

# **Futures on India VIX**

# India VIX: Volatility Index

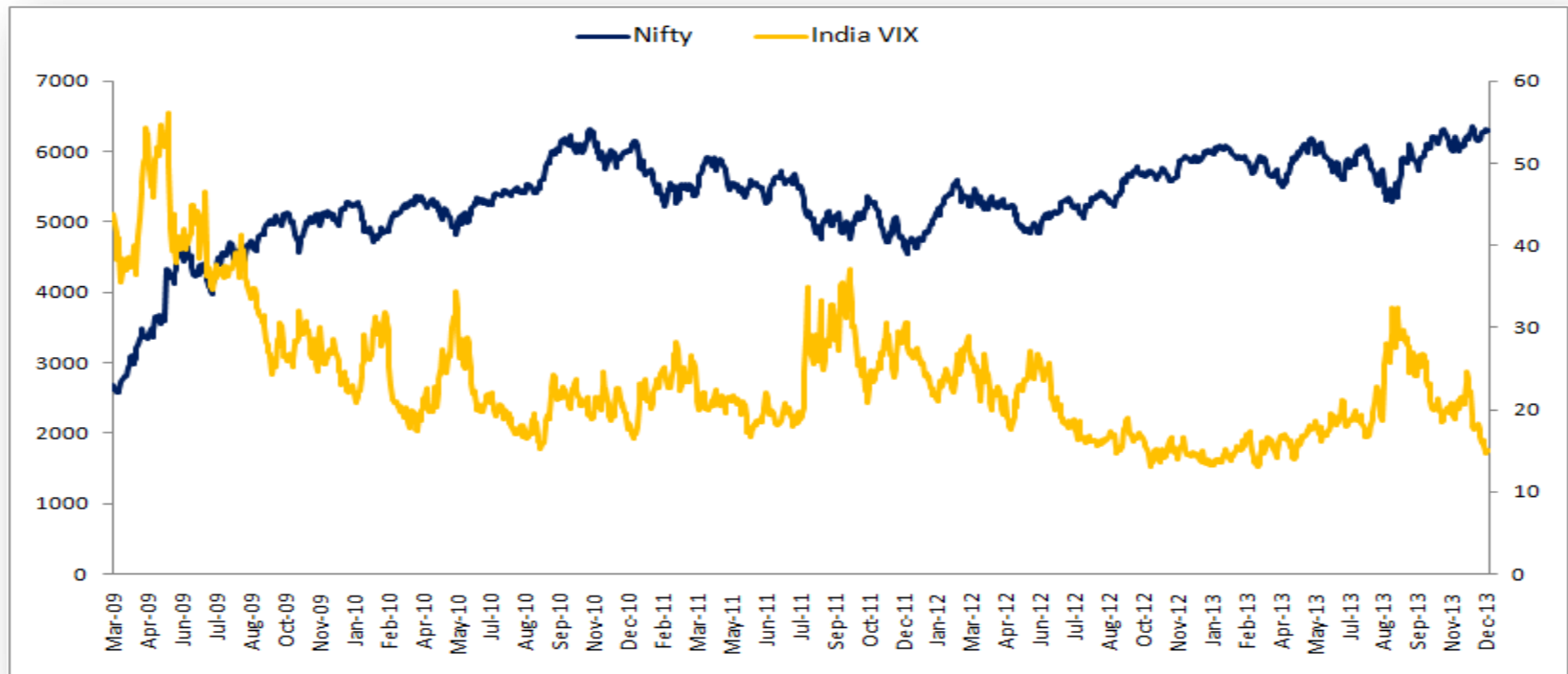
- India VIX\* is India's first volatility index
- Based on the methodology used by CBOE for VIX index
- Indicates investor's perception of volatility in near term
- Represents expected volatility of Nifty over 30 calendar days
- India VIX historical data available from Mar 02, 2009
- India VIX will be calculated up to 4 decimals with a tick size of 0.0025 (for e.g. 18.1075)

\* "VIX" is a trademark of Chicago Board Options Exchange, Incorporated ("CBOE") and Standard & Poor's has granted a license to NSE, with permission from CBOE, to use such mark in the name of the India VIX and for purposes relating to the India VIX.

## India VIX Computation

- India VIX based best bid-ask quotes of OTM strikes
- Nifty near and mid option contract used
- Mid and Far option contract quotes used with 3 days to expiry
- Variance (volatility squared) computed separately for near and mid month expiry
- Interpolated to get a single variance with a constant maturity of 30 days
- Square root of variance is India VIX value

# Relationship between India VIX and Nifty



- Negative correlation observed between India VIX and Nifty
- India VIX at high levels implies a market expectation of large movement in Nifty and vice versa

# Volatility Derivatives on Leading Exchanges

- Derivatives started in 2005
- Based on EURO STOXX 50 options

- VHSI was launched in 2011
- Based on Hang Seng Index options
- Derivatives started in 2013

## CBOE (VIX)

- First to compute volatility index in 1993
- Based on S&P 500 options
- Derivatives started in 2004

## Eurex (VSTOXX)

- Launched in 2008
- Based on Nifty options
- Derivatives to start in 2014

## HKEX (VHSI)

## OSE (Nikkei 225 VI)

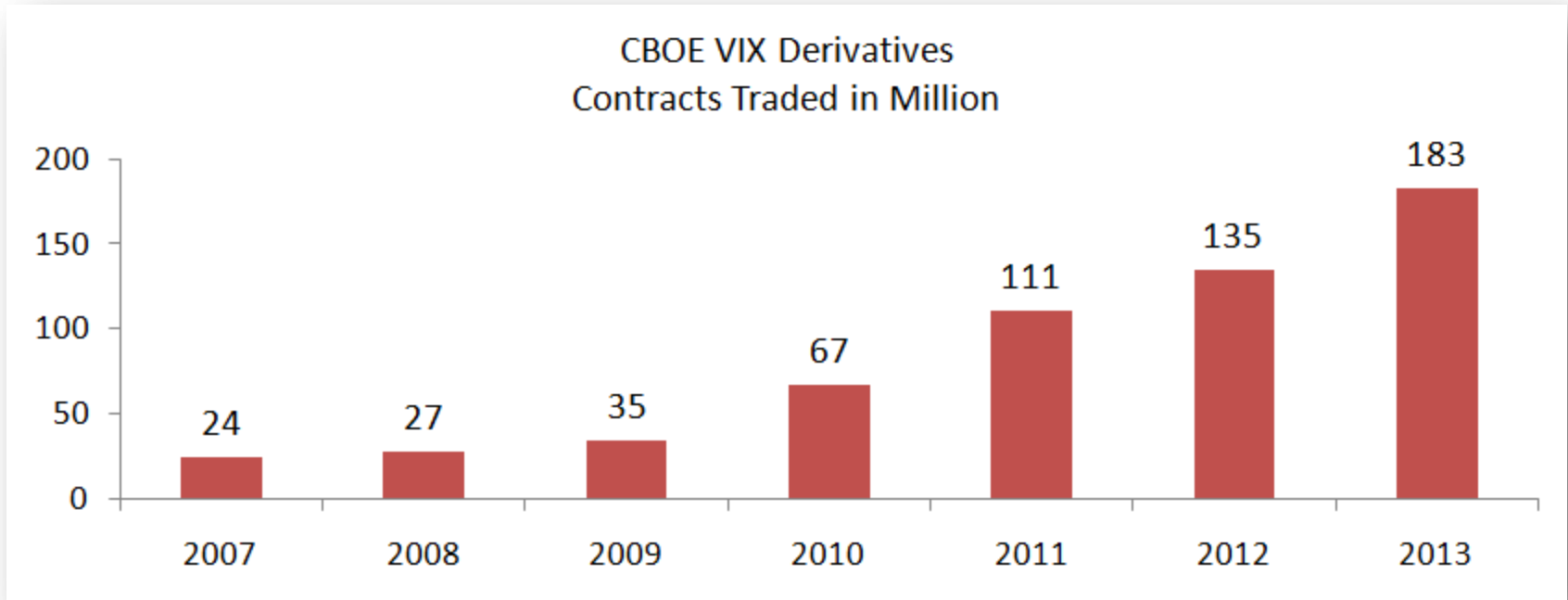
- Derivatives started in 2012
- Based on Nikkei 225 options

## NSE (India VIX)

## ASX (A-VIX)

- Derivatives started in 2013
- Based on SP/ASX 200 options

## Trends in Volume



Source: CBOE

- In the year 2013, around 183 million contracts were traded
- Volumes in 2013 has grown by 36% over 2012

## India VIX Futures – Contract Specification

Underlying	India VIX Index
Symbol	INDIAVIX
Instrument Type	FUTIVX
Lot Size	Shall be informed through circular
Quotation Price	India VIX Index *100
Contract Value	Minimum Rs. 10 lakhs at the time of introduction
Tick Size	Rs. 0.25
Trading Hours	9:15 AM to 03:30 PM
Expiry Day	Tuesday
Contract Cycle	3 Weekly contracts
Daily Settlement Price	Last half hour's weighted average price of futures
Final Settlement Price	Closing price of the underlying index
Final Settlement Procedure	Cash Settlement
Final Settlement day	All open positions on expiry date shall be settled on the next working day of the expiry date (T+1)

## Contract Price of India VIX Futures

- India VIX index values are calculated in 4 decimals. Example 18.1325
- A trader wants to buy 1 futures contract of volatility index at 18.1475
- Price to be quoted: 1814.75 (18.1475 \* 100)
- Contract Value = No of contracts \* lot size \* Quoted price

$$\text{Rs.10,88,850} = 1 * 600 * 1814.75$$

### Impact of 1 tick change

	India VIX Value	India VIX Futures Price	Contract Value
Current Price	18.1325	1814.75	Rs.10,88,850
1 tick change	18.1350	1815.00	Rs.10,89,000
Impact	0.0025	0.25	Rs.150

Note: Lot size is assumed to be 600 for this example. Exchange shall subsequently inform the lot size through circular



# Clearing, Settlement and Risk Management

- Clearing and Settlement
  - Daily mark-to-market and settlement on T+1 day
  - Final settlement on expiry + 1 day
  - Pay-in obligation to be netted with other contracts in F&O
- Risk Management
  - Margins computed using SPAN
  - Minimum initial margin of 9%, Exposure margin of 5%
  - Trading Member Limit: Higher of 15% of open interest or Rs.150 crores
  - Client level limit: 15% of open interest



THANK YOU