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Capital Inflows and Economic Growth in India: The Role of Macro-Monetary Policies

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ABSTRACT

The present study scrutinized the role of macro-monetary policies in the relationship between capital inflows and economic growth in India for the period 1980-81 to 2016-17. The study employed Autoregressive Distributed Lag (ARDL) Bound co-integration technique. The study found that macro-monetary policies play a fundamental role in the relationship between capital inflows and economic growth in India. Results found that inclusion of monetary policy the coefficient of foreign direct investment (9.28 and 1.21 %) in the regression estimate with monetary policy was lesser than the coefficient of foreign direct investment (0.35) in the regression estimate monetary policy.

Key Words : Capital inflow, Economic growth, Macro-monetary policies, ARDL model, India

INTRODUCTION

Economists have always considered capital as the central element of the process of economic development. The straight forward view of development economists is that capital is essential for growth. Based on this view the capital deficient countries heavily resorted to foreign capital as the primary means to achieve rapid economic growth.

Everywhere in the world, including the developed countries, governments are vying with each other to attract foreign capital. Foreign capital flows are mutually beneficial to both the home country and the host country. For home country, it is generating income through expanding business activities globally and for the host country it promotes production activities, boosts domestic exports and finally lead to long-run economic growth

Standard neoclassical growth theory emphasized capital accumulation (through increased savings) as a prerequisite for the achievement of economic growth. However, the low level of savings (resulting in low investment) among developing countries is one of the crucial militating factors which have made developing countries' actual output level lag behind their potential output level Recognizing the impediment posed by the savings-investment gap and the pressing need to fill this gap and stimulate economic growth, most resource deficient countries have largely embraced foreign capital inflows as an injection into the investment stream to propel economic growth.

To enhance the growth potentials of capital inflows, economists and policy analysts have stressed that the effectiveness of capital inflows on economic growth is conditioned on the presence

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of sound macroeconomic policies in the recipient. The presence of good and stable macroeconomic policies are presumed not only to serve as a pulling force for foreign capital but also to enhance the effectiveness of these inflows in accelerating economic growth. In contrast, unstable macroeconomic policies initiate panic and loss of confidence among private investors, which may act as a blockage to the inflow of foreign capital into the recipient economy.

Foreign capital flows consist of the movement of financial resources from one country to another. In this context, capital flows is a broad term which includes different kinds of financial transactions such as; lending by governments, and international organizations; bank lending, short and long-term; investment in public or private bonds; investment in equities; and direct investment in productive capacity. Each of these has different effect on economic growth and expose capital market to risks. Generally, foreign capital inflows depends on a variety of features of the host economy which include among others; its market size, level of education, institutional environment, tax laws, and overall macroeconomic and political environment.

Globalisation and the consequent introduction of New Economic Policy were the land mark achievements made by the supporters of the capitalist champions. The effect of the New Economic Policy is seen in the foreign capital. The economic policy of 1991 proved to be watershed in the economic history of India. In 1991 government introduced a series of reforms to liberalise and globalise the Indian economy. These economic reforms tend towards the market economy and globalisation of country. These policies of economic reforms were intended to integrate the Indian economy with the world. As a result of globalisation in India, the process of dismantling trade barriers started since 1991 and every year government has been announcing reduction in trade barriers. It is argued that this shall enable free flow of goods, capital and technology and thus globalisation became a motivating force for economic development. It also opened access to new markets and new technology.

Capital is the life blood of any production and distribution activity and it plays an important role among the factors of production. In view of the economic crisis on the one hand, and the perceived importance of foreign capital in the economic development of the country on the other, the Government of India has been making continuous efforts to attract foreign capital during the post liberalisation period. As a result of the continuous efforts by the Government of India, there has been steady rise in the inflow of foreign capital and it led to overall progress in various sectors of the Indian economy. In addition, there has been improvement in the employment position, standard of living, infrastructure development, health and hygiene, Gross Domestic Product and National Domestic Product due to foreign capital inflows in India.

Literature of review:

Papanek (1973) in his work disaggregated foreign capital inflows into three principal components: foreign aid, foreign private investment and all other foreign. He examined 34 countries in 1950 and 51 countries in 1960 using a cross sectional data and found out that all the three flows had a statistically significant positive impact on growth. Among the components, foreign aid exhibited stronger effect on economic growth than other factors.

Bowen (1998) carried out a study to measure the direct and indirect relation between foreign aid and economic growth using a cross-sectional data for 67 less developed economies for the period, 1970-1988. He observed an indirect foreign aid growth relationship through its interaction with domestic savings and was significant and negative.

Burnside and Dollar (2000) estimated a model using a panel data of 56 countries. In estimating

the model they employed TSLS method for growth, foreign aid and policy. By making assumptions about the separate effects of foreign aid and policy, they observed that foreign aid had a robust positive impact on economic growth. When they entered foreign aid directly into their model, it was not significant. However, it was significant when interacted with the policy index.

Hansen and Tarp (2001) examined the relationship between foreign aid and economic growth in real GDP per capita. Average growth rate in 56 countries covering the year 1974-1993 in five period was regressed on several policy and institutional control variables and foreign aid.

Herzer *et al.* (2006) employing a bivariate VAR modeling technique, observed a positive FDI-led growth relation for Nigeria, Sri Lanka, Tunisia, and Egypt. Based on weak exogeneity tests, a long-run causality between FDI and economic growth running in both directions was observed for the same set of countries.

Chung-Hua Shen *et al.* (2010) study re-examined that relationship between international capital flows and economic growth within the context of various 'conditional factors' that possibly have the potential to influence such relationships. It employed panel data for 80 countries that cover 1976-2007. International capital inflow is broken down into foreign direct investments (FDI) and foreign portfolio investments (FPI). We find interesting evidence that only FDI has a positive effect on growth and that FPI has an unfavorable, if not negative, effect on growth. The conditional variables of banking liberalization, high-income level, twin crises, lower corruption, and human capital mitigate the positive impacts of FDI on growth.

Mohamed and Sidiropoulos (2010) in their study, analyzed the effect of workers remittance on economic growth. The data for this were sourced from the seven MENA countries for the period of 1975-2006. Both fixed effect and random effect models were used for empirical analysis. Their results showed support for fixed effect models, and revealed that remittances have a positive impact on economic growth both directly and indirectly via their interaction with financial and institutional channels.

Tiwari and Mutascu (2011) also examined the relationship between economic growth and FDI for Asian countries using Panel data approach. The sample period comprises 1986 to 2008, and they analyzed data of 23 countries. Hence, they observed that both foreign direct investment and exports enhances the growth process. Also that, labor and capital also play a significant role in economic growth.

Daniel Sakyi (2011) this paper employs the ARDL bounds testing approach to co-integration ,to investigate the extent to which trade openness and the inflow of foreign aid, impact on economic growth in post-liberalization Ghana. The paper finds that this effect is positive and statistically significant in both the short-run and the long run, although reduced by their interaction.

Mohammad Amin Almfraji (2014) study investigated how FDI inflows affect Qatar's business cycles. Timeseries data was selected from 1990 to 2010 as available. The VAR Impulse Responses and the Granger Causality test were mainly employed by using Eviews. The derived result shows that the FDI inflows and the economic growth in Qatar interact with each other in a relatively long term.

Philip R. Lane (2015) analyzed the behavior of international financial flows during three periods: (I) the 2003-2007 global boom; (II) the 2008-2009 crisis; and (III) the 2010-2012 recovery phase. In particular, they examine aid –adjusted net financial inflows, debt inflows, foreign direct investment inflows and official reserve outflows and highlight the role of country characteristics in explaining the cross-country variation in international flows during these different phases.

Yener Cos¸ Kun *et al.* (2017) study explores the relations between the development level of

capital market sub-components, involving mutual/pension funds, corporate bond, stock and government bond markets, and economic growth over the period of 2006:M1 and 2016:M6 in Turkey. We find that there is a long-run cointegrating relationship between capital market development and economic growth and also a unidirectional causality running from capital market development to economic growth. Using ARDL, Markov Switching Regression and Kalman Filter models, we also find that capital market development has asymmetric effects on economic growth where government bond market development is negatively but the aggregated index of other sub-components is positively associated with economic growth.

Objectives of the study:

The following are the specific objectives of the proposed study:

1) To study the foreign inflow and economic development in India

2) To assess the role of macro-monetary policies in the relationship between capital inflows and economic growth in India.

METHODOLOGY

This study is carried on with secondary data. The secondary data pertaining to this research area are collected from statistical hand book of RBI, RBI Bulletin and other books, journals, records and websites.

Real GDP per capita growth rate is the dependent variable in this study. Foreign capital net inflows, both net inflow of total capital and the disaggregated capital net inflows, consisting of three major classifications of capital net inflows, such as FDI, portfolio investment, and other investment, are the main explanatory variables in this study.

Gross domestic savings rate as the percentage of GDP is an explanatory variable of economic growth, Gross capital formation or gross domestic investment, measured as the percentage of GDP, is an explanatory variable of economic growth. Domestic credit to the private sector by banks, which is a proxy of financial development as the share of GDP, is the financial support provided to the private sector as an engine of economic growth.

Macroeconomic policy (mp) is measured by: (a) monetary policy (mp) measured by the monetary policy rate; (b) fiscal policy (fp) is measured by government size expressed as the ratio of total government expenditures (capital plus recurrent expenditures) to gross domestic product; and (c) trade policy (tp) measured by trade openness expressed as the ratio of import plus export to gross domestic product. Import is measured by total non-oil import of goods and services while export is measured by total nonoil export of goods and services. Private sector capital (prv) is measured by gross fixed capital formation; human capital (lab) is proxy by labour force; and inflation rate is measured by the annual inflation rate.

Researcher collected data from 1980-81to 2016-17 in Indian contexts.

Econometrics tools and techniques:

In attempting to establish the relationship between foreign capital inflows components and growth, the study employed econometric techniques such as; Augmented Dickey-Fuller (ADF) and Philips Perron test and ARDL model.

The rational for this test is to determine how the variables enter the model. It enables us know how the granger causality runs from these variables to growth. Given the above discussion, the

functional relationship between foreign capital inflows and economic growth of India are expressed in the following way:

The basic form of an ARDL regression model is:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \ldots\ldots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \ldots\ldots\ldots + \alpha_q x_{t-q} + \varepsilon_t, \quad (1)$$

where ε_t is a random "disturbance" term, which we'll assume is "well-behaved" in the usual sense. In particular, it will be serially independent.

A conventional ECM for cointegrated. It would be of the form:

$$\Delta y_t = \beta_0 + \Sigma\beta_i \Delta y_{t-i} + \Sigma\gamma_j \Delta x_{1t-j} + \Sigma\delta_k \Delta x_{2t-k} + \varphi z_{t-1} + e_t \; ; \quad (2)$$

Here, z, the "error-correction term", is the OLS residuals series from the long-run "cointegrating regression",

$$y_t = \alpha_0 + \alpha_1 x_{1t} + \alpha_2 x_{2t} + \gamma_t \; ; \quad (3)$$

The ranges of summation in (2) are from 1 to p, 0 to q_1, and 0 to q_2, respectively.

$$\Delta y_t = \beta_0 + \Sigma\beta_i \Delta y_{t-i} + \Sigma\gamma_j \Delta x_{1t-j} + \Sigma\delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \; ; \quad (4)$$

The difference is that we've now replaced the error-correction term, z_{t-1} with the terms y_{t-1}, x_{1t-1}, and x_{2t-1}. From (3), we can see that the lagged residuals series would be $z_{t-1} = (y_{t-1} - a_0 - a_1 x_{1t-1} - a_2 x_{2t-1})$, where the a's are the OLS estimates of the α's. So, what we're doing in equation (4) is including the same lagged levels as we do in a regular ECM, but we're *not restricting* their coefficients.

Now we're ready to perform the "Bounds Testing"

Here's equation (4), again:

$$\Delta y_t = \beta_0 + \Sigma\beta_i \Delta y_{t-i} + \Sigma\gamma_j \Delta x_{1t-j} + \Sigma\delta_k \Delta x_{2t-k} + \theta_0 y_{t-1} + \theta_1 x_{1t-1} + \theta_2 x_{2t-1} + e_t \; ; \quad (4)$$

All that we're going to do is preform an "F-test" of the hypothesis, H_0: $\theta_0 = \theta_1 = \theta_2 = 0$; against the alternative that H_0 is not true.

The estimate the long-run equilibrium relationship between the variables:

$$y_t = \alpha_0 + \alpha_1 x_{1t} + \alpha_2 x_{2t} + \gamma_t \; ; \quad (5)$$

as well as the usual ECM:

$$\Delta y_t = \beta_0 + \Sigma\ \beta_i \Delta y_{t-i} + \Sigma\gamma_j \Delta x_{1t-j} + \Sigma\delta_k \alpha x_{2t-k} + \varphi z_{t-1} + e_t \; ; \quad (6)$$

where $z_{t-1} = (y_{t-1} - a_0 - a_1 x_{1t-1} - a_2 x_{2t-1})$, and the a's are the OLS estimates of the α's in (5).

RESULTS AND DISCUSSION

To understand the foreign inflow and impact of macro monetary policies in India, we adopt Johansen methodology as given in Annex. The study uses the annual data to examine the relationships between foreign investment, macro and monetary policy variables for India. Annual time series data for GDP, Government Expenditure (GE), Human Capital (HC), Foreign Inflow (FI), Repo Rate (RR), Gross Fixed Capital Formation (GFCF), Trade Openness (TO), Inflation (WPI) and Gross Domestic Savings (GDS) for the period 1980-81 to 20016-17 are collected from the Reserve Bank of India, Government of India.

In attempting to establish the relationship between foreign capital inflows components and growth, the study employed econometric techniques such as; ARDL cointegration test, this enables us establish long-run and short run relationship between the variables and growth the unit root test is conducted on the series using Augmented Dickey-Fuller(ADF) and Philips Perron test.

Given the above discussion, the functional relationship between foreign capital inflows and economic growth and macro monetary policies of India are expressed in the following way: The computational device is the Econometric views (E-Views-9.) software program.

As a preface to the regression analysis, the unit root, lag selection and the cointegration estimates of the variables are presented in Section. while the long- and short-run regression estimates on the relationship among capital inflows, macroeconomic policy and economic growth are presented in Section 4.2.

Table 1 : VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	53.15292	NA	6.49e-13	-2.523024	-2.123077	-2.384963
1	355.3950	431.7744	2.43e-18	-15.16543	-11.16596*	-13.78482
2	488.5574	121.7485*	3.45e-19*	-18.14614*	-10.54715	-15.52297*

* indicates lag order selected by the criterion LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error AIC: Akaike information criterion SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Examining the properties of time series before analysing the relationship between/among variables has become important owing to the challenges that non-stationary series present in regression analysis. It has been well established in the literature that an ordinary least square (OLS) regression estimate produces spurious results while using data with unit roots. Inadequate accounting of the unit roots may lead to estimates, which may appeared to be significant and meaningful but in reality were meaningless and insignificant (Hamilton, 1994). To avoid spurious regression estimates, the unit root tests on all variables were carried out using the Augmented Dickey–Fuller (ADF) test and the Phillips–Perron (PP) and the results are presented in Table 2.

Table 2 : Results of Unit Root Stationarity Test

Variables		Augmented Dickey Fuller test(ADF)		Philips- Perron test(PP)	
		Level	First Difference	Level	First Difference
LGDP		-0.597538	-5.195736***	-0.597538	-5.197812***
LFI		-0.972058	-6.644042***	-0.969108	-6.605981***
LGDS		0.459112	-6.692440***	0.934252	-6.915863***
LGE		-1.376374	-3.877289***	-2.011485	-3.640190***
LGFCF		-1.884991	-4.551134***	-1.754317	-4.539011***
LHC		-0.503465	-6.334929***	-0.294144	-6.808012***
LRR		-1.268477	-4.705358***	-1.268477	-4.871485***
LTO		-0.505885	-7.562230***	-0.426882	-7.368242***
LWPI		-3.600894	-6.699033***	-3.600894	-6.836198***
Critical	1%	-3.626784	-3.632900	-3.626784	-3.632900
Values	5%	-2.945842	-2.948404	-2.945842	-2.948404
	10%	-2.611531	-2.612874	-2.611531	-2.612874

Notes: *** indicates significant at one percent or a rejection of the null of no unit root at the one percent level
MacKinnon (1996) one sided p-values

Apart from the above, it was also important to examine the unit roots of the variables in the estimating models to detect any possible presence of variables that were integrated of order two. In the presence of I(1) variables, the computed F-statistics provided by Pesaran *et al.* (2001) are not valid because the bounds test was based on the assumption that the variables are either I (0) or I(1). Hence, the carrying out of the unit root tests is to ensure that none of the variables are integrated of order two or beyond.

From Table 2 it was observed that all the variables with the exception of the inflation rate were integrated of order one, suggesting that the variables were I(1) series. With respect to inflation rate, the unit root tests result showed that the variable is integrated of order zero, indicating that the variable is an I(0) series. The result of the unit root tests produced by the ADF test on the left hand side of Table 1 were also confirmed by the PP result on the right hand side of Table 2.

From Table, it is evident that the various lag selection criteria produced conflicting results. The AIC indicated five lags, the BIC indicated two lags while the HQC indicated three lags. Although the AIC arguably remained the most widely used of the above lag selection criteria, the BIC is often preferred to the AIC because of its tendency to choose parsimonious models (Neath and Cavanaugh, 1997; Schwarz, 1978). Drawing from the above justification for the BIC, this study chooses the lag length of two (2) as indicated by the Schwartz criterion (BIC).

The estimates of the ARDL cointegration tests are presented in Table. The cointegration test showed that the null hypotheses of no cointegration among the variables were rejected, which implied the presence of cointegration among the variables. This indicated the existence of a long-run relationship among the variables in the model. The cointegrating result presented in Table showed that the calculated F-statistic for the model to be estimated on the relationship among capital inflows, macroeconomic policy and economic growth in India, was higher than the upper bounds level. This implied that the null hypothesis of no cointegration could not be accepted. There is indeed a strong cointegration relationship among the variables in the models.

Estimates on the relationship among capital inflows, macroeconomic policy and economic growth:

In examining the role of macroeconomic policy on the relationship between capital inflows and economic growth, this study conducted two ARDL estimates. The first regression estimate takes into cognizance the presence of macroeconomic policy variables in the regression estimate while the second regression estimate was without macroeconomic policy. This is important to see the role of the presence of macroeconomic policy on the relationship between capital inflows and economic growth in India (Table 3).

Table 3 : ARDL bound testing/co-integration result

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	6.360877	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

The estimates of the ARDL cointegration tests are presented in above Table. The cointegration test showed that the null hypotheses of no cointegration among the variables were rejected, which implied the presence of cointegration among the variables. This indicated the existence of a long-run relationship among the variables in the model. The cointegrating result presented in Table 3 showed that the calculated F-statistic for the model to be estimated on the relationship among capital inflows, macroeconomic policy and economic growth in India, was higher than the upper

bounds level. This implied that the null hypothesis of no cointegration could not be accepted. There is indeed a strong cointegration relationship among the variables in the models.

Table 4 : Short-run estimate (with macroeconomic policy) on the impacts of capital inflows on economic growth in India

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	-0.077608	0.208220	-0.372719	0.7164
D(LFI)	-0.680515	0.005667	-120.079229	0.0000
D(LFI(-1))	-0.035555	0.007733	-4.598031	0.0008
D(LFI(-2))	-0.045491	0.007266	-6.260538	0.0001
D(LFI(-3))	-0.011987	0.005942	-2.017277	0.0687
D(LGDS)	-0.037187	0.041754	-0.890634	0.3922
D(LHC)	-1.012738	0.146168	-6.928567	0.0000
D(LHC(-1))	0.357459	0.195695	1.826608	0.0950
D(LHC(-2))	0.438136	0.133861	3.273070	0.0074
D(LGE)	-0.389853	0.158949	-2.452685	0.0321
D(LGE(-1))	0.092354	0.106084	0.870566	0.4026
D(LGFCF)	-0.210629	0.116120	-1.813889	0.0970
D(LGFCF(-1))	0.289761	0.139503	2.077093	0.0620
D(LGFCF(-2))	-0.103744	0.127445	-0.814032	0.4329
D(LGFCF(-3))	-0.011810	0.110493	-0.106886	0.9168
CointEq(-1)	0.303113	0.203140	1.492139	0.1638
Cointeq = LGDP - (-0.5804*LFI + 0.2874*LGDS + 10.5394*LHC + 1.7185 *LGE + 0.7333*LGFCF + 0.2469)				

Source: Author's computation using Eview-9

In addition to the long-run estimate, the parsimonious short-run estimate (with its associated first lagged coefficient of the Error Correction Term (that is ECM(-1)) on the effects of capital inflows on economic growth (with the presence of macroeconomic policy variables) is presented in Table 5. The ECM coefficient showed the speed of adjustment from the short-run towards the long-run equilibrium. The ECM is expected to be negatively signed and statistically significant. A highly significant ECM coefficient proves the existence of a stable long-run relationship.

From the parsimonious estimate, the coefficient of the error correction term was correctly positive signed (0.30) and statistically insignificant as observed from Table 5. The coefficient estimate of the error correction term of 0.30 implied that the model corrects its long-run disequilibrium by 30 per cent speed of adjustment in order to return to the short-run equilibrium. In addition, the positive sign of the error correction term indicates a move forward towards equilibrium.

Table 5 : Long-run estimate (with macroeconomic policy) on the impacts of capital inflows on economic growth in India

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFI	-0.580374	0.400016	-1.450876	0.1747
LGDS	0.287370*	0.125990	2.280892	0.0435
LHC	10.539397	7.088034	1.486928	0.1651
LGE	1.718468	1.032390	1.664553	0.1242
LGFCF	0.733313	0.567069	1.293162	0.2225
C	0.246864	2.289550	0.107822	0.9161

Note:* denote 5% significance level respectively. Source: Authors' calculations

In contrast to the long-run result, the coefficient of foreign inflow was positive but statistically insignificant in the short run while the coefficient of foreign aid was positive and insignificant. The insignificant effect of FDI in the short run is expected because FDI are long-term investments unlike portfolio investments that are short term in nature, and include investment in securities.

Long-run estimate (With monetary policy) on the impacts of capital inflows on economic growth in India :

The parsimonious short-run estimate (without macroeconomic policy) presented in Table 7

Table 6 : ARDL Bounds Test

Test Statistic	Value	K
F-statistic	13.15646	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Authors' calculations

Table 7 : Short-run estimates (with monetary policy) on the impacts of capital inflows on economic growth in India

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	-0.160495	0.634058	-0.253123	0.8165
D(LGDP(-2))	-0.082887	1.009814	-0.082082	0.9398
D(LGDP(-3))	-0.763403	0.514099	-1.484932	0.2342
D(LFI)	0.035555	0.019229	1.849032	0.1616
D(LFI(-1))	-0.011987	0.009554	-1.254639	0.2985
D(LFI(-2))	0.037187	0.034495	1.078061	0.3600
D(LFI(-3))	0.049918	0.007147	6.984502	0.0060
D(LHC)	-1.012738	0.351912	-2.877812	0.0636
D(LHC(-1))	0.357459	0.607719	0.588197	0.5977
D(LHC(-2))	0.438136	0.192724	2.273383	0.1076
D(LHC(-3))	0.389853	0.536066	0.727248	0.5197
D(LRR)	-0.038684	0.066243	-0.583980	0.6002
D(LRR(-1))	0.210629	0.184868	1.139349	0.3373
D(LRR(-2))	-0.162558	0.082916	-1.960508	0.1448
D(LRR(-3))	0.289761	0.115857	2.501019	0.0876
D(LTO)	0.103744	0.045925	2.259017	0.1090
D(LTO(-1))	0.074828	0.063431	1.179664	0.3232
D(LTO(-2))	-0.075622	0.050179	-1.507039	0.2289
D(LTO(-3))	0.074110	0.054081	1.370337	0.2641
D(LWPI)	-0.051603	0.138866	-0.371604	0.7349
D(LWPI(-1))	0.162164	0.177877	0.911664	0.4292
D(LWPI(-2))	-0.022449	0.015276	-1.469561	0.2380
D(LWPI(-3))	-0.028131	0.023063	-1.219765	0.3097
CointEq(-1)	0.386001	0.168914	2.285191	0.1064
Cointeq = LGDP - (-0.0154*LFI + 9.2862*LHC + 1.2147*LRR -0.1094*LTO + 0.2596*LWPI -32.5193)				

Source: Authors' calculations

showed that the coefficient of the error correction term was positively signed (0.38) and statistically significant. The coefficient estimate of the error correction term of 0.38 implied that the model corrects its short-run disequilibrium by 38 per cent speed of adjustment in order to return to the long-run equilibrium. In addition, the negative sign of the error correction term indicates a move back towards equilibrium.

Similar to the regression estimate with macroeconomic policy as explanatory variables the coefficient of current value of FI was positive but statistically insignificant in the short run while the various coefficient of human capital and rate of interest was negative but statistically significant. The coefficient of the second lagged values of human capital and interest rate or repo rate were also insignificant in the short run.

Table 8 : Long-run estimates (with monetary policy) on the impacts of capital inflows on economic growth in India

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LFI	-0.015353	0.023863	-0.643391	0.5658
LHC	9.286217	1.111407	8.355373	0.0036
LRR	1.214685	0.171576	7.079580	0.0058
LTO	-0.109428	0.163598	-0.668887	0.5514
LWPI	0.259575	0.494419	0.525009	0.6359
C	-32.519307	2.557383	-12.715856	0.0010

Source: Authors' calculations

The long-run regression estimate monetary policy variable as explanatory variables is presented in Table. The monetary policy variables in the estimating model, foreign direct investment was insignificant in influencing economic growth in the India in the long run. This result is in contrast to the one obtained with the inclusion of monetary policy variables in Table . More so, the coefficient of foreign direct investment (9.28 and 1.21 %) in the regression estimate with monetary policy was lesser than the coefficient of foreign direct investment (0.35) in the regression estimate monetary policy.

From the regression estimates in Table , the role of macroeconomic policy and monetary policies on the relationship between capital inflows and economic growth, it is evident that macroeconomic and monetary policies plays a fundamental role in promoting the performance of foreign direct investment on economic growth in India. It was shown that when macroeconomic policy variables were included in the model, foreign direct investment positively and significantly influenced economic growth while in the regression estimate with the absence of macroeconomic policy variables, foreign direct investment had an insignificant impact on economic growth in India.

Conclusion:

This study examined the role of macroeconomic policy on the relationship between capital inflows and economic growth in India for the period 1980 to 2016. The cointegration test showed that the null hypotheses of no cointegration among the variables were rejected, which implied the presence of cointegration among the variables. The coefficient estimate of the error correction term of 0.30 implied that the model corrects its long-run disequilibrium by 30 per cent speed of adjustment in order to return to the short-run equilibrium. The insignificant effect of FDI in the short run is expected because FDI are long-term investments unlike portfolio investments that are short term in nature, and include investment in securities.

The macroeconomic policy as explanatory variables the coefficient of current value of FI was positive but statistically insignificant in the short run while the various coefficient of human capital and rate of interest was negative but statistically significant. The inclusion of monetary policy the coefficient of foreign direct investment (9.28 and 1.21 %) in the regression estimate with monetary policy was lesser than the coefficient of foreign direct investment (0.35) in the regression estimate monetary policy. The macroeconomic and monetary policy plays a fundamental role in promoting the performance of foreign direct investment on economic growth in India. From the regression estimate, the study concluded that macroeconomic policy plays a fundamental role in the relationship between capital inflows and economic growth. Specifically, the study concluded that capital inflows matters in promoting the performance of foreign direct investment on economic growth in India. There is the need for government to initiate incentives and trade agreements capable of promoting economic growth.

Furthermore, there is the need for government to redirect the inflows of foreign aid from consumption to investment channels, as this will enhance the growth of the India's economy. More so, there is the need for value reorientation on the prudent use of international workers' remittances by the recipient households in investment purposes rather than on consumption. Such investment will ultimately enhance the growth of the Indian economy

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