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India Index Services & Products Limited

NIFTY 50

WHITE PAPER
SERIES #11

NIFTY200 Quality30

{ Capturing the performance of select
'Quality' companies from large and
mid-cap segments }

April 2018

Introduction

Imagine it is the UEFA Champions league final between two of the biggest football clubs in the world: Manchester United and Real Madrid. Two grueling hours of cagy football couldn't decide the winner of this years biggest competition in club football. Referee blows the final whistle to announce the end of extra time; there is no other option but to decide the winner based on penalties. Two of the most decorated managers in the modern day football: Jose Mourinho and Zinedine Zidane are in a dilemma - a tough choice to pick the best penalty takers - players who can be banked upon. Finally, the managers have made up their minds and not surprisingly, the 'best' (read 'quality') players of the respective teams are chosen to take the decisive kicks : Ronaldo, Ramos, Kroos, Modric & Marcelo for Real Madrid and Pogba, Lukaku, Mata, Matic & Sanchez for Manchester United. What makes them 'quality' players are probably attributes like high success rate, self-reliance, and consistency in performance.

In equity investments also, we often face such dilemma of identifying the right stock that is expected to perform well in most of market phases. Banking upon 'quality' stocks in such a dilemma may turn out to be a more appropriate investment strategy, especially in the long run. The newly launched NIFTY200 Quality 30 index follows a similar strategy. The NIFTY200 Quality 30 includes top 30 companies from its parent NIFTY 200 index, selected based on their 'quality' scores. The quality score for each company in the index is determined based on profitability (read success rate), leverage (read self-reliance) and earnings growth variability (read consistency in performance).

What defines a 'Quality' company?

Researchers often differ on the definition of 'quality' company, as unlike value, momentum and volatility, where these is a broad consensus, 'quality' does not seem to have a universally accepted definition. While Benjamin Graham's identification of quality centred around 'earnings stability' and 'EPS growth' (1973), Sloan (1996) stressed on 'accruals-based measure of earnings'. In 2000, Piotroski emphasized on F-score[1] based measure of financial strength, likewise in 2013, Novy-Marx devised performance strategies based on gross profitability (gross profits-to-assets), whereas Grantham in his whitepaper (2004) defined quality companies as those which meet the criteria of low leverage, high profitability, and low earnings volatility.

The 3 most common measures to represent 'quality' company include the following:

Profitability: A measure of ability and efficency of a company to generate earnings. Commonly used measures to identify profitability include: ROE, ROA, ROCE, Gross profit/assets.

Financial Leverage: Financial leverage is the amount of debt that an entity uses over its common equity. An excessive amount of financial leverage increases the risk of failure, since it becomes more difficult to repay debt. Commonly used measures to identify financial leverage include: debt-equity ratio, debt-servicing ratio etc.

Earnings Quality: Earnings quality implies persistence in earnings growth measured by the volatility of EPS or profit growth.

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[1]*Piotroski's F-score: Constructed as the sum of nine binary variables that take the value zero (indicating weakness) or one (indicating strength). The F-score can get gets one point for each of four profitability signals [positive earnings before extraordinary items (IB), positive cash flows from operations (OANCF), increasing returns on- assets (IB/AT that exceeds that of the previous year), and negative accruals]; one point for each of three liquidity signals [decreasing debt, increasing current ratio, and no equity issuance]; and one point for each of two efficiency signals [increasing gross margins (revenues (REVT) minus cost of goods sold (COGS) scaled by revenues) and increasing asset turnover (revenues scaled by assets)].*

About NIFTY200 Quality 30 Index

NIFTY200 Quality 30 includes top 30 companies from its parent NIFTY 200, selected based on their 'quality' scores. The quality score for each company is determined based on return on equity (ROE), financial leverage (D/E) and earning (EPS) growth variability analyzed during the previous 5 years. The weight of each stock in the index is based on square root of free float market capitalization and its quality scores, giving the pool of stocks quality factor based tilt. NIFTY200 Quality 30 index seeks to combine the stock-specific quality factor used in active investment with the rules-based frame work of passive investment.

Exhibit 1: Parameters used for NIFTY200 Quality 30 Index
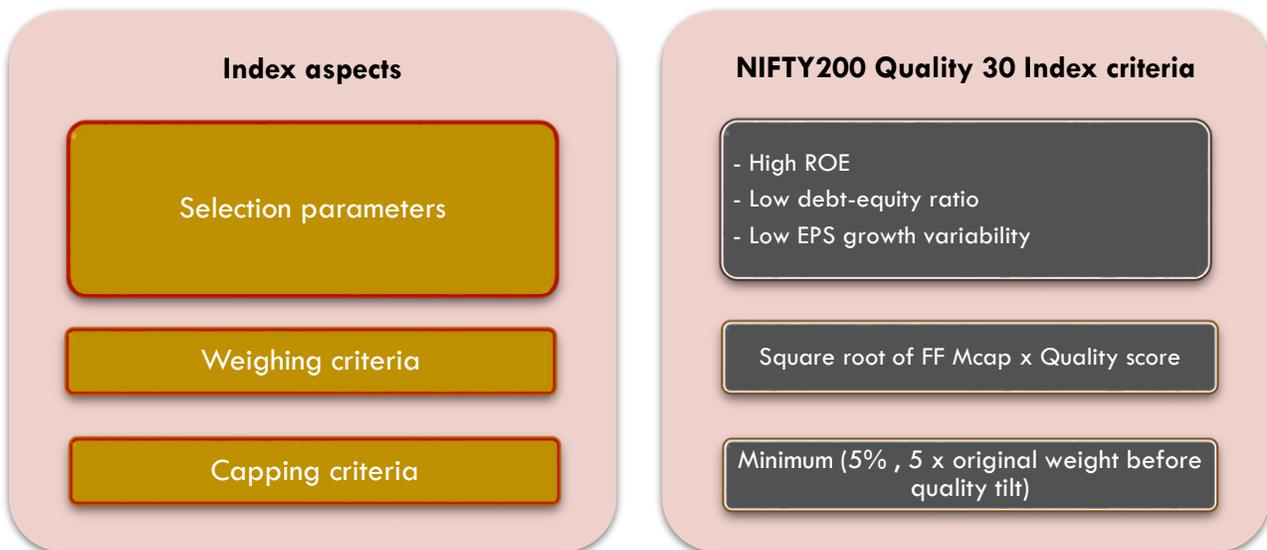
Exhibit 2: Key parameters in quality index with their weightages and key benefits

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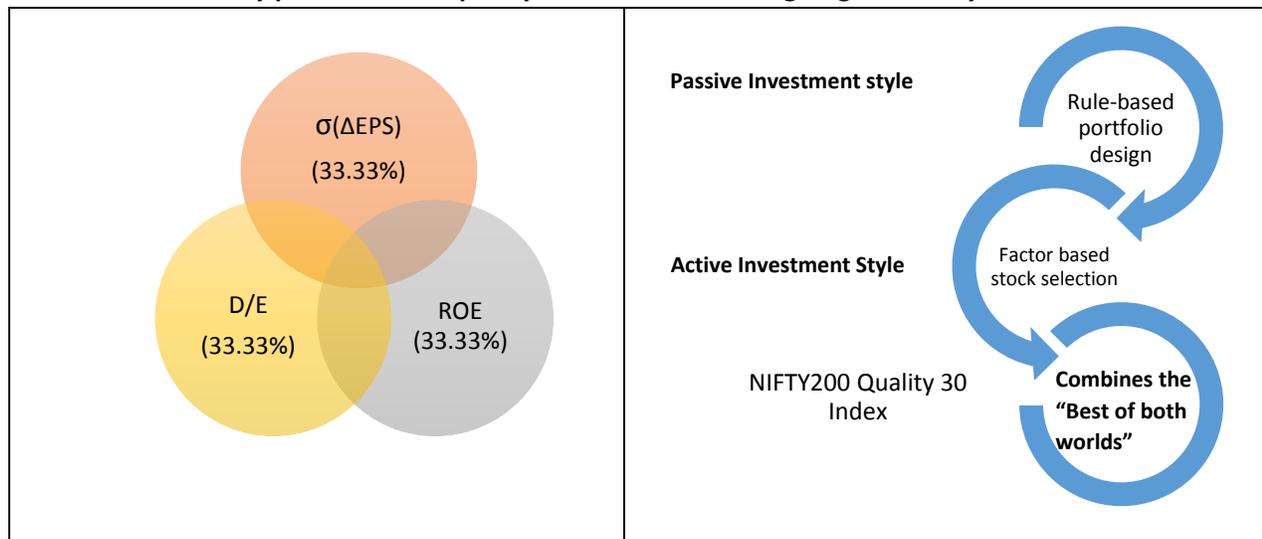
NIFTY200 Quality 30 portfolio has outperformed its parent NIFTY 200 index in most calendar years

Exhibit 3 below shows the performance of NIFTY200 Quality 30, NIFTY 200 Index and NIFTY 50 from April 2005 till March 2018.

Exhibit 3: Performance comparison of NIFTY200 Quality 30, NIFTY 200 and NIFTY 50
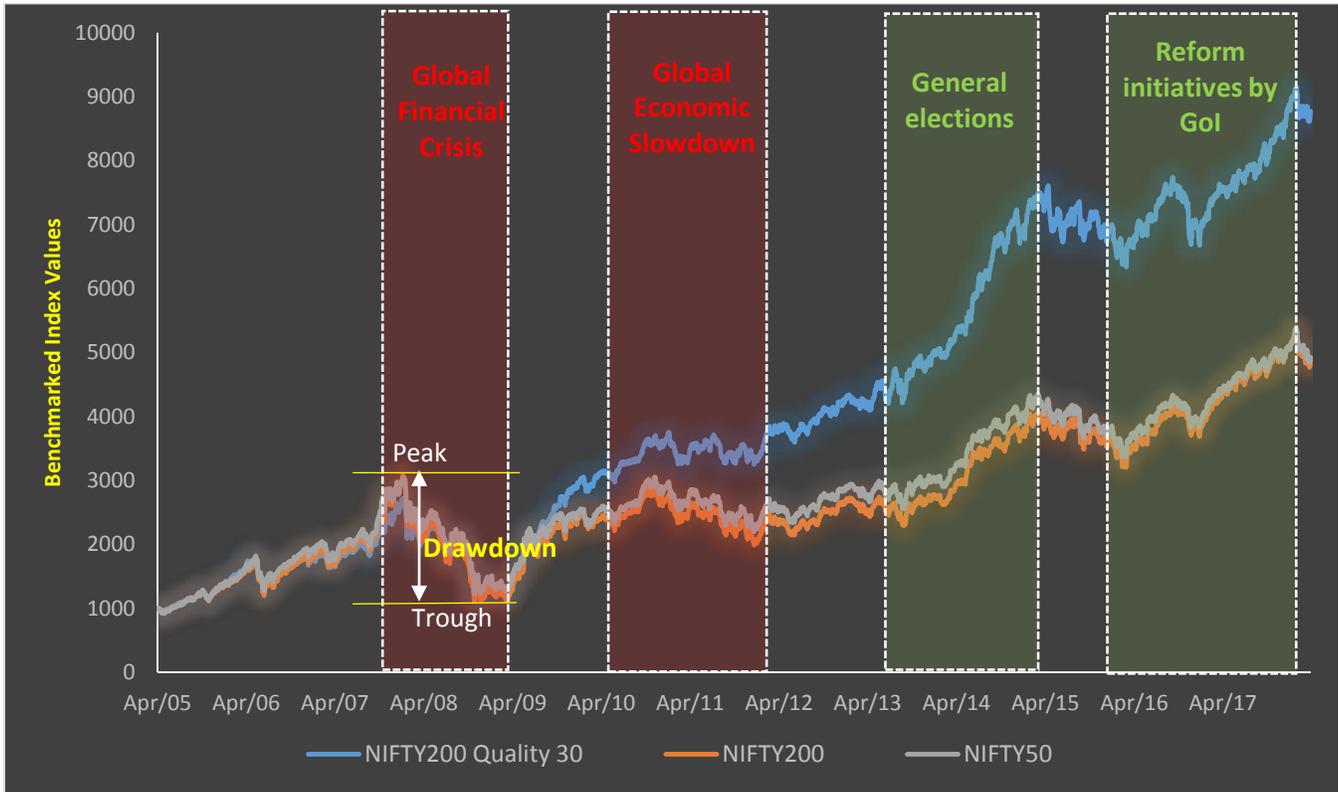
Data as on March 28, 2018

Exhibit 4 below shows the calendar year performance of NIFTY200 Quality 30, NIFTY 200 Index and NIFTY 50. NIFTY200 Quality 30 index performed better than its parent (NIFTY 200) and NIFTY 50 during periods of economic downturn (Global Financial Crisis 2008) as evident from its returns of -50.82% as against -56.61% of NIFTY 200 and -51.79% of NIFTY 50.

The performance of NIFTY200 Quality 30 was considerably better during economic recovery of 2009 as it delivered returns of 127.16% against returns of 86.58% of NIFTY 200 and 75.76% of NIFTY 50.Relatively robust performance of NIFTY200 Quality 30 index can again be seen during global economic slowdown of 2011. The NIFTY200 Quality 30 index also performed relatively better than NIFTY 200 and NIFTY 50 during bull rally of 2014 generating sizeable alpha of 259 bps over its parent (NIFTY 200) and 673 bps over NIFTY 50.

Exhibit 4: Calendar year returns comparison of NIFTY200 Quality 30, NIFTY 200 and NIFTY 50

Year	Calendar year returns (%)		
	NIFTY200 Quality 30	NIFTY 200	NIFTY 50
2005	38.29%	35.58%	37.19%
2006	29.43%	34.64%	39.83%
2007	48.23%	63.66%	54.77%
2008	-50.82%	-56.61%	-51.79%
2009	127.16%	86.58%	75.76%
2010	26.26%	14.20%	17.95%
2011	-11.54%	-26.97%	-24.62%
2012	28.93%	31.64%	27.70%
2013	17.47%	4.44%	6.76%
2014	38.12%	35.53%	31.39%
2015	0.88%	-1.90%	-4.06%
2016	-0.57%	3.70%	3.01%
2017	27.80%	33.43%	28.65%
2018 YTD	-1.20%	-5.41%	-3.96%

Data as on March 28, 2018

On calendar year basis, from 2005 to 2018, NIFTY200 Quality 30 portfolio has outperformed NIFTY 200 in 9 out of 14 calendar years and NIFTY 50 in 10 out of 14 calendar years (highlighted in green in Exhibit 4).

On a rolling return basis, NIFTY200 Quality 30 portfolio consistently outperformed its parent for longer investment horizons

Rolling returns analysis was conducted to eliminate recency bias in performance. Figures in Exhibit 5 below shows number of instances of outperformance of NIFTY200 Quality 30 with respect to NIFTY 200 index. For example, NIFTY200 Quality 30 index has delivered an alpha in the range of 5 - 8% over NIFTY 200 in 100% of the instances on 10 years rolling returns basis.

Exhibit 5: Rolling year returns comparison of NIFTY200 Quality 30 and NIFTY 200

Rolling returns comparison between NIFTY200 Quality 30 and NIFTY 200						
Investment period	**NIFTY200 Quality 30 outperforming NIFTY 200 (% instances)**					**Total Instances of Outperformance**
	Outperformance : (>8%)	Outperformance : (5%-8%)	Outperformance : (3% -5%)	Outperformance : (1% -3%)	Outperformance: (0% -1%)	
10 years	0%	100%	0%	0%	0%	100%
7 years	61%	22%	18%	0%	0%	100%
5 years	51%	29%	4%	10%	5%	99%
3 years	48%	15%	6%	4%	8%	80%
2 years	44%	9%	7%	10%	2%	73%
1 year	33%	11%	11%	12%	3%	70%

Data as on March 28, 2018

NIFTY200 Quality 30 index has managed to outperform NIFTY 200 comfortably in 10, 7, 5 and 3 years rolling periods for more than 80% of the times. For 10 and 7 years period, the NIFTY200 Quality 30 managed to beat NIFTY 200 100% of the times. This highlights the fact that on a longer investment horizon, NIFTY200 Quality 30 portfolio tends to outperform its parent (NIFTY 200). However, the performance remains more balanced in shorter duration (between 1-2 year rolling periods) with NIFTY200 Quality 30 outperforming NIFTY 200 in ~70% of times.

NIFTY200 Quality 30 has consistently delivered better risk adjusted returns with lower drawdowns as compared to NIFTY 200

Exhibit 6 below includes CAGR returns, volatility and return-risk ratio for NIFTY200 Quality 30, NIFTY 200 and NIFTY 50 on an annualized basis as on March 28, 2018. As seen, performance of NIFTY200 Quality 30 index is consistently better than NIFTY 200 and NIFTY 50 on risk-return basis. The NIFTY200 Quality 30 index has higher returns and lower volatility as compared to NIFTY 200 and NIFTY 50 resulting in higher return-risk ratio for 1, 5, 7, 10 years period and since inception. Lower volatility of NIFTY200 Quality 30 index vis-à-vis NIFTY 200 and NIFTY 50 can be seen across all time frames.

Exhibit 6: Performance analysis of NIFTY200 Quality 30, NIFTY 200 and NIFTY 50

Period	CAGR (%)			Volatility (%)			Return-Risk ratio		
	NIFTY200 Quality 30	NIFTY 200	NIFTY 50	NIFTY200 Quality 30	NIFTY 200	NIFTY 50	NIFTY200 Quality 30	NIFTY 200	NIFTY 50
Since inception	18.20%	12.88%	13.00%	19.4%	22.4%	22.8%	0.94	0.58	0.57
10 years	15.28%	8.44%	7.89%	17.4%	21.0%	21.6%	0.88	0.40	0.37
7 years	14.09%	9.26%	8.18%	12.6%	15.3%	15.4%	1.12	0.60	0.53
5years	16.03%	14.03%	12.22%	12.6%	14.7%	14.6%	1.27	0.95	0.84
3 years	6.25%	7.64%	6.00%	12.2%	13.9%	13.6%	0.51	0.55	0.44
1 year	15.71%	10.97%	10.25%	9.3%	10.4%	10.0%	1.69	1.05	1.03

Data as on March 28, 2018

Exhibit 7 below shows the calendar year drawdowns of NIFTY200 Quality 30, its parent (NIFTY 200) and of NIFTY 50. As indicated in Exhibit 3, a drawdown is the peak-to-trough decline during a specific period of an investment. Out of 14 calendar years, NIFTY200 Quality 30 recorded lower drawdowns compared to NIFTY 200 in 11 instances indicating relatively better performance of NIFTY200 Quality 30 during periods of market correction. Highest drawdown recorded by NIFTY200 Quality 30 index was -55.95% during financial crisis of 2008 as against -64.04% of NIFTY 200 and -59.86% of NIFTY 50.

Exhibit 7: Calendar year drawdowns of NIFTY 200 Quality 30, NIFTY 200 and NIFTY 50

Calendar year	NIFTY200 Quality 30	NIFTY 200	NIFTY 50
2005	-13.06%	-12.96%	-13.04%
2006	-31.81%	-32.00%	-29.87%
2007	-13.42%	-15.14%	-15.33%
2008	**-55.95%**	**-64.04%**	**-59.86%**
2009	-13.39%	-18.77%	-17.57%
2010	-7.35%	-11.62%	-10.66%
2011	-13.35%	-28.33%	-26.20%
2012	-7.60%	-13.89%	-13.76%
2013	-11.29%	-16.41%	-14.58%
2014	-7.28%	-6.68%	-6.50%
2015	-11.60%	-14.55%	-15.98%
2016	-13.74%	-13.53%	-12.46%
2017	-3.96%	-4.64%	-4.11%
2018 YTD	-5.86%	-10.50%	-10.17%

Data as on March 28, 2018

## NIFTY200 Quality 30 index has a fairly sector diversified portfolio

Exhibit 8: Sector composition of NIFTY200 Quality 30 portfolio

- CONSUMER NON DURABLES
- SOFTWARE
- AUTO
- CONSUMER DURABLES
- MINERALS/MINING
- PETROLEUM PRODUCTS
- PHARMACEUTICALS
- TEXTILE PRODUCTS
- CHEMICALS
- FINANCE
- GAS
- AUTO ANCILLARIES
- MEDIA & ENTERTAINMENT
- NON - FERROUS METALS

27.4%, 22.9%, 17.2%, 5.7%, 5.4%, 3.8%, 3.6%, 2.7%, 2.4%, 2.1%, 1.7%, 1.7%, 1.7%, 1.6%
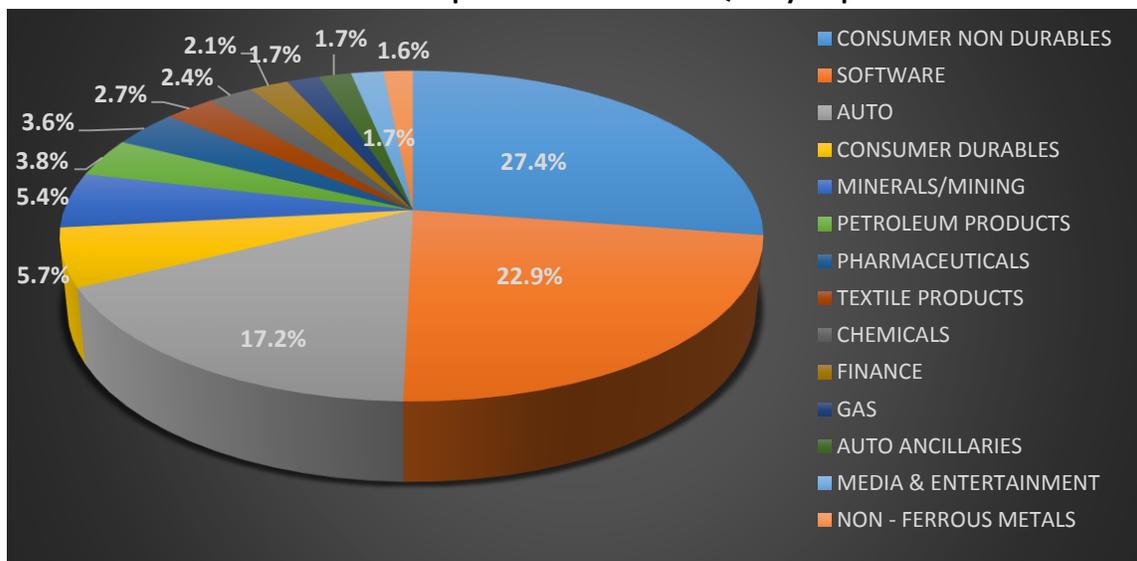
Data as on March 28, 2018

Exhibit 8 above shows the industry exposure of NIFTY200 Quality 30 index. NIFTY200 Quality 30 has a fairly diversified portfolio spread across 14 sectors. NIFTY200 Quality 30 has Consumer Non Durables (27.4%), Software (22.9%), Automobiles (17.2%),Consumer durables (5.7%) and Minerals/Mining (5.4%) as the top 5 sectors with a combined weight of 78.7%. The remaining weight of 21.3% is fairly distributed among as many as 9 sectors, individually having weight of lesser than 5%.

Stock level weights are provided in Exhibit 9. As on March 28, 2018, top 10 stocks in NIFTY200 Quality 30 portfolio contribute 49.48% of weight (with individual weights within a narrow range of 4.25% to 5.49%) whereas those of NIFTY 200 contribute to 41.08% of weight (with individual weights varying in a wide range of 2.23% to 7.32%). Quality tilt assigned to NIFTY200 Quality 30 portfolio ensures that the portfolio is more aligned towards quality stocks.

Exhibit 9: Top 10 stocks based on weights in NIFTY200 Quality 30 and NIFTY 200 index

NIFTY200 Quality 30		NIFTY 200	
Company Name	Weight (%)	Company Name	Weight (%)
Infosys Ltd.	5.49	HDFC Bank Ltd.	7.32
Tata Consultancy Services Ltd.	5.43	Reliance Industries Ltd.	5.77
Coal India Ltd.	5.39	Housing Development Finance	5.53
HCL Technologies Ltd.	5.18	Infosys Ltd.	4.29
Hindustan Unilever Ltd.	4.93	I T C Ltd.	4.14
I T C Ltd.	4.89	ICICI Bank Ltd.	3.39
Hero MotoCorp Ltd.	4.76	Larsen & Toubro Ltd.	3.07
Maruti Suzuki India Ltd.	4.61	Tata Consultancy Services Ltd.	2.69
Asian Paints Ltd.	4.54	Kotak Mahindra Bank Ltd.	2.65
Eicher Motors Ltd.	4.25	Maruti Suzuki India Ltd.	2.23
Total weight of top 10 stocks	**49.48**	**Total weight of top 10 stocks**	**41.08**
Herfindahl - Hirschman Score	**390.20**	**Herfindahl - Hirschman Score**	**232.68**

Data as on March 28, 2018

The Herfindahl - Hirschman Index (HHI)[2] value explains the degree of diversification in a portfolio, where a lower value signifies a more diversified portfolio. Although being a 30 stock index, the HHI value of NIFTY200 Quality 30 portfolio is 390.2, whereas that of NIFTY 200 (a 200 stock index) is 232.68.

Exhibit 10: Range in Full Market Capitalization of stocks in NIFTY200 Quality 30 and NIFTY 200 portfolio

Parameter	NIFTY200 Quality 30	NIFTY 200
Largest Stock	Tata Consultancy Services Ltd.	Reliance Industries Ltd.
Smallest Stock	Hexaware Technologies Ltd.	Suzlon Energy Ltd.
Median Stock	Britannia Industries Ltd.	Rural Electrification Corporation Ltd.

Data as on March 28, 2018

[2]: Herfindahl Hirschman Index (HHI) measures of concentration. Calculated as sum of squares of percentage weight of each stock in the portfolio

Signing Off…

NIFTY200 Quality 30 index is created by assessing companies on fundamentals such as profitability, lower earnings-growth variability and lower leverage. Investment in quality factor is based on the underlying view that durable and stable businesses are expected to perform well in long term investment horizon. The NIFTY200 Quality 30 index has consistently outperformed its parent NIFTY 200 on risk adjusted return and rolling returns basis over long term investment horizons. The portfolio has lower drawdowns compared to NIFTY 200 underlining the robustness in performance during periods of market downturn. The stringent stock selection method and quality tilt based index weighing seeks to capture the performance of companies with high quality score and is expected to strongly appeal to the investment community looking to align their investment with the quality based strategy. The indices are expected to serve as reference indices, which can be tracked by passive funds in the form of Exchange Traded Funds (ETFs), index funds and structured products.

For information on Index methodology and factsheet, please visit us at www.niftyindices.com

About India Index Services & Products Ltd. (IISL):

India Index Services & Products Ltd. (IISL), a subsidiary of NSE, provides a variety of indices and index related services for the capital markets. IISL focuses upon the index as a core product. IISL owns and manages a portfolio of indices under the NIFTY brand of NSE, including the flagship index, the NIFTY 50. IISL equity Indices comprises of broad-based benchmark indices, sectoral indices, strategy indices, thematic indices and customised indices. IISL also maintains fixed income indices based on Government of India securities, corporate bonds and money market instruments. Many investment products based on IISL indices have been developed within India and abroad. These include index based derivatives traded on NSE, Singapore Exchange Ltd. (SGX), Chicago Mercantile Exchange Inc. (CME), Osaka Exchange Inc. (OSE), 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.

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