Impact of Private Capital Inflows to the Economic Growth in Kenya

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Abstract

Kenya has for a long time received Private Capital Inflows (PCIs) from other nations and even liberalized its financial markets in order to attract more of these inflows to boost the growth of the economy. The Kenyan economy is currently anchored on the vision 2030 to be a globally competitive, industrialized middle income nation providing high standards of living for its nationals. PCIs are a major factor in its actualization. With all these government efforts it has not been established what exactly the impact of each of the components of the PCIs are. ThispaperaimedatanalyzingtheimpactofPCIsonEconomicgrowth in Kenya, as well as the causal relationship of Foreign Direct Investment (FDI), Portfolio Investment (FPI),CrossBorder Bank Lending (IBB)andEconomicgrowthfortheperiod1988to2018. Time series data of the variables of the period 1988 to 2018 was obtained from the World Bank African Development indicators, the Statistical Abstract and the economic surveys. VAR and VECM analysis was employed using E-views 11.0 software to determine the impact of PCIs on economic growth in Kenya. Relevant diagnostic tests were carried out to identify any presence of econometric problems before the model was considered fit for any inferential analysis. The question of whether it is the private capital inflows that cause growth or it is the economic growth that causes PCIs was also addressed in the study. The study discovered a unidirectional causal relationship from foreign direct investmenttoeconomicgrowth,andfrom economicgrowthtocrossborderinterbankborrowing. The coefficient of FDI as a ratio of GDP was positive and statistically significant, coefficient of FPI as a ratio of GDP was also positive and statistically significant while that of cross-border interbank borrowing was negative and statistically insignificant. Owing to the results above the government should work towards creating an environment that attracts FDI and FPI as a way to pursue sustainable growth and attract cross border interbank borrowing.

Key Words: *Private Capital Inflows, Foreign Direct Investment (FDI), Portfolio Investment (FPI),CrossBorder BankLending (IBB)*

I. INTRODUCTION

This paper examines the controversial topic on Private Capital Inflows and Economic Growth. Private Capital Inflows in Kenya has become an increasingly important source of capital. They are especially important as they relax the nations' constrain of capital, augment investment resources and to some extent facilitate growth. The study sought to find out on the impact of the PCIs on growth in Kenya. It keenly observes the trends of PCIs and Economic growth, establishes the component of PCIs that are beneficial to economic growth and examines the causal relationship between the PCIs and Economic growth. Private Capital flows are made up of Equity flows and Debt flows; the equity inflows include Foreign Direct Investments (FDI) and Portfolio Equity (PE), debt inflows on the other hand include Cross border bank lending and Portfolio bonds flow. The paper looks into FDI, Foreign Portfolio investment (Portfolio equity + Portfolio Bonds flow), Cross border bank lending and Economic growth delving on how they impact the economic growth in Kenya

Divergent views have been established regarding how Private Capital inflows affect economic growth and this has attracted a substantial interest in the literature, without reaching any consensus. Because Private Capital Inflows could accelerate domestic savings, some researchers were of the opinion that foreign private capital flows would improve economic growth in developing countries (King et al., 1993, Levine et al., 2002, Aizenman et al., 2013). While others had a contrary opinion suggesting that foreign private capital flows have a negative effect on economic growth (Mody et al., 2011). Some researchers argue that foreign private flows reduce domestic savings rather than supplementing them. (Taslim et al., 2000). Aizenman and Park (2013), suggested that the effects of the capital flows on economic growth was reliant upon the type of foreign capital employed and the type of economy in which the flows were operating.

Existing literature has yielded conflicting views on the influence of Private capital inflows on economic growth. An examination of the available global literature reveals that most of them have devoted attention to mostly one particular form of Private capital inflow rather than comparing the contribution to economic growth of the alternative forms of Private capital inflows. Haddad and Harrison (1993), Aitken and Harrison (1999) and Khalid and Noy (2007) looked at FDI and found conflicting results. Duasa and Kassim (2013), Kania and Mroz (2014) and Yahya and Nazir (2015) focused on foreign portfolio investment with inconsistent findings. Favassa and Nsiah (2010), Vita and Kay (2009), Macias and Massa (2009) and Vihn (2010) found a positive association between private capital inflows and economic growth whereas Mosley (1980), Carkovic (2002), Durham (2003) and Prasad (2006) found a negative relationship. These studies however, looked at developing countries in general and were therefore not limited to Kenya. Thus, the results obtained cannot be used to generalize the influence on Kenya given that the developing countries do not have the same economic and institutional structure as Kenya. The studies done in Kenya that have compared the relative contribution of the Private capital inflows on economic growth using a time series analysis have given conflicting results. This study notes the inconsistent views reflected in the literature and intends to bridge the existing gap.

In the quest to attract foreign private capital, most developing countries in the global context have strengthened their microeconomic performance and reformed their economies to encourage capital inflows. For Kenya, these factors that have contributed to the increasing inflow of Private capital are; improved business environment, reduction of political instability, the vast skilled and unskilled labor availability and vast natural resources endowment. This has attracted major economies such as China and generally encourage the inflow of Private capital. The factors are as a result of governments efforts, aimed at stimulating and promoting economic growth (CBK, 2015).

Following the liberalization of external accounts in Kenya, Private capital inflows have been on the increase though the growth of the economy has not kept pace. The level of income has still remained very low. This brings a concern as to whether Private capital inflows actually contribute to the economic growth. If not, how do we identify the best form of private capital inflow to attract into Kenya to improve its economic growth? Also we establish whether it is Economic growth that causes PCI or it is the PCI that cause economic growth in Kenya. With also the inconsistent view in literature, the questions still remain whether the Private Capital Inflows have a real impact on economic growth in Kenya? If they do, what are these components of PCI that have contributed to growth levels that have been experienced in the nation?

II. Material And Methods

2.1 Study Design
The study adopted a descriptive research design. In this study, descriptive research design was valuable because it brought out the relationship and causal effect of FDI, Portfolio Investments and Cross-border interbank borrowing on economic growth measured in terms of real GDP.

2.2 Study Location and Target Population
The objective of the study was to determine the impact of private capital inflows on the economic growthofKenya.Thepopulationinthisstudywastheentireeconomicperformancefrom1988to 2018.TheperiodwaschoseninordertocapturetheperiodofincreasedprivatecapitalflowsinKenya and also in order to allow for a sufficient period for time series analysis. The population data consisted ofdata relatingto GDP, FDI, FPI, andcross-borderinterbankborrowingvalues as a percentage of GDP. The main variables for this study are economic growth and private capital inflows; FDI, Foreign Portfolio Equity and Cross-border interbank borrowing. The Real Gross Domestic Product (GDP) is used as the proxy for economic growth in Kenya. In total 30 observations (1988-2018) were made for each of the variables.

2.3 Study Duration
January 1988 to December 2018.

2.4 Sampling and Sample Size
Non-probability sampling was used; this is because the study did not involve the concept of random selection. The researcher studied the variables under the study using the most recent data available from Kenya. The sample was selected from the years ranging from 1988 to 2018. The sample size consisted of 31 years.

2.5 Sample Size Calculation
The researcher used Yamane statistical formula to determine the most appropriate representative sample, the sample is a representative sample size at a reliability of 95% confidence level. Using Yamane formula, 31 years of Private capital inflows were used as the representative sample for the period ranging from 1988 to 2018.

2.6 Data Collection

To attain the objectives of this study, secondary annual time series data was used. In this study, literature review was provided to present the causal relationship and influence between the independent variables and the dependent variable. The independent variables are the foreign direct investments, foreign portfolio investments and cross-border bank lending. The dependent variable is the economic growth. Secondary data on economic growth, foreign direct investment, portfolio investment and cross-border bank lending for the period ranging from 1988 to 2018 was obtained from World Bank's African Development Indicators, Central Bank of Kenya reports and Kenya National Bureau of Statistics' Economic surveys.

2.7 Procedure Methodology

The properties of the series employed in this study were investigated by conducting an analysis of the variables, so as to understand the relationships among variables. Secondly, the series was transformed into logarithmic term followed by correlation analysis among variables, in order to better understand how the variables are related. The third section presented a trend analysis, to indicate the fluctuations of the variables. This established the basis for the next step, involving unit root tests. Finally, an endogeneity causality test was conducted in order to understand a causal relationship among variables.

2.7.1 Multicollinearity

The existence of multicollinearity was examined using correlation matrix provided by E-views software version 11. Where there is any correlation or any relationship between two variables exceeding 0.8, then severe multicollinearity is suspected. Based on the results, all the correlation coefficients between the explanatory variables were less than 0.8 in absolute terms and thus qualify the use of Gaussian (ordinary) regression since there was no severe multicollinearity problem (serial correlation) between the variables. There was positive association between FDI and FPI, GDP Government consumption and Interbank Borrowing, and a negative association in Inflation, IBB, Government consumption and Trade openness.

2.7.2 Heteroscedasticity

A hypothesis test was carried out using E-views software version 11 and p-values obtained to detect the heteroscedasticity problem. Where the obtained p-value is more than 5% significance level, then the model does not have heteroscedasticity problem. The null hypothesis was that there was no heteroscedasticity problem. If the p-value is less than significance level of 0.05 (5%), then we reject the null hypothesis, otherwise do not reject the null hypothesis and conclude that there is heteroscedasticity problem.A test of constant variance using the Breusch_Pagan_Godfrey test revealed that there was no heteroscedasticity problem in the model since the p-values were greater than the significance value of 5%, hence we failed to reject the null hypothesis and concluded that there is no heteroscedasticity problem.

2.7.3 Autocorrelation

The linear relationship between the residual and their lagged residuals (LRESIDUAL) was established to determine a possibility of autocorrelation in the data. From the output, a p-value of 0.8401 which is greater than 0.05 (5% level of significance), a clear indication of absence of autocorrelation in the data.

2.8 Statistical Analysis

In analyzing the data, where the variables of this study are in percentage of GDP and others a ratio of GDP, the variables are first transformed into natural log. This is necessary because it makes the data moderately skewed and more normally distributed, bringing about consistency in the variance.

2.8.1 Stationarity Test (Unit Root Test)

Estimation analysis began with unit root tests. The variables were tested for unit root and stationarity. A stationarity test was performed after the natural log of the variables. This was to check for stationarity of each of the variables. In checking for stationarity of the variables, an ADF test was used while a Philip Peron test was undertaken to confirm the results. The ADF test was performed to ascertain the point at which the variables were stationary. If the absolute value of the t statistics is higher than that of the 5% confident level, we can accept stationarity of the variable. Both ADF and PP tests are complementary, however the PP test is less restrictive and its results are accurate even if the absence of autocorrelation and heteroscedasticity of the errors are not met (Pesaran 2001). The ADF unit root was tested and reported in table 2.8.1 below. It was noted that all the variables were stationary at first difference I(1). The alternative test for no unit root, the PP test was also conducted to ensure the robustness of the result. Thereafter, the Johansen co-integration test was conducted since the degree of integration of most of the variables was I(1).

Table 2.8.1 below presents the outcomes from the stationarity tests:

Series	Model	Lag Length	Level	Lag Length	1st Difference	DI
LnGDP	Trend	1	-2.66	0	-5.09***	I(1)
LnFDI	Trend	0	-3.42*	0	-6.34***	I(1)
LnFPI	Trend	9	4.86	9	-1.41	
LnIBB	Trend	0	-1.21	0	-6.02***	I(1)
LnGC	Intercept	0	-2.3	0	-6.51***	I(1)
LnNX	Intercept	0	-2.84*	0	-7.55***	I(1)
LnINF	Int & Tre	1	-2.09	0	-3.82***	I(1)

Notes: I(0) – degree of integration at level; I(1) – degree of integration at first difference. *, **, and *** – denotes the rejection of the null hypothesis of unit root at 10%, 5% and 1% level of significance respectively.

2.8.2 Co-integration Test Results
Co-integration involves examining the existence of a long-run relationship among variables under investigation, to indicate that data belongs to the same system. By conducting co-integration analysis we can establish that the vector Yt series contains N endogenous variables, of which all are integrated to the same order [I(1)]. Since the study involved a simultaneous equation model specification, the co-integration approach employed was based on Johansen's Maximum Likelihood Method. To test the hypothesis, Johansen's Maximum Likelihood approach employed the trace Statistic and Maximum Eigenvalue Statistics to test co-integration among variables. Johansen co-integration was performed after the lag length selection. Most of the models were found to have at least one co-integrating relation which revealed that there existed a long-run relationship between them.

The co-integration output results are summarized in Table 2.8.2 below. The null tested is that there are no co-integrating equations. The alternative is that there is at least one co-integrating equation.

Date: 09/04/20 Time: 17:51
Sample (adjusted): 3 31
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: LNGDP LNFDI LNFPI LNIBB
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.587285	69.62949	47.85613	0.0001
At most 1 *	0.457138	43.96457	29.79707	0.0006
At most 2 *	0.409608	26.24846	15.49471	0.0008
At most 3 *	0.314872	10.96636	3.841465	0.0009

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.587285	25.66491	27.58434	0.0863
At most 1	0.457138	17.71611	21.13162	0.1408
At most 2 *	0.409608	15.28210	14.26460	0.0344
At most 3 *	0.314872	10.96636	3.841465	0.0009

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

According to trace test statistics, the null hypothesis is rejected because the trace statistic value is greater than the critical value (69.629 > 47.856) while the probability value is less than 5% (P-value = 0.0001). This means that there was at least one co-integrating vector. A further review indicated that we reject the null hypothesis for asterisks ranking one–three since the trace statistic value is greater than the critical values. The corresponding probability values are less than 5%. In sum, there is at least one co-integrating vector and results indicate that at least two equations are co-integrated to order one [I(1)] at 0.05 critical level.

Considering the Max-Eigen results, the null hypothesis indicating no co-integrating equations is not rejected. This is because the Max-Eigen Statistic is less than the critical value (25.664 < 27.584), while the probability value is greater than 5% (P-value = 0.0863). This means that there is no co-integration. However, based on the trace Statistic Test and Max-Eigen Test, we reject the null hypothesis for asterisks ranking two–three since the trace statistic value is greater than the critical values. The corresponding probability values are less than 5%. Also, there exists a long-run relationship among the series employed in this study.

2.8.3 Long-Run Relationships Among Co-Integrating Variables (Causality between Private Capital Inflows and economic growth)

The next step was to determine whether there existed bi-directional causality between economic growth and the private capital flows, and the unidirectional causality from either economic growth to private capital flows or from private capital flows to economic growth. The results showed that there existed unidirectional causality between economic growth and private capital flows except for a few models that indicated bi-directional causality involving the control variables (openness to trade) for foreign portfolio investment and government consumption for foreign direct investment. There was no bi-directional causality between cross-border interbank borrowing and economic growth. For IBB, the results indicated that there was no bi-directional causality but unidirectional causality existed which only ran from economic growth to IBB. Unidirectional causality that stemmed majorly from economic growth to FDI was also observed in all the models save for the model with government consumption (LNGC) as this displayed a bi-directional causality from FDI to economic growth and vice-versa. The findings were similar to the study done by Ocharo et. al (2014), who found out unidirectional causality from economic growth to IBB and unidirectional causality from FDI to economic growth. Foreign portfolio investment (FPI) indicated a mixture of relationships with one model showing bi-directional causality (with the trade openness). Unidirectional causality was seen from economic growth to FPI in one model while causality stemming from FPI to economic growth was observed in two models. This is due to the fact that FPI creates economic growth in Kenya.

III. RESULTS

3.1 Simultaneous Equation Model Specification

Evidence of a long-run relationship between economic growth and the private capital flows was observed. As a result, the magnitude and sign of the causal effect was further explored. The slope coefficients of the estimated models and the error correction terms were recorded in appendix 1.0 below. Residual diagnostic tests were also conducted and serial correlation test and probability also reported. The model was taken to pass the serial correlation where the probability was found to exceed the 10% significance level. Heteroscedasticity was also conducted and the model was found to free from heteroscedasticity and thus qualified to be a good model.

To achieve the second objective, first an OLS estimation was carried out followed by an innovation (impulse response and variance decomposition) to complement the OLS estimation. Results of the regression analysis where LnGDP-log of economic growth was the dependent variable are summarized in the table 3.1 below. The coefficient of log of foreign direct investment as a ratio of GDP was 0.089 and was statistically significant at 5% level. It shows that a 10% rise in the ratio of foreign direct investment to GDP will lead to a 0.9% an increase in GDP growth.

Dependent Variable: D(LNGDP)
Selected Model: ARDL (1, 0, 0,0, 2)
31 observations used for estimation from 1988 to 2018

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.075	0.025	3.057	0.009
DGDP	0.043	0.156	0.276	0.787
D(LNFDI)	0.135	0.050	2.671	0.019
D(LNIBB)	-0.128	0.047	-2.694	0.018
DLNFPI	0.313	0.097051	3.220851	0.007
DLNGC	-1.099	0.151	-7.290	0.000
DLNINF	0.147	0.181	0.808	0.434
DLNTO	0.257	0.135	-1.897	0.080
DGDP(-1)	0.725	0.344	2.109	0.0471
DLNFDI(-1)	0.619	0.393	1.575	0.131
DLNFPI(-1)	0.771	0.324	2.381	0.0268
DLNIBB(-1)	-0.185	0.333	-0.556	0.584

Note: Significance Level at 5%

IV. DISCUSSION

The above model describes the dynamic effects of changes in the explanatory variables upon current and future values of the GDP. Co-efficient of determinant (R-squared) was established to be approximately 0.82 implying that 82.16% of the total variation in the dependent variable (GDP) was explained by the changes in the explanatory variables in the model.

The first lag of cross-border interbank borrowing had a negative sign and was statistically insignificant. The above results also indicated that an increase in IBB by 1% will lead to an immediate decrease in GDP by approximately 0.128% and a further decrease of approximately 0.185% after the first period. IBB did not influence economic growth. Rather, economic growth led to IBB. The findings were similar to those of Were (2001) which revealed a negative impact between debt accumulation and economic growth in Kenya.

For FDI, it was observed that economic growth led to FDI with a positive relationship though not statistically significant for inflation and trade openness but statistically significant for government consumption control variable. The results also indicated that an increase in FDI by 1% will lead to an immediate increase in GDP by approximately 0.135% and a further increase of approximately 0.619% after the first period. The model with government consumption also showed that FDI caused economic growth. This was consistent with the study findings of Ocharo et al. (2014) which found out both a positive and statistically significant relationship between FDI and economic growth in Kenya. The study findings on the effect of FDI flows on economic growth are in conflict with the findings of Ogujiuba and Obiechina (2012) which emphasized the negative correlation between economic growth and capital flows in developing countries, and concluded that international capital flows may even hurt economic growth in poor countries. The study findings on the effects of FDI on economic growth agrees with the findings of the International Capital Flows and economic growth study by IMF (2010) which found that inflows of foreign capital promote growth and also found strong positive role of capital flows on economic growth where volatility was low, but also found out that capital flow was associated with slower growth where volatility was high.

For FPI, the first lags of foreign portfolio investment flows had positive sign and had statistically significant impacts on economic growth. The results also indicate that an increase in FPI by 1% will lead to an immediate increase in GDP by approximately 0.313% and a further increase of approximately 0.771% after the first period. Thus, the lag of both foreign direct investments and foreign portfolio investment flows significantly impacts economic growth.

V. CONCLUSION

The study explored the relative contribution of the PCIs to economic growth in Kenya. The causal effect between these private capital flows (namely foreign direct investment, foreign portfolio investment and cross-border interbank borrowing) and economic growth were observed. Additionally, the magnitude and sign of the long run relationship between the PCIs were investigated to ascertain which one contributes the most to the economy.

The results obtained indicated unidirectional causality from economic growth to cross-border interbank borrowings with no case of bi-directional causality in all models (inflation, government consumption and trade openness control variables) for IBB. Unidirectional causality was also observed from economic growth to FDI in all the models save for government consumption control variable which revealed a bi-directional causality. Evidence of bi-directional causality was also observed for FPI under trade openness control variable model with unidirectional causality seen for FPI to economic growth under the models with inflation and government consumption control variables while one model revealed unidirectional causality from economic growth to foreign portfolio investment.

It can therefore be concluded from the analysis that only foreign portfolio investment (FPI) and foreign direct investment (FDI) had a positive effect on economic growth. These two private capital flows also have the significant impact on economic growth. Thus, if policies are to be aimed at stimulating growth in the economy and attracting foreign capital in Kenya, the government is best advised to focus more on attracting more foreign portfolio investment and foreign direct investment through policies that promote these types of private capital flows.

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