Capital Inflow and Economic Growth Nexus in Nigeria: The Role of Trade Openness

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Abstract: The paper examined the effects of capital inflow on economic growth and also investigated the role of trade openness in foreign capital inflow/growth nexus in Nigeria. This is with a view to testing modernization hypothesis in Nigeria. The paper adopted the Principal Component Analysis (PCA) technique to derive a unique index that captures the quantity and quality of the conventional measures of capital inflow along with trade openness. The method has been used in other studies but not yet applied to capital inflow versus growth analysis. The time series properties of the data were examined and Autoregressive Distributed Lag (ARDL) bound testing methodology was used to analyze the time series data. The result showed that capital inflow when interacted with trade openness had significant impact on growth, thus providing empirical support for the modernization hypothesis that capital inflow and trade policy are complementary and growth enhancing. The paper concluded that trade liberalization policies tend to enhance effectiveness of capital inflow and jointly promote higher economic growth in Nigeria.

Keywords: Liberalization Policy, Modernization Hypothesis, Growth, Factor Analysis, ARDL

JEL Classification: C82; F21; F35; F43; N17

1 Introduction

The relationship between foreign capital and economic growth has for long been a debated issue in the finance literature. While a substantial number of studies documented a positive relationship between foreign capital and economic growth (Osinubi and Amaghionyeodiwe, 2010; Khadraoui, 2012; Odhiambo, 2011; and Ndambendia and Njoupouognigni, 2010), several other studies have equally observed either a negative relationship or ambiguous effect of capital inflows on economic growth (Akinlo 2004, Burke and Ahmadi-Esfahani, 2006; Alfaro et al., 2001; and Shahbaz and Rahman, 2010).

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The relationship between trade openness and economic growth has also generated similar controversy as capital inflows, though in this case, the balance of evidence tilted towards positive and significant trade effects on real growth (Dollar and Kraay, 2000; Damooei and Tavakoli, 2006; Aryeetey, 2005; and Kasuga, 2007). However a critical look at the methodological approaches adopted in these studies show that lack of consensus in the empirical results from existing studies arose from how foreign capital is measured and incorporated into the model. More specifically, it was observed that when foreign capital is interacted with other growth fundamentals like trade openness, physical and human capital produce stronger and more robust estimates of positive effects on economic growth were observed (Kumar 2010, Li and Liu, 2005; Fayissa and Nsiah , 2010; and Sakyi, 2011).

This paper takes a new look at how capital inflow is captured and incorporated into the endogenous growth model as a way of addressing the observed lapses in the existing literature. The paper contributes to the empirics of capital inflows and growth in three ways. First, it contributes to literature by focusing attention on a unique country case study –Nigeria-unique in the sense that not only has there been little empirical studies on impact of capital inflow in the country, but also that it combines crucial attributes of being one of the top recipients of capital inflows in Africa (Castilleja-Vargas Liliana, 2009), but yet is a country that has experienced unimpressive real inclusive economic growth characterized by dismal development statistics despite the huge amount of both domestic and foreign resources inflow (Iwayemi, 2012). Secondly, the paper probes into the possible differential impact of different aspect of capital inflow and their interaction with trade policy orientation unlike existing studies on Nigeria (Odhiambo, 2011; Akinlo, 2004; Osinubi and Amaghionyeodiwe, 2010) which used a single measure of capital inflow.

More importantly, the paper builds a composite indicator of capital inflows derived from PCA in the Autoregressive Distributed Lag (ARDL) modelling environment to explore the interactive effects of capital inflow and trade openness on economic growth for a country-specific case study using Nigeria's data series for the period, 1960 to 2010. Thus providing another opportunity to test the robustness of the PCA method and also contributes to literature on capital inflow and economic growth in Nigeria. The remainder of this paper is organized as follows: Section 2 presents the analytical framework while section 3 deals with the methodological approaches adopted for the study. Section 4 presents the empirical results while section 5 concludes with policy implications.

2. Theoretical Framework

The endogenous-growth AK model developed by Rebelo (1991) and adapted by Pagano (1993) in analysing finance-growth nexus serves as the starting point of the model used in this paper. The model expresses output as a function of total productivity and capital stock:

$$Y = AK_t \quad (1)$$

Where Y, A and K denote the output, total factor productivity and capital respectively

The model assumes excess labour supply and production is constrained only by the quantity and quality of capital. The financial system acts as the intermediating units of which part of the capital is also consumed by financial system hence not all capital mobilized get to the real productive sector. The amount of investable capital is determined by the efficiency of financial intermediation (ϕ) since a certain amount of the total domestically mobilized investible savings ($1-\phi$; $0<\phi<1$) which represents the cost of financial intermediation per unit of savings is consumed by the financial market system. This indicates that only the fraction ϕ of total domestic savings is available for investment (Bailliu (2000)). Given this constraint, the long run economic growth rate is expressed as a function of total factor productivity, efficiency of financial intermediation and the saving rate:

$$g = A\left(\frac{I}{Y}\right) - \delta = \phi s - \delta, \quad (2)$$

Where δ is the rate of depreciation, ϕ is the proportion of saving converted to investment and s denotes the gross savings rate. Y is output and I is change in capital. A is the factor productivity and g is the output growth.

Equation (2) represents a closed economy which does not account for capital inflows. To incorporate capital inflows, we assumed that foreign residents invest in the domestic economy and foreign donors grant financial aids to the recipient economy to augment the deficiency in domestic savings. If capital flows in, on net, then a larger pool of savings is available for investment than in the absence of net capital flows (NCF). Following Bailliu (2000), the capital market equilibrium

($\phi s_t = I_t$) in the closed economy then becomes:

$$\phi^* (S_t + NCF_t) = I_t^* \quad (3)$$

And the long run economic growth rate becomes:

$$g^{*} = A*\frac{1^{*}}{Y} - \delta = A^{*}\phi*\left(\frac{S+NCF}{Y}\right) - \delta = A*\phi*(s+ncf)*-\delta \quad (4)$$

Equation (4) depicts the various ways capital inflow can influence the long run growth in a small but open economy. For example ($\phi * > \phi$) implies that the inflow of capital makes the local firms more efficient and with higher factor productivity (A*>A) if, the new capital inflow leads to higher investment rate with positive spill-over and higher country competitiveness (Bailliu (2000) Damooei and Tavakoli, 2006). Trade liberalization policy can also augment inflow of capital through trade. Total trade consists of both capital goods and consumer goods and hence trade liberalisation policy, that allows for free flows of capital goods, helps developing countries overcome some of the domestic resource constraints. Thus trade, stimulates competition, promotes realization of comparative advantage, expand access to varieties of inputs and opportunities to gain access to new technology as well as managerial skills. Translating this theory into empirical specification and incorporating trade openness and other growth macroeconomic environment or factor endowments, the general formulation of equation (4) becomes:

$$\Delta Y_t = \alpha_0 + \beta_{1i}\,\Delta Z_{it} + \beta_{2i}\,\Delta CF_{it} + \beta_3\,\Delta OPEN_t + e_t \quad (5)$$

ΔY is the real output growth rate, Z represents other possible macroeconomic growth conditioning variables. The other macroeconomic variables (Z) included are employment level (LAB measure as share of active labour force in the population) and aggregate domestic saving (GDS). CF (= FDI, AID, OCF). FDI is Foreign Direct Investment, while AID is total foreign aid which includes both official development assistance (ODA) and OCF is other capital inflows variables while Trade openness (OPEN) is measured, as (imports + exports)/GDP (Javid and Qayyum 2011 and Kargbo 2012). e is a normally distributed error term..

Theoretically it is expected that trade openness variable should have a positive co-efficient. According to modernization hypothesis, coefficient on FDI should be positive. But dependency hypothesis would expect the coefficient on FDI to be uncertain. The same follows for the AID and OCF variables. Finally, the coefficients on GDS and LAB in standard growth are expected to be positive (Obwona, 2001). Thereforeβ_{1i}, β_{2i}, and β_3 should be positive and significantly different from zero. To check whether trade policy liberalization, as an alternative measure of policy orientation and good institutional environment, plays any role in the effectiveness of foreign capital inflow, an interactive variable representing the

product of the capital inflow and trade openness is included and equation 5 becomes:

$$\Delta Y_t = \alpha_0 + \beta_{1i}\,\Delta Z_{it} + \beta_{2i}\,\Delta CF_{it} + \beta_3\,\Delta OPEN_t + \beta_{4i}\,\Delta CF * OPEN_{it} + e_t \quad (6)$$

Theoretical hypothesis is that $\beta_{4i} > 0$, if trade liberalization policy as good policy orientation and institutional environment enhances the effectiveness of both foreign direct investment and foreign aids.

3. Analytical Techniques

3.1 Deriving Capital inflow index

The PCA technique is used to build an aggregate index summarizing information on the quantity and quality of the conventional measures of capital inflow along with trade openness. This method has been used in several other similar studies but not yet applied to capital inflow versus growth analysis. For instance, Alesina and Perotti (1996) use PCA to create a measure of political instability while Sanchez-Robles (1998) and Calderon and Poggio (2010) employed it to build an aggregate index of infrastructure. Creane et al. (2003), Gries et al. (2009) Abdul Jalil et al. (2010) and Gounder (2012) used it to build a single measure of financial market development.

Following the procedure used in Ionita and Schiopu (2010), the paper in similar manner derives a new series with the aid of Principal Component Analysis (PCA) technique that captures most if not all the variability in the capital inflow variables and at the same time overcomes the possible multicollinearity and degree of freedom that might occur if all the selected variables are used in a specified model. The PCA transforms correlated variables into a smaller number of uncorrelated variables called principal components, while retaining most of the original variability in the data set.

As a prelude to the use of PCA, the correlation for the variables is examined. Table 1 presents the correlation matrix for the selected capital inflow variables. The correlation coefficients among the variables are relatively high especially between AID and OCF and between Trade openness (OPEN) and FDI. If all the variables are used simultaneously in the model, there is high possibility of multicollinearity, which may lead to incorrect inferences. In order to overcome this problem, the principal components for the selected capital inflow variables are estimated. Table 2a and 2b report the results of the PCA for the individual variables and their interactive terms respectively.

Table 1. Correlation Matrix

	FDI	OCF	AID	OPEN	FDI*OPEN	AID*OPEN
FDI	1.000					
OCF	0.612	1.000				
AID	0.672	0.902	1.000			
OPEN	0.969	0.551	0.651	1.000		
FDI*OPEN	0.937	0.516	0.592	0.972	1.000	
AID*OPEN	0.763	0.878	0.981	0.762	0.960	1.000
OCF*OPEN	0.684	0.990	0.900	0.640	0.922	0.904

Table 2a.Principal Components Analysis for the individual Variables

Principal Component	*Eigenvalues*	*Difference*	*% Variance*	*Cumulative value*	*Cumulative %*
1	2.829800	2.664549	0.9433	2.829800	0.9433
2	0.165250	0.160301	0.0551	2.995050	0.9984
3	0.004950	---	0.0016	3.000000	1.0000
	Eigenvectors (Factor Loadings)			*Ordinary Correlations*	
Variable	*PC 1*	*PC 2*	*PC 3*	*FDI*	*AID*
FDI	0.591541	-0.202543	-0.780420	1.00000	-
AID	0.577847	-0.568532	0.585547	0.913711	1.000000
OCF	0.562292	0.797338	0.219271	0.845181	0.984049

Table 2b Principal Components Analysis for the Interactive Terms

Principal Component	*Eigenvalues*	*Difference*	*% Variance*	*Cumulative value*	*Cumulative %*
1	2.916055	2.834277	0.9720	2.916055	0.9720
2	0.081778	0.079611	0.0273	2.997833	0.9993
3	0.002167	---	0.0007	3.000000	1.0000
	Eigenvectors (Factor Loadings)			*Ordinary Correlations*	
Variable	*PC 1*	*PC 2*	*PC 3*	*FDI*OPEN*	*OCF*OPEN*
FDI*OPEN	0.584418	-0.181092	-0.790988	1.00000	
OCF*OPEN	0.576924	-0.592752	0.561965	0.904101	1.000000
AID*OPEN	0.570627	0.784762	0.241939	0.960422	0.922243

The reported eigenvalues in Table 2 indicate that the first principal component explains about 94% and 97% of the standardized variance for the individual and interactive variables respectively. Therefore, only information related to the first principal component is used in the construction of the series. The corresponding new series from the PCA results are represented by equations (7) and (8) which are

linear combinations of the original variables using the respective factor loading as the weights.

$$FC1 = 0.592(FDI) + 0.578(AIDS) + 0.562(OCF) \quad (7)$$

$$FC2 = 0.584(FDI*OPEN) + 0.577(OCF*OPEN) + 0.571(AID*OPEN) \quad (8)$$

Figure 1 plots the resulting indices of net capital inflows depicted by equation 7 and 8. The indices coincide fairly with the economic state and policy changes that happened during the sample period. Nigeria's economic historical development is well captured by the trend of this index. In the early period before the oil boom, the inflow of capital was relatively low but stable while the era of oil boom in 1970s experienced upsurge in capital inflow. This trend is truncated by the oil glut and subsequent austerity measure in early 1980s. The implementation of policy reforms and introduction investment incentives in late 1980s led to a swing in the capital inflow.

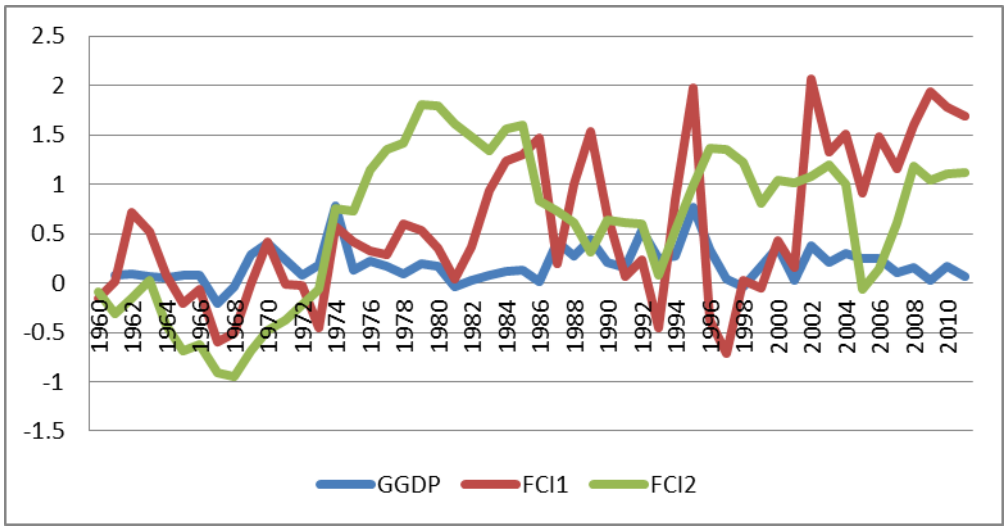

Figure 1. Capital inflow Indices and Output Growth Rate in Nigeria

The most remarkable policy change during this period was the introduction of the Structural Adjustment Programme (SAP), which provided the basis for deregulation of the economy (Fasanya 2012)). The SAP policy included the deregulation of the economy, the introduction of new industrial policy in 1989, the establishment of the Nigeria Investment Promotion Commission (NIPC) in early 1990s, and the signing of Bilateral Investment Treaties (BITs) in the late 1990s (Wafure and Nurudeen, 2010). According to the UNCTAD (2007) World Investment Report, 70% of capital inflow to West Africa and 11% of Africa's total capital inflow went to Nigeria during this period and Nigeria ranked among the

first five highest recipients of capital inflow in Africa, (Eshenake and Oriavwote, 2012). The political crisis in 1993 to 1999 explained the fall in capital inflow before it resumes upward trend from 2002. The introduction of global telecommunication, which attracted high inflow of FDI into telecommunication sector and .the strengthening of financial policy from 1999 till 2009 further made Nigerian economy more attractive and this explains the sharp increase in private investment inflow and Nigeria ranking second to South Africa in capital inflows between 2000-2010 (Rangasamy and Mihaljek, 2012).

3.2. ARDL Bound Testing Approach

Autoregressive Distributed Lag model (ARDL) developed by Pesaran et al. (2001) is used to estimate the model specified above in equation 7. ARDL yields valid results irrespective of whether the underlying variables are I(0), I(1), or a combination of both (Abdul Jalil et al., 2010). It is also asymptotically efficient in small sample study and when the regressors are endogenous (Sakyi, 2011) , thus making ARDL methodology more appropriate for estimating our model with only 51 observations. ARDL helps overcome possible endogeneity problem that may arise in a model incorporating capital inflow, trade openness and economic growth. The opportunity of introducing optimal lag structure for both the dependent and independent variables in ARDL and use of OLS to estimate the cointegration relationship whether the underlying variables are I(0), I(1) or both makes the ARDL to outperform other methods (like Engle and Granger error correction method) of estimating cointegration. The ARDL approach involves estimating equation 6 in the form:

$$\Delta Y^{i} = \alpha_0 + \sum_{i=1}^{p} \delta_i \Delta Y_{t-i} + \sum_{i=1}^{p} \gamma_i \Delta Z_{t-1} + \sum_{I=1}^{P} \theta_I \Delta CF_{t-I} + \sum_{i=1}^{p} \psi_i \Delta OP_{t-1} + \lambda_1 Y_{t-1}$$

$$+ \lambda_2 Z_{t-1} + \lambda_3 CF_{t-1} + \lambda_4 OP_{t-1} + U_t \quad \text{..... ....} (9)$$

Where α_0 is the drift component; U_t is the white noise; the terms with summation signs represent the error correction; dynamics with δ_i for example represents the short run effects; while the second part of the equations with λ_i corresponds to the long run relationship.

Cointegration relationship in the ARDL model is established using F-test. The null hypothesis is $\lambda_i = 0$ which implies non-existence of long run relationship and the

alternative $\lambda_i \neq 0$ suggests the existence of a long run relationship. Pesaran and Shin (1999) provides two sets of asymptotic critical values bounds based on whether all the variables are I(0) for lower bound or I(1) for upper bound. The null hypothesis is rejected if the F-statistics is greater than the upper bound. If the long run relationship exists among the variables, the following error correction model is estimated:

$$\Delta Y^i = \alpha_0 + \sum_{i=1}^{p} \delta_i \Delta Y_{t-i} + \sum_{i=1}^{p} \gamma_i \Delta FC_{t-1} + \sum_{I=1}^{P} \theta_I \Delta FCT_{t-I} + \sum_{i=1}^{P} \psi_i \Delta GC_{t-1} + \omega ECM_{t-1} + \mu_t \quad (10)$$

The ECM_{t-1} is the error correction term and the coefficient of ECM_{t-1} measures the speed of adjustment towards the long-run equilibrium. For a country specific study, the usual problem of data comparability, measurement issue and consistency do not arise in this case. All the variables are as defined in and sourced from the Central Bank of Nigeria (CBN)'s Statistical Bulletin, 2010 and Annual Report and Statement Account for 2011. All variables are expressed in log form in Naira, official currency in Nigeria, except labour force which is calculated as the active labour participation rate multiplied by the population size for the year.

4. Empirical Results and Discussion

The Autoregressive Distributed Lag (ARDL) bound testing approach procedure does not require pre-testing of unit roots and hence the order of cointegration can be determined irrespective of their order integration (Pesaran and Shin, 1999). The critical value of the ARDL Bound testing depends on selected lag length; for this reason, the optimal lag (p) is determined empirically based on Schwartz Bayesian Criterion (SBC) and Akaike's Information Criteria (AIC). Both original series and the PCA derived series are used to allow for comparison of results which lead to 5 models being estimated. Model (I) to (III) use the original data series while model (IV) and (V) use the new series ((FC1 and FC2 respectively) along with the other growth determinants included in the models. The critical values reported in Pesaran et al. (2001) are based on large sample sizes; thus, it cannot be used for small sample sizes. Narayan (2004) generates and reports new sets of critical values for small sample sizes ranging from 30 observations to 80 observations. Table 3 reports the result of the ARDL approach to co-integration.

Table 3. ARDL Bound Tests for Cointegration

	Model I	Model II	Model III	Model IV	Model V
F-statistic	6.09	5.14	6.24	5.02	5.147
	(0.073)	(0.052)	(0.031)	(0.017)	(0.01)
Likelihood ratio	20.17	21.01	20.67	19.89	20.67
	(0.009)	(0.007)	(0.03)	(0.002)	(0.00)
% Critical Levels	Critical Values for Cointegration Bound Testing				
1%	3.498	3.056	3.498	4.306	4.306
5%	2.593	2.726	2.593	3.136	3.136
10%	2.205	2.309	2.205	2.614	2.614

Note: The critical values for unrestricted intercept and no trend obtained from :Narayan (2004, Pp25-31) AppendixA6 () :Critical values for the bounds test: Case III Restricted intercept and trend

The computed *F*-statistics with corresponding Likelihood ratios are for the higher than the upper critical bound at 5% and 10% critical values as indicated in Table 3. Given the values of the F statistics relative to the upper and lower bound critical values, the ARDL cointegration tests therefore confirm that the null hypothesis of no long run relationship among the variables in the models is rejected and alternatively confirming that at least a long run cointegration relationship exists among the variables in the estimated ARDL models.

Table 4 and 5 present the estimates of long run and short run results respectively. For brevity and conciseness, only the estimates of the capital flow variables are reported and discussed. The results show that the model (IV) with interactive term perform better that the model (I) without interactive terms. Specifically, except foreign aid which remains insignificant and negative, the result shows FDI and other capital inflow are significant and positive when the possible interactive effect of trade openness is explicitly included which confirms that trade openness plays crucial role in the effectiveness of both FDI and other capital inflows. The error correction terms in Table 5 are negative and statistically significant as expected and they also indicate a high speed of readjustment to long run equilibrium from short run shocks.

A comparison of the results of the Models (I) to (III) with Model IV and V) of table 4 and 5 for both the long run and short run shows that using the indices derived by the PCA as alterative measures of capital flow and its interaction implies a remarkably improved statistical performance of the model in terms of efficiency and robustness. The improved performance of the new series might have removed the possible multicollinearity problems that may arise when

correlated series are used in the same model. Most of the capital flows series have tendency of high correlation as observed in the correlation result presented earlier.

Table 4. Estimated Long Run Coefficients using the ARDL Approach

Regressors	Model I	Model II	Model III	Model IV	Model V
FDI	-0.01(-1.06)		0.27(2.57)		
AID	0.08(1.10)		0.27(1.63)		
OCF	-0.02(-1.25)		0.13(2.85)		
OPEN	0.08(2.43)		0.01(0.07)		
FDI*OPEN		-0.11(-2.08)	0.13(2.23)		
AID*OPEN		-0.002(-0.05)	-0.04(-0.44)		
OCF*OPEN		-0.04(-3.06)	0.11(2.77)		
FC1				0.18(2.7)	
FC2					0.165(2.75)
R^2	0.58	0.50	0.53	0.51	0.51
F-Stat	3.27	2.60	3.18	3.15	3.24
DW	2.01	1.91	1.87	1.97	1.99

Table 5. Estimates of Short Run ARDL Model

Regressors	Model I	Model II	Model III	Model IV	Model V
D(FDI(-1))	0.05(0.45)		0.24(2.24)		
D(AID(-1))	0.08(1.82)		0.42(2.58)		
D(OCF(-1))	0.37(2.07)		0.48(2.62)		
D(OPEN(-1))	-0.07(-0.61)		0.05(0.38)		
D(FDI*OPEN(-1))		-0.12(-2.75)	0.12(2.53)		
D(AID*OPEN(-1))		0.04(0.75)	0.07(0.75)		
D(OCF*OPEN(-1))		-0.04(-2.37)	0.16-2.90)		
D(FC1(-1))				0.65(3.04)	
D(FC2(-1))					0.316(2.98)
ECM(-1)	-1.08(-4.53)	-1.05(-4.62)	-0.93(-4.1)	-1.03(-4.62)	-1.08(-4.76)
R^2	0.48	0.56	0.60	0.56	0.57
F-Stat	22.82	26.69	31.22	23.46	24.76
DW	1.98	2.01	1.95	1.97	1.99

Note: (*) and (**) implies significant at 5% and 10% level of significance respectively

The model diagnostic and stability tests carried out on the model estimates reported in Table 6 also confirms the robustness and stability of the estimated coefficients in the models. The results in the short run models in Table 5 (Model III) show that foreign aid (AID), foreign direct investment (FDI) and other capital inflow (OCF) are positive and statistically significant. This short run result

therefore suggests that foreign direct investment and other capital inflow except foreign aids have significant positive effects on economic growth in the short run. The insignificant effect of foreign aids in the long run model corroborates the observation by Clements et al (2004) that even if foreign aid has no robust long run effect on economic growth, in the short run, foreign aids like other capital inflows could be growth enhancing.

Table 6. Diagnostic Tests Statistics

Regressors	Model I	Model II	Model III	Model IV	Model V
Serial Correlation	0.84 (0.437)	0.43 (0.651)	0.07 (0.923)	0.44 (0.646)	0.85 (0.433)
Functional Form	8.15 (0.999)	0.05 (0.820)	0.10 (0.747)	2.32 (0.632)	0.04 (0.838)
Normality	9.39 (0.000)	5.82 (0.054)	3.40 (0.177)	17.35 (0.000)	16.85 (0.000)
Heteroscedasticity	0.48 (0.879)	0.56 (0.820)	0.69 (0.744)	0.65 (0.705)	0.68 (0.688)

5. Conclusion and Policy Implications

The paper examined whether good trade policy enhances or hinders the effectiveness of different components of capital inflow in Nigeria. The empirical results suggest that though the individual capital inflows policy variables might have contradictory and/or negative effects (especially foreign aids) as reported in earlier studies, a well-defined aggregate index of the capital flow variables and trade openness yields positive and statistically significant effects on economic growth in Nigeria.

The positive impact of combined indices of capital flows and trade openness provides further supports the argument that a good synergy between capital inflows and trade policy could yield positive impact on economic growth in both short and long run. Capital inflow and trade openness should complement each other in boosting the technological innovation and domestic investment and therefore providing support for the modernization hypothesis. The previous studies (like Sakyi 2011) that suggest adverse effects of capital inflow even in the presence of good policy and institutional environment possibly may be suffering from either omitted variable or variable measurement error. The result from this study provides a new empirical support for the modernization hypothesis in Nigeria. This in contract to the earlier results obtained by Sakyi (2011), Roodman (2007) and Akinlo (2004) and Rajan and Subramanian (2005) which failed to establish significant positive relationship between measures of capital inflows and economic

growth. However the results conform to empirical evidence from Osinubi and Amaghionyeodiwe (2010), Khadraoui (2012), Odhiambo (2011) among others which found a positive relationship between foreign capital and economic growth. As Gomanee et al (2005) noted the capital inflow (foreign aid inclusive) should have positive impact or economic growth and the poor economic growth performance of many African countries should not be attributed to capital inflow (and or foreign aid) ineffectiveness. The likely policy implication of the findings is that capital inflows help ease the domestic resource constraint and a well-designed trade policy plays a crucial role in determining the effectiveness of capital inflow.

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