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# THE FOURTH QUADRANT: DEEP THROUGH COLD WINTER, THANKFULLY RUPEE IS IN FOR A PLEASANT SUMMER, BUT CAN WE MOUNT INTERNATIONALISATION OF RUPEE THROUGH PAYMENT MECHANISMS SANS $?

Donald Rumsfeld, having the distinction of being both the youngest and the oldest defence secretary under two different administrations, famously quipped in 2012 about the decisive interplay among known knowns, known unknowns and unknown unknowns, with the later category supposedly holding the answers to an uncertain future through the course of history. However, an interesting add-on antithesis to Rumsfeld puzzle, as cognitive psychologists to market puritans would argue, remains the fourth quadrant of *unknown knowns*, predicting a somewhat known outcome based on seemingly unknown, as on date, hypotheses.

The current Ukraine-Russia conflict falls in the category of unknown known with crude prices going ballistic in the aftermath of war but now settling around $110/bbl, and supposed to decline further. Interestingly, in the merchant market (in both spot and forward segment) there was an excess demand of $30.4 billion during Apr'21– Jan'22 (till 14th). However, in the interbank market the trend is quite opposite and there has been excess supply of $11.6 billion in the same period (sans SWAP segment) and this must have increased significantly by now. Overall, merchant dollar demand was far higher than supply as they were already anticipating a stronger dollar and hence may have been holding to long position in dollars. This was being balanced by excess dollar supply in interbank market, but the net effect is a large demand of dollars at $18.8bn. We believe a large part of this demand was counter balanced in the offshore market, imparting stability to the dollar rupee movement. **However, with onset of global turbulence, the offshore market players have now also turned buyers of US$ and this would have further pushed the rupee lower. In this context, one known unknown that might be made clearly known known is publishing the data on offshore market rupee dollar transactions by RBI (currently not published) that would impart a lot of transparency and credibility in the market! By publishing the data, even with a lag, the RBI could actually move the market with it!**

Meanwhile, the RBI has been active in the foreign exchange market and actively propping up the rupee. Simultaneously, with foreign exchange intervention of the RBI now a part of inflation targeting, the rupee has largely remained devoid of serrated volatility. This has worked favourably with rupee having an appreciating bias that has helped to contain the imported inflation in check. Additionally, such interventions creating liquidity is now also being managed by swaps to delay the liquidity impact of intervention. Intervention operations to manage volatility in the exchange rate typically pose challenges for monetary policy independence by influencing the term structure of interest rates.

**In this context, we must mention that the RBI has also been using the Sell/Buy swap route effectively to provide liquidity, while smoothening the forward premia curve in the shorter tenor. An overwhelming proportion of net forward book of RBI (~47 bn out of 49 bn approx.) stands maturing between three months to one year and more longer tenor swaps, along the lines of what we saw on 8th March for $5 billion that received nearly thrice the bids, and it should help extend the maturity, easing the liquidity concern as well as be tenor antagonistic. With elevated crude oil prices, RBI's intervention in the FX market will reduce INR liquidity and hence does not require sterilisation operations through forwards. RBI may also choose to allow some forward positions to mature if INR depreciation continues. Driving out irrational market participants should anchor RBI's efforts to provide directions, sans much volatility.**

**RBI may look at intervening in the NDF market instead of the onshore market through banks during Indian time zone. This has the benefit of not impacting rupee liquidity. Also, majority of the USD buying in onshore market follows offshore market, either for view-based trades or arbitrage. Directly intervening in the NDF market will reverse the arbitrage.**

Dollar has gained strength against all EM currencies, including rupee, with Fed hinting in no uncertain terms its sticking the course for rate enhancements going forward, even as it battles inflation and unknots the balance sheet lest it inherits a balloon syndrome. **US inflation is now close to 8%, the highest since Jimmy Carter was the President. Crude is already in a precarious zone, though it has declined lately as there are signs of a thaw in the Ukraine and Russia conflict.** On the downside, crude sticking above $100 level for next few months along with hurtling commodity prices could be the Damocles sword for EMs.

USD/INR is a mean-reverting currency pair. Analysing the 6-month and 12-month moving average as the two means, the period since Financial crisis may be divided into seven time zones. Over the past few years, USD/INR has formed a bottom in between these two averages except few episodes to deviate due to stained global risk-off. **However, the good thing is that even assuming that the Russian-Ukraine conflict would drag on for now, we expect the USD/INR, the most tracked pair in local FX market, to trade in an elevated zone, but ideally, the FY23 average should not be higher than 76-78, with an appreciating bias.** During the global financial crisis, the rupee had continued to decline and lost around 13% during Jan'2008 to Jul'2011. However, in the post crisis period, the volatility had become significant (4.6%) and INR declined by 41% during Jul'2011 to Nov'2013. However, the recent episodes of rupee volatility has been much less and lower forex volatility in India (USD/INR volatility movement in the range of 1-2%) have diminished the depreciation risks, and hence we expect rupee not to be majorly impacted. **However as a matter of fact, one should not rule out episodic currents of volatility in local currency against the USD in case of further negative geopolitical surprises.**

**An interesting anecdote, the hegemony of US$ appears likely to continue in next few decades, notwithstanding the alternate settlement mechanism being envisaged** by select nations desirous of continuing inter-territorial trades of compulsory nature, circuiting around the western sanctions **as backdoor talks gather momentum for rupee-rouble or yuan-rouble settlements globally**, with some enthusiasts betting for gold settlements too! **This, however should present the moment of reckoning for the internationalisation of rupee too**, underpinning the need to evolve alternate payment and settlement mechanisms. **Let us grab the iron when it is hot!**

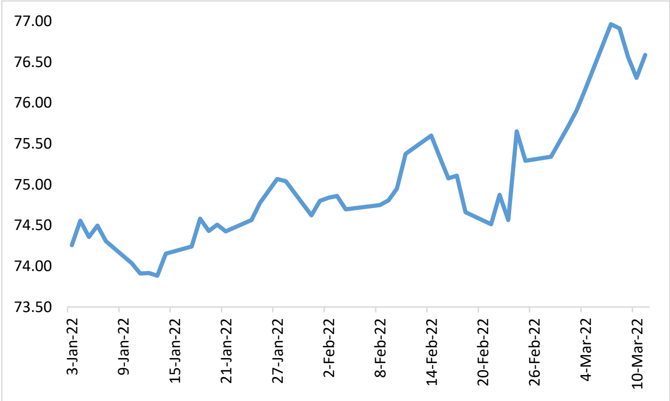
## RUPEE IS DEPRECIATING

- INR has been under significant pressure and has continued to trade under stress due to the geo-political tensions in the global markets and the half-hearted peace efforts between Russia and Ukraine yielding no results. With major western countries continuing imposing hard sanctions on Russia and the volatility prevailing in the markets and the possible impact of these sanctions will put pressure on the Indian currency. Experts point out that any escalation in the current situation will open targets post-77 levels for spot USD-INR pairs. The rupee will be weakened by the global background of risk aversion, the spike in Brent crude oil prices to heights above $120/bbl and the Fed's imminent policy tightening.

## FX INTERVENTION IN INFLATION TARGETING FRAMEWORK

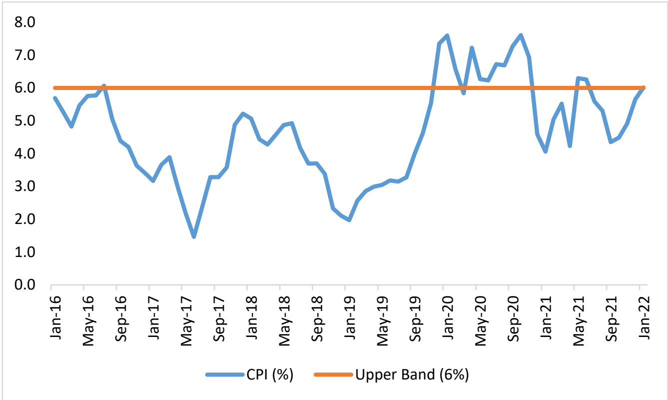
- After high inflation and crises in the 1990s, many emerging market economies (EMEs) has adopted inflation targeting (IT) as their monetary policy framework, catching up with the trend set by advanced economies. In India, too, we have seen this happening. The adoption of the flexible inflation targeting regime from 2016 mandates that no other variable is explicitly targeted besides inflation. The Monetary Policy Committee has been successful in achieving this objective and has focused predominately on controlling inflation by changes in the interest rate. CPI inflation crossed the upper band of 6.0% only in 14 instances since Jan'16 (out of 73, i.e. only 19%).
- However, the situation has changed drastically in last 2 years & the Covid-19 pandemic & recent Russia-Ukraine conflict have brought forward new policy dilemmas.
- In the past when growth was faltering it translated in depreciating rupee, which through the trade channel, helped the exports. A significant appreciating currency in times when growth is a priority, is not what the central bank looks for, as it would hamper exports growth and affect overall growth adversely. Thus, it has engaged itself in active forex market intervention to mostly impart a value to the rupee.
- In the current backdrop of low/slow growth and expected high inflation emanating from depreciating rupee a pertinent question arises regarding the role of intervention in inflation targeting framework in India? EMEs are embracing IT whole heartedly and bringing in innovations, including the happy marriage of foreign exchange interventions with IT frameworks.

**Rupee-Dollar Exchange Rate in 2022**



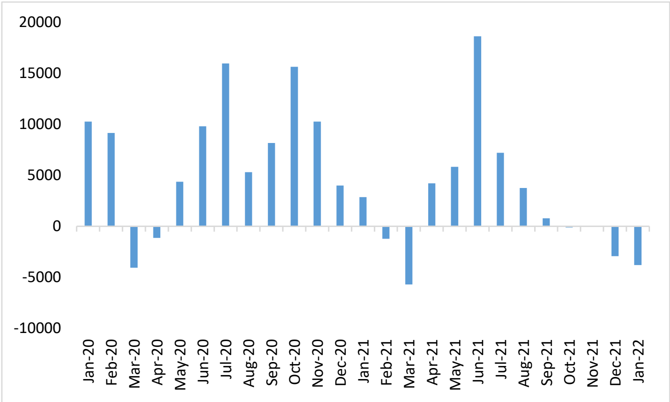

Source: SBI Research

**CPI inflation since Jan-16**




Source: SBI Research

**Net Purchase/ Sale of Foreign Currency (US$ Million)**



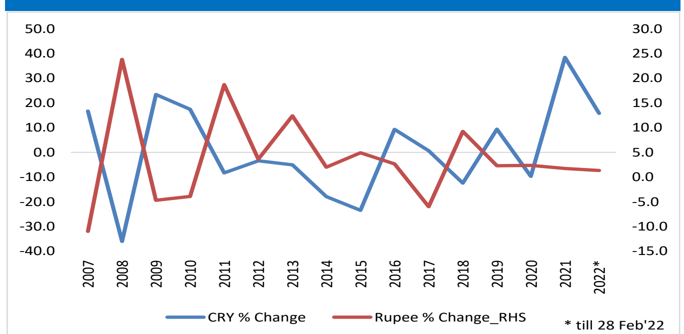

Source: SBI Research

- RBI had also been utilizing the Quarterly Projection Model (QPM), a forward-looking, open economy, calibrated, new-Keynesian gap model, incorporating specific characteristics of the Indian economy, which provided the basis for decisions under the FIT. Considering the changing dynamics, the model has been calibrated recently to include balance of payments and exchange rate interactions as well.
- So, the exchange rate component does get factored in implicitly. However, with the principle of one variable for one target, the MPC cannot explicitly target the exchange rate, while targeting interest rate as well.
- So what can RBI do? It can adopt the exchange rate anchored Inflation targeting, as referred to by Buffie et al (2018), who have shown in their analytical experiments that this type of targeting does indeed help to enhance the viability of forward-looking IT and could enhance credibility.
- The combination of two instruments (interest rates and sterilised intervention) to achieve two objectives (price stability and exchange rate stability) is consistent with Tinbergen's principle: the interest rate is adjusted to achieve the inflation target level, whereas foreign exchange market intervention aims to mitigate large, temporary deviations in the exchange rate from its medium-term equilibrium value, assuming that the central bank knows that value with some degree of certainty.
- This two-target, two-instrument regime is needed especially for developing countries who battle the burden of expectations much more severely than advanced nations. We should not forget that by March 2008, RBI had also entered into forward dollar purchase contracts worth $14.7 billion and as capital flows reversed, it turned into a net seller by the end of March 2009 to support the rupee.
- However, this is not devoid of risks. While unsterilised interventions can create surplus liquidity that can depress short-term interest rates to levels lower than the policy interest rate, sterilisation of surplus liquidity through open market operations (OMOs) can influence longer-term yields while the use of swaps to delay the liquidity impact of intervention could alter forward premia. Intervention operations to manage volatility in the exchange rate can thus pose challenges for monetary policy independence by influencing the term structure of interest rates.

## COMMODITY PRICES, INFLATION AND EXCHANGE RATE MANAGEMENT

- **Historical data shows that inflation increased significantly in India during November 2007-August 2008, despite the exchange rate appreciation during this period largely on account of increased inflows of foreign capital which should have benefitted inflation management through favourable pass-through effects**. Since August 2008, inflationary pressures subsided considerably even though the exchange rate depreciated. This might have enhanced the price competitiveness of Indian exports at a time when external demand was contracting, while the pass-through effects on domestic inflationary conditions should have worked towards moderating the rapid decline in prices.
- A prima facie observation of the trends in the behaviour of the nominal exchange rate and inflation may suggest that the exchange rate pass-through effects on prices were working in the opposite direction in relation to the expected normal behaviour. However, in view of the leads and lags in transmission of effects from exchange rate to inflation, as also the unprecedented volatility seen in the primary determinants of inflation during 2008-09, empirical evidence on pass-through has to be seen as a dynamic process.
- International commodity prices increased at a much faster rate than the rate of appreciation in the exchange rate during the first phase and, as a result, the net effect on inflation through import prices still remained positive and strong. Similarly, since August 2008, the decline in global commodity prices was much sharper than the exchange rate depreciation, causing the net effect on import costs to be negative and significant.

**Y-o-Y movement of Core commodity Index and Rupee (end**




Source: SBI Research

- If we look at the current situation, the weighted component of imported inflation has been rising as crude oil prices have increased. From $54.79 per barrel in Jan'21, crude oil Indian basket is at $84.76 in Jan'22, and the weighted average imported component has gone from 0.85 in Jan'21 to 1.03 in Jan'22, though it has declined from 1.56 in Oct'21.
- Meanwhile, rupee is also depreciating with the exchange rate down more than 3.8% in the last one year. With depreciating Rupee and increasing commodity prices, the inflationary impact has turned positive. Thus RBI has to be careful in its exchange rate management going forward.

## RUPEE VOLATILITY & WAY FORWARD

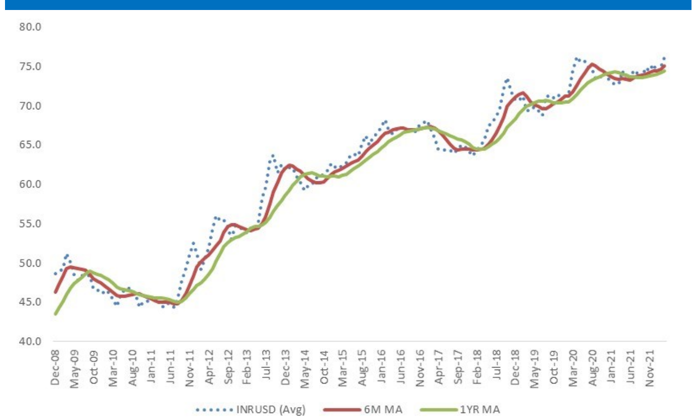
- The exchange rate of a country depends on many factors both domestic & global economic environment, shocks etc. To look at the movement of INR/USD in different periods, we divided it into 7-timezones based on the movements.
- During the global financial crisis, the rupee had continued to decline and lost around 13% during Jan'2008 to July 2011. However, in the post crisis period, the volatility had become significant (4.6%) and declined by 41% during July 2011 to Nov'2013. This has possibly created uncertainty for the long-term expected trend of the Rupee in the mind of borrowers. The 'Taper Tantrum' episode of summer 2013 (May- September) was an unexpected shock to USD/INR volatility.
- Subsequently, lower forex volatility in India (USD/INR volatility movement) in the range of 1-2% have diminished the depreciation risks, that impacted with a lag once the mandated hedging ratio was brought down.
- The dollar has surged against all emerging market currencies, including the rupee, as the US Fed has hinted that it will continue rising interest rates in March. The price of crude oil is rising globally as a result of the political crisis in Ukraine. The rupee is also being weighed down by this, with local exchange rate volatility increasing and continues to depreciate.
- USDINR is a mean-reverting currency pair. One way to express that mathematically is to take a deviation from the mean. In this case, we have taken the 6-month moving average and 12-month moving average as the two means. Over the past few years, USD/INR has formed a bottom in between these two averages except few episodes to deviate due to stained global risk-off.
- The gain in dollar may continue in the next few months but the volatility may be reduced in the next 6-months by following the mean-reverting method and may stay in the range of 76-78.

**Exchange rate regimes and Volatility of INR/USD Exchange rate**

| | Period | % Change (MoM) ^ | Mean | Volatility |
|---|---|---|---|---|
| Financial Crisis | Jan-08 to July-11 | 12.8 | 45.7 | 2.8 |
| Post Financial Crisis | July-11 to Nov-13 | 40.9 | 54.6 | 4.6 |
| Fed Taper | Nov-13 to Feb-16 | 9.0 | 62.9 | 2.4 |
| Better Domestic Activity | Feb-16 to Mar-18 | -4.6 | 65.8 | 1.4 |
| Pre-pandemic Period | Mar-18 to Feb-20 | 9.9 | 70.2 | 1.8 |
| COVID-19 Pandemic | Feb-20 to Jan-22 | 4.1 | 74.3 | 1.0 |
| Russia-Ukraine crisis | After Feb-22 | 2.4 | 75.6 | 0.9 |

Source: Bloomberg, ^ '-' : appreciation of Rupee

**6M & 1Yr Moving Average of USD/INR**

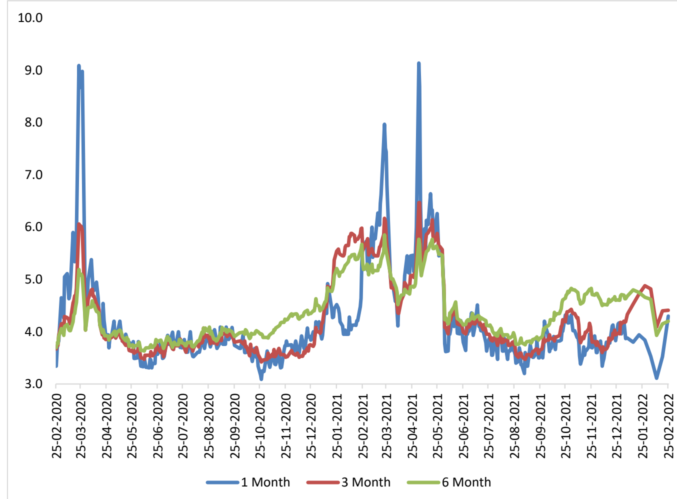



Source: SBI Research

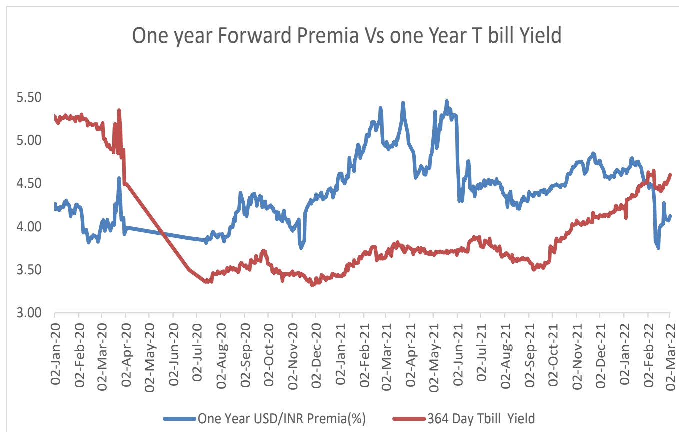
## RUPEE DEMAND SUPPLY

- Based on turnover figures published by RBI, in the forex market, with excess demand of USD in the merchant forwards continually outpacing the demand from merchant spot with excess/differential merchant demand amounting to only $3.8 billion during Apr-Oct'21 (cumulatively) later shooting up to $30.4 billion by mid-January with November being an aberration when spot demand turned positive which market participants attribute to fall in crude prices for a brief period then. Also, in the interbank market, there has been excess demand of dollars in the forwards, indicating appetite of market players seeking increased arbitrage in the shorter term with Interbank SWAP segment providing an evidence as levels spiked during the last few months.
- From December to January, collapsing premia in the forwards showed the likelihood of appreciation in the rupee, notwithstanding FPIs selling, as the country seemed rather insulated from the third wave of Omicron, and recovery being broad based with growth coming back on track as RBI gave ample signals to anchor the underlying supporting growth. The heightened geopolitical tensions though played a spoilsport with rates spiking off late. Interestingly, Uncovered Interest Parity (UIP) has never held on meaningfully in the Indian context.
- RBI has also been using the Sell/Buy swap route effectively to provide Fx liquidity, while smoothening the forward premia curve in the shorter tenor. An overwhelming proportion of net forward book of RBI (47 bn out of 49 bn approx.) stands maturing between three months to one year and more longer tenor swaps along the lines of what we saw on 8th March for $5 billion, should help extend the maturity easing the liquidity concern as well as tenor antagonistic. Data showed the central bank's long dollar positions in forwards stood at $73 billion as of end-March'21 from a short position of about USD 5 billion dollars a year ago (2020). Driving out irrational market participants while bringing discipline in genuine market participants should anchor RBI's efforts to provide directions, sans much volatility.

Interbank Forward Premia of USD




Source: SBI Research




Turnover in the foreign exchange market ($ mn)

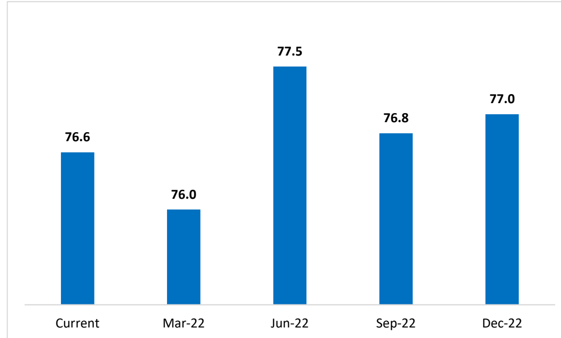
| Month | Merchant | | | Interbank | | | Grand Total | IB SWAP |
|---|---|---|---|---|---|---|---|---|
| | Forward Excess Demand | Spot Excess Demand | Total Excess Demand | Forward Excess Demand | Spot Excess Demand | Total Excess Demand | | |
| Jan-22* | 7,524 | -1,108 | 6,416 | -2135 | -3807 | -5,942 | 474 | -1,211 |
| Dec-21 | 8,406 | -1,467 | 6,939 | 5055 | -10793 | -5,738 | 1,201 | -29,091 |
| Nov-21 | 9,380 | 3,918 | 13,298 | -352 | -6967 | -7,319 | 5,979 | -38,875 |
| Oct-21 | 7,400 | -8,054 | -655 | 5016 | -8367 | -3,350 | -4,005 | -12,635 |
| Sep-21 | 7,684 | -5,575 | 2,109 | 2468 | -3853 | -1,385 | 724 | -29,125 |
| Aug-21 | 8,117 | -4,598 | 3,519 | -7174 | 1452 | -5,723 | -2,204 | -18,220 |
| Jul-21 | 2,900 | -8,546 | -5,647 | -421 | 4812 | 4,391 | -1,255 | 3,365 |
| Jun-21 | 6,579 | -5,396 | 1,183 | 3616 | 1529 | 5,145 | 6,327 | 19,120 |
| May-21 | 7,903 | -1,254 | 6,650 | 4008 | -3536 | 472 | 7,121 | 6,483 |
| Apr-21 | 717 | -4,092 | -3,375 | 10924 | -3107 | 7,817 | 4,442 | 10,087 |
| Mar-21 | 6,386 | -5,415 | 971 | 9881 | 128 | 10,009 | 10,980 | -4,810 |
| Feb-21 | -1,450 | -2,830 | -4,280 | 2922 | 9171 | 12,093 | 7,813 | 2,087 |
| Jan-21 | 6,695 | -8,014 | -1,319 | 4990 | 1383 | 6,373 | 5,054 | 19,714 |
| Dec-20 | 4,521 | -12,779 | -8,258 | 7610 | -929 | 6,680 | -1,578 | 9,029 |

Source: RBI, *Till 14 Jan 22

## RUPEE OUTLOOK

- The near-term outlook for Rupee remains challenging until geopolitical tensions moderate. With uncertainties being high, this could further dampen portfolio inflows, which have already been in reverse gear so far in 2022 (so far, outflows tantamount to $12 billion occurred). It is too early to anticipate how this conflict will evolve, but given the developments in the last few days, pressure on commodity prices will likely remain high.
- Once geopolitical tensions abate, the relative interest rate outlook between Fed and other central banks will again become a prominent driver for the FX market. For now, Fed is likely to start with a 25-bps hike in March and could continue with similar sized hikes despite higher inflationary pressures. While this is relatively negative for the USD, the prominence of geopolitical tensions will keep USD heavily bid for now.
- At historical lows of its lifetime, accentuated by supply side gluts forcing the world to stare at imported 'super inflation' with renewed concerns, no levels would ideally look too low for the rupee should the aftermath of the war peter out to colour ground realities, as Europe braces for the effect of galloping gas prices transcending in the wake of Russian embargo. US, on the other hand, seems better insulated in terms of its less dependency on imported gasoline.
- Assuming that the Russian-Ukraine conflict will slowly drag on for now, we expect the $/Rs at 77.5 by Jun-22 and 77.0 by Dec-22. As of now, the geopolitical situation is very volatile, and we cannot rule out significant depreciation in Rupee against the USD in case of further negative geopolitical surprises.

**Rupee Outlook**




Source: SBI Research

## OIL PRICE IMPACT ON MACRO INDICATORS

- Given the extreme volatile oil prices, we have taken various scenarios of oil price for next year and estimated their impact on CAD, Inflation and GDP.
- According to our calculations, every $10/ bbl. increase in Brent crude price will lead to increase in inflation by 20-25 bps, widen Current account deficit as % of GDP by 35 bps, increase fiscal deficit by 8 bps and lower GDP by 15-20 bps
- If average oil price rises to $100 per barrel in FY23, then GDP growth will come around 7.6% (down from 8% growth estimated earlier), inflation will rise to 5% (compared to 4.5% estimated earlier) and CAD would rise to $ 86.6 billion (2.5% of GDP)
- CAD could go upto 3.5% of GDP if oil prices averages to $130 billion. And in that case, inflation could reach 5.7% and GDP growth will reduce to 7.1%.

**SBI Estimates for impact of oil price hike**

| Scenarios | CAD | | | Inflation | | GDP | |
|---|---|---|---|---|---|---|---|
| | bps | Amount ($ bn) | % of GDP | bps | % | bps | Growth FY23 (%) |
| For every $10 per bbl increase | 35 | 13.8 | - | 20-25 | - | (-)15 to (-)20 | - |
| If average price is $90 in FY23 | 41 | 72.8 | 2.1 | 27 | 4.8 | -21 | 7.8 |
| If average price is $100 in FY23 | 76 | 86.6 | 2.5 | 49 | 5.0 | -38 | 7.6 |
| If average price is $110 in FY23 | 111 | 100.4 | 2.8 | 72 | 5.2 | -56 | 7.4 |
| If average price is $120 in FY23 | 146 | 114.2 | 3.2 | 94 | 5.4 | -73 | 7.3 |
| If average price is $130 in FY23 | 181 | 128.0 | 3.5 | 117 | 5.7 | -91 | 7.1 |

Source: SBI Research

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