

**UPDATE
MARCH
2020**



LIQUIDITY • LOWER COSTS • TIGHT SPREADS • LARGE PARTICIPANT BASE

INDEX

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About BSE



Evolution of the Exchange



Key Milestones

Date			
03 rd Feb, 2017	BSE becomes India's 1st listed Stock Exchange		
16 th Jan ,2017	Commencement of Trading at India INX	15 th May, 2019	BSE launches StAR MF mobile application for IFA's –"IFA StAR MF Mobility"
09 th Jan, 2017	Hon'ble Prime Minister of India, Shri Narendra Modi inaugurated India International Exchange (IFSC) Ltd, India's 1st International Exchange	1 st Oct, 2018	BSE launches its commodity derivatives segment making it India's 1st Universal Exchange
09 th July, 2016	Shri Arun Jaitley, Hon'ble Minister of Finance Unveiled the Commemorative Postage Stamp Celebrating 140 glorious years of BSE	01 st Aug, 2018	BSE launches 'chatbot', "Ask Motabhai", for faster, more convenient access to stock market information
02 nd Jan, 1986	S&P BSE SENSEX, country's first equity Index launched (Base Year: 1978-79 =100)	17 th July, 2018	BSE building received trademark
31 st Aug, 1957	BSE granted permanent recognition under Securities Contracts (Regulation) Act (SCRA)	15 th Nov, 2017	BSE's 100% subsidiary, Marketplace Tech Infra Services, goes live with hosted trading platform BEST(BSE Electronic Smart Trader)
09 th July 1875	The Native Share & Stock Broker's Association formed	26 th Oct, 2017	India's Premier Stock Exchange BSE and World's largest Insurance Exchange Ebix, Inc. Sign MOU to Launch Joint Venture Company, for Setting up Pioneering Insurance Distribution Network in India

BSE Group

BSE*

Domestic

IFSC-GIFT CITY

Exchange

Central Counter Party (CCP)

Central Securities Depository (CDSL)

Exchange

Central Counter Party (CCP)

100%

100%

20%

92.29%

90.1%

BSE Investments Ltd.

Indian Clearing Corporation Ltd

Central Depository Services Ltd

India International Exchange (IFSC) Ltd.

India International Clearing Corporation (IFSC) Limited

- ✓ Pranurja Solutions Limited - 41.08%
- ✓ BSE EBIX Insurance Broking Private Limited - 40%

- ✓ CDSL Ventures Ltd.
- ✓ CDSL Insurance Repository Ltd.
- ✓ CDSL Commodity Repository Limited

100%

India INX Global Access IFSC Limited

SERVICES

100%

100%

50%

51.22%

100%

100%

Marketplace Technologies Pvt Ltd.

BSE Institute Ltd.

***Asia Index Pvt. Ltd.**

BFSI Sector Skill Council of India (Section 8 company)

BSE CSR Integrated Foundation [Section 8 Company]

BSE Sammaan CSR Limited

- ✓ Marketplace Tech Infra Services Pvt Ltd.
- ✓ Marketplace EBIX Technology Services Private Limited - 40%

- ✓ BIL- Ryerson Technology Startup Incubator Foundation [Section 8 company] (Stake 51%)
- ✓ BSE Institute of Research Development & Innovation [Section 8 company]

*BSE has terminated its licensing arrangements with AIPL and said termination is sub-judice

- ✓ BSE-48.78%
- ✓ BSE Institute Ltd. (BIL) – 2.44%

BSE-75%
BSE Subsidiaries -25%

- * BSE LTD.
- NSE Symbol : BSE
- Bloomberg Symbol : BSE IN
- Reuters Symbol : BSEL.NS

BSE Shareholding Pattern

BSE & Its Partners

As on 31st December 2019

Category	%
Trading Members & Associates of trading Members	29.72%
Promoter & Promoter Group	0
Public	70.28%
Non Promoter-Non Public	0
Share Underlying DRs	0
Shares held by Employee Trusts	0
TOTAL	100%

*Market Capitalization \$ 2,001.37 Billion
(Market capitalization as on 6th March 2020)

*Conversion rate is taken \$1 = Rs. 71




- Eurex T7 trading architecture




- Partnership on Index products
- Marketing and Branding of BSE Indices
- New Index Product




INSURANCE DISTRIBUTION

- BSE EBIX Insurance Broking Private Ltd is a JV with EBIX Received approval. Beta Launch initiated.



- Board Presence
- 5.61% investment in BSE as on 31.12.2019
- Key user and supporter of platform






- 2.39% investment in BSE by State Bank of India as on 31.12.2019
- key user and supporter of platform

Key Highlights



- 1** Strong Distribution Network
- 2** Diversified Business Model
- 3** Active Relationship with Market Participants
- 4** State –of-the -Art Infrastructure and Technology
- 5** Financial Strength
- 6** Alliance with Global Exchanges



Board of Directors

	NAME / TITLE	PROFILE
	<p>Justice Vikramajit Sen Former Supreme Court Judge and Chief Justice, High Court of Karnataka Chairman & Public Interest Director</p>	<ul style="list-style-type: none"> Justice 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. He was appointed as acting Chief Justice and Chief Justice of High Court of Karnataka. 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>Shri Ashishkumar Chauhan Managing Director & CEO</p>	<ul style="list-style-type: none"> Shri Ashishkumar Chauhan is the MD & CEO of BSE, Asia's oldest exchange, World's fastest exchange with 6 Micro seconds response time, World's largest exchange with 5,000 plus listed companies and India's first universal exchange to offer trading across all asset classes. He is credited with reviving BSE and completing its IPO - which was oversubscribed more than 51 times. He was instrumental in setting up India's first International Exchange, India International exchange, inaugurated by India's Prime Minister Shri Narendra Modi in January 2017. Prior to joining BSE, from 2000 to 2009, Ashish worked at Reliance Industries, India's largest conglomerate as President and Group CIO, Head of Corporate communications and CEO of Cricket team Mumbai Indians in its formative years. From 1993 to 2000, he setup India's National Stock Exchange (NSE), primarily on technology, Screen based trading system, satellite communications network, equities and derivatives businesses, and Nifty index amongst his many responsibilities. He is considered the father of modern financial derivatives in India due to his work at NSE. He received several Indian and International awards including Distinguished Alumnus Awards from both his Alma Mater IIT Bombay and IIM Kolkata, a rare achievement. He has also been awarded "Digital Icon of Year" by Indian Express Group and ranked amongst the top CEOs in financial markets by Asian Banker, amongst top 50 CIOs in the world by Information Week US. He is a member of several committees of Government, Regulators and international associations. He is a member on the Board of Directors at IIM Raipur and NIFM Faridabad and served as the chairman of NIT Manipur. He is a distinguished visiting faculty at Ryerson University in Toronto and Honorary Professor at Nottingham University Business School. He co-authored a book on the history of the BSE titled "The Temple of Wealth Creation".
	<p>Shri Sumit Bose IAS (Retd.) Former Union Finance Secretary Public Interest Director</p>	<ul style="list-style-type: none"> Shri Sumit Bose joined the Indian Administrative Service in 1976 and allotted to the Madhya Pradesh Cadre. After superannuation was Member, Expenditure Management Commission set up to review the allocative and operational efficiencies of Government expenditure to achieve maximum output. The Commission concluded its work end February 2016 after giving a series of reports inter alia on fiscal management, defence expenditure, streamlining administrative processes and public procurement and social sector spending. Immediately prior to superannuation, was the Union Finance Secretary (as Secretary, Department of Revenue). Had also served as Secretary (Expenditure) and Secretary (Disinvestment) as well as Secretary in the Thirteenth Finance Commission, consecutively in the Ministry of Finance, GOI since August 2007 till superannuation. Was member of the core group for the Union Budget from 2010 to 2015. Served the Government of Madhya Pradesh (GoMP) as Principal Secretary (Finance) during which tenure various reforms including fiscal responsibility legislation, outcome budgeting, extensive use of the PPP mechanism,



Board of Directors

	NAME / TITLE	PROFILE
		<p>contributory pension scheme was introduced in MP. Had also done an early stint in the Department of Economic Affairs, MOF, GOI as Deputy Secretary in the Fund Bank Division.</p> <ul style="list-style-type: none"> Have been involved in several assignments in the field of education for more than eight years, first as Secretary, School Education in the GoMP and then as Joint Secretary in the Ministry of HRD, GOI. During the latter assignment, was responsible for the launch and execution of Sarva Shiksha Abhiyan for universalization of elementary education. Have served the GoMP in the field, as the District Magistrate and Collector of Sidhi Rewa, Gwalior and Bhopal Districts. In the State Secretariat, besides Departments of Finance and Education, served in the Chief Minister's Office in two stints, first as Special Assistant as a junior officer and later as Secretary to the Chief Minister. Undertook various consultancy assignments on aid effectiveness, land acquisition and resettlement and primary education with the World Bank, Commonwealth Secretariat, United Nations Development Programme and Department for International Development, (UK) in India and in Washington DC, London, Kenya and Turkey. Shri Sumit Bose is Director on the Board of Coromandal International Limited, Tata AIG General Insurance Company Ltd, Foundation to educate girls globally, HDFC Standard Life Insurance Company Limited, 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,, Board of Governors of The Doon School, Dehradun, a Member, Governing Body, Parivaar Education Society, Kolkata, Director, Jal Seva Charitable Foundation.
	<p>Shri S. S. Mundra Public Interest Director</p>	<ul style="list-style-type: none"> Shri S.S. Mundra, recently retired as Deputy Governor of Reserve Bank of India on 30th July 2017 after completing a stint of three years. Prior to that, the last position held by him was as Chairman and Managing Director of Bank of Baroda from where he superannuated in July 2014. In a banking career spanning over four decades, Shri Mundra held several important positions including that of Executive Director of Union Bank of India, Chief Executive of Bank of Baroda (European Operations) amongst others. He also served as RBI's nominee on the Financial Stability Board (G20 Forum) and its various committees. Shri Mundra was also the Vice-chair of OECD's International Network on Financial Education (INFE). Prior to joining RBI, Shri Mundra also served on Boards of several multi-dimensional companies like the Clearing Corporation of India Ltd (CCIL), Central Depository Services (India) Ltd. (CDSL), BOB Asset Management Company, India Infrastructure Finance Corporation (UK) Ltd. (IIFCL), India First Life Insurance Company Ltd., Star Union Dai-Ichi Life Insurance Company Ltd., National Payments Corporation of India Ltd., etc. The experience gained in guiding these entities has bestowed him with wide leadership skills and keen insights in best practices in Corporate Governance. Shri Mundra has been a regular presence as a Speaker on various Forums. He has delivered more than 60 speeches/presentations on diverse issues viz. banking, financial inclusion & literacy, MSME financing, audit, Fraud Risk Management, Cyber security, Consumer Protection, Human Resource Management etc. at both domestic and international forums. Many of these speeches have been published on the websites of Reserve Bank of India and that of the Bank for International Settlements. Amity University has conferred the Degree of Doctor of Philosophy (D.Phil.), Honoris Causa, upon Shri Mundra, in recognition of his services in the field of banking and related areas. Appointed as a Independent Director on the Board of Indiabulls Housing Finance Ltd.



Board of Directors

	NAME / TITLE	PROFILE
	<p>Shri David Wright Public Interest Director</p>	<ul style="list-style-type: none"> ■ Shri David Wright, has worked for nearly 34 years in the European Commission from 1977-2011, after graduating from Worcester college ,Oxford in 1974 in politics ,economics and philosophy(PPE). He held a variety of posts including at the beginning of his career responsibility for oil and gas data in the Statistical Office, Luxembourg (1977-1981) during the second oil crisis; energy policy coordination and modelling in the Directorate General for Energy, Brussels (1982-1987); and then industrial trade policy negotiations during the Uruguay multilateral trade round (1987-1989). ■ From 1989-1992 he was a member of President Delors' "Think Tank" called the "Cellule de Prospectives" where he worked on industrial policy and wrote the first Commission document on sustainable development. In this period he co-authored a book with Professor Alexis Jacquemin on the post-1992 EU political and economic agenda called "Shaping factors, shaping actors" . From 1993-1994 he was a member of Sir Leon Brittans' Cabinet and worked on various aspects of trade and industrial policy, including completion of the Uruguay Round in 1994. In 1995 he became an Adviser to President Jacques Santer in his Cabinet – covering competitiveness, industrial and telecom policies, political relations with the UK and Ireland, financial services, risk capital and various other trade and foreign policy briefs. ■ From March 2000 – October 2010 he was first Director, then Deputy Director-General for securities and financial markets, then for all financial services policy in DG Internal Market and Services. He helped design and drive forward the Financial Services Action Plans to integrate the EU's capital and financial services markets. He was the rapporteur for both the Lamfalussy (2000/1) and De LaRosière Committees (2008/9), chaired the Securities and Banking Committees and represented the Commission in the Financial Services Committee and in various FSB/G20 fora. He also played a leading role in the EU-US financial markets dialogue in this period. ■ He was the EU Visiting Fellow at St Antony's College, Oxford until July 2011 and was a Member of the European Commission's Task force on Greece until the end of January 2012. ■ David Wright's appointment as Secretary General of the International Organization of Securities Commissions (IOSCO) commenced on 15 March 2012.
	<p>Shri Umakant Jayaram Public Interest Director</p>	<ul style="list-style-type: none"> ■ Shri Umakant Jayaram has 27 yrs Cross functional experience in Global Investment Banking, Finance Planning & Analysis ,Risk Consulting / Business transformation. ■ Shri Umakant Jayaram has successfully led the Global Finance Planning and Analysis services function for JP Morgan Chase Investment Bank and delivered key breakthroughs in finance technology architecture change, in the area of Analytics and Business intelligence. He has also directed the Global Markets Structuring function in Deutsche Bank CIB centre in India. He has directed the Global Markets Operations strategy for ABN AMRO Investment Bank Operations across Equities, Fixed Income and Derivatives Clearing and Settlements. He is well versed with emerging markets products pricing, risk, regulatory and compliance issues relating to financial markets.

Board of Directors

	NAME / TITLE	PROFILE
	<p>Su Shri Jayshree Vyas Public Interest Director</p>	<ul style="list-style-type: none"> ▪ Su Shri Jayshree Vyas, a professionally qualified Chartered Accountant has been working as the Managing Director of Shree Mahila Sewa Sahakari Bank, Ahmedabad since 1986 which has more than 5,00,000 women clients. During her tenure she has taken active steps to introduce and operate an Integrated Micro Insurance Scheme for women working in the informal sector. This scheme was introduced for the first time in the country and in a short period of three years covered more than 150,000 women. She has also devised and implemented various housing finance schemes, which have been accessed by over 20,000 poor women. She has introduced, organized and managed savings groups of poor women in more than 5000 villages in nine districts of Gujarat. This scheme has helped more than 150,000 women start saving for the first time in their lives, and availed credit facilities for coming out of the vicious circle of Poverty. In addition, she has prepared modules and manuals for providing training for running effective saving and credit programs for various national voluntary organizations involved in similar activity ▪ In the year 2001, financial literacy programme was introduced in Sewa Bank, first of its kind in India – at initiative of Su Shri Jayshree Vyas.. ▪ In the year 2006, Micro Pension Scheme was introduced for Sewa Bank Members (Unorganized sector workers) under her leadership. ▪ Some of her key appointments include: <ul style="list-style-type: none"> ▪ Managing Trustee in Indian School of Micro finance for women (ISMW, Ahmedabad). ▪ Board Director in Ananya Finance for Inclusive Growth Pvt. Ltd. ▪ Board Director in TFC (Trade Facilitation Center). ▪ Board Director of Gujarat Urban Cooperative Bank Federation. ▪ Member of Advisory Committee of SEBI (Securities and Exchange Board of India)- Investor’s Protection and Education Fund” (IPEF).
	<p>Smt. Usha Sangwan Former MD, Life Insurance Corporation of India Shareholder Director</p>	<ul style="list-style-type: none"> ▪ Smt. Usha Sangwan, was the first ever woman Managing Director of Life Insurance Corporation of India since its inception. ▪ She is Post Graduate in Economics, Post Graduate Diploma holder in Human Resource Management and Licentiate from Insurance Institute of India. She joined LIC as Direct Recruit Officer in 1981. At present, is the Board Member of Grasim Industries Ltd. and Ultratech Cement Limited.



Management Team

	NAME / TITLE	PROFILE
	<p>Shri Ashishkumar Chauhan Managing Director & Chief Executive Officer</p>	<ul style="list-style-type: none"> ■ Shri Ashishkumar Chauhan is the MD & CEO of BSE, Asia's oldest exchange, World's fastest exchange with 6 Micro seconds response time, World's largest exchange with 5,000 plus listed companies and India's first universal exchange to offer trading across all asset classes. He is credited with reviving BSE and completing its IPO - which was oversubscribed more than 51 times. He was instrumental in setting up India's first International Exchange, India International exchange, inaugurated by India's Prime Minister Shri Narendra Modi in January 2017. ■ Prior to joining BSE, from 2000 to 2009, Ashish worked at Reliance Industries, India's largest conglomerate as President and Group CIO, Head of Corporate communications and CEO of Cricket team Mumbai Indians in its formative years. From 1993 to 2000, he setup India's National Stock Exchange (NSE), primarily on technology, Screen based trading system, satellite communications network, equities and derivatives businesses, and Nifty index amongst his many responsibilities. He is considered the father of modern financial derivatives in India due to his work at NSE. ■ He received several Indian and International awards including Distinguished Alumnus Awards from both his Alma Mater IIT Bombay and IIM Kolkata, a rare achievement. He has also been awarded "Digital Icon of Year" by Indian Express Group and ranked amongst the top CEOs in financial markets by Asian Banker, amongst top 50 CIOs in the world by Information Week US. He is a member of several committees of Government, Regulators and international associations. He is a member on the Board of Directors at IIM Raipur and NIFM Faridabad and served as the chairman of NIT Manipur. He is a distinguished visiting faculty at Ryerson University in Toronto and Honorary Professor at Nottingham University Business School. He co-authored a book on the history of the BSE titled "The Temple of Wealth Creation".
	<p>Shri V Balasubramaniam Managing Director & Chief Executive Officer (India INX)</p>	<ul style="list-style-type: none"> ■ Shri 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.

Management Team

	NAME / TITLE	PROFILE
	Shri Neeraj Kulshrestha Chief Regulatory Officer	<ul style="list-style-type: none"> ▪ Shri Neeraj Kulshrestha heads the regulatory functions of the exchange including membership compliance, surveillance, inspection, investigation, regulatory communication, investor services, listing compliance and regulatory legal. ▪ At BSE he was earlier responsible for Business Development, Trading, Membership and Listing Operations and Development. ▪ He has about 27 years 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.
	Shri Nayan Mehta Chief Financial Officer	<ul style="list-style-type: none"> ▪ Shri 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.
	Shri Kersi Tavadia Chief Information Officer	<ul style="list-style-type: none"> ▪ Shri 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.

Management Team

	NAME / TITLE	PROFILE
	<p>Shri Sameer Patil Chief Business Officer</p>	<ul style="list-style-type: none"> ■ Shri Sameer Patil heads the Business Development of the exchange including equity & equity derivatives, currency derivatives, commodity derivatives, fixed income, debt and mutual funds. ■ He is instrumental in setting up and responsible for Business Development of INDIA INX at GIFT CITY IFSC. Currently, INDIA INX has more than 90% market share. ■ He is a board member of INDIA INX Global Access (INDIA INXGA). ■ He has about 21 years' of experience in financial sectors like Commodities, Currency Derivatives, Indices etc and has experience in Trading, Hedging Strategies, Product Designing and Business Development. ■ He was associated with MCX since inception for more than a decade as Senior Vice President – PKMT (Precious Metals) & Business Development and K J Investors Services (I) PVT LTD, an affiliate of Cargill Investors Services, Illinois, Chicago, USA as Senior Financial Analyst. ■ He is credited for successful launch of the flagship contracts on MCX the Gold, Silver, WTI Crude Oil and Copper contracts. The Gold Petal contract launched on April 18, 2011 was awarded as the Best Innovative contract of the year by FOW Singapore. ■ He is awarded the "India UAE business Ambassador of the year 2018" at Abu Dhabi and was nominated for the prestigious IIFC awards for excellence in respective fields. Past recipients of the awards being Mother Teresa, APJ Kalam, Rajesh Khanna, Sunil Gavaskar etc. ■ He is Science Graduate from Mumbai University and MBA in finance.
	<p>Shri Girish Joshi Chief Trading Operations and Listing Sales</p>	<ul style="list-style-type: none"> ■ Shri Girish Joshi heads the Trading Operations and Listing Sales of the Exchange. ■ He has worked with ICICI Bank Group for 10 years. At ICICI Bank Group he worked in various areas like ICICIDirect.com, Treasury Mid Office and in the area of Regulatory Reporting and Monitoring at CFO office of the Bank. ■ He was also one of the earliest core team members who were involved in the set-up of National Stock Exchange (NSE). During 7 years at NSE he worked in Wholesale Debt Market and post trade functions. ■ He was also a member of Corporate Bonds and Securitization Advisory Committee (CoBoSAC) of Securities and Exchange Board (SEBI) of India. He represents BSE in Sustainability Working Group (SWG) of World Federation of Stock Exchange (WFE) and also Sustainable Stock Exchange initiative of the United Nations. ■ He has represented BSE in various sub groups formed by SEBI for market developments like E-IPO / T+3 listing, Regulatory Framework for Index Providers, Development of CBLO type products for Corporate Bonds, Listing of REITs and InVit etc. He has also represented BSE on the Secretarial Standard Board (SSB) formed by the Institute of Company Secretary of India (ICSI). Currently he is also co-opt member of Western India Regional Council of ICSI. ■ Shri Girish Joshi, a Commerce Graduate from Sydenham College of Commerce and Economics, Mumbai is a Chartered Accountant as well as a Cost Accountant by qualification

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 ➢ ETF ➢ EQUITY ➢ SME & Startups ➢ BOND ▪ FPO ▪ Sovereign Gold Bonds ▪ Mutual Fund-NFO ▪ Non-Competitive Bidding in G-Sec & T- Bills 	<ul style="list-style-type: none"> ▪ Equity Cash ▪ ETF ▪ Equity Derivatives ▪ Currency Derivatives ▪ Commodity Derivatives ▪ Interest Rate Derivatives ➢ Interest Rate Futures ➢ Interest Rate Options ▪ Securities lending & borrowing (through ICCL) ➢ Small & Medium Enterprises ➢ Offer to Buy ➢ Offer for Sale ➢ Close Ended Mutual Funds ➢ Corporate Bonds ➢ Government Securities and ➢ Sovereign Gold Bonds 	<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

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

Total Fund Mobilization through (Equity and Debt)

- Total Rs. 43,023.87 crores (\$ 6.05 billion*) have been raised in Indian Markets through Stock Exchanges in India since April 2019
- Rs. 36,038.00 crores (\$ 5.07 billion*) have been raised at BSE since April 2019
- BSE is the market leader with 84% of total funds raised
- BSE has the largest number of listed companies in world

4742
Companies listed
with Equities

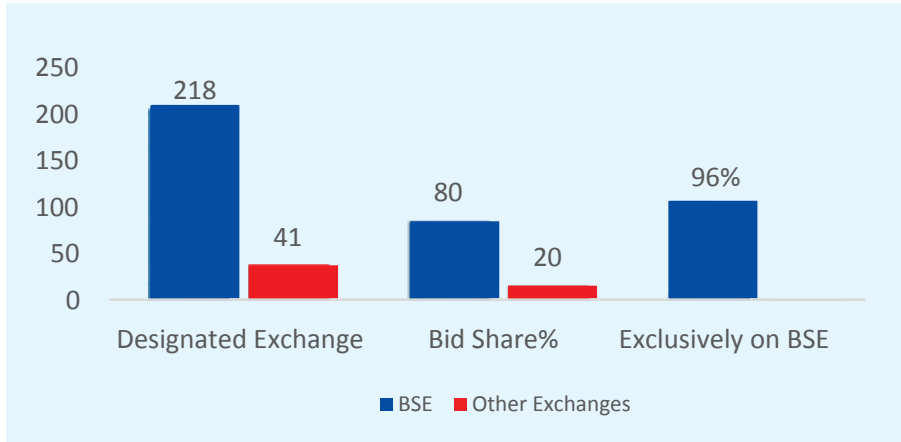
- BSE is the preferred choice amongst entities for listing Privately Placed Debt Instruments (PPDI). In F.Y. 2019-20 (till February 28, 2020), corporates have raised Rs. 4,23,372.368 Crores (\$59.63 billion) through Privately Placed Debt Instruments on BSE. In F.Y. 2018-19, 1880 Instruments were listed on BSE with an amount totalling to Rs. 4,34,466 crores (\$ 61.17 billion) vis-a-vis 655 instruments on other Exchange(s).
- Amounts raised via Rights Issue on BSE in F.Y. 2019-20 (till February 29,2020) is Rs.55,299 Crores (\$ 7.30 billion) and whereas for the F.Y. 2018-19 it was Rs.2,149 crores(\$ 0.30 billion).
- In F.Y. 2019-20 (till February 29,2020), corporates have raised Rs. 1,81,759 crores (\$ 25.59 billion) through Preferential Issues on BSE. In the past financial year, i.e. F.Y. 2018-19, the fund raising via preferential issues on BSE was Rs. 2,02,106 crores (\$ 28.45 billion).
- Listed Corporates have mobilized Rs. 54389.195 crores (\$ 7.66 billion) via Qualified Institutional Placement ("QIP") transactions (till February 29, 2020) in F.Y. 2019-20 against Rs 8,678 crores (\$1.22 billion) in F.Y 2018-19.
- Amount raised via Commercial Paper on BSE in F.Y. 2019-20 (till February 28, 2020) is Rs. 3,01,735.95 Crores (\$ 42.49 billion).

* Figures does not include Amount Raised in SME segment at BSE and Other Exchanges

* Conversion rate is taken \$1 = Rs. 71

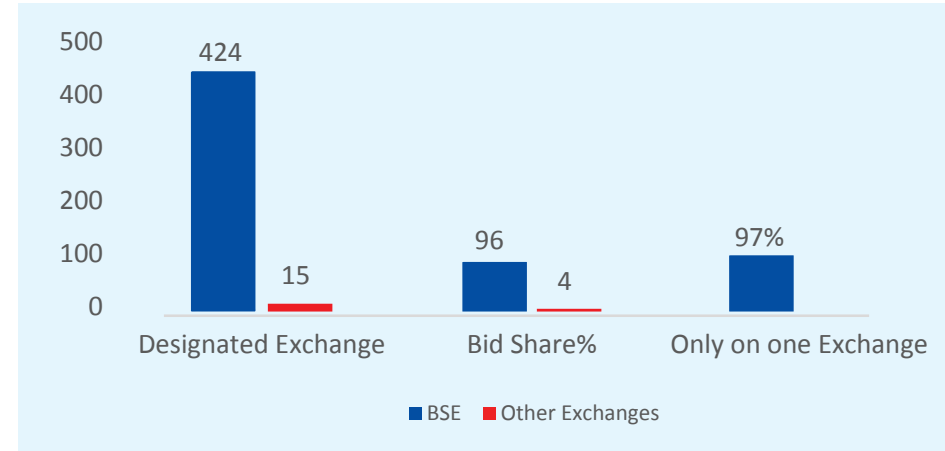
Capital Raising Platforms - OFS/OTB/ BOND Platform

BSE's Leadership in OFS*



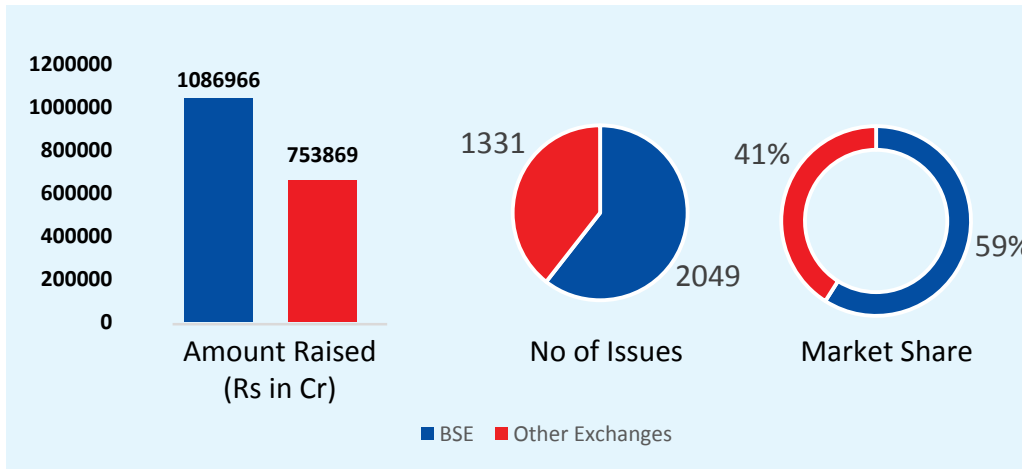
OFS is a mechanism provided by the Exchange for promoters to dilute their holdings in listed companies in a transparent manner through a separate window with wider investor participation.

BSE's Leadership in OTB**



OTB is Acquisition window enabled for facilitating Buyback, Takeover and Delisting for listed companies.

BSE's Leadership in BOND Platform***



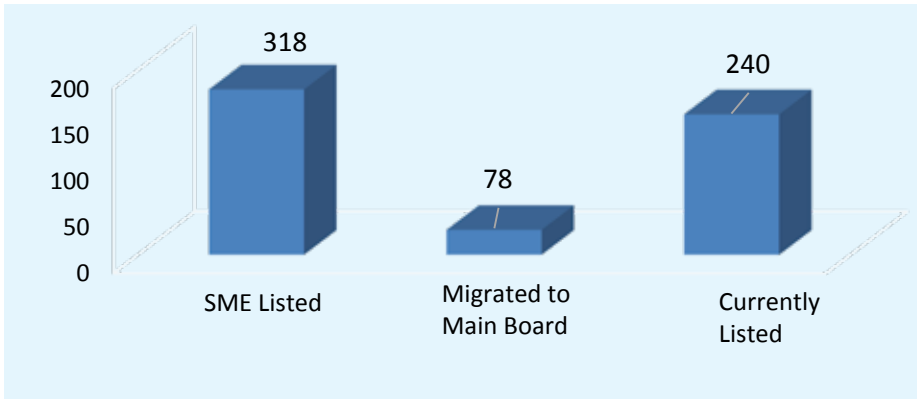
BSE BOND is the Electronic Book Mechanism (EBM) offered by BSE to carry out the bidding process for private placement of debt securities in the primary market.

It is an efficient, transparent and a user-friendly mechanism for price discovery of Privately Placed Debt Instrument (PPDI) issuances.

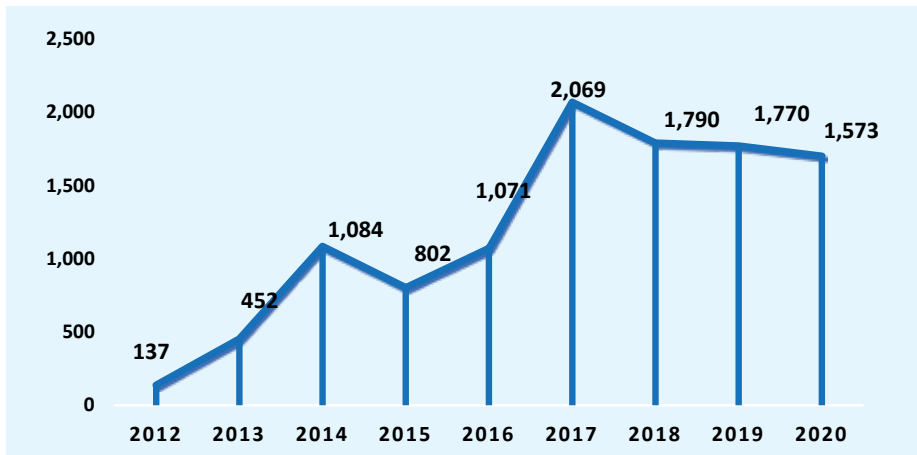
* Since Feb 2012
 ** Since July 2015
 *** Since July 2016

BSE SME – India’s Biggest SME platform

Companies on BSE-SME Platform



SME IPO INDEX



- BSE is the first stock exchange in India to receive approval from SEBI on 26th September 2011 to launch SME Platform.
- SME IPO Index with a Base value of 100 as on 16th August, 2012 is aimed at tracking the companies listed on SME platform was launched on 14th December 2012. As on 28th February, 2020 its value was 1,573.22.
- 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.
- Market Capitalization of 240 companies –Rs.11,473.26 Crs. (USD 1593 Million)
- Market Capitalization of 78 companies Migrated to Main Board – Rs.6391.56 Crs. *(USD 887 Millon). Conversion rate is taken \$1= Rs. 72.

60% of Market Share in terms of number of SMEs listed

BSE Startups –India's 1st startup platform



- BSE is the first stock exchange in India to launch Startups Platform on 22nd December 2018
- The 'Startup Companies' seeking to be listed on the BSE Startups Platform should be in the sector of IT, ITES, Bio-technology and Life Science, 3D Printing, Space Technology, E-commerce, Hi-tech Defence, Drones, Nano Technologies, Artificial Intelligence, Big Data, Augmented/Virtual Reality, E-gaming, Exoskeleton, Robotics, Holographic Technology, Genetic Engineering, Variable Computers Inside Body Computer Technology and other high-tech industries.
- No. of companies listed- 4
- Market Capitalization–Rs. 73.65 Crs *(\$10.229 millions)

100% of Market Share in terms of number of Startups listed

* (Conversion rate is taken \$1 = Rs. 72.)

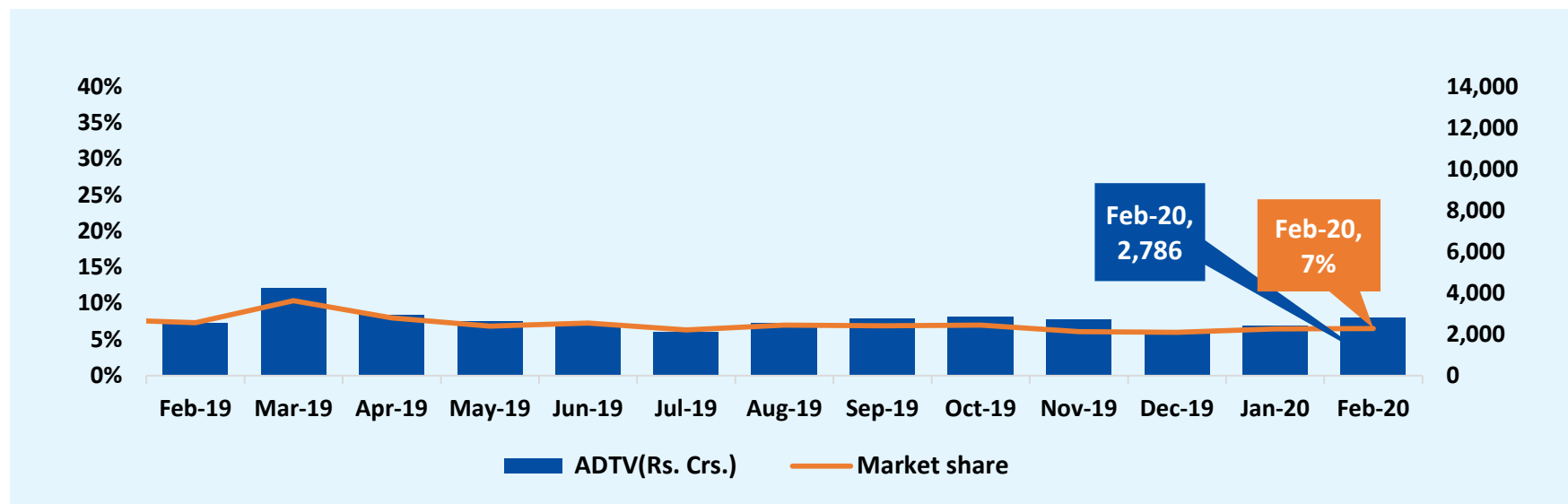


**Market
Business**

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Equity Cash Market

Turnover & Market Share%



Revision in transaction charges of equity segment w.e.f August 01, 2018

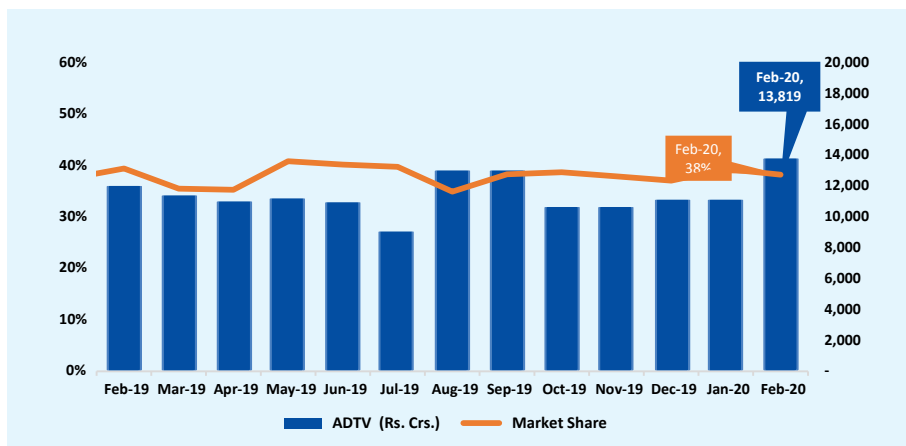
Monthly Turnover in Rs. Crs in calendar month	Rate (in Rs.) per Crore on incremental turnover.
Upto 750	300
Above 750 upto 1500	290
Above 1500 Upto 2500	280
Above 2500 upto 5000	270
Above 5000 upto 7500	260
Above 7500	250

<https://www.bseindia.com/markets/MarketInfo/DispNewNoticesCirculars.aspx?page=20180719-36>

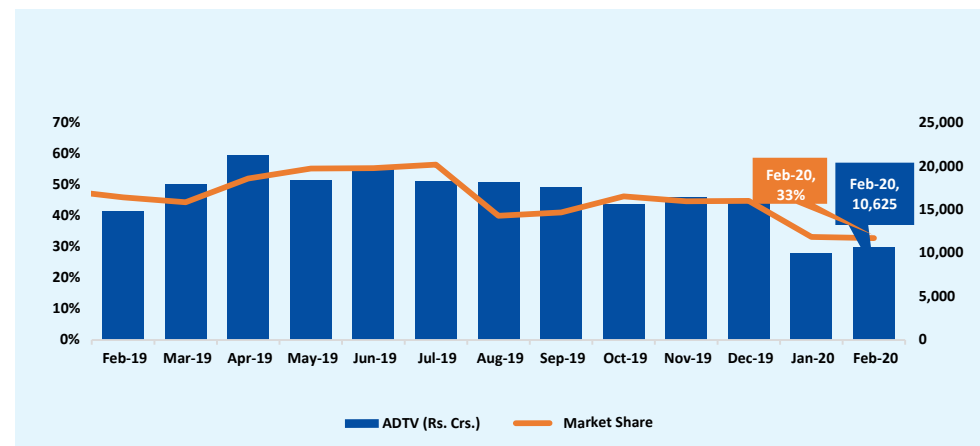
Data as of February 2020

Currency Derivatives

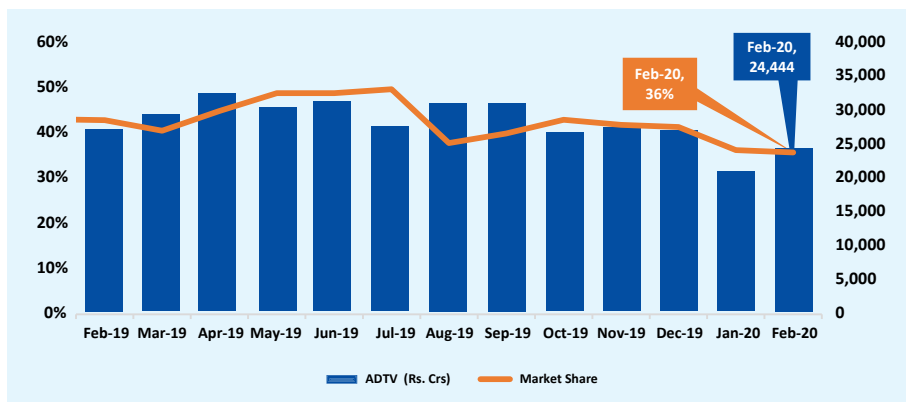
Currency Futures



Currency Options



Combined Turnover & Market Share

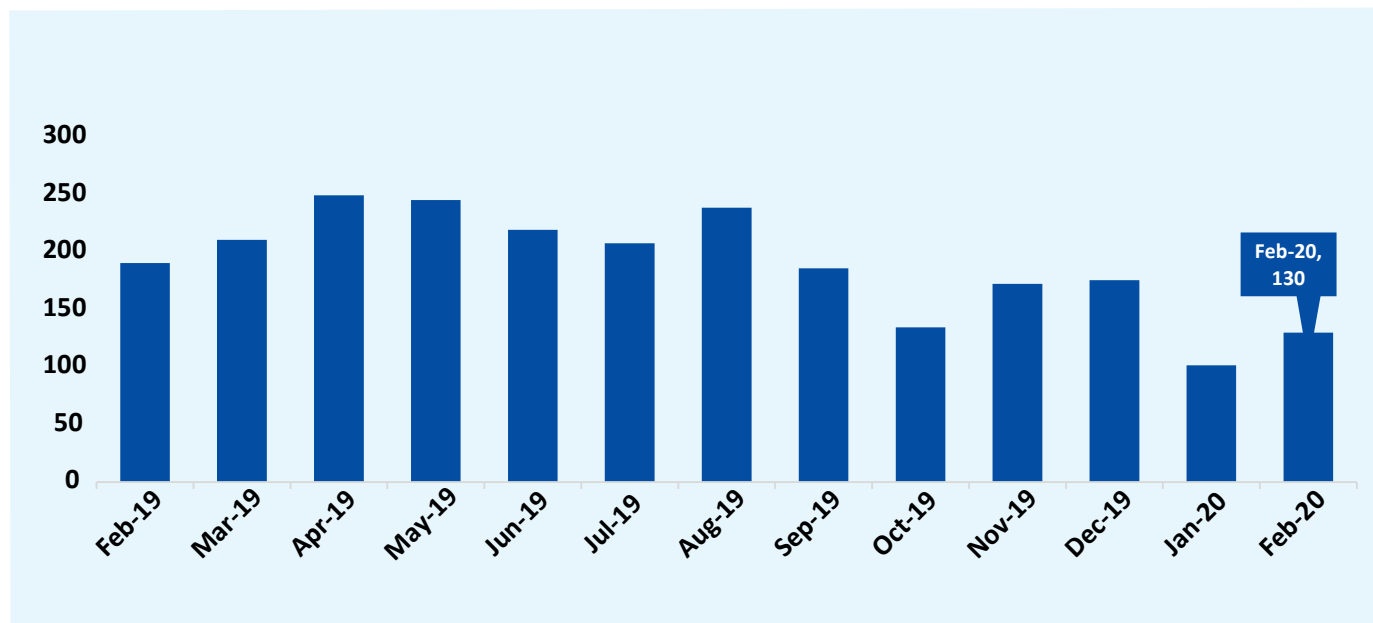


Revision in Transaction charges in Currency Derivative Segment w.e.f 1st Jan 2018

Sr. No.	Currency Options - Charges Applicable per crore on premium Value (on both active and passive side)	
1	Rs.100/-	
Sr. No.	Incremental Monthly Turnover in Currency Futures (Rs. Crore)	Currency Futures - Charges Applicable per crore (on both active and passive side)
1	Turnover < Rs.5,000 Crores	Rs.22
2	Turnover => Rs.5,000 Crores & < Rs.10,000 Crores	Discount of 25% on Rs.22 (i.e. Rs.16.50)
3	Turnover => Rs.10,000 Crores & < Rs.20,000 Crores	Discount of 50% on Rs.22 (i.e. Rs.11)
4	Turnover => Rs.20,000 Crore	No Transaction charges

COMMODITY DERIVATIVES

BSE COMMODITY ADTV (Rs. Crs.)

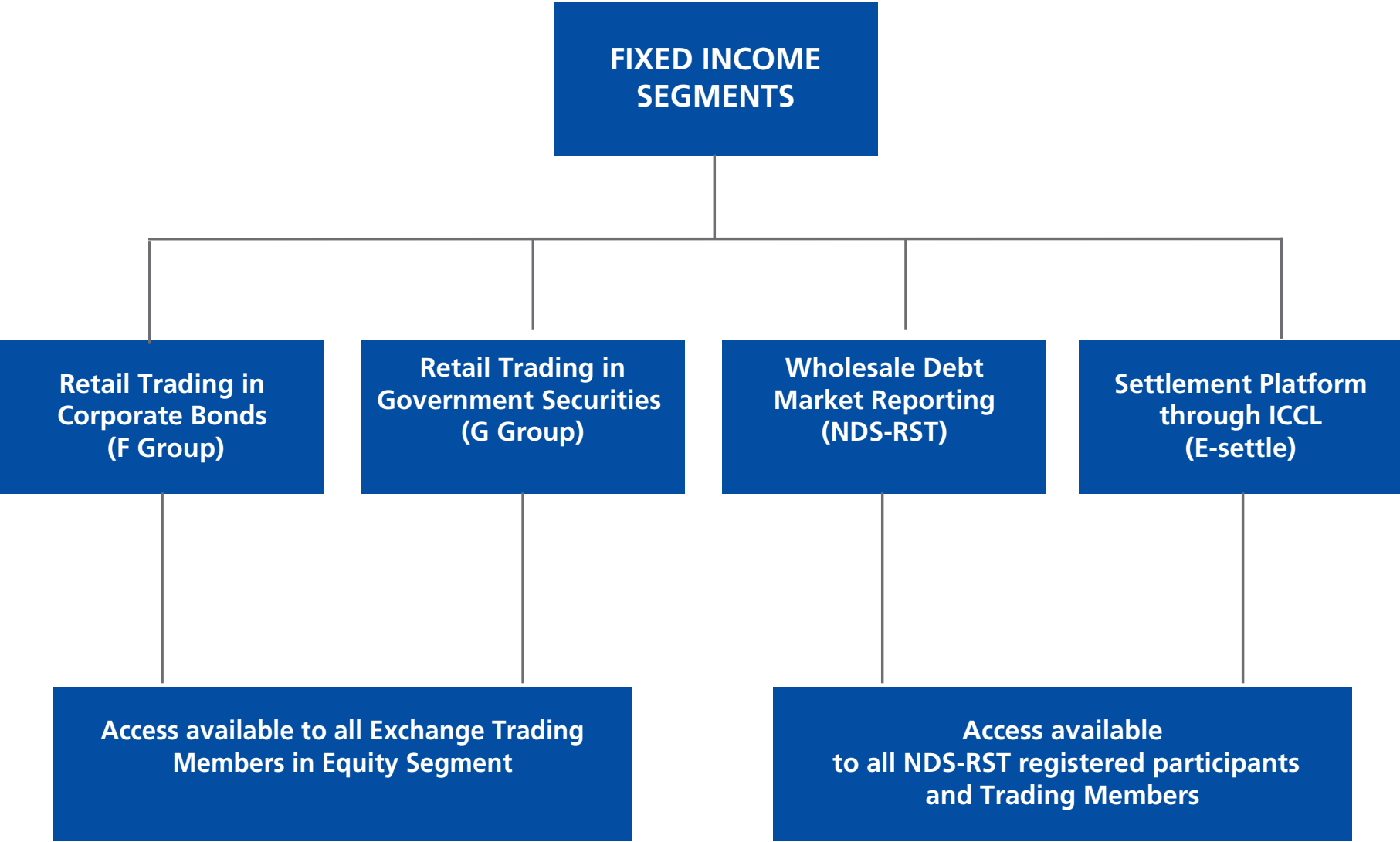


Commodity Launch details

NAME OF THE PRODUCT	DATE OF COMMENCEMENT OF BUSINESS
AGRI COMMODITIES	
GUARSEED	06-Feb-19
GUARGUM	06-Feb-19
COTTON	18-Feb-19
TURMERIC	28-Jun-19
NON-AGRI COMMODITIES	
GOLD (1 KG)	01-Oct-18
SILVER (30 KG)	01-Oct-18
OMANCRUDE	26-Oct-18
COPPER	02-Nov-18
GOLDM	18-Feb-18
SILVERMINI	13-Jun-19
SILVER KG	13-Jun-19
BRENT CRUDE OIL	27-Jan-20

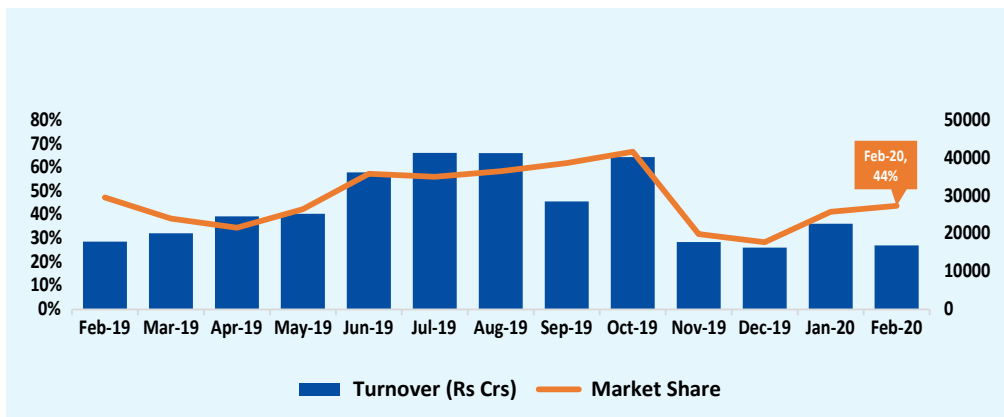
Data as of February 2020

Fixed income segment overview

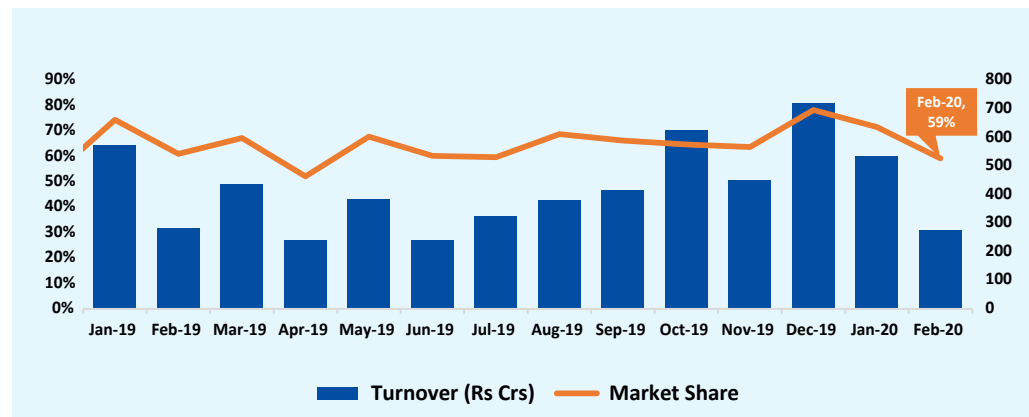


Fixed Income Segments

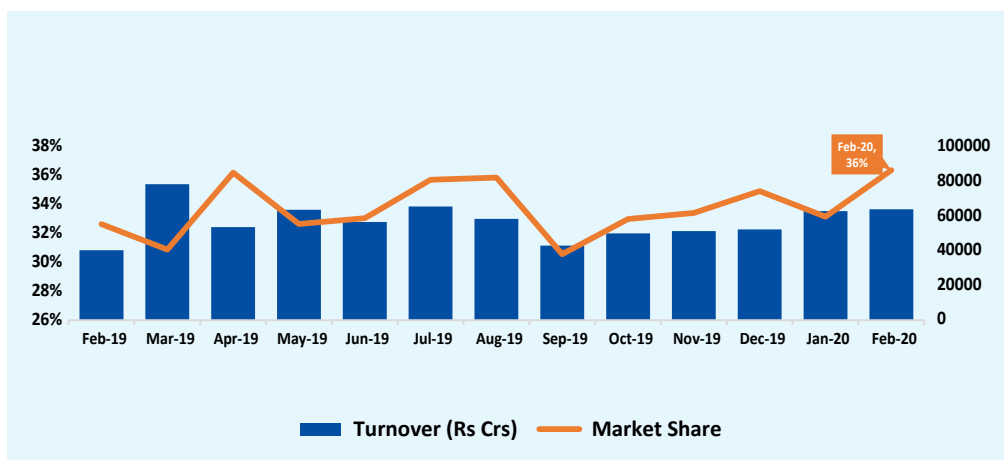
G-Sec Reporting



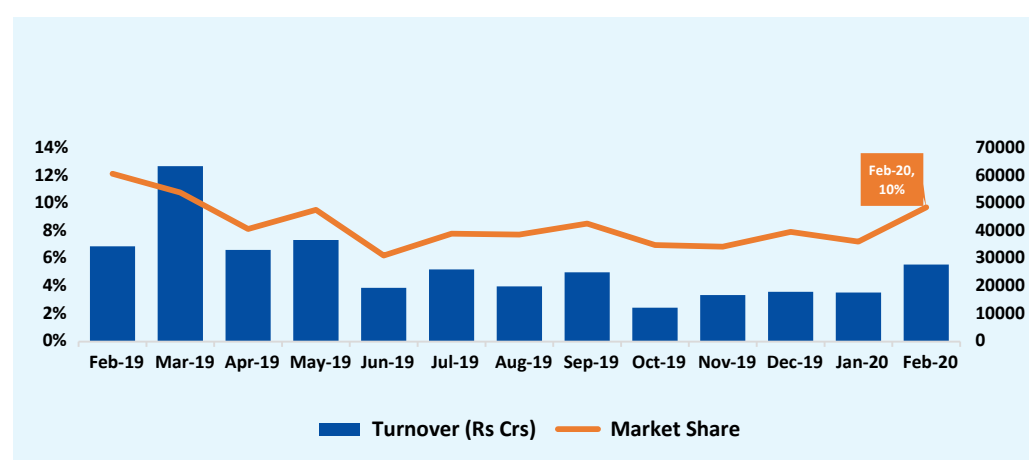
Retail Trading in Corporate Bonds



Corporate Bond Reporting



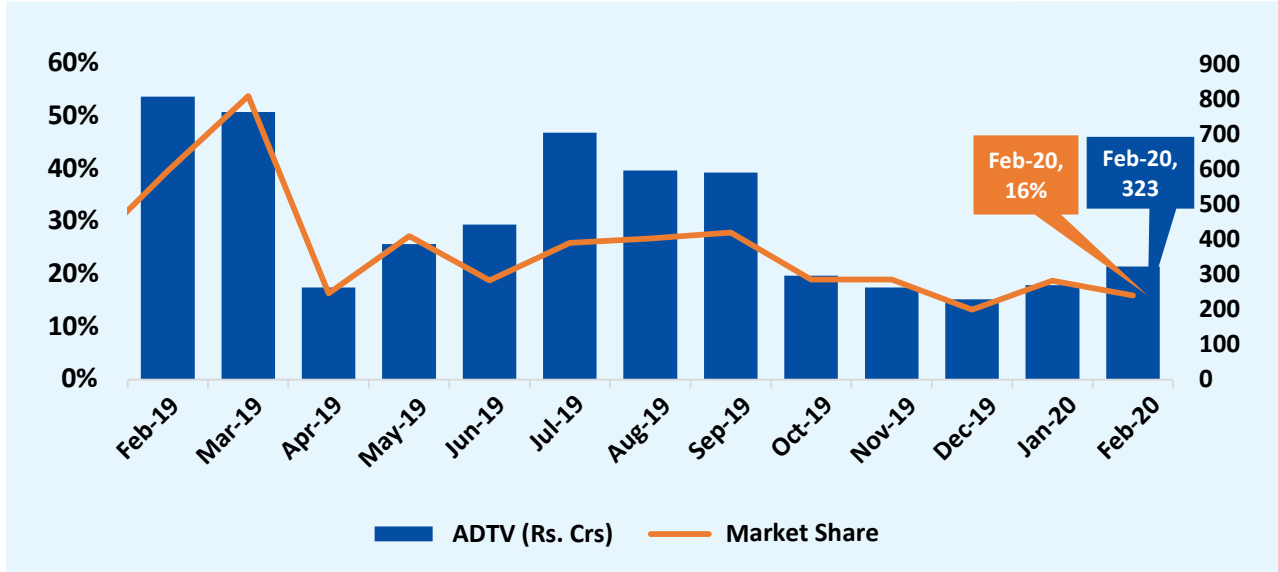
ICCL Settlement



Data as of February 2020

Interest Rate Derivatives

ADTV Turnover & Market Share %



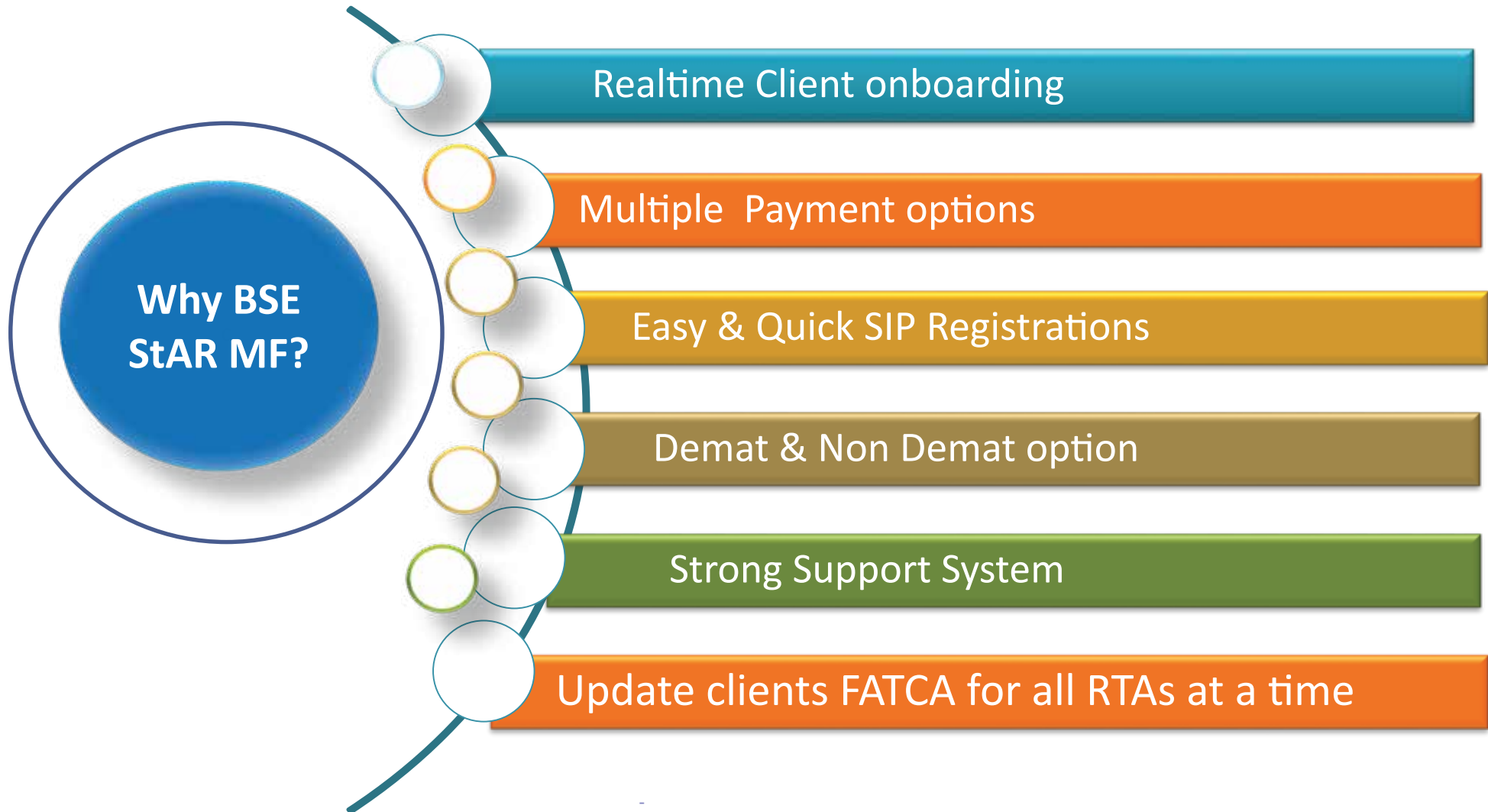
- In India, Exchange traded futures have been available since 2014. BSE launched interest rate futures in November 2014 and interest rate options in August 2019. These contracts are a part of currency derivatives segment. It is our continuous endeavour to provide the widest range of offerings for investors and traders. Interest rate futures on below mentioned Government of India securities are currently available for trading :

⇒	726GS2029
⇒	768GS2023
⇒	727GS2026
⇒	717GS2028
⇒	668GS2031
⇒	795GS2032
⇒	757GS2033
⇒	645GS2029
⇒	ONMIBOR
⇒	91DTB

Interest rate options

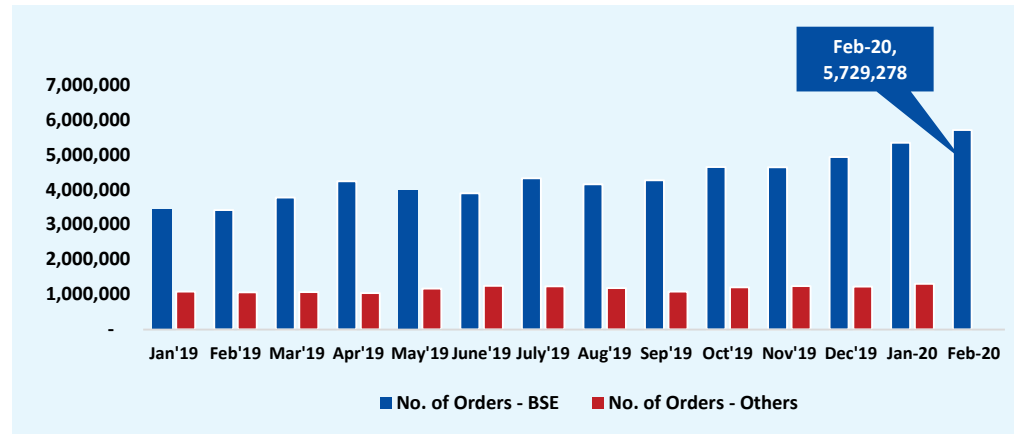
- **BSE has launched India's first exchange traded interest rate options in August 2019.** Interest rate options provide for an efficient tool for managing interest rate risk and exposure through hedging. With a wide array of instruments being made available, Investors can hedge their risk across the yield curve. Apart from hedging, interest rate options can also be used for trading with various strategies.
- Eight-in-the-money, eight-out-of-the-money and one near-the-money call and put options are available for each underlying. The contracts currently available for trading are based on the underlying government of India securities as follows:

⇒	726GS2029
⇒	768GS2023
⇒	727GS2026
⇒	717GS2028
⇒	668GS2031
⇒	795GS2032
⇒	757GS2033
⇒	645GS2029

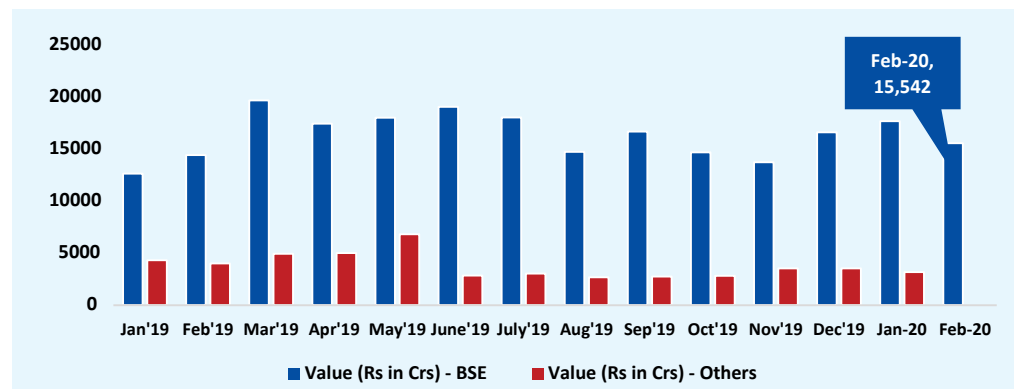


StAR MF-India's largest online MF Distribution platform

No. Of Orders



Value (Rs. Crs.)



BSE StAR MF is the largest digital platform in MF Industry



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

Data as of February 2020

BSE StAR MF Platform – At a Glance!



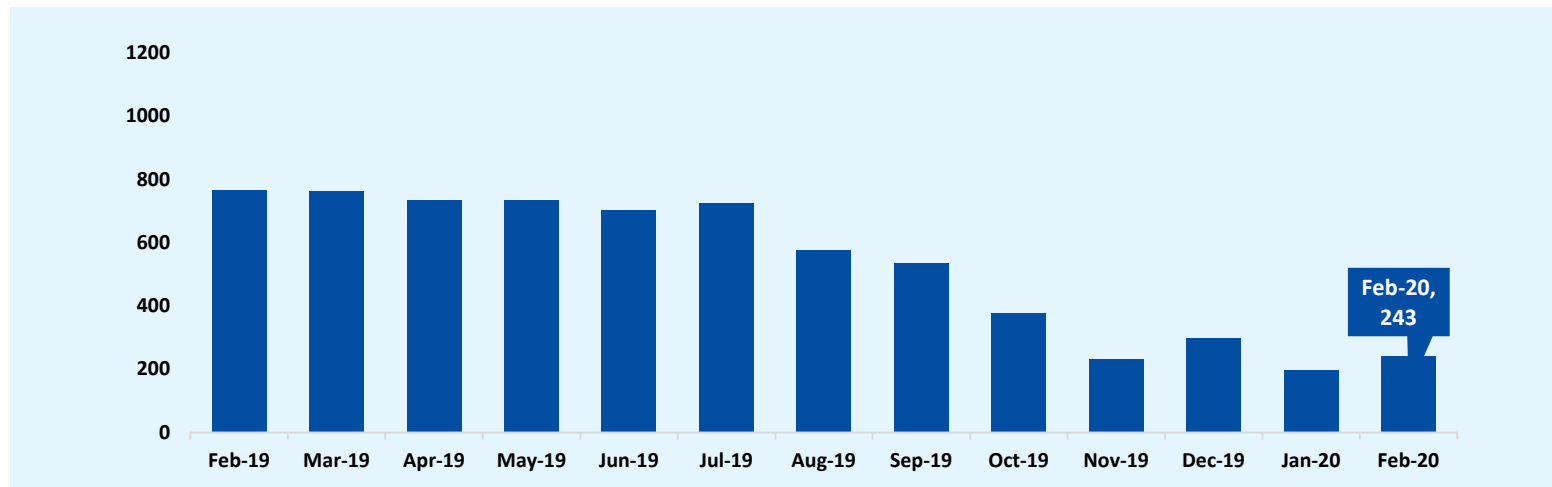
80% Market share (Txns)

Over 3.13 L new SIPs
registration

57.33 L+ MoM Trxns

Over 56500 members can
transact

Turnover (Rs Crs.)



- ETF 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
- Most common types of ETFs in India:
 - Equity ETF
 - Precious Metal ETF
 - Liquid ETF
- Employees' Provident Fund Organization (EPFO) invests 15% of its investment corpus in large-cap ETFs
- BSE in its effort to bring greater participation for retail investors in the Indian landscape has tied up with market makers for ETF's
- Trading volume and turnover of ETF's at BSE has grown by 66% and 35% between 2011 to 2018



**Data
Business**

BSE
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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

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BOW API – Build Your own Trading Front End

Single API Interface to Trade on Multi Exchange segments

BOW API- Overview

- **Supports :**
 - Exe
 - Browser
 - Mobile App.
- Connect to BOW OMS
- Real Time Market Data and RMS .
- High Security – IP Locking.

Exchange Covered

- BSE
- NSE
- MCX
- NCDEX



Segment Support

- Equity
- Equity Derivatives
- Currency Derivatives
- Interest Rate Future
- Offer For Sale
- SLB
- Debt
- ITP
- Commodity Derivatives

Connectivity

- Internet
- Leased Line

Key Advantage & Offerings

Multi Fold Advantage:

- ❖ Encourage members/Vendors to develop their OWN Front-End.
- ❖ Members Can use Hosted BOW's Robust OMS and RMS
- ❖ No impact of exchange mandated changes on API users
- ❖ No IT infrastructure / Connectivity cost to the Member.

Key Offerings:

- ❖ Real Time market data to display in innovative ways.
- ❖ Order & Trade Management
- ❖ User Management
- ❖ Risk Management through BOW Admin interface
- ❖ Payment Gateway interface
- ❖ Report Management

BOW API- Free of cost for all Members



Multi Exchange Risk Management System – MERMS-ICCL

Single API Interface to Validate Pre Trade Risk Management for Multi Exchange segments

MERMS API- Overview

- MERMS is hosted application for ICCL Members
- Facilitates Risk Management services.
- Validation of Orders generated from.
 - ✓ Client Software
 - ✓ Algo Software
- ICCL Members can Monitor & control Limits & Risk Management of TM.

Key Offerings & Risk Parameters

- Key Offerings:**
- Client software connection to MERMS.
 - Single Interface to Validate pre trade orders for Multi exchanges.
 - Real time Pre trade risk management to multiple exchanges
 - MERMS terminal to set risk parameters at Trading Member level.

- Risk Parameters:**
- Risk management at Member Level
 - **Risk Parameters**
 - ✓ Margin
 - ✓ MTM
 - ✓ Turnover
 - ✓ Exposures
 - ✓ Order Value & Limits etc.

- Exchanges:**
- BSE, NSE, MCX and NCDEX.
- Segments:**
- ✓ Equity
 - ✓ Equity Derivatives
 - ✓ Currency Derivatives
 - ✓ Interest Rate Future
 - ✓ Commodity Derivatives
 - ✓ BSE SLB
 - ✓ BSE DEBT
 - ✓ BSE Repo
 - ✓ BSE ITP

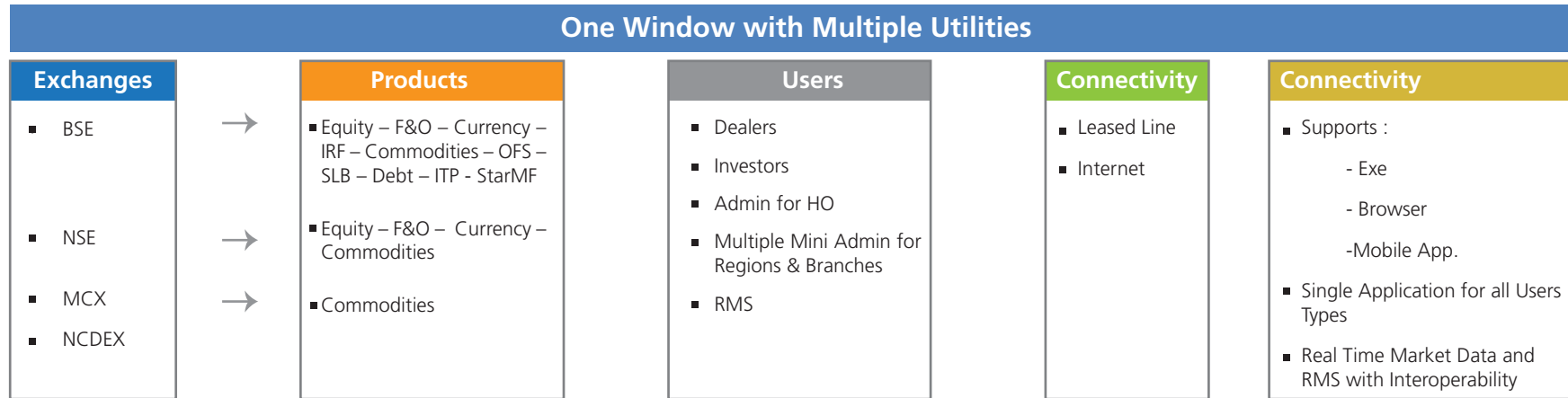
Key Advantages

- Robust Comprehensive Single Interface RMS for Multi Exchange.
- Monitor and Control Trading Member Risk Management .
- Prevention of Erroneous orders before sending to Exchange based on risk parameters set
- No IT infrastructure / Connectivity cost to the Member.

MERMS - Free of cost for all Members/ vendors



Bolt plus - Hosted Member Trading interface



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 and Risk Monitoring with Interoperability.
- MTM Based Single Click Auto square Off. Timer Based Square off.
- Top Gainers / Top Losers - Most Active by VOLUME / VALUE.
- Corporate Action Information.
- Customized short cut keys - predefined Key Mapping Styles .
- 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

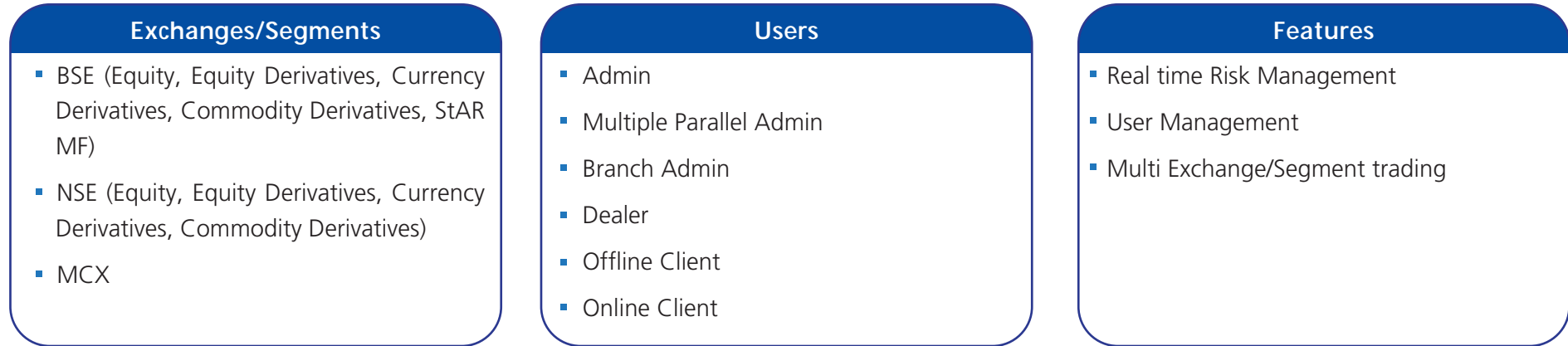
Bolt+on web (BOW)- Free of cost for all Members



Best(BSE Electronic Smart Trader)- features

Hosted Trading and Risk Management Application

One Window with Multiple Utilities

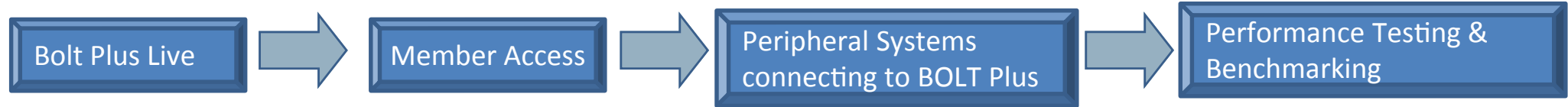


Roles & Functionalities



BEST- Free of cost for all Members

BSE's -World Class Trading Infrastructure



- Products available for trading
 - Currency Derivatives – 29th November, 2013
 - Interest Rates Futures – 28th January, 2014
 - Equity Derivatives - 10th February, 2014
 - Equity – 7th April, 2014
 - Commodity Derivatives – 01st October, 2018

- API based access -
 - Through existing IML API
 - Advanced High performance Industry Standards based 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
- In built application level redundancy
- Usage of commodity hardware to ensure ease of availability



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
- 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
Cost to member for 10G port connection	INR.0.50 Lakhs AMC (1 Primary & 1 Secondary)	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 Market Data since November 2010. Free EOBI feed since June 2015.	Free Tick By Tick Data since July 2018.

*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

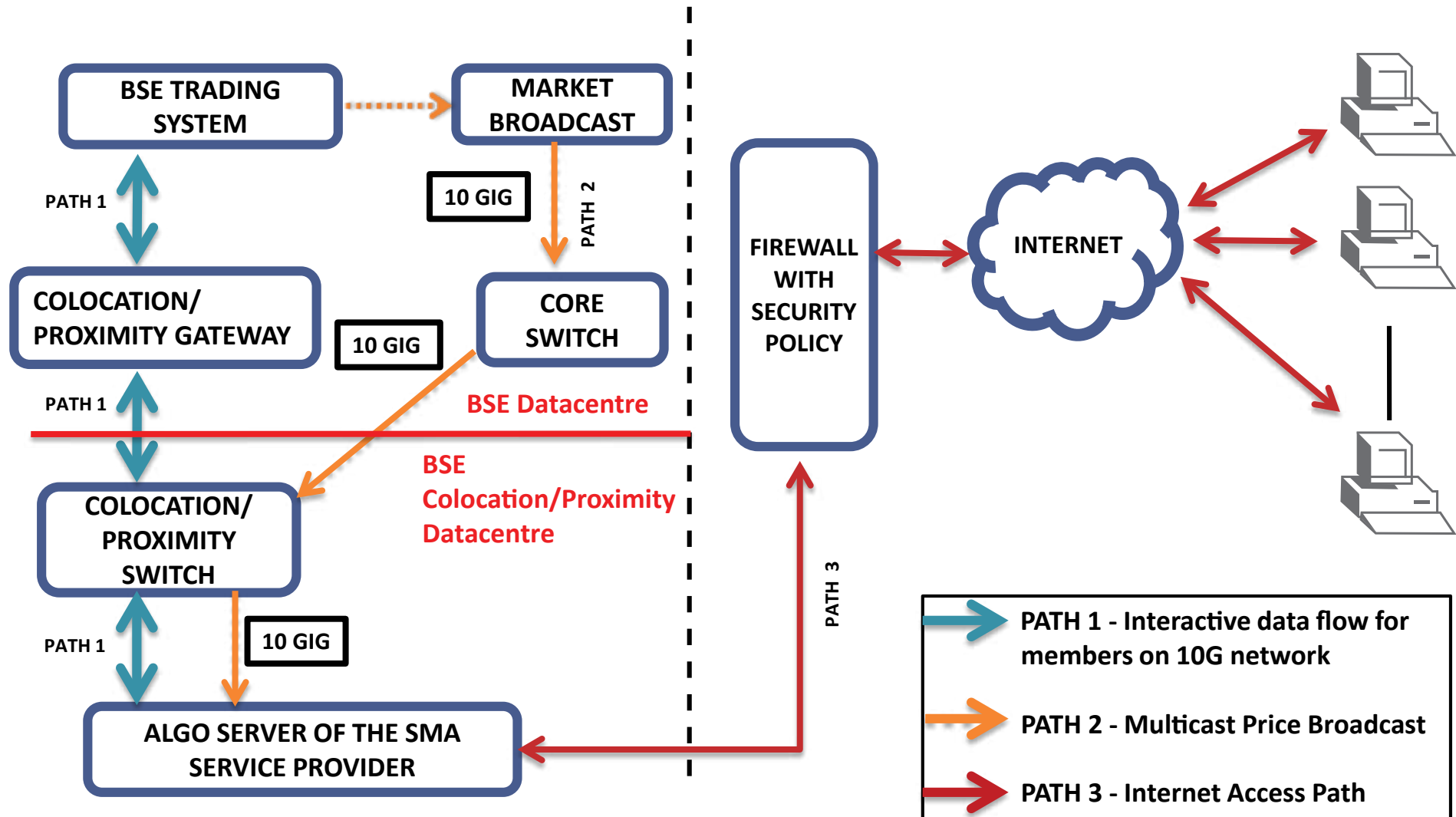
For Members

- 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

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