

A Study on Currency Fluctuation Impact on ECB/FCCB (India)

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ABSTRACT:

The analysis has been focused to find out the impact on foreign reserves from external borrowings ECB/FCCB payouts by the Indian companies with the help of UNIT ROOT TEST WITH PHILLIPS- PERRON TEST. This analysis has been done from that the year 2007-2013.it has been observed through granger causality test that inflow of ECB &FCCB capital did not cause for the growth of the foreign reserves from the present period to the past six years rupee got depreciated with the dollar up to 29%,this depreciation affected all the Indian companies which opted this route and got ended up by paying extra capital in terms of rupees.Global interest rates started going down side in the past six years even then industries were not concentrating to raise fresh capital because of currency fluctuations.

Key Words: ECB, FCCB, FOREIGN RESRVES, LIBOR RATES, Re. Vs. \$.

INTRODUCTION

Investing in foreign securities ECB and FCCBs, while a good thing for your long-term portfolio, continues to pose new threats for investors. As more people broaden their investment universe by expanding into foreign stocks and bonds, they must also bear the risk associated with fluctuations in exchange rates. Fluctuations in these currency values, whether the

home currency or the foreign currency, can either enhance or reduce the returns associated with foreign investments. Currency plays a significant role in investing.

Efficient capital markets are a critical component for any developed economy and Indian capital markets today are amongst the best regulated markets where-in the regulatory framework has kept pace with the significant growth in the securities markets. The story of Indian capital market reveals an efficient trading and settlement infrastructure, high levels of disclosure and fostering an environment of innovation. In this back drop, FCCB and ECB is emerging as a preferred instruments for corporate financing with large number of FCCB/ECBs being issued over the past few years.

In India, FCCB/ECBs can be accessed through automatic and approval route. Major regulators governing the FCCBs in India are exchange control department of RBI and FCCB division in department of economic affairs at ministry of finance. FCCB/ECB policy aims at keeping maturities long, costs low and encourages infrastructure and export sector financing so as to ensure overall growth of the economy.

YEAR	NO.ECB&FCCB'S	AVG Re Vs \$
2007-2008	625	40.25
2008-2009	550	45.98
2009-2010	600	47.44
2010-2011	724	45.55
2011-2012	1074	47.91
2012-2013	917	54.4

Before recession period i.e.2007 rupee recorded its highest point with dollar and after 2009 rupee started getting depreciating with dollar by the year 2013 it got corrected almost 29% .The Indian companies which has used ECB&FCCB for raising up the capital externally got effected severely at the time of the redemption. Most of the companies top-line and bottom-line went downside because of the financial recession globally due to that requirement for the capital to the operations of the business by the Indian industries went upside. Globally it has been observed there is paradine shift in fund flows from conventional investments to the debt markets. With this analysis how currency fluctuation impacted Indian companies and inflow and outflow of FCCB/ECB influenced foreign reserves.

OBJECTIVES:

1. Impact of rupee appreciation/depreciation on ECB/FCCB.
2. To analyse the ECB/FCCB effect on Indian foreign reserves.
3. To study the currency depreciation impact on ECB/FCCB coupon rates.

SCOPE: The analysis has been focused on the industries which were used ECB and FCCB to raise the funds for the operational purpose. The analysis period is confined to six years i.e., 2007 to 2013.

Period	Variable
2007-2013	Rupee vs. Dollar
2007-2013	ECB'S
2007-2013	FCCB'S

The analysis has been used to find the currency fluctuation impact on interest payments for the external borrowings by the Indian companies. To what extent ECB and FCCB flows influence the foreign reserves of the country.

LIMITATIONS:

1. LIBOR rates have been considered to calculate the interest rates for ECB and FCCB'S.
2. Currency appreciation impact not considered for the analysis.
3. ECB /FCCB tenure not considered for the analysis.
4. Dollar has been considered for currency conversion to FCCB/ECB.

EMPERICAL STUDY: ECB, FCCB, LIBOR, RUPEE VS DOLLAR, FOREIGN RESERVES.

LITERATURE REVIEW:

Kumud Malviya: This paper examines the role of Foreign Currency Convertible Bonds (FCCBs), its nature, problems and relevant current issues in relation to foreign investment in India. FCCBs play a pivotal role in foreign investment in India. It is an important instrument to raise funds from the International financial institution outside India. The RBI's report on FCCBs itself states that Indian Companies which issued FCCBs, are facing the problem of redemption which is further resulting in winding up or selling of assets or in some cases buying back the issued bonds to meet their liability. The companies that hoped to issue equity in place of the bonds are now expected to almost certainly repay since the conversion price of the bonds, fixed at the time of its issue, is far higher than the market price. As per the RBI's report FCCB redemptions are set to peak in June 2012 when over \$1.1 billion of bonds will mature. The Foreign Currency Convertible Bonds are issued by the companies in case when it needs a great amount of fund on low coupon rate. But presently FCCBs bonds of many companies are due and they have to pay to the bond holders the amount that is definitely

lower than their expansion of business program, as the profits have to be used to meet the liability. Considering the present scenario, the main focus of this Paper is to examine the contemporary issues related to FCCBs.

Dipen Chatterjee: Indian companies that raised large sums of foreign funds to finance growth and acquisition plans during the bull run in the stock markets are in a Catch 22 situation. The conversion price of their foreign currency convertible bonds is several times higher than their current market prices. This leaves them with two options. One is to reset the price at current market price, a move that could dilute promoter holdings (since it would entail issuing more equity shares). The other is to redeem the bonds, which could increase debt obligations that are already substantial in some cases. The maturity of many of the FCCBs is expected to start in October 2009 and peak in 2010-11. Most analysts say the market is unlikely to recover so significantly over the next two years that market prices will match the conversion prices. The paper would state forth the current conditions of the FCCB market and Bond Holders.

Deepak Devgan, Harpreet Dusanjh: The financial markets of the world have undergone a sea change during the last few decades and the same winds of change have also entered the Indian capital markets. With the advent of liberalization, a variety of new financial instruments are replacing traditional avenues of finance and India Inc. has flown to overseas markets to get finance for expansion and other purposes. Amidst these, a new and popular array of innovative instruments is a type of bonds called Foreign Currency Convertible Bonds (FCCBs) that have provided access to cheaper overseas debt for Indian companies. The paper tries to explore the various dynamics of these innovative bonds that have lured India Inc. Besides, these instruments are also helpful from macro (economy) point of view and strengthen the motive behind the study of these instruments

Manappakkam: A central bank of the country that controls foreign exchange reserves by implementing the policies and procedures, which results the valuations of currency. In a supple polices on exchanges rates the valuation activities prompting involuntarily, due course the supply and demand of the foreign currencies are adjusted by bought and sold. External Commercial Borrowings (ECB) also not exempted from that, objectively study attempt to prove it. By using the various statistical tools, the research found and strongly believes that both the time series, foreign reserves and external commercial borrowings had mutual relationship during the elected study period.

Mora Sowjanya & D. Satish: The main objective of this case study is to understand the redemption pressures encountered by the Indian entities in paying back the external borrowings. With the initiation of liberalization policies, the Indian financial markets had experienced remarkable changes and Indian companies started borrowing and investing abroad. Many Indian companies have raised substantial amounts of external borrowings through External Commercial Borrowings (ECBs) for their long-term requirements. One such company Tata Steel Ltd. raised \$500 million to support its

acquisition of Corus in 2007. However, the recent financial crisis and subsequent effects – increased cost of borrowings, rupee depreciation and erratic exchange rates – hit the companies that raised funds through ECB route. In the wake of liquidity crisis, it is to be seen as to how companies, in particular Tata Steel Ltd., can manage the redemption pressures.

Himanshu Yadav: The paper studies the External Commercial Borrowing policy being followed by the Government of India in order to let the Indian entities access the foreign funds. The law governing foreign exchange is Foreign Exchange Management Act, 1999 but no express mention of the ECB instruments is there, though they involve foreign funds. The paper establishes the source of law for ECB and the relevant provisions of the act from where the RBI (Regulator of ECB) derives its powers for the same. An analytical approach has been made to gauge the aspects of the latest ECB policy (2012) as RBI tends to amend it from time to time via FEMA notifications and A.P. (DIR) and Master Policy circulars. The provisions of law and that of policy have been consolidated to present a framework for the investors where they can categorically relate their proposed ECB to the mode of arising the same within the framework of the extant guidelines.

Ankita Chatterjee: ECB is presently ubiquitous in the corporate world as a catena of business activities thrive on ECB transactions taking place in the country on a daily basis. The Indian capital market is one of the most prominent and formidable markets worldwide. As per records, from April 2006 to December 2006, ECB influx into India was a staggering USD 9 billion.

Sonika: External Commercial Borrowing constitutes a major part of total capital inflows in India for the corporate sector and PSU's, but the term remains vague to many, despite the profound effects on the economy. This paper attempts to analyze the performance of External Commercial Borrowings (ECBs) in India since 1991. To examine the performance of external commercial borrowing selective indicators are taken into considerations. These indicators are: share of ECBs in total external debt and share of ECBs in total long term debt. The paper explores the uneven beginnings of external commercial borrowings in India and examines the developments relating to the trends.

Umanath Kumarasamy: the central bank of the country that controls foreign exchange reserves by implementing the policies and procedures, which affects the valuation of currency. The exchange rate can be adjusted by demand and supply of the foreign currencies. External commercial borrowing also affects foreign reserves and exchange rate. This paper found that foreign reserves and external commercial borrowing have mutual relationship.

Mora Sowjana and D. Satish: observed through the case study named Tata Steel's ECB- the payoffs that, with the initiation of liberalization policies, the Indian financial markets had experienced remarkable changes and Indian

companies started borrowing and investing abroad. Many Indian companies have raised substantial amounts of external borrowings through ECB for their long term requirements.

RESEARCH METHODOLOGY:

Skewness is defined as: $\frac{n}{(n-1)(n-2)} \sum \left(\frac{x_j - \bar{x}}{s} \right)^3$ Describe asymmetry from the normal distribution in a set of statistical data. Skewness can come in the form of "negative skewness" or "positive skewness", depending on whether data points are skewed to the left (negative skew) or to the right (positive skew) of the data average.

AVERAGE FORMULA:
$$A = \frac{1}{n} * \sum_{i=1}^n x_i$$

GRANGER CAUSALITY TEST:

$$\Delta y_t = \phi + \lambda_0 \Delta x_t + \sum_{i=1}^{k1} \lambda_i \Delta x_{t-i} + \sum_{i=1}^{k2} \delta_i \Delta y_{t-i} + \eta ECM_{t-1} + v_t$$

$$\Delta x_t = \phi' + \lambda'_0 \Delta y_t + \sum_{i=1}^{k'1} \lambda'_i \Delta y_{t-i} + \sum_{i=1}^{k'2} \delta'_i \Delta x_{t-i} + \eta' ECM_{t-1} + v'_t$$

We say that x_t is Granger causal for y_t wrt. F_t if the variance of the optimal linear predictor of y_{t+h} based on F_t has smaller variance than the optimal linear predictor of y_{t+h} based on $z_t; z_{t-1}; \dots$ for any h . In other word x_t is Granger causal for y_t if x_t helps predict y_t at some stage in the future

PHILLIPS-PERRON TEST: In statistics, the **Phillips–Perron test** (named after Peter C. B. Phillips and Pierre Perron) is a unit root test. That is, it is used in time series analysis to test the null hypothesis that a time series is integrated of order.

The Phillips–Perron test involves fitting the regression

$$y_i = \alpha - \rho y_{i-1} + \epsilon_i$$

where we may exclude the constant or include a trend term. There are two statistics, Z_ρ and Z_τ , calculated as

$$Z_\rho = n(\hat{\rho}_n - 1) - \frac{1}{2} \frac{n^2 \hat{\sigma}^2}{s_n^2} (\hat{\lambda}_n^2 - \hat{\gamma}_{0,n})$$

$$Z_\tau = \sqrt{\frac{\hat{\gamma}_{0,n}}{\hat{\lambda}_n^2}} \frac{\hat{\rho}_n - 1}{\hat{\sigma}} - \frac{1}{2} (\hat{\lambda}_n^2 - \hat{\gamma}_{0,n}) \frac{1}{\hat{\lambda}_n} \frac{n \hat{\sigma}}{s_n}$$

$$\hat{\gamma}_{j,n} = \frac{1}{n} \sum_{i=j+1}^n \hat{u}_i \hat{u}_{i-j}$$

$$\hat{\lambda}_n^2 = \hat{\gamma}_{0,n} + 2 \sum_{j=1}^q \left(1 - \frac{j}{q+1}\right) \hat{\gamma}_{j,n}$$

$$s_n^2 = \frac{1}{n-k} \sum_{i=1}^n \hat{u}_i^2$$

DATA ANALYSIS:

Libor rate calculation for yoy on ECB from 2007-2013

YEAR	ECB TOTALS	LIBOR RATE	INT AMOUNT PAID						
2007-2008	24,970,343,671	4.525175	1129951749						
2008-2009	17,620,206,060	2.853741667	1129951749	502835162					
2009-2010	17,605,321,085	1.284833333	1129951749	502835162	226199034				
2010-2011	24491072063	0.901241667	1129951749	502835162	226199034	220723746			
2011-2012	35029616217	0.898216667	1129951749	502835162	226199034	220723746	314641851		
2012-2013	30619326408	0.935733333	1129951749	502835162	226199034	220723746	314641851	286515243.6	
			6779710494	2514175811	904796135	662171238	629283702	286515244	
TOTAL	150,335,885,503							11776652624	162,112,538,127

INTERPRETATION: The above table depicts the picture of ECB raised amounts from the year 2007-2013 which shows that in the year 2007 & 2008 highest capital has been raised later they are started going downside which indicates that rupee depreciation with dollar had impacted Indian companies inspite of libor rates were going downside every year.

Libor rate calculation for yoy on FCCB from 2007-2013

YEAR	FCCB TOTALS	LIBOR RATE	INT AMOUNT PAID						
2007-2008	5987819730	4.525175	270959321.5						
2008-2009	508,000,000	2.853741667	270959321.5	14497008					
2009-2010	4,076,556,424	1.284833333	270959321.5	14497008	52376955.79				
2010-2011	1270232523	0.901241667	270959321.5	14497008	52376955.79	11447864.76			
2011-2012	937160342	0.898216667	270959321.5	14497008	52376955.79	11447865	8417730.385		
2012-2013	1426647811	0.935733333	270959321.5	14497008	52376955.79	11447865	8417730	13349619.12	
			1625755929	72485040	209507823.2	34343594.76	16835460.39	13349619.12	
	14206416830							1972277466	16178694296

INTERPRETATION The above table shows that the capital has been raised through FCCB every year but in the year 2009&2010 highest capital has been obsorbed by the Indian companies. It has been observed during the analysis period downward libor interest rates not effected the fccb capital.

Skewness analysis to ECB and FCCB with foreign reserves between 2007-2013

YEAR	ECB	FCCB
2007-2008	1.051642275	1.526695827
2008-2009	0.893334745	1.465633062
2009-2010	1.915490217	2.893874602
2010-2011	1.728877692	0.956583593
2011-2012	0.476286319	1.232153864
2012-2013	0.96068221	2.312864281

INTERPRETATION The above analysis of skewness between ECB & FCCB with FOREIGN RESERVES all the values of skewness from 2007-2013 are greater than zero it shows right skewed distribution and most values are concentrated on left of the mean with extreme values to the right. Which indicates that the inflow of fccb not influenced the foreign reserves growth from the year 2007-2013.

FCCB&ECB INT RATES WITH FOREIGN RESERVES TOTALS:

YEAR	ECB+FCCB+LIBOR	FOREIGN RESERVES	AVERAGE RUPEE VALUE
2007-2008	32,359,074,471	932667000001	40.25
2008-2009	20,046,449,301	1213185000001	45.98
2009-2010	23,878,696,739	1186801000001	47.44
2010-2011	28,190,295,427	1252611000001	45.55
2011-2012	38,718,826,982	1358308000001	47.91
2012-2013	35,097,889,504	1267268000000	54.4

Pair wise GRANGER CAUSALITY TEST:

NULL HYPOTHESIS	OBSERVATIONS
Y does not Granger Cause X	3
X does not Granger Cause Y	
Z does not Granger Cause X	3
X does not Granger Cause Z	
Z does not Granger Cause Y	3
Y does not Granger Cause Z	

X=Rupee vs. Dollar, Y=Ecb+Fccb, Z=Foreign reserves (India).

INTERPRETATION: The above analysis shows that currency fluctuation (Dollar) does not caused for the foreign reserves fluctuations, external borrowings does not caused foreign reserves appreciation/depreciation and rupee is not influenced by the external borrowings flows into India. With the above GRANGER CAUSALITY TEST it has been proven that all these three variables movements does not have any effects on each other during the analysis period i.e., 2007-2013.

UNIT ROOT TEST WITH PHILLIPS- PERRON TEST STATISTIC

Phillips-Perron test statistic				
			Adj. t-Stat	Prob.*
			-6.365102	0.0059
Test critical values:	1% level		-5.604618	
	5% level		-3.694851	
	10% level		-2.982813	
R-squared		0.826041	Mean dependent var	6.69E+10
Adjusted R-squared		0.768054	S.D. dependent var	1.42E+11
S.E. of regression		6.84E+10	Akaike info criterion	53.0256
Sum squared resid		1.41E+22	Schwarz criterion	52.86937
Log likelihood		-130.564	Hannan-Quinn criter.	52.6063
F-statistic		14.24542	Durbin-Watson stat	2.259541

HYPOTHESIS:

NULL HYPOTHESIS (H₀): If probability value < t-statistic the hypothesis is significance means ECB+FCCB+LIBOR does not influence foreign reserves.

ALTERNATE HYPOTHESIS (H₁): If probability value > t-statistic the hypothesis is not significance means ECB+FCCB+LIBOR influence foreign reserves.

INTERPRETATION: The above analysis of UNIT ROOT TEST with PHILLIPS- PERRON TEST on external borrowings outflow impact on Indian foreign reserves shows that during the 2007-2013 Indian foreign reserves got affected with the ECB and FCCB principal amount payment along with the interest payouts. R-squared is more than the 60 i.e., 82% which indicates the data modeling for the unit root test is stable .The probability value is more than the t-statistic value hence we reject the null hypothesis and accept the alternative hypothesis

FINDINGS:

1. With the analysis it has been observed that the rupee depreciation with the dollar affected the external borrowings in the form of ECB&FCCB during 2007-2013 by the Indian companies.
2. It has been observed during the 2007-2013 libor interest rates were going downside inspite of fund flows were shifted from other asset classes to the debt markets after recession periods.
3. Currency fluctuations with dollar did not influence for raising the capital to fccb as it had impacted ecb because funds got raised in various currencies instead of dollar.
4. It has been observed that the external borrowings inflow through fccb and ecb did not influence the foreign reserve growth during the 2007-2013.
5. It has been found through granger causality test that currency fluctuations didn't caused fccb and ecb flows and external borrowings did not caused foreign reserves during the analysis period.

6. Payments of the principal amount of fccb & ecb to the foreign investors got affected foreign reserves during 2007-2013, Phillips perron test has proved that the foreign reserves downfall got slightly fueled with ecb and fccb payout.

CONCLUSION: We conclude the analysis on AN IMPACT OF CURRENCY FLUCTUATIONS ON ECB/FCCB (INDIA) during the 2007-2013. It has been observed that rupee got depreciated in the past 6 years 29.7% and approximately 4490 companies have raised capital through ECB/FCCB. All the companies which opted this route for the external borrowings severely affected on payouts. When the companies have raised the capital externally, those flows not influence the rupee to get stronger with the dollar and these flows did not influence the foreign reserves to go upside but with the help of unit root test of PHILLIPS- PERRON analysis has been found that outflows of the ECB/FCCB payouts effecting the foreign reserves to go downside. Hence there is a further scope to do research to analyze the impact of ECB/FCCB payouts on Indian foreign reserves.

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