

# A Review Report on Interest Rate Derivatives in India

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## ABSTRACT

After taking off with a bang, volumes in the Interest Rate Futures (IRF) market in India have slowed down. The financial crisis has also underscored the weaknesses in the OTC derivatives markets which need to be addressed for building a resilient financial system that is less prone to instabilities. But any corporate debt market suffers from an inherent interest rate risk—one of the most pervasive risks in any economy. The increasing importance of interest rate risk for the corporate sector in a deregulated interest rate environment is widely appreciated. A way to hedge against such a risk is to use an interest rate future. This paper seeks to examine if the current trend in interest rate derivatives trading is indeed worrisome; and if so, what could be the likely causes and the issues related to OTC traded interest rate derivatives in India.

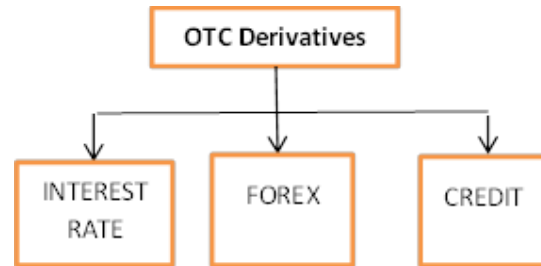
**Keywords:** Interest rate derivative, Interest rate futures, OTC trading, Interest rate risk.

## 1. INTRODUCTION

Conventionally, OTC derivative contracts are classified based on the underlying into (a) foreign exchange contracts, (b) interest rate contracts, (c) credit linked contracts, (d) equity linked contracts, and (e) commodity linked contracts. According to BIS semi-annual survey (2011), as at the end of 2011, the Interest rate contracts were the most important in terms of notional amount outstanding, accounting for about 77 per cent, followed by foreign exchange contracts (10 per cent) and credit default swaps (5 per cent). The equity linked contracts and commodity contracts were relatively insignificant together accounting for about 1 per cent of the gross notional amount. It may be added that the last two classes of contracts are absent in the domestic Indian OTC markets

## 2. STRUCTURE OF OTC MARKET

The structure of the OTC derivatives market (excluding equity and commodity linked derivatives) is broadly depicted below



## 3. INTEREST RATE DERIVATIVES IN INDIA

The Indian Financial System witnessed wide discussion on the usefulness of derivatives as instruments of risk management in the late 1990's. The origin of recent initiatives for development of derivative market in India can be traced to the L C Gupta Committee (set up by SEBI in November 1996). Though the Committee's main concern was equity based derivatives, it examined the need for financial derivatives in a broader perspective and recommended introduction of interest rate and currency derivatives. The emphasis was on introduction of exchange traded derivatives based on these underlying. It may be recalled that Tarapore Committee on capital account convertibility around the same time had also advocated introduction of currency futures.

Recognizing the need for interest rate derivatives in a deregulated interest rate regime, the RBI in 1999 permitted banks, primary dealers (PD) and financial institutions (FI) to undertake transactions in interest rate swaps and forward rate agreements.

A Forward Rate Agreement (FRA) is a financial contract between two parties to exchange interest payments for a 'notional principal' amount on settlement date, for a specified period from start date to maturity date. An Interest Rate Swap (IRS) is a combination of FRAs in which a fixed interest on a notional principal is exchanged for a floating interest rate equal to the reference rate at periodic intervals over the tenure of the contract. Globally, swaps are the dominant instrument among interest rate derivatives; according to the BIS semiannual survey 2011, swaps accounted for more than 78 per cent of all gross notional outstanding of all

single currency interest rate derivatives with FRAs and Options accounting for about 11 per cent each. As far as tenor wise activity is concerned, the swap and FRA segment is dominated by contracts with less than one year maturity (41 per cent) followed by 1-5 year (30 per cent) and 5-10 year (29 per cent) maturities.

In the Indian markets, four OTC interest rate products are traded, viz., Overnight Index Swap based on overnight MIBOR, a polled rate derived from the overnight unsecured inter-bank market, contracts based on MIFOR, contracts based on INBMK, and contracts based on MIOIS. A typical characteristic of the Indian interest rate market is that unlike in the overseas inter-bank funds markets, there is very little activity in tenors beyond overnight and as such there is no credible interest rate in segments other than overnight. Absence of a liquid 3-month or 6-month funds market has been a hindrance for trading in FRAs as also in swaps based on these benchmarks. Recent emergence of a deep and liquid CD market with significant secondary market trading may perhaps address some of these issues.

In terms of gross notional outstanding, the OIS based on overnight MIBOR is the most dominant product traded, accounting for about 90 per cent of the outstanding followed by MIFOR which accounts for nearly 10 per cent and the remaining two products almost insignificant.

As far as the regulatory regime is concerned, all scheduled commercial banks (SCBs) excluding Regional Rural Banks, primary dealers (PDs) and all-India financial institutions have been allowed to use IRS and FRA for their own balance sheet management as also for the purpose of market making. The non-financial corporations have been allowed to use IRS and FRA to hedge their balance sheet exposures, with a caveat that at least one of the parties in any IRS/FRA transaction should be a RBI regulated entity.

#### 4. RATIONALE BEHIND DEBT DERIVATIVES

In the fixed income markets, an investor is exposed to several kinds of risks. The most prominent of these risks is that arising out of changes in interest rates, which may affect the coupon receipts, capital gains/losses on the debt instrument and re-investment income. Debt derivatives such as forwards, futures, swaps and options can be used to hedge the risks arising out of variations in interest rates.

In India, Interest Rate Swaps (IRSs)/Forward Rate Agreements (FRAs) were introduced in June 1999 with a view to further deepening the money market as also to enable banks, PDs and FIs to hedge interest rate

risks. Currently, IRFs on the following underlying are available for trading in the F & O Segment of the NSE:

- Notional T – Bills
- Notional 10 year bonds (coupon bearing and non – coupon bearing)

Interest rate future (IRF) is a financial derivative based on an underlying security, a debt obligation that moves in value as interest rates change. Buying an interest rate futures contract will allow the buyer to lock in a future investment rate. When the interest rates scale up, the buyer will pay the seller of the futures contract an amount equal to the profit expected when investing at a higher rate against the rate mentioned in the futures contract. On the flip side when the interest rates go down, the seller will pay off the buyer for the poorer interest rate when the futures contract expires.

In other words, IRFs are an agreement to buy or sell an underlying debt security at a fixed price on a fixed day in the future, and the prices of these derivatives mirror the rise and fall in the yield of the underlying government bonds. Unlike overnight interest rate swaps, IRFs have to be traded on exchanges rather than over the counter.

IRFs account for the largest volume among financial derivatives traded on exchanges worldwide. For financial markets in India, IRFs present a much needed opportunity for hedging and risk management by a wide range of institutions and intermediaries, including banks, primary dealers, corporates, foreign institutional investors, retail investors etc.

#### 2003 INITIATIVE IN INDIA

As a part of the process to make Indian financial market more robust, the finance ministry and regulators like Reserve Bank of India introduced some new financial products between 2000 and 2005. Introduction of Interest Rate Futures in 2003, which allowed participants to take a call on the future movement of interest rates as a hedging tool, was once such move.

The Securities and Exchange Board of India (SEBI) group on Secondary Market Risk Management first discussed the introduction of interest rate derivatives in India at its meeting on March 12, 2003 and then the NSE first launched 10-year bond futures in June 2003. According to the RBI, it was necessary to supplement the OTC market for interest rate products by an active exchange-traded derivative market. However the initiative turned out to be a failure-in less than three months after the launch, trading in bond futures literally stopped. Among other factors, restrictions on short selling and requiring financial institutions to use derivatives only for hedging purposes could account for the inactivity of the product. In other words, the

absence of speculators may have robbed the market off badly needed liquidity.

## 5. 2009 INITIATIVE

As the market for interest rate futures failed to pick up and almost vanished, it was reintroduced in August 2009 to allow participants to buy protection against and bet on interest rates changes. Trading in interest rate futures on 91 day Treasury Bills began on August 31, 2009, clocking trading volumes of Rs 276 crore on the first day of trade. The SEBI and the Reserve Bank of India have limited the maturity of IRF contracts between a minimum of three months and a maximum of 12 months. While the maximum tenor of the futures contract is 1 year or 12 months, usually it would have to be rolled over in three months making the contract cycle span over four fixed quarterly contracts.

This time around banks have been allowed to hedge interest rate risks as well as take bets on the rate trajectory. Also, foreign institutional investors have been given access to the market. This apart, a company, or a non-resident Indian or a retail investor is also eligible to trade in the IRFs market. Under normal circumstances, the weighted average price of the futures contract for the final 30 minutes would be taken as the daily settlement or closing price. Usually, the daily settlement is done on a daily marked-to-market procedural basis while the final settlement would be through physical delivery of securities. In the absence of last half an hour trading the price as determined by the exchange would be considered as daily settlement price.

The following are the advantages of this initiative:

- Interest rate futures on 91-day Treasury bill can be used for hedging against volatile interest rates.
- They are cash-settled, as a result, investors can trade without the worry of being saddled with illiquid contacts, which could have been the case if the contracts were physically settled.
- No securities transaction tax (STT) is levied.
- Low margins required as compared to trading in equities and equity derivatives.
- The new product would be traded in the currency segment of the exchange so there is no requirement of any new formalities of a new account.

Some of the salient features of exchange traded IRFs are:

- Increased market reach enables higher liquidity.
- Exchange platform ensures protection against counterparty default risk.
- Greater transparency due to automated anonymous order matching system and settlement.

- Delivery of underlying asset is possible on exchange platform.
- Large number of informed participants can trade using online electronic trading systems leading to efficient price discovery.

However the 2009 initiative failed to click as well. The average daily trading turnover on NSE fell from Rs 77.5 crore in September 2009 to Rs 6 crore in January 2010. By February 2010, the average trading value dropped to a piffling Rs 3.02 crore. Since then NSE has been registering almost nil volumes for many months now. Trading in IRFs has thus slowed to a trickle as initial enthusiasm has been replaced by worries about the limited variety of players in the market and fears that the dice are loaded in favor of sellers. Bankers have said that one problem is that the underlying bonds are illiquid. In a bid to ease concerns over delivery obligations, in December 2009, SEBI allowed exchanges to set any period of time during the delivery month as the delivery period for the securities.

It was found that the product itself is defective because only the seller gains as he has the discretion of delivering either liquid or illiquid securities. Moreover, developed markets where IRFs have already taken off allow short selling and provide a good repo market. In India, short selling is not allowed beyond five days, and the repo market is not adequately developed. As a result there are mostly people who want to sell the futures and buy bonds on spot thereby creating a situation wherein everyone sits on one side of the market.

To alleviate some of these concerns, Life Insurance Corp. of India, India's largest insurer, and Central Bank of India in December decided to purchase government bonds from members who desire to liquidate the securities received against their interest rate derivative obligations.

The another underlying problem was that the three months' tenor for the underlying asset (91-day T-bills) is too short to base an interest rate futures product on. Interest rate futures seem to be on a deathbed due to complete lack of interest among the participants. In fact, in some of the trading days the volume has been as low as Rs 9 lakh. Lack of awareness among the Indian financial institutions is another major reason while the foreign financial institutions find the Indian market too small and the size of the deals tiny.

The third reason is the lack of depth because only two government securities have been introduced for future options while large number of other government bonds and corporate bonds are still out of the purview of interest rate futures. Moreover, according to market players, the prime reason for the failure of this segment is that banks are staying away from it. While the over-the-counter (OTC) market sees huge participation from

foreign and private sector banks, the exchange platform has not been able to attract the same players. In order to revive this promising financial product and to make it robust, a long term planning is required. We need to create much more awareness on the efficacy of interest rate future as a hedging tool against interest rate volatility, and there should be many more securities.

## 6. 2011 INITIATIVE

In 2011, SEBI decided to introduce new products in the sagging interest rate futures segment such as derivatives based on shorter-tenure bonds that can be cash-settled.

On Dec 30, 2011, RBI and SEBI decided to introduce IRFs on notional 2-year and 5-year coupon bearing Government of India securities. The 2-year and 5-year IRF contracts shall be cash-settled and the final settlement price shall be based on the yields of the basket of securities underlying each Interest Rate Futures contract specified by the respective stock exchange. Shorter duration products that can be settled in cash are expected to attract market players.

The industry has been asking for such products and the policymakers are hoping that it will provide new life to the IRF segment. However according to skeptics, the market has totally shunned these instruments and the current environment does not guarantee any success for the new products either. No one is willing to bet on rates on account of high inflation and high borrowing.

### 2014 initiative

India launched trading of government bond futures as part of efforts to deepen its financial markets. These interest rate futures would help banks and financial firms in Asia's third-largest economy assess expectations for borrowing costs and hedge the risks of rate changes to their bond portfolios. It would also provide the country's policymakers with a valuable gauge to measure market expectations for their future rate decisions. Getting the structure right is critical for the central bank, which failed in two previous attempts in 2003 and 2009 because of what market participants have said were faulty designs. IRFs seem to have already caught the fancy of investors as exchanges recorded a turnover of close to Rs 9,000 crore in the first week of trading of the product.

## 7. CONCLUSION

Although India has active derivatives markets in currencies and equities, it has struggled to develop liquidity in debt derivatives, depriving banks and other financial firms of a hedging opportunity. Banks, insurers, primary dealers and provident funds own about 90 percent of Indian government bonds. India has a vibrant exchange-traded equities derivatives market,

with turnover about 14 times that of cash markets, reflecting the potential demand for interest rate derivatives.

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