

Swap with Embedded Option

This Product Disclosure Statement is in reference to RBI Circular dated 16.09.2021, Master Direction – Reserve Bank of India (Market-makers in OTC Derivatives) Directions, 2021.

This document contains standard information about the product which may enable the user to determine if the product will meet its risk management objective and to facilitate comparison with other products.

Features

Swap with Embedded Options is a combination of an INR-FCY swap and an option strategy to limit the risk of FCY appreciation.

- The swap agreement consists of swapping principal and/or interest payments on a loan in INR for principal and/or interest payments of a loan of equivalent value in foreign currency
- After the liability transformation, the swap will be embedded with an option structure to hedge against the risk of foreign currency appreciation

Swapping an existing INR liability to FCY liability provides a carry, which is advantageous for the user as it reduces the overall cost of INR liability. Embedded option within swap provides partial or full hedge on FCY appreciation by reducing the carry received from the swap. Along with the embedded option structure the carry on the swap becomes partially/fully independent of the negative currency move

Illustration:

For an underlying fixed interest rate liability in INR.

The underlying exposure for this product is an INR liability. User undertakes this transaction to convert the principal and coupon of this fixed interest rate INR liability to fixed interest rate EUR liability. By entering into this transaction, user would look to benefit from the coupon differential (derived from interest rate differential) between the INR and EUR cash flows.

However, user is exposed to risk of EUR appreciation from spot reference rate at the initiation of the swap. User can hedge this risk partially/fully by entering into option structure i.e. plain vanilla call option, call spread, range forward (only for bullet maturity structure).

All these option structure should be premium paying structure or zero cost structure. If tenor of the swap is more than 1 year, user may choose to defer the option premium instead of paying premium upfront (Deferring option cost is not allowed for range forward structure).

Building Blocks:

The building blocks of this option are as below:

- a. FCYINR Spot rate
- b. Overnight FCY rate curve
- c. Overnight SOFR rate curve
- d. Modified MIFOR curve
- e. USDINR Fx swap
- f. FCYUSD cross currency basis curve
- g. Tenor of the swap
- h. Time to expiry for option structure
- i. Implied volatility

Costs and fees, including break-up and details

The derivative cost consists of market cost which is determined through a financial model taking above building blocks as input parameters and the price is dependent on Bid/Offer spread of the FCYINR spot rate, overnight FCY rate curve, overnight SOFR rate curve, Modified MIFOR curve, USDINR Fx swap, FCYUSD cross currency basis curve rate, implied volatility; along with administrative costs, Capital charge and transaction handling charges.

An illustration of how the product works

Standalone swap Transaction:

User receives under the swap agreement: 9.00 % on outstanding INR notional

User pays under the swap agreement: 5.00% on outstanding EUR notional

Coupon settlement frequency: Quarterly

Tenure of swap: 2.5 yrs

Amortization: As per schedule given below

Option Structure: Buy call @ 89 and Sell call @ 93.50 for all delivery dates on notional equivalent to EUR (amortization + coupon) for respective maturity

Option premium, 2.40% p.a. on derived outstanding EUR notional matching to schedule of the underlying

Or

Option Premium: EUR 323,000 payable effective value cash/spot

Swap with embedded option structure:

1. If user wants to defer option premium:

User pays under the swap with embedded option agreement: 7.40% on outstanding EUR notional

| Start Date | End Date | Applicable INR Notional | INR Amortization on End date | INR coupon | Applicable EUR Notional | EUR Amortization on End date | Net EUR coupon |
|------------|----------|-------------------------|------------------------------|------------|-------------------------|------------------------------|----------------|
| 5-Apr-23 | 5-Jul-23 | 890,000,000 | 89,000,000 | 19,970,137 | 10,000,000 | 1,000,000 | 187,056 |
| 5-Jul-23 | 5-Oct-23 | 801,000,000 | 89,000,000 | 18,170,630 | 9,000,000 | 1,000,000 | 170,200 |
| 5-Oct-23 | 5-Jan-24 | 712,000,000 | 89,000,000 | 16,151,671 | 8,000,000 | 1,000,000 | 151,289 |
| 5-Jan-24 | 5-Apr-24 | 623,000,000 | 89,000,000 | 13,979,096 | 7,000,000 | 1,000,000 | 130,939 |
| 5-Apr-24 | 5-Jul-24 | 534,000,000 | 89,000,000 | 11,982,082 | 6,000,000 | 1,000,000 | 112,233 |
| 5-Jul-24 | 5-Oct-24 | 445,000,000 | 89,000,000 | 10,094,795 | 5,000,000 | 1,000,000 | 94,556 |
| 5-Oct-24 | 5-Jan-25 | 356,000,000 | 89,000,000 | 8,075,836 | 4,000,000 | 1,000,000 | 75,644 |
| 5-Jan-25 | 5-Apr-25 | 267,000,000 | 89,000,000 | 5,925,205 | 3,000,000 | 1,000,000 | 55,500 |
| 5-Apr-25 | 5-Jul-25 | 178,000,000 | 89,000,000 | 3,994,027 | 2,000,000 | 1,000,000 | 37,411 |
| 5-Jul-25 | 5-Oct-25 | 89,000,000 | 89,000,000 | 2,018,959 | 1,000,000 | 1,000,000 | 18,911 |

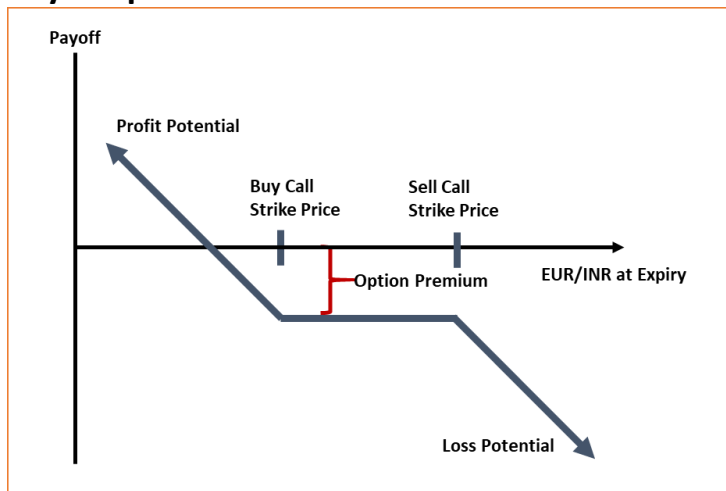
Or

2. If user wants to pay option premium upfront:

| Start Date | End Date | Applicable INR Notional | INR Amortization on End date | INR coupon | Applicable EUR Notional | EUR Amortization on End date | Net EUR coupon |
|------------|----------|-------------------------|------------------------------|------------|-------------------------|------------------------------|----------------|
| 5-Apr-23 | 5-Jul-23 | 890,000,000 | 89,000,000 | 19,970,137 | 10,000,000 | 1,000,000 | 126,389 |
| 5-Jul-23 | 5-Oct-23 | 801,000,000 | 89,000,000 | 18,170,630 | 9,000,000 | 1,000,000 | 115,000 |
| 5-Oct-23 | 5-Jan-24 | 712,000,000 | 89,000,000 | 16,151,671 | 8,000,000 | 1,000,000 | 102,222 |
| 5-Jan-24 | 5-Apr-24 | 623,000,000 | 89,000,000 | 13,979,096 | 7,000,000 | 1,000,000 | 88,472 |
| 5-Apr-24 | 5-Jul-24 | 534,000,000 | 89,000,000 | 11,982,082 | 6,000,000 | 1,000,000 | 75,833 |
| 5-Jul-24 | 5-Oct-24 | 445,000,000 | 89,000,000 | 10,094,795 | 5,000,000 | 1,000,000 | 63,889 |
| 5-Oct-24 | 5-Jan-25 | 356,000,000 | 89,000,000 | 8,075,836 | 4,000,000 | 1,000,000 | 51,111 |
| 5-Jan-25 | 5-Apr-25 | 267,000,000 | 89,000,000 | 5,925,205 | 3,000,000 | 1,000,000 | 37,500 |
| 5-Apr-25 | 5-Jul-25 | 178,000,000 | 89,000,000 | 3,994,027 | 2,000,000 | 1,000,000 | 25,278 |
| 5-Jul-25 | 5-Oct-25 | 89,000,000 | 89,000,000 | 2,018,959 | 1,000,000 | 1,000,000 | 12,778 |

User pays under the swap with embedded option agreement: 5.00% on outstanding EUR notional + INR 28,747,000 effective cash/spot

Pay-off profile:



Impact Analysis

1. If user wants to defer option premium:

| [EUR/INR] Average Level | Impact on Swap with embedded option (in INR mio) | Underlying Cashflow (in INR mio) | Total Cashflow (in INR mio) |
|----------------------------|--|--|--------------------------------|
| 76.00 | 161.80 | (1,000.36) | (838.56) |
| 80.00 | 117.66 | (1,000.36) | (882.70) |
| 84.00 | 73.53 | (1,000.36) | (926.83) |
| 89.00 | 18.36 | (1,000.36) | (982.00) |
| 91.00 | 18.36 | (1,000.36) | (982.00) |
| 93.50 | 18.36 | (1,000.36) | (982.00) |
| 96.00 | (9.22) | (1,000.36) | (1,009.59) |
| 100.00 | (53.36) | (1,000.36) | (1,053.72) |
| 104.00 | (97.49) | (1,000.36) | (1,097.86) |

2. If user wants to pay option premium upfront:

| [EUR/INR] Average Level | Impact on Swap with embedded option (in INR mio) | Underlying Cashflow (in INR mio) | Total Cashflow (in INR mio) |
|----------------------------|--|--|--------------------------------|
| 76.00 | 187.28 | (1,000.36) | (813.08) |
| 80.00 | 144.48 | (1,000.36) | (855.88) |
| 84.00 | 101.69 | (1,000.36) | (898.67) |
| 89.00 | 48.20 | (1,000.36) | (952.16) |
| 91.00 | 48.20 | (1,000.36) | (952.16) |
| 93.50 | 48.20 | (1,000.36) | (952.16) |
| 96.00 | 21.45 | (1,000.36) | (978.91) |
| 100.00 | (21.34) | (1,000.36) | (1,021.70) |
| 104.00 | (64.14) | (1,000.36) | (1,064.50) |

Note: In the above table, negative sign indicates cash outflow. Option payoff is excluding premium paid (if any)

Benefits

This product allows user to benefit from the coupon differential (derived from interest rate differential) between the INR and FCY cash flows along with mitigating negative currency move (partially or fully).

Risks

- a) The currency in which the debt is denominated depreciates beyond sell option strike price
- b) Option expiring without getting exercised, effectively increases cost compared to unhedged transaction on account of option premium paid
- c) Limited participation. Maximum gain from the structure will be if spot on the maturity is above sell call strike price
- d) Bid-offer spreads in case of unwind
- e) Basis risk
- f) Liquidity risk

The terms and conditions applicable for booking/termination will be guided by deal term sheet/sanction letter/ISDA document