

## The Impact of Foreign Direct Investment on External Debt of India: An Empirical Analysis

Dr. Biswaranjan Parida<sup>1</sup>, Mr. Manas Ranjan Pati<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Business administration GIFT, Bhubaneswar

<sup>2</sup>Assistant Professor, Department of Business administration, Gandhi Engineering College

### ABSTRACT

Capital formations have always been a challenge for the developing country. They are unable to generate sufficient resources over and above their consumption requirement during the initial phases of their economic development. As a result, they look for help from external sources in order to overcome the vicious circle of low capital formation and growth. Even if internal resources are sufficient for the development needs of a country, foreign capital is imminent for importing of improved machinery and technology. So, foreign capital fulfills the twin objectives i.e. generation of capital formation and foreign exchange for developing countries.

India, a developing country, whose gross domestic investment is low, requires good amount of foreign capital for its growth and development. Out of different sources of foreign capital, foreign direct investment and external debt play very important role as they contribute significant portion of the required capital. FDI usually takes the form of capital inflows, plants and machineries, know-how and the investors take the advantage of market, natural and physical resources, infrastructure and economic environment of the recipient countries, whereas the external debt help the recipient country in fulfilling the short term and long term project finance. At the same time, excess reliability of external debt affects the sovereignty of the recipient country.

In this context, the research article will focus on the importance of FDI in downsizing the external debt in India.

**Key words:** Capital formations, foreign exchange, FDI, external debt.

### I. INTRODUCTION

Among the developing countries India continues to be less vulnerable with its external debt indicators, comparing well with other indebted developing countries. However, among BRICS economies, India is at fourth position after China, Brazil, and Russia in terms of the total debt stock and in third position in terms of the share of short term debt to total debt. The basic reason for which India could maintain external debt within manageable limit is the prudent external debt policy and Foreign Direct Investment Policy pursued by the Government of India. As per the RBI, at end-March 2018, India's external debt witnessed an increase of 12.4 per cent over its level at end-March 2017, due to continuous rise in commercial borrowings, short-term debt and non-resident Indian (NRI) deposits. Apart from that external debt is also increasing on account of valuation loss resulting from the depreciation of the US dollar against major currencies. Most importantly, the external debt to GDP ratio stood at 20.5 per cent at end-March 2018, higher than its level of 20.0 per cent at end-March 2017.

#### The major facts pertaining to India's external debt:

- India's external debt was placed at US\$ 529.7 billion, recording an increase of US\$ 58.4

billion over its level at end-March 2017 vis-à-vis March 2018,

- The depreciation of Indian rupee vis-à-vis major currencies (viz., euro, SDR, Japanese yen and pound sterling) has reached to US\$ 5.2 billion.
- The major component of external debt has been rapid change of commercial borrowings with a share of 38.2 per cent, followed by NRI deposits (23.8 per cent) and short-term trade credit (19.0 per cent).
- The long-term debt (with original maturity of above one year) was placed at US\$ 427.5 billion, recording an increase of US\$ 44.3 billion over its level at end-March 2017.
- The share of long-term debt (original maturity) in total external debt at end-March 2018 was 80.7 per cent, lower than its level of 81.3 per cent at end-March 2017.
- The share of short-term debt (with original maturity of up to one year) in total external debt increased to 19.3 per cent at end-March 2018 from 18.7 per cent at end-March 2017.
- The short-term debt on a residual maturity basis (i.e., debt obligations that include long-term debt by original maturity falling due over the next twelve months and short-term debt by original maturity) constituted 42.0 per cent of total external debt at end-March 2018 (41.6 per cent at end-March 2017).

- However, the US dollar denominated debt continued to be the largest component of India's external debt with a share of 49.5 per cent at end-March 2018, followed by the Indian rupee (35.8 per cent), SDR (5.5 per cent), Japanese yen (4.8 per cent) and euro (3.4 per cent).
- The borrower-wise classification shows that the outstanding debt of both government and non-government sectors increased at end-March 2018.
- Debt service payments declined to 7.5 per cent of current receipts at end-March 2018 as compared with 8.3 per cent at end-March 2017.

#### **About External Debt**

External debt is defined as "the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of principal and/or interest by the debtor at some point(s) in the future and that are owed to non-residents by residents of an economy" {External Debt Statistics - Guide for Compilers and Users, International Monetary Fund (IMF), 2003}.

#### **Long and Short-term**

The external debt can be of two types; long term and short term debt. Long term debt can be defined as debt with an original maturity of more than one year, while short term debt is defined as debt repayments on demand or with an original maturity of one year or less.

#### **Multilateral and Bilateral Debt**

Multilateral creditors are also known as multilateral institutions which include International Development Association (IDA), International Bank for Reconstruction and Development (IBRD), Asian Development bank (ADB) etc. Bilateral creditors include those sovereign countries with which sovereign and non-sovereign entities enter into one-to-one loan arrangements. India's major bilateral creditors who extend loans to both sovereign and non-sovereign debtors include Japan, Germany, United States, France, Netherlands and Russian Federation.

#### **Sovereign (Government) and Non-Sovereign (Non-Government) debt**

Sovereign debt includes (i) external debt outstanding on account of loans received by Government of India under the 'external assistance' programme, and civilian component of Rupee Debt; (ii) other Government debt comprising borrowings from IMF, defense debt component of Rupee debt as well as foreign currency defense debt and (iii) FII investment in Government

Securities. Non-sovereign includes the remaining components of external debt.

#### **Trade Credit**

Trade credit refers to loans and credits extended for imports directly by overseas supplier, bank and financial institution to sovereign and non-sovereign entities. Depending on the source of finance, such credits can be either suppliers' credit or buyers' credit. (i) Suppliers' Credit: Such credit is extended by the overseas supplier of goods in the form of deferred payments.

(ii) Buyers' Credit: Such credit is provided by a bank or financial institution and is generally governed by OECD consensus terms and carries insurance from export credit agency of the concerned country.

#### **External Commercial Borrowings**

The commercial borrowing includes loans from commercial banks, other commercial financial institutions, money raised through issue of securitized instruments like bonds (including India Development Bonds (IDBs) and Resurgent India Bonds (RIBs)), Floating Rate Notes (FRN) and securitized borrowings of commercial banks, etc. It also includes borrowings through buyers' credit & supplier credit mechanism of the concerned countries, International Finance Corporation.

#### **Objectives of Study**

- To study the recent trend and composition of flow of external debt in India
- To find out the co-relation between FDI and external debt of India

## **II. REVIEW OF LITERATURES**

Muhammad Azam and Asmat Ullah Khan (2011) used simple log linear regression model and the method of Least Squares for estimating the impact of public debt on FDI. The empirical results found statistically significant and indicates that public debt discourages FDI inflows into Pakistan. Thus, it has been concluded, that public debt be managed, through active and proper debt management policy, in order to utilize the maximum benefits of FDI in Pakistan.

Singh, Chadha and Singh (2012) find out Foreign Direct investment flows are supplementing the scarce domestic investments in developing countries particularly in India. They recommend that India should welcome the inflow of foreign investment because it enables India to achieve the cherished goal like making favorable balance of payment, removal of poverty, and internal personal disparity in the development and also it is very much convenient and favorable for Indian economy.

MogaTano Jilenga<sup>1</sup>, Helian Xu<sup>1</sup> and Igor-Mathieu Gondje-Dacka<sup>2</sup> (2016) investigate the impact of external debt and Foreign direct investment (FDI) on economic growth in Tanzania using time series data from 1971-2011. The empirical analysis was based on ARDL model and the Bounds test approach of co-integration as advocated by Pesaran et al (2001) to test for long-run equilibrium relationship. The results show that, in the long-run debt promote economic growth in Tanzania. However, foreign direct investment exhibits a negative impact on economic growth. While in the short-run, the results indicate that there is no directional causality either between external debts (PD) and economic growth (RGDP) or between FDI\_INFL and economic growth (RGDP).

Purity KagendoMugambi and James Murunga, (2017) estimated long run cointegrating equation and the findings showed that external debt service have a negative impact on country's foreign direct investments. The study recommends that the government should not heavily rely on external borrowing to finance economic growth but should rather cut her programs to avoid higher budget deficit. This recommendation is premised on the fact that lower external debt service will attract foreign direct investment that will eventually result to a more reduced budget deficit.

### Hypothesis of Study

In order to analyze the impact of FDI on external debt the author has formulated the following hypothesis of the present research.

**H<sub>0</sub>**: FDI does not make significant contribution in predicting the Net External Debt.

**H<sub>a</sub>**: FDI makes significant contribution in predicting the Net External Debt.

### III. RESEARCH METHODOLOGY

In order to achieve the above cited research objectives, various research methods are used that consists of trend analysis, statistical and econometric methods. For this mean, standard

deviation, correlation, simple and other statistical means are utilized in order to answer stated research questions and accept or reject the hypotheses. Programs SPSS-19, Eviews 7, and Excel are used as main statistical tools.

The paper has analyzed the inflow of foreign direct investment and external debt into India through the period of 1991 – 2014. The time series data which are used in this work are drawn mainly from RBI hand book of Statistics on Indian Economy and website of ministry of finance.

The granger causality test is adopted to estimate the external debt and FDI of India in this study. The functional form is:

$$NED = f(FDI)$$

Where:

NED = Net External Debt

GDP = Gross Domestic Product

FDI = Foreign Direct Investment

The methodology of this study involves constructing an econometric model to investigate the relationship between Net External Debt and FDI.

### IV. DATA INTERPRETATION & HYPOTHESIS TESTING

#### Trend Analysis

In many time series broad movements can be discerned which evolve more gradually than the other motions which are evident. The gradual changes are described as trends and cycles. The changes which are of a transitory nature are described as fluctuations. In some cases, the trend should be regarded as nothing more than the accumulated effect of the fluctuations. In other cases, the trends and the fluctuations represent different sorts of influences and are inclined to decompose the time series into the corresponding components. As the present study is based on time series data from 1991 to 2013, and analyze the data in three stages so ease variable has been described in three different trends.

Fig-1 Trend curve of Net External Debt : 1991-92 to 2007-08

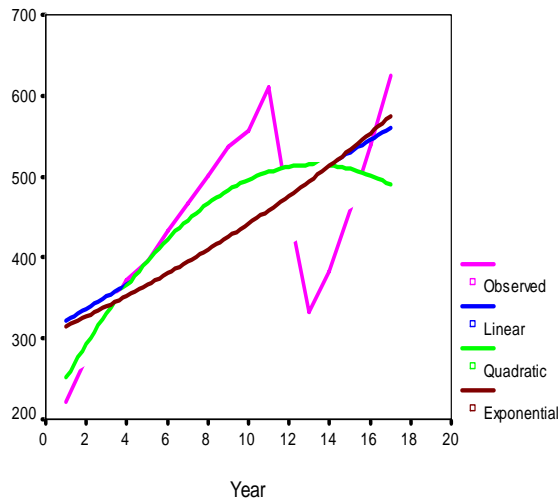


Fig-2 : Trend Curve of Net External Debt : 2007-08 to 2014

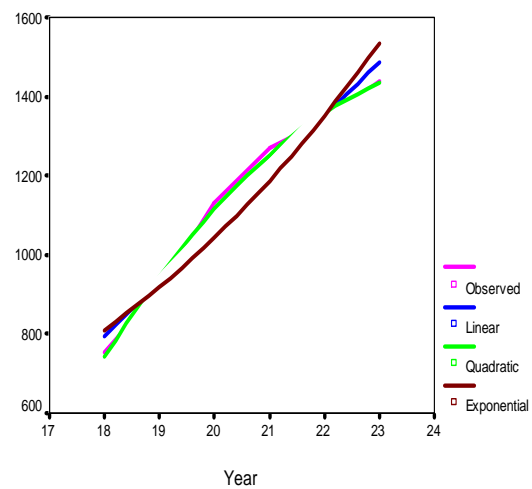


Fig-3: Trend Curve of Net External Debt : 1991-92 to 2013-14

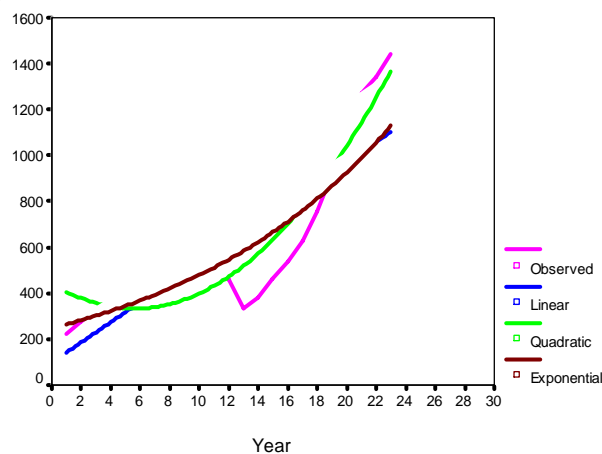


Table- 1: TREND: NET EXTERNAL DEBT

Period	Trend	Constant	B1 Coefficient	B2 Coefficient	df	R <sup>2</sup>
1991-92-2007-08	EXP	303.6731	0.0375* (3.473)	-	15	0.4088
2007-08-2013-14	LIN	-1694.742	138.3451* (10.657)	-	4	0.9574
1991-92-2013-14	EXP	248.297	0.0658* (8.365)	-	21	0.7581

\* Significant at 1 % level

\*\* Significant at 5 % level

Source: Researcher's own estimate

Above three figures are the graphs that are pictorial depiction of the trend of Net External Debt (NED) took place from India from 1991-92 to 2013-14. Again this is divided into three broader sections one is from 1991-92 to 2007-08, another is from 2007-08 to 2013-14 and the last is from 1991-92 to 2013-14 with constants 303.6731, -1694.742, and 248.2970 respectively. The T-value for the period 1991-92 to 2007-08 is found out and the value is 3.473 and 15 as the degree of freedom. The

adjusted R<sup>2</sup> value for the year 1991-92 to 2007-08 is 0.4088. The red line is the indication of exponential trend observed in case of NED for the period 1991-92 and 2007-08. The calculated significant p-value (.0034) is observed less than .05. The beta (B) value for the period 1991-92 and 2007-08 is .037509 at 1% level. Hence the null hypothesis can be rejected by accepting that there is an exponential trend growth took place in terms of Net External Debt (NED) of India between 1991-

92 and 2007-08. The p-value found to be not significant between 2007-08 and 2013-14, as the calculated p-value (.0004) less than .05 leaves there is linear trend observed. The blue line is the indication of linear trend observed in case of NED for the period 2007-08 and -2012-13. The d.f. is 4 in case of 2007-08 and 2012-13 period. From the data it is observed that the Beta (B) value is found to be 248.297 at 1% and the adjusted R<sup>2</sup> is .75817 between the period 1991-92 and 2013-14. It is observed from the result that there is the exponential trend is observed in the Net External Debt (NED) of India between 1991-92 and 2013-14, as the significant p-value (.0000) is less than .05. The red line in the graph is the depiction of trend for both the periods. The Beta (B) value for the period found to be .0658. Hence the null hypothesis can be rejected by accepting that there is an exponential growth took place in terms of Gross Domestic product at Factor Cost (GDPFC) of India between 1991-92 and 2013-14. The d.f. value is 21 and the adjusted R<sup>2</sup> value was .7581. The

significant level here considered is 1% as well as 5%.

The following table-2 shows the descriptive statistics in which the mean value of FDI is 704.4343 and standard deviation value is 820.49925. The mean value of Net External Debt is 623.6774 and standard deviation value is 352.3907. The following table-3 deals with the correlation between FDI and Net External Debt. The data shows there is a positive correlation exists between FDI and Net External Debt. As the Pearson correlation value is .899. The concept of correlation says the value of correlation should lie between -1 and +1. The significance value or the p value tells whether we should argue there is a relationship or not. If the calculated P value is higher than the observed P value then in that case there is no significant relationship exists between variables. But in this case the calculated P value is less than the observed P value i.e. our calculated P value is .000 which is less than 0.05 (.000 < .05). Therefore it is to conclude that there is significant relationship exists between FDI and Net External Debt.

**Table-2: Descriptive Statistics of Correlations between FDI and Net External Debt**

	Mean	Std. Deviation	N
<b>FDI</b>	704.4343	820.4993	23
<b>Net Ext_Debt</b>	623.6774	352.3907	23

**Table-3: Correlations between FDI and Net External Debt**

		FDI	Net_Debt
<b>FDI</b>	Pearson Correlation	1	.899**
	Sig. (2-tailed)		.000
	N	23	23
<b>Net Ext_Debt</b>	Pearson Correlation	.899**	1
	Sig. (2-tailed)	.000	
	N	23	23

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Researcher's own estimate

**Table-4: Model Regression Summary of FDI and Net Ext Debt**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	.899 <sup>a</sup>	0.808	0.799		157.95379	0.463
a. Predictors: (Constant), FDI						
b. Dependent Variable: Net Ext Debt						

**Table-5: ANOVA of FDI and Net Ext Debt**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2208006	1	2208005.57	88.499	.000 <sup>a</sup>
	Residual	523937.4	21	24949.4		
	Total	2731943	22			
a. Predictors: (Constant), FDI						
b. Dependent Variable: Net Ext Debt						

**Table-6: Coefficients of FDI and Net Ext Debt**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	351.689	43.825		8.025	0
	FDI	0.386	0.041	0.899	9.407	0
a. Dependent Variable: Net Ext Debt						

Source: Researcher's own estimate

In the above tables the Net Debt has been taken as dependent variable and the FDI as independent variable.  $R^2$  is known as the coefficients of the determinants. In table-4 a value of R is .899 and because there is only one predictor, this value represents the simple correlation between FDI and Net Debt (this already has been confirmed this by running a correlation). The value of  $R^2$  is .808, which tells that FDI can account for 80.8% of the variation in Net Debt. It is because there might be many factors that can explain this variation, but the derived model in this case is

$$\alpha_i = \beta_0 + \beta_1 X + \epsilon_i$$

$$\Rightarrow \text{Net External Debt} = \beta_0 + \beta_1 \text{FDI} + \epsilon_i$$

Here,  $\alpha_i$  denotes to dependent variable Net External Debt which includes FDI, can explain approximately 80.8% of it. This means that around 20% of the variation in FDI cannot be explained by Net External Debt. Therefore, there must be other variables that have an influence also.

The next part of the output (SPSS Output) reports an analysis of variance (ANOVA). The summary table shows the various sums of squares described in table-5 and the degrees of freedom associated with each. From these two values, the average sums of squares (the mean squares) can be calculated by dividing the sums of squares by the associated degrees of freedom. The most important part of the table is the F-ratio, which is calculated using equation , and the associated significance value of that F-ratio. For these data, F is 88.499 which is significant at  $p < .001$  (because the value in the column labeled Sig. is less than .001). This result tells that there is less than a 0.1% chance that an F-ratio this large would happen if the null

hypothesis were true. Therefore, it can be concluded that the regression model results is significantly better prediction of Net Debt than if the mean value is used of Net Debt In short, the regression model overall predicts Net Debt significantly well.

The ANOVA in specific highlights whether the model, overall, results in a significantly good degree of prediction of the outcome variable. However, the ANOVA doesn't talks about the individual contribution of variables in the model (although in this simple case there is only one variable in the model and so we can infer that this variable is a good predictor). The table-6 provides details of the model parameters (the beta values) and the significance of these values. The above equation-8 states that  $\beta_0$  was the Y intercept and this value is the value B (in the SPSS output) for the constant. So, from the table, it can be stated that  $\beta_0$  is 351.689, and this can be interpreted as meaning that when no FDI will be allowed (when  $X = 0$ ), the model predicts that 351.689 will be the level of Net Debt  $\beta_1$  value represents the gradient of the regression line. It is 0.386. Although this value is the slope of the regression line, it is more useful to think of this value as representing the change in the outcome associated with a unit change in the predictor. Therefore, if the predictor variable is increased by one unit (if the FDI is increased by 1), then the devised model predicts that 0.386 will be the level of Net Ext Debt.

## V. FINDINGS

After analyzing the data it is found that there is a positive correlation exists between FDI

and Net External Debt. The Pearson correlation between two variables is .972. The calculated P value is less than the observed P value i.e. our calculated P value is .0000 which is less than 0.05 (.0000 <.05). Therefore it can be concluded that there is significant relationship exists between FDI and Net External Debt.

## VI. CONCLUSION

International comparison based on World Bank's 'International Debt Statistics 2017' indicates that India continues to be among the less vulnerable nations and India's main external debt indicators compare well with other indebted developing countries. India's key debt indicators, especially external debt to GNI, debt service ratio and short-term debt to total external debt continue to be comfortable indicating that our external debt is within manageable limits. Among developing countries, while China has the highest debt stock and the highest share of short term external debt to total external debt, its key debt indicators like total external debt to GNI, debt service ratio and foreign exchange cover for external debt are more favorable than the other developing countries. Multilateral sources continue to dominate India's sovereign external debt and Japan remains the single largest bilateral creditor. While IDA continues to account for bulk of the multilateral sovereign debt in the last two years, there is some fall in IDA's share, while there is a slight increase in the share of IBRD and ADB loans. This indicates lesser access to loans on concessional terms in the coming years, especially with terms on IDA borrowings also beginning to harden. Though this has implications for future debt service payments under Government Account, it is within manageable levels as indicated in the projections for the same. Currency-wise, Indian Rupee has overtaken SDR as the dominant currency, owing to increase in FII investment in government securities.

## REFERENCES:

- [1]. Azam, M. and K. Asmatullah (2008). Qualitative analysis of the external debts in Pakistan. *Abasyn J. Social Sci.* 2(1): 01-05.
- [2]. Azam Muhammad and Khan AsmatUllah (2011) Impact of public debt on foreign direct investment in Pakistan: a quantitative approach *ElixirFin. Mgmt.* 38 4225-4227
- [3]. JilengaMogaTano et al.(2016) The Impact of External Debt and Foreign Direct Investment on Economic Growth: Empirical Evidence from Tanzania *International Journal of Financial Research* Vol. 7, No. 2.
- [4]. Mugambi Purity KagendoMurunga James (2017) Effect of External Debt Service on Foreign Direct Investment Inflows in Kenya

European Journal of Economics, Law and Politics, ELP September edition Vol.4, No.3  
ISSN 2518-3761

[5]. [www.finmin.nic.in](http://www.finmin.nic.in)

[6]. [www.rbi.org.in](http://www.rbi.org.in)