THE IMPACT OF FOREIGN CAPITAL FLOWS ON THE MACROECONOMIC PERFORMANCE OF SUB-SAHARAN AFRICA COUNTRIES

Author: John Kebaso Omurwa
The Catholic University of Eastern Africa, Department of Accounting & Finance
P. O. Box 62157-00200, Nairobi-Kenya; Email: jkomurwa@yahoo.com

ABSTRACT

This study looked into the impact of foreign capital flows on the macroeconomic performance of Sub-Saharan Africa Countries. The dependent variables in this study were the macroeconomic performance indicators of the gross domestic Savings (GDS), gross capital formation (GCF) and growth in gross domestic product (GDP). The independent variables of study were four forms of capital flows, namely, the Foreign Direct Investments (FDI), Foreign Portfolio Investments (FPI), Loans (commercial loans and bonds) and the official development assistance (ODA). The specific objectives of the study were to find the impact of each of the four types of foreign capital flows on the three macroeconomic performance variables. Annual percentage data was collected on the variables under study from the world development indicator (WDI) data base available on the World Bank website. Secondary panel data was collected from 47 SSA countries for the period 2003-2013. To analyse the data, the study adopted panel econometrics design with fixed effects panel least squares method using the eviews software. In this study FDI was found to have a significant positive correlation with GDS, an insignificant positive correlation with GCF and an insignificant positive correlation with growth in GDP. FPI was found to have an insignificant negative correlation with GDS, an insignificant negative correlation with GCF and an insignificant positive correlation with growth in GDP. Loan portfolio was found to have a significant negative correlation with GDS, a significant negative correlation with GCF, and a significant negative correlation with growth in GDP. Official development assistance had a significant negative correlation with GDS, an insignificant negative correlation with GCF and a significant positive correlation with growth in GDP. Thus it was concluded that FDI has a positive impact (significant and insignificant) on macroeconomic performance in SSA, FPI has an insignificant (positive and negative) impact on macroeconomic performance in SSA, Loan has a negative significant impact on macroeconomic performance in SSA and ODA has mixed impact on macroeconomic performance in SSA that is positive (significant), negative (significant and insignificant). Generally the study concluded that the impact of capital flows on macroeconomic performance in SSA is mixed.

Key words: *Foreign Capital Flows, Foreign Direct Investment, Foreign Portfolio Investment, Gross Capital Formation, Gross Domestic Product, Gross Domestic savings, Loans, Official Development Assistant*

1.0 INTRODUCTION

1.1 Background of the Study

The issue of economic development is of great concern globally and particularly to the Sub – Saharan African Countries (SSA) that have lagged behind in the development agenda due to a

myriad of reasons. The theories of economic growth, starting with the neoclassical growth theories to recent macroeconomic theories have indicated that increased levels of international interaction among nations can have a positive impact on the economic development of those countries. Empirically, there is no conclusive statement as to the exact effect of foreign capital flows to a country's level of economic development (Ghose, 2004; Ndambendia & Njoupouognigni, 2010; Michalowski, 2012).

1.2 Statement of the Problem

Empirical studies (Ghose, 2004; Ndambendia & Njoupouognigni, 2010; Michalowski, 2012) show conflicting evidence on the exact impact of foreign capital flows on the economic development of nations and that the impact of foreign capital flows may vary from one country to another and depending on the type of foreign capital flow and the social and economic environments of the recipient countries. Aizeman, Jinjarak & Park (2011) note that "Overall, the empirical literature yields a complex and mixed picture of the relationship between foreign capital flows and economic growth. The balance of evidence does not conclusively support either a positive or negative impact – both collectively and in its different components". This study sought to make an empirical contribution to the raging debate on the effect of foreign capital flows on macroeconomic performance in SSA.

1.3 Research Hypotheses

The main objective of the study was to determine the impact of foreign capital flows on the Macroeconomic Performance of the Sub-Saharan Africa Countries. To achieve this objective the following four research hypotheses were formulated;

1.3.1 *Research Hypothesis 1,* H_{A1}: Level of FDI affects macroeconomic performance in Sub-Saharan Africa Countries

1.3.2 *Research hypothesis 2,* H_{A2}: Level of FPI affects macroeconomic performance in Sub-Saharan Africa Countries

1.3.3 *Research hypothesis 3,* H_{A3}: Level of Foreign Commercial Bank Loans and Bonds (Loans) affects macroeconomic performance in Sub- Saharan Africa Countries

1.3.4 *Research hypothesis 4,* H_{A4}: Level of ODA affects macroeconomic performance in Sub-Saharan Africa Countries

2.0 LITERATURE REVIEW

2.1 FDI and Macroeconomic Performance

Shimul, Abdulla and Siddiqua (2009), using Granger Causality test showed that the FDI and openness were not significantly causing growth in the GDP per capital both in the short and long run. Aizenman et al (2011) in their study on Capital flows and economic growth in the era of financial integration and crisis found that a large and robust relationship between FDI – both inflows and outflows – and growth. Michalowski (2012) notes posits that there is mixed evidence regarding FDI impact on economic growth in SSA. Sukar and Ahmed (2011), found results that indicate that FDI has marginally significant positive effect on economic growth. Sukar and Ahmed note that domestic economic conditions such as macroeconomic policy, openness, and domestic investment have significant positive effect on economic growth. Seetanah and Khadaroo (2007) employ both static and dynamic panel data estimates, in which the results suggest that FDI is an important element in explaining economic performance of SSA countries, though to a lesser extent as compared to the other types of capital.

Aizenman, Jinjarak and Park (2011) who investigated the relationship between economic growth and lagged international capital flows, concluded that the relationship between growth and lagged capital flows depends on the type of flows, economic structure, and global growth patterns. Aizenman et al (2011) found that a large and robust relationship between FDI – both inflows and outflows – and growth.

2.2 FPI and Macroeconomic Performance

Durham (2003) examines the effects of foreign portfolio investment (FPI) and "other" foreign investment (OFI) on economic growth and finds that FPI has no effect, and some results indicate that OFI has a negative impact on growth that is somewhat mitigated by initial financial and/or legal development. Durham (2003), however, notes that these results are questionable due to possible simultaneity bias and that FPI does not correlate positively with macroeconomic volatility.

2.2.3 Loan and Macroeconomic Performance

Many empirical studies have investigated the effect of external debt on economic growth, some end up finding a negative impact on economic growth while others do not find any significant relationship between economic growth and external debt Sabir (as cited in AKTAṬ,2013). Shabir attempted to explore the relationship between external debt and economic growth, focusing on whether external debt stock and the external debt servicing lead to crowding out. His findings are consistent with both the debt overhang theory and the liquidity constraint hypothesis suggesting that external debt stock adversely affects economic growth and higher level of external debt stock leads to crowding out. Deshpaned (cited in Ejigayehu 2013) and Fosu (cited in Ejigayehu 2013), testing the debt overhung hypothesis, found a negative effect of external debt on Investment. A recent study by Aizenman et al (2011) found that the relationship between growth and short-term debt was nil before the crisis and negative after the crisis.

2.2.4 ODA Flows and Macroeconomic Performance

Empirical studies on the effectiveness of foreign aid can be broadly classified into three types: foreign aid works foreign aid does not work; and foreign aid works under certain conditions (Dalgaard, Hansen and Tarp, 2004). Ndambendia and Njoupougnigni (2010) find strong evidence of positive impact of foreign aid and foreign direct investment on economic growth. They, however, note that the effect of foreign aid on growth in SSA is low.

Waheed (2004) identified certain limitations of the previous studies on the aid savings relationships. These were misspecification of the savings function, use of cross – section data, less attention to the time series econometrics in the time series studies. Waheed (ibid) through the use of three cointegretion tests confirmed the existence of a significant long-run positive relationship between domestic savings and foreign aid. Bowles (as cited in Ndambendia & Njoupouognign, 2010) attempted to address the issue of causal relationship between foreign aid and domestic savings applying the bivariate and the trivariate causality tests and found mixed results. Herzer and Grimm (2012) using panel data cointegration and causality techniques to examine the long-run relationship between foreign and private investment found a statistically significant negative effect between foreign aid and investment. Razzaque and Ahmed (as cited in Shimul, Abdulla and Siddiqua, 2009) examined the relationship between foreign aid and domestic savings for the Bangladesh economy using the cointegration technique and they found a negative long- run relationship between domestic savings and foreign aid.

3.0 RESEARCH METHODOLOGY

The study adopted a panel data econometric design using panel data on net foreign capital inflows (of various types), domestic savings, investments and GDP growth from 48 Sub-Saharan Africa Countries over the period 2003 – 2013.

The population of the study was all the Sub- Saharan Africa Countries. There are 48 countries in Sub-Saharan Africa. The sample consisted of all the countries in Sub-Saharan Africa that had up to date data on all the variables under study for the period 2003 to 2013. This effectively resulted in a sample size of 47 countries. The researcher collected annual secondary data on GDS, net FDI, FPI, Loans and ODA as percent of the GDP, GCF was collected as a percent of GNI, GDP growth was collected as annual growth rate. The FPI data was incomplete as the data for 2003 and 2004 were missing and this necessitated to the collection of FPI (debt and equity) and GDP, both in current US dollars for the construction of approximate of FPI percentages for the two years. The percentage FPI of GDP was calculated by dividing the FPI by the corresponding GDP. The researcher collected data from the World Bank (World Bank, 2015) development indicators available at data.worlbank.org/indicator on the internet, using an excel work file.

The data was collected for the forty seven countries under study by transferring it from the World Bank website on the internet to an excel work sheet using a laptop.

3.6 Data Analysis Techniques

3.6.2 Analytical Model

The analytical models for this study were stated as follows;

Gross Domestic Savings model;

$$GDS_{it} = \beta_0 + \alpha_1(FDI_{it}) + \beta_2(FPI_{it}) + \beta_3(Loan_{it}) + \beta_4(ODA_{it})) + \varepsilon_{sit} \quad \text{..... (3.1)}$$

Gross Capital Formation model;

$$GCF_{it} = \alpha_0 + \alpha_1(FDI_{it}) + \alpha_2(FPI_{it}) + \alpha_3(Loan_{it}) + \alpha_4(ODA_{it})) + \varepsilon_{Iit} \quad \text{..... (3.2)}$$

Gross Domestic Product model;

$$GDP_{it} = \mu_0 + \mu_1(FDI_{it}) + \mu_2(FPI_{it}) + \mu_3(Loan_{it}) + \mu_4(ODA_{it}) + \varepsilon_{Git} \quad \text{..... (3.3)}$$

Where, for equations (3.1), (3.2) and (3.3);

GDS_{it} = Gross Domestic savings as a percentage of GDP of country i at time t

GCF_{it} = Gross Capital Formation as percentage of GNI of country i at time t

GDP_{it} = Annual GDP growth rate of country i at time t

FDI_{it} = Net Foreign Direct Investments as a Percentage of GDP of country i at time t

FPI_{it} = Net Foreign Direct Investment as a Percentage of GDP of country i at time t

$Loan_{it}$ =Net commercial borrowings and loans as a percentage of the GDP of country i at time t

ODA_{it} = Official development Assistance as a percentage of GDP of country i at time t

$i = country$, i = 1 to 48;

$t = time(year)$ t = 1 to 11, i.e. the years 2003 to 2013;

α, β, μ = Regression coefficients

ε = error terms

The data for all the panels under study was tested for unit root using the Levin, Lin & Chu t* test statistics for panel data. All the panels were found not be suffering from non-stationarity problems at the 5% significance level. Next the panels were tested for cointegration using Anger-Granger-based Kao test of cointegration. All the panels were found to be cointegrated at 5% significance level.

The problems of autocorrelation and heteroscedasticity were addressed by either differencing and/or lagging and/or by transforming the variables to exponent and by employing the standard way of correcting for these errors by using heteroscedasticity and autocorrelation consistent (HAC) standard errors (Newey-West standard errors) selection. Significance of the individual coefficients in the models was indicated by the t-values. The appropriateness or strength of the model was indicated by the F-test value and the adjusted R^2-squared.

3.7 Data Presentation

The data was presented in form regression model output and Eviews software computer outputs.

4.0 RESEARCH FINDINGS AND DISCUSSION

4.1 The Research Findings

4.1.1 Panel Unit Root Tests

All the panels were first tested for the problems of non-stationarity using the Levin, Lin & Chu t* panel unit root test. The results of these tests are shown in tables 4.1 to 4.7

Table 4.1: GDS Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: GDS
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-7.95721	0.0000

** Probabilities are computed assuming asympotic normality

Form table 4.1 the Levin, Lin & Chu t* of -7.95721 is significantly less than zero (with $p<0.01$) and therefore we reject the null hypothesis of a unit root in favour of the alternative that the panel is stationary.

Table 4.2: GCF Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: GCF
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-6.55207	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.2 the Levin, Lin & Chu t* of -6.55207 is significantly less than zero (with p<0.01) and therefore we reject the null hypothesis of a unit root in GCF panel in favour of the alternative that the panel is stationary.

Table 4.3: GDP Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: GDP
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-15.7842	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.3 the Levin, Lin & Chu t* of -15.7842 is significantly less than zero (p<0.01) and therefore we reject the null hypothesis of a unit root in GDP panel in favour of the alternative that the panel is stationary.

Table 4.4: FPI Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: FPI
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-8.65057	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.4 the Levin, Lin & Chu t* of -8.65057 is significantly less than zero (p<0.01) and therefore we reject the null hypothesis of a unit root in FPI panel favour of the alternative that the panel is stationary.

Table 4.5: FDI Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: FDI
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-8.05880	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.5 the Levin, Lin & Chu t* of -8.05880 is significantly less than zero (p<0.01) and therefore we reject the null hypothesis of a unit root in FDI panel in favour of the alternative that the panel is stationary.

Table 4.6: LOAN Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: LOAN
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-15.1866	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.6 the Levin, Lin & Chu t* of -15.1866 is significantly less than zero ($p<0.01$) and therefore we reject the null hypothesis of a unit root in Loan panel in favour of the alternative that the panel is stationary.

Table 4.7: ODA Panel Unit Root Test

Null Hypothesis: Unit root (common unit root process)
Series: ODA
Sample: 2003 2013

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-39.5644	0.0000

** Probabilities are computed assuming asympotic normality

From table 4.7 the Levin, Lin & Chu t* of -39.5644 is significantly less than zero ($p<0.01$) and therefore we reject the null hypothesis of a unit root in ODA panel in favour of the alternative that the panel is stationary. Thus it was concluded that all the panels did not suffer from the problem of non-stationarity.

4.1.2 Panel Data Cointegration Tests

The data panels were tested for cointegration using the Kao (Engle-Granger based) panel cointegration test and the results are shown in tables 4.8 to 4.10.

Table 4.8: GDS Panels Cointegration Test

Kao Residual Cointegration Test
Series: GDS FDI FPI LOAN ODA
Sample: 2003 2013
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend

	t-Statistic	Prob.
ADF	-3.339965	0.0004
Residual variance	0.007969	
HAC variance	0.006507	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares

Sample (adjusted): 2005 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.591825	0.050396	-11.74341	0.0000
D(RESID(-1))	-0.069106	0.041824	-1.652304	0.0992

R-squared	0.337684	Mean dependent var	0.002284
Adjusted R-squared	0.336111	S.D. dependent var	0.088219
S.E. of regression	0.071880	Akaike info criterion	-2.422907
Sum squared resid	2.175224	Schwarz criterion	-2.403771
Log likelihood	514.4448	Hannan-Quinn criter.	-2.415346
Durbin-Watson stat	2.067003		

From table 4.8 the t-value of -3.339965 is significantly less than zero ($p<0.05$) and we reject the null of no cointegration and no trend assumption in favour of the alternative that the panels are cointegrated and that there is a long-run relationship amongst the panels. The Durbin-Watson of 2.088095 is very close to 2.0 indicating no serial correlation in the regression residuals and the regression is credible.

Table 4.9: GCF Panels Cointegration Test

Kao Residual Cointegration Test
Series: GCF FDI FPI LOAN ODA
Sample: 2003 2013
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend

	t-Statistic	Prob.
ADF	-2.507158	0.0061
Residual variance	28.50874	
HAC variance	21.72042	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Sample (adjusted): 2005 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.572609	0.050481	-11.34311	0.0000
D(RESID(-1))	0.020134	0.045798	0.439620	0.6605

R-squared	0.290917	Mean dependent var	0.304263
Adjusted R-squared	0.289108	S.D. dependent var	5.223087
S.E. of regression	4.403816	Akaike info criterion	5.807883
Sum squared resid	7602.289	Schwarz criterion	5.828068
Log likelihood	-1142.153	Hannan-Quinn criter.	5.815881
Durbin-Watson stat	2.088095		

Form table 4.9 the t-value of -2.507158 is significantly less than zero ($p<0.05$) and we reject the null of no cointegration and no trend in favour of the alternative that the panels are cointegrated and we therefore conclude that the panels are cointegrated and have a deterministic trend. The Durbin-Watson of 2.088095 is very close to 2.0 indicating no serial correlation in the regression residuals and the regression is credible.

Table 4.10: GDP Panels Cointegration Test

Kao Residual Cointegration Test
Series: GDP FDI FPI LOAN ODA
Sample: 2003 2013
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend

	t-Statistic	Prob.
ADF	-3.731873	0.0001
Residual variance	26.47059	
HAC variance	17.93445	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Sample (adjusted): 2005 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.796870	0.061147	-13.03200	0.0000
D(RESID(-1))	0.041301	0.048438	0.852659	0.3944

R-squared	0.374549	Mean dependent var	-0.273356
Adjusted R-squared	0.372997	S.D. dependent var	4.995622
S.E. of regression	3.955710	Akaike info criterion	5.593123
Sum squared resid	6306.001	Schwarz criterion	5.612896
Log likelihood	-1130.608	Hannan-Quinn criter.	5.600950
Durbin-Watson stat	1.794548		

From table 4.10 the t-value of -3.731873 is significantly less than zero ($p<0.05$) and we reject the null of no cointegration and no trend assumption in favour of cointegration and a deterministic trend in the panels. The Durbin-Watson of 1.794548 is close to 2.0 indicating no serial correlation in the regression residuals. Thus it was concluded that all the panels did not suffer from the problem of non-cointegration

4.1.3 Panel Regression Outputs

Panel least squares method was used to run a regression of the GDS, GCF and GDP on the capital flows (FDI, FPI, Loan and ODA). The results are shown in tables 4.11 to 4.13.

Table 4.11: Regression of GDS on Capital Flows

Dependent Variable: D(GDS(-2))
Method: Panel Least Squares
Sample (adjusted): 2006 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.011888	0.005573	-2.133084	0.0337
D(FDI(-2))	0.150905	0.070001	2.155763	0.0319
D(FPI(-2))	-0.039811	0.046175	-0.862175	0.3892
D(LOAN(-2))	-0.144882	0.024801	-5.841788	0.0000
D(ODA(-2))	-0.124788	0.045651	-2.733509	0.0066

Effects Specification			
Cross-section fixed (dummy variables) Period fixed (dummy variables)			
R-squared	0.206402	Mean dependent var	0.003907
Adjusted R-squared	0.064153	S.D. dependent var	0.098883
S.E. of regression	0.095658	Akaike info criterion	-1.715098
Sum squared resid	2.909855	Schwarz criterion	-1.108938
Log likelihood	380.4385	Hannan-Quinn criter.	-1.474474
F-statistic	1.450992	Durbin-Watson stat	2.498091
Prob(F-statistic)	0.025412		

From table 4.11 the model estimation for GDS is;

$$GDS = -0.011888 + 0.150905(FDI) - 0.039811(FPI) - 0.144882(Loan) - 0.124788(ODA)$$

From table 4.11 the coefficient for FDI has a t-value of 2.155763 is significant ($p<0.05$) at 5% significance level) and therefore foreign direct investment has a significant positive correlation with Gross Domestic savings; the coefficient for FPI has a t-value of -0.862175 which is insignificant ($p>0.05$) at 5% significance level and therefore foreign portfolio investment has an insignificant negative correlation with gross domestic savings; the coefficient for Loan has a t-value of -5.841788 which is significant ($p<0.05$) at 5% significance level and therefore loan has a significant negative correlation with gross domestic savings and the coefficient for official development assistance has a t-value of -2.733509 which is significant ($p<0.05$) at 5% significance level and therefore official development assistance has a negative significant correlation with gross domestic savings.

In table 4.11 the adjusted R-squared for the model was 0.064153 showing that 6.4153% of the variation in GDS would be explained by the various types of capital flows. The best Durbin-Watson statistics of 2.498091 was obtained after lagging all the variables by 2 and differencing once. This value shows that the data was approximately free from the problem of serial correlation. The F-statistic of 1.450992 was significant ($p<0.05$) at 5% significance level indicating that the model as a whole had a good fit.

Table 4.12: Regression of GCF on Capital Flows

Dependent Variable: EXP(GCF(-2))
Method: Panel Least Squares
Sample (adjusted): 2006 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.203208	0.095572	12.58956	0.0000
EXP(FDI(-3))	0.085544	0.078151	1.094608	0.2745
EXP(FPI(-3))	-0.004370	0.051702	-0.084514	0.9327
EXP(LOAN(-3))	-3.61E-07	1.43E-07	-2.512886	0.0125
EXP(ODA(-3))	-0.013959	0.021832	-0.639364	0.5230

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.774691	Mean dependent var	1.272163
Adjusted R-squared	0.734305	S.D. dependent var	0.165471
S.E. of regression	0.085293	Akaike info criterion	-1.944472
Sum squared resid	2.313425	Schwarz criterion	-1.338312
Log likelihood	423.5608	Hannan-Quinn criter.	-1.703848
F-statistic	19.18232	Durbin-Watson stat	1.707415
Prob(F-statistic)	0.000000		

From table 4.12 the model estimation for the GCF is;

$$GCF = 1.203208 + 0.085544(FDI) - 0.004370(FPI) - 3.61E-07(Loan) - 0.013959(ODA)$$

From table 4.12 the coefficient for FDI has a t-value of 1.094608 which is insignificant ($p > 0.05$) 5% significance level and therefore foreign direct investment has an insignificant positive correlation with Gross Capital Formation; the coefficient for FPI has a t-value of -0.084514 which is insignificant ($p>0.05$) at 5% significance level and therefore foreign portfolio investment has an insignificant negative correlation with Gross Capital Formation; the coefficient for Loan has a t-value of -2.512886 which is significant ($p<0.05$) at 5% significance level and therefore loan has a significant negative correlation with Gross Capital Formation and the coefficient for official development assistance has a t-value of -0.639364 which is insignificant ($p>0.05$) 5% significance level and therefore official development assistance has an insignificant negative correlation with Gross Capital Formation.

In table 4.12 the adjusted R-squared for the model was 0.734305 showing that 73.435 % of the variation in GCF would be explained by the various types of capital flows. This value means that the model had a high explanatory power. The Durbin-Watson statistic of 1.707415 was obtained after 3 lags of all variables followed by transformation of the variables into exponential. This value shows that the data was approximately free from the problem of serial correlation. The F-statistic of 19.18232 was significant ($p<0.05$) at 5% significance level indicating that the model had a good fit.

Table 4.13: Regression of GDP on Capital Flows

Dependent Variable: GDP(-2)
Method: Panel Least Squares
Sample (adjusted): 2005 2013

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.258538	0.496220	10.59719	0.0000
FDI	0.045927	0.040008	1.147939	0.2518
FPI	0.006453	0.031483	0.204979	0.8377
LOAN	-0.026989	0.003737	-7.221947	0.0000
ODA	0.072998	0.027165	2.687201	0.0076

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.408202	Mean dependent var	4.878272
Adjusted R-squared	0.312970	S.D. dependent var	5.084379
S.E. of regression	4.214303	Akaike info criterion	5.844642
Sum squared resid	6180.601	Schwarz criterion	6.408152
Log likelihood	-1126.540	Hannan-Quinn criter.	6.067690
F-statistic	4.286403	Durbin-Watson stat	1.646714
Prob(F-statistic)	0.000000		

From table 4.13 the model estimation for GDP is;

$$GDP = 5.258538 + 0.045927(FDI) + 0.006453(FPI) - 0.026989(Loan) + 0.072998(ODA)$$

From table 4.13 the coefficient for FDI has a t-value of 1.147939 which is insignificant ($p > 0.05$) 5% significance level and therefore foreign direct investment has an insignificant positive correlation with Gross Domestic Product; the coefficient for FPI has a t-value of 0.204979 which is insignificant ($p>0.05$) at 5% significance level and therefore foreign portfolio investment has an insignificant positive correlation with Gross Domestic product; the coefficient for Loan has a t-value of -7.221947 which is significant ($p<0.05$) at 5% significance level and therefore loan has a significant negative correlation with Gross Domestic Product and the coefficient for official development assistance has a t-value of 2.687201 which is significant ($p<0.05$) 5% significance level and therefore official development assistance has a significant positive correlation with Gross Domestic Product.

In table 4.13 the adjusted R-squared for the model was 0.312970 showing that 31.2970 % of the variation in GDP would be explained by the various types of capital flows. This value means that the model had low explanatory power. The Durbin-Watson statistic of 1.646714 was obtained after 3 lags of the dependent variable. This value shows that the data was approximately free from the problem of serial correlation. The F-statistic of 4.286403 was significant ($p<0.05$) at 5% significance level indicating that the model had a good fit.

4.2 Discussion of Results

4.2.1 FDI and Macroeconomic Performance in SSA

From the findings FDI was found to have significant positive correlation with GDS (see table 4.11); an insignificant positive correlation with GCF (see table 4.12) and an insignificant positive correlation between FDI and growth GDP (see table 4.13). The findings on FDI and GDP agree with those of Ndambendia and Njoupougnigni (2010) who find strong evidence of positive but low

impact of FDI on economic growth, Shimul et al (2009), Aizenman et al (2011), Sukar and Ahmed (2011), Seetanah and Khadaroo (2007). Michalowski (2012), however, find mixed evidence regarding FDI impact on economic growth in SSA.

4.2.2 FPI and Macroeconomic Performance in SSA

From the findings FPI was found to have an insignificant negative correlation with Gross Domestic Savings (see table 4.11); an insignificant negative correlation with GCF (see table 4.12) and an insignificant positive correlation with GDP (see table 4.13).

Few studies have been carried on the effect of FPI and Economic performance. A notable one is that of Durham (2003) who notes that FPI has no effect on growth that is somewhat mitigated by initial financial and/or legal development and concludes that FPI does not correlate positively with macroeconomic volatility. But all in all, some evidence does suggest that both FDI and FPI have positive real effects, however conditional on other critical variables in host countries.

4.2.3 Loan and Macroeconomic Performance in SSA

From the findings Loan was found to have a significant negative correlation with GDS (see table 4.11). There were no studies reviewed on the effect of loan on GDS.

The study found significant negative correlation between loan and Gross Capital Formation (see table 4.12). This finding agrees with that of Deshpaned (cited in Ejigayehu, 2013; Aizenman et al, 2011) who found a negative effect of external debt on Investment.

A significant negative correlation between loan and growth GDP was found (see table 4.13). This findings partially confirm Sabir's (as cited in AKTAṬ, 2013) assertion that many empirical studies find a negative impact of external debt on economic growth while others do not find any significant relationship between economic growth and external debt . Fosu (cited in Ejigayehu 2013) found that foreign debt imposes a negative effect on countries' economic growth even without or hardly affecting the level of investment. The results of this study agree with all the empirical literature reviewed.

4.2.4 ODA and Macroeconomic Performance in SSA

From the findings ODA was found to have a negative significant correlation with Gross Domestic Savings (see table 4.11). This finding agrees with those of Razzaque and Ahmed (as cited in Shimul, Abdulla and Siddiqua, 2009) who found a negative long- run relationship between domestic savings and foreign aid. The findings however disagree with that of Waheed (2004) who found an existence of a significant long-run positive relationship between domestic savings and foreign aid. Bowles (as cited in Ndambendia & Njoupouognign, 2010) found mixed results between foreign aid and savings.

The study finds an insignificant negative correlation between ODA and GCF (see table 4.12). This result partially agrees with that of Herzer and Grimm (2012) who found a negative but statistically significant negative effect between foreign aid and investment.

From 4.13 it ca be seen that there is a significant positive correlation between ODA and Gross Domestic Product. This finding agrees with that of Ndambendia and Njoupougnigni (2010) who

argue that there is a strong evidence of positive but low impact of foreign aid on economic growth in SSA.

In summary the findings on the effect of ODA on GDS can be summed up by Dillard et al's (2004) argument that effectiveness of foreign aid can be broadly classified into three types: foreign aid works; foreign aid does not work; and foreign aid works under certain conditions.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Regarding the first objective which was to determine the effect of FDI on macroeconomic performance in SSA countries, the study found that FDI has a significant positive correlation with GDS, a significant positive correlation with GCF and an insignificant positive correlation with growth in GDP. These findings therefore led to the rejection of the null hypothesis in favour of the alternate that FDI affects macroeconomic performance in SSA. Thus it can be concluded that the level of FDI has a positive (significant and insignificant) impact on macroeconomic performance in SSA.

The second objective sought to determine the effect of FPI on macroeconomic performance in SSA countries. The study found FPI to have an insignificant negative correlation with, an insignificant negative correlation with GCF and an insignificant positive correlation with growth GDP. These findings led to the failure to reject the null hypothesis which states that FPI has no effect on macroeconomic performance in SSA. Thus it can be concluded that the level of FPI has no significant impact on the macroeconomic performance of SSA.

The third objective was to determine the effect of Foreign Commercial Bank Loans and Bonds (Loans) on macroeconomic performance in SSA countries. According the results Loan portfolio was found to have a significant negative correlation with GDS, a significant negative correlation with GCF, and a significant negative correlation with growth in GDP. These findings therefore led to the rejection of the null hypothesis in favour of the alternate that Loan affects macroeconomic performance in SSA. Thus it can be concluded that the level of foreign commercial bank loans and bonds (Loans) have a significant negative impact macroeconomic performance in SSA.

Lastly, the forth objective was to determine the effect of ODA on macroeconomic performance in SSA countries. From the findings ODA was found to have a negative significant correlation with GDS, an insignificant negative correlation with GCF and a significant positive correlation with growth in GDP. These results are mixed and therefore in it can concluded that ODA has both a significant (positive and negative) and an insignificant negative effect on macroeconomic performance in SSA

5.2 Policy Recommendations

To reap the full benefits of foreign capital flows, the researcher recommends the following measures;

5.2.1 To attract more FDI SSA countries should put in place policies to attract more FDI. These policies would include; an attractive tax policy, bureaucratic streamlining, legal and administration transparency.

5.2.2 To make clear and effective the effect of FPI on Macroeconomic performance, the SSA countries need policies that promote fiscal incentives, liberalization, deregulation, openness

and technological advancement to attract more FPI and also to improve on the FPI data capturing and recording for future policy formulation.

5.2.3 To reduce the negative effect of Loans, SSA countries should put in place policies to reduce foreign debt (debt reduction agreements), policies to attract interest free or low cost foreign debt and also to seek debt relief and policies to efficiently allocate and to develop constraints to utilize the amount of external debt on more productive and development expenditures. debt rescheduling

5.2.4 To attract more ODA the SSA countries, apart from adhering to donor conditions need to negotiate with donors the impact of the various conditionalities to arrive at conditions that are conducive for the parties involved. Further the SSA countries must employ best practices in ODA projects implementation.

REFERENCES

Aizenman J, Y. Jinjrak and D. Park (2011). Capital flows and economic growth in the era of financial integration and crisis, 1990-2010, *Working Papers,* NBER 2011

AKTAŢ, M. (2013). The Impacts of the Economic Development Indicators on the Government Debt: A Case of Developed Countries. *International Journal of Economic & Social Research*, *9*(2).

Dalgaard, C.J., Hansen, H. and Tarp, F. (2004). "On the empirics of aid and growth," *Economic Journal*, 114, 191-216.

Durham, J. B (2003). "Foreign portfolio investment, foreign bank lending, and economic growth," International Finance Discussion Papers 757, Board of Governors of the Federal Reserve System (U.S.)

Ejigayehu, D. A (2013). The Effect of External Debt on Economic growth – A panel data analysis on the relationship between external debt and economic growth. Retrieved on 30April 2015 from http://www.diva-portal.org/smash/get/diva2:664110/FULLTEXT01.pdf

Ghose, A. K (2004) Capital inflows and investment in developing countries. *Employment Strategy Papers,* Employment Analysis Unit Employment Strategy Department, 2004/11

Herzer, D and M. Grimm (2011). Does Foreign Aid Increase Private Investment? Evidence From Panel data. *Journal of Applied Economics* 2012 44(20), 2537-2550.

Michalowski, T. (2012). Foreign direct investment in Sub-Saharan Africa and its effects on economic growth of the region. *Working Papers of Institute of International Business University of Gdansk* 2012, No. 31

Ndambendia, H and M. Njoupougnigni (2010). Foreign Aid, Foreign Direct Investment and Economic Growth in Sub-Saharan Africa: Evidence from Pooled Mean Group Estimator (PMG). *International Journal of Economics and Finance*, Vol 2, No. 3

Seetanah, B and A. J Khadaroo (2012). Foreign Direct Investment and Growth. New Evidence from Sub-Saharan Africa Countries, University of Technology, Mauritius.

Shimul, N. S, Abdulla, S, N and S. Siddiqua (2009). An Examination of FDI and Growth Nexus in Bangladesh. *BRAC University Journal*, Vol 1 No.1

Sukar, A Ahmed, S and S. Hassan (2011). Effects of Foreign Direct Investment in Economic Growth. The Case of Sub – Saharan Africa, Southwestern Economic Review, 2011

Waheed, A., (2004). "Foreign capital inflow ad economic growth of developing countries: A critical Survey of selected empirical studies". *Journal of economic corporation*. Vol 4, No.1,pp.1

World Bank (2015). World Bank Development Indicators available on data.worldbank.org/indicator