NSE

Interest Rate Derivative

Interest Rate Derivative

- Interest Rate Derivative (IRD) is a financial contract whose value is based on one or more interest rates, prices of interest rate instruments, or interest rate indices.

- IRD is one of the largest derivative market in the world and includes interest rate futures (NSE Bond Futures), Interest Rate Options (IROs), Interest Rate Swaps (IRS), Swaptions, and Forward Rate Agreements (FRA).

- IRD are traded both on OTC and Exchange traded markets in India, with both IRF and IRO widely traded on the NSE.

- IRDs are often used to hedge against changes in interest rates or for trading based on interest rate movements.

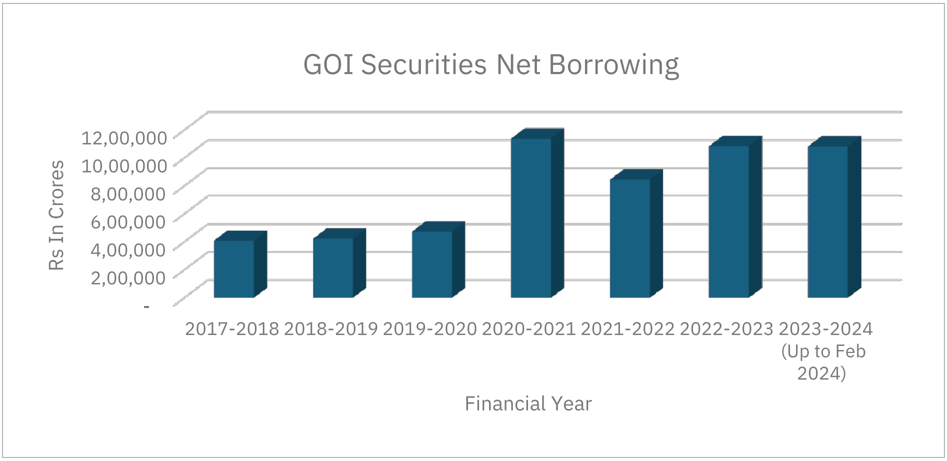
- Includes-IRF, IRO, IRS and FRAa; IRFs and IROs permitted to be traded on the Exchanges in India while others are available in the OTC segment.

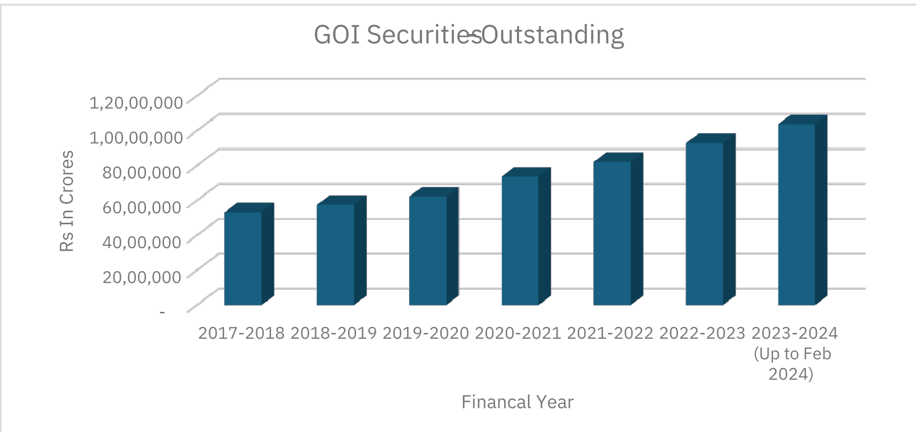
Below products all provide ways to hedge interest rate risk, with different products being appropriate for different scenarios:

Interest Rate Options	It is a financial derivative that allows the holder to benefit from changes in interest rates
Interest Rate Futures	It is similar to a forward contract however more standardized and less risky due to the presence of an intermediary.
Forward Rate Agreement	It is a cash-settled OTC contract between lender and borrower who lock in an interest rate for a stated period of time at an agreed date in the future.
Interest Rate Swaps	Restricted to the bank and institutional segment. Dominated by foreign and private sector banks
Floating Rate Bonds	Lesser supply and not easily accessible to the non-institutional segment

Interest Rate Derivatives in India – New Prospects

Interest rates are linked to a variety of economic conditions. They can change rapidly, influencing investments and debt obligations. In a market environment, where long term debt issuance by the government is increasing and the demand for it is growing, there is a strong need for a cost efficient hedging instrument against interest rate risk.





Interest rate risk is caused by fluctuations in interest rates. Such uncertainty accompanied by volatility increases risk and requires tools to manage risks. The volatility of interest rates has increased manifold in the last couple of years.

Interest Rate Derivatives on Government of India Securities.

Product Specifications

Instrument Name	Interest Rate Futures		
Attributes	6 Year	10 Year	13 Year
Underlying	GOI Securities with 4-8 years of residual maturity	GOI Securities with 8-11 years of residual maturity	GOI Securities with 11-15 years of residual maturity
Symbol	The symbol shall denote coupon, type of bond and maturity year. Example – 7.72% Central Government Security maturing on May 25, 2025, shall be denoted as 772GS2025		
Instrument Type	FUTIRC		
Unit of Trading	1 Lot - (1 lot is equal to 2000 bonds with notional bonds of FV Rs.0.2 million or 2 Lakhs)		
Quotation	Price based (derived from underlying Clean Price)		
Contract Value	1 Contract shall be equal to Quoted price * 2000		
Trading Cycle	Three serial monthly contracts & three-quarter end contracts (Mar, Jun, Sep & Dec)		
Expiry Day	Last Thursday of the month. In case the last Thursday is a trading holiday, the previous trading day shall be the expiry / last trading day.		
Base Price	Theoretical price on the 1st day of the contract. On all other days, Daily Settlement Price of the contract		
Price operating range	+/- 3% of the base price. (Whenever a trade in any contract is executed at the highest/lowest price of the band, Exchange may expand the price band for that		
	contract by 0.5% in that direction after 30 minutes after taking into account market trend. Price band may be relaxed only 2 times during the day)		
Exchange Level Overall Position Limit	Overall open interest in IRF contracts on each underlying shall not exceed 25% of the outstanding of underlying bond.		
Initial Margin	SPAN Based Margin (Min 1.5%)		
Extreme loss margin	0.5% of the value of the gross open positions		
Daily Settlement	Daily MTM settlement on T+1 in cash based on daily settlement price		
Daily Settlement Price	Volume Weighted Average Futures Price of last half an hour or Theoretical Price		
Final Settlement	Final settlement on T+1 day in cash based on final settlement price		
Final Settlement Price	Weighted average price of the underlying bond based on the prices during the last two hours of the trading on NDS-OM. If less than 5 trades are executed in the underlying bond during the last two hours of trading, then FIMMDA price shall be used for final settlement		
Spread Trading	Facility for spread trading. Margin Rs. 1500 for a one month spread, Rs.1800 for two months and Rs. 2100 for three months spread and Rs. 3000 for greater than 3 month spread.		

Instrument Name	Interest Rate Options
Underlying	Government of India Security
Option Type	Premium style European Call & Put Options
Market type	N
Instrument type	OPTIRC
Contract Size	Rs. 2 lakhs face value of GOI securities equivalent to 2000 units. Members shall place orders in terms of number of lots.
Quotation	The premium for options contract shall be quoted in Indian Rupees.
Tick size	Rs. 0.0025
Contract cycle	Three Serial monthly contracts followed by three quarterly contracts of the cycle March/June/September/December
Strike Price Intervals	Rs. 0.25
No. of Strikes	Minimum Eight in-the-money, Eight out-of the-money and one near-the-money strikes shall be provided for all available contracts.
Normal Trading Hours	9.00 am to 5.00 pm (Monday to Friday) The trading hours shall be aligned with that of underlying market in case of change of trading hours of underlying NDS-OM platform.
Quantity freeze	Quantity Freeze for OPTIRC contracts shall be 1251lots or greater
Last trading day	Last Thursday of the month. In case the last Thursday is a trading holiday, the previous trading day shall be the expiry/last trading day
Final settlement price	Volume weighted average price of the underlying bond based on the prices during the last two hours of the trading on NDS-OM. If less than 5 trades are executed in the underlying bond during the last two hours of trading, then FBIL price shall be used for final settlement
Daily settlement	Daily premium settlement on T+1 in cash
Final Settlement	Exercise settlement on T+1 day in cash based on final settlement price

Position Limits

CATEGORY	POSITION LIMITS FOR 8-11 YEAR BUCKET
Trading members, institutions in Category I and II FPIs (i.e. other than individuals, family offices and companies), banks and Primary Dealers, Mutual Funds (at AMC level), Insurance Companies, Pension Funds and Housing Finance companies	10% of Open Interest or INR 1,200 crore whichever is higher
Non-institutions in Category II FPIs (i.e. individuals, family offices and companies), Mutual Fund (Scheme level) and other clients	3% of Open Interest or INR 400 crore whichever is higher
Exchange Level Overall Position Limits	INR 25,000 crore or 25% of the outstanding of underlying security whichever is higher.

Eligibility for Trading

The Members registered by SEBI for trading in Currency Derivatives Segment shall be eligible to trade in NSE Bond Futures.

Trading and Settlement Process in the IRD Segment

The Members registered by SEBI for trading in Currency Derivatives Segment are eligible for trading in Interest Rate Futures and Interest Rate Options. The clearing and settlement is be done by NSE Clearing and all open positions are cash settled on the contract expiry day. The positions in the futures contracts for each member are marked to market to the daily settlement price of the futures contracts at the end of each trade day. On the expiry date of the futures contracts, NSE Clearing marks all positions to the final settlement price and the resulting profit / loss is settled in cash.

Associated Risks and Risk Management Framework

IRDs carry similar risks as derivatives or futures trading, that are inherently risky and require participants (especially brokers) to be familiar with these risks and also be skilled to manage these risks. One of the key risks associated with IRD rading comes from leverage, which is managed by the Exchange Clearing Corporation's margining framework which covers member capital requirements via initial margins, extreme loss margins, calendar spread margins and special margins in case of unusual positions. The Exchange's monitoring system generates alerts whenever Clearing/ Trading members reach the margin limits as may be set up by NSE Clearing from time to time, in accordance with SEBI guidelines.

The other key risk is liquidity risk, wherein the level of liquidity in an IRD contract can impact ability or costs associated with exiting illiquid contracts. NSE Clearing acts as legal counter-party to all deals on Interest Rate Futures contract and guarantees settlement.

In case of any dispute, NSE also provides investor grievance redressal and arbitration mechanism operative from its key offices across Delhi, Mumbai, Kolkata and Chennai.

For detail framework please refer to
https://www.nseindia.com/products-services/interest-rate-derivatives-clearing-settlement

Advantages of Interest Rate Derivatives

- Cash settled derivatives contract
- Contract based on a single GOI security
- Easier and cheaper access to rates trading
- Centralized clearing supported by guaranteed settlement
- Useful to all types of investors
- Low transaction cost

Usage by Different Category of Market Participants

Participant	Regulation	Major Strategies
Banks	Hedging and Trading	Hedging; Arbitrage; View based trading; Changing duration of portfolio; Calendar spread; Lock-in of yield
Primary Dealers	Hedging and Trading	Hedging; Arbitrage; View based trading; Changing duration of portfolio; Calendar spread; Lock-in of yield
FPI's	Hedging Restricted trading	Hedging; View based trading; Changing duration of portfolio; Calendar spread; Lock-in of yield
Mutual Funds	Hedging, Exposure	Hedging; View based trading
Insurance Companies	Hedging Future Cashflows	Long Hedge
Corporates	Hedging and Trading	Hedging; View based trading; Lock-in of yield
NBFC's	Hedging	Hedging; Changing duration of portfolio
Individuals	Hedging and Trading	Hedging; View based trading; Lock-in of yield
Trading Members	Hedging and Trading	Hedging; View based trading; Calendar Spread

Bond Basics

Coupon

Interest rate is the amount charged, expressed as a percentage of principal, by a lender to a borrower for the use of assets. They are typically noted on an annual basis, known as the annual percentage rate (APR). E.g. 7.72 May 2025 security bears an interest rate of 7.72% annually which is also referred to as coupon. Does the rate of return remain same throughout the tenure of the bond? No, to measure the rate of return on your investment let us first understand the concept of yield.

Yield

Yield is the income (return) on an investment. This refers to the income received from a security and is usually expressed as a percentage (annual return) based on the investment's cost, its current market value or its face value. Yield and price of a bond have an inverse relationship. As yield increases the price of the bond decreases and vice-versa.

Clean Price

Clean price is the price of a coupon bond not including any accrued interest. When bond prices are quoted in the underlying market (NDS-OM) they are quoted using the clean price.

Accrued interest

Accrued interest is the interest amount accrued from last coupon payment date / issue date up to the day prior to the settlement date. It is calculated using 30/360 day count convention which assumes each month has 30 days.

Dirty Price or Cash Price

The dirty price is the price of a bond including any interest that has accrued since issue of the most recent coupon payment.

Dirty price = Clean price + Accrued interest

Modified duration

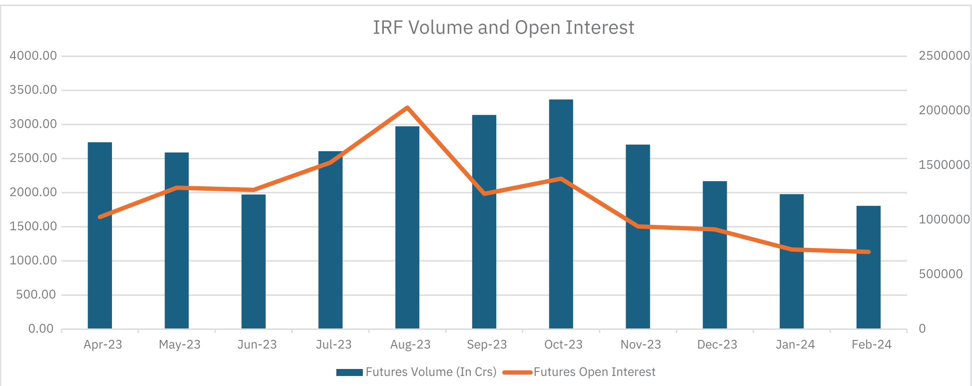
Modified duration is a measure of the sensitivity of the price (the value of principal) of a _xed-income investment to a change in interest rates. Rising interest rates mean falling bond prices, while declining interest rates mean rising bond prices. The greater the duration number, the greater the interest-rate risk or reward for the bond.

Theoretical Futures Price = Cash price + Financing cost - Income on cash position
Where,

- Cash price of the underlying = Clean price + Accrued interest
- Financing cost = Financing cost for the period on Cash price
- Income on cash position = Accrued interest expected to be received on expiry + Coupon payment + Interest on coupon payment
- The component of coupon payment and interest on coupon payment are applicable in case of any coupon payments falling during the holding period

Growth of IRD

Introduction of Interest Rate Derivatives is an excellent example of collaborative efforts on the part of market participants, exchanges and regulators. It is a great addition to the existing portfolio of financial products in the Indian Financial Markets. Since its launch in January 2014, the Interest Rate Futures average daily volume has grown from Rs. 981 crores in January 2014 to Rs. 2306 crores in August 2015.



About NSE:

National Stock Exchange of India (NSE) is the world's largest derivatives exchange by trading volume (contracts) as per the statistics maintained by Futures Industry Association (FIA) for calendar year 2021. NSE is ranked 4th in the world in the cash equities by number of trades as per the statistics maintained by the World Federation of Exchanges (WFE) for calendar year 2021. NSE was the first exchange in India to implement electronic or screen-based trading. It began operations in 1994 and is ranked as the largest stock exchange in India in terms of total and average daily turnover for equity shares every year since 1995, based on SEBI data. NSE has a fully integrated business model comprising exchange listings, trading services, clearing and settlement services, indices, market data feeds, technology solutions and financial education offerings. NSE also oversees compliance by trading, clearing members and listed companies with the rules and regulations of SEBI and the exchange. NSE is a pioneer in technology and ensures the reliability and performance of its systems through a culture of innovation and investment in technology.

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