

# Interest Rate Derivatives

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# Derivatives

- Financial Derivative
  - Financial Instrument that is derived from the underlying real asset
- Derivative Instruments
  - Futures
  - Forwards
  - Options
  - Swaps
  - Caps
  - Floors etc

# IR Derivatives

- IR Derivative
  - Derivatives that are derived from Cash Market or Reference Interest Rate
- Why IR Derivatives
  - Cheaper (less execution cost) than underlying instrument transactions
  - Quicker to adjust the portfolio positions
  - More liquid than the underlying instrument

# IR Derivatives

- Popular IR Derivatives
  - IR Futures
  - IR Swap
  - IR Cap
- IRD Markets
  - Exchange Traded IRDs
  - OTC IRDs
- IR Categories
  - Short-term
    - Underlying security with maturity less than a year
  - Long-term
    - Underlying security with maturity more than a year

# IR Futures

- IR Futures
  - Futures contract to buy or sell instrument at some future date
- Notional Coupon
  - Coupon rate on the underlying instrument
- Popular IRF Exchanges
  - CBOT
  - CME

# Exchange Traded IRDs

- Treasury Bond Futures
  - Treasury Bond underlier
- Treasury Note Futures
  - Treasury Notes underlier
- Agency Note Futures
  - Fed Agency Notes like Fannie Mae, Freddie Mac etc
- Eurodollar futures
  - US Dollars deposited outside US
  - Based on LIBOR

# IR Cap

- Buyer receives the money at the end of each period when interest rate exceeds the agreed strike price
- Used to protect borrower from adverse movements in interest rates
- Works as a Insurance
- Usually LIBOR is used as reference rate
- Equal to series of European Call Options
- Also referred as CAPLETS

# IR Floor

- Buyer receives the money at the end of each period when interest rate falls below the agreed strike price
- Used to protect from lender from adverse movements in interest rates
- Works as a Insurance
- Usually LIBOR is used as reference rate
- Equal to series of European PUT Options
- Also referred as FLOORLETS