

What Drives Forward Premia in Indian Forex Market?

Anil Kumar Sharma and Anujit Mitra*

This paper explores the behaviour of the forward premia for US\$ *vis-à-vis* INR during the five-year period of September 2000 to September 2005. Indian forex market experienced a peculiar phenomenon in the years 2003 and 2004 where the forward premia on US\$ spot (cash) *vis-à-vis* Indian rupee became negative. This phenomenon was somewhat uncommon to Indian forex market wherein Indian rupee was always at discount to US\$ in the past. The paper tests hypothesis of uncovered interest rate parity in the context of Indian market. The paper also tries to find out the factors that drive the forward premia in the Indian forex market during this period. It is observed that forex premia of US\$ *vis-à-vis* Indian rupee is driven to a large extent by the interest rate differential in the inter bank market of the two economies combined with FII flows, current account balance as well as the changes in the exchange rate of US\$ *vis-à-vis* Indian rupees.

JEL Classification : G13, G15.

Keywords : Forward Premia, Uncovered Interest Rate Parity

Introduction

Indian forex market experienced a peculiar phenomenon in the years 2003 and 2004 where the forward premia on US dollar spot (cash) *vis-à-vis* Indian rupee became negative. This phenomenon was somewhat uncommon to the Indian forex market wherein Indian rupee has *always* been at discount to the US dollar in the past, in conformity with the theory

* Shri Anil Kumar Sharma is Director and Shri Anujit Mitra is Assistant Adviser in Operational Analysis Division of Department of Statistical Analysis & Computer Services (DESACS). The authors wish to thank Dr. Balwant Singh, Adviser, DESACS for his comments on the earlier version of the paper. An earlier version of the paper was also presented at the Eighth Money and Finance Conference at Indira Gandhi Development Research Institute (IGIDR) in March 2006. The views expressed in the paper are of the authors own and do not reflect the views of the organization to which they belong.

which says that currency of the country where inflation rate/interest rate is more than that of the other country, its currency should be at discount *vis-à-vis* other country's currency. However, years 2003 and 2004 experienced the Indian rupee gaining strength against US dollar despite of India having higher inflation rate / interest rate *vis-à-vis* US economy. This generates a question as to what drives forward premia in Indian forex market. This also raises question on how deep is the Indian forex market, especially the forward market.

The Indian rupee is still not fully convertible on capital account except for certain transactions carried out by foreign institutional investors, within certain limits, and liberalisation on Investment abroad by Indian Individuals/companies wherein they can freely convert their foreign currency/rupee assets into Indian/foreign currency assets by way of investment in Indian/foreign capital market. Recently, Indian companies have also been permitted to invest, up to 25 per cent of its net worth, in shares of foreign companies, having a minimum of 10 per cent of the share capital of a company listed in a recognized stock exchange in India. Mutual Funds are permitted to invest in ADRs/GDRs of the Indian companies, rated debt instruments and also invest in equity of overseas companies with an overall cap of USD 1 billion. Furthermore, under the Liberalised Remittance Scheme of USD 25,000, resident individuals are free to acquire and hold immovable property, shares or any other asset outside India without prior approval of RBI, enabling them to convert their rupee denominated assets into foreign currency denominated assets. These are steps closer to full convertibility of rupee. As all these measures do have an impact on exchange rate of rupee as well as forward premia of US dollar *vis-à-vis* Indian rupee, developments on these fronts are worth noticing for players active in the Indian forex market. Further, banks can hold both rupee as well as foreign currency deposits and can transmit their influence on interest rates as well as on forward premia.

However, with convertibility of Indian rupee on current account, India's increasing share in world exports (i.e. 0.84 per cent in 2004 as against only 0.52 per cent in 1990), liberalisation on investment abroad by Indian individuals and Indian companies, as well as almost full convertibility of Indian rupee as regard transactions carried out by non-resident Indians, exchange rate of Indian rupee is largely market

determined. Still the share of Indian rupee in the forex market was only 0.15 per cent of global turnover in the year 2004. This was even less in the earlier years, as indicated by the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity by Bank for International Settlements (refer Table 1). With the US dollar still dominating the invoicing pattern of India's exports, this paper concentrates on forward premia on US dollar *vis-à-vis* Indian rupee only. As the market decides forward premia in advance after taking into account all the information available in the market at that time it also raises question on whether Indian forex market satisfies the hypothesis of uncovered interest rate parity or not.

During the last twenty-five years, the majority of studies have rejected the hypothesis of uncovered interest rate parity, which states that the (nominal) expected return to speculation in the forward foreign exchange market conditioned on available information is zero. These empirical studies have regressed *ex post* rates of depreciation on a constant and the forward premium, and have rejected the null hypothesis that the slope coefficient is one. In particular, a robust result in these studies is that this slope is negative, and significantly different from one. This phenomenon is known as the "forward premium puzzle" and implies that, contrary to the theory, high domestic interest rates relative to those in the foreign country, predict a future appreciation of the home currency. Different explanations have been given to this issue. First, rejection of the null hypothesis can be related to the existence of a rational risk premium in the foreign exchange market. Second, other authors have claimed the existence of a "peso problem", or even the existence of irrational market participants.

To understand the behaviour of forward premia in respect of the Indian forex market, an exploratory analysis is carried out using data available in *Database on Indian Economy (culled out from Central Database Management System (CDBMS) of Reserve Bank of India's Data Warehouse)* and other data series available in Telerate. The paper tests the hypothesis of uncovered interest rate parity in the context of Indian market in Section I. Section II discusses the various theoretical explanations that are supposed to determine the forex premia in any market. The paper also tries to find out the factors that drive the forward premia in the Indian forex market in Section III. Section IV concludes the paper.

Section I

This paper has tried to test the UIP hypothesis, in the Indian context. Empirical work on the relation between the forward premia in the foreign exchange market to the expected change in the spot exchange rate has been an area of active research for the last twenty years. In particular, an important building block of this relationship has been the UIP, which states that the (nominal) expected return to speculation in the forward foreign exchange market conditioned on available information is zero:

$$E_t [s_{t+\delta t} - s_t] = f_t - s_t \quad (1)$$

where s_t is the logarithm of the spot exchange rate S_t , f_t is the logarithm of the forward rate F_t contracted at t and matures at $t + \delta t$. As a consequence, the (log) forward exchange rate is an unbiased predictor of the δt -periods ahead (log) spot exchange rate. For this reason, UIP is also known as “Unbiasedness Hypothesis”.

Although one main criticism made against UIP is that it pays no attention to issues of risk aversion and inter-temporal allocation of wealth, Hansen and Hodrick (1983) have given the following formulation, which is consistent with a model of rational maximising behaviour. The conditions needed are that the spot and forward exchange rates and the stochastic discount factor have a lognormal distribution with constant conditional second moments. This proposition is known as “Modified Unbiasedness Hypothesis” (Hodrick (1987), Engel (1996) and Wang and Jones (2002).

Assuming rational expectations (RE) in foreign exchange markets:

$$s_{t+\delta t} - s_t = E_t [s_{t+\delta t} - s_t] + \mu_{t+\delta t, \delta t} \quad (2)$$

where $\mu_{t+\delta t, \delta t}$ is a rational expectation error with zero mean and uncorrelated with any variable in the time t .

Combining equations (1) and (2)

$$s_{t+\delta t} - s_t = f_t - s_t + \mu_{t+\delta t, \delta t}$$

which has motivated the following OLS regression, as in Geweke and Feige (1979), as the usual starting point to test UIP:

$$s_{t+\delta t} - s_t = \beta_0 + \beta_1 (f_t - s_t) + \mu_{t+\delta t, \delta t} \quad (3)$$

as a test of $\beta_0 = 0$ and $\beta_1 = 1$.

However, the RE assumption implies that errors are not auto-correlated as long as the sampling interval is equal or larger than δ_t . For

this reason, different authors, as Frenkel (1977) among others, have sampled data to produce a data set with non-overlapping residuals with the corresponding waste of degrees of freedom.

On the other hand, Hansen and Hodrick (1980) showed how to use overlapping data in order to increase the sample size, which will be reflected in corresponding gains in the asymptotic power of tests. Using Hansen's Generalised Method of Moments, they obtain asymptotic standard errors that take into account the serial correlation induced into the regression error when the prediction horizon is higher than the sampling interval of the data. In the same way, standard errors robust to conditional heteroscedasticity can also be computed.

Nonetheless, some points with respect to the single equation approach have to be emphasised. First, the asymptotic covariance matrix is very sensitive to the selection of the bandwidth and the kernel chosen in its estimation. Secondly, the construction of the covariance matrix is infeasible if we want to use high-frequency data in order to test UIP, given that the degree of overlapping tends to infinity.

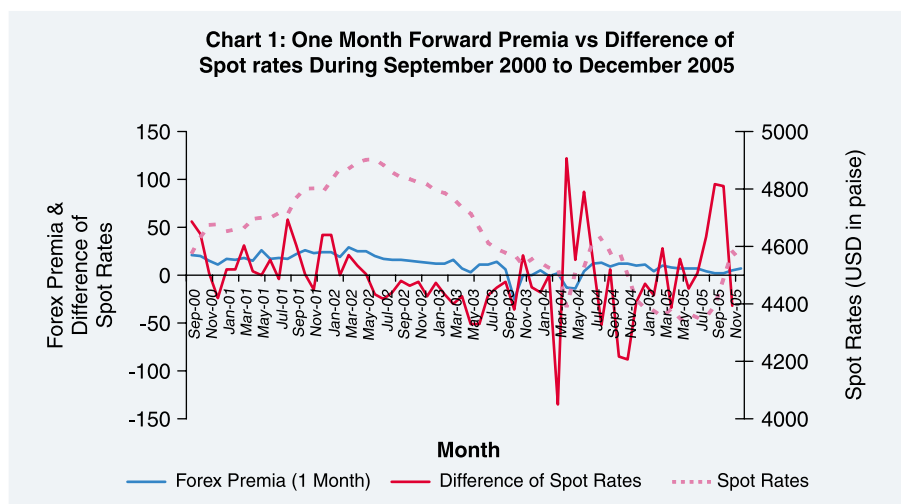
In order to test the UIP in the case of India, this paper has used monthly interval data on forward premia and exchange rate to avoid above-mentioned problems. Accordingly, let $s_{t+\delta t} = \log$ (spot exchange rate of US\$ *vis-à-vis* the Indian rupee at time $t+\delta t$), $\delta t = 1$ month $f_t = \log$ (one month forward exchange rate of US\$ *vis-à-vis* Indian rupee).

To test UIP for Indian forex market:

$$s_{t+\delta t} - s_t = \beta_0 + \beta_1 (f_t - s_t) + \mu_{t+\delta t, \delta t} \quad \text{using (3)}$$

If UIP holds good, i.e. $\beta_0 = 0$ and $\beta_1 = 1$, we estimate error terms and work out its variance-covariance matrix.

From Chart 1, it is clear that spot rate of Indian rupee *vis-à-vis* US dollar started appreciating in as early as June 2002, however, one month forward premia became negative for the first time only in October 2003. To smoothen the volatile movements of Indian rupee, RBI absorbed almost US \$ 10 billion from the market in November, December 2003 and January 2004 (refer Table 2). While carrying out regression as suggested in equation (3) above, it can be observed from the results presented below that UIP hypothesis do not hold good for Indian market as the slope coefficient is significantly different from one and is negative. The negative slope coefficient



means market is expecting a steady appreciation of Indian rupee *vis-à-vis* US dollar irrespective of the positive forward premia and in spite of higher domestic interest rate in Indian market as compared with US market. Further, the relationship with spot exchange rate and forward premia in Indian market is found to be very weak. This means future spot rate of US dollar *vis-à-vis* Indian rupee is driven by some other factors in addition to forward premia. Based on equations (1), (2) and (3) above with $\mu=0$ (i.e. assuming rational expectation) for the period September 2000 to December 2005, the regression equation in Indian context takes the following form

$$s_{t+\delta t} - s_t = 0.00005 - 0.0583 * (f_t - s_t)$$

(0.028) (- 0.102)

$R^2 = 0.0002$; t-statistic are give in parenthesis.

Question then arises is what does forward premia in Indian forex market represent and what factors are accounted for by the market players while determining the forward premia itself. The paper endeavoured to analyse these factors in Section II in general and in section III in respect of Indian forex market in particular.

Section II

Forward Market for foreign exchange is extremely important particularly for importers and exporters. This is so because international trade results in exposure in foreign currencies. Forward Market helps the traders in hedging the risks of this inevitable exposure in foreign currency. On the other side there are players in foreign exchange market who offer the forward rates for the foreign currency. A well-developed market helps in getting the better rates for the traders promoting international trade and consequently the general economic development.

Offering forward rates for any commodity always involve trying to forecast the future price of the commodity keeping in view the opportunity cost. It may require knowledge about how the price of the underlying product is determined in the market. One also needs to be aware about the factors influencing the price of the product. Countries are free to decide the type of exchange rate arrangements, which could be described to vary in different degrees from fixed to flexible exchange rate. It is practically impossible to strictly follow either a completely fixed or flexible exchange rate. International Monetary Fund publishes an annual report listing the different regimes followed by its member countries. There are many countries that are following 'pegged exchange rate' mechanism whereby their domestic currencies are fully pegged with some other major foreign currency like USD. Forecasting the exchange rate and thereby working out the forward rates for currencies following different regimes would be different.

From the perspective of the economists there are three classes of explanatory variables, *viz.*, price level, interest rates and the balance of payments to explain the behaviour of the exchange rate. The Purchasing Price Parity or PPP hypothesis tries to explain how the price levels affect the exchange rates. It says the relative exchange rate $S = kP/P^*$, where P is the price level in the domestic economy, P^* is that in the other country and k is a constant parameter. Taking differences after taking logarithms gives us $\Delta s = \Delta p - \Delta p^*$ giving us the idea how the forward rates could be influenced by the change in the level of prices in the two economies. However, it is noted that over a short or medium term, PPP hypothesis is conclusively rejected.

Though, it cannot be said that the price levels have no impact on exchange rate movement or the forward rates.

In the earlier section the paper has already talked about the influence of interest rates on the exchange rates. Both the major Interest Rate Parity hypotheses, *i.e.*, Covered Interest Rate Parity (CIP) and Uncovered Interest Rate Parity (UIP) have drawn lot of attention of the researchers, but UIP is more interesting in the context of this paper because it involves the variable, expected future spot rate, unlike CIP.

That the trade imbalances would have a bearing on the behaviour of exchange rates has been recognised very early. However, the earliest models to relate the current account to the exchange rate followed the Marshallian tradition of treating the exchange rate as a relative price to clear the market with the “elasticities approach”. The limitations of this approach led to the emergence of “absorption approach” in the 1950s. Among the series of subsequent models, the Mundell–Fleming model is most referred. The Mundell-Fleming Model adds a balance of payments equilibrium condition to the IS-LM Model. This extends the closed economy IS-LM framework to examine the interplay between monetary policy and exchange rate policy. In particular, the model emphasises the differences between fixed and floating exchange rates.

It is very apparent that the forward rate is supposed to be arrived at from the expectations on the future exchange rates, which is expected to get influenced by the sets of variables mentioned above as well as all of the “news”. This news could indicate change in the economic conditions or even political stability. The price of the crude oil in the international market is found to impact the forex market. The forward premia is particularly sensitive to any news having financial bearing and reacts or over-reacts instantly. Coming back to the Indian context where the exchange rate regime currently followed is *largely market determined*, the intervention by the regulator may also play important role at least over short to medium term. Over the years, internationally, the central banks are found to intervene through the Forward Market in conjunction with the spot market for making larger impact. In the next section the paper looks at the behaviour of forward premia on US dollar *vis-à-vis* Indian rupee.

Section III

As observed in Section I, UIP hypothesis does not hold good for the Indian market, as the slope coefficient is significantly different from one. Furthermore, there are other factors, which also influence the forward market in India. This section has tried to identify the factors that affect forward premia in Indian forex market, *i.e.*, “What drives forward premia in Indian forex market?”

- Is it inflation-differential?
- Is it interest-rate differential?
- Is it FII flows?
- Is it the current account balance in BoP?

To answer this question, an attempt is made to carry -out some exploratory exercise based on Forward Premia - annualized (INR *vis-à-vis* US\$), Inflation differential between Indian and US economy (*i.e.* WPI for India* – CPI for US economy) (Chart 2), Interest Rate differential between 91 Day Treasury Bills in India and US (Chart 3); Interest Rate differential between MIBOR - one month and LIBOR-one month (Chart 4), FIIs inflows and Current Account Balance (Chart 5).

Chart 2 indicates that forward premia has a *weak relationship* with Inflation-differential in US and Indian Economy.

Chart 3 indicates the relationship between 3 months forward premia (annualised) and interest rate differential in Government of India and the US T Bills is also *not strong*, though there is good co-movement some of the time. Hence the variable is considered for further analysis.

* In the case of India, a representative CPI is not available at present.

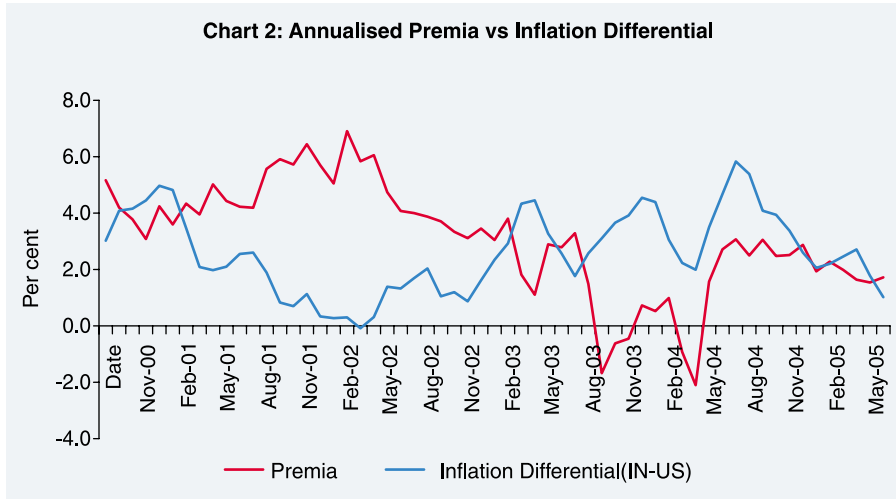
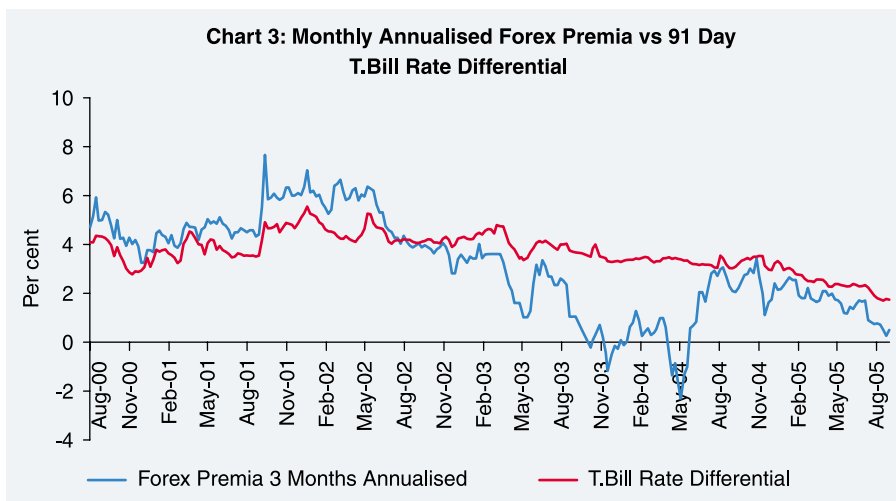
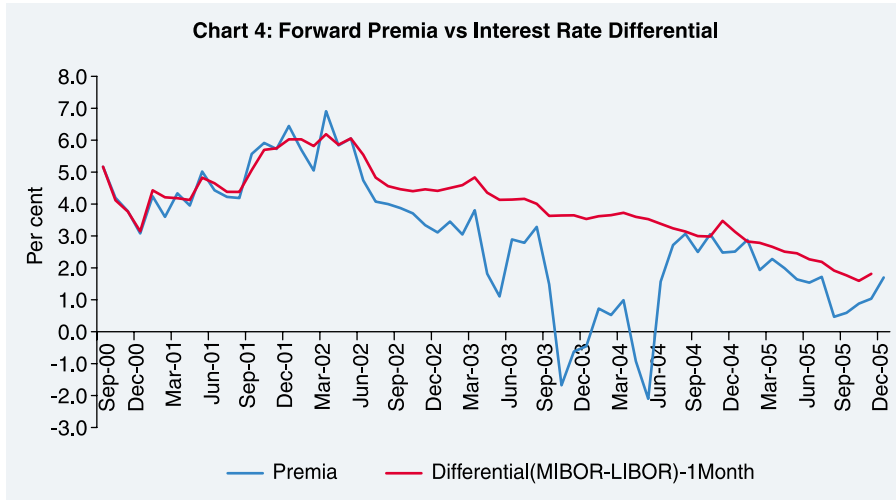


Chart 4 indicates that relationship between forward premia - 1 month (annualised) and interest rate differential between one month MIBOR and 1 month LIBOR, is stronger than the above two.

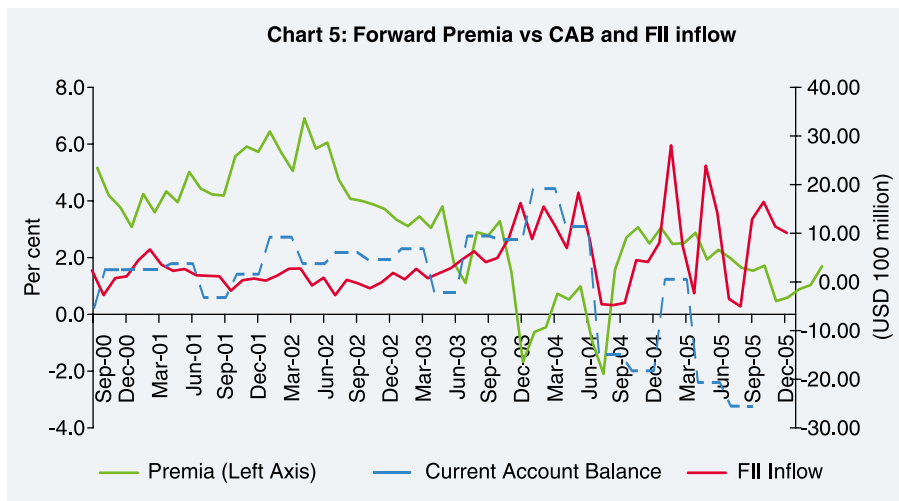
However, there are other factors (supply side as well as demand side), viz., fresh flows by Foreign Institutional Investors (FIIs) and current account balances play important roles in determining the forward premia as can be seen from the respective regression equation and its analysis given below. In Chart 5 below the premia is shown with the





current account balance (USD 100 million) and FII net investment (in USD 100 million).

Performing the regression of one month Forward Premia for USD *vis-à-vis* INR (Annualised) vs Inflation Differential, Interest Rate Differential (one month MIBOR – one month LIBOR), FII Portfolio Investment (net flows) and India’s current account balance (CAB) over the entire period Septemer 2000 to September 2005, it is observed that the coefficient for Inflation differential is not statistically significant, thereby prompting us to drop from final analysis. Since, the information



on current account balances is available to the market with a lag, introduction of lagged value of current account balance (1 quarter lag) showed improvement. Furthermore, balance of payments (BoP) current account quarterly balance is distributed equally for intervening months for regression analysis, due to non-availability of monthly CAB data. In this connection, instead of CAB, trade balance data, which is available on monthly frequency was also tried, but did not show good result.

Equation:

Forward Premia (Y) = f (Interest rate differential (IRD), Current Account Balance –lagged (CAB), FIIs Net flows (FIINF))

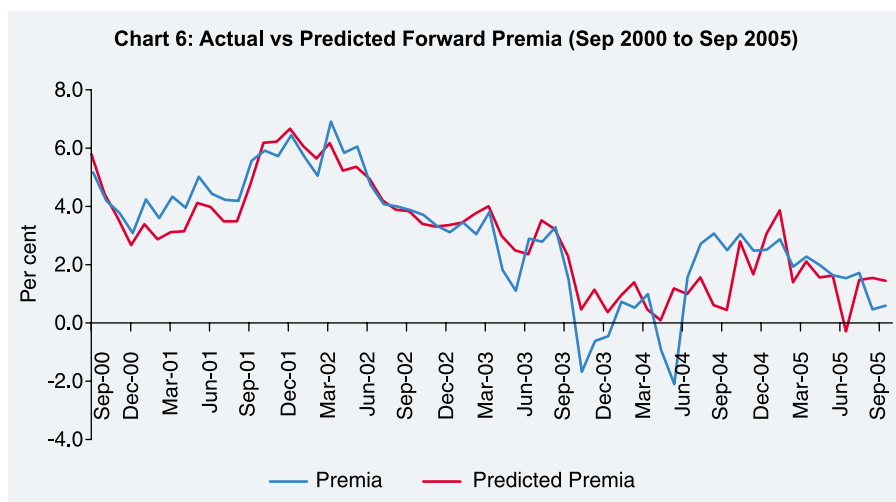
(Period : September 2000 to September 2005)

	Coefficients	Standard Error	t Stat	P-value
Intercept	-2.3166	0.5822	-3.9788	0.0002*
IRD	1.4393	0.1316	10.9339	0.0000*
CAB	-0.1039	0.0145	-7.1897	0.0000*
FIINF	-0.0917	0.0212	-4.3220	0.0001*

* : Significant at 5 per cent.

Regression Statistics	
R Square	0.7695
Adjusted R Square	0.7574
Standard Error	0.9870
Durbin-Watson D	1.084

Furthermore to check the influence of RBI intervention on forward premia, RBI's Intervention (Net Purchase of USD) has also been tried as regressor and it was found that the variable is not statistically significant indicating that RBI intervention in forex market does not make significant impact in determination of forward premia and it only helps in smoothing the volatility in forex premia. Similarly



inclusion of Trade Balance as regressor in place of Current Account Balance has not resulted in improvements.

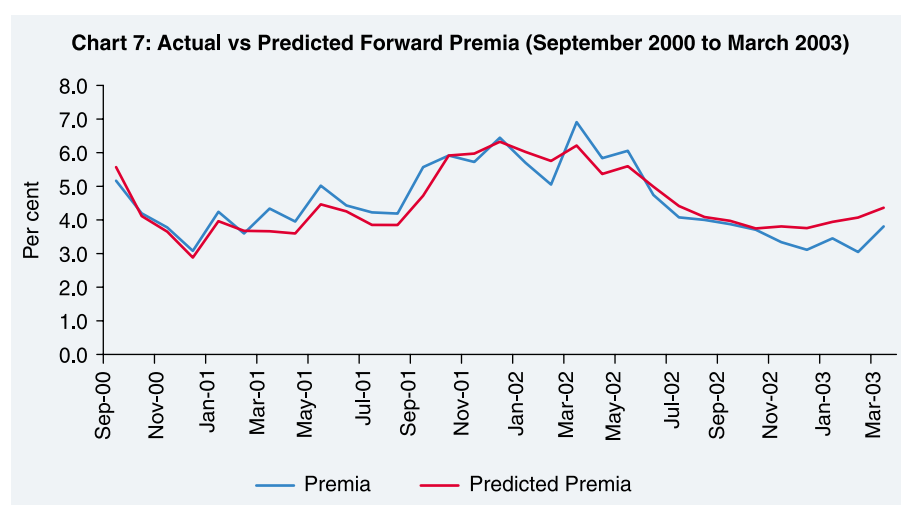
Though the regression above shows a reasonable fit with expected signs, in the actual and estimated premia plot in Chart 6 some change in pattern is observed over the period. This motivated breaking the period of observation into two parts, *i.e.*, September 2000 to March 2003 and April 2003 to September 2005 and explores the behaviour separately.

For the September 2000 to March 2003 period, the regression gives the following result:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-1.3441	0.5754	-2.3357	0.0272
IRD	1.2402	0.1164	10.6567	0.0000*
CAB	-0.0610	0.0198	-3.0746	0.0048*
FIINF	-0.0076	0.0452	-0.1678	0.8680*

* : Significant at 5 per cent

Regression Statistics	
R Square	0.8135
Adjusted R Square	0.7928
Standard Error	0.4800
Durbin - Watson D	0.980

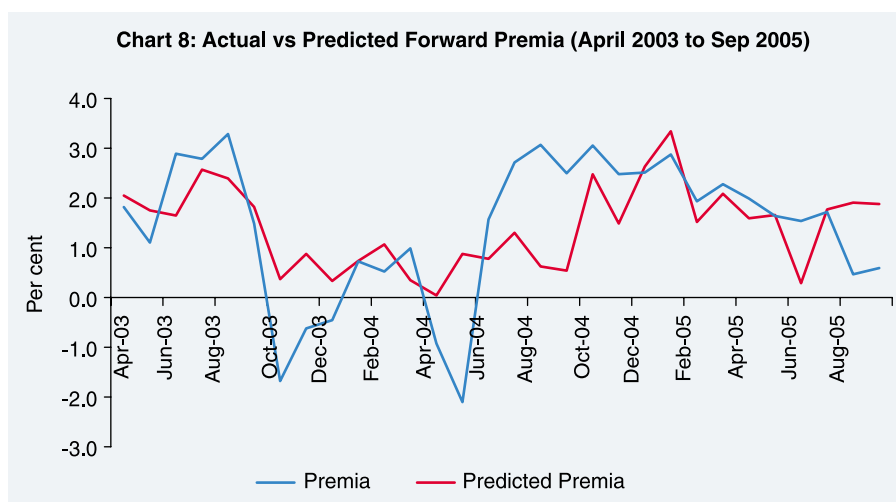


For the period April 2003 to September 2005 period, the regression gives the following result:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.5304	1.3627	-0.3892	0.7003
IRD	0.7686	0.4251	1.8081	0.0822*
CAB	-0.0842	0.0240	-3.5074	0.0017*
FIINF	-0.0682	0.0309	-2.2041	0.0366*

* : Significant at 5 per cent

Regression Statistics	
R Square	0.3324
Adjusted R Square	0.2554
Standard Error	1.2429
Durbin - Watson D	1.121

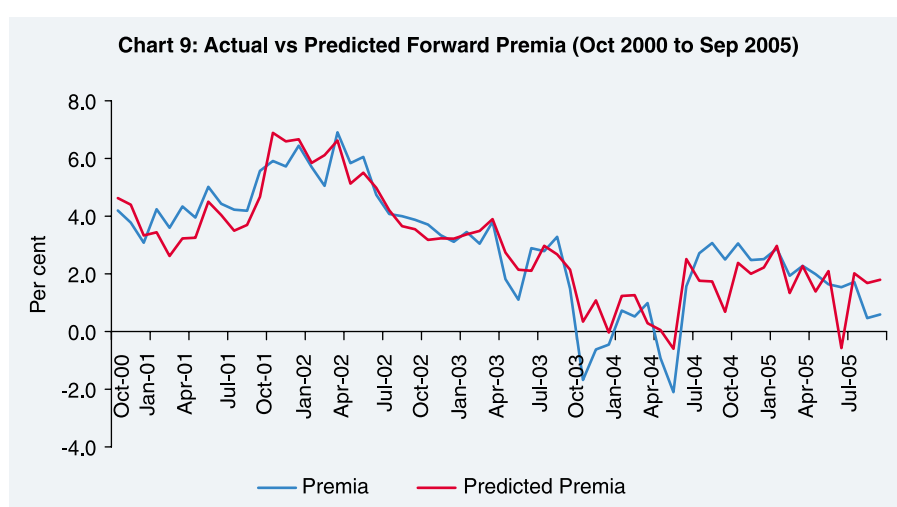


As observed there is a marked difference in the regression results in the two periods. Also, the Durbin Watson D statistics, for the regression run for the full study period, indicates the possible presence of first order autocorrelation. One way to deal with the autocorrelation is to include the lagged value of the dependent variable as a regressor. However, it is felt that the past forward premia might have less influence on the current forward premia compared to the observed change in the exchange rate in the immediately preceding period. It was indeed found out that introducing the lagged forward premia was not improving the regression. Therefore, another variable AOCER : Annualised observed change in exchange rate of USD vis-à-vis INR was introduced. This variable captures the immediate trend in the exchange rate. Further, this also goes well with self-fulfilling nature as observed during the times of volatility in any financial market. The regression results based on the four variables for the period of October 2000 to September 2005 are as follows:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-2.0894	0.5210	-4.0107	0.0002*
IRD	1.3955	0.1186	11.7658	0.0000*
CAB	-0.1109	0.0130	-8.5095	0.0000*
FIINF	-0.0889	0.0187	-4.7451	0.0000*
AOCER	0.0477	0.0113	4.2146	0.0001*

* : Significant at 5 per cent.

Regression Statistics	
R Square	0.8236
Adjusted R Square	0.8108
Standard Error	0.8702
Durbin-Watson D	1.144



It is observed that the incorporation of the exchange rate variable, i.e., AOCER has improved the fitness in terms of the Adjusted R Square (0.75 to 0.81) and other parameters. More importantly, it is observed that the fit is good uniformly and in particular much better in the second half of the study period, which experienced volatile movements in forward premia. It is also observed that the first order autocorrelation has come down though its presence cannot still be ruled out. This leaves further scope for exploratory analysis in this area especially in respect of Indian forex market, which is still emerging.

Section IV

Conclusion

In Section I, we have seen that the UIP hypothesis does not hold good for Indian market. It has been explored that individually no single factor is able to explain the behaviour of the forex premia in Indian

forex market. From the analysis carried out above, we could see that in specific time window one of the factors may have dominated in determining the movement of the forex premia. The paper has also explored the movement of the forex premia by dividing the study period in two parts and observed that in the first part (September 2000 to March 2003) of the study period the coefficient of the interest rate differential was much higher than the second part (April 2003 to September 2005). The role of foreign institutional investment in driving the forward premia is observed to be more dominant in second part than the first. This vindicates the perception that the premia is more and more being influenced by demand and supply factors rather than the interest rate differential in recent times. Though these two variables along with the interest rate differentials were able to explain the behavior of the premia in the first part of the study period, the relationships have weakened considerably in recent times.

In a longer time horizon, differential between interest rates (i.e. LIBOR-MIBOR differential) together with foreign institutional investment in Indian market, current account balance and the change in the observed Exchange rate are largely able to explain the behaviour of the forex premia in Indian forex market. The findings suggest that forex premia of US\$ *vis-à-vis* Indian rupee is driven to a large extent by the interest rate differential in the inter bank market of the two economies coupled with capital receipts and excess of current accounts payments on accounts of imports in relation to exports as well as the change in the exchange rate of USD *vis-à-vis* Indian rupees.

Table 1 : Currency distribution of reported foreign exchange market turnover¹

Percentage shares of average daily turnover in April

Currency	1989	1992	1995	1998	2001	2004
US dollar	90	82.0	83.3	87.3	90.3	88.7
Euro .....	.	.	.	.	37.6	37.2
Deutsche mark ₂	27	39.6	36.1	30.1	.	.
French franc.....	2	3.8	7.9	5.1	.	.
ECU and other EMS currencies.....	4	11.8	15.7	17.3	.	.
Japanese yen	27	23.4	24.1	20.2	22.7	20.3
Pound sterling.....	15	13.6	9.4	11.0	13.2	16.9
Swiss franc	10	8.4	7.3	7.1	6.1	6.1
Australian dollar	2	2.5	2.7	3.1	4.2	5.5
Canadian dollar.....	1	3.3	3.4	3.6	4.5	4.2
Swedish krona ₃ .....	...	1.3	0.6	0.4	2.6	2.3
Hong Kong dollar ₃.....	...	1.1	0.9	1.3	2.3	1.9
Norwegian krone ₃ .....	...	0.3	0.2	0.4	1.5	1.4
Korean won ₃ .....	...	...	...	0.2	0.8	1.2
Mexican peso ₃ .....	...	...	...	0.6	0.9	1.1
New Zealand dollar ₃.....	...	0.2	0.2	0.3	0.6	1.0
Singapore dollar ₃ .....	...	0.3	0.3	1.2	1.1	1.0
Danish krone ₃ .....	...	0.5	0.6	0.4	1.2	0.9
South African rand ₃.....	...	0.3	0.2	0.5	1.0	0.8
Polish zloty ₃ .....	...	...	...	0.1	0.5	0.4
Taiwan dollar ₃ .....	...	...	...	0.1	0.3	0.4
Indian rupee₃ .....	...	...	...	0.1	0.2	0.3
Brazilian real ₃.....	...	...	...	0.4	0.4	0.2
Czech koruna ₃ .....	...	...	...	0.3	0.2	0.2
Thai baht ₃ .....	...	...	...	0.2	0.2	0.2
Hungarian forint ₃ .....	...	...	...	0.0	0.0	0.2
Russian rouble ₃ .....	...	...	...	0.3	0.4	0.7
Chilean peso ₃ .....	...	...	...	0.1	0.2	0.1
Malaysian ringgit ₃.....	...	...	...	0.0	0.1	0.1
Other currencies	22	7.7	7.1	8.2	6.5	6.1
All currencies	200	200.0	200.0	200.0	200.0	200.0

1 Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%. The figures relate to reported "net-net" turnover, *i.e.*, they are adjusted for both local and cross-border double-counting, except for 1989 data, which are available only on a "gross-gross" basis.

2 Data for April 1989 exclude domestic trading involving the Deutsche mark in Germany.

3 For 1992-98, the data cover local home currency trading only.

Source : Triennial Central Bank Survey 2004, BIS

Table 2 : Reserve Bank's Sale and Purchase of USD (in Million)

Month	Sales in US Dollar	Purchase in US Dollar	Net in US Dollar
2000:09 (SEP)	1,015.1	728.0	-287.1
2000:10 (OCT)	1,004.5	510.5	-494.0
2000:11 (NOV)	4,392.5	8,078.6	3,686.1
2000:12 (DEC)	2,204.5	2,049.4	-155.1
2001:01 (JAN)	1,334.7	2,166.3	831.6
2001:02 (FEB)	456.5	1,080.4	623.9
2001:03 (MAR)	1,138.7	1,745.0	606.3
2001:04 (APR)	1,626.8	1,608.5	-18.3
2001:05 (MAY)	613.5	1,082.3	468.8
2001:06 (JUN)	1,169.2	1,205.5	36.3
2001:07 (JUL)	1,130.7	859.0	-271.7
2001:08 (AUG)	1,052.0	1,733.8	681.8
2001:09 (SEP)	2,326.1	1,432.0	-894.1
2001:10 (OCT)	1,043.4	1,280.8	237.3
2001:11 (NOV)	1,435.0	2,977.1	1,542.1
2001:12 (DEC)	1,341.2	2,381.6	1,040.4
2002:01 (JAN)	1,390.5	2,781.7	1,391.2
2002:02 (FEB)	1,202.5	1,769.3	566.8
2002:03 (MAR)	1,428.0	3,710.6	2,282.5
2002:04 (APR)	1,605.5	2,082.0	476.5
2002:05 (MAY)	1,146.5	1,232.5	86.0
2002:06 (JUN)	571.3	812.0	240.8
2002:07 (JUL)	685.0	2,514.1	1,829.1
2002:08 (AUG)	1,459.0	2,637.8	1,178.8
2002:09 (SEP)	1,956.4	2,921.5	965.1
2002:10 (OCT)	1,422.5	2,593.5	1,171.0
2002:11 (NOV)	972.0	3,086.5	2,114.5
2002:12 (DEC)	1,551.5	3,230.5	1,679.0
2003:01 (JAN)	1,046.0	2,830.5	1,784.5
2003:02 (FEB)	1,171.0	3,505.5	2,334.5
2003:03 (MAR)	1,339.1	3,188.5	1,849.4
2003:04 (APR)	1,511.0	2,942.5	1,431.5
2003:05 (MAY)	1,636.0	3,978.0	2,342.0
2003:06 (JUN)	982.1	1,878.5	896.4
2003:07 (JUL)	2,950.0	6,095.5	3,145.5
2003:08 (AUG)	1,360.0	3,711.5	2,351.5
2003:09 (SEP)	4,229.4	6,574.0	2,344.6
2003:10 (OCT)	5,227.7	6,821.0	1,593.3
2003:11 (NOV)	580.0	4,029.0	3,449.0
2003:12 (DEC)	484.4	3,372.5	2,888.1
2004:01 (JAN)	1,028.0	4,321.5	3,293.5
2004:02 (FEB)	2,163.0	5,519.5	3,356.5
2004:03 (MAR)	2,789.0	6,170.5	3,381.5
2004:04 (APR)	3,332.9	10,758.5	7,426.5
2004:05 (MAY)	3,439.5	3,219.5	-220.0
2004:06 (JUN)	1,383.0	969.5	-413.5
2004:07 (JUL)	1,179.5		-1,179.5
2004:08 (AUG)	880.5	5.0	-875.5
2004:09 (SEP)	124.0	143.0	19.0
2004:10 (OCT)	104.0	5.0	-99.0
2004:11 (NOV)		3,791.5	3,791.5
2004:12 (DEC)	108.2	1,501.5	1,393.3
2005:01 (JAN)			0
2005:02 (FEB)		4,974.0	4,974.0
2005:03 (MAR)		6,030.0	6,030.0
2005:04 (APR)			0
2005:05 (MAY)			0
2005:06 (JUN)	103.6		-103.6
2005:07 (JUL)		2,473.0	2,473.0
2005:08 (AUG)	451.0	2,003.0	1,552.0
2005:09 (SEP)			0
2005:10 (OCT)			0

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