

# FEBRUARY UPDATE 2016 ↻



The world's fastest exchange with a speed of 6 microseconds and India's leading currency derivative exchange.  
**LIQUIDITY • LOWER COSTS • MARKET MAKERS • TIGHT SPREADS • LARGE DEPTH • LARGE PARTICIPANT BASE**



THE WORLD'S FASTEST EXCHANGE WITH A SPEED OF  
***6 MICROSECONDS***

## INDEX

Section	Contents	Page No.
1	About BSE	2
2	Lines of Businesses	10
3	Primary Markets	14
4	Secondary Markets	19
5	Information Products	37
6	Technology Initiatives	39

# About BSE



## Evolution



## Key Milestones

Date	Milestones
09 <sup>th</sup> July 2015	BSE celebrated its 140th Foundation Day
19 <sup>th</sup> Feb 2013	BSE enters into Strategic Partnership with S&P Dow Jones Indices
15 <sup>th</sup> Jan 2011	Co-location facility at BSE - tie up with Netmagic
20 <sup>th</sup> May 2005	The BSE (Corporatisation and Demutualisation) Scheme, 2005 (the Scheme) announced by SEBI
14 <sup>th</sup> Mar 1995	BSE On-Line Trading (BOLT) system introduced
02 <sup>nd</sup> Jan 1986	S&P BSE SENSEX , country's first equity index launched (Base Year:1978-79 =100)
31 <sup>st</sup> Aug 1957	BSE granted permanent recognition under Securities Contracts (Regulation) Act (SCRA)
09 <sup>th</sup> Jul 1875	The Native Share & Stock Broker's Association formed



# BSE Group – A Complete Securities Eco-system



# Partners in Progress

## Highlights



- ✓ Alliance with leading global exchanges
  - Deutsche Börse
  - Singapore Exchange
- ✓ Key local Indian investors provide credibility and support
- ✓ Cross listing of benchmark index S&P BSE SENSEX in BRICS countries

SBI



- ✓ 4.75% investment in BSE as key user and supporter of platform



- ✓ 4.75% investment in BSE to build Asian gateway of securities and derivatives



- ✓ 4.68% investment in BSE as key user and supporter of platform
- ✓ Board Presence



- ✓ Index cooperation
- ✓ Board Presence
- ✓ Eurex T7 trading architecture
- ✓ 4.75% investment in BSE to expand Asia presence and increase footprint in multiple time zones



- ✓ Listing of Sensex



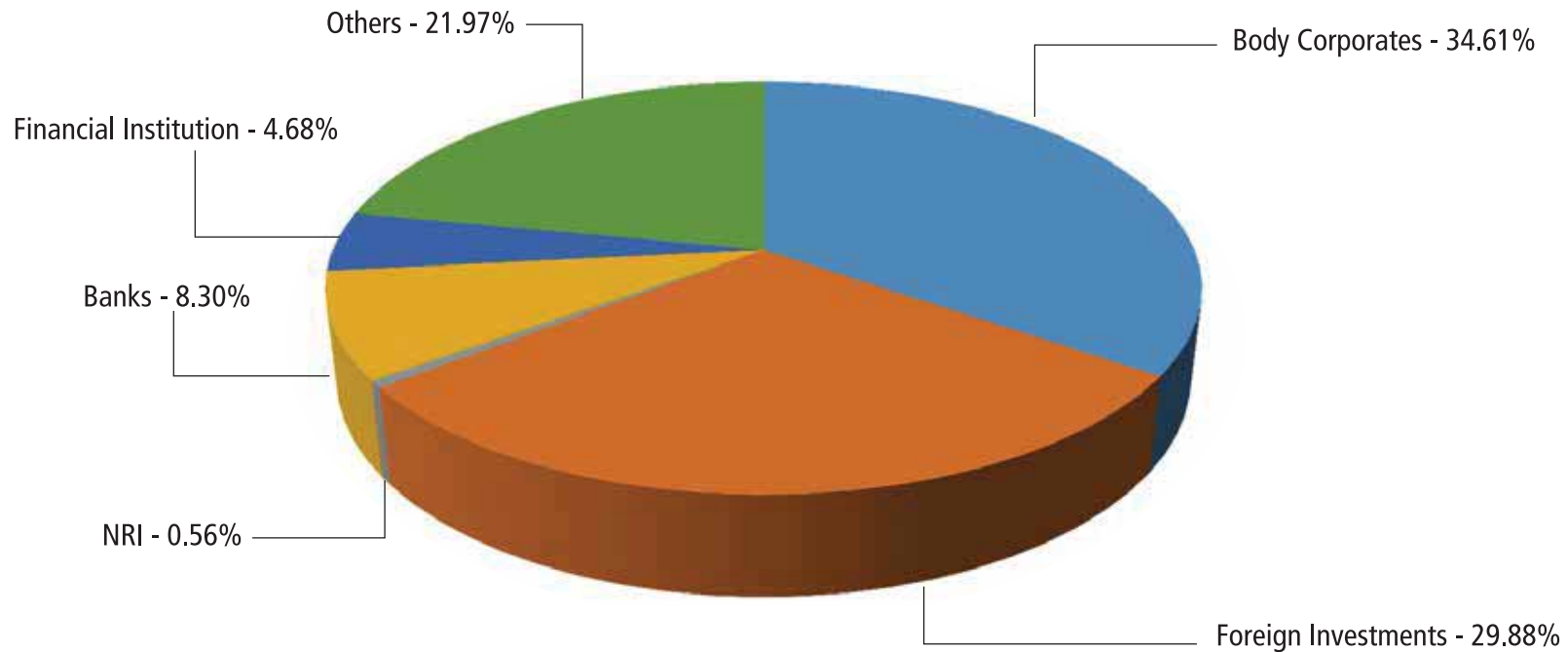
- ✓ Calculation & maintenance of all BSE Indices
- ✓ Index Product sales abroad
- ✓ Partnership on Index products



## Shareholding Pattern

**Paid up Capital Rs. 10.74 crs. | Face Value per share 1/- each**

### Categorywise Shareholding Pattern (%)



All 19 nationalized banks are our shareholders



## Board of Directors



**Mr. S. Ramadorai**  
Chairman  
Public Interest Director



**Mr. Ashishkumar Chauhan**  
Managing Director & CEO



**Mr. Dhirendra Swarup**  
Public Interest Director  
Retd. IA & AS



**Dr. Sanjiv Misra**  
Public Interest Director  
Retd. IAS



**Mr. Sudhakar Rao**  
Public Interest Director  
Retd. IAS



**Dr. Krishnaswamy  
Kasturirangan**  
Public Interest Director  
Retd. Chairman, ISRO



**Mr. Sethurathnam Ravi**  
Public Interest Director



**Mr. Thomas Bendixen**  
Shareholder Director



**Dr. Sriprakash  
Kothari**  
Shareholder Director



**Ms. Rajeshree  
Sabnavis**  
Shareholder Director



**Ms. Usha Sangwan**  
Shareholder Director

## Management Team



**Ashishkumar Chauhan**  
Managing Director &  
Chief Executive Officer

- ✓ **Ashishkumar Chauhan** one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. At NSE, he was instrumental in setting up the first screen based trading in India, equities market and first commercial satellite communications network for India. He is best known as the father of modern financial derivatives in India. He also created several path breaking frameworks including Nifty index, NSE certifications in financial markets etc. From 2000 to 2009, he worked as the President and Chief Information Officer of Reliance group.
- ✓ He is a part of several committees of World Federation of Exchanges ("WFE"), Government of India ("GOI"), Reserve Bank of India ("RBI"), Securities and Exchange Board of India ("SEBI"), Confederation of Indian Industry ("CII"), Federation of Indian Chambers of Commerce and Industry ("FICCI"), Indian Merchants Chamber ("IMC"), India UK council ("UKIBC") etc. He is also associated with several NGOs and education institutions. His quotes and writings have been published in various newspapers, magazines and journals in India and abroad.
- ✓ He holds a B Tech in Mechanical Engineering from IIT Bombay and a PGDM from IIM Kolkata.



**V Balasubramaniam**  
Chief Business Officer

- ✓ **V Bala** heads the business development encompassing Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform & SME platform at BSE and is also in-charge of all the new initiatives planned by BSE including the setting up of Commodities Market and the international exchanges in GIFT City.
- ✓ He is a board member for Futures Industry Association – ASIA, CDSL (Central Depository Services (India) Ltd), BSE Institute Limited, BSE SAMMAN Limited and a Co-Chair of the Capital Markets Working Group of FICCI. He has over two decades of experience in the capital markets industry and has previously worked with Reliance Group and as co-founder of Marketplace Technologies.
- ✓ He was part of the core team involved in setting up the National Stock Exchange in 1993 and was involved in roll out of the Capital Market Segment, Creation of NSCCL, Nifty, NCFM and Futures & Options Segment.
- ✓ He has completed his Masters in Commerce from the University of Mumbai and is a Rank holder from the Institute of Cost Accountants of India.



**Nehal Vora**  
Chief Regulatory Officer

- ✓ **Nehal Vora** heads the regulatory functions of the exchange including membership compliance, surveillance, inspection, investigation, regulatory communication, investor services, listing compliance, regulatory legal and corporate secretarial. He is a Board member of Indian Clearing Corporation Limited (ICCL) and of Central Depository Services Limited (CDSL). His other Board Memberships include that of National Power Exchange Limited, BSE Investments Limited, BSE Sammaan – CSR Exchange and Institutional Investor Advisory Services India Limited (IIAS).
- ✓ He has more than 19 years of experience in the area of legal and compliance. He has previously worked at the Securities and Exchange Board of India (SEBI) for 10 years and as Director, Law & Compliance at DSP Merrill Lynch Ltd heading Broking and Investment Banking Compliance
- ✓ He is the Chair of the Cyber Resilience Taskforce of The Affiliate Members Consultative Committee (AMCC) of The International Organization of Securities Commissions (IOSCO) and Chair of AMCC's Working Group on Cyber Resilience at Trading Venues
- ✓ Nehal has completed his Bachelors of Commerce from Mumbai University and Master of Management Studies from Narsee Monjee Institute of Management Studies, University of Mumbai

## Management Team (Contd...)



**Nayan Mehta**  
Chief Financial Officer

- ✓ **Nayan Mehta** has previously worked at Credit Analysis & Research Ltd. (CARE Ratings) as Joint General Manager (Accounts), CFO at Multi Commodity Exchange of India Limited and at the National Stock Exchange
- ✓ He has completed his Chartered Accountancy certification from Institute of Chartered Accountants of India and has a Bachelors in Commerce degree from University of Mumbai



**Kersi Tavadia**  
Chief Information Officer

- ✓ **Kersi Tavadia** has over 30 years of experience in the area of Application Systems/ IT Infrastructure development and management, managing all aspects of IT operations in Financial Services, Capital markets and manufacturing companies. He has played a leading role in transforming BSE into the fastest exchange in the country with response times of less than 200 microseconds. He is instrumental in promoting, adaption of Open Source technologies and has successfully deployed one of the largest Data Warehouse on Open source platform. He has provided technical leadership & architectural vision in implementation of Mission Critical Applications across the organization including IT Infrastructure, Web portals, web based and non-web based customized solutions.
- ✓ He is amongst the Pioneers to implement single-window Multi-Exchange online trading systems to facilitate trading across multiple asset classes.

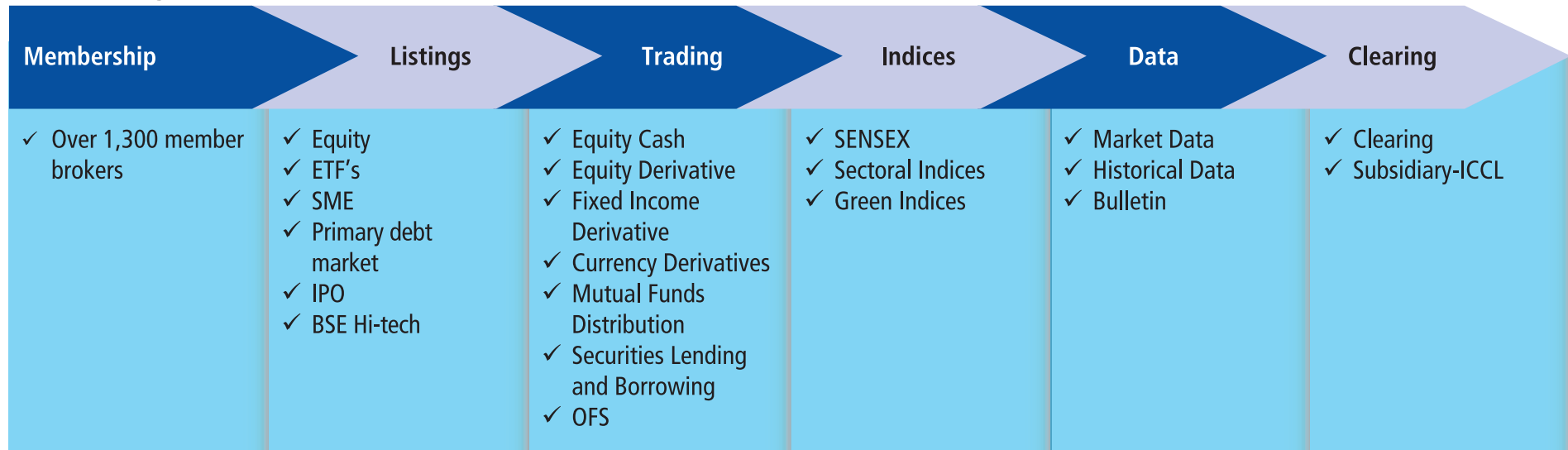


**Neeraj Kulshrestha**  
Chief Operating Officer

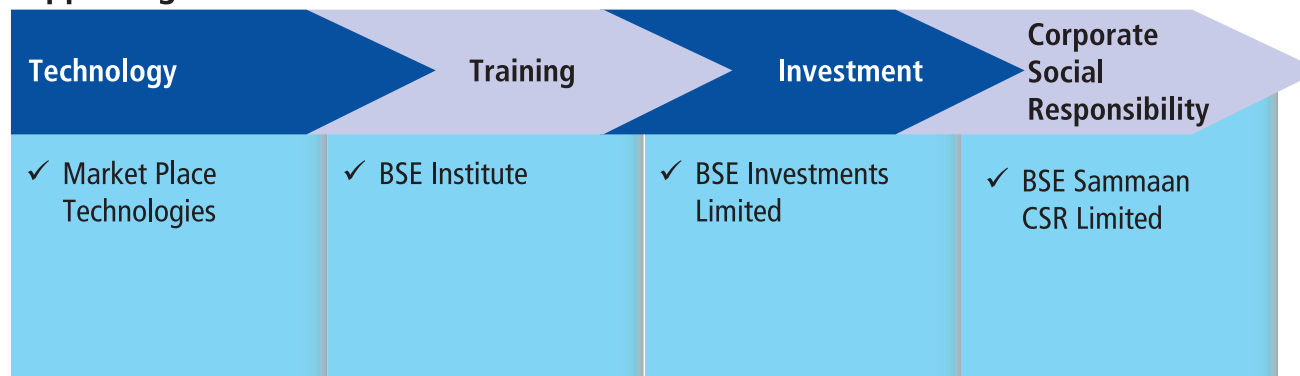
- ✓ **Neeraj Kulshrestha** is in charge of Trading, Listing and Membership Operations.
- ✓ He has about 27 year experience in Capital markets, which includes Securities Markets and General Insurance.
- ✓ Prior to BSE he was an Executive Director in Morgan Stanley India for 10 years. He was earlier with National Stock Exchange and has managed various functions like Trading Operations, Inspection and Investigation, Futures and Options Clearing and Trading. He was also the CEO of India Index Services Ltd. and Dotex International Ltd..
- ✓ He has completed his Bachelors in Computer Science from Delhi University and a MBA (Finance) from Indore University.

# Lines of Business

## Revenue Segments



## Supporting Business



# Our Products

## Primary Markets

- ✓ IPOs / FPOs and Rights Issues
- ✓ Institutional Placement Programme (IPP)
- ✓ Reverse Book Building (RBBS)
- ✓ Securitized Debt Instruments
- ✓ Structured Products
- ✓ FII Debt Limits
- ✓ Government Securities
- ✓ Corporate Bonds
- ✓ Preference shares
- ✓ SME

## Secondary Market

- ✓ Equity
- ✓ Equity Derivatives
- ✓ ETFs
- ✓ Corporate Bond Market
- ✓ Government Securities
- ✓ Interest Rate Derivatives
- ✓ Currency Derivatives
- ✓ Offer For Sale (OFS)
- ✓ Offer to Buy (OTB)
- ✓ Hi-tech
- ✓ Securities Lending and Borrowing
- ✓ Structured products

## Global Indices Trade in rupee denominated futures

- ✓ Hang Seng
- ✓ FTSE/JSE Top 40
- ✓ MICEX
- ✓ Ibovespa

## Data Products

- ✓ Real time products
- ✓ Snapshot products
- ✓ End of day products

Exchange promoted trading platform-BOLT Plus on Web (BoW)

## Global Rankings on Market Capitalization

Market Capitalization		
Rank	Exchange	Amount (USD Trillion)*
1	NYSE	17.79
2	Nasdaq-US	7.28
3	Japan Exchange Group - Tokyo	4.89
4	Shanghai Stock Exchange	4.55
5	Shenzhen Stock Exchange	3.64
6	Euronext	3.31
7	Hong Kong Exchanges & Clearing	3.18
8	Deutsche Boerse	1.72
9	TMX Group	1.59
10	SIX Swiss Exchange	1.52
11	BSE India Limited	1.52
12	National Stock Exchange of India	1.49

## Product-wise Global Rankings

### INDEX OPTIONS \*

Rank	Exchange	No. of Contracts Traded
1	National Stock Exchange India	1,89,35,55,261
2	Korea Exchange	48,35,97,487
3	Chicago Board Options Exchange	40,82,78,277
4	EUREX	40,13,87,669
5	TAIFEX	19,21,90,964
6	<b>BSE India</b>	<b>16,25,53,555</b>
7	CME Group	14,02,89,929
8	Tel Aviv SE	4,78,23,896
9	Japan Exchange Group	3,83,24,847
10	Hong Kong Exchanges	2,38,98,672

### NO. OF EQUITY TRADES \*

Rank	Exchange	No. of Equity Trades
1	Shanghai Stock Exchange	51,34,074
2	Shenzhen Stock Exchange	46,55,649
3	BATS Global Markets - US	23,59,896
4	National Stock Exchange of India	18,62,493
5	Nasdaq - US	17,97,193
6	Korea Exchange	17,72,054
7	NYSE	17,51,841
8	Nigerian Stock Exchange	9,26,919
9	Japan Exchange Group - Tokyo	7,73,459
10	BATS Chi - x Europe	5,48,558
11	<b>BSE India Limited</b>	<b>3,88,498</b>

Source: World Federation of Exchanges

\*Jan 2015 to Dec 2015 (YTD)

\*\*Amount in thousand

# Primary Markets

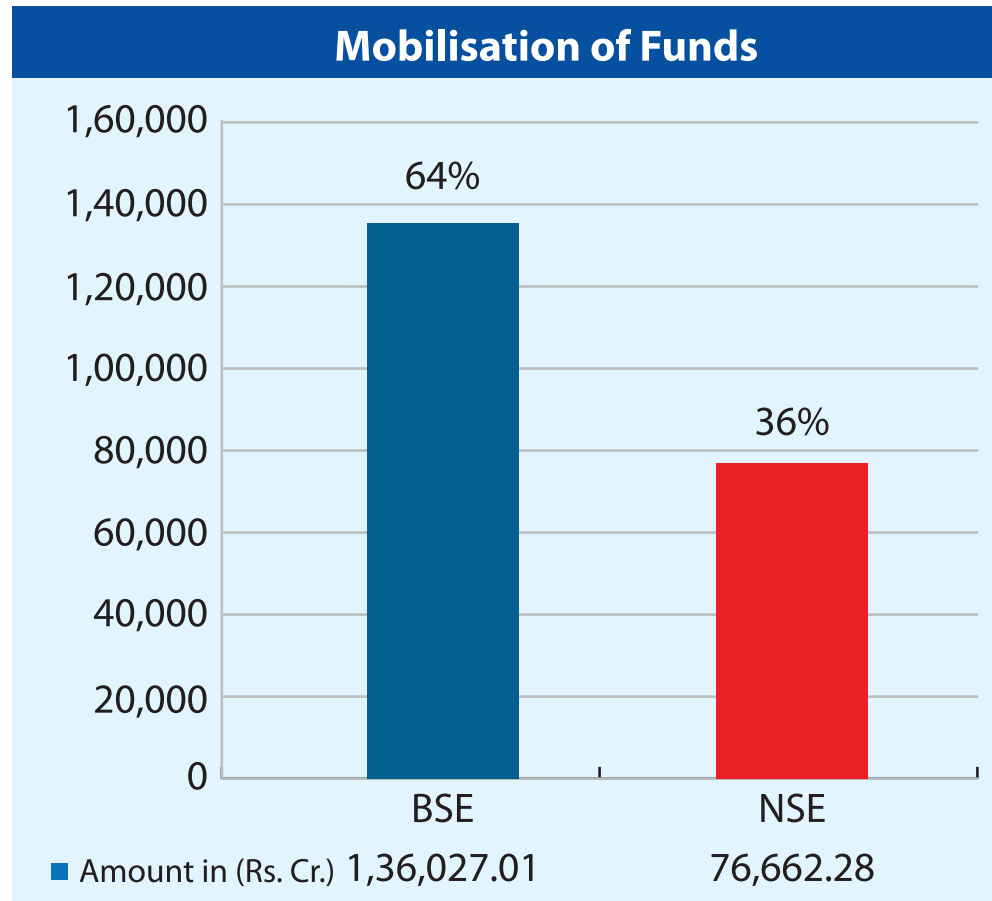




## Primary Markets-Equity and Debt

### Mobilization of funds for FY 2015-16

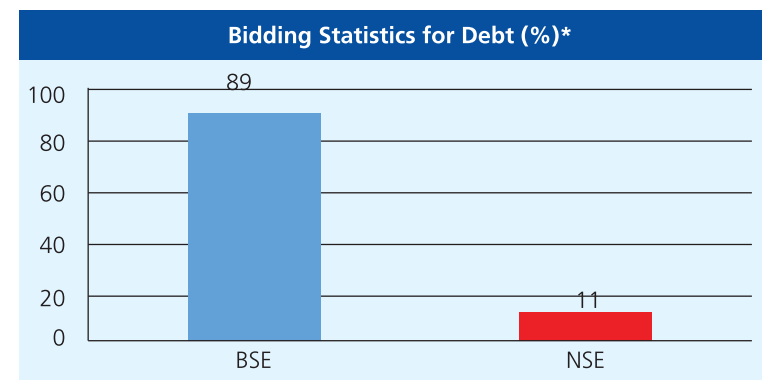
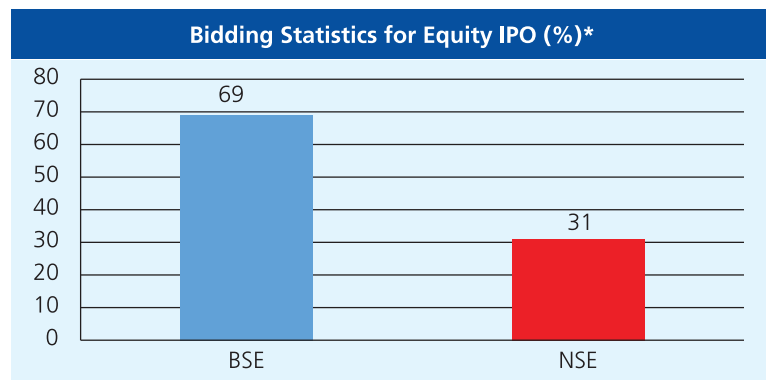
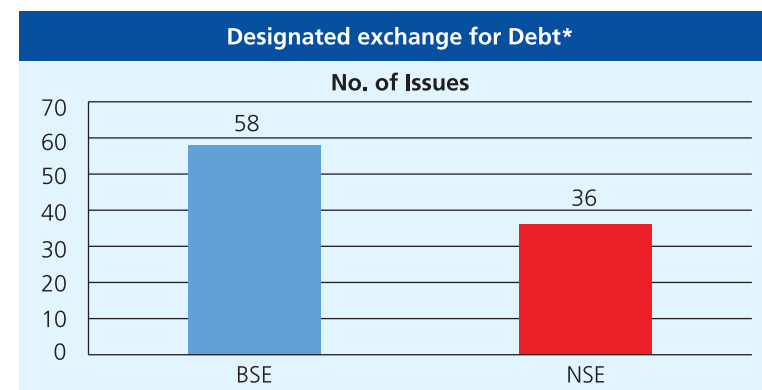
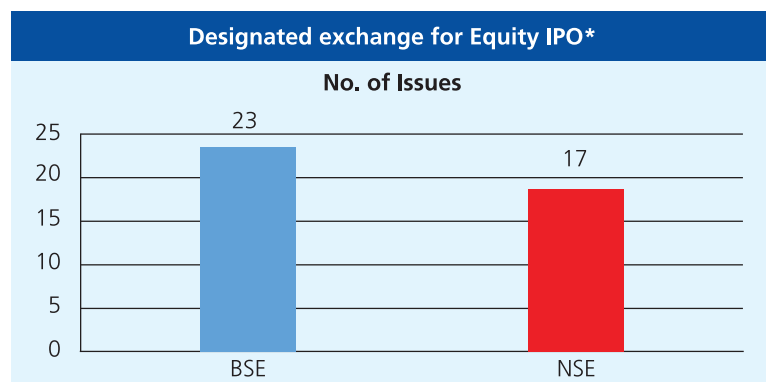
✓ BSE has enabled collection of Rs. 1,36,027 crs (64%) of the total amount raised across the Exchanges in FY 2015-16 (till January 2016).



5769  
Listed entities  
Largest on any  
exchange in  
the world

# Primary Markets-Equity and Debt Market Performance

- ✓ BSE is the preferred choice for listing Privately Placed Debt Instruments (PPDI). In FY14-15, BSE has listed 1575 Instruments vis-a-vis 1,301 on other Exchange. In FY15-16 till January 2016, BSE has listed 1366 Instruments with a market cap of 194325.24 crs. vis-à-vis 1126 on other Exchange.
- ✓ In F.Y. 2015-16 till January 2016, 15 Debt Public issues have tapped the market and BSE is the Designated Stock Exchange for all 15 issues, of these issues 11 issues have listed only on BSE.



\*Till date January 2016

## SME Platform

- ✓ BSE is the first stock exchange in India to receive approval from SEBI for a SME Platform and launch of the SME IPO Index on 14th December, 2012 aimed at tracking the companies listed on SME platform .
- ✓ BSE SME Platform facilitates capital raising to small and medium enterprises including start-up companies which are in their early stages of growth. It also provides easier entry and exit options for informed investors like angel investors, VCFs and PEs etc. and equity financing which lowers the debt burden leading to lower financing cost and healthier balance sheet.

<b>Number of Companies Listed</b>	<b>Companies migrated to main Board</b>
120*	31*
<b>Total funds raised</b>	<b>Number of Market Makers</b>
Rs. 895.88 crs.*	93
<b>Total Market Capitalization</b>	<b>Average Investors per Issue</b>
Rs. 7029.47 crs.*	200

# Mutual Fund Distribution Platform

## BSE StAR MF

### MODE OF SETTLEMENT

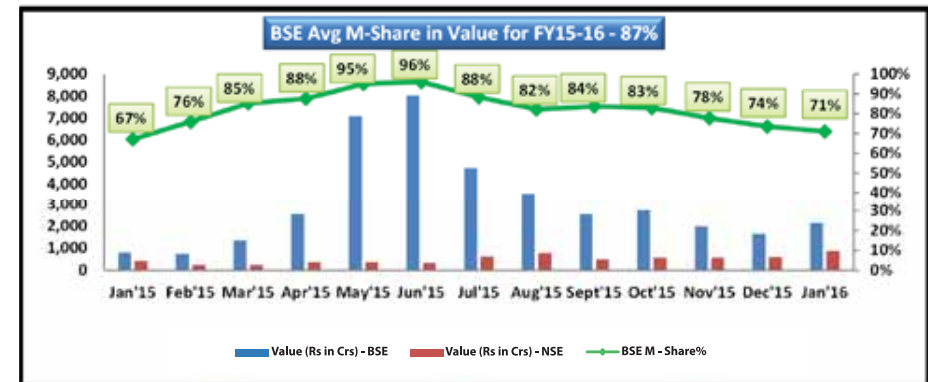
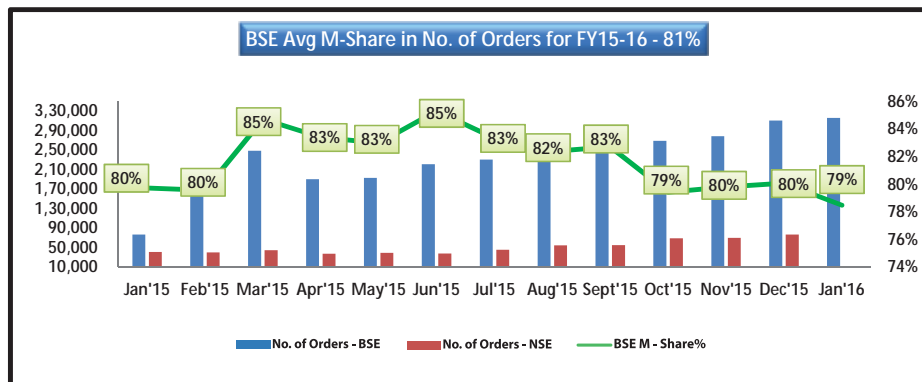
- ✓ Settlement of Funds and units through member POOL Account and MFDs / IFAs via Direct Settlement
- ✓ Majority of National Distributors (NDs) and Broker members prefer pool mode
- ✓ Pool Mode is available only with BSE. Neither NSE - NMF II nor AMFI -MFU have this model for non-demat transactions

### CONNECTIVITY & DIGITIZATION

- ✓ Multi mode of Platform access
- ✓ Web - browser
- ✓ APIs over leased Lines – IML
- ✓ WEB Services over Internet
- ✓ 100 % digital transaction mode , eliminating paper work from MF segment

### UNIQUE PRODUCT OFFERINGS

- ✓ X-SIP Facility with First order today flexibility , enabling BSE StAR MF members to start systematic investment plans (SIP) within couple of minutes instead of waiting for a month!
- ✓ Overnight Investments framework: an alternative investment avenue for idle monies by investing in MF Liquid Schemes for better returns



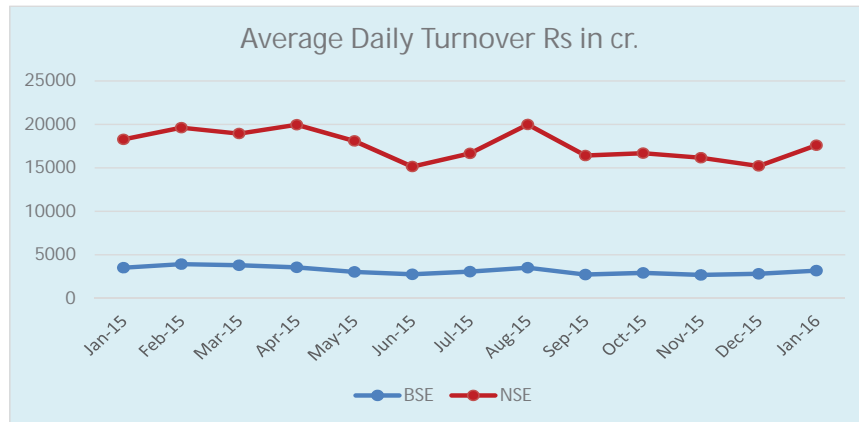
For Registration Process, refer: <http://ir.bseindia.com/mfdforms/members/LoginMF.aspx?expandable=0>

# Secondary Markets

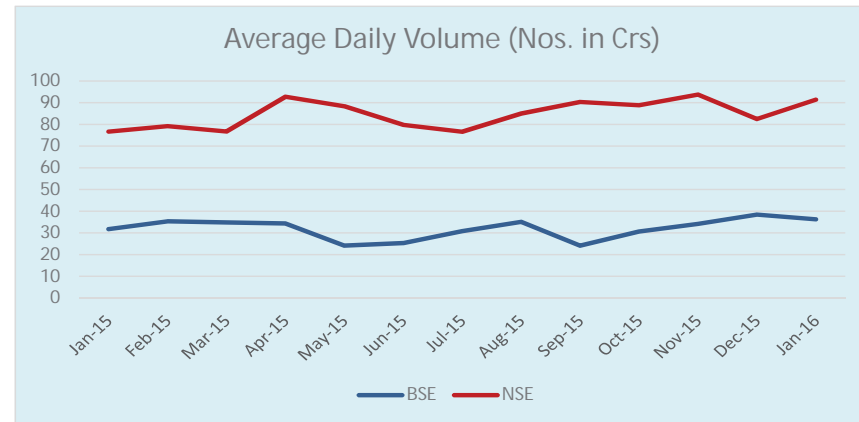


# Equity Markets-Performance

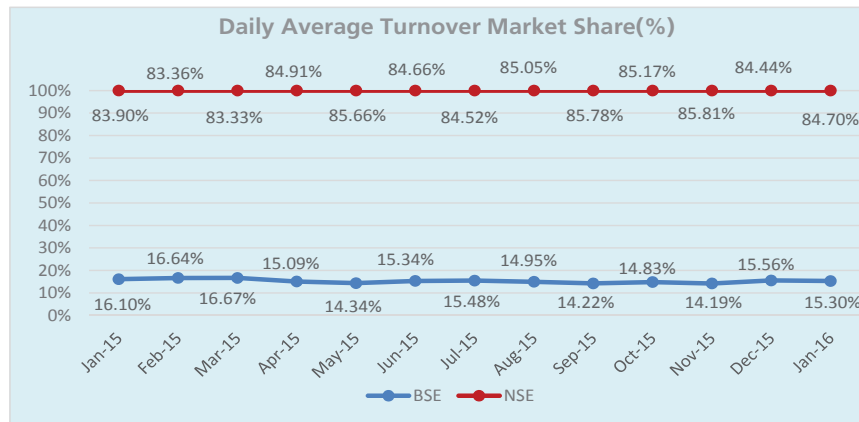
Equity Turnover Amount (Rs. in crs.)



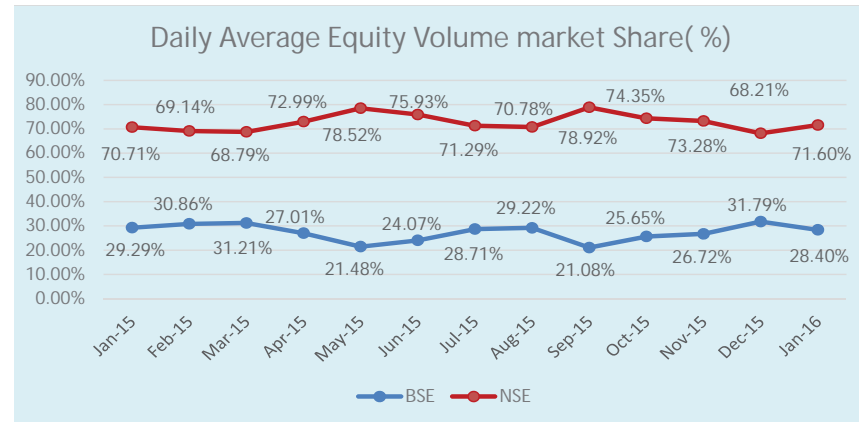
Equity Turnover Volume (no. of shares traded in crs.)



Market share based on Equity turnover



Market share based on Equity Volumes (no. of shares traded)

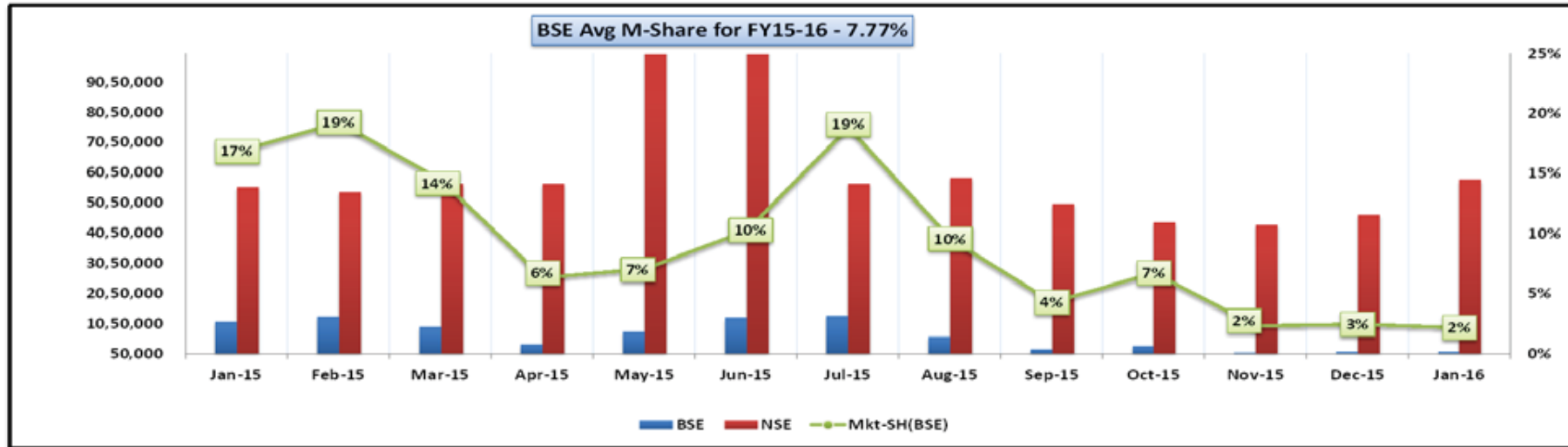


## Equity Derivatives Product Features

- ✓ Index Derivatives on
  - Investable and Broad Indices – S&P BSE SENSEX and S&P BSE 100
  - Sector Indices – S&P BSE TECK , S&P BSE BANKEX , S&P BSE OIL AND GAS.
- ✓ Maturities available:
  - Index & Stock Futures: Near, Mid, Far Month
  - Index Options: Weekly, Monthly & Long Dated – Only Exchange in India offering weekly expiring Options
    - ◆ 5 Weekly, 3 Monthly and 12 Long Dated ( 4 quarterly and 8 semiannual)
  - Stock Options: Weekly and Monthly
    - ◆ 5 Weekly / 3 Monthly
- ✓ Number of Strikes to be made available on daily basis - 1 In the money, 1 At the money, 1 Out of the money
- ✓ Ongoing Liquidity Enhancement Programme (LEIPS) to create lasting liquidity in BSE derivatives. Market-Makers incentivized to maintain tight spreads and deep quotes
- ✓ Lower transaction costs for all participants:
  - As Liquidity provider, you pay Zero
  - As Liquidity taker, you pay 0.05 bps of Futures contract value and 0.05 bps of Options Premium value
  - For Options, this is almost 200 times lower transaction fees compared to the other exchange

# Equity Derivatives Market Share and Performance

## Market Share



## Performance

### Average Daily Turnover\*

Futures: 19 crs                      Options: 6610 crs.

### Average number of contracts traded Daily\*

Futures: 393                              Options: 1,31,050

### Average num of contracts Open Daily\*

Futures: 4,333                              Options: 1,163

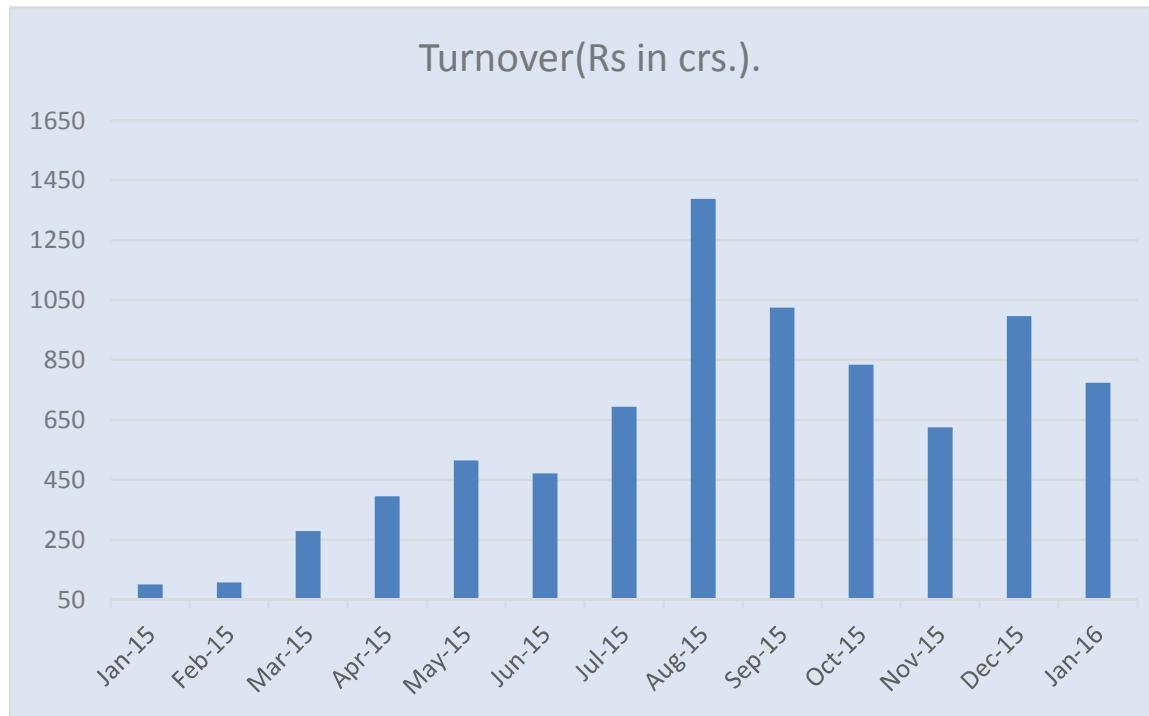


\*Jan 2016



## Equity Traded Funds(ETF) Products and Performance

- ✓ Exchange traded fund is a security that tracks an index, a commodity or a sector like an index fund or a sectoral fund but trades like a stock on an exchange.
- ✓ It is similar to a close ended mutual fund listed on stock exchanges
- ✓ BSE in its effort to bring greater participation for retail investors in the Indian landscape has tied up with market makers for ETF's
- ✓ BSE ranks 9<sup>th</sup> in terms of ETF listings in Asia Pacific region as at December 2015.#
- ✓ As at January 2016, there are 46 ETF listings on BSE.



## Equity Derivatives and ETF Competitive Advantage

### Equity Derivatives

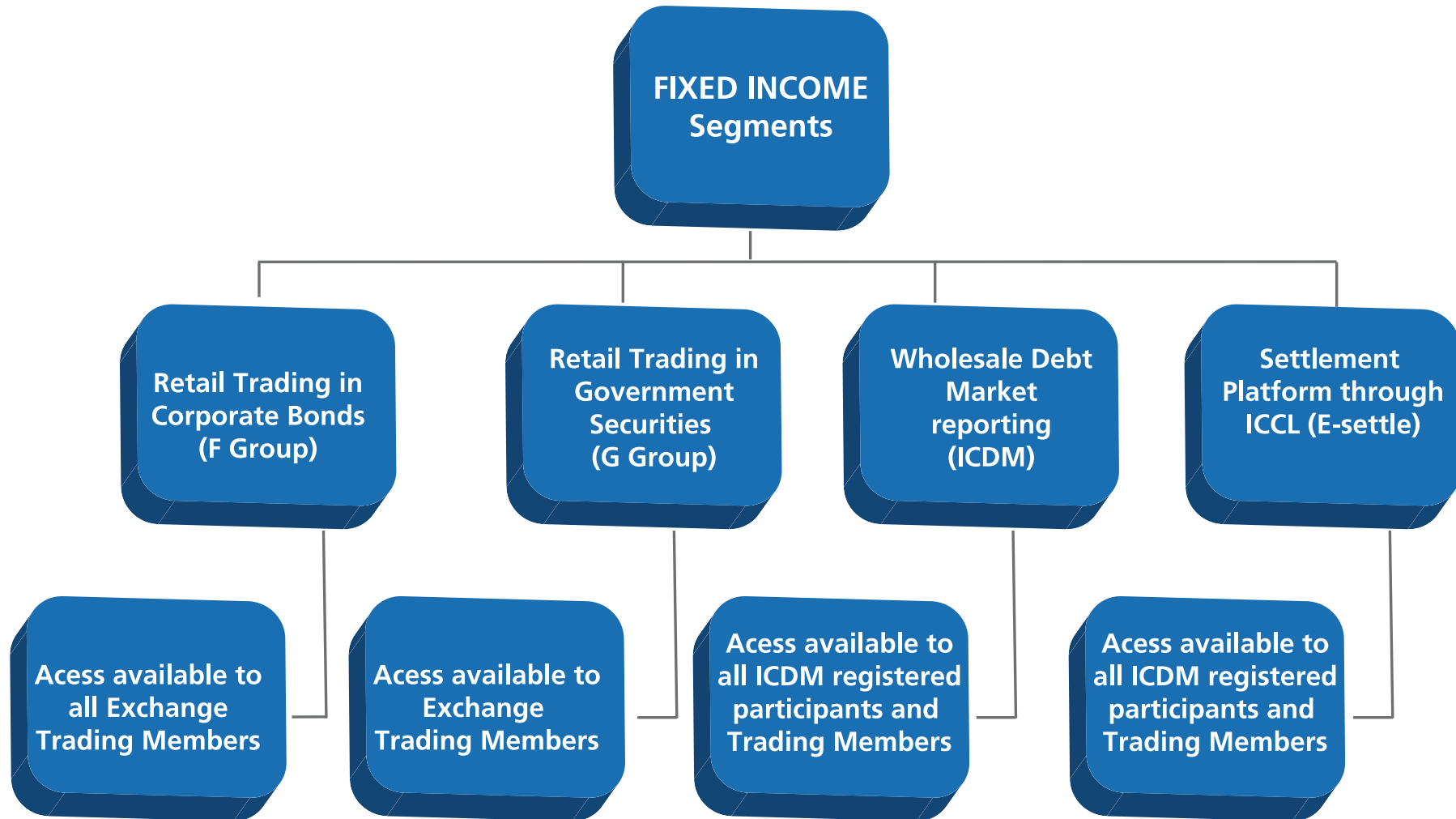
Futures	Trade at BSE	Trade at Competing Exchange A	Trade at Competing Exchange A
	bps	bps	bps
<b>Sell Futures</b>			
STT	-1.0	-1.0	-1.0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	-0.05*	-0.19	-0.12
<b>Buy Futures to Square off</b>			
STT	0	0	0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	0*	-0.19	-0.12
<b>Net outflow</b>	<b>-1.09</b>	<b>-1.42</b>	<b>-1.28</b>

Options	Trade at BSE	Trade at Competing Exchange A	Trade at Competing Exchange A
	bps	bps	bps
<b>Sell Options</b>			
STT	-1.70	-1.70	-1.70
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	<b>-0.05*</b>	<b>-5.00</b>	<b>-2.50</b>
<b>Buy Options to Square off</b>			
STT	0	0	0
SEBI Fees	-0.02	-0.02	-0.02
Exchange Fee	<b>0*</b>	<b>-5.00</b>	<b>-2.50</b>
<b>Net outflow</b>	<b>-1.79</b>	<b>-11.74</b>	<b>-6.74</b>

### ETF

Turnover Slab	BSE	NSE	Save cost @ BSE
Up to 1250 Crs	275	325	15.38%
>1250 Crs < 2500 Crs	275	320	14.06%
>2500 Crs < 5000 Crs	275	315	12.70%
>5000 Crs < 10000 Crs	275	310	11.29%
>10000 Crs < 15000 Crs	275	305	9.84%
>15000 Crs	275	300	8.33%

# Fixed Income Segments Overview



## Fixed Income Segments Performance

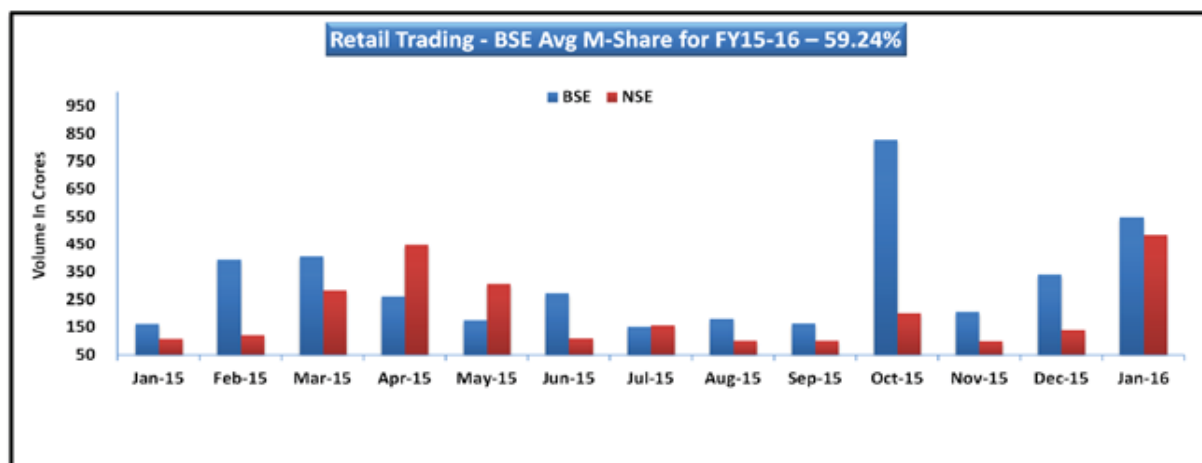
- ✓ BSE has managed to gain market share in Retail trading of Corporate Bonds from 55% in FY 13-14 to more than 63% in FY14-15. In January 2016, BSE market-share was 53%.
- ✓ Market Share in Reporting volumes in Wholesale Debt Market of Government Bonds in January 2016 is 33%. In FY 14-15 volumes in this segment have exponentially increased to Rs. 2,21,233 crs vis a vis Rs.48,952 crs in FY 13-14.
- ✓ Settlement volumes of Corporate bonds for FY 15-16 (Till January,2016) is Rs. 45,728.

Retail trading -Corporate Bonds (F group)	FY 14-15	FY 15-16
Turnover*	3,757	3,136
Members / participants**	1,353	1,358

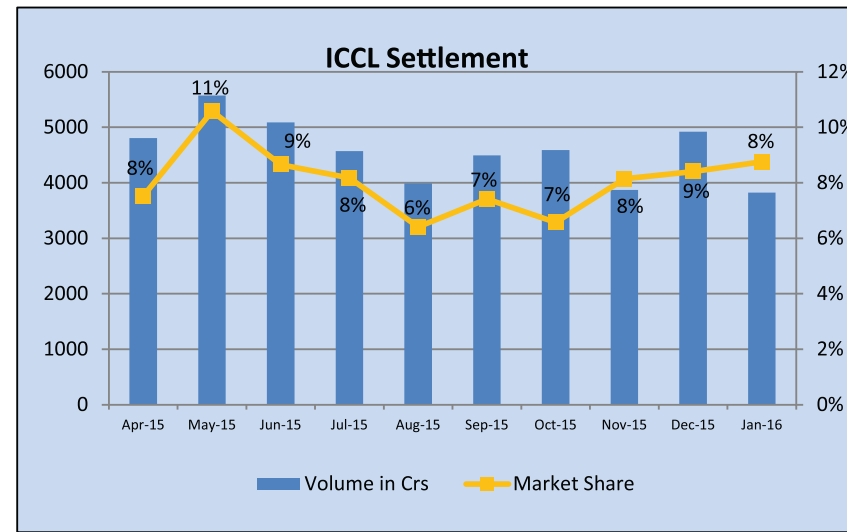
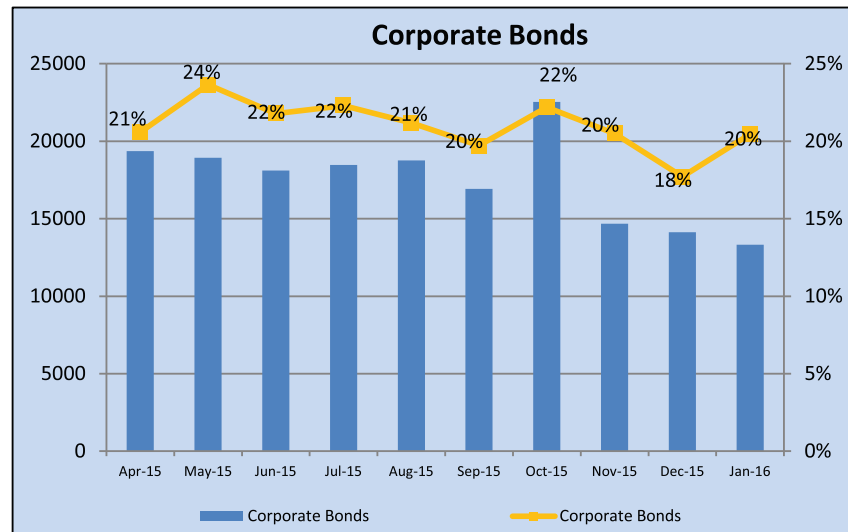
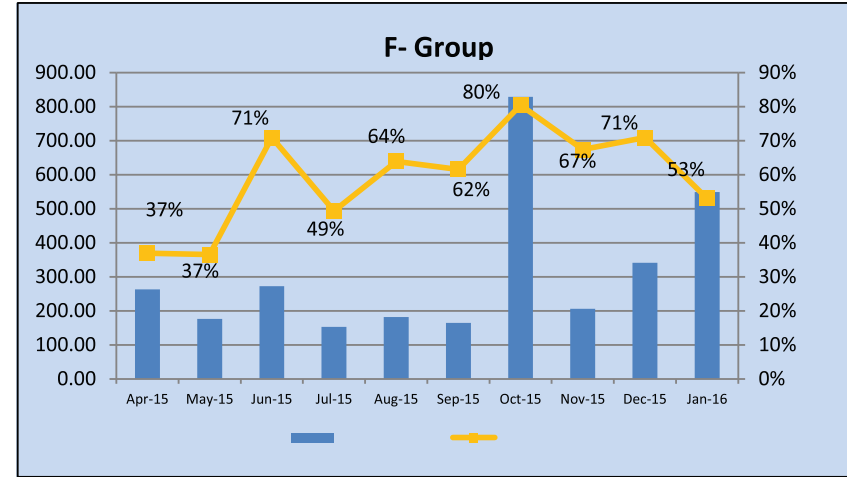
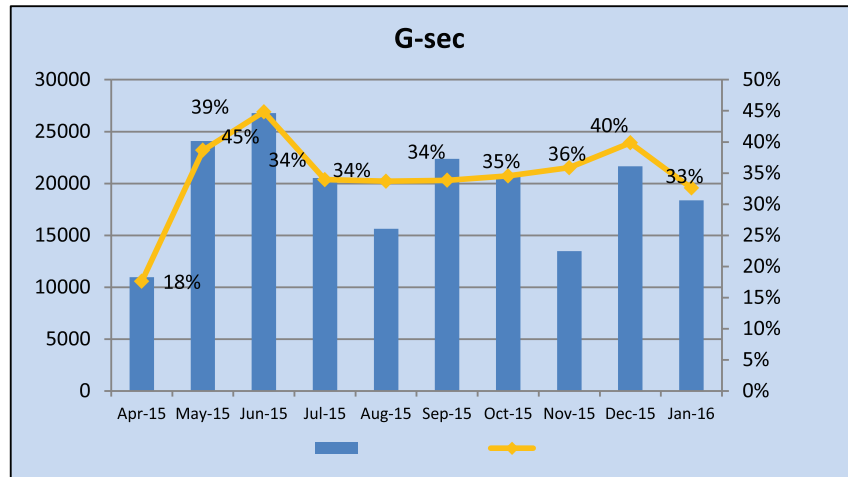
Wholesale Segment Government Bonds	FY 14-15	FY 15-16
Turnover*	2,21,233	1,94,640
Members / participants**	130	130

Wholesale Segment - Corporate Bonds (ICDM)	FY 14-15	FY 15-16
Turnover*	2,03,387	1,75,204
Members / participants**	1,155	1,302

Settlement of Corporate Bonds and CP / CD (E-Settle)	FY 14-15	FY 15-16
Settlement of CPs / CDs.*	1,90,407	3,20,744
Members / participants**	1,155	1,302



# Fixed Income Segments Volume Growth



## Interest rate Derivatives Contract Specifications

- ✓ Launched Interest Rate Futures (IRF) on 10 Year GOI Bonds on Jan 28,2014
- ✓ **Underlying Assets : Interest Rate Derivatives offers trading in following four products :**
  - 91-Day T-Bill Futures | 6-year G-sec Futures | 10-year G-sec Futures | 13-Year G-sec Futures

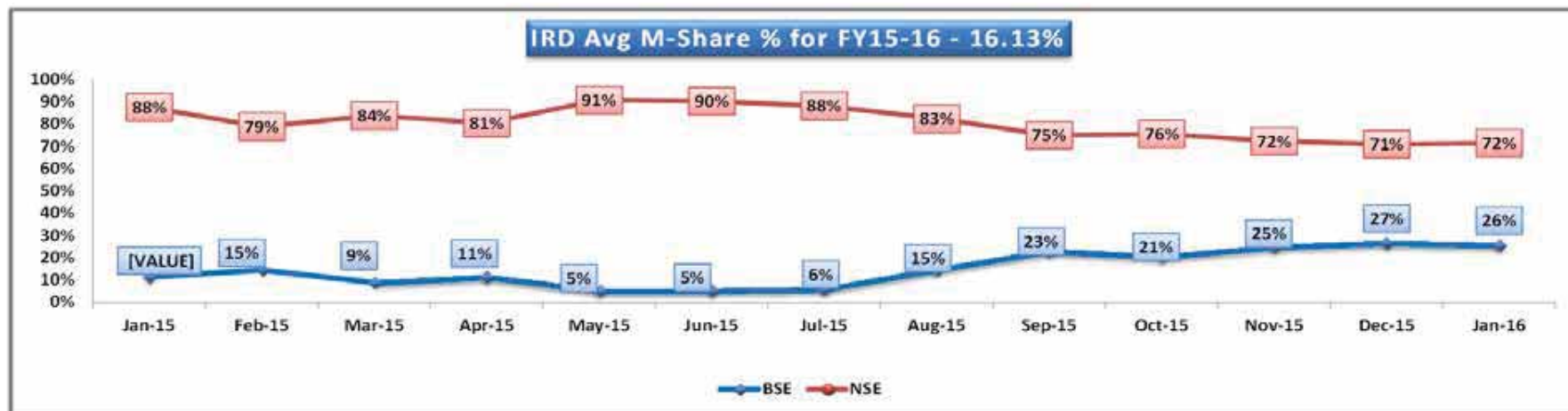
### Business Benefits to Members

- ✓ Membership at no cost and no deposit, At present 120 + registered members
- ✓ Clearing & Settlement by ICCL and Uniform Risk Management & Margin framework

Underlying	7.72% GOI Bond Maturing on May 25,2025	8.40% GOI Bond Maturing on July 28,2024	7.88% GOI Bond Maturing on March 19,2030	7.59% GOI Bond Maturing on March 20,2029	7.68% GOI Bond Maturing on December 15,2023	8.27% GOI Bond Maturing on June 09,2020	7.59% GOI Bond Maturing on Jan 11,2026
Coupon	7.72%	8.40%	7.88%	7.59%	7.68%	8.27%	7.59%
Instrument Type	FUTIRO	FUTIRO	FUTIRO	FUTIRO	FUTIRO	FUTIRO	FUTIRO
Symbol	10YGS772	10YGS840	13YGS788	13YGS759	06YGS768	06YGS827	10YGS759
Maturity Bucket	8-11 Years	8-11 Years	11-15 Years	11-15 Years	4-8 Years	4-8 Years	8-11 Years
Trading Hours	9.00 AM to 5.00 PM (aligned with trading hours of NDS-OM platform)						
Trade modification & give up timings	9.00 AM to 5.30 PM						
Contract trading cycle	Three serial monthly contracts followed by three additional quarterly contracts of March/June/September/December shall available for trading						
Spread Contracts	Calendar spread facility shall be available for trading across monthly and quarterly contracts.						
Expiry/Last trading day	Last Thursday of the expiry month. (If any expiry day is a trading holiday, then the expiry/last trading day shall be the previous trading day)						
Unit of Contract	1 Contract 1 Contract = 2000 (No. of Bonds)* 100 (Face Value) = INR 200,000/-						
Quotation	Similar to the quoted price of GOI security						
Contract Value	Quoted Price*2000						
Tick Size	0.0025						
Maximum Qunatity Limit	1250 Orders with Qty more than 1250 will be rejected.						
Price Bands	Initial price band at 3% of the previous closing price. If trade is executed at lowest/highest price of the band, it may be expanded by 0.5% after 30 minutes. Maximum two expansion in a day will be allowed. SEBI in consultation with RBI may halt the trading in case of extreme volatility in the IRF market.						
Settlement (Daily and Final settlement) Mechanism	Cash Settled contracts INR on T+1 day.						
Daily Settlement Price	Volume weighted Average Futures Price of last half an hour or Theoretical 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.						

## Interest Rate Derivatives Market Share, Performance & Competitive Advantage

### Market Share



### Performance

Total Turnover\*

11,817 crs.

Average Daily Number of Open contracts\*

37003

### Competitive Advantage

Interest Rate Derivatives			
	BSE*	NSE	MSEI
Exchange Transaction Fees (Rs./Per Cr.)	4	10	10
Save your cost @ BSE up to		60%	



\*Jan 2016

## Currency Derivatives Overview and Global Rankings

BSE commenced operations in the Currency Derivatives segment on November 29, 2013. The daily average turnover of BSE currency derivative increased to 11,442 crore in 2015 from 559 crore in the first year of operations. BSE offers trading in four currency futures pairs – USDINR, EURINR, GBPINR & JPYINR and one currency option pair USDINR. Participation and membership base has also been growing steadily in currency segment.

### CURRENCY OPTIONS#

Rank	Exchange	No. of Contracts Traded
1	National Stock Exchange India	19,33,81,670
2	BSE India	14,78,92,293
3	Moscow Exchange	1,98,16,150
4	CME Group	1,93,91,098
5	Tel Aviv SE	1,53,12,814
6	Johannesburg SE	96,02,670
7	BM&FBOVESPA	66,05,325
8	Euronext	1,09,797
9	MexDer	69,459
10	Borsa Istanbul	3,698

### CURRENCY FUTURES#

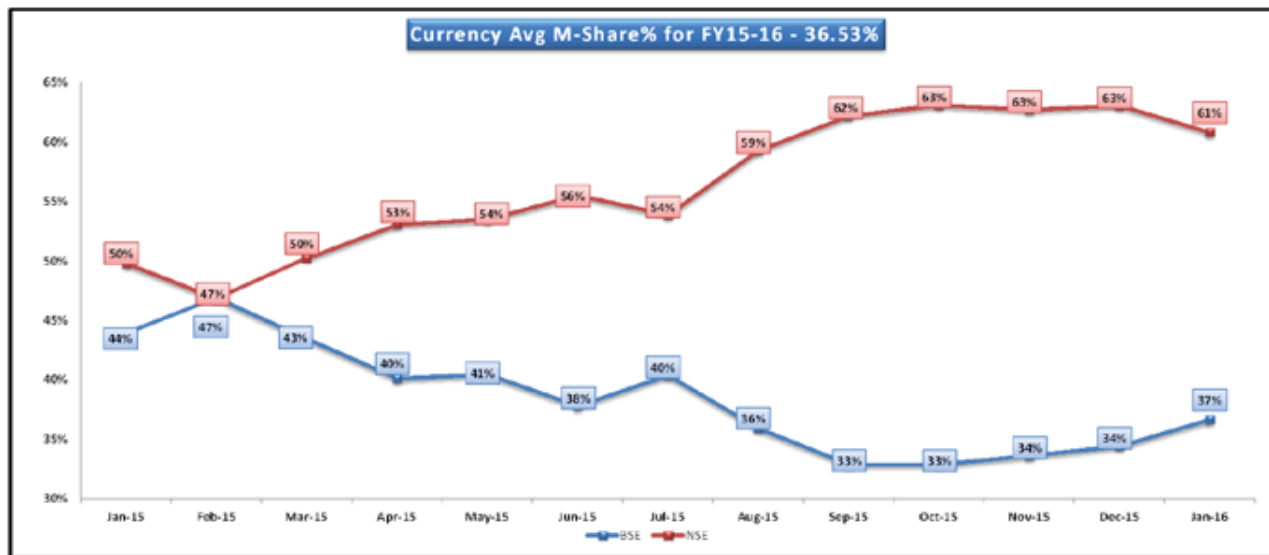
Rank	Exchange	No. of Equity Trades
1	Moscow Exchange	88,67,52,654
2	National Stock Exchange India	36,56,93,131
3	BSE India	19,72,44,736
4	CME Group	18,11,14,693
5	BM&FBOVESP	10,92,85,330
6	Korea Exchange	4,91,89,028
7	Johannesburg SE	2,88,39,911
8	MexDer	70,01,217
9	Borsa Istanbul	11,68,473
10	TAIFEX	10,64,267

#Source: World Federation of Exchanges  
\*Jan-15 to Dec-15



# Currency Derivatives Market Share and Competitive Advantage

## Market Share



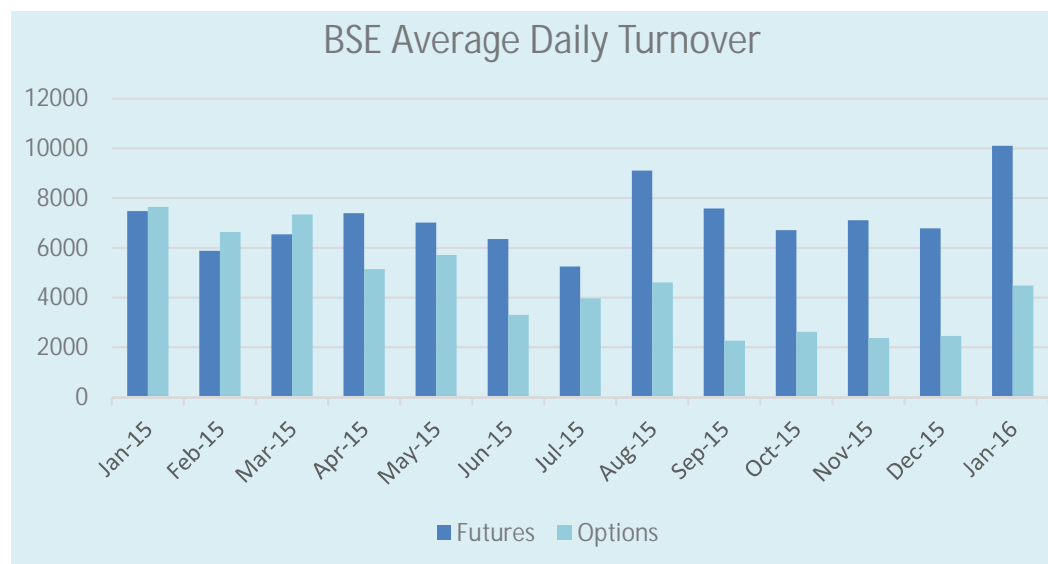
## Competitive Advantage

Currency Future	BSE*	Exchange A
Exchange Transaction Charges (Rs. / Per Cr)	10	110
Exchange Transaction Charges for Buy & Sell (Square Off)	10	220
Exchange Transaction Charges for 1 Million Dollar (1000 Lots)	65	1430
<b>Save your cost @ BSE upto</b>	<b>95.45%</b>	
Currency Option Transaction Charges	BSE*	Exchange A
Exchange Transaction Charges on premium value (Rs./ Per Cr.)	10	4000
<b>Save your cost @ BSE upto</b>	<b>99.75%</b>	

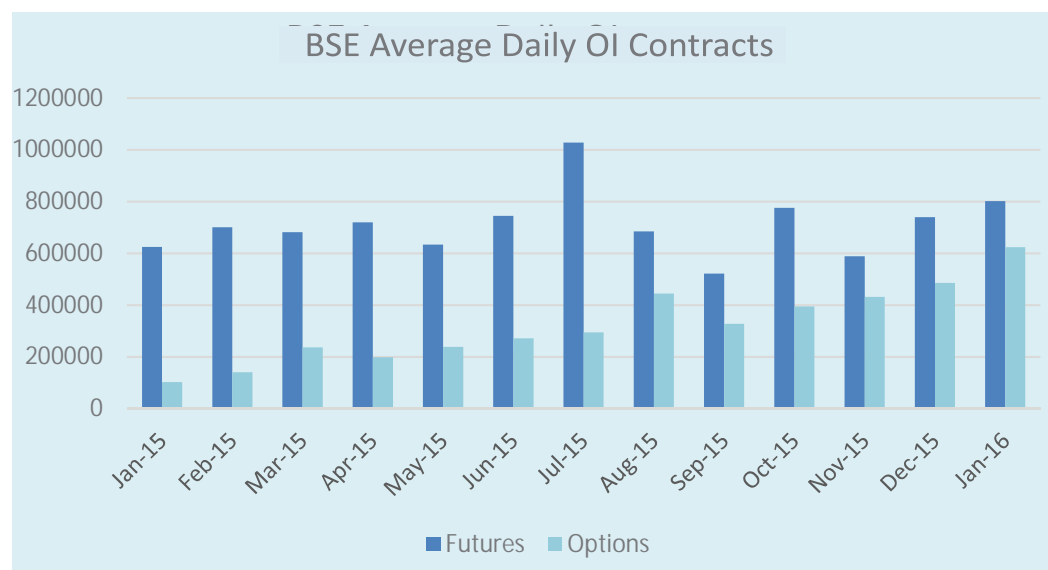
\*Transaction charges on the active side only, the passive side of the transaction shall be exempted for transaction charges

## Currency Derivatives Performance

Turnover (in crs.)		
Month	Futures	Options
Jan-15	7483	7645
Feb-15	5878	6642
Mar-15	6540	7344
Apr-15	7395	5149
May-15	7020	5717
Jun-15	6354	3311
Jul-15	5253	3967
Aug-15	9110	4609
Sep-15	7581	2271
Oct-15	6711	2624
Nov-15	7110	2371
Dec-15	6782	2454
Jan-16	10107	4481

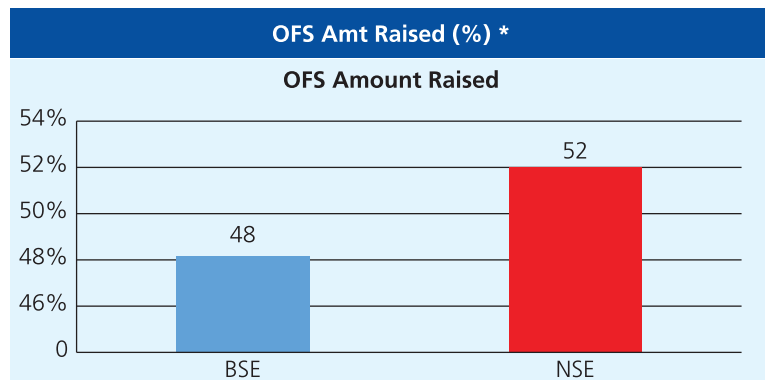
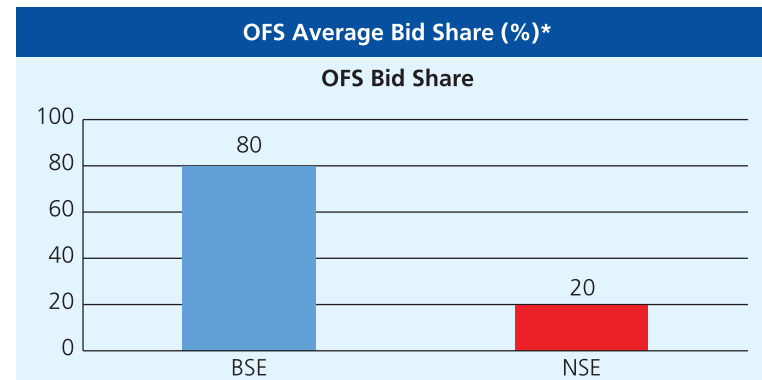
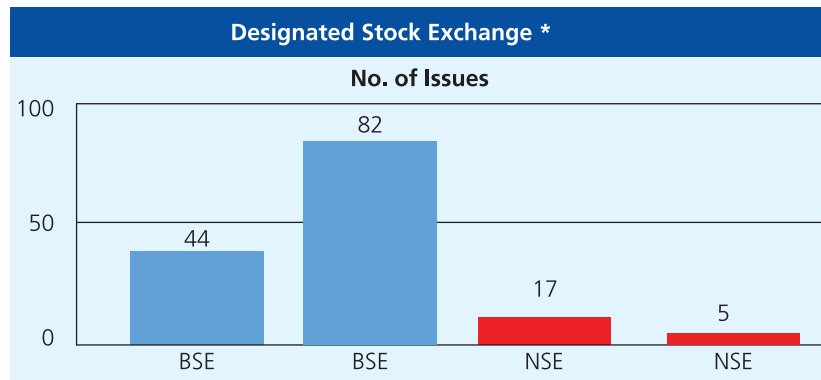


OI contracts (Nos.)		
Month	Futures	Options
Jan-15	624981	102540
Feb-15	701019	140305
Mar-15	681900	236859
Apr-15	719771	198626
May-15	633620	238924
Jun-15	745120	272007
Jul-15	1028437	295145
Aug-15	685017	445074
Sep-15	521770	327347
Oct-15	775622	395094
Nov-15	588844	431661
Dec-15	739793	485886
Jan-16	802188	623944



# Offer For Sale (OFS)

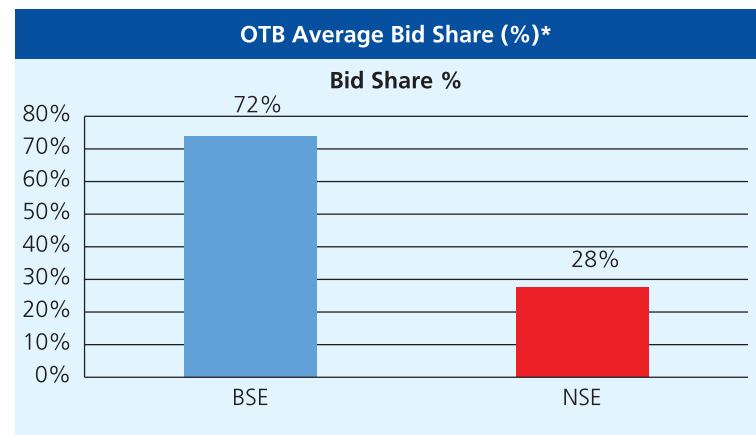
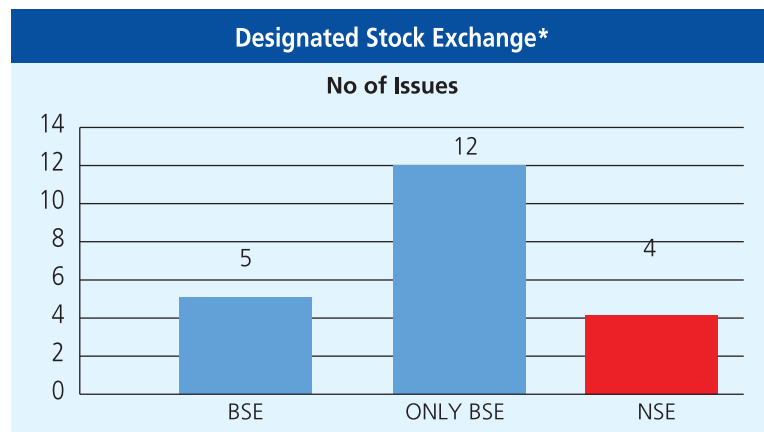
- ✓ BSE launched the Offer For Sale (OFS) module on iBBS (Internet based book building System) platform on 24th February, 2012.
- ✓ 148 companies have completed OFS issues of which BSE was appointed the Designated Stock Exchange in 126 issues. Over 500 members have participated in OFS via BSE platform.
- ✓ The process has helped the Government to raise over Rs.37,520 crs through divestment of holdings in PSUs.



82 are conducted only on BSE platform

## Offer to Buy (OTB)– Acquisition Window

- ✓ An Offer to Buy is a new mechanism to facilitate tendering of shares by the shareholders and settlement of the same, through the stock exchange in the form of a separate window (the “Acquisition Window”).
- ✓ BSE launched the Offer to Buy (OTB) module on iBBS (Internet based book building System) platform on 01st July, 2015.
- ✓ Till date, 21 companies have completed their OTB issues of which BSE was appointed the Designated Stock Exchange in 12 OFS issues.



12 issues are conducted only on BSE platform

## BSE Hi-Tech



A platform for young fast growing companies requiring funds to fuel growth



A credible exit avenue for early investors which will enable VC/PE investors to churn their portfolio and enhance liquidity for investors

Platform for new age, high-tech / innovative stocks that are more growth oriented



Cos can attract  
Global investors  
as FPIs

Increased  
visibility  
Brand creation,  
research &  
media  
coverage

Access to funds  
through a well  
established  
platform and  
mechanism

Start-up

Cheaper and less  
onerous than  
international  
listing

High credibility  
amongst all  
stakeholders

Sophisticated  
investors  
Enabling better  
valuation

## BOLT PLUS ON WEB(BoW)



### One Window with Multiple Utilities

Trading	Segments	For	Connectivity
✓ BSE	→ ✓ Equity – F&O – Currency – IRF - OFS – Mutual Fund – SLB – Debt – ITP	✓ Dealers	✓ Leased Line
✓ NSE	→ ✓ Equity – F&O – Currency	✓ Investors	✓ Internet
✓ MCX	→ ✓ Commodities	✓ Admin for HO	
✓ NCDEX	→ ✓ Commodities	✓ Multiple Mini Admin for Regions & Branches	
		✓ RMS	

### User Friendly features

- ✓ Dual Market Depth Display
- ✓ AMO – After Market Orders
- ✓ Time base Square up for Intraday transactions and One click square up on M2M Alert.
- ✓ Corporate Information Analysis for
  - Bonus, Rights, Dividend, Board Meetings, Scheme
- ✓ Top Gainers / Top Losers
- ✓ Most Active by VOLUME / VALUE
- ✓ User define short keys - predefine Key Mapping Styles for ODIN-BOLT
- ✓ Auto upgrade notification
- ✓ Easy mechanism to activate locked User ID (just fetch Password)
- ✓ Market Movement with chart with user defined time frame
- ✓ NEWS Plus with RSS feeds and Twitter

- Web links for 100 + Visual Operational Help Video's
- Tip of the Day prompt on login – notifying what all can be done
- Member Branding through EXE
- Bolt + on Web (BoW) – FREE OF COST FOR ALL MEMBERS
- Trade commencement in one day
- No Extra hardware like TAP-IML server required.

*Application for Desktop and Mobile*



# Information Products



## Products offered

### Market Data

- ✓ Equity Level 1 – Real-time & 1 minute Snapshots
- ✓ Equity Level 2 – Real-time
- ✓ Indices – Real-time & 1 minute Snapshots
- ✓ Derivatives (Equity , Index , Currency & Interest Rate Derivatives) – Real-time

### Corporate Data

- ✓ Corporate Announcement
- ✓ Financial Results
- ✓ Shareholding Pattern
- ✓ Corporate Action through SWIFT

### End of day / Historical

- ✓ Quotation files
- ✓ Annual report
- ✓ Daily Bulletin
- ✓ Sector Classification
- ✓ Trade and Order book data



# Technology Initiatives



# New Trading Architecture – BOLT PLUS

## Bolt Plus Live

- ✓ Products available for trading
  - Currency Derivatives – 29<sup>th</sup> November, 2013
  - Interest Rates Futures - 28<sup>th</sup> January,2014
  - Equity Derivatives - 10<sup>th</sup> February,2014
  - Equity – 7<sup>th</sup> April,2014

## Member Access

- ✓ API based access
  - Through existing IML API
  - Advanced High performance APIs (ETI, MDI/EMDI)

## Peripheral Systems connecting to BOLT Plus

- ✓ Reference Data, Risk Management, Surveillance, Clearing & Settlement, Data Warehouse

## Performance Testing & Benchmarking

- ✓ Latency : < 6  $\mu$ s (Gateway in to Gateway out)
- ✓ Network Latency for Colo Users: 18  $\mu$ s
- ✓ Throughput Capacity: 5 lacs order per second
- ✓ Scalability: Horizontally scalable by adding partitions

## Technology Programme - Colocation Facilities

### Fastest Co-location

- ✓ BSE is the fastest Exchange in the world with a speed of 6 microseconds.
- ✓ BSE provides the fastest Colocation service in India with round trip network latency of less than 20 microseconds.
- ✓ At BSE Colocation, Exchange response for an order has round trip latency of less than 30 microseconds.
- ✓ Market access across Equity, Equity Derivatives and Currency Derivatives segments.
- ✓ Extension of Precision Time Protocol (PTP) from BSE's Grandmaster clock to the Colocation enables members to synchronize with the Exchange clock.
- ✓ Equitable distribution of market data to all members by usage of same length cables for all members.
- ✓ Full order book (EOBI) broadcast is provided to Colocation members.
- ✓ State-of-the-art Data Centre services from NTT – Netmagic
- ✓ Low latency 10 Gbps Solarflare NIC cards (Model No. : SFN7322F) will be provided to members by BSE.

### BSE Co-location : NTT Netmagic Data Centre

BSE Co-location is entirely managed by a third party service provider - NTT Netmagic. Key technical highlights are:

- ✓ 10 Gbps Fibre optic cable connection with BSE trading system with full redundancy
- ✓ 24 X 7 operations support
- ✓ 24 X 7 High security zone
- ✓ Uninterrupted Power Supply with DG back up
- ✓ ITIL and ISO 27001 compliant
- ✓ FM200 Fire suppression facility
- ✓ Global Exchanges' feed from Thomson Reuters Electron network
- ✓ 99.999% uptime

## Technology Programme - Software and Hardware

For services opted by member, BSE bears the cost on behalf of the member for; **ALGO Trading**

- ✓ The software license cost for ALGO trading and market access
- ✓ The infrastructure cost on Co-location rack space
- ✓ The ALGO trading servers at Co-location
- ✓ The internet connectivity between BSE Co-location and member's office

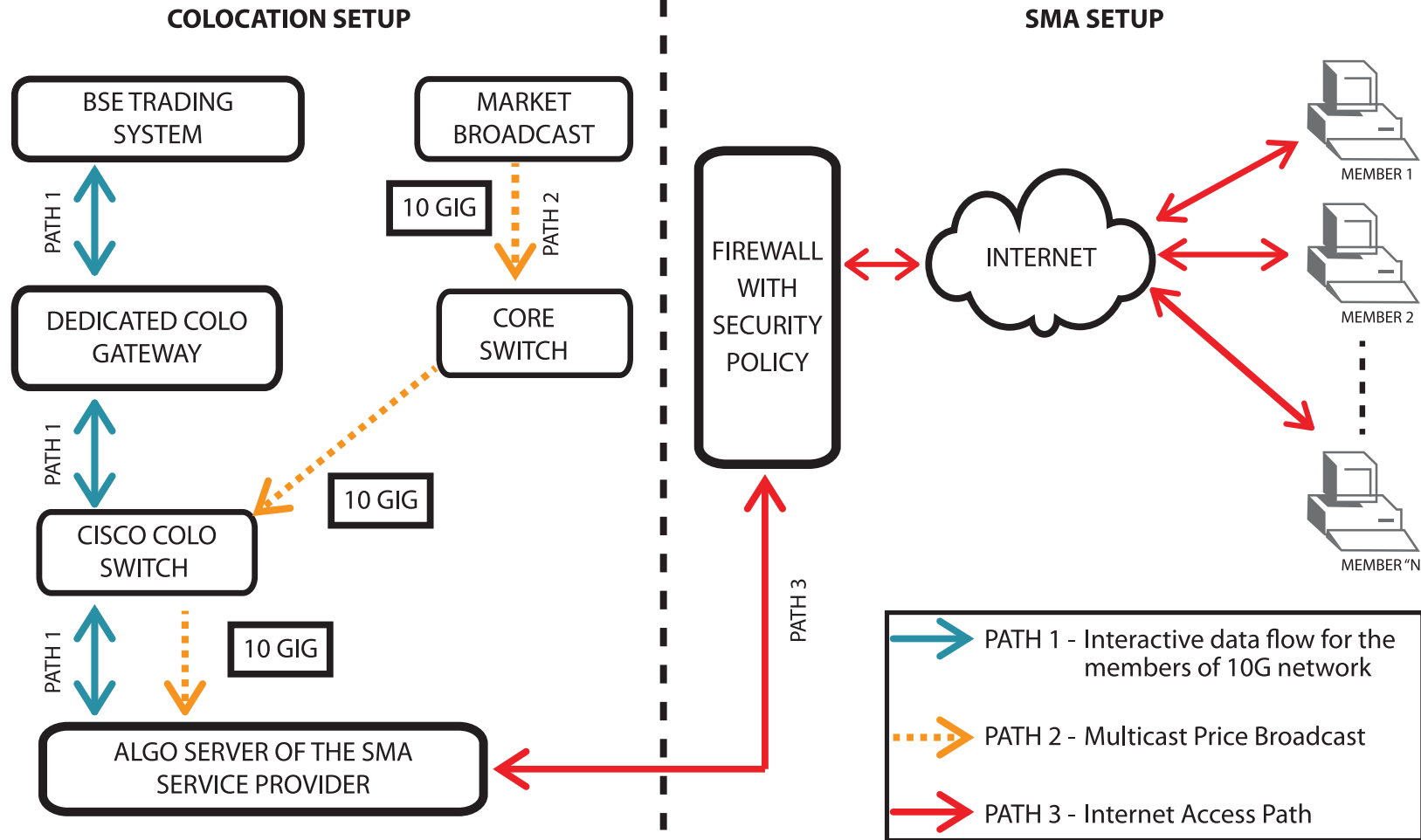
Algo Trading software is available from following vendors for quoting and market making in Eq. Derivatives including auto hedging capabilities across Exchanges and Segments:

- ✓ Greeksoft Technologies Pvt. Ltd
- ✓ uTrade Solutions Pvt. Ltd
- ✓ Omnesys Technologies Pvt. Ltd
- ✓ Symphony Fintech Solutions Pvt. Ltd.

### Cost Comparison

Service	BSE	Other Exchange
Colocation Network Bandwidth	10 Gbps fiber optic network	10 Gbps fiber optic network
10 G Go-live Month	September 2014	October 2014
Roundtrip Latency (in µsec) : Exchange Response Time	6	500 #
Roundtrip Latency (in µsec) : Colo Network*	20	500 #
Roundtrip Latency (in µsec): Exchange Response Time + Colo Network Latency	26	1000 #
10G Switch at Member Rack	Not Mandatory	Mandatory
10G NIC Card from Exchange per member	2 Solarflare Cards (SFN7322F)	NIL
Additional cost to member for 10G migration	NIL	INR 10 – 20 Lakhs
Full Racks	Free	One Time Cost : Rs. 1 Lakh plus AMC : Rs.12 Lakhs
Half Racks	Free	One Time Cost : Rs. 50,000 plus AMC : Rs.6 Lakhs
Quarter Racks	Free	Not Available
Servers	Free	Not Available
Algo software	Free	Not Available
Interactive and Market data connectivity cost	Unlimited order throughput and market data feed at no cost	Interactive Connectivity : Annual Cost per connection Rs.10 Lakhs for 400 messages/sec
		TBT Market Data Feed : Annual Cost per feed Full Rack : Rs.1.00 Lakh / Half Rack: Rs.0.50 Lakh

# Sponsored Market Access New Facility at Colocation



# Sponsored Market Access

## Implementation of 'Sponsored Market Access' (SMA) at Colocation

- ✓ SMA is a software distribution model in which applications are hosted by a service provider and made available to customers over a network. The live operations started in December, 2014.
- ✓ Free of cost rack space is allocated by BSE to the SMA service providers to install their algo trading application server in BSE Colocation. The members can connect to this SMA algo server at Colocation via Internet.
- ✓ The algo strategy parameters can be triggered from the member front-end application and sent to the SMA algo server at Colocation.
- ✓ The corresponding algos will generate orders to be sent to BSE trading system through Colocation network.
- ✓ The algo orders will be sent to the BSE Trading system via the high speed Colocation gateway for minimum latency.
- ✓ Members can execute orders over high speed Colocation network without installation of any infrastructure at Colocation by the members.

## Advantages

### ✓ For Members

- Zero capital expenditure on infrastructure at Colocation.
- The algo orders will be generated at Colocation and sent to the BSE Trading system via the high speed 10G Colocation network for minimum latency.

### ✓ For Vendors

- Free of cost rack space is allocated by BSE to SMA service providers to install their algo trading application server in BSE Colocation.
- Vendor can service multiple clients with a centralized algo server installed at Colocation. Hence, vendor's cost of maintenance is low.



For more details, kindly e-mail to [tech.prog@bseindia.com](mailto:tech.prog@bseindia.com)

Bloomberg Ticker	Category	Type
SENSEX Index CT	S&P BSE SENSEX Index futures	Futures contract
BSE100 Index CT	S&P BSE 100 index futures	Futures contract
SENSEX Index OMON	S&P BSE SENSEX Index options	Options contract
BSE100 Index OMON	S&P BSE 100 Index Options	Options contract
LUSA Currency OMON	S&P BSE Currency Options	Options Contract
LUSA Curncy	S&P BSE Currency USDINR Futures	Futures Contract
LERA Curncy	S&P BSE Currency EURINR Futures	Futures Contract
LGBA Curncy	S&P BSE Currency GBPINR Futures	Futures Contract
LJPA Curncy	S&P BSE Currency JPYINR Futures	Futures Contract
TBBA Comdty	T-Bill	Futures Contract
IISA Comdty	Gov Bond 8.4%	Futures Contract
IIPA Comdty	Gov Bond 7.72%	Futures Contract

Thompson Reuters Symbols	Category	Type
0#BIF	S&P BSE SENSEX Equity Index	Futures contract
0#BHI	S&P BSE 100 Index futures	Futures contract
0#BIF*.BO	S&P BSE SENSEX Equity Index	Options contract
0#BHI*.BO	S&P BSE 100 Index Options	Options contract
0#BIR	Currency USD/INR	Futures contract
0#BEU	Currency EUR/INR	Futures contract
0#BGB	Currency GBP/INR	Futures contract
0#BJP	Currency JPY/INR	Futures contract
0#BIR	Currency USD/INR	Currency Futures Spread Contract
0#BEU	Currency EUR/INR	Currency Futures Spread Contract
0#BGB	Currency GBP/INR	Currency Futures Spread Contract
0#BJP	Currency JPY/INR	Currency Futures Spread Contract
0#BSE91	Treasury Bill	Futures contract
0#B883	10 Yr G-Sec	Futures contract
0#B716	10 Yr G-Sec	Futures contract



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