

**APRIL
2017
UPDATE** 



LIQUIDITY • LOWER COSTS • TIGHT SPREADS • LARGE PARTICIPANT BASE

INDEX

Section	Contents	Page No.
1	About BSE	2
2	Listing Business	18
3	Market Business	20
4	Data Business	30
5	Technology Initiatives	32



About BSE



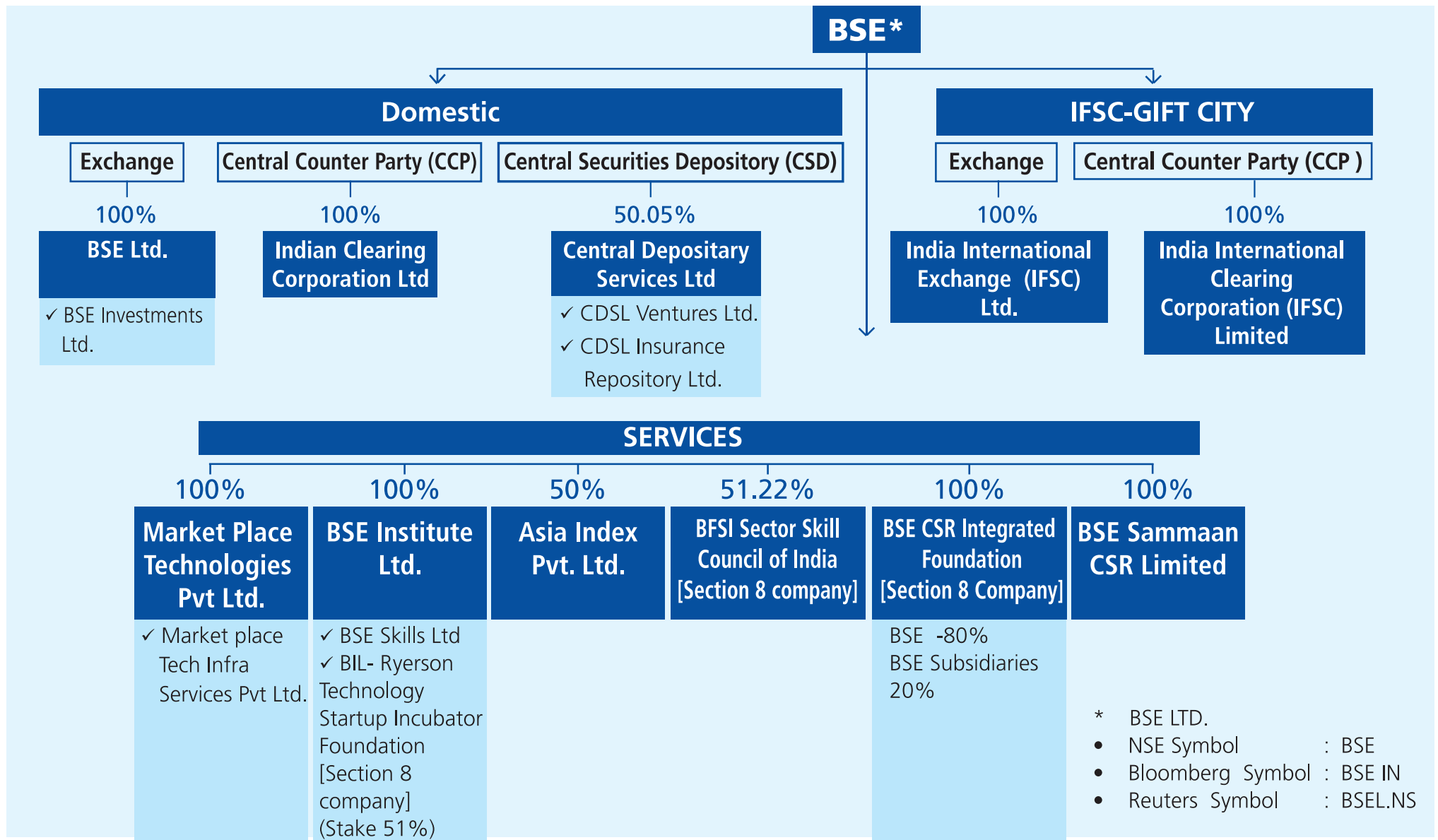
Evolution Of The Exchange



Key Milestones

16 th Mar, 2017	BSE partners with Sentifi for analysing and reporting social media updates
14 th Mar, 2017	BSE launches futures on S&P BSE SENSEX 50 for investors to achieve portfolio diversification.
3 rd Feb ,2017	BSE becomes India's 1st listed Stock Exchange
16 th Jan ,2017	Commencement of Trading at India INX
9 th Jan ,2017	Hon'ble Prime Minister of India, Shri Narendra Modi inaugurated India International Exchange (IFSC) Ltd, India's 1st International Exchange
7 th Dec ,2016	Asia Index Private Limited launches S&P BSE SENSEX 50 Index to measure the performance of the 50 largest listed companies at the BSE
9 th July,2016	Shri Arun Jaitley, Hon'ble Minister of Finance Unveiled the Commemorative Postage Stamp Celebrating 140 glorious years of BSE
9 th Jun, 2016	BSE announces commencement of trading of Sovereign Gold Bonds
2 nd Jan ,1986	S&P BSE SENSEX , country's first equity index launched (Base Year:1978-79 =100)
31 st Aug ,1957	BSE granted permanent recognition under Securities Contracts (Regulation) Act (SCRA)
9 th July,1875	The Native Share & Stock Broker's Association formed

BSE Group



BSE & Its Partners



- Sensex Licensing to Korea Exchange



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



- 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



- 4.75% investment in BSE by State Bank of India as key user and supporter of platform.
- 4.98% Investment in BSE by Smallcap World Fund, Inc.

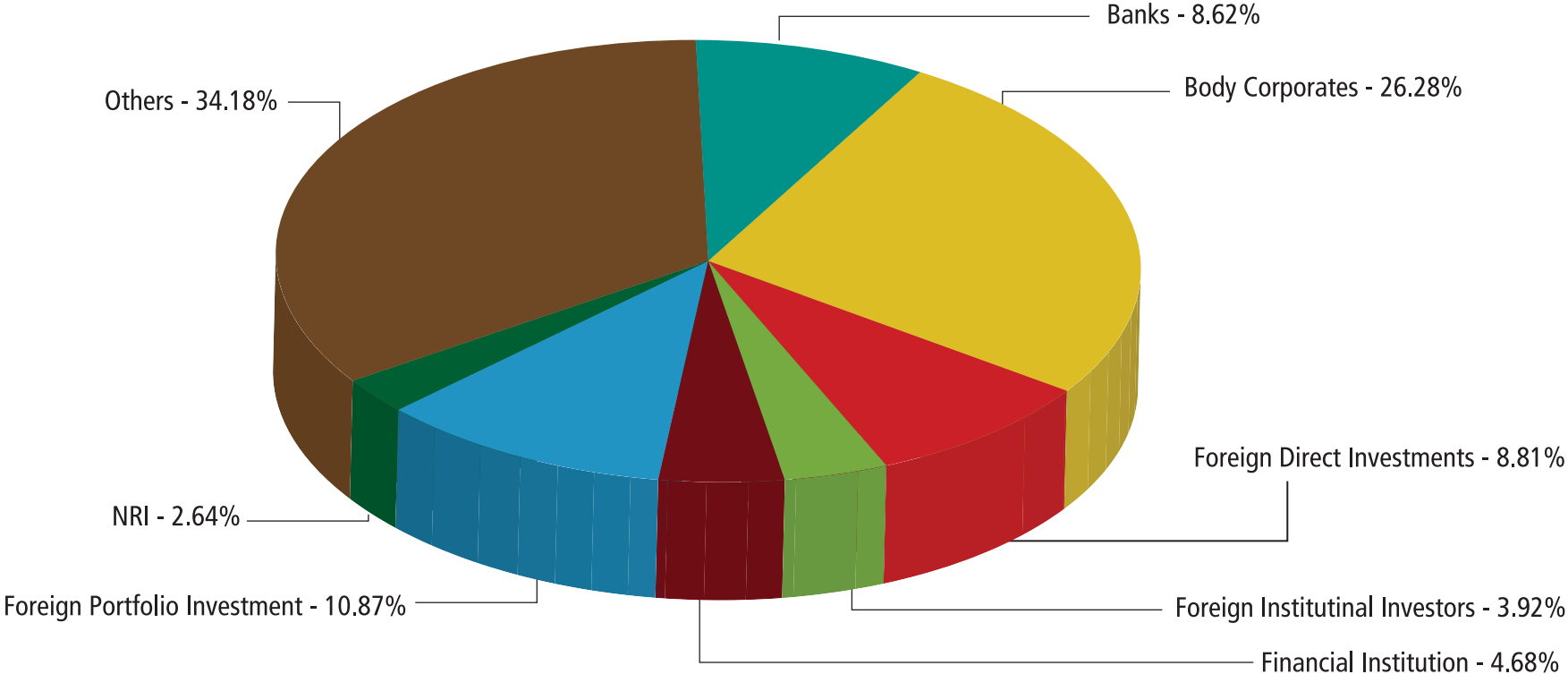


- 4.68% investment in BSE as key user and supporter of platform
- Board Presence

Shareholding Pattern

Paid up Capital Rs. 10.74 crs. | Face Value per share 2/- each

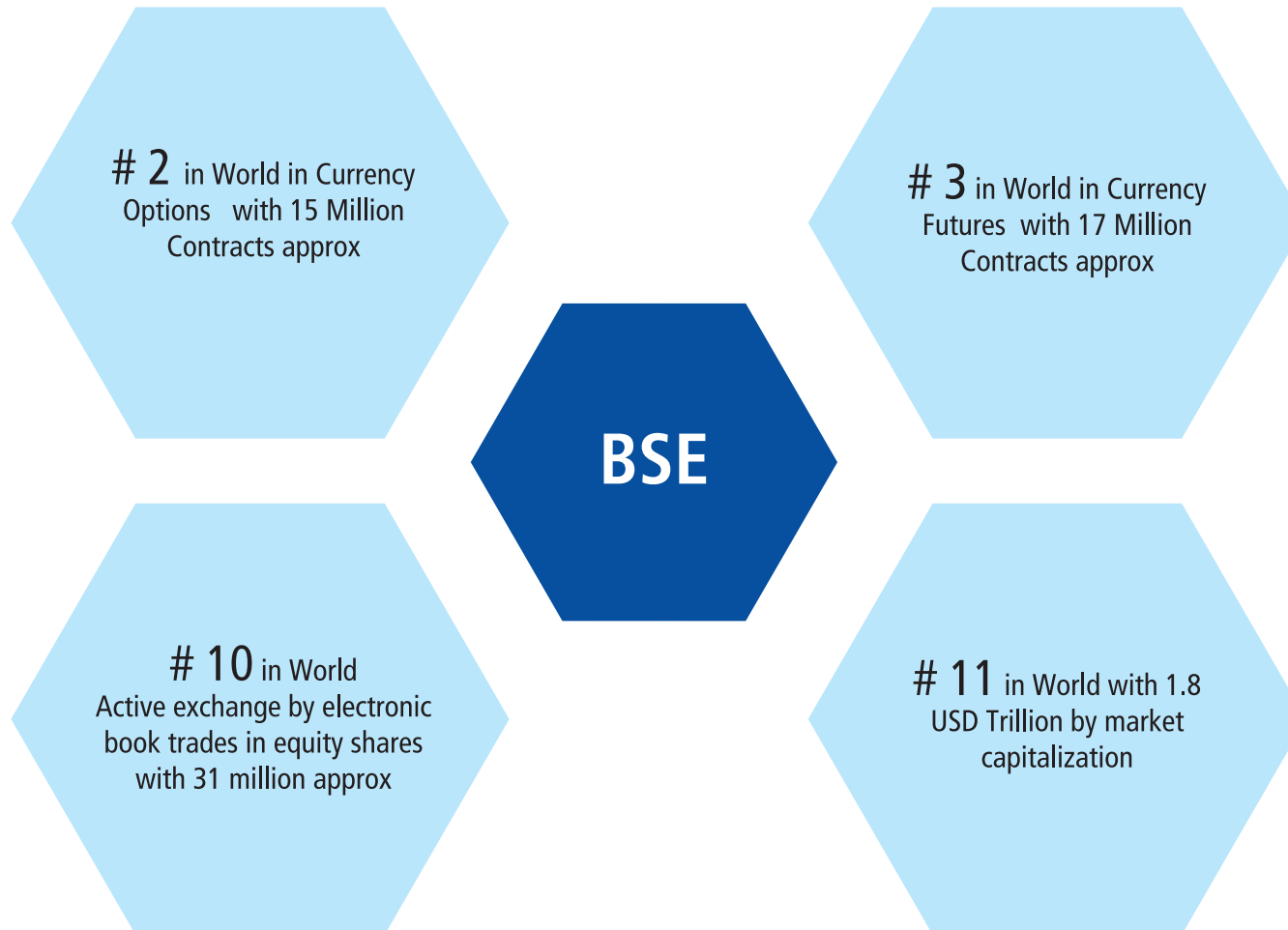
Categorywise Shareholding Pattern (%)



All 20 nationalized banks are our shareholders

Data as of 31st March 2017

Global Ranking



Source: World Federation of Exchanges




Data as of February 2017

Key Highlights




Growth Strategy






Board of Directors

	NAME / TITLE	DESCRIPTION
	<p>Mr. Sudhakar Rao IAS (Retd.) Chairman, Public Interest Director</p>	<ul style="list-style-type: none"> Mr. Sudhakar Rao has completed master's degree in Arts (Economics) from University of Delhi and a master's degree in Public Administration from the Kennedy School of Government, Harvard University. He was in the Indian Administrative Service (IAS) and retired as the Chief Secretary of the State Government of Karnataka. He was awarded the Kannada Rajyotsava Award, under the public service category by the Government of Karnataka on November 1, 2010. He holds directorship of several companies including BSE Institute Limited, L&T Infrastructure Development Projects Limited, Healthcare Global Enterprises Limited, IFFCO-TOKIO General Insurance Company Limited and Tata Elxsi Limited. He is currently also Chairman of BSE Training Institute and BFSI Sector Skill Council of India.
	<p>Mr. Ashishkumar Chauhan Managing Director & CEO</p>	<ul style="list-style-type: none"> Mr. Ashishkumar Chauhan is the MD & CEO of BSE (Bombay Stock Exchange), the first stock exchange of Asia. He is one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. He is best known as the father of modern financial derivatives in India due to his work at NSE. He was instrumental in setting up India's first fully automated screen based trading system and first commercial satellite communications network. 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 and was also the CEO of the cricket team Mumbai Indians in its formative years. He currently serves as the Chairperson on the Board of Governors (BoGs) of the National Institute of Technology (NIT) Manipur. He is an Advisor to the Technical Evaluation Committee set up by the Department of Posts for Postal Bank and also a part of several other 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. He is a Distinguished Visiting professor at Ryerson University, Toronto, Canada. In recognition of his contribution to industry he has received many awards at National and International levels.
	<p>Dr. Krishnaswamy Kasturirangan Former Chairman, ISRO Public Interest Director</p>	<ul style="list-style-type: none"> Dr. Krishnaswamy Kasturirangan is currently the Chancellor of Jawaharlal Nehru University, an Honorary Distinguished Advisor, Indian Space Research Organisation (ISRO), an Emeritus Professor at the National Institute of Advanced Studies and holds the Satish Dhawan Chair for Engineering Eminence instituted by Indian National Academy of Engineering. Earlier, as Chairman of ISRO, he oversaw the space programme in India between the years 1994 and 2003. He was also a Member, Upper House of the Indian Parliament, and subsequently, Member of the erstwhile Planning Commission. His interests include astrophysics, space science and technology as well as science related policies.



Board of Directors

	NAME / TITLE	DESCRIPTION
	<p>Mr. Dharendra Swarup Secretary (Retd.), Finance Ministry Public Interest Director</p>	<ul style="list-style-type: none"> ■ Mr. Dharendra Swarup has over four decades of experience across Finance, Budgeting, Public Debt Management, Public Policy and Pension Reforms. A former Chairman of Pension Funds Regulatory and Development Authority, he has been a career civil servant retiring as Secretary to the Government of India, Ministry of Finance. ■ He is an IMF expert on fiscal affairs and has worked in UK, Turkey and Georgia. ■ He is a Director on the Board of Eros International Media Limited, PTC India Limited, Berger Paints India Limited and PTC Energy Limited.
	<p>Mr. Vikramajit Sen Former Supreme Court Judge and Chief Justice, High Court of Karnataka Public Interest Director</p>	<ul style="list-style-type: none"> ■ Mr. Vikramajit Sen retired from the Supreme Court of India on 31st December 2015. Prior thereto practised mainly commercial law in the Courts in Delhi. Presently on the Board of several Corporations. In addition, conducting Arbitrations and giving legal opinion on complicated questions of law. ■ Studied in St. Xavier's School in Delhi, followed by a BA (Honours) degree after attending St. Stephen's College, Delhi University. Received Law Degree from the Faculty of Law, Delhi University in 1974. ■ He is a Director on the Board of DCM Shriram Limited
	<p>Mr. Sumit Bose IAS (Retd.) Former Union Finance Secretary Public Interest Director</p>	<ul style="list-style-type: none"> ■ Mr. Sumit Bose is Director on the Board of Coromandal International Limited, Tata AIG General Insurance Company Ltd., UTI Asset Management Company Ltd., HDFC Standard Life Insurance Co. Limited, and Oil and Natural Gas Corporation Ltd. Vice Chairman, National Institute of Public Finance and Policy, New Delhi, Chairman, Board of Directors of Vidhi Centre for Legal Policy, New Delhi, an independent legal think tank, a Member, Board of Governors of The Doon School, Dehradun, a Member, Governing Body, Parivaar Education Society, Kolkata, Director, Jal Seva Charitable Foundation




Board of Directors

	NAME / TITLE	DESCRIPTION
	<p>Mr. Sethurathnam Ravi FCA, Practising Chartered Accountant Public Interest Director</p>	<ul style="list-style-type: none"> ■ Mr. S. Ravi is the Managing Partner of Ravi Rajan & Co., Chartered Accountants. He is an Independent Director on the board of IDBI Bank Ltd and UTI Trustee Company Ltd, amongst other reputed companies. ■ He is a member of the Takeover Panel and Mutual Funds Advisory Committee of SEBI.
	<p>Dr. Sriprakash Kothari Gordon Y Billard Professor of Accounting and Finance Massachusetts Institute of Technology, Sloan School of Management Shareholder Director</p>	<ul style="list-style-type: none"> ■ Dr. Sriprakash Kothari is Gordon Y Billard Professor of Accounting and Finance at the Sloan School of Management, Massachusetts Institute of Technology. With close to two decades at this premier institute, Mr. Kothari recently completed a six-year stint as Deputy Dean at the Sloan School of Management. He is also faculty director of the MIT-India Program http://web.mit.edu/misti/mit-india/ and an editor of the world-renowned academic publication Journal of Accounting & Economics. Recently, in the year 2014 Mr. Kothari was a recipient of the American Accounting Association's (AAA) Notable Contributions to the Accounting Literature award. His other awards include honorary doctorates, Doctor Honoris Causa, from the University of Technology, Sydney in May 2013 and University of Cyprus in 2016 and a Distinguished Alumnus Award from Birla Institute of Technology and Science, Pilani, in 2013. ■ Dr. Sriprakash Kothari holds a bachelor of engineering degree from the Birla Institute of Technology and Science, Pilani, and has also earned his MBA (PGDM) from one of India's finest institutes, the Indian Institute of Management, Ahmedabad. Mr. Kothari completed his PhD from University of Iowa, United States. His highly-cited research focuses on the US and international financial reporting practices, the pricing of financial information, investment analysis and valuation.
	<p>Ms Usha Sangwan MD, Life Insurance Corporation of India Shareholder Director</p>	<ul style="list-style-type: none"> ■ Ms. Usha Sangwan, is the first ever woman Managing Director of Life Insurance Corporation of India since its inception. ■ She is the whole time Director of LIC of India, Board Member of General Insurance Corporation of India, , LIC Housing Finance Ltd., Axis Bank and Ambuja Cements Ltd. Director on the board of LIC (Singapore) Pte. Ltd., and LIC Cards Services Ltd., Associate Director LIC Mutual Fund Trustee Private Ltd. Member of Governing Council of National Insurance Academy, a Trustee of LIC Golden Jubilee Foundation, Chairman of Trust - LIC of India (Regular Part-time employees) Pension Fund and a Member of Policyholder Protection Committee, Executive Committee, Risk Management Committee and Investment Committee of LIC of India.


Board of Directors

	NAME / TITLE	DESCRIPTION
	Mr. Thomas Bendixen Representative, Deutsche Boerse AG Shareholder Director	<ul style="list-style-type: none">■ Mr. Thomas Bendixen represents Deutsche Boerse AG as a Shareholder Director on the BSE Board and is responsible for managing and developing the BSE - DBAG partnership.
	Ms. Rajeshree Sabnavis Fellow Member of ICAI, Company Secretary Shareholder Director	<ul style="list-style-type: none">■ Ms. Rajeshree Sabnavis is part of the Direct Taxation Committee with the Bombay Chamber of Commerce where she is a Co-Chairperson. She is also a member of the EU Chamber of Commerce.

Management Team

	NAME / TITLE	DESCRIPTION
	<p>Ashishkumar Chauhan Managing Director & Chief Executive Officer</p>	<ul style="list-style-type: none"> ■ Mr. Ashishkumar Chauhan is the MD & CEO of BSE (Bombay Stock Exchange), the first stock exchange of Asia. He is one of the founders of India's National Stock Exchange ("NSE") where he worked from 1992 to 2000. He is best known as the father of modern financial derivatives in India due to his work at NSE. He was instrumental in setting up India's first fully automated screen based trading system and first commercial satellite communications network. 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 and was also the CEO of the cricket team Mumbai Indians in its formative years. ■ He currently serves as the Chairperson on the Board of Governors (BoGs) of the National Institute of Technology (NIT) Manipur. He is an Advisor to the Technical Evaluation Committee set up by the Department of Posts for Postal Bank and also a part of several other 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. He is a Distinguished Visiting professor at Ryerson University, Toronto, Canada. ■ In recognition of his contribution to industry he has received many awards at National and International levels.
	<p>V Balasubramaniam Managing Director & Chief Executive Officer (INX)</p>	<ul style="list-style-type: none"> ■ V Bala is the founding Managing Director and Chief Executive Officer of India International Exchange IFSC Ltd. (India INX) the first International Exchange from India in GIFT City International Financial Services Centre Special Economic Zone which started its operations from JAN, 2017 and a wholly owned subsidiary of BSE (Asia's first stock exchange). He also holds board position in the following organisations – 1) Central Depository Services (India) Limited – Depository 2) BSE Institute Limited – Education business, 3) BSE Sammaan – CSR Exchange and 4) India International Clearing Corporation IFSC Limited. ■ Prior to this, he was the Chief Business Officer of BSE heading the business development encompassing all business segments viz. Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform and SME platform. In addition to the markets business, he was also responsible for the listings and data business of BSE and managing the entire trading operations and membership operations. ■ He has over 25 years of experience in the Capital Markets industry and has previously worked with Reliance Group as Vice President and was also as co-founder of Marketplace Technologies Limited which was acquired by BSE. ■ He was also part of the core team involved in setting up the National Stock Exchange of India. He was instrumental in creating the Capital Market segment, Nifty Index creation, setup of NSCCL as the first clearing corporation in India, NCFM certification creation and the Futures and Options segment inter-alia. ■ He has Masters in Commerce from the University of Mumbai, Rank holder from the Institute of Cost Accountants of India, Diploma from Institute of Chartered Financial Analysts of India and is a Certified Information Systems Auditor.
	<p>Nehal Vora Chief Regulatory Officer</p>	<ul style="list-style-type: none"> ■ 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 ■ 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 ■ 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...)

	NAME / TITLE	DESCRIPTION
	Nayan Mehta Chief Financial Officer	<ul style="list-style-type: none"> ▪ Nayan Mehta currently heads all finance, accounting, treasury and taxation functions of the Exchange. He represents BSE as the Senior Vice Chairman on the Executive Board of the South Asian Federation of Exchanges. He represents BSE on the Boards of group companies and joint ventures of BSE and as a member of the Qualified Audit Review Committee of SEBI. ▪ He has previously worked at Credit Analysis & Research Ltd, as Joint General Manager (Accounts), CFO at Multi Commodity Exchange of India Limited and has also worked at the National Stock Exchange. ▪ He holds a Bachelors in Commerce degree from University of Mumbai. He is a qualified Chartered Accountant as well as a qualified Cost and Management Accountant.
	Kersi Tavadia Chief Information Officer	<ul style="list-style-type: none"> ▪ 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 ▪ 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 of Business Operations	<ul style="list-style-type: none"> ▪ Neeraj Kulshrestha is responsible for Business Development for Equities, Equity Derivatives, Debt, Interest Rate Futures, Currency Derivatives, Mutual Fund Distribution platform and SME platform. He is also responsible for Trading Operations and Development, Listing Sales and Operations 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

Listing Business		Market Business				Data Business
Primary Market	Secondary Market	BSE Star Mutual Funds platform	New Debt Segment	Membership	Post Trade	Information Products
<ul style="list-style-type: none"> ▪ IPO ➢ EQUITY ➢ SME ➢ BOND ▪ FPO ▪ BSE Hi-Tech ▪ Sovereign Gold Bonds ▪ Mutual Fund-NFO 	<ul style="list-style-type: none"> ▪ Equity Cash ➢ Small & Medium Enterprises ➢ Offer to Buy ➢ Offer for Sale ➢ Close Ended Mutual Funds ➢ Corporate Bonds ➢ Government Securities and Sovereign Gold Bonds ▪ Equity Derivatives ▪ Currency Derivatives ▪ Interest Rate Futures ▪ Securities lending & borrowing (through ICCL) ▪ ETF 	<ul style="list-style-type: none"> ▪ Order placement platform 	<ul style="list-style-type: none"> ▪ OTC Corporate Bond Reporting CP/CD ▪ Trade Repository 	<ul style="list-style-type: none"> ▪ Trading Members ▪ Clearing Members ▪ Self-clearing Members 	<ul style="list-style-type: none"> ▪ Clearing and Settlement Services through ICCL ▪ Depository Services through CDSL 	<ul style="list-style-type: none"> ▪ Market Data ▪ Corporate Data ▪ Corporate Action through SWIFT ▪ End of Day Products ▪ Historical Data ▪ Macro economic Indices

Supporting Business

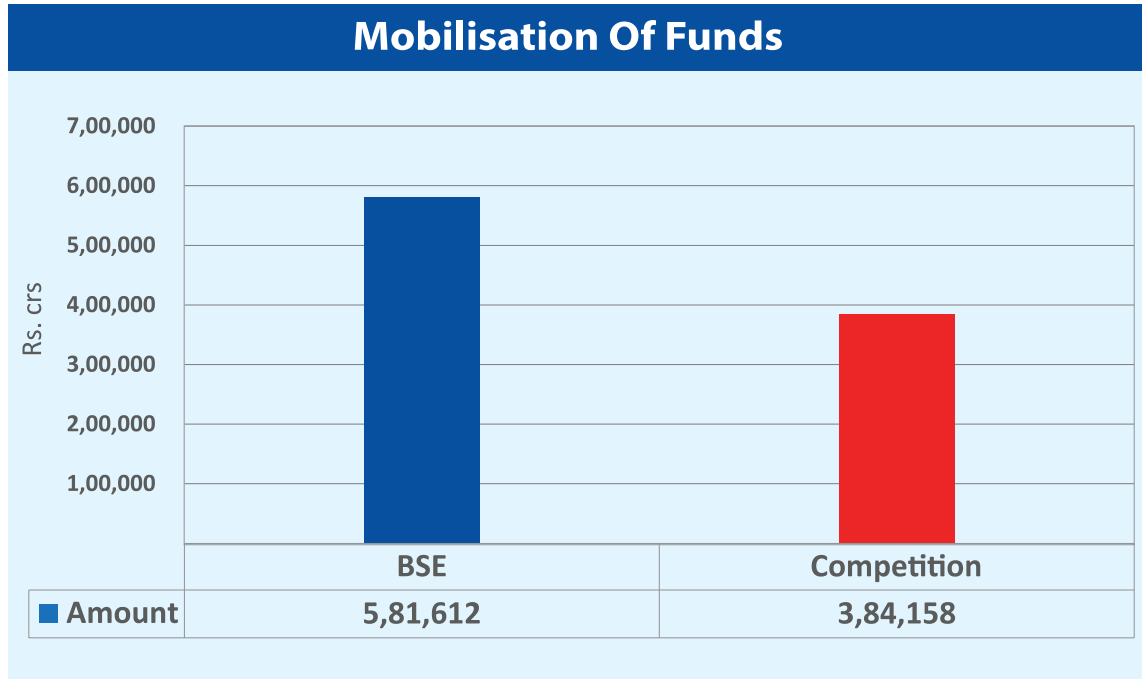
Technology	Index Products	Training	Corporate Social Responsibility
<ul style="list-style-type: none"> ▪ IT services & solutions 	<ul style="list-style-type: none"> ▪ S&P BSE SENSEX ▪ Sectoral Indices ▪ Sustainability Indices ▪ Thematic Indices ▪ Fixed Income Indices 	<ul style="list-style-type: none"> ▪ Training ▪ Certification ▪ Skill Development ▪ Technology Incubator & Accelerator Program 	<ul style="list-style-type: none"> ▪ BSE CSR Samman



Listing Business

3SE
EXPERIENCE THE NEW

Equity and Debt Mobilisation of Funds (Public Offer)



5317
Companies listed
with Equities

BSE crosses another
milestone of raising
Rs.200,111 Crore via the
Debt online platforms

- Amount raised across the Exchanges since April 2015 till March 2017

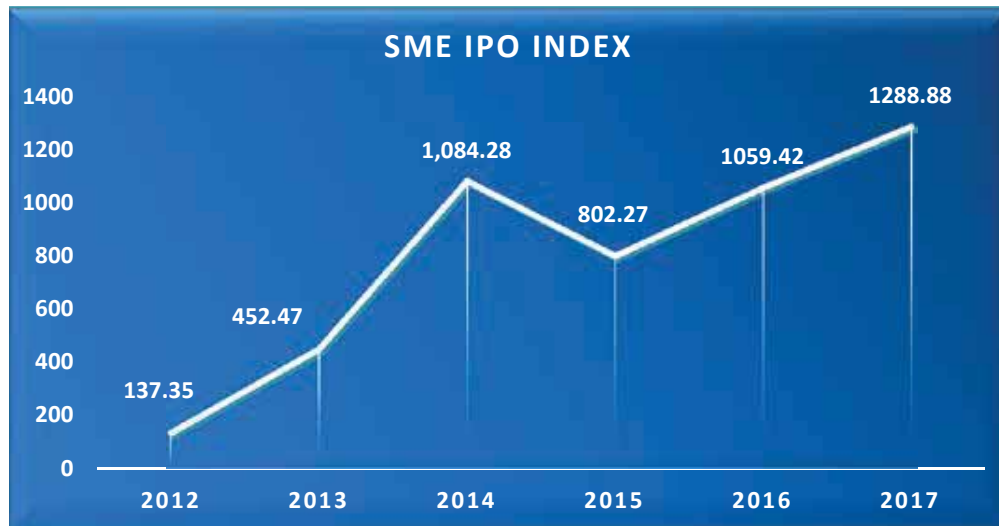
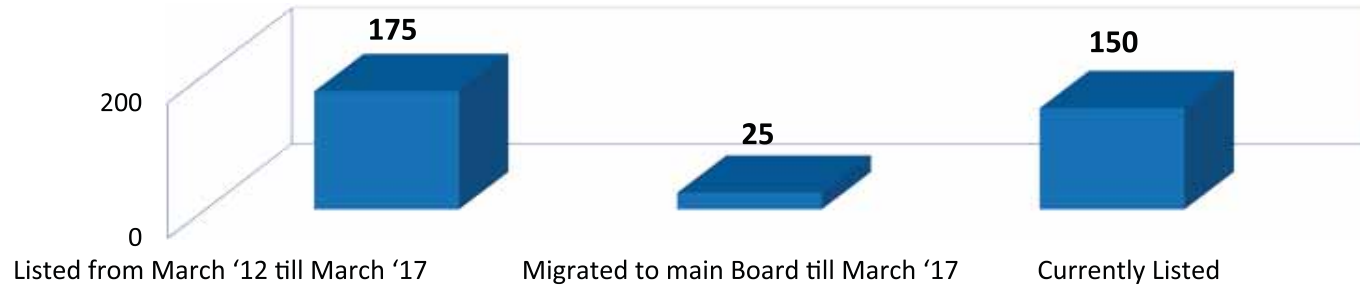
Equity and Debt Market

- BSE is the preferred choice for listing Privately Placed Debt Instruments (PPDI). In FY15-16, BSE has listed 1760 Instruments vis-a-vis 1339 on other Exchange.
- In F.Y. 2016-17 till March 2017 , Exchange has listed 2353 instruments with a market cap of Rs.4,20,661.1 crores vis a vis 1200 instruments on the other Exchange.
- In F.Y 2015-16, 20 Debt Public issues have tapped the market. BSE is the Designated Stock Exchange for 20 issues with 15 issues being listed only on BSE.
- In F.Y 2016-17 till March 2017, 16 Debt Public issues have tapped the market and BSE is the Designated Stock Exchange for the 14 public issues.

**Since April 2015*

SME Platform

Companies on BSE-SME Platform



- BSE is the first stock exchange in India to receive approval from SEBI on 26th September 2011 to launch SME Platform. SME IPO Index was launched on 14th December, 2012 aimed at tracking the companies listed on SME platform with a Base value of 100. As on 31st March, 2017 its value was 1,288.88.
- The Platform facilitates capital raising by 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.
- Total Market Capitalization of 150 companies –Rs.9,795.96 Crs
- Total Market Capitalization of 25 companies Migrated to main Board – Rs.7,129.76 Crs.

Data as of March 2017

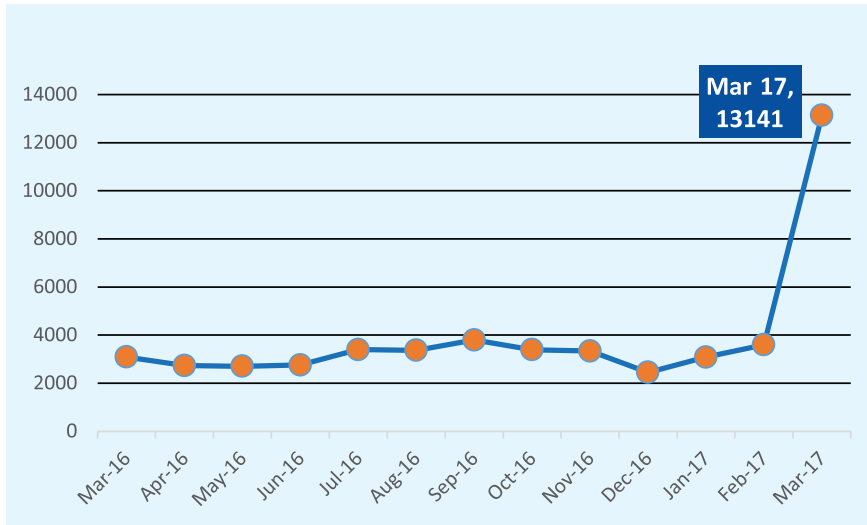


**Market
Business**

BSE
EXPERIENCE THE NEW

Equity Cash Market

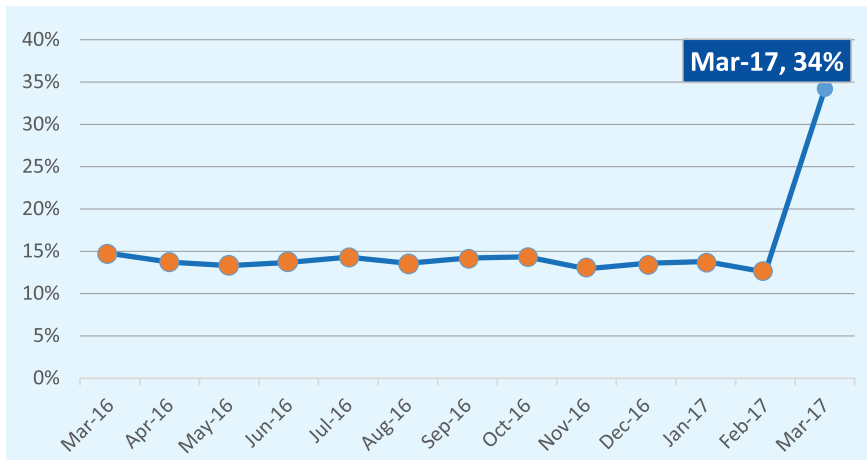
Turnover (Rs. Crs.)



Revision in Transaction Charges for Equity Segment w.e.f April 03, 2017

Slab-wise Rates	
Monthly Trades Count	Rate (in Rs.) per Trade
0 – 5,00,000	1
5,00,001 – 10,00,000	0.7
10,00,001 -20,00,000	0.6
20,00,001 – 30,00,000	0.5
30,00,001 -40,00,000	0.4
> 40,00,001	0.3

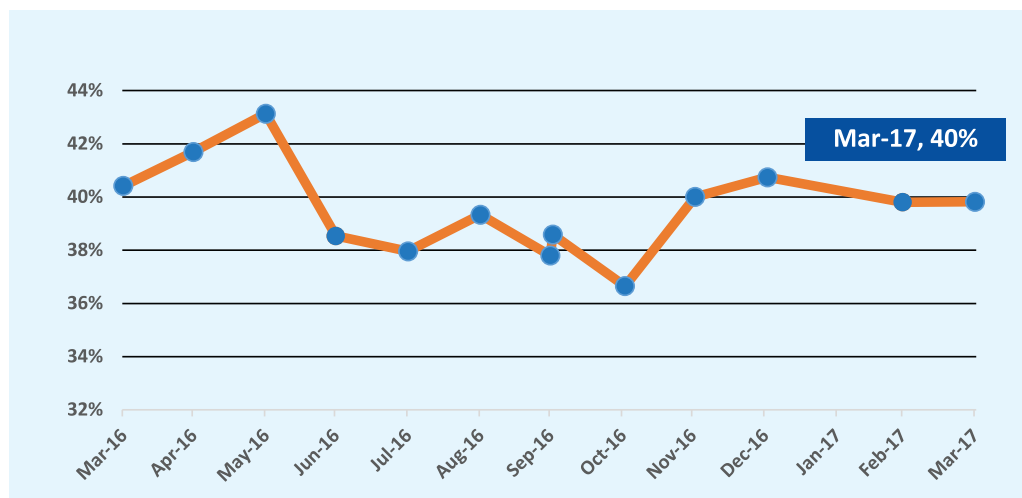
Equity Turnover Market Share %



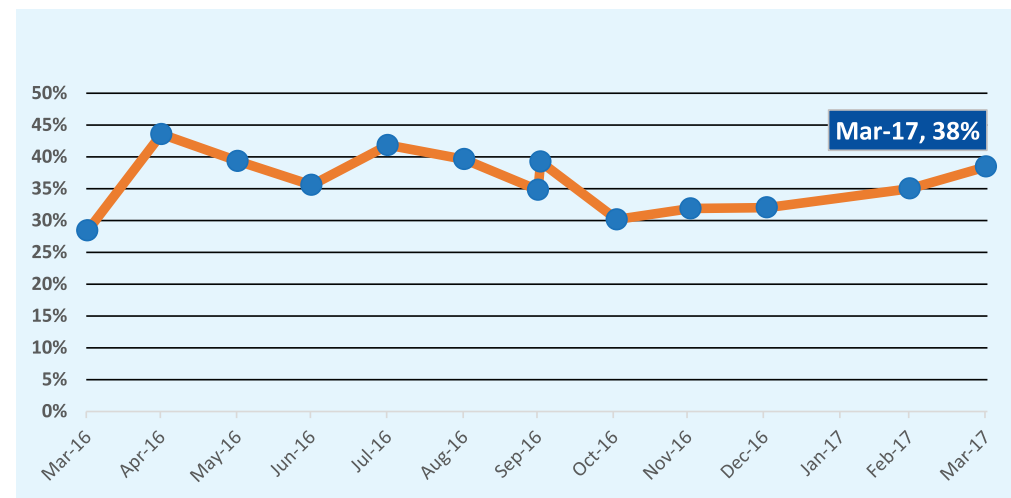
Data as of March 2017

Currency Derivative Market Share Percentage

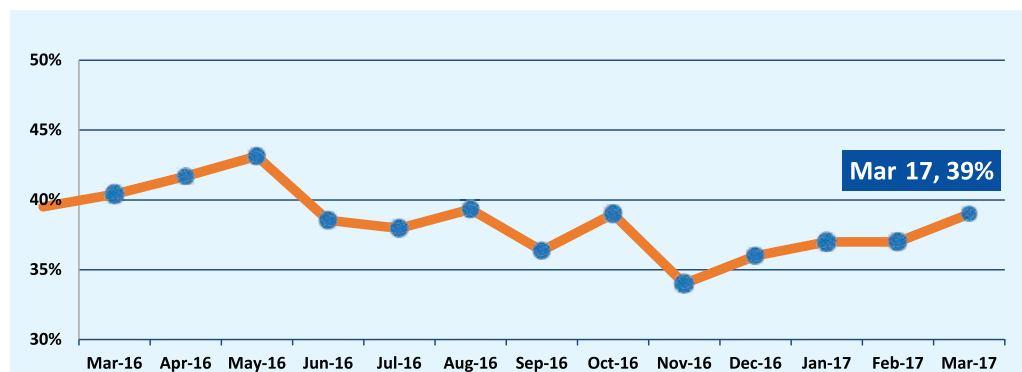
Currency Futures



Currency Options



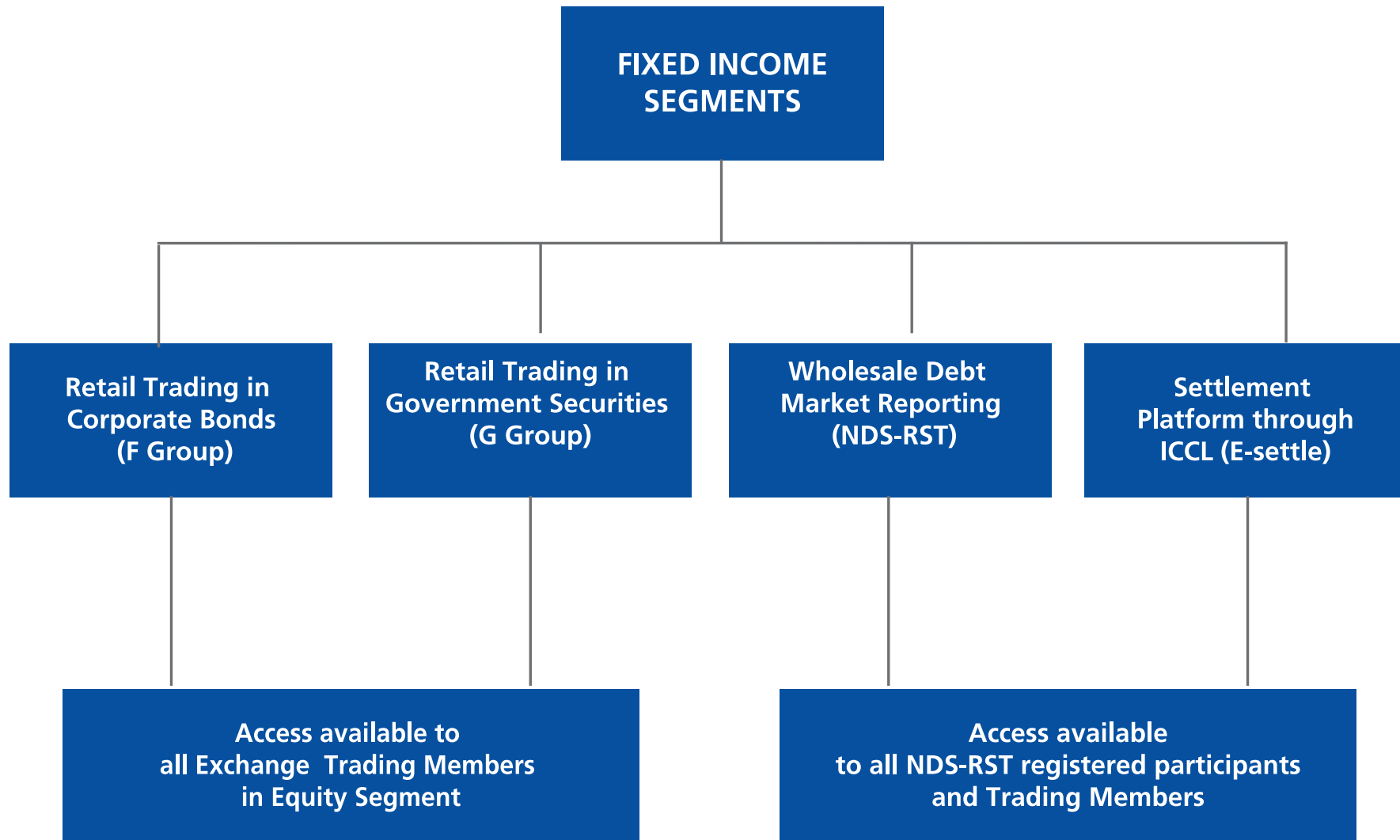
Combined Market Share



Futures Daily Avg Turnover & OI YOY % Change

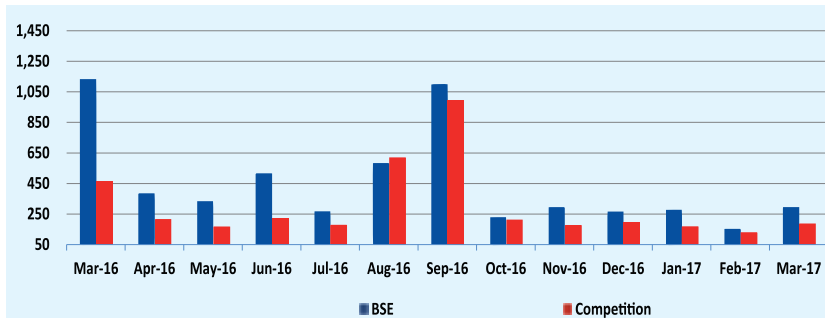
Currency Future		BSE	NSE	MSEI
Exchange Transaction Charges (Rs. / Per Cr.)	Futures	18	110	90
Cost Saving @ BSE up to		83.64%		
Exchange Transaction Charges (Rs. / Per Cr.)	Options	1500	4000	2500
Cost Saving @ BSE up to		62.50%		

Fixed Income Segments Overview



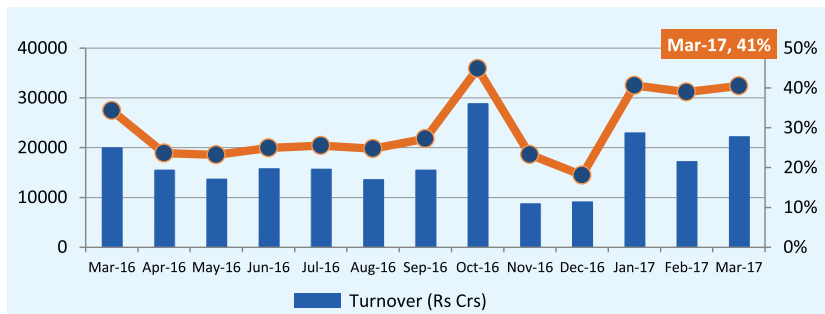
Fixed Income Segments

Retail Trading in Corporate Bonds (Rs. Crs.)

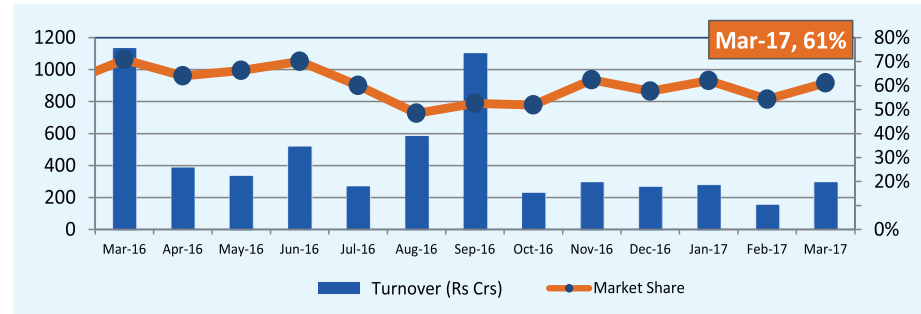


- BSE has maintained the dominant market share in Retail trading of Corporate Bonds. BSE Market share was 62% in FY15-16 and for FY 16-17 till Feb '17 was 59 % and 61% for March '17 .
- Market Share for reporting volumes in Wholesale Debt Market of Government Bonds in March 2017 was 41 %.
- Settlement volumes of Corporate bonds for FY 15-16 is Rs. 57,874 Crs , For FY 16-17 till Feb 2017 was Rs. 93,290 Crs. and for March 17 Rs. 22,740 Crs.

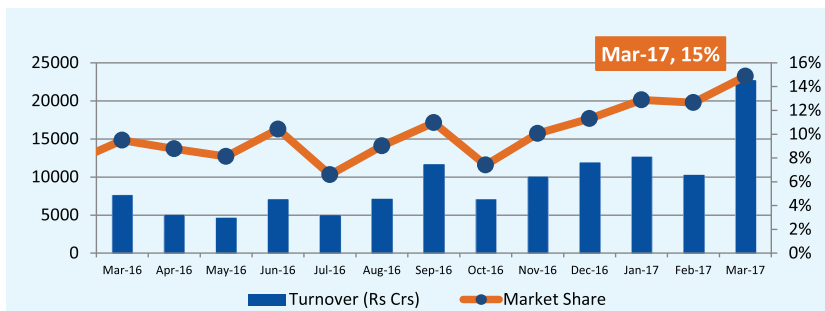
G-Sec Reporting



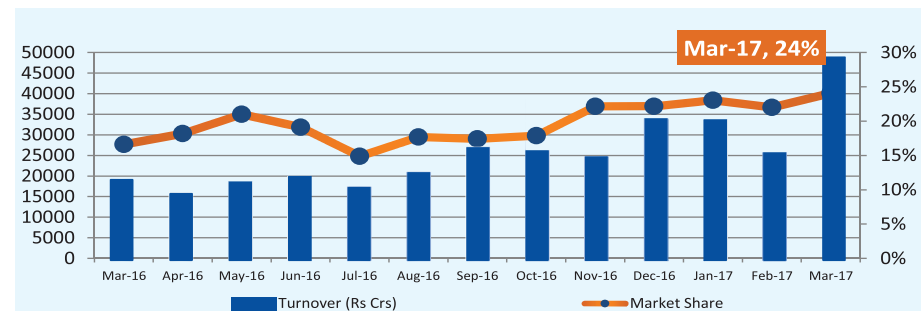
F - Group



ICCL Settlement

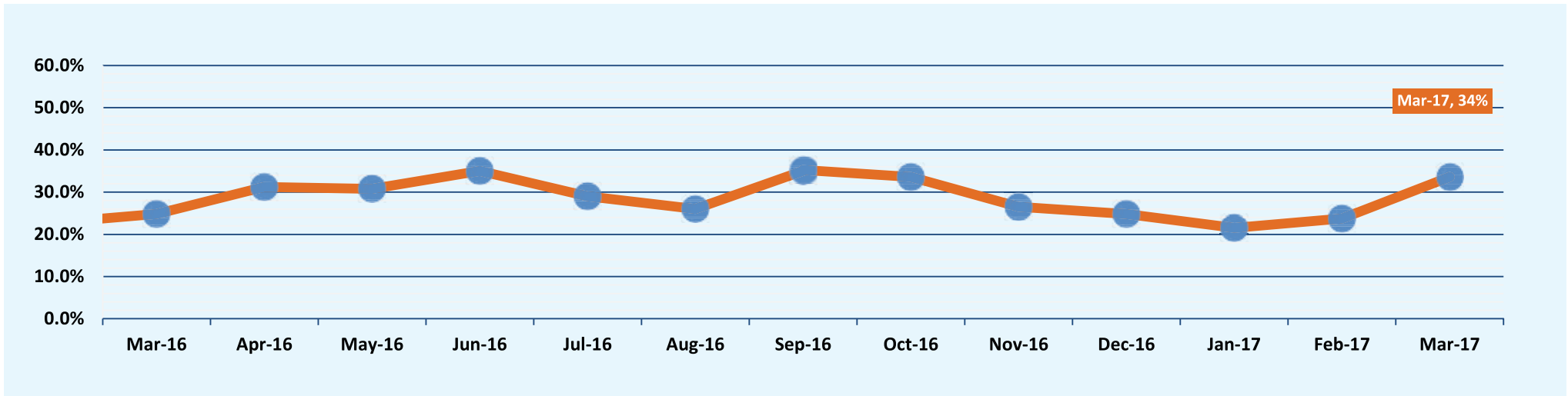


Corporate Bond Reporting



Interest Rate Derivatives

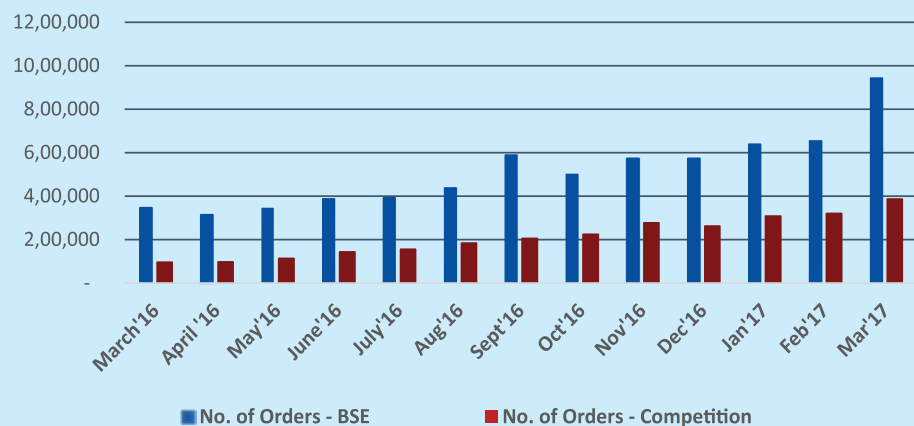
Avg Market Share %



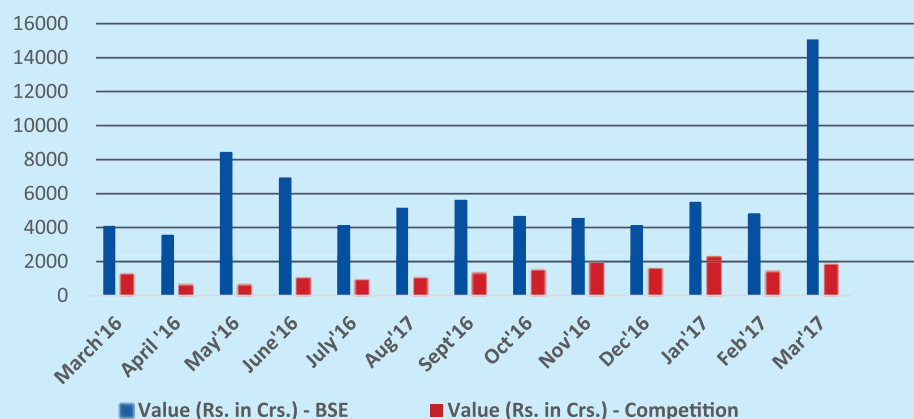
Data as of March 2017

Mutual Fund Distribution Platform

No. of Orders



Value (Rs. Crs.)



PLATFORM FEATURES

- Completely digital- Demat and Non Demat /Mutual Fund transactions, while facilitating the benefits of Physical mode
- 24x7 order acceptance
- SGB enabled for MFDs
- 6 day order holding facility
- Paperless SIP
- Any day STP and SWP
- Paperless bank Mandate

CONNECTIVITY & USP_s

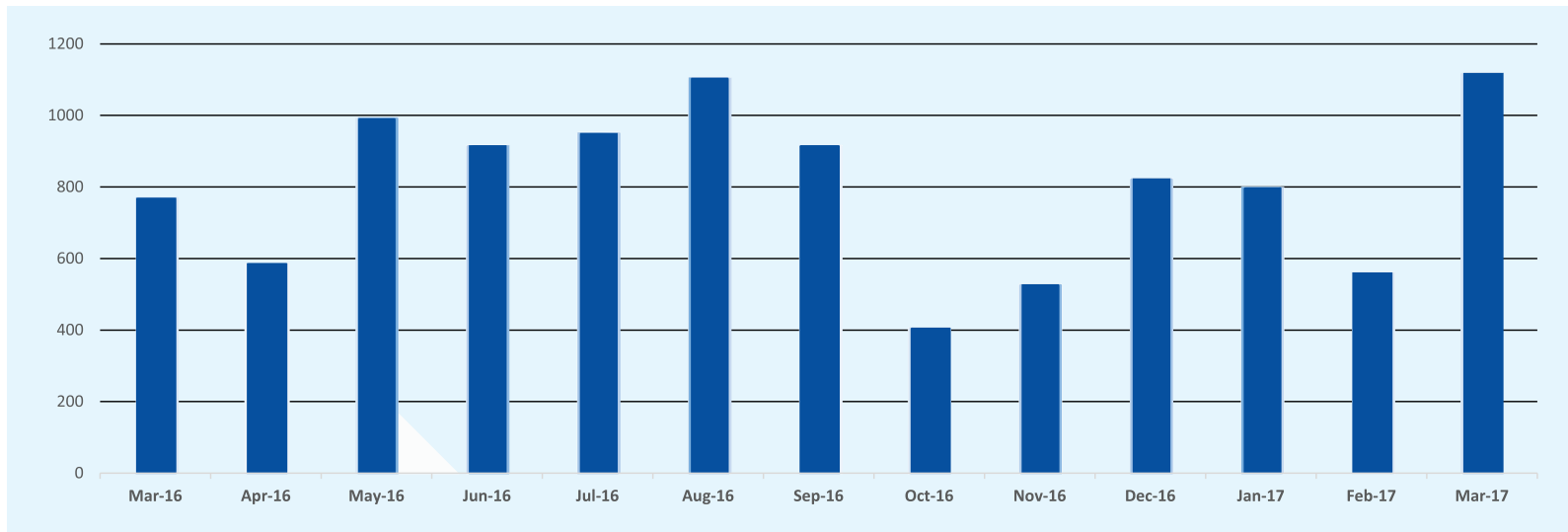
- Unique overnight investments framework
- Multi-mode of platform access
- Completely digital and REAL Time Investors registration / onboarding
- Widely accepted by NDs / Custodians / Brokers / IFA Platform / New age Digital Distributors / IFAs/ RIAS
- E-submission and online MFD Registration

PLATFORM STATISTICS

- Over 65.5 Lakh orders transitioned aggregating to Rs 75,000 Crs on BSE StAR MF Platform during FY 16-17
- Market share of 85% ,processing over 10 lac orders and adding 55,000 SIP's every month.
- BSE StAR MF is the largest digital platform in MF Industry

Exchange Traded Funds

Turnover (Rs Crs.)

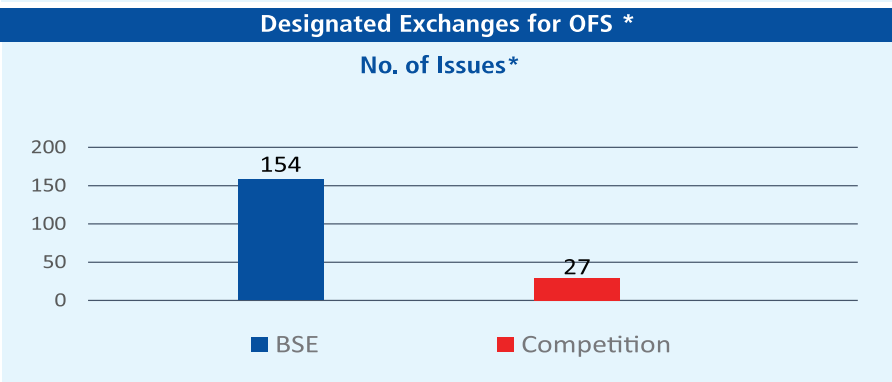
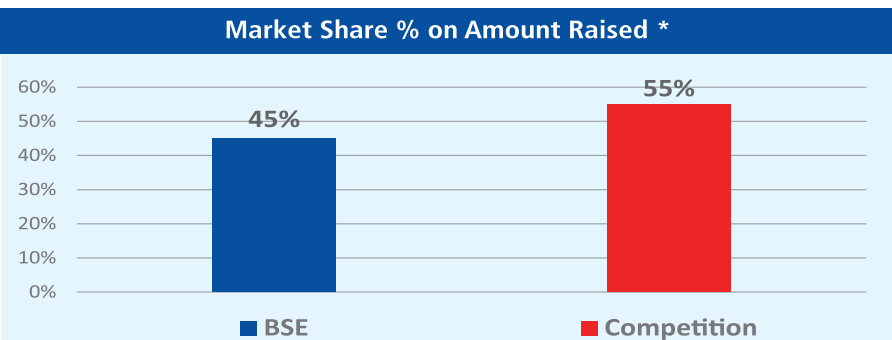
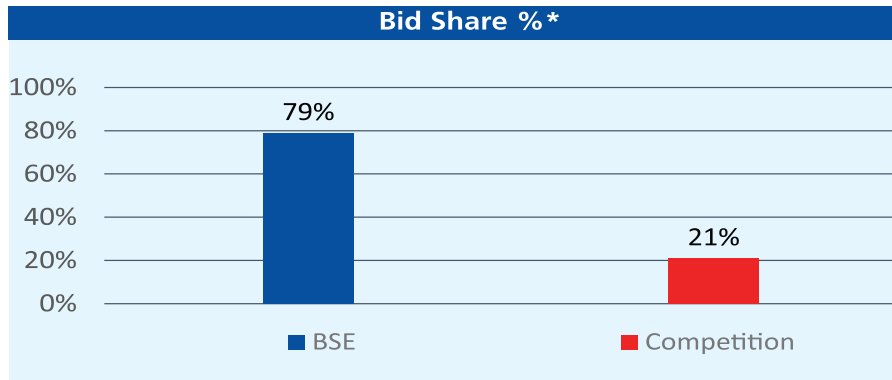


*Source: World Federation of Exchanges

- 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
- 50 ETF listings on BSE as on February 2017*

Data as of March 2017

Offer For Sale (OFS)



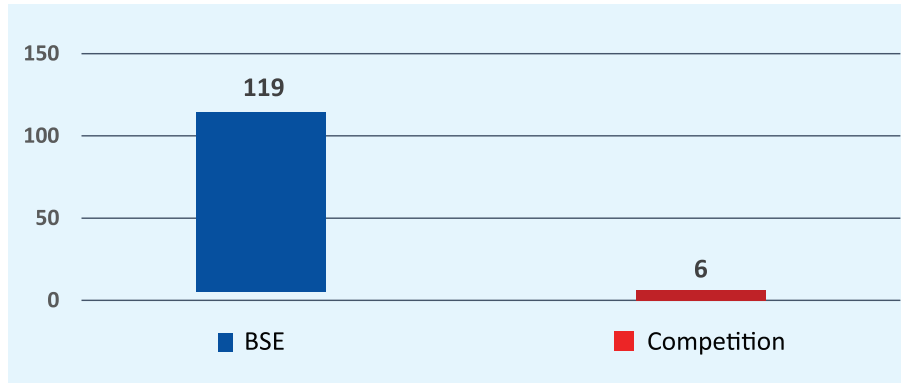
- BSE launched the Offer for Sale (OFS) platform on 24th February, 2012.
- 181 companies have completed OFS issues .
- BSE was appointed the Designated Stock Exchange in 154 issues. All members have participated in OFS via BSE platform.
- The process has helped the Government to raise over Rs. 88,870 Crs through divestment of holdings in PSUs.

105 OFS issues were conducted Exclusively on BSE platform

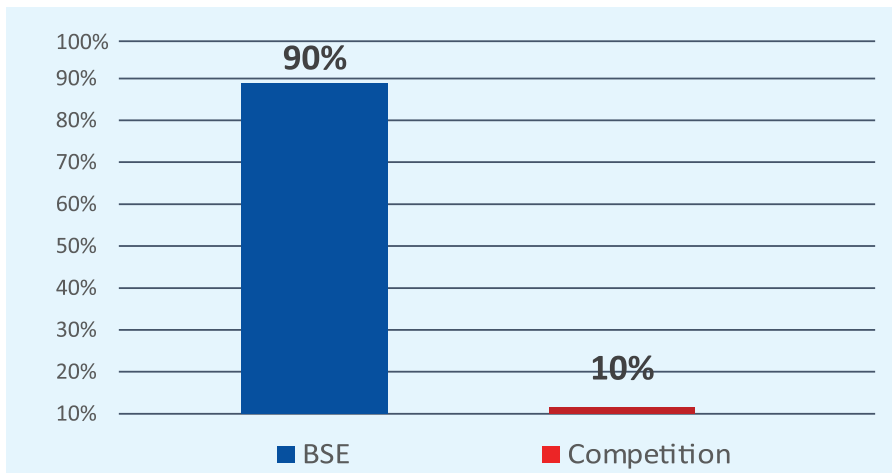
* Since Feb 2012

Offer to Buy (OTB)

Designated Exchanges for OTB
No. Of Issues*



Bid Share %*



- An Offer to Buy is a 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) platform on 1st July, 2015.
- 125 companies have completed their OTB issues .
- BSE was appointed the Designated Stock Exchange in 119 OTB issues.

109 OTB issues were conducted exclusively on BSE platform

* Since July 2015



**Data
Business**



Data Business Product

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 or Historical

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



**Technology
Initiatives**

3SE
EXPERIENCE THE NEW

Bolt Plus on Web (BoW)



One Window with Multiple Utilities			
Exchanges		Products	Users
<ul style="list-style-type: none"> ▪ BSE → ▪ NSE → ▪ MCX → ▪ NCDEX 		<ul style="list-style-type: none"> ▪ Equity – F&O – Currency– IRF - OFS – Mutual Fund – SLB – Debt – ITP ▪ Equity – F&O – Currency ▪ Commodities 	<ul style="list-style-type: none"> ▪ Dealers ▪ Investors ▪ Admin for HO ▪ Multiple Mini Admin for Regions & Branches ▪ RMS
			Connectivity
			<ul style="list-style-type: none"> ▪ Leased Line ▪ Internet

Application for Desktop and Mobile

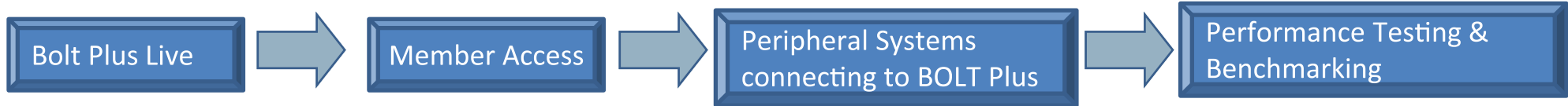
- Single window for Multi Exchange Segments with all Asset Class.
- Combined Market Depth.
- Facility of After Market Orders (AMO).
- Real Time Margining.
- Supports Timer Based and Single Click square Off.
- Top Gainers / Top Losers - Most Active by VOLUME / VALUE.
- Corporate Action Information.
- Customized short cut keys - predefined Key Mapping Styles of ODIN-NOW
- NEWS Plus with RSS feeds and Twitter.
- Customized Add on of Web links.

- No IT infrastructure cost to the Member.
- Completely Hosted Application.
- Single Application for all Users Types .
- Trade commencement in one day.
- Real time support services.

Payment Gateway Integrated with Bill Desk

Bolt+on web (BOW)- Free of cost for all Members

New Trading Architecture – BOLT PLUS



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

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

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

- Latency : < 6 μ s (Gateway in to Gateway out)
- Network latency for Colo users – 10 μ s
- Throughput Capacity: 5 lacs order per second
- Scalability: Horizontally scalable by adding partitions

Technology Programme –Co-location facilities

Fastest Co-location

- BSE is the fastest Exchange in the world with a speed of 6 microseconds.
- BSE provides the fastest Co-location service in India with round trip network latency of less than 10 microseconds.
- At BSE Co-location, response for an order has round trip latency of about 16 microseconds (including 10 microseconds of Co-location network latency).
- Market access across Equity, Equity Derivatives and Currency Derivatives segments.
- Extension of Precision Time Protocol (PTP) from BSE's Grandmaster clock to the Co-location 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 multicast (EOBI) is provided to Co-location members at no cost.
- State-of-the-art Data Centre services from NTT – Netmagic.

BSE Co-location Data Centre

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
- Market Data 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;

- 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 Co-location and member's office

ALGO Trading

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
- Thomson Reuters International Services Pvt Ltd.
- Symphony Fintech Solutions Pvt. Ltd.
- Resolute Softech

Cost Comparison

Service	BSE	Other Exchange
Co-location Network Bandwidth	10 Gbps fiber optic network	10 Gbps fiber optic network
Roundtrip Latency (in µsec): Exchange Response Time	6	500 #
Roundtrip Latency (in µsec): Colo Network*	10	500 #
Roundtrip Latency (in µsec): Exchange Response Time + Colo Network Latency	16	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 connectivity cost	Free	Annual Cost per connection Rs.10 Lakhs for 400 messages/sec
Market data connectivity cost	Free (including EOBI feed)	TBT feed Annual Cost per feed Full Rack : Rs.1.00 Lakh / Half Rack: Rs.1.00 Lakh

*10G network with Solarflare card SFN7322F with Onload # Based on market feedback

Sponsored Market Access

Implementation of 'Sponsored Market Access' (SMA) at Co-location

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

Advantages

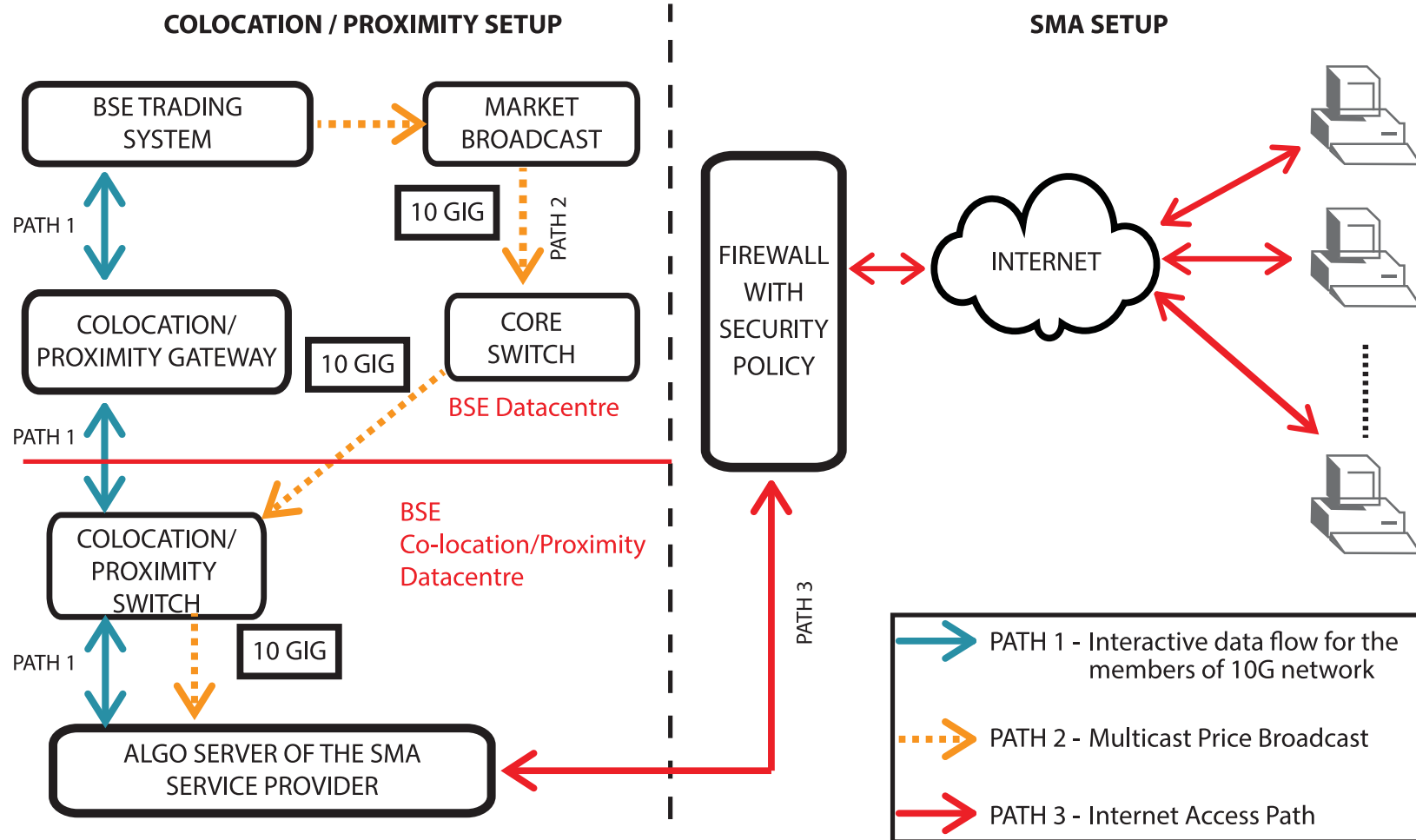
For Members

- Zero capital expenditure on infrastructure at Co-location.
- The algo orders will be generated at Co-location and sent to the BSE Trading system via the high speed 10G Co-location 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 Co-location.
- Vendor can service multiple clients with a centralized algo server installed at Co-location. Hence, vendor's cost of maintenance is low.

Sponsored Market Access New Facility at Co-location



Contract Symbols

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	Currency USDINR Futures	Futures Contract
LERA Curncy	Currency EURINR Futures	Futures Contract
LGBA Curncy	Currency GBPINR Futures	Futures Contract
LJPA Curncy	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#BSE91	Treasury Bill	Futures contract
0#B883	10 Yr G-Sec	Futures contract
0#B716	10 Yr G-Sec	Futures contract

Disclaimer

By accepting this document, you agree with the representations made herein:



The material and the information included in this document have been compiled for general information sharing purpose only and neither create any legally binding obligation on the part of BSE Ltd and/or its affiliates ("BSE") nor reflect endorsement by BSE.

Whilst making all reasonable efforts to provide correct information, BSE cannot and does not warrant or guarantee that the information provided by this document are accurate in every respect. The information is provided "AS IS" and "WITH ALL FAULTS" basis and without warranty of any kind other than as expressly provided in this document. BSE does not warrant, guarantee or make any representations concerning the use, results of use or inability to use the information in terms of timeliness, truthfulness, sequence, completeness, accuracy, reliability, correctness, performance or otherwise. The user of the information assumes the entire risk as to the suitability, use, results of use, accuracy, completeness, correctness of the information and shall waive any claim of detrimental reliance upon the information. The material and the information provided in this document are neither intended to nor constitute an investment advice. While making a decision you should consider both your legal and regulatory position in the relevant jurisdiction and the risks associated with the transaction. BSE is not acting as your legal, financial, tax or accounting advisor or in any other fiduciary capacity with respect to any transaction, of whatsoever nature.

Without limitation, this document does not solicit or constitute an offer, an invitation to offer or a recommendation to enter into any transaction. Through this document, BSE is neither soliciting business, generally or specifically, nor is it directing any work flow or recommendations to the futures commission merchants, the commodity pool operator, the commodity trading advisor and the introducing broker.

This information should not be reproduced or redistributed or passed on directly or indirectly in any form to any other person or published, copied, in whole or in part, for any purpose. This information is not directed or intended for distribution to, or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject BSE to any registration or licensing requirements within such jurisdiction. BSE is a resident outside the United States (U.S.) and are not associated persons of any U.S. regulated broker-dealer. BSE has neither been registered as FBOT under CFTC's Registration of FBOT Rules [76 FR 80674] nor been registered as DOSM under SEC Rule 902(B)(2) of Regulation S issued in terms of the Securities Act, 1933 and nor has sought an exempted relief therein.

BSE SPECIFICALLY DISCLAIMS ALL LIABILITY FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR OTHER LOSSES OR DAMAGES INCLUDING LOSS OF PROFITS INCURRED BY YOU OR ANY THIRD PARTY THAT MAY ARISE FROM ANY RELIANCE ON THIS DOCUMENT OR FOR THE RELIABILITY, ACCURACY, COMPLETENESS OR TIMELINESS THEREOF.

This document is typically used for the publication to be issued/circulated in US. Depending upon the nature of the document, you may consider retaining the same.

Any dispute out of or in connection with the use of the information provided by this document is subject to the exclusive jurisdiction of the courts of Mumbai, India and shall be governed by Indian law.

m@bseindia.com | bdm@bseindia.com



www.bseindia.com



[/BSEIndia](https://www.facebook.com/BSEIndia)



[@BSEIndia](https://twitter.com/BSEIndia)



[/BSEIndia](https://www.youtube.com/BSEIndia)



[/BSEIndia](https://www.instagram.com/BSEIndia)