

WHITE PAPER SERIES #14



NIFTY500 Value 50

Capturing the performance of select 'Value'
companies across market cap segments

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Introduction

Benjamin Graham, in his classic book on value investing 'The Intelligent Investor' gives a great analogy while hunting for 'Value Stocks': "buy stocks like you buy groceries, not like you buy your perfume. Shop for value, compare, consider the ingredients, think about what you are going to need for the meal you are about to prepare and never go to the grocery store on an empty stomach. The goal is to buy the finest quality companies at reasonable prices, not the trendy scent in the fancy packaging". Value investing is the art of buying stocks which are trading at a lower price in comparison to their intrinsic value. Value investors achieve this by looking for companies with cheap valuation metrics i.e. typically lower price multiples, for reasons which are not justified over the longer term. Value investing seeks to exploit the irrational prices of these companies with belief that over long term investment horizon, the prices of these stocks will rise to their expected levels.

The concept of 'Value Investing' has been in existence for decades. Investors' quest for identifying 'value' picks gathered momentum when investment gurus like Benjamin Graham and his popular disciple Warren Buffett developed a structured approach to 'Value Investing'. Value investing has gradually evolved over the years as prominent investors and academicians have identified or developed various parameters which determine the 'intrinsic value' of stocks and thus identify relatively undervalued investment potentials which are expected to generate higher returns over long term investment horizons.

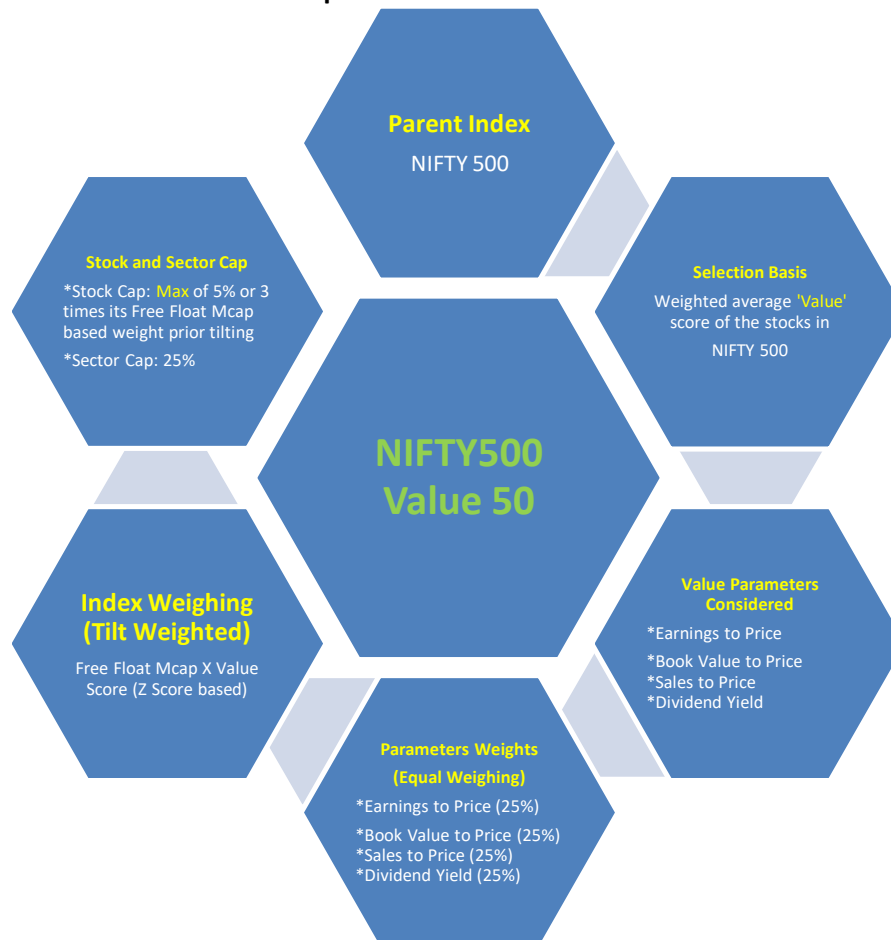
The new product offering of NSE Indices Ltd., NIFTY500 Value 50 Index consist of 50 'value' companies selected from its parent NIFTY 500 universe, which currently are trading at lower price multiples and have high dividend yield. The parameters used to identify these value companies are backed by robust theses on value investing as well as extensive back testing. The index presents an ideal fit for investment community looking to align their investments on value based strategy and is well suited for benchmarking needs of funds based on 'value' as an investment theme.

About NIFTY500 Value 50 Index

The NIFTY500 Value 50 index consist of 50 companies from its parent NIFTY 500 index, selected based on their 'value' scores. The value score for each company is determined based on Earnings to Price ratio (E/P), Book Value to Price ratio (B/P), Sales to Price ratio (S/P) and Dividend Yield.

The weight of each stock in the index is based on the combination of stock's composite value score and its free float market capitalization. The index is rebalanced & reconstituted semi-annually.

Exhibit 1: Aspects of NIFTY 500 Value 50 Index



What defines a 'Value' company?

Foundations of value investing were laid down by veteran investors like David Dodd, Benjamin Graham, Peter Lynch, John Bogle, Philip Fisher and many more, who focused on identifying intrinsic value of a company independent of its market price. The concept revolved around finding stocks which are available at a discount compared to its intrinsic value. These stocks offer 'margin of safety' and have lower risk of loss of principle for investors. The framework of value investing was popularized by Warren Buffett who developed his own rules for picking undervalued stocks with a potential to generate significant returns in future.

Exhibit 2: Ratios used to identify 'value' in NIFTY500 Value 50 Index



Based on the broad framework of value investing, NIFTY500 Value 50 index considers 4 parameters to identify 'value' in companies, these include:

Book Value to Price (B/P): A measure of 'margin of safety' for investment in a company. A higher B/ P ratio indicates that a stock is undervalued relative to the worth of its assets.

Earnings to Price (E/P): Earnings to Price ratio is a measure of the earnings yield of a company in relation to every rupee spent on the stock. A higher E/P ratio is indicative of higher earnings yield relative to the stock's trading price and indicates that the stock is available at 'bargain'.

Sales to Price (S/P): The ratio is derived by dividing the company's sales per share by market price of the stock. A higher S/P ratio indicates that a stock is undervalued relative to the revenue generated.

Dividend Yield (Dividend/Market Price): Dividend yield is another measure of a 'value' company and is measured by the annualized dividend amount paid by the firm in relation to its market price. Typically it has been observed that when compared with growth companies, value companies pay higher dividend.

*For all the above ratios, latest price of stocks is considered during rebalancing/reconstitution. Earnings, Book Value, Sales and Dividends are taken from disclosures provided in annual reports.

NIFTY500 Value 50 delivered higher returns in long term investment horizon vis-à-vis its parent index (NIFTY 500 TR) & NIFTY 50 TR

Exhibit 3: Annualized returns, annualized volatility and return-risk ratio of NIFTY500 Value 50 TR, NIFTY 500 TR and NIFTY 50 TR

Period	Annualized returns (%)			Annualized Volatility (%)			Return-Risk Ratio		
	NIFTY500 Value 50 TR	NIFTY 50 TR	NIFTY 500 TR	NIFTY500 Value 50 TR	NIFTY 50 TR	NIFTY 500 TR	NIFTY500 Value 50 TR	NIFTY 50 TR	NIFTY 500 TR
Since inception (April 1, 2005)	15.6%	15.2%	15.1%	26.9%	22.5%	21.7%	0.58	0.68	0.69
10 years	14.6%	11.7%	12.4%	25.6%	20.7%	19.8%	0.57	0.57	0.63
7 years	12.0%	14.3%	15.1%	23.8%	14.9%	14.7%	0.50	0.96	1.03
5 years	27.3%	17.8%	20.4%	23.5%	13.7%	13.8%	1.16	1.30	1.48
3 years	15.5%	15.1%	15.9%	20.5%	12.3%	12.6%	0.76	1.23	1.26
1 year	-12.3%	19.4%	16.3%	18.2%	10.1%	10.8%	-0.68	1.91	1.52

*As on August 31, 2018

Note: Returns for more than 1 year are CAGR returns

Exhibit 3 above captures the annualized returns, volatility and return-risk ratio of NIFTY 500 Value 50 TR, NIFTY 50 TR & NIFTY 500 TR Indices. NIFTY 500 Value 50 TR index registered higher annualized returns-in comparison to NIFTY 50 TR across long term investment horizons viz. since inception, 10, 5, 3 years (Highlighted in 'green' in Exhibit 4). Although the returns delivered by NIFTY 500 Value 50 TR index were higher than its parent (NIFTY 500 TR) and that of NIFTY 50 TR index, it has come at the cost of higher volatility. However, higher volatility is synonymous with cyclical themes in general and the strategy tends to work well in periods marked by economic revivals.

Exhibit 4: Calendar year returns and volatility of NIFTY500 Value 50 TR, NIFTY 50 TR and NIFTY 500 TR

Year	Annual Returns (%)			Annual Volatility (%)		
	NIFTY500 Value 50 TR	NIFTY 50 TR	NIFTY 500 TR	NIFTY500 Value 50 TR	NIFTY 50 TR	NIFTY 500 TR
2005*	26.3%	39.3%	38.5%	19.11%	17.12%	15.97%
2006	14.1%	41.9%	36.2%	29.23%	26.07%	25.65%
2007	109.0%	56.8%	64.6%	27.53%	25.35%	23.89%
2008	-56.7%	-51.3%	-56.5%	42.74%	44.23%	43.11%
2009	133.0%	77.6%	91.0%	36.12%	34.62%	32.46%
2010	30.9%	19.2%	15.3%	20.08%	16.26%	15.26%
2011	-37.7%	-23.8%	-26.4%	21.15%	20.95%	19.51%
2012	32.2%	29.4%	33.5%	20.45%	15.15%	14.68%
2013	-14.0%	8.1%	4.8%	29.30%	18.03%	17.00%
2014	78.9%	32.9%	39.3%	28.17%	12.65%	13.25%
2015	-7.2%	-3.0%	0.2%	24.18%	16.16%	16.10%
2016	25.1%	4.4%	5.1%	24.75%	15.13%	15.44%
2017	47.0%	30.3%	37.7%	15.92%	9.03%	9.64%
2018#	-18.7%	12.2%	6.4%	19.61%	10.51%	11.19%

*Since April 1, 2005. #Data as on August 31, 2018

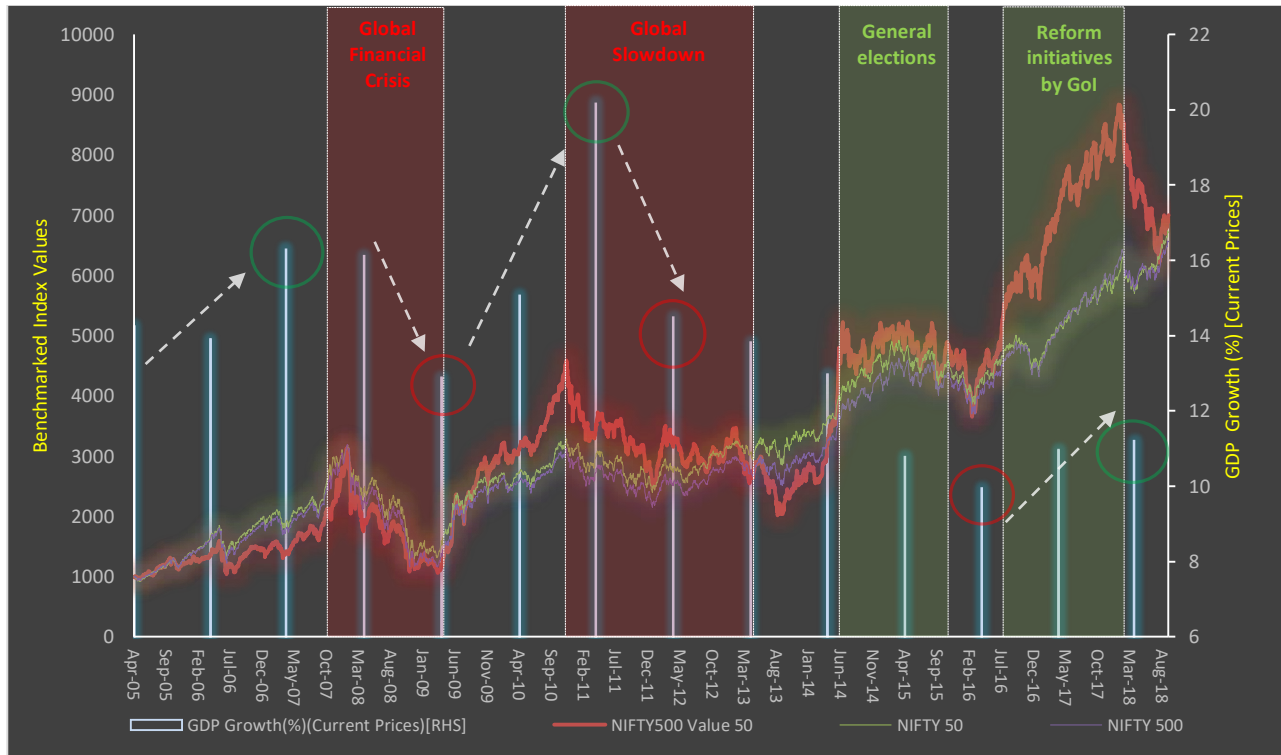
Exhibit 4 above captures the calendar year returns of NIFTY500 Value 50 TR index, NIFTY 50 TR & NIFTY 500 TR Index. As evident from the calendar years highlighted in green, the NIFTY500 Value 50 TR index managed to outperform NIFTY 50 TR and NIFTY 500 TR significantly during periods of strong economic growth/recoveries. For instance, in 2007, NIFTY500 Value 50 index delivered an

alpha of ~52% and ~44% over NIFTY 50 TR & NIFTY 500 TR Index respectively. NIFTY500 Value 50 index delivered similar stellar performance post global financial crisis when it outperformed NIFTY 50 TR & NIFTY 500 TR by ~55% and ~42% in 2009. Thus, NIFTY500 Value 50, with its robust methodology that assigns weightages to value stocks distributed across Large-Mid-Small cap segments, represents an ideal choice for investment strategies centered round value investing.

Value based investment strategy exhibits cyclical behavior and has high correlation with economic cycles

Exhibit 5 below shows the performance of NIFTY500 Value 50 index vis-à-vis NIFTY 50 TR & NIFTY 500 TR Index. Domestic GDP growth rate (Current Prices) (%) is shown in white bars which helps establish the correlation between value-based investment strategy and economic cycle. Green circles show periods of sizeable GDP growth, whereas periods when GDP rate fell considerably are highlighted in red circles.

Exhibit 5: Performance comparison of NIFTY500 Value 50 index, NIFTY 50 TR, NIFTY 500 TR Index and GDP growth rates for corresponding fiscal years



Value based investment style tends to exhibit a cyclical behavior which is correlated with economic cycle of a country and moves largely in-line with the economy. Cyclical sectors are influenced by economic indicators like GDP growth rate, interest rates, inflation etc. Sectors that have cyclical nature typically include metals, energy, financial services sectors and have traditionally carried higher weightage in value themed portfolio. For instance, NIFTY500 Value 50 index saw a rally pre-Global Financial Crisis 2008-09 (GFC) when financial services sector drove the index to record highs. GDP growth rate remained fairly high during the same period. The index witnessed correction when the financial services sector underperformed during - Global Financial Crisis and GDP rate fell significantly. Recovery in GDP and subsequent outperformance of NIFTY500 Value 50 can be observed in 2009-10 period.

Similar instance of high correlation between economic cycles and cyclical behavior of value themed strategy can also be observed during 2017-18 period, when GDP picked up after demonetization and GST rollout. NIFTY500 Value 50 index saw a major bull run primarily driven by financial services, energy, metal & commodities sectors during this period.

Unique 'value' stock identification methodology of NIFTY500 Value 50 index results in exposure across various segments and sectors

The methodology of NIFTY500 Value 50 index assigns weights to individual stocks depending on their composite 'value' score and its free float market capitalization. The distribution of weights among Large-Mid-Small Cap segments varies depending on the composite 'value' score derived based on equal weightages to 4 parameters namely to Earnings to Price (E/P), Book Value to Price (B/P), Sales to Price (S/P) and Dividend Yield. Consequently, number and aggregate weight to 'value' stocks may be distributed across Large-Mid-Small cap segments based on the market scenario.

Exhibit 6: Trend in weightages of Large-Mid-Small Cap segments in NIFTY500 Value 50 portfolio across rebalancing periods

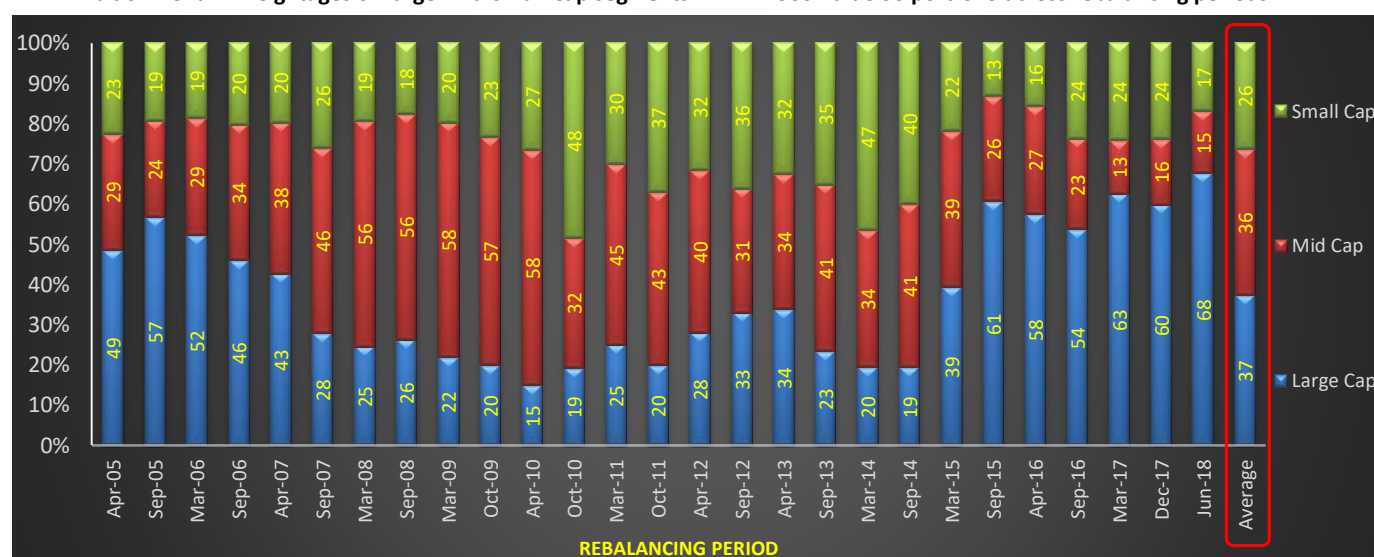


Exhibit 6 above captures the trend in distribution of weightages across Large-Mid-Small cap segments based on the availability of value stocks over rebalancing periods from 2005 to 2018. Weights have drifted in NIFTY500 Value 50 index among size segments based on the relative valuation of large, mid or small cap. Hence similar to the cyclicity in performance of value theme, weight allocation also shows cyclicity among large-mid-small cap stocks. For example post mid and small cap rally of 2014, the weight to large cap stocks has increased in the index due to availability of cheaper large cap stocks (lower price multiple). Historically, allocation of weightages for large Cap segment has ranged from 15% to 68% with average being 37% whereas average weightage distribution of midcap stocks is 36% and that of small cap stocks is 26%.

Exhibit 7: Trend in weightages of sectors in NIFTY500 Value 50 portfolio across rebalancing periods

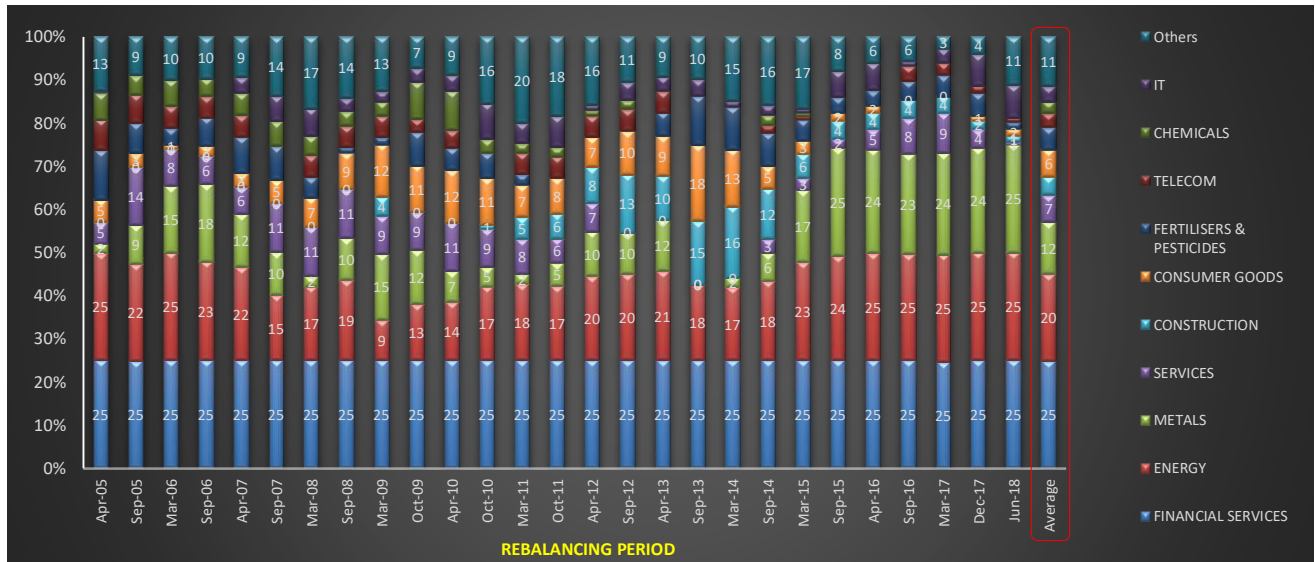


Exhibit 7 above captures the trend in distribution of weightages across sectors during rebalancing periods from 2005 to 2018. NIFTY500 Value 50 has a well-diversified portfolio across 17 sectors. On an average, top 5 sectors namely: Financial Services (25%), Energy (20%), Metals (12%), Services (6%) and Construction (4%) have together contributed ~68% to the portfolio. The portfolio also has a well-defined tail with bottom 7 sectors namely Pharma, Textiles, Automobiles, Industrial Manufacturing, Cement and Cement Products, Media and Entertainment & Paper together contributing 11% of the weight on an average from 2005 to 2018. The weightage of Financial Services and Energy sectors has remained steady across the years, whereas the contribution from Metals sector has increased.

On a rolling return basis, NIFTY500 Value 50 portfolio consistently outperformed NIFTY 50 for longer investment horizons

Rolling returns analysis was conducted to eliminate recency bias in performance. Figures in Exhibit 8 below shows number of instances of outperformance of NIFTY500 Value 50 TR index with respect to NIFTY 50 TR index. For example, NIFTY500 Value 50 TR index has delivered an alpha in the range of 5 - 8% over NIFTY 50 TR in 53% of the instances on 10 years rolling returns basis.

Exhibit 8: Rolling year returns comparison of NIFTY500 Value 50 TR and NIFTY 50 TR

Rolling returns comparison between NIFTY500 Value 50 TR and NIFTY 50 TR						
Investment period	NIFTY500 Value 50 TR outperforming NIFTY 50 TR (% instances)					Total Instances of Outperformance
	Outperformance range (alpha) %					
	(>8%)	(5%-8%)	(3% -5%)	(1% -3%)	(0% -1%)	
10 years	0%	53%	12%	16%	14%	96%
7 years	0%	6%	24%	49%	15%	94%
5 years	31%	32%	20%	12%	4%	100%
3 years	47%	6%	3%	4%	3%	63%
2 years	46%	8%	6%	6%	3%	68%
1 year	38%	3%	4%	4%	3%	52%

*Since April 1, 2005. #Data as on August 31, 2018

NIFTY500 Value 50 TR index has managed to outperform NIFTY 50 comfortably in 10, 7 and 5 years rolling periods for more than 94% of the times. For 5 year investment period, the NIFTY500 Value 50 TR index managed to beat NIFTY 50 TR index 100% of the times. This highlights the fact that on a longer investment horizon, NIFTY500 Value 50 TR index tends to outperform NIFTY 50 TR index. However, the performance remains more balanced in shorter duration (between 1-3 year rolling periods) with NIFTY500 Value 50 TR index outperforming NIFTY 50 TR index in ~50-70% of instances.

Signing off...

Value investing is a 'tried and tested' approach which has evolved over the years. Systematic, structured and rule-based philosophy of identifying 'value' buys has delivered sizeable returns for value pickers over long term investment horizons.

NIFTY500 Value 50 index provides a unique rule-based methodology that intends to identify 'value' stocks across 3 size segments (Large-Mid-Small caps). NIFTY500 Value 50 index has consistently delivered higher returns across long term investment horizons and also during periods of high economic growth/ economic recoveries. The methodology of NIFTY500 Value 50 index manages to have a distribution of weightages across Large-Mid-Small cap segments and various sectors. NIFTY500 Value 50 index has outperformed NIFTY 50 index comfortably over long term horizons on rolling returns basis. NIFTY500 Value 50 index, therefore, represents an ideal fit for the strategies based on value investing and is well-suited for benchmarking needs of value centric investment themes.

About NSE Indices Limited:

(Formerly known as India Index Services & Products Limited-IISL)

NSE Indices Limited, a subsidiary of NSE, provides a variety of indices and index related services for the capital markets. The company focuses on the index as a core product. The company owns and manages a portfolio of indices under the NIFTY brand of NSE, including the flagship index, the NIFTY 50. NIFTY equity indices comprises broad-based benchmark indices, sectoral indices, strategy indices, thematic indices and customised indices. NSE Indices Limited also maintains fixed income indices based on Government of India securities, corporate bonds, money market instruments and hybrid indices. Many investment products based on NIFTY indices have been developed within India and abroad. These include index based derivatives traded on NSE, NSE IFSC, Singapore Exchange Ltd. (SGX) and Taiwan Futures Exchange (TAIFEX) and a number of index funds and exchange traded funds. The flagship 'NIFTY 50' index is widely tracked and traded as the benchmark for Indian Capital Markets.

For more information, please visit: www.niftyindices.com

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