GDP as shown by table 4.9 is illustrated using equation 4.2:

GDP = - 0.756913704415PI + 0.0291966689074CAB+ 0.0157813136224 EXCHR + 0.000348036621587 + FINDEV - 0.108607158912INF - 0.00284391365163PS + 0.0254893307547TO - 0.0764296618254…… (4.2)

Equation 4.2 shows that, there is a positive long run relationship running from CAB, EXCHR, FINDEV and TO to GDP. The equation 4.2 also indicates that PS, INF and PI, negatively affect GDP growth of SSA in the long-run. The exchange rate has a negative effect on economic growth. Our result is in line with (Oladi et al, 2008, p 16) who suggest that real exchange rate volatility affect the real sector due to uncertainty in future prices of goods and services. The results also indicate a negative effect of inflation on economic growth which confirms the results of Khan and Senhadji (2000). A possible explanation to this could be that, high inflationary periods increase the cost of borrowing on investment projects, which reduces productivity.

From equation 4.2, portfolio inflows have a negative effect on economic growth. This confirm the results of empirical studies such Choong et al (2010) and Durham (2004). The authors explain this to be that unlike FDI which disseminates advanced technological and managerial practices through the host country and thereby exhibits greater positive externalities, PI is just a change in ownership. It tends to be unstable because it is more liquid hence, short time horizon compared to other sources of finance. Macroeconomic policies are adversely affected due to the volatility nature of PI. Hence, the adverse effect of PI on economic growth.

In order to check the short run causality from PI to GDP, we use the chi-square value of the Wald statistic. The Wald tests the hypothesis that the coefficients of PI cannot influence GDP in the short run. The result in table 4.8 below shows that the negative coefficients of PI jointly explain that, there is a short run relationship running from PI to GDP.

Table 4.9: Wald Test; Short run Causality from PI to GDP

Test Statistic	**Value**	**df**	**Probability**
F-statistic	4.682228	(2, 76)	0.0121
Chi-square	9.364456	2	0.0093

Null Hypothesis: C(4)=C(5)=0
Null Hypothesis Summary:

Normalized Restriction (= 0)		Value	Std. Err.
	D(PI (-1)	-0.487575	0.210118
	(-2)	-0.678990	0.235143

4.7 Diagnostic Tests

The diagnostics of the general model concerning the Jarque-Bera test for normality indicate that the residuals are normally distributed since we cannot reject the null hypothesis of multivariate normality of the residuals.

4.8 Test of Research Hypothesis

The all the null hypothesis in the study are rejected and we accept the alternate hypothesis.

i.e.

H1: Domestic factors influence on portfolio flows to SSA.

H2: External factors drive portfolio inflows of SSA.

H3: FPI has an impact on the economic growth of SSA countries.

This study investigated the determinants of portfolio investment and its effect on the economic growth of Sub-Saharan Africa countries using a sample of 17 countries over the period 2005-2013. To achieve the objective of establishing the determinants of FPI to SSA, we estimate the baseline portfolio inflows regression using the system GMM dynamic panel model, while controlling for past portfolio flows, market size, financial development, trade openness and current account balance, exchange rate, institutional quality and inflation as domestic factors. The US interest rate and the growth rate of industrialised economies are also included as external factors. The results of the system GMM model confirm the theoretical expectation that domestic factors; past portfolio inflows and market size positively affect PI of SSA. We however, find financial development, current account deficit to be negatively related with PI in the sub region. We find no evidence of significant impact of trade openness, exchange rate, institutional quality and inflation on PI. Similarly, there is no relationship between the US interest rate and PI in SSA. We however find the growth rate of industrialised countries to play a significant role in portfolio inflows of SSA.

Through a VECM technique over the period 2005–2013, we tested for the impact of PI on economic growth. We introduced trade openness, inflation, financial development, exchange rate, current account balance and political stability as control variables. The results show that there is a long run relationship between PI and all the independent variables included the model. Similarly, there is a presence of a long-run relationship between PI and GDP growth rate. Thus, there is a mutual interaction between PI and economic growth. We observed that

there is a negative long run relationship running from PI to GDP. The Wald tests also revealed that there is no short-run causality from GDP to PI in SSA countries. The reverse is however true for PI to GDP.

4.9 Policy Implication

The findings of this study can be used to formulate a framework for Statutory Governments and Agencies who operate in the real sectors which struggle to attract to foreign investment. For instance, the empirical analysis concluded that internal factors such GDP growth rate, current accounts deficit, can influence foreign inventor's decision-making process, whether to invest in a country or not; therefore policies for controlling those indicators can be implemented.

The negative impact of current account deficit on portfolio flows may be attributed to the fact that there is more import of goods and services than exports. This creates exchange rate gap since the flow of capital outside the region exceeds capital receipts from exports. Hence the current account balance of SSA countries is worsened due to balance of trade deficit. Governments of these countries should therefore initiate or encourage export policies so as to increase the country's net foreign assets. For instance, policies can be geared towards the protection of domestic companies whiles encouraging the establishment of import-substitution industries.

Moreover, although we find portfolio investment to be sensitive to domestic factors, we also find the growth rate of industrial countries to play a significant role in portfolio flows of SSA. As a result, changes in global productivity levels (financial sentiments) may produce substantial impact on PI in the SSA region. We therefore propose that policy makers in the

sub region particularly, Central Banks of individual countries should keep track of world's economic growth cycles to be ready to react to the variations in portfolio flows.

4.10 Chapter Summary

This chapter of the study analyses the panel data-set of 17 countries to ascertain the factors that influences portfolio investment in the Sub-Saharan African region from 2005 through 2013. We also presented and discussed the results of the data analysis in order to give meaning to the results and facilitate comparison with other related literature. In our quest to investigate the determinants of PI in SSA, the study analysed the data-set by employing the System GMM dynamic panel estimation model. The results of the system GMM model suggest that portfolio flows to SSA is determined by both internal factors (previous portfolio investment, market size, level of financial development and current account balance) and external factors (such as world income growth rate). Furthermore, the study investigates the impact of portfolio inflows on economic growth of SSA countries while controlling for INF, PS, PI, CAB, EXCHR, FINDEV and TO. The study finds a negative long-run relationship running from PI to economic growth.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the concluding chapter of the study .This chapter gives a summary of the study. On the basis of the outcome of the study, the researcher draws conclusions and makes recommendation for policy implementation. Furthermore, we identify the limitations of the study to guide future studies on the subject matter.

5.2 Summary

This study investigated the determinants of portfolio investment and its effect on the economic growth of Sub-Saharan Africa countries using a sample of 17 countries over the period 2005-2013. To achieve the objective of establishing the determinants of FPI to SSA, we estimate the baseline portfolio inflows regression using the system GMM dynamic panel model, while controlling for past portfolio flows, market size, financial development, trade openness and current account balance, exchange rate, institutional quality and inflation as domestic factors. The US interest rate and the growth rate of industrialised economies are also included as external factors. The findings of the study are summarised below:

1. Domestic factors; past portfolio inflows and market size positively affect PI of SSA. The study however revealed financial development, current account deficit to be negatively related with PI in the sub region.
2. We find no evidence of significant impact of trade openness, exchange rate, institutional quality and inflation on PI. Similarly, there is no relationship between the US interest rate and PI in SSA.

3. We discovered the growth rate of industrialised countries to play a significant role in portfolio inflows of SSA.
4. It was revealed that there is a long run relationship between foreign portfolio inflows and GDP growth rate. Thus, there is a mutual interaction between PI and economic growth.
5. The Wald tests also revealed that there is no short-run causality from GDP to PI in SSA countries. The reverse is however true for PI to GDP.

5.3 Contribution to Knowledge

This thesis's aim was to define the determinants for Foreign Portfolio Investment of Sub-Saharan African Countries. The distinguishing feature of this study from other literature on Sub-Saharan Africa region is that, the study covers periods before, during and after the financial crises in 2008.

Additionally, empirical literature on Sub Saharan Africa by Delechat et al. (2009) and Brafu-Insaidoo and Biekpe (2013) concentrated on the pull factors of capital flow leaving no evidence for push factors. This study adds to literature by the inclusion of external factors in our model and the establishment of long run relationship between economic growth and PI of SSA. The choice of GMM is due to its relative advantage (e.g. the presence of a lagged dependent variable) over other methods like the ordinary least square.

The main result of this thesis is the confirmation with high certainty through the adoption of the Generalised Moment Method (GMM) which over-comes biases and inconsistencies of the Ordinary Least Squares (OLS) methodology if the regressors are endogenous. This study also provide a new contribution to existing literature by focusing on the determinants of foreign portfolio equity, which has been the most important source of capital for SSA countries.

5.4 Conclusion of the Study

Motivated by the current surge in portfolio inflows of SSA, the current study sought to analyse the determinants of portfolio investment in SSA countries. Pull factors such as market size, current account balance, trade openness and financial development have been investigated. The real interest rate offered by U.S.A and the GDP growth rate of industrialised countries are the only push factors under investigation. We also take cognizance of the view that PI decision may be made based on historical data of portfolio flows and hence we use one-period lag of the dependent variable. The systems GMM estimation method is employed for empirical investigation**.** Using annual data for the period 2005–2013, the regression results are obtained for 17 countries in the sub region. The results indicate that high level of financial development discourages portfolio flows although the effect is negligible. We also find higher current account deficit to negatively affect portfolio flows to the sub region. On the other hand market size and past PI are found to positively affect portfolio flows to Sub-Saharan Africa. Evidence is also found in favour of the fact that trade openness has no significant relationship with portfolio flows. With regards to the external factors, we find no evidence for the role of international interest rate in explaining portfolio inflows of SSA. The results however indicate that portfolio flows are determined by output growth rate of industrialised countries.

Further, the rise in PI of sub region raises concern as to the effect of PI on economic growth. Using the VECN over the period 2005-2013, the study finds that there is a long run relationship between PI and GDP, CAB, EXCHR, FINDEV, TO, PS and INF. We also find that there is a long-run negative relationship running from PI to economic growth. Although

there is a long-run relationship running from GDP to PI, there is no short run relationship running from GDP to PI but the reverse is true.

5.5 Recommendations

Following from the results obtained, we are able to produce some policy recommendations with regards to FPI of SSA. Without any supranational regulation body for SSA countries, policy advices for each single country could be made based on cross-countries similarities. Indeed, all income group of countries in SSA are included in this study hence, the following recommendations concern all SSA countries.

1. First of all since there is a long run relationship between PI and economic growth, we recommend that recipient countries of portfolio investment will aim to attract the positive effects with which PI brings and not to allow the negative influence of portfolio investment on economic performance. Hence, it is important to have effective preventive measures in place in order to prevent volatility problems and other constructive measures that will attract portfolio investment in SSA.

2. Although we find portfolio investment to be sensitive to domestic factors, we also find the growth rate of industrial countries to play a significant role in portfolio flows of SSA. As a result, changes in global productivity levels (financial sentiments) may produce substantial impact on PI in the SSA region. We therefore propose that policy makers in the sub region particularly, Central Banks of individual countries should keep track of world's economic growth cycles to be ready to react to the variations in portfolio flows.

3. Given the significant role of investment risk (such as current account balance) in determining PI, actions toward safe investment environment will be most acute

among preventive measures. The negative impact of current account deficit on portfolio flows may be attributed to the fact that there is more import of goods and services than exports. This creates exchange rate gap since the flow of capital outside the region exceeds capital receipts from exports. Hence the current account balance of SSA countries is worsened due to balance of trade deficit. Governments of these countries should therefore initiate or encourage export policies so as to increase the country's net foreign assets. For instance, policies can be geared towards the protection of domestic companies whiles encouraging the establishment of import-substitution industries.

4. In addition, the current trend of integration into the international financial market by SSA countries should be encouraged and sustained since past portfolio flows signal investment opportunities to other potential investors. Consequently emphasis should be geared towards size and efficiency in the use of funds.

5. It is worth noting that as literature suggests, great portion of actions should be effectively geared towards developing and improving trade reforms in SSA. Although the results indicated a positive effect of trade openness on portfolio inflows of the sub region it did not enter the model significantly. A significant impact of trade openness can be realised if trade liberalisation reforms are perceived as sustainable and not subject to reversals. Governments' in the sub region should therefore develop and enhance mechanism that will ensure the sustainability of trade reform policies.

5.6 Suggestions for Further Studies

Further studies on SSA are important in finding out the relevance of different national policies such as tax-breaks, governmental regulations aiming to attract foreign portfolio investment to sub-Saharan Africa.

Future studies that include broader set of domestic and external factors are also recommended. This might give more insight on the topic, and provide even better explanation for the determinants of portfolio inflows of SSA.

Finally, this study focused on the relationship between portfolio inflows and economic growth of SSA Countries, hence a detailed research can be conducted on the causality between these two variables. Its results may give more insight on the findings identified in this research.

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