CONTRIBUTOR

Mahavir Kaswa, CFA
Associate Director
Product Management
S&P BSE Indices
mahavir.kaswa@spglobal.com

Measuring Indian Equities: The S&P BSE 500

The S&P BSE 500, which launched in 1999, is one of the most popular broad benchmarks of India's capital market. With a rich history of more than 18 years, the index has captured all major events—from heightened activity seen during numerous bull and bear runs, including the information technology boom and then bust in 2001, the bull market rally ending in 2007, the 2008 global financial crisis, and later the regional shocks seen globally.

This paper discusses the construction and attributes of the S&P BSE 500 and compares it with other popular equity indices in the Indian market.

EXECUTIVE SUMMARY

- Interest in Indian equities should continue to grow, as the International Monetary Fund (IMF) projects a growth rate of 7.4% in 2018 and 7.8% in 2019 for the Indian economy, putting it among the fastest-growing global markets of its size.[1]
- The S&P BSE 500 is designed to measure the performance of the leading 500 Indian companies, and it covers more than 88% of India's listed equity market capitalization.
- The S&P BSE 500 has historically exhibited low correlation to global markets, providing a potential diversification opportunity.
- The index offers diversified exposure to all GICS® sectors. The large-cap stocks account for nearly 79% of the index weight. The combined weight of constituents having individual derivative trading is 87%, which facilitates the hedging of the index portfolio. Thus, the S&P BSE 500 reflects a complete picture of India's economy.
- Over the period studied, the S&P BSE 500 outperformed the S&P BSE 100 and S&P BSE 250 SmallCap Index, while it underperformed the S&P BSE 150 MidCap Index on an absolute and risk-adjusted basis over the long term.
- The financials sector, which constituted the highest average index weight over the past three years, contributed the most (nearly one-third) of the total returns of the S&P BSE 500.

[1] International Monetary Fund. World Economic Outlook Database. April 2015.

INDIA'S GROWTH STORY

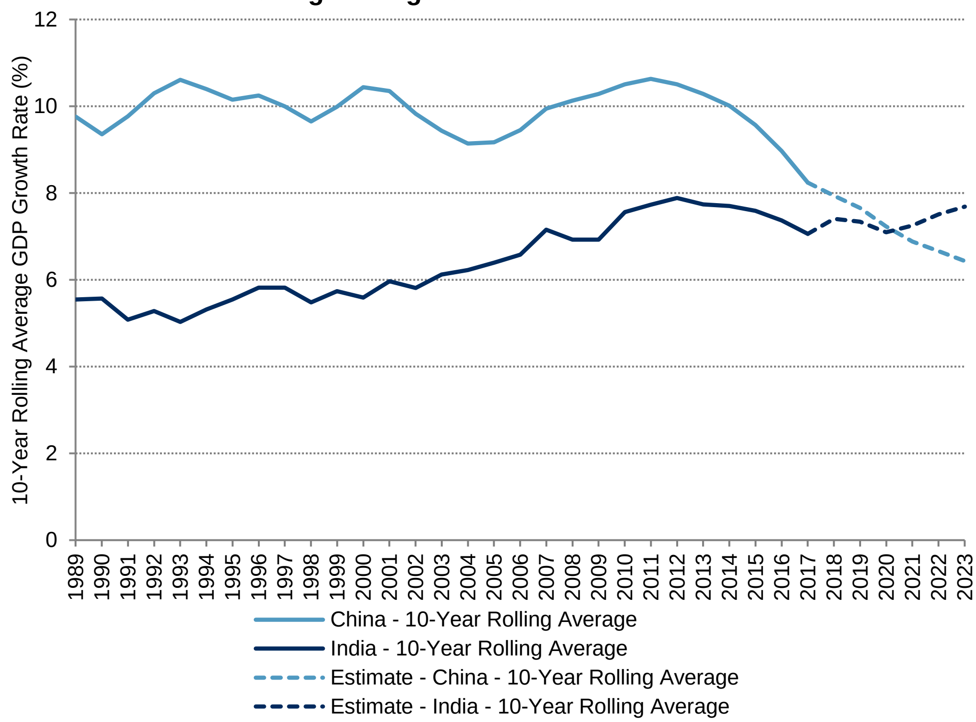
India has regained the tag of fastest-growing (large) economy, as the IMF[1] projected India's GDP growth rate at 7.4% in 2018 and 7.8% in 2019, whereas China (the second-fastest) was expected to grow at 6.6% in 2018 and 6.4% in 2019 (see Exhibit 1).

India's economy crossed the USD 1 trillion size mark in 2007 and is expected to cross the USD 3 trillion mark in 2018, which is approximately 3.4% of the global economy.

Since opening its economy in 1990, India has grown multifold and gained greater importance in the global economy. India's economy crossed the USD 1 trillion size mark in 2007 and is expected to cross the USD 3 trillion mark in 2018, which is approximately 3.4% of the global economy.[1] With a projected GDP of over USD 3 trillion, the Indian economy is expected to be the sixth-largest economy globally, between the UK and France.[1]

According to a recent article by The World Bank,[2] the growth in India's GDP was primarily led by the services sectors (information technology, telecommunication services, and financials), followed by industrials, and finally a relatively stable growth in the agriculture sector. The report further stated that the growth has not just accelerated, but it has also become more stable over time. Since 1980, India's 10-year rolling average GDP growth rate has shown an upward trend, demonstrating stability and more consistent GDP growth over time (see Exhibit 1).

Exhibit 1: 10-Year Rolling Average GDP Growth Rate



Source: International Monetary Fund, World Economic Outlook Database. 10-year rolling average GDP growth rate calculated with yearly GDP growth rate. Data as of March 31, 2018. Chart is provided for illustrative purposes.

[2] The World Bank. "India Development Update." March 2018.

INDIA'S GLOBALIZATION

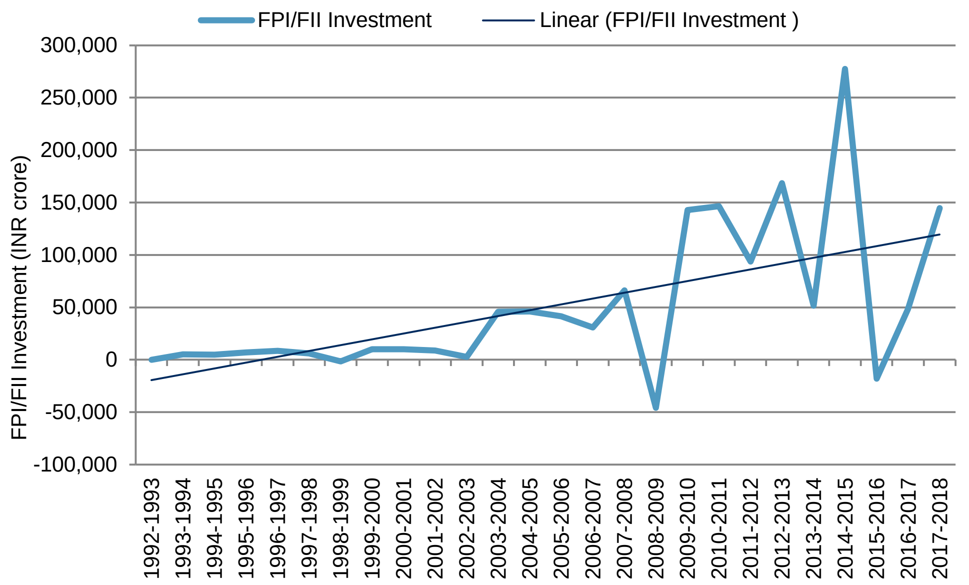
According to Ernst & Young Solutions' 2015 India attractiveness survey,[3] 32% of the business leaders from global corporations polled for the survey said India is the most attractive investment destination in the world, followed by China, Southeast Asia, and Brazil. The survey found major improvements in perception from the 2014 survey in key areas such as macroeconomic stability, political and social stability, relaxation in foreign direct investment (FDI) policy, and the government's efforts to ease doing business.

In 1992, foreign institutional investors were first allowed to invest in all securities traded on the primary and secondary markets.

In 1992, foreign institutional investors (FIIs) were first allowed to invest in all securities traded on the primary and secondary markets, with a maximum cap of 5% in the case of a single FII and 24% for all FIIs.[4] Since then, FII regulations have gone through numerous changes and have become increasingly more liberal.

Exhibit 2 shows India started receiving increasingly greater foreign investment in the early 2000s. The highest foreign investments were received during the financial year[5] 2014-2015; whereas major outflow was experienced during the financial year 2008-2009, the period of the financial crisis.

Exhibit 2: FPI/FII Investments in India



Source: National Securities Depository Ltd. Data as of March 31, 2018. Chart is provided for illustrative purposes. FPI: Foreign Portfolio Investors. INR 1 crore = INR 10 million.

[3] Ernst & Young Solutions LLP, a member of the global EY organization. EY's attractiveness survey: India 2015 "Ready, set, grow." March and April 2015.

[4] Sharma, Laksmi. "A Gap Analysis of FIIs Investments – An estimation of FIIs Investments Avenues in Indian Equity Market." NSE News. December 2004.

[5] The Indian financial year starts from April 1 and ends on March 31.

As illustrated in Exhibit 3, historically, India's equity market has had average or low correlation to other global markets, providing a potential diversification opportunity. The Indian equity market noted its lowest correlations of 0.24 and 0.30 with the Japanese and U.S. equity markets, respectively.

India's equity market has had average or low correlation to other global markets, providing a potential diversification opportunity.

Exhibit 3: 10-Year Correlation of Daily Total Returns With Top 10 Countries by GDP

COUNTRY	BRAZIL	CHINA	FRANCE	GERMANY	INDIA	ITALY	JAPAN	RUSSIA	UK	U.S.
BRAZIL	1.00	0.34	0.62	0.62	**0.36**	0.57	0.16	0.56	0.65	0.60
CHINA	-	1.00	0.32	0.32	**0.47**	0.28	0.37	0.38	0.35	0.22
FRANCE	-	-	1.00	0.95	**0.41**	0.93	0.20	0.60	0.90	0.57
GERMANY	-	-	-	1.00	**0.43**	0.89	0.19	0.60	0.87	0.60
INDIA	**-**	**-**	**-**	**-**	**1.00**	**0.39**	**0.24**	**0.42**	**0.44**	**0.30**
ITALY	-	-	-	-	-	1.00	0.16	0.56	0.83	0.53
JAPAN	-	-	-	-	-	-	1.00	0.26	0.22	0.01
RUSSIA	-	-	-	-	-	-	-	1.00	0.62	0.41
UK	-	-	-	-	-	-	-	-	1.00	0.56
U.S.	-	-	-	-	-	-	-	-	-	1.00

Source: S&P Dow Jones Indices LLC. 10-year correlation calculated based on daily total returns of corresponding S&P Global BMI country indices except China (S&P China 500), India (S&P BSE 500), and the U.S. (S&P 500®) in USD. Data from Dec. 31, 2007, to Dec. 31, 2017. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

CAPTURING THE INDIA STORY WITH THE S&P BSE 500

Over the past three to four decades, the Indian equity market has witnessed phenomenal growth, on account of increasing foreign capital flows and increasing participation by domestic institutional investors.

The increasing depth and breadth has brought an increasing demand from market participants for suitable benchmarks. The S&P BSE SENSEX launched in 1986 and was the first and most popular Indian benchmark, followed by the S&P BSE 100 and S&P BSE 200 in 1989 and 1994, respectively. In 1999, the S&P BSE 500 was launched in response to market demand for broader benchmarks that offer more complete coverage of the Indian equity market.

The Index Construction of the S&P BSE 500

The S&P BSE 500 is designed to be a broad representation of the Indian equity market, consisting of the 500 leading companies in terms of total market capitalization that are members of the S&P BSE AllCap. The differential voting rights (DVRs) shares class is eligible to be part of the index, which means that at any point in time, the index will include a fixed number of 500 companies, but the number of stocks in the index could be greater than or equal to 500.

To keep the index aligned to changes in the local market and regulatory environment, the S&P BSE 500 methodology has seen a few periodic changes.

To keep the index aligned with changes in the local market and regulatory environment, the S&P BSE 500 methodology has seen a few periodic changes. Taking inspiration from the recent Security and Exchange Board of India's (SEBI) circular on the categorization and rationalization of mutual fund schemes[6] that classifies stocks in different size families by total market capitalization, the S&P BSE 500 methodology changed to select stocks by total market capitalization, effective as of the rebalancing in June 2018.

Exhibit 4: S&P BSE 500 Construction Rules

CRITERIA	DESCRIPTION
Universe	Constituents must be members of the S&P BSE AllCap.
Share Class	All common equities shares and DVR shares are eligible.
Listing Venue	BSE Ltd. (previously Bombay Stock Exchange Ltd.)
Number of Companies	500 (Fixed)
Number of Stocks	Greater than or equal to 500 (Variable on account of DVR shares).
Listing History	Stocks must have a listing history of at least three months. IPOs are eligible if they have a listing history of at least one month.
Liquidity Criteria	Annualized traded value must be greater than or equal to INR 100 crores. Existing constituents must have an annualized traded value of greater than or equal to INR 80 crores. Stocks must have traded for at least 80% of trading days.
Index Construction	Companies are ranked by total market capitalization. The top 500 companies are selected subject to a 20% stock rank buffer.
Weighting Method	Float-adjusted market capitalization.
Rebalancing Frequency	Semiannually in June and December of each year.
Calculation Frequency	Index is calculated on a real-time basis by BSE Ltd.
Currency	INR and USD.

Source: Asia Index Private Limited. Data as of June 2018. For the complete index methodology, visit www.asiaindex.co.in/. Table is provided for illustrative purposes.

Characteristics of the S&P BSE 500 Composition

As of April 30, 2018, with a total market capitalization of INR 1,35,14,943 crores (approximately USD 2 trillion), the S&P BSE 500 represented approximately 88% of all BSE-listed companies. The index includes 500 constituent companies that meet eligibility and liquidity filters. The combined weight of constituents having individual derivative contracts was 87%, which facilitates risk management of the index portfolio.[7]

The S&P BSE 500 is diversified in terms of the weight of constituents and weight of sectors held in the index.

The S&P BSE 500 is diversified in terms of the weight of constituents held in the index. The top 10 constituents accounted for a cumulative weight of 36.1%, and the largest component, HDFC Bank Ltd., had a weight of 6.28% (see Exhibit 5).

The S&P BSE 500 is diversified across sectors, and no individual sector had an excessive overweight in the index. As shown in Exhibit 5, the financials sector had the highest weight in the index, with 30%, followed by consumer discretionary at 12.5%. The services sectors, which includes

[6] SEBI. "Categorization and Rationalization of Mutual Fund Schemes." Circular number: SEBI/HO/IMD/DF3/CIR/P/2017/114. Oct. 6, 2017.

[7] Narasimhan, M.S., and Kalra, S. "The Impact of Derivative Trading on the Liquidity of Stocks." Vikalpa Vol. 39 (No. 3), pp. 51-65. July-September 2014.

financials, information technology, and telecommunications services, together contributed nearly 41% to the total index weight. As illustrated in Exhibit 15 in the Appendix, financials noted the highest gain of 4.9% in index weight, whereas information technology noted the greatest loss of 5.5% in the index weight over the five-year period ending Dec. 31, 2017.

Exhibit 5: Top 10 Stocks and GICS Sector Coverage

TOP 10 STOCKS		GICS SECTORS	
COMPANY NAME	**INDEX WEIGHT (%)**	**SECTOR NAME**	**INDEX WEIGHT (%)**
HDFC Bank Ltd	6.28	Consumer Discretionary	12.54
Housing Development Finance Corp	4.95	Consumer Staples	9.50
Reliance Industries Ltd	4.94	Energy	8.26
ITC Ltd	3.81	Financials	29.96
Infosys Ltd	3.62	Health Care	5.00
ICICI Bank Ltd	2.90	Industrials	9.04
Tata Consultancy Services Ltd	2.79	Information Technology	10.06
Larsen & Toubro Ltd	2.71	Materials	10.33
Kotak Mahindra Bank Ltd	2.27	Real Estate	0.65
Maruti Suzuki India Ltd	1.86	Telecommunication Services	1.40
Total	**36.11**	Utilities	3.27
		Total	**100**

Source: Asia Index Private Limited. Data of as April 30, 2018. Table is provided for illustrative purposes.

Since the SEBI circular[8] of Oct. 6, 2017, which focuses on the categorization and rationalization of mutual fund schemes, the S&P BSE 100, S&P BSE 150 MidCap Index, and S&P BSE 250 SmallCap Index have been considered suitable benchmarks for the large-, mid-, and small-cap size segments in India, respectively, because they adopt a similar approach as that defined in the SEBI circular.

The S&P BSE 500 offers exposure to all size segments.

The S&P BSE 500 offers exposure to all size segments, and large-cap stocks accounted for 79% of the total index weight, mid caps 13%, and small caps 8%, as of April 30, 2018 (see Exhibit 6). As illustrated in Exhibit 16 in the Appendix, over the five-year period ending on Dec. 31, 2017, large-cap stocks lost nearly 3.6% in index weight, and small caps gained 3%. The major loss of weight for large caps occurred during 2014, while small caps noted a steady increase in weight throughout the five-year period.

[8] SEBI. "Categorization and Rationalization of Mutual Fund Schemes." Circular number: SEBI/HO/IMD/DF3/CIR/P/2017/114. Oct. 6, 2017.

Exhibit 6: Size Coverage of the S&P BSE 500

SIZE	INDEX WEIGHT (%)
Large Cap	78.62
Mid Cap	13.33
Small Cap	8.05

Source: Asia Index Private Limited. Data of as April 30, 2018. Table is provided for illustrative purposes.

Institutional Investors Coverage

Institutional holdings provide some level of comfort to market participants (especially to small investors) in their investment decisions. Many believe that institutional investors have better capabilities and resources to research a particular company, and hence, they are better able to make more informed decisions before investing in any company.

As per the latest shareholding data, the S&P BSE 500 has a good coverage of institutional (foreign or domestic) investors. Exhibit 7 shows that 484 companies (out of 500 constituent companies) have a combined (foreign and domestic) institutional holding greater than 5%. Similarly, there are 388 companies that have a foreign institutional investment greater than 5%, whereas there are 391 companies that have a domestic institutional holding greater than 5%.

Exhibit 7: Number of Companies With Institutional Investments (Foreign, Domestic, and Combined) Coverage

PERCENT OF TOTAL OUTSTANDING SHARES	TOTAL NUMBER OF CONSTITUENT COMPANIES	COMBINED (FOREIGN & DOMESTIC)	FOREIGN	DOMESTIC
1	500	499	478	483
5	**500**	**484**	**388**	**391**
10	500	444	272	271

Source: Accord Fintech Ltd. Data as of March 31, 2018. Table is provided for illustrative purposes.

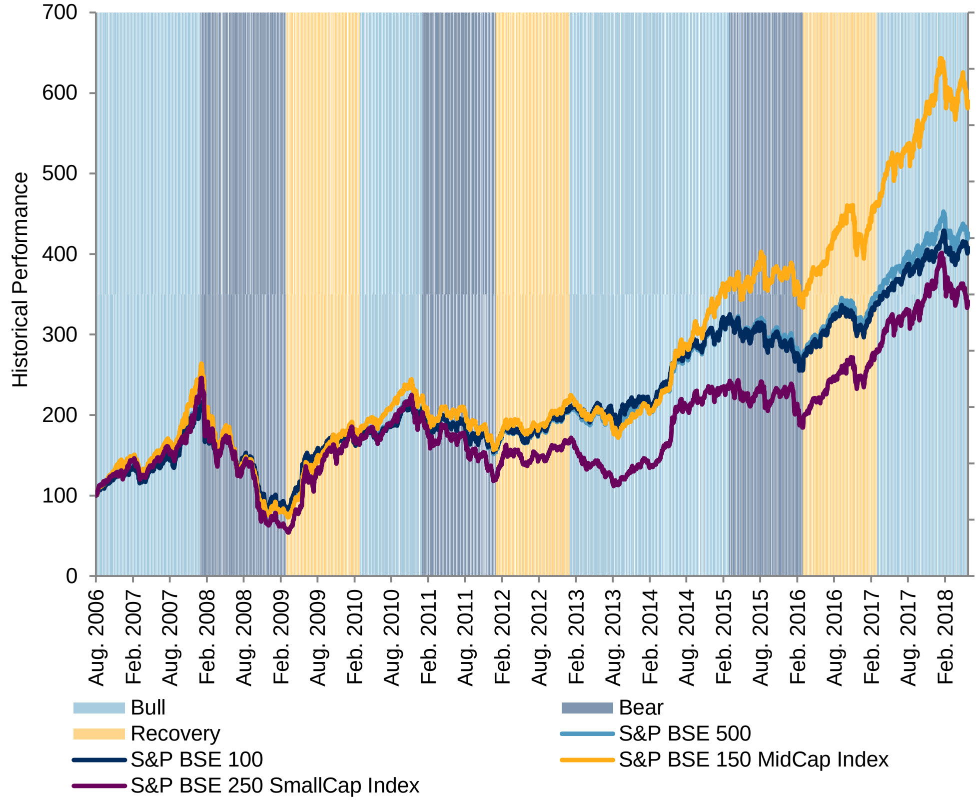
Historical Index Performance

The S&P BSE 500 outperformed the more volatile S&P BSE 250 SmallCap Index in all three bear cycles, while it outperformed the S&P BSE 150 MidCap Index in two out of three bear cycles.

As illustrated in Exhibit 8, the S&P BSE 500 performed similarly to the S&P BSE 100—not surprising given that large caps accounted for 79% of the total index weight. Over the mid to long term, the S&P BSE 500 significantly lagged the S&P BSE 150 MidCap Index, but outperformed the S&P BSE 250 SmallCap Index.

The S&P BSE 500 outperformed the more volatile S&P BSE 250 SmallCap Index in all three bear cycles, while it outperformed the S&P BSE 150 MidCap Index in two out of the three bear cycles. The S&P BSE 100 outperformed the S&P BSE 500 in two of the three bear cycles, indicating that investors seem to prefer large-cap stocks over mid caps and small caps during turbulent times (see Exhibit 17 in Appendix).

Exhibit 8: Historical Performance Chart During Various Market Cycles



Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The S&P BSE 500 posted an annualized total return of 13.4% in INR.

As illustrated in Exhibit 9, from Aug. 1, 2006, to April 30, 2018, the S&P BSE 500 posted an annualized total return of 13.4% in INR, outperforming the S&P BSE 100 and S&P BSE 250 SmallCap Index, while lagging the S&P BSE 150 MidCap Index.

On a risk-adjusted basis, the S&P BSE 500 noted higher returns than the S&P BSE 100 and S&P BSE 250 SmallCap Index; however, it noted lower risk-adjusted returns than the S&P BSE 150 MidCap Index.

Exhibit 9: Risk/Return Profile

PERIOD	S&P BSE 500	S&P BSE 100	S&P BSE 150 MIDCAP	S&P BSE 250 SMALLCAP
CAGR (%)				
3-Year	13.5	11.8	21.1	17.6
5-Year	16.9	15.1	25.4	21.0
10-Year	9.7	9.2	13.0	7.8
Since Aug. 1, 2006	13.4	12.9	16.9	11.6
ANNUALIZED VOLATILITY (%)				
3-Year	13.6	13.6	14.6	17.7
5-Year	14.3	14.5	14.2	17.6
10-Year	20.6	21.4	18.2	22.1
Since Aug. 1, 2006	21.6	22.3	19.9	22.9
RISK-ADJUSTED RETURNS				
3-Year	0.99	0.87	1.45	0.99
5-Year	1.18	1.04	1.79	1.19
10-Year	0.47	0.43	0.71	0.35
Since Aug. 1, 2006	0.62	0.58	0.85	0.51
MAXIMUM DRAWDOWN (%)				
Since Aug. 1, 2006	-66	-63	-72	-78
CORRELATION				
10-Year	1.000	0.996	0.913	0.871

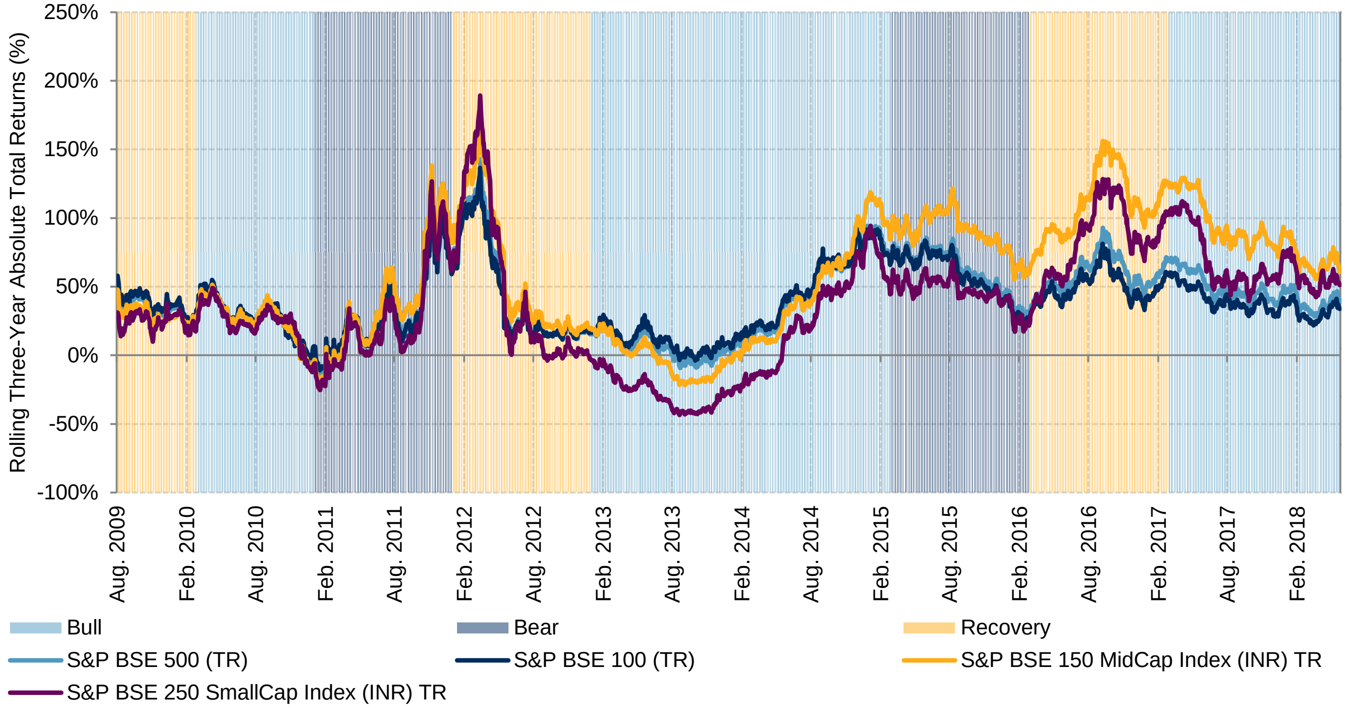
Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

In terms of rolling three-year returns, the S&P BSE 500 noted only 113 days out of 2,192 trading days of negative total returns, showing a potentially small probability of negative total returns.

In terms of rolling three-year returns,[9] from Aug. 1, 2006, to April 30, 2018, the S&P BSE 500 noted only 113 out of 2,192 trading days of negative total returns, showing a potentially small probability of negative total returns during the three-year time horizon (see Exhibit 18 in Appendix).

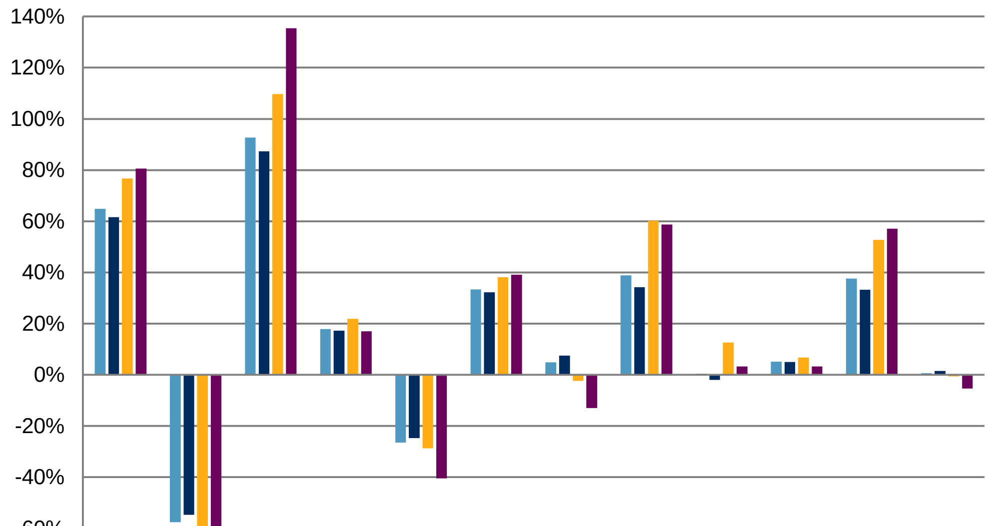
[9] It is assumed that there are 250 trading days in a calendar year (i.e., for a three-year period, there are 750 trading days).

Exhibit 10: Rolling Three-Year Absolute Total Returns



Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 11: Calendar Year Total Returns



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD 2018
S&P BSE 500 (TR)	64.9%	-57.6%	92.7%	17.9%	-26.4%	33.4%	4.9%	38.9%	0.4%	5.2%	37.6%	0.6%
S&P BSE 100 (TR)	61.6%	-54.7%	87.3%	17.2%	-24.8%	32.2%	7.6%	34.2%	-2.0%	5.0%	33.3%	1.5%
S&P BSE 150 MidCap Index (INR) TR	76.7%	-65.6%	109.7%	21.9%	-28.7%	38.1%	-2.3%	60.2%	12.6%	6.7%	52.7%	-0.6%
S&P BSE 250 SmallCap Index (INR) TR	80.6%	-69.4%	135.4%	17.0%	-40.5%	39.1%	-13.0%	58.8%	3.3%	3.3%	57.1%	-5.4%

Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

GICS Sector Contribution to the S&P BSE 500 Total Returns Over the Past Three Years

Exhibit 12 illustrates the contribution by each GICS sector to the absolute total returns over the three-year period from April 30, 2015, to April 30, 2018.

Over the past three years, in terms of total returns, energy and materials were the best-performing sectors.

Over the past three years, in terms of total returns, energy and materials were the best-performing sectors. Energy stocks were on the run primarily on account of the increase in crude prices, coupled with the government's decision to link retail fuel prices with the international market—helping to reduce the burden of subsidies on state-owned oil companies. The steel, paint, and cement stocks, representing the materials sector, gained due to the government's increased focus on infrastructure development and affordable housing. On the other hand, telecommunication services stocks closed with negative total returns—not surprising given that most telecommunication services companies are highly leveraged and are facing an intense price war. Similarly, the health care sector ended in the red, as pharmaceutical companies have faced a lot of U.S. regulatory hurdles, consolidation of buyers, and greater competition.

Out of the S&P BSE 500's absolute total return of 46.32%, the financials sector alone contributed 14.88%—nearly one-third of the index's total return. The consumer discretionary sector contributed 6.51% to the index's total return as the distant second best. On the other hand, the health care and telecommunication services sectors noted the lowest contributions of -1.2% and -0.37% to the total index's return, respectively.

Exhibit 12: GICS Sector Contribution to the S&P BSE 500 Total Returns

GICS SECTOR NAME	AVERAGE WEIGHT (%)	TOTAL RETURN (%)	CONTRIBUTION TO RETURN (%)
Financials	28.42	52.89	14.88
Consumer Discretionary	12.13	54.08	6.51
Materials	9.11	74.83	6.50
Energy	8.17	79.90	5.91
Consumer Staples	9.56	55.06	5.20
Information Technology	10.91	39.34	3.90
Industrials	9.08	36.84	3.21
Utilities	3.30	42.62	1.51
Real Estate	0.32	60.23	0.32
Telecommunication Services	1.93	-14.55	-0.37
Health Care	7.07	-12.22	-1.20
Residuals	NA	NA	-0.05

Source: Bloomberg. Data from April 30, 2015, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

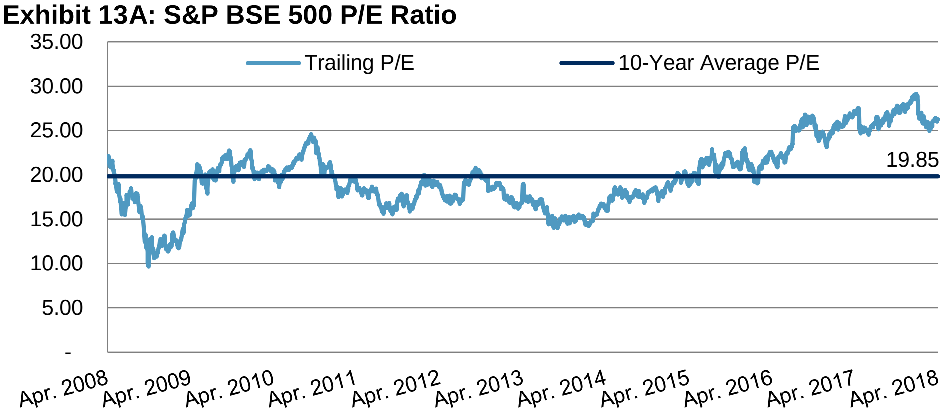
S&P BSE 500 Valuation Ratios

The price/earnings ratio (P/E ratio) is one of the most commonly used investment valuation indicators. As shown in Exhibit 13A, the P/E ratio of the S&P BSE 500 fell sharply during the period of the financial crisis in 2008 to reach the 10-year low of 9.67 in October 2008, indicating cheaper valuations. Since 2014, it exhibited a steady increase and reached the peak of 29.16 on Jan. 24, 2018. The overall 10-year average P/E ratio from April 30, 2008, to April 30, 2018 was 19.85.

India generally noted relatively lower dividend payments compared with many developed economies.

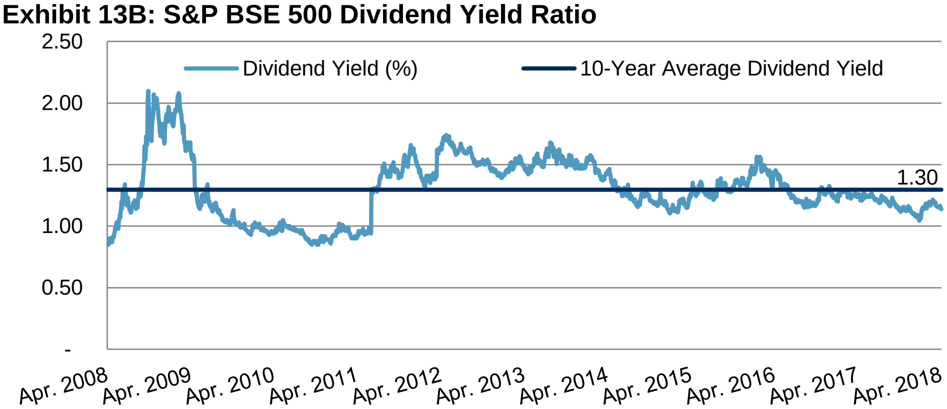
Dividend yield is an important source of total return from investments in the equity space. India, which has been a growing market, generally noted relatively lower dividend payments compared with many developed economies. Most companies earn considerably more than they pay out to shareholders, and usually the retained earnings are used to finance future growth. As seen in Exhibit 13B, over the past 10 years, the dividend yield of the S&P BSE 500 has been stable, ranging from 0.8% to 1.8% for most of the period. However, due to a sharp market correction from the financial crisis, the dividend yield rose notably to 2.10% in 2008. As of April 30, 2018, the average 10-year dividend yield was 1.3%.

Exhibit 13A: S&P BSE 500 P/E Ratio



Source: Asia Index Private Limited. Data as of April 30, 2018. Chart is provided for illustrative purposes.

Exhibit 13B: S&P BSE 500 Dividend Yield Ratio



Source: Asia Index Private Limited. Data as of April 30, 2018. Chart is provided for illustrative purposes.

CONCLUSION

With the IMF's label as the fastest-growing economy, India is increasingly gaining attention in the global market. As foreign investment rules are becoming more liberal, coupled with lower correlation with global markets, Indian equities could remain an essential part of long-term investment strategies for many global investors. Since its launch in 1999, the S&P BSE 500 has evolved to become a widely used benchmark for India's economy.

With the coverage of more than 88% of India's listed universe by total market capitalization, it seeks to provide comprehensive coverage of the Indian equity market. It provides diversified exposure to all sizes and all key economic sectors of India's economy. The combined weight of index constituents having individual derivative contracts is 87%, which facilitates hedging of the index portfolio. Thus, the S&P BSE 500 reflects a complete picture of India's economy.

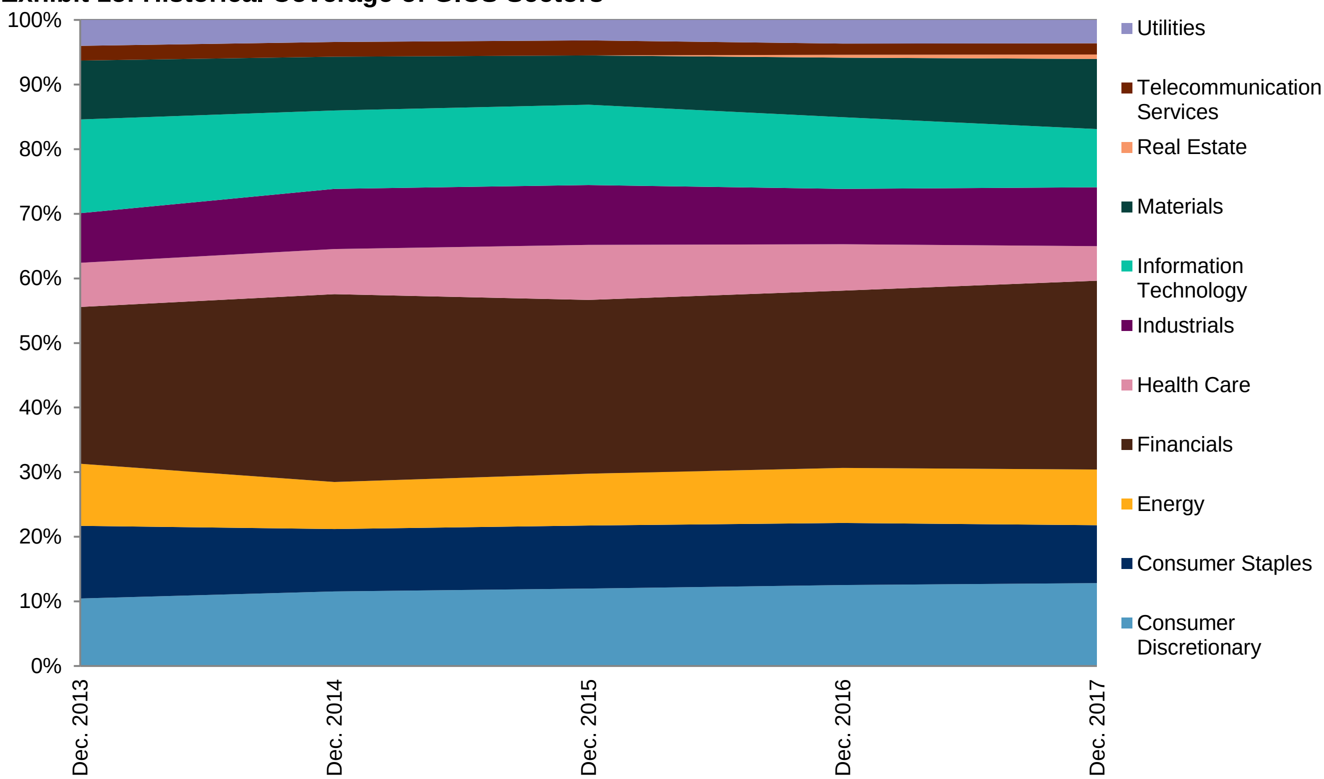
APPENDIX

Exhibit 14: Illustrative Market Cycles

FROM	TO	MARKET CYCLE
August 2006	December 2007	Bull
December 2007	February 2009	Bear
February 2009	February 2010	Recovery
February 2010	December 2010	Bull
December 2010	December 2011	Bear
December 2011	December 2012	Recovery
December 2012	February 2015	Bull
February 2015	February 2016	Bear
February 2016	February 2017	Recovery
February 2017	April 2018	Bull

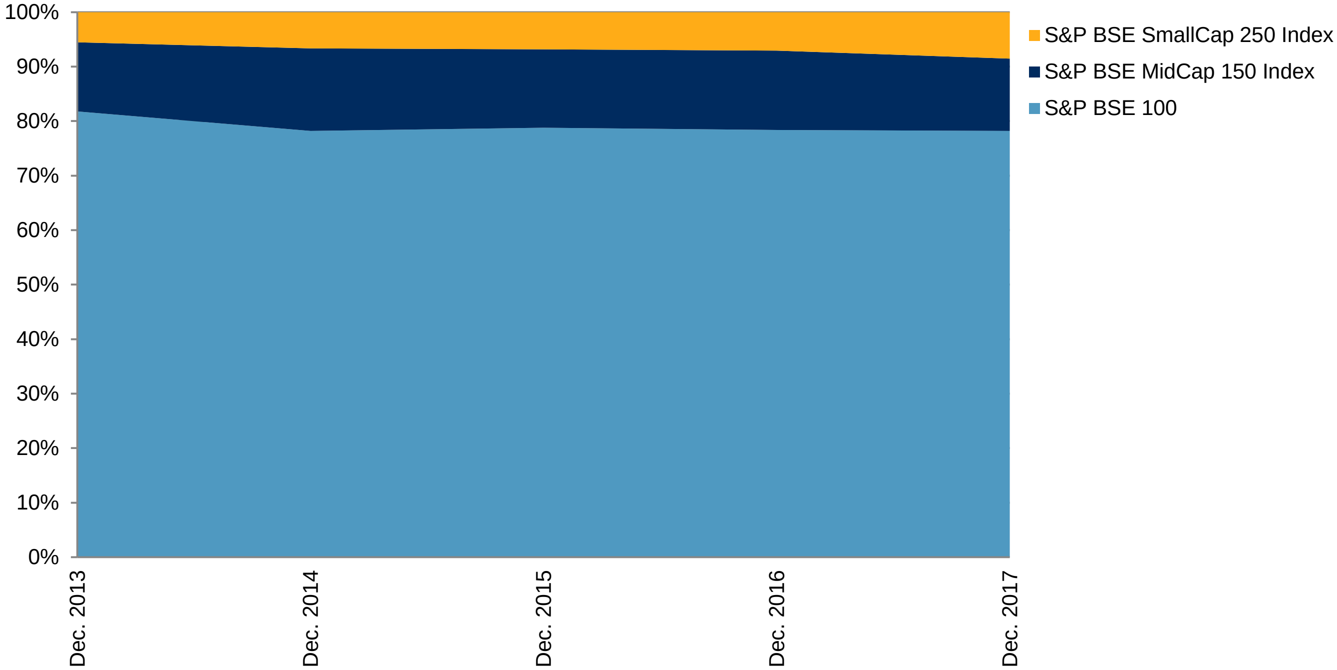
Source: Asia Index Private Limited. Data from August 2006 to April 2018. Table is provided for illustrative purposes.

Exhibit 15: Historical Coverage of GICS Sectors



Source: Asia Index Private Limited. Data of as Dec. 31, 2017. Chart is provided for illustrative purposes.

Exhibit 16: Historical Coverage of Large, Mid, and Small Caps



Source: Asia Index Private Limited. Data of as Dec. 31, 2017. Chart is provided for illustrative purposes.

Exhibit 17: Performance During Different Market Cycles (%)

FROM	TO	MARKET CYCLES	S&P BSE 500	S&P BSE 100	S&P BSE 150 MIDCAP	S&P BSE 250 SMALLCAP
Aug. 1, 2006	Dec. 31, 2007	Bull	117.1	109.1	152.8	137.9
Dec. 31, 2007	**Feb. 27, 2009**	**Bear**	**-61.8**	**-58.9**	**-69.2**	**-75.3**
Feb. 27, 2009	Feb. 26, 2010	Recovery	104.2	96.2	127.3	180.5
Feb. 26, 2010	Dec. 31, 2010	Bull	23.7	23.4	25.7	21.3
Dec. 31, 2010	**Dec. 30, 2011**	**Bear**	**-26.4**	**-24.8**	**-28.7**	**-40.5**
Dec. 30, 2011	Dec. 31, 2012	Recovery	33.4	32.2	38.1	39.1
Dec. 31, 2012	Feb. 28, 2015	Bull	55.8	55.2	64.7	42.6
Feb. 28, 2015	**Feb. 28, 2016**	**Bear**	**-18.2**	**-19.9**	**-7.5**	**-22.0**
Feb. 29, 2016	Feb. 28, 2017	Recovery	34.0	31.7	39.1	51.6
Feb. 28, 2017	April 30, 2018	Bull	25.3	23.2	34.9	29.8

Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 18: Number of Days With Negative Rolling Returns Over Three-Year Horizons

INDEX	NUMBER OF DAYS
S&P BSE 500	113
S&P BSE 100	52
S&P BSE 150 MidCap	212
S&P BSE 250 SmallCap	452

Source: Asia Index Private Limited. Data from Aug. 1, 2006, to April 30, 2018. Index performance based on total return in INR. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

PERFORMANCE DISCLOSURE

Please refer to the index launch date table below. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.asiaindex.co.in.

AIPL defines various dates to assist our clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. AIPL defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.asiaindex.co.in for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. AIPL or its agent maintains the S&P BSE Indices and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

INDEX	LAUNCH DATE	FIRST VALUE DATE
S&P BSE 500	August 9, 1999	February 1, 1999
S&P BSE 100	January 3, 1989	April 3, 1984
S&P BSE 250 SmallCap Index	November 30, 2017	September 16, 2005
S&P BSE 150 MidCap Index	November 30, 2017	September 16, 2005
S&P Brazil BMI	December 31, 1997	January 1, 1995
S&P China 500	August 28, 2015	June 16, 2006
S&P France BMI	December 31, 1992	January 7, 1989
S&P Germany BMI	December 31, 1992	January 7, 1989
S&P Italy BMI	December 31, 1992	January 7, 1989
S&P Japan BMI	December 31, 1992	January 7, 1989
S&P Russia BMI	December 31, 1997	January 1, 1995
S&P United Kingdom BMI	December 31, 1992	January 7, 1989
S&P 500	March 4, 1957	January 3, 1928
S&P BSE SENSEX	January 1, 1986	April 3, 1979
S&P BSE 200	May 27, 1994	January 2, 1991
S&P BSE AllCap	April 15, 2015	September 16, 2005
S&P BSE 500 Shariah	May 2, 2013	November 3, 2008
S&P BSE PSU	June 4, 2001	February 1, 1999

GENERAL DISCLAIMER

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. AIPL Companies does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. AIPL Companies makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. AIPL Companies is not an investment advisor, and AIPL Companies makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by AIPL Companies to buy, sell, or hold such security, nor is it considered to be investment advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of AIPL Companies. The Content shall not be used for any unlawful or unauthorized purposes. AIPL Companies and its third-party data providers and licensors (collectively "AIPL Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. AIPL Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall AIPL Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

AIPL Companies keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of AIPL Companies may have information that is not available to other business units. AIPL Companies has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, AIPL Companies provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.

GENERAL DISCLAIMER

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.