NJ MUTUAL FUND

BUILT ON RULES

NJ's FACTOR BOOK

Mr. Neeraj Choksi & Mr. Jignesh Desai
(Co-Founders, NJ Group)

Started
1994

Employees
1700+

AUM
₹1,23,000+
crores

Asset managed by various
AMCs, Mobilised by NJ.

as on 5th April 2022.

BUILT ON TRUST

Nj GROUP

A BUSINESS BUILT ON TRUST

Over the course of 27 years, a small corporation has grown into a global conglomerate with origins in the financial services industry. The trust that we have built with our customers, partners, employees and society as a whole is a critical component of NJ's success. By providing greater investment options, NJ has helped countless Indian families improve their livelihood. Today, NJ Group is expanding its boundaries with the same trust, desire for changing lives and moral standards to help society progress alongside us.

NJ is growing as a result of the trust that millions of people have placed in it.

We are established on the foundation of trust.

CHAIRMAN'S MESSAGE

The progress of science and, specifically, technology is spectacular across various industries, from blockchain technology to aerospace technology to quantum computing.

If technology has the capability to support driverless cars, some simple questions may come to the mind of investors.

Can one create an investment portfolio using technology?

Can one find a winning stock for the next decade using technology?

Needless to say, technology has advanced in the field of constructing investment portfolios as well, popularly known as Factor Investing, Quant-based Investing or Smart Beta Investing.

Factor Investing replaces discretionary management by a portfolio manager with effective and efficient use of relevant technology and rules. It is nothing but a confluence of sound investment principles, statistical concepts and data analytics embedded in a software program which constructs the investment portfolio.

Factor Investing has gained popularity, momentum and greater investor acceptance in developed markets, especially after the global financial crisis. Only ETFs using this approach are estimated to manage over USD 1.60 tln. in the US alone[1].

NJ Asset Management has participated in the evolution of investment management through a systematic rule based approach with effective use of technology over the last decade in India. We believe that an appropriate scientific approach to investing with a strong technology foundation has a high likelihood of success.

As such, NJ Asset Management has dedicated itself to work in the field of rule based active investing through the efficient use of research and technology, thereby eliminating individual biases and inculcating discipline.

I am pleased to launch the first edition of NJ's Factor Book a comprehensive demonstration of the new world of Factor Investing and the compilation of the insights and analysis of the research conducted by NJ Asset Management research team on various factors in India.

Let me end by expressing our gratitude for the overwhelming support we received in our first NFO viz NJ Balanced Advantage Fund. NJ Asset Management is passionate, dedicated and committed to this new avatar of investment management viz FACTOR INVESTING.

Mr. Neeraj Choksi
Director & Chairman - NJ Asset Management Private Limited

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[1] This figure represents the total assets under management (AUM) of the 1,219 Smart Beta Exchange Traded Funds (ETFs) listed in the United States as of March 2022. Source: ETF.com

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PREFACE

> **The truth is, history can be one of our greatest aids, in investing as in life.**
> *-Howard Marks*

> **The four most dangerous words in investing are, it's different this time.**
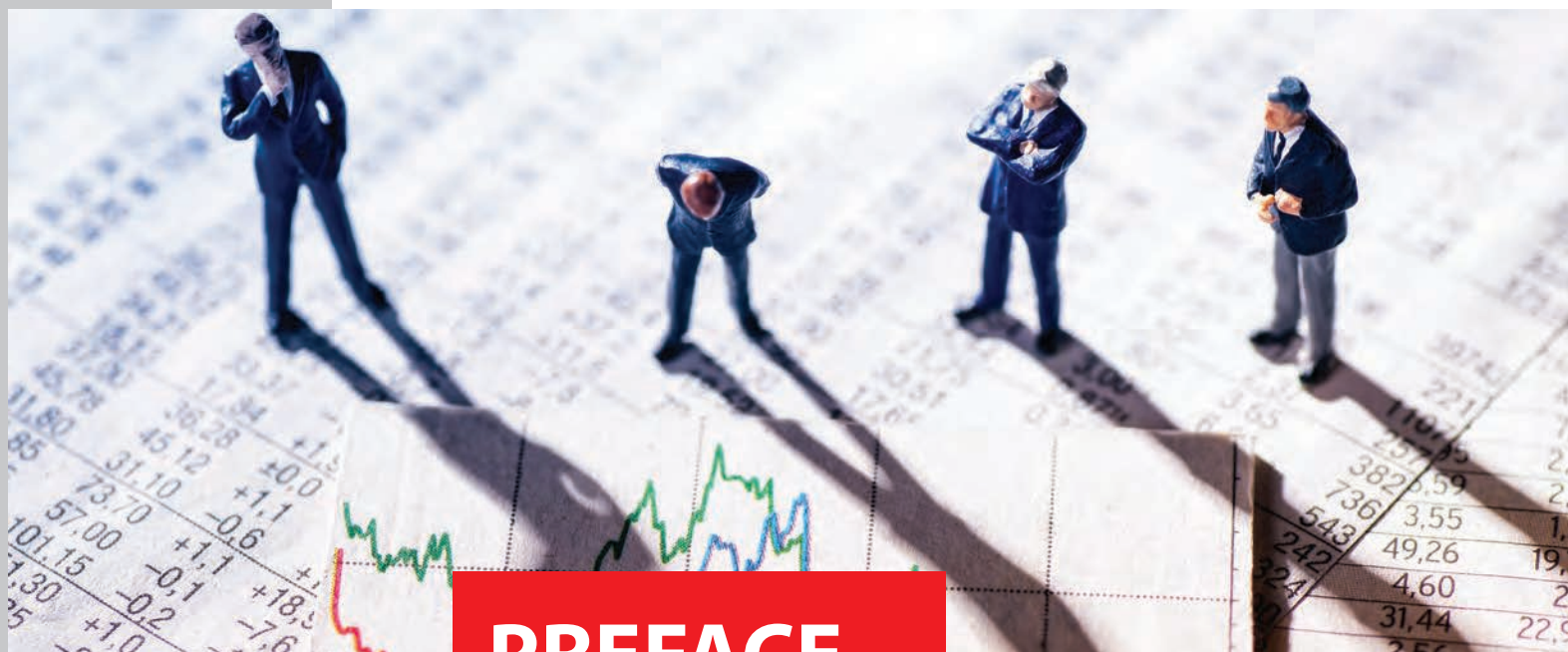> *-Sir John Templeton*

Most people accept that history is important and a knowledge of history is crucial to understanding the present and preparing for the future. In investing, a study of history provides crucial insights into market and investor behavior. However, to a large extent, studying this history has only been of interest to market experts who have used it to guide their investment decisions.

With both quality and quantum of data increasing with time, it was inescapable that the role of data in investment decision making would only grow. However, the exponential growth of computing power over the last couple of decades super-powered this transformation.

Factor based investing, which relies on conducting increasingly complex analysis of ever growing amounts of data, is driven by this fortunate confluence of data and analytical capabilities.

This book tries to take you through the contours of how this came to be and where we see it headed.
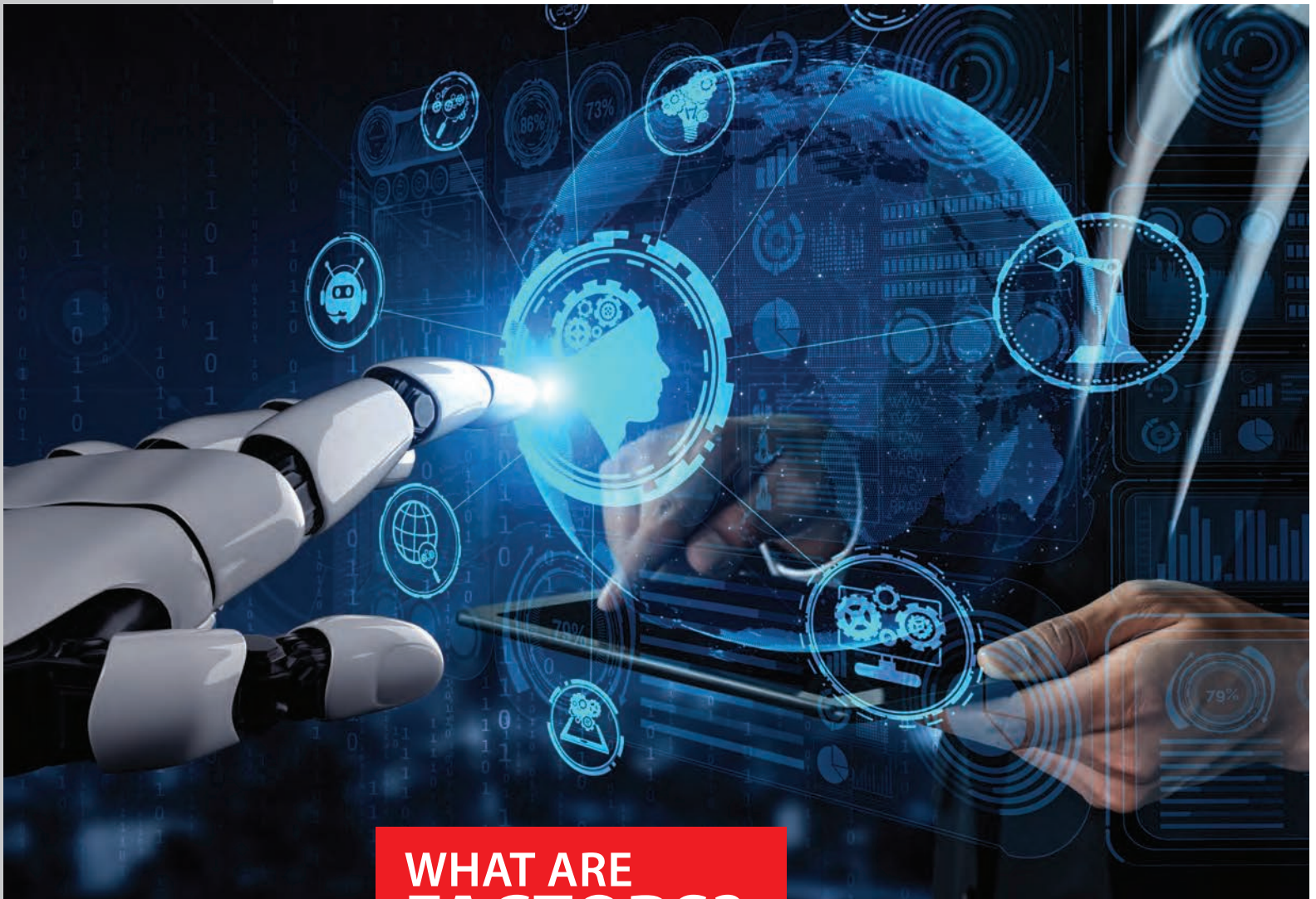
WHAT ARE
FACTORS?

> We don't have to be smarter than the rest.
> We have to be more disciplined than the rest.
> *-Warren Buffett*

> You have to learn the rules of the game,
> and then you have to play better than anyone else.
> *-Albert Einstein*

For More Details
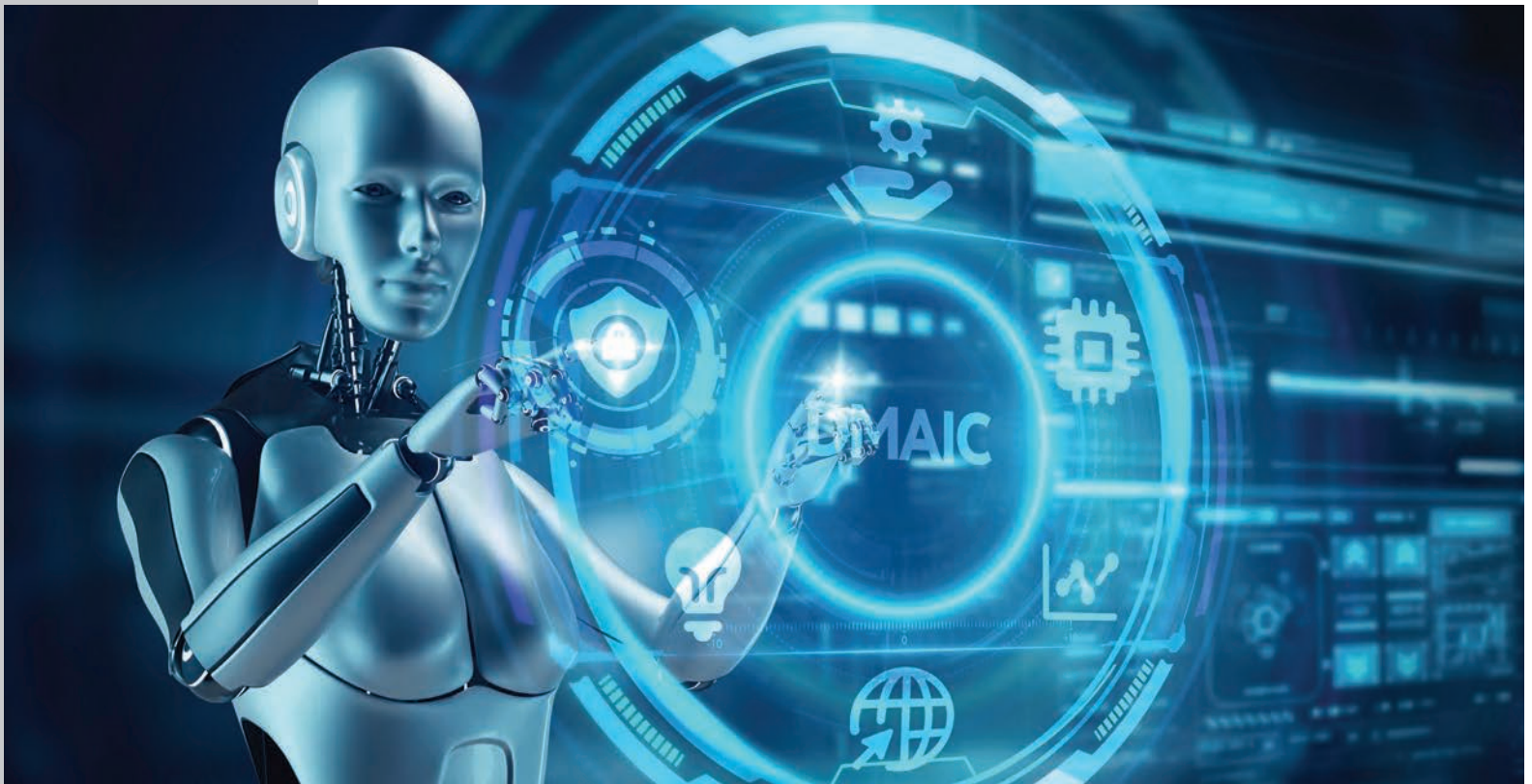
Defining 'Factors' in an Investment Setting

We all praise Sachin's text-book style square cuts and master strokes, but is that enough to win matches for the Indian cricket team?

Apart from Sachin's quality batting, we also need Dhoni's low-volatility advice, Sehwag's strong scoring momentum, and Dravid's valuable "wall" for a victory.

When buying property as well, we generally do not make a decision solely based on the property's price, but also look at its location, safety and amenities among other aspects. Likewise, when making investment decisions, professionals tend to evaluate securities based on various parameters viz. price, volatility, relative value, earnings, growth, and liquidity among others. These different elements help explain the risks and returns of securities and are referred to as factors in the context of investing.

C CAPITAL   **A** ASSET   **P** PRICING   **M** MODEL
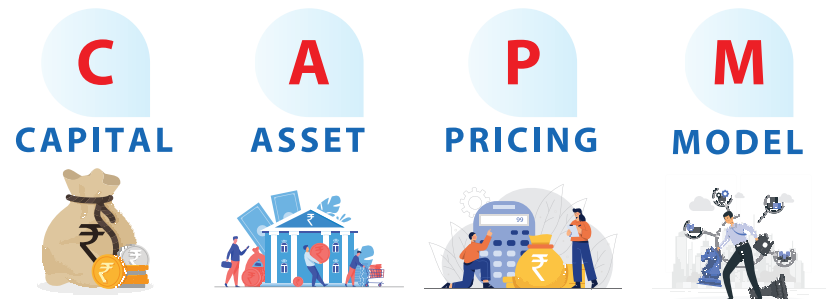
How Have Factors Evolved over the Years?

Although buzzwords such as "investment factors", "factor funds", "smart/strategic beta" have recently gained popularity, factor investing was pioneered back in the 1960s. This era gave birth to many modern finance theories including the seminal Capital Asset Pricing Model (CAPM) which was developed by Jack Tryenor, William Sharpe, John Lintner and Jan Mossin (Perold, 2004).

CAPM's central thesis is that the return generated by a security is a function of its volatility compared to the market as a whole, describing this parameter as Beta. However, CAPM has low explanatory power, largely due to its many assumptions that do not reflect the functioning of markets in the real-world.

CAPM's failure to explain various market anomalies, such as the Value Effect, Size Effect, and Momentum Effect, motivated academicians to devise more sophisticated multi-factor models which explain risk and return based on factors other than CAPM's beta. These developments can be considered as the official inception of multi-factor investing, beginning with the Fama and French 3-Factor Model (FF3F) that aims to explain a security's returns using a size factor, a value factor and market risk (Fama & French, 1992)

Superior explanatory power of the FF3F vis-a-vis CAPM triggered a wave of discovery. Over time, as the discipline advanced, more factors emerged that explained more of the specific performance of stocks than earlier thought possible.

Classifying a Parameter as an Investment Factor

Almost any parameter associated with the fundamental or market data of a company can be used as a factor. With potentially hundreds of factors available it is necessary to choose the most effective ones and avoid those that may be construed as random noises or one-time anomalies. Empirical developments in this space demonstrate that commonly accepted investment factors explain security returns cross-sectionally, over time, and across markets.

Common Attributes of Investment Factors

Any determinant of investment returns and/or risk must adhere to 5 unique attributes in order to be formally classified as an investment factor (Berkin & Swedroe, 2016). Investment factors must be,

PERSISTENT
The parameter must consistently explain returns over time i.e. its explanatory power must not fade away over time.

PERVASIVE
The parameter must explain returns across markets, economies, sectors, and geographies.

ROBUST
The parameter must not change its meaning or impact significantly with changes in the definition of its characteristics. For example, whether defined as the trailing price-to-earnings, price-to-book, or dividend yield, the meaning and economic significance of the Value factor must remain truly unambiguous.

INVESTABLE
Gaining exposure to the specific parameter must be easy and cost-efficient.

INTUITIVE
There must be an economic rationale/justification for getting exposure to that specific parameter.

Factor Categories: Macroeconomic vs Style

Most investors classify investment factors into two broad categories, namely macroeconomic and style factors. As its name suggests, macroeconomic factors illustrate broad macroeconomic and financial elements of risk across several asset classes such as equities, fixed income, and gold. Common macroeconomic factors include interest rates, real GDP/economic growth, inflation, money supply and liquidity. Macroeconomic factors are typically used to determine asset allocation between different asset classes (Macroeconomic Factors: Important Diversifiers).

On the other hand, style factors are those specific to an asset class and used to select securities within the asset class. The most prevalent style factors for equities include size, quality, volatility, value, and momentum. We explore these in detail in the coming sections.

VALUE
FACTOR

❝ **The secret to investing is to figure out the value of something - and then pay a lot less.** ❞
-Joel Greenblatt

❝ **I make no attempt to forecast the market-my efforts are devoted to finding undervalued securities.** ❞
-Warren Buffett

For More Details

What is 'Value' Investing?

Value investing is synonymous with Benjamin Graham. In 1934, Mr Graham along with co-author David Dodd, published a seminal book called Security Analysis (Graham & Dodd, 2008). This book prescribed a formula to measure the intrinsic value of a company that was based on its Earnings Per Share (EPS), and its long term growth potential. And while this formula was further enhanced in his subsequent book "The Intelligent Investor" (Graham, 2013) published in 1974, its core has remained unchanged for close to a century now.

The basic premise of investing in stocks that have an intrinsic value higher than their prevailing market price continues to be the essence of value investing. However, since the formula requires an estimated future long term growth rate to function, it relies on the ability to forecast this growth rate accurately for successful implementation. For this reason, it cannot be used in factor investing directly.

To overcome this, researchers and practitioners focused on the part of the formula that can be populated mathematically like the EPS of a company as a starting point and, over the years, developed various mathematical derivations of the "discount to intrinsic value" concept that rely on ratios like Price-to-Earnings (P/E), Price-to-Book (P/B), Price-to-Sales (P/S), Price-to-Cash flow (P/CF), Enterprise Value to Earnings Before Interest, Taxes, Depreciation and Amortised Expenses (EV/EBITDA), and Dividend Yield among others with varying degrees of success. These have emerged as the predominant way of measuring value across the world.

How is 'Value' Measured Internationally?

Index providers across the world now publish factor indexes using various definitions of the factors. A simple way to ascertain the most popular definitions of value across the world is to inspect the definitions used by the various index providers for their value indexes. A summary of the same is in the table below

Index Details	Factor Characteristics	Methodology
Index Name: FTSE Value Factor Index Index Provider: FTSE Russell	Cash flow yield, earnings yield and P/S	Tilt the market capitalisation index by using a composite score
Index Name: MSCI Enhanced Value Index Index Provider: MSCI Inc.	Forward P/E, P/B, and Enterprise value to operating cash flow	Tilt the market capitalisation index using the composite score and target a fixed number of stocks, targeting 30% market capitalisation coverage.
Index Name: S&P Enhanced Value Index Index Provider: S&P Dow Jones Indices LLC	P/B, P/E and P/S	Tilt the market capitalisation index by targeting a fixed percentage of constituents in the market capitalisation index.
Index Name: Dow Jones U.S. Large-Cap Value Total Stock Market Index Index Provider: S&P Dow Jones Indices LLC	Projected P/E, Projected 3-5 Yr Operating EPS Growth, P/B, Div Yield, Trailing Revenue Growth (5 Yr), Trailing EPS Growth (Last 21 quarters)	Tilt the US Large-Cap Total Stock Market Index (float-adjusted capitalisation-weighted) towards its constituents classified as "value" using a 6-factor composite score and cluster analysis.
Index Name: Nifty 500 Value 50 Index Index Provider: NSE Indices Ltd	E/P, B/P, Sales/Price, Dividend Yield	Tilt the Nifty 500 Index (capitalisation-weighted) towards specific constituents based on a weighted-average "Value" score and free-float market capitalisation.

Source: FTSE Russell, MSCI Inc, S&P Dow Jones Indices LLC & NSE Indices Ltd

Does the Value Factor work?

The success of these measures has waned somewhat over time, not because of any inherent conceptual infirmity, but because of the inability of value definitions to keep pace with increasingly complex corporate and market structures. In addition, with relative growth playing an increasingly important role in determining stock prices, the part of Mr Graham's equation that isn't mathematically quantifiable has become more dominant over recent years.

In India as well, value factor performance has lagged behind the rest of the market for more than a decade now, with some resurgence visible in 2020 and 2021. Apart from the challenges faced internationally, India has its own unique challenges that make a simple implementation of value difficult to succeed.

Predominant among these is the existence of perpetual value companies in the public and private sector, the stock prices of which have stagnated despite attractive valuations. These value 'traps' typically occupy the highest end of most value definitions and have a significant impact on the performance of value as a factor in India.

Nevertheless, the value factor has low correlation with momentum and other factors, and can offer potential diversification benefits especially at times of factor cyclicality.

NJ's Value Factor - NJ Value 100 Portfolio

A combination of good value parameters, portfolio diversification and a robust weighting approach can assist in capturing the value factor to a large extent.

NJ Asset Management's research shows that value characteristics are cyclical and may perform differently for different sectors. In addition, there are important differences in how value needs to be measured for financial and non-financial companies. There is also the additional challenge of avoiding value traps.

The NJ Value 100 Portfolio, an equal-weighted portfolio of 100 stocks, is constructed by tilting the float-adjusted capitalisation-weighted Nifty 500 TRI, investable universe, towards 100 constituents with highest ranks based on a combination of value factor metrics.

The portfolio displays the following characteristics vis-a-vis the benchmark Nifty 500 TRI

	Price to Book Ratio (x)	Price to Earnings Ratio (x)	Price to Sales Ratio (x)
NJ Value 100 Portfolio	1.66	19.11	3.68
Nifty 500 TRI	3.55	24.65	2.59

▸ Source : Internal research, Bloomberg, National Stock Exchange of India.

▸ Factor parameters calculated as on 31st December 2021.

▸ For Nifty 500 & NJ Value 100 Portfolio factor definitions are the average of its constituents.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Value 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

VALUE FACTOR

Value Factor 1-Yr Excess Return Against Nifty 500 TRI
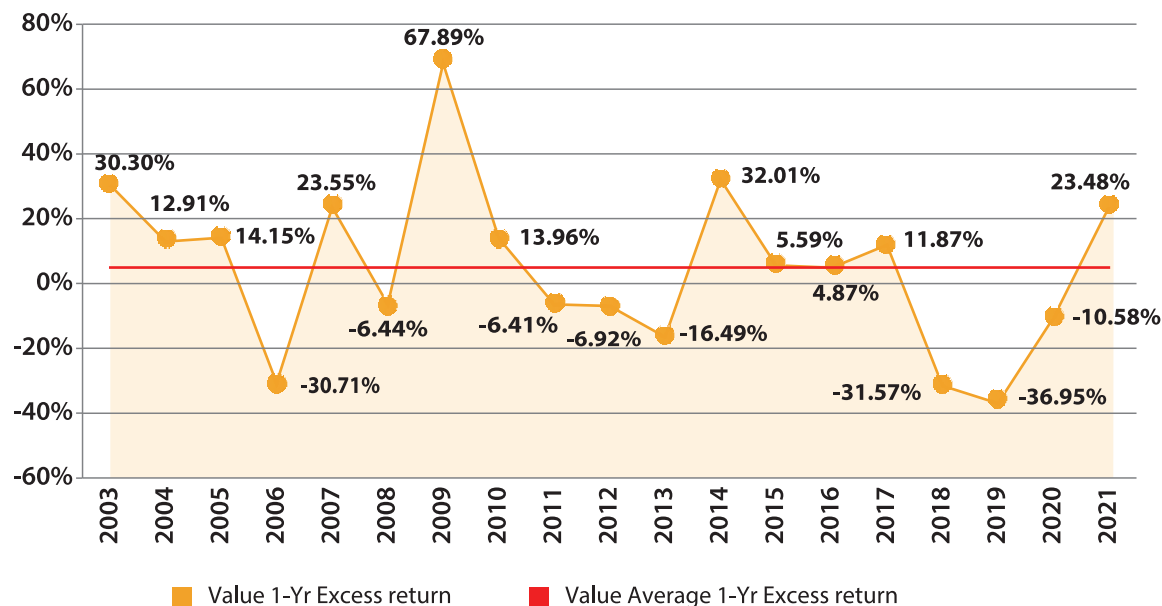
Value 1-Yr Excess return **Value Average 1-Yr Excess return**

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ 1-Yr Excess returns are calculated as the difference of the NJ Value 100 Portfolio returns and Nifty 500 TRI returns on a yearly basis for the period January 2003 to December 2021. The average 1-Yr excess return is calculated as the arithmetic average of 1-Yr excess returns over the period.

▸ Past performance may or may not be sustained in future and is not indication of future return

▸ NJ Value 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

The deep cyclicality of the value factor emerges clearly from the chart. Efforts are currently underway to determine whether a stable relationship exists between the performance of the value factor and that of the market and other factors. The elusiveness of a method to model the expected long term growth rate of a company remains, till date, the most significant weakness of the value factor.

VALUE FACTOR

NJ Value 100 Portfolio vs Nifty 500: CAGR
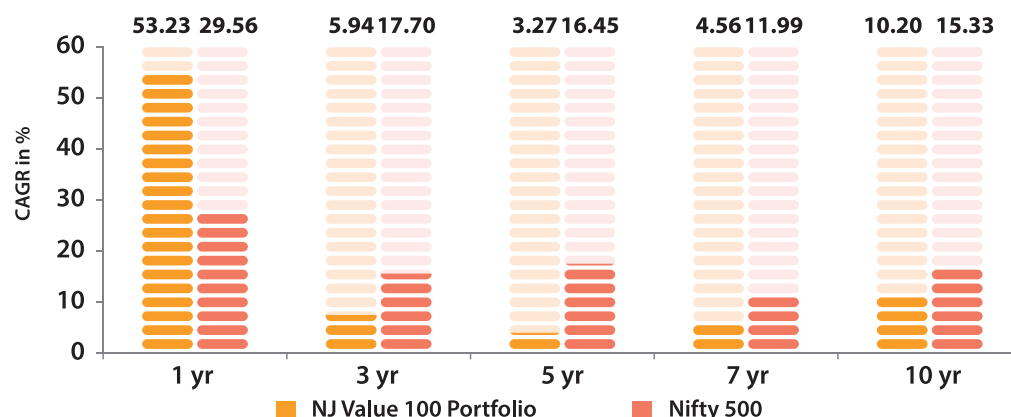
CAGR in %

	1 yr	3 yr	5 yr	7 yr	10 yr
NJ Value 100 Portfolio	53.23	5.94	3.27	4.56	10.20
Nifty 500	29.56	17.70	16.45	11.99	15.33

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ The Compounded Annualised Growth Rates (CAGRs) have been calculated using the daily NAVs of NJ Value 100 Portfolio and the Nifty 500 TRI. All the CAGRs have been calculated as on 31st December, 2021.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Value 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.
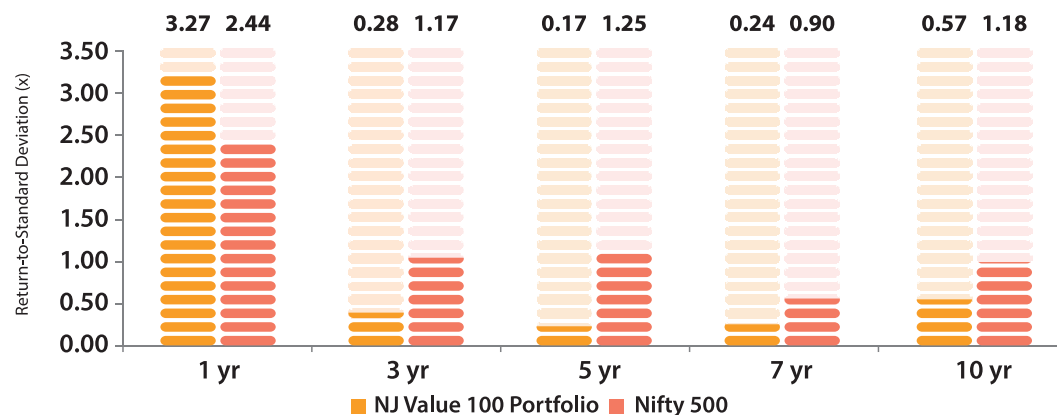
NJ Value 100 Portfolio vs Nifty 500: Return / Standard Deviation

Return-to-Standard Deviation (x)

	1 yr	3 yr	5 yr	7 yr	10 yr
NJ Value 100 Portfolio	3.27	0.28	0.17	0.24	0.57
Nifty 500	2.44	1.17	1.25	0.90	1.18

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ The Return / Standard Deviation Ratios have been calculated by dividing the CAGR of NJ Value 100 Portfolio and Nifty 500 TRI by their respective standard deviations. Standard Deviations for NJ Value 100 Portfolio and Nifty 500 TRI have been calculated using the weekly returns on the NJ Value 100 Portfolio and Nifty 500 TRI, respectively. Standard deviations are annualised standard deviations. All the ratios have been calculated as on 31st December, 2021.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Value 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

NJ Value 100 Portfolio vs Nifty 500: Maximum Drawdown

▸ Source: Internal research, Bloomberg, National Stock Exchange of India

▸ The Drawdown for a specific date has been calculated by dividing that day's NAV of NJ Value 100 Portfolio and Nifty 500 TRI by their peak NAVs up to that date, respectively.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Value 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.
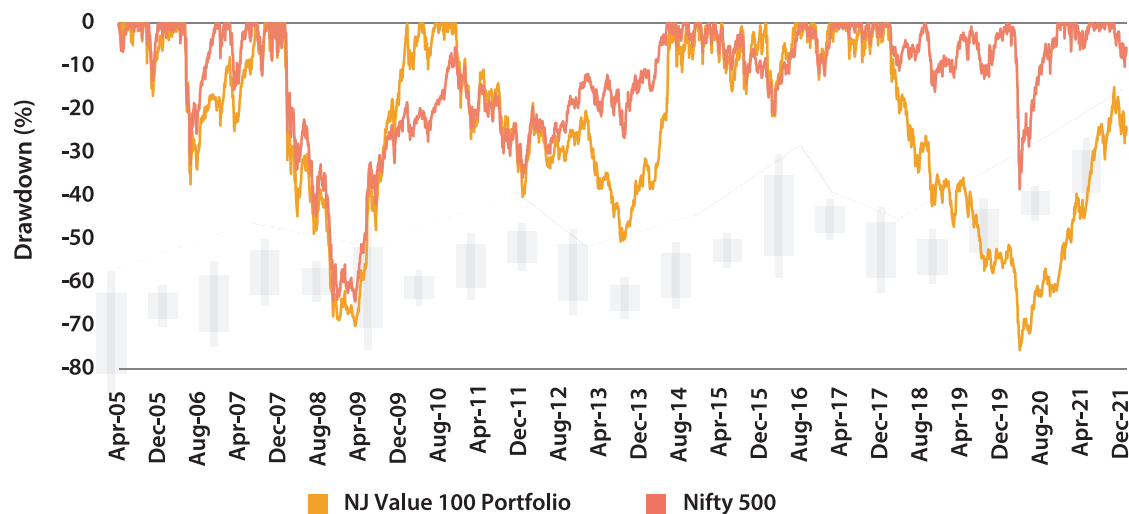
QUALITY
FACTOR

“ **Quality is never an accident.**
It is always the result of intelligent effort. ”
-John Ruskin

“ **It is hard to make a good return over the long term**
by investing in poor-quality or even average businesses. ”
-Terry Smith

For More Details

QUALITY FACTOR

What is 'Quality' Investing?

As a noun, the 'quality' of an item refers to how good or bad it is. In popular usage however, the word 'quality' has retained only positive connotations being used most often as a simile for "high quality". A "quality product" is assumed to be a high quality product and a "quality company" is understood to mean a high quality company. It is almost always used relationally signifying the standing of one in comparison to others of a similar nature.

But how does one define a quality company compared to its peers? Mostly, companies that exert greater control over their markets for purchases and sales, with controlled costs and a high degree of strategic & financial flexibility are considered to be quality companies. Measuring the quality factor, though, comes with its own unique challenges.

The one thing that sets quality apart from all the other factors is that it has no relationship with the prevailing price of the stock. It relies completely on non-market information, typically the financial statements released by companies periodically.

In the context of factor investing, the quality factor can be captured using multiple fundamental ratios calculated using companies' financial statements, such as Return on Equity (ROE), Return on Assets (ROA), Gross Margin, EPS Growth, and Leverage to name a few.

It can be logically inferred that informed and rational investors would be willing to pay a premium for companies that possess high quality businesses with many of the above mentioned characteristics. This is commonly referred to as the Quality Premium or Quality Effect and signifies the potential of high quality stocks to outperform their lower quality counterparts over long periods of time.

It is important to note that unlike value, volatility or momentum, there is no one-size-fits-all definition for quality factor and different academicians and professionals may have developed different definitions of quality. In other words, while one may find companies with high gross and operating margins to be of superior quality, someone else may prioritise low leverage and high ROE over high gross margins.

How is 'Quality' Measured Internationally?

The below table shows that quality factor commercial indices are not all the same. They have different inputs and methodologies, which often lead to different outcomes.

Index Details	Factor Characteristics	Methodology
Index Name: S&P 500 Quality Index Index Provider: S&P Dow Jones Indices LLC	ROE (TTM), Balance Sheet Accruals Ratio (Change in NOA/Avg NOA), Leverage (Total Debt/BVE)	Tilt S&P 500 Index (capitalisation-weighted) towards 100 constituents with their weights based on the product of their market cap in the Parent Index and Overall Quality (based on the 3 Quality metrics)
Index Name: Russell 2000 0.4 Target Exposure Quality Factor Index Index Provider: FTSE Russell	Profitability (Only ROA for profitability in case of Financial and RE companies): ROA, Accruals Ratio, Change in ATO; Leverage: Leverage Ratio (OCF/Total Debt)	Tilt Russell 2000 Index (capitalisation-weighted) based on a combined Quality Z-score
Index Name: NIFTY100 Quality 30 Index Index Provider: NSE Indices Ltd	ROE, Financial Leverage (D/E), and last 5-Yr EPS growth variability	Choose 30 stocks from Nifty 100 Index (capitalisation-weighted) based on their quality scores and weight them according to the product of their free-float MC and Quality Z-Score
Index Name: Fidelity U.S. Quality Factor Index Index Provider: Fidelity Investments Inc.	For Non-Banks: FCF Margin, ROIC, FCF Stability; For Banks: ROE, Debt to Assets	Select high quality stocks, from top 1,000 stocks in the U.S., based on a composite score. Security weights determined on the basis of an overweight adjustment (identical for all stocks within a sector) and their market capitalisations
Index Name: MSCI India Quality Index Index Provider: MSCI Inc.	ROE, Debt-to-Equity, Earnings Variability	Tilt MSCI India Index (capitalisation-weighted) towards high Quality constituents with weights equal to their product of market capitalisations weight in MSCI India Index and Composite Quality Score

Source: FTSE Russell, MSCI Inc, S&P Dow Jones Indices LLC, NSE Indices Ltd. & Fidelity Investments Inc.

QUALITY FACTOR

Does the Quality Factor work?

The inherent inconsistency in the definition of 'quality', make it difficult to gauge the true determinants of the quality premium i.e. the higher excess returns by high quality companies vis-a-vis companies of low quality. Academics and practitioners, including index providers, generally evaluate a stock's quality based on its financial and accounting/reporting quality.

Hsu, Kalesnik, and Kose (Hsu et al., 2019) examined the quality premium by comparing seven different traits, namely profitability, earnings stability, capital structure, growth, accounting quality, payout/dilution, and investment.

QUALITY FACTOR

Based on their study, covering the US, Global Developed, Japan, Europe, and Asia Pacific ex-Japan over the period 1990-2016 (1963-2016 for the US), they concluded that quality metrics focusing on capital structure, earnings stability and growth had little impact on the quality premia. On the contrary, profitability, accounting quality, payout/dilution, and investments (capital expenditures) tend to drive the quality premium.

In India, quality as a factor has worked well especially since the Great Financial Crisis of 2008. During the tumultuous market conditions of that period, some stocks outperformed others by a wide margin and a common thread that connected these were their superior profitability, margin and debt indicators. This has also drawn attention to the factor leading to its incorporation into most investment processes.

We must note that the quality indices do not capture a homogenous source of risk and/or driver of returns and in fact these indices may themselves be construed as multi-factor portfolios that are exposed to multiple quality specific elements such as profitability, leverage, accruals etc.

NJ's Quality Factor - NJ Quality 100 Portfolio

Both intuition and experience with the quality factor are extremely strong. At the same time, one needs to choose the best parameters to ascertain the presence of quality carefully. The goal is clearly to target stocks that exhibit superior profitability parameters and generate value for the shareholders through various markets and business cycles. These include profitability, cash flow and related attributes like Return on Investment, Return on Capital Employed, Interest Coverage among others that are derived from a company's financial statements.

With these parameters, there is often a need to measure the performance of financials and non-financials differently and look at sector specific ratios for them.

The NJ Quality 100 Portfolio, an equal-weighted portfolio of 100 stocks, is constructed by tilting the float-adjusted capitalisation-weighted Nifty 500 TRI, the investable portfolio, towards 100 constituents with highest ranks based on a combination of profitability, leverage, and accruals based parameters

	EPS Variability (%)	ROE (%)	ROA (%)
NJ Quality 100 Portfolio	51.72	25.41	15.55
Nifty 500 TRI	118.58	13.38	7.10

▸ Source : Internal research, Bloomberg, National Stock Exchange.

▸ Factor parameters calculated as on 31st December 2021.

▸ For Nifty 500 & NJ Quality 100 Portfolio factor definitions are the average of its constituents.

▸ EPS variability is defined as the coefficient of variation of quarterly earnings per share of the last 3 years.

▸ ROE is calculated by dividing the net income with the shareholders equity.

▸ ROA is calculated by dividing the net income by total assets.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Quality 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

QUALITY FACTOR

Quality Factor 1-Yr Excess Return Against Nifty 500 TRI
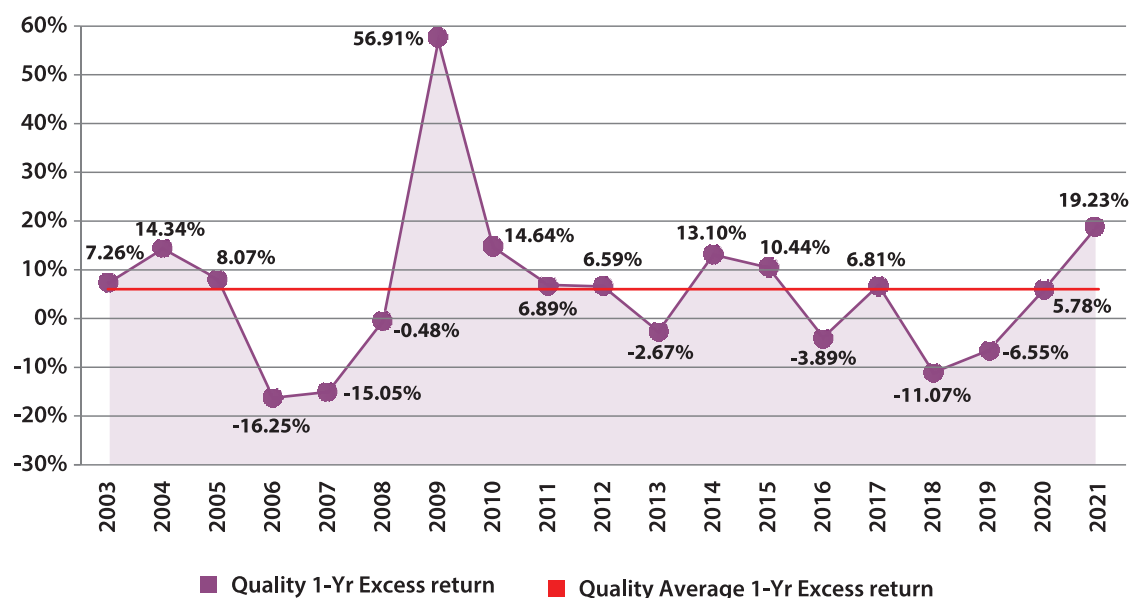
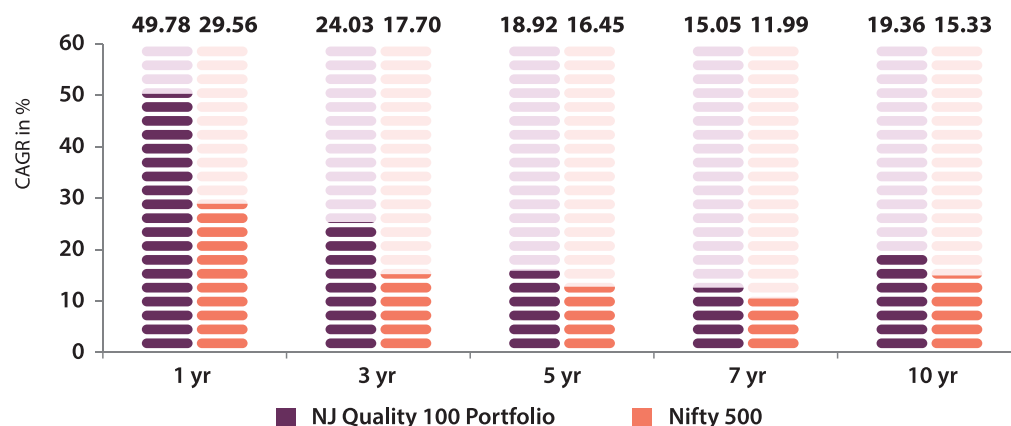Legend: Quality 1-Yr Excess return | Quality Average 1-Yr Excess return

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ 1-Yr Excess returns are calculated as the difference of the NJ Quality 100 Portfolio returns and Nifty 500 TRI returns on a yearly basis for the period January 2003 to December 2021. The average 1-Yr excess return is calculated as the arithmetic average of 1-Yr excess returns over the period.

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One can see from the charts above that while there is some cyclicality in the performance of the quality factor, it appears to sustain a more stable relationship with the index. As with all other factors, efforts to improve the way quality is measured are continuously underway among academics as well as practitioners.

NJ Quality 100 Portfolio vs Nifty 500: CAGR

| | 49.78 | 29.56 | 24.03 | 17.70 | 18.92 | 16.45 | 15.05 | 11.99 | 19.36 | 15.33 |

Legend: ■ NJ Quality 100 Portfolio   ■ Nifty 500

Y-axis: CAGR in %
X-axis: 1 yr, 3 yr, 5 yr, 7 yr, 10 yr

▶ Source : Internal research, Bloomberg, National Stock Exchange of India

▶ The Compounded Annualised Growth Rates (CAGRs) have been calculated using the daily NAVs of NJ Quality 100 Portfolio and the Nifty 500 TRI. All the CAGRs have been calculated as on 31st December, 2021.

▶ Past performance may or may not be sustained in future and is not an indication of future return.

▶ NJ Quality 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

NJ Quality 100 Portfolio vs Nifty 500: Return / Standard Deviation

| | 4.24 | 2.44 | 1.53 | 1.17 | 1.38 | 1.25 | 1.10 | 0.90 | 1.55 | 1.18 |

Legend: ■ NJ Quality 100 Portfolio ■ Nifty 500

Y-axis: Return-to-Standard Deviation (x)
X-axis: 1 yr, 3 yr, 5 yr, 7 yr, 10 yr

▶ Source : Internal research, Bloomberg, National Stock Exchange of India

▶ The Return / Standard Deviation Ratios have been calculated by dividing the CAGR of NJ Quality100 Portfolio and Nifty 500 TRI by their respective standard deviations. Standard Deviations for NJ Quality 100 Portfolio and Nifty 500 TRI have been calculated using the weekly returns on the NJ Quality 100 Portfolio and Nifty 500 TRI, respectively. Standard deviations are annualised standard deviations. All the ratios have been calculated as on 31st December, 2021.

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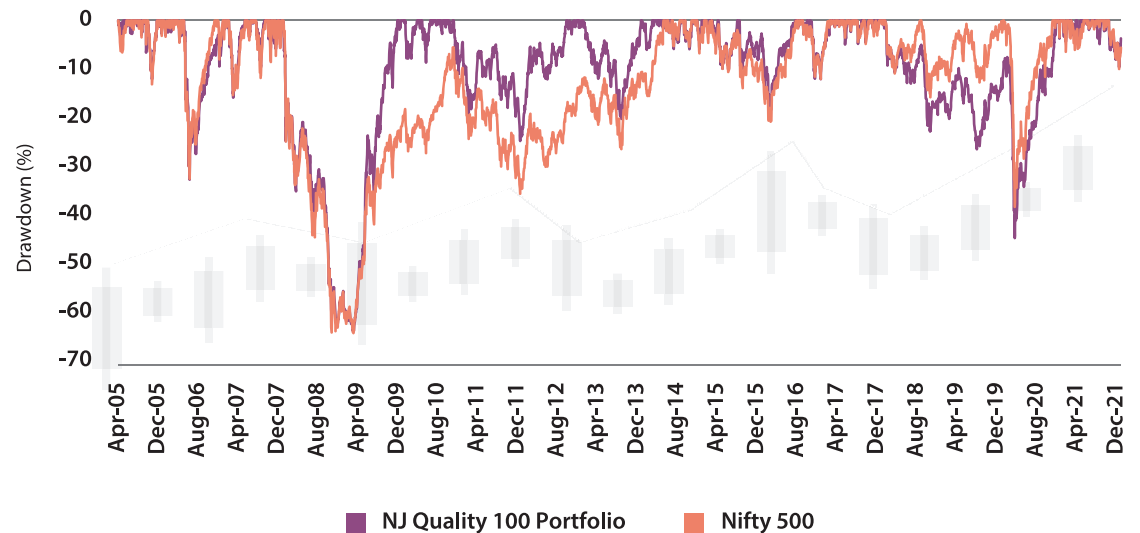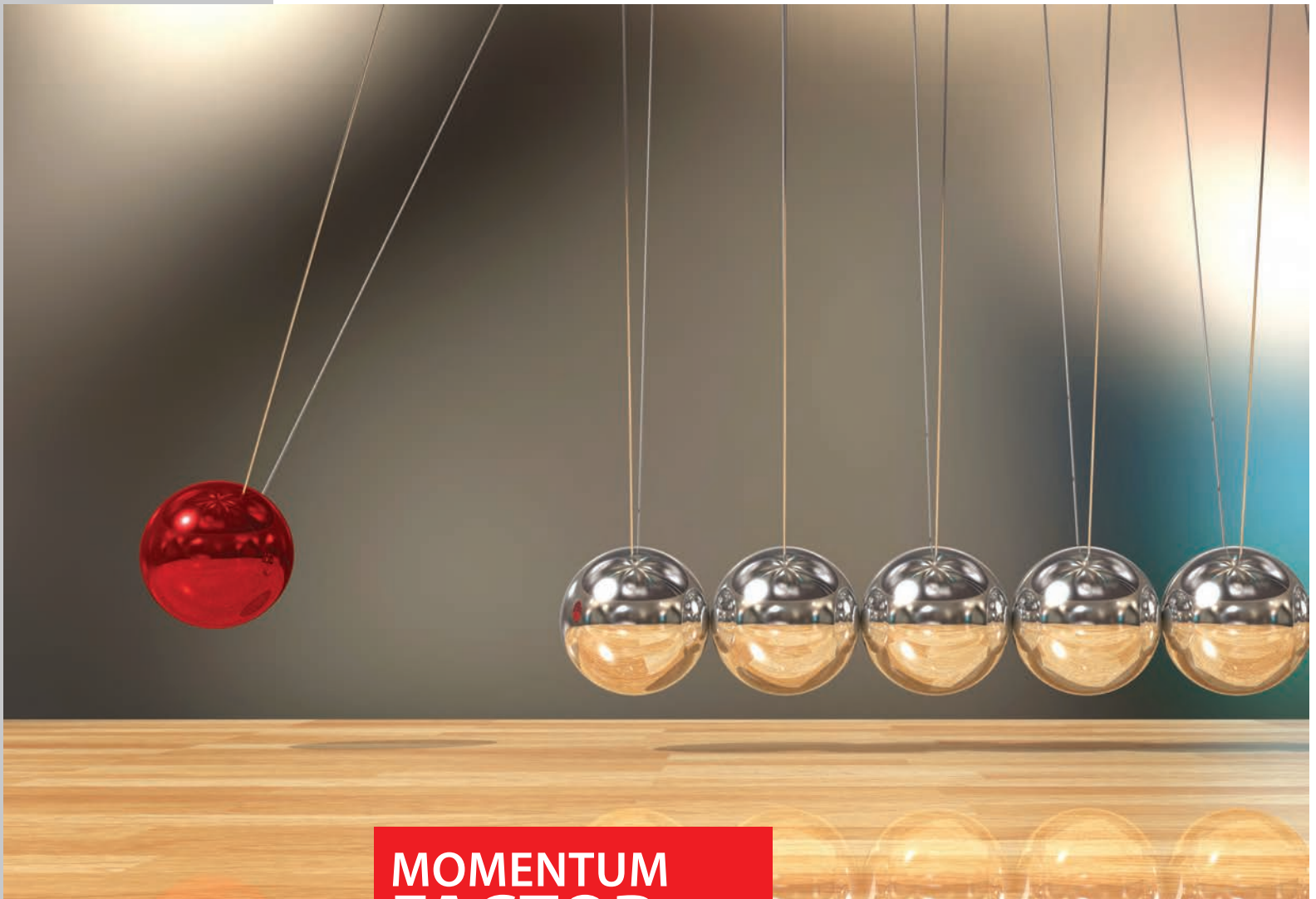
NJ Quality 100 Portfolio vs Nifty 500: Maximum Drawdown

Legend: **NJ Quality 100 Portfolio** **Nifty 500**

▸ Source: Internal research, Bloomberg, National Stock Exchange of India

▸ The Drawdown for a specific date has been calculated by dividing that day's NAV of NJ Quality 100 Portfolio and Nifty 500 TRI by their peak NAVs up to that date, respectively.

▸ Past performance may or may not be sustained in future and is not indication of future return.

▸ NJ Quality 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

MOMENTUM FACTOR

66 **Momentum solves 80% of your problems.** 99
-John C. Maxwell

66 **Perhaps the best-known investment paradigm is buy low, sell high. I believe that more money can be made by buying high and selling at even higher prices.** 99
-Richard Driehaus

What is 'Momentum' Investing?

Why are runners unable to stop right after crossing the finish line? The force that is applied to move them towards the finish line builds momentum and keeps them moving in the same direction for some time even after the force ceases, which is explained by Newton's first law of motion. Momentum is a vector quantity, containing both speed and direction.

This phenomenon is quite prevalent in the stock market as well with the motion of stocks in response to a sustained force (buying or selling) building momentum. This momentum doesn't stop when the original force wanes but continues to push the stock price in the same direction for some time. In other words, the momentum effect is the propensity of already rising (or falling) securities to continue rising (or falling).

According to the efficient market hypothesis (EMH) momentum premium cannot exist. But momentum effects are pervasive in financial markets. In fact, it is so pervasive that even the Nobel Laureate Eugene Fama, the creator of the EMH, famously said that momentum is "the premier market anomaly"[2].

[2]An anomaly is a phenomenon that cannot be explained with theories and that defies rational markets

MOMENTUM FACTOR

Prevalence of irrationalities and behavioural biases such as optimism/pessimism, confirmation bias, representativeness, and herding further boost momentum effect in the markets. Although juxtaposed against popular contrarian strategies such as value investing, momentum has been empirically proven to generate abnormal incremental returns. However, momentum is more of a short-term phenomenon and its return-enhancing effect reduces sharply with time. As a result, using momentum may require frequent rebalancing with the associated increase in portfolio turnover and transaction costs.

There are two momentum approaches in factor investing. These are,

● Time-series momentum: Sometimes referred to as absolute momentum, time-series momentum is calculated based on a stocks own past return, considered independently from the returns of the other stocks.

● Cross-sectional momentum: Originally referred to as relative strength, before academics developed a more jargon-like term, cross-sectional momentum is a measure of a stock's performance relative to other stocks.

Within these two as well, there are many choices to be made with regard to the time period for evaluating momentum, whether to use more than one time period to ascertain change in momentum etc. Each has its own benefits and sacrifices which make this choice a crucial one in crafting a stock selection methodology.

How is 'Momentum' Measured Internationally?

There is an abundance of methodologies for momentum strategies, all backed by professionals and academicians. The table below provides an overview of common momentum factor indices among index providers and professionals.

Index Details	Factor Characteristics	Methodology
Index Name: S&P 500 Momentum Index (US) Index Provider: S&P Dow Jones Indices LLC	12-month price change excluding current month (9-month price change if 12-month data unavailable)	Tilt S&P 500 Index (capitalisation-weighted) towards its constituents with weights equal to the product of their market capitalisation weights in Parent Index and Momentum Z-Score
Index Name: MSCI India Momentum Index Index Provider: MSCI Inc.	Risk-adjusted Price Momentum (6-month and 12-month) = [(6/12-month Price Return - Local Risk-free Rate)/SD of returns]	Tilt MSCI India Index (capitalisation-weighted) towards securities based on their Momentum Z-scores with weights equal to the product of Momentum Z-scores and their market capitalisation weights in the Parent Index
Index Name: Nasdaq Factor Family US Momentum Index Index Provider: Nasdaq, Inc.	Momentum Strength Score = Sigma(Ret1,Ret3, Ret6, Ret9, Ret12)/5	50 securities with lowest Adjusted Momentum Strength Score are selected from the eligible universe, subject to a set of constraints
Index Name: Nifty 200 Momentum 30 Index Index Provider: NSE Indices Ltd	6 and 12-month Momentum Ratio (excluding rebalancing month prices) = 6/12-month Price Return/(Ann. SD of lognormal daily returns of the stock for 1 year)	Select top 30 stocks from Nifty 200 (capitalisation-weighted) based on their Normalised Momentum Z-scores. Security weights equal the product of their free-float market capitalisation and Normalised Momentum Score

Source: FTSE Russell, MSCI Inc, S&P Dow Jones Indices LLC, NSE Indices Ltd & Nasdaq, Inc.

Does the Momentum Factor work?

The momentum factor has empirically generated positive excess returns, as evidenced by several seminal works including the ones by Jegadeesh and Titman (Jegadeesh & Titman, 1993) and Carhart's 4 Factor Model (Carhart, 1997).

A 2013 study by Professors Agarwalla, Jacob and Varma of the Indian Institute of Management, Ahmedabad (Agarwalla et al., 2013) calculated factor returns for the three Fama French factors and momentum for the Indian stock markets. Covering two decades of data, this study indicates that momentum was one of the strongest factors in India. This is in line with market experience as well which explains a dominant preference for momentum investing.

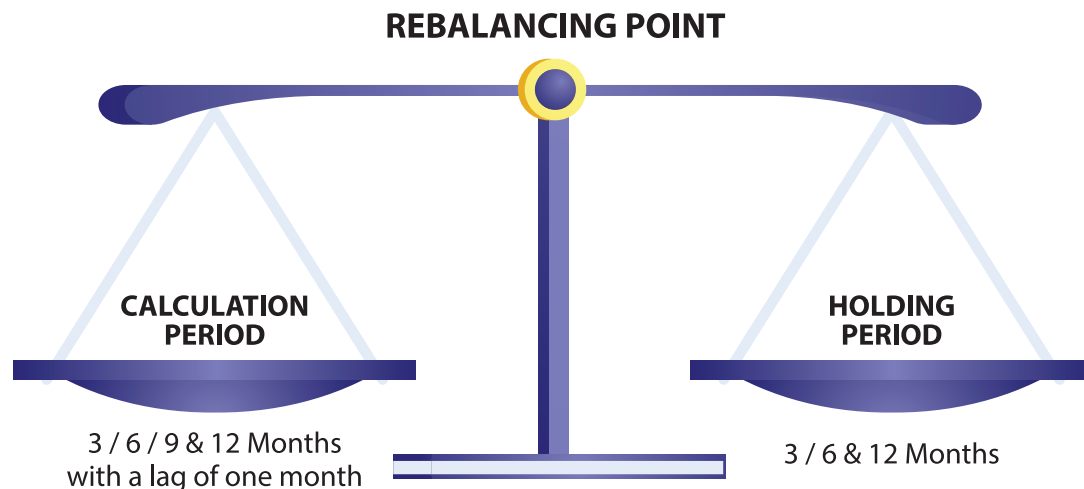## NJ's Momentum Factor - NJ Momentum 100 Portfolio

One of the concerns when using momentum is the propensity of a moving stock to "recoil" sharply when it reaches a turning point. The most popular way of overcoming this is to use a lag between the time when momentum is studied and when it is acted upon. This allows the "recoil", if it happens, to manifest and lower the acquisition cost of the stock.

In developing our momentum indicator, we studied various time periods between 1 and 12 months of standalone and comparative momentum. We studied these both with and without different lag periods from 5 days to 1 month. We also studied various holding periods for our resultant portfolio ranging from 3 to 12 months. In studying these, transaction costs were incorporated into process to allow for a robust comparison of the outcomes achieved.

REBALANCING POINT

CALCULATION
PERIOD

HOLDING
PERIOD

3 / 6 / 9 & 12 Months
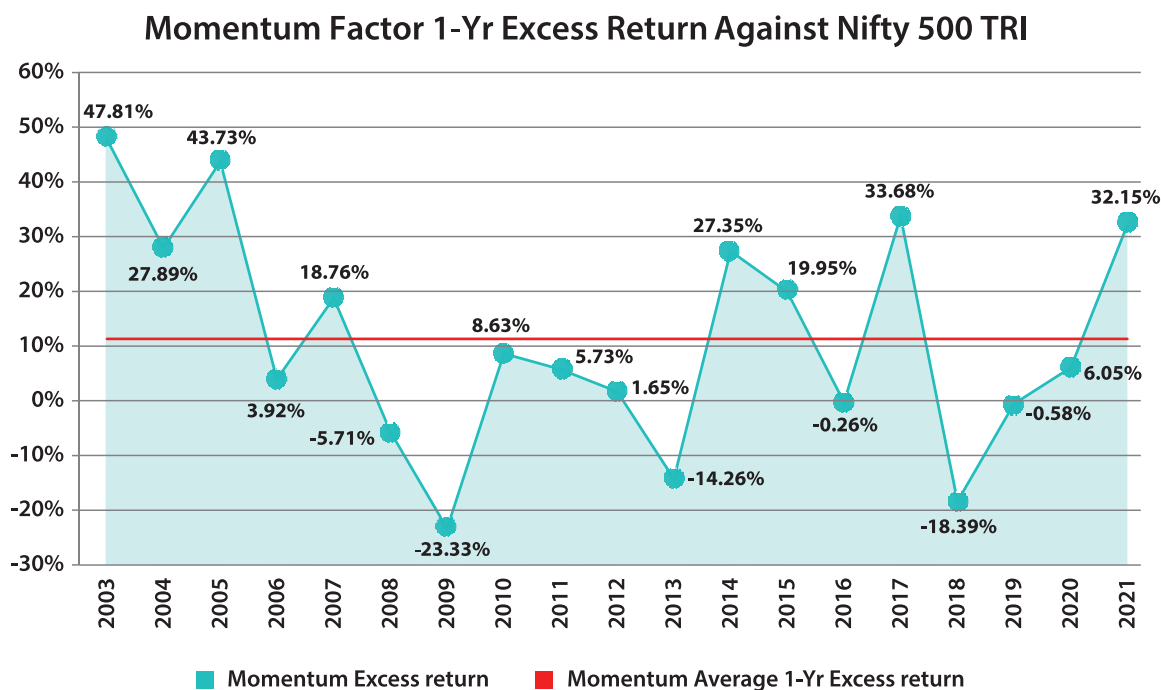with a lag of one month

3 / 6 & 12 Months

Our current methodology provides a balance between managing portfolio churn, factor decay and scalability

The NJ Momentum 100 Portfolio, an equal-weighted portfolio of 100 stocks, is constructed by tilting the float-adjusted capitalisation-weighted Nifty 500 TRI, the parent index, towards 100 constituents with highest ranks based on our momentum methodology.

	3M Momentum (%)	6M Momentum (%)	9M Momentum (%)
NJ Momentum 100 Portfolio	2.31	16.70	40.00
Nifty 500 TRI	-2.69	8.72	18.96

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ Factor parameters calculated as on 31st December 2021

▸ For Nifty 500 & NJ Momentum 100 Portfolio factor definitions are the average of its constituents.

▸ Momentum is defined as the total return of price of the securities for their respective time period.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Momentum 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

MOMENTUM FACTOR

Momentum Factor 1-Yr Excess Return Against Nifty 500 TRI

Legend: ■ Momentum Excess return ■ Momentum Average 1-Yr Excess return

Data points:
- 2003: 47.81%
- 2004: 27.89%
- 2005: 43.73%
- 2006: 3.92%
- 2007: 18.76%
- 2008: -5.71%
- 2009: -23.33%
- 2010: 8.63%
- 2011: 5.73%
- 2012: 1.65%
- 2013: -14.26%
- 2014: 27.35%
- 2015: 19.95%
- 2016: -0.26%
- 2017: 33.68%
- 2018: -18.39%
- 2019: -0.58%
- 2020: 6.05%
- 2021: 32.15%

▶ Source : Internal research, Bloomberg, National Stock Exchange of India

▶ 1-Yr Excess returns are calculated as the difference of the NJ Momentum 100 Portfolio returns and Nifty 500 TRI returns on a yearly basis for the period January 2003 to December 2021. The average 1-Yr excess return is calculated as the arithmetic average of 1-Yr excess returns over the period.

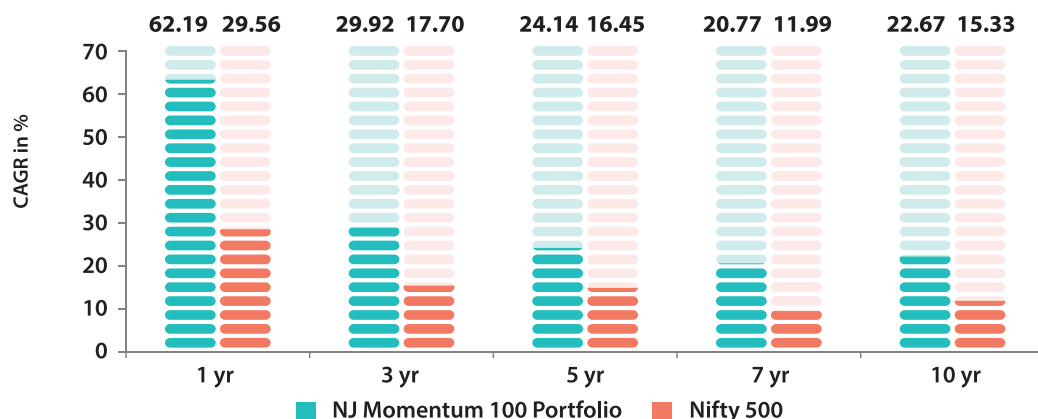▶ Past performance may or may not be sustained in future and is not an indication of future return.

▶ NJ Momentum 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

As the charts indicate, momentum has been a consistent outperformer across various time periods which make it one of the most important factors in India. Since it offers the widest range of options to calculate and determine its presence, implementations of momentum differ very widely across the world and even within India. Combined with its fickle nature, the search for the most efficient and consistent way to measure momentum promises to be a long one.
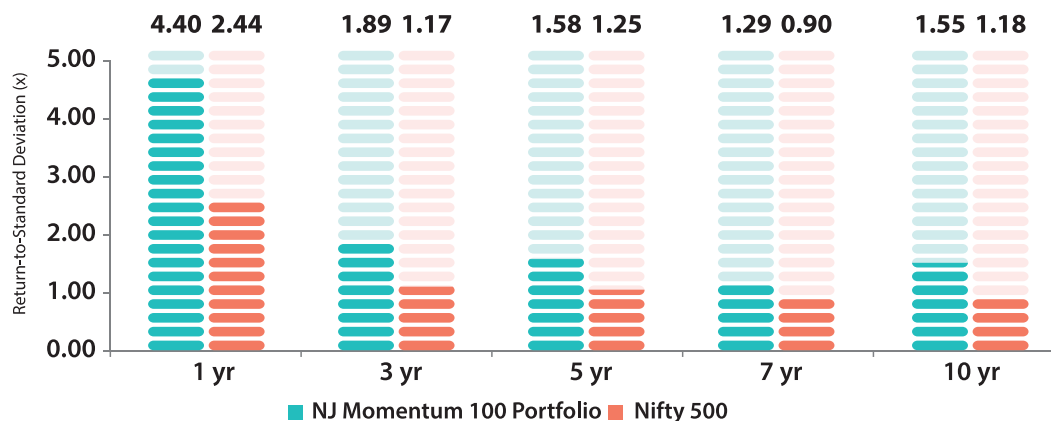
NJ Momentum 100 Portfolio vs Nifty 500: CAGR

| | 62.19 | 29.56 | 29.92 | 17.70 | 24.14 | 16.45 | 20.77 | 11.99 | 22.67 | 15.33 |

Legend: ■ NJ Momentum 100 Portfolio ■ Nifty 500

CAGR in % — 1 yr, 3 yr, 5 yr, 7 yr, 10 yr

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ The Compounded Annualised Growth Rates (CAGRs) have been calculated using the daily NAVs of NJ Momentum 100 Portfolio and the Nifty 500 TRI. All the CAGRs have been calculated as on 31st December, 2021.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Momentum 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

NJ Momentum 100 Portfolio vs Nifty 500: Return / Standard Deviation

| | 4.40 | 2.44 | 1.89 | 1.17 | 1.58 | 1.25 | 1.29 | 0.90 | 1.55 | 1.18 |

Legend: ■ NJ Momentum 100 Portfolio ■ Nifty 500

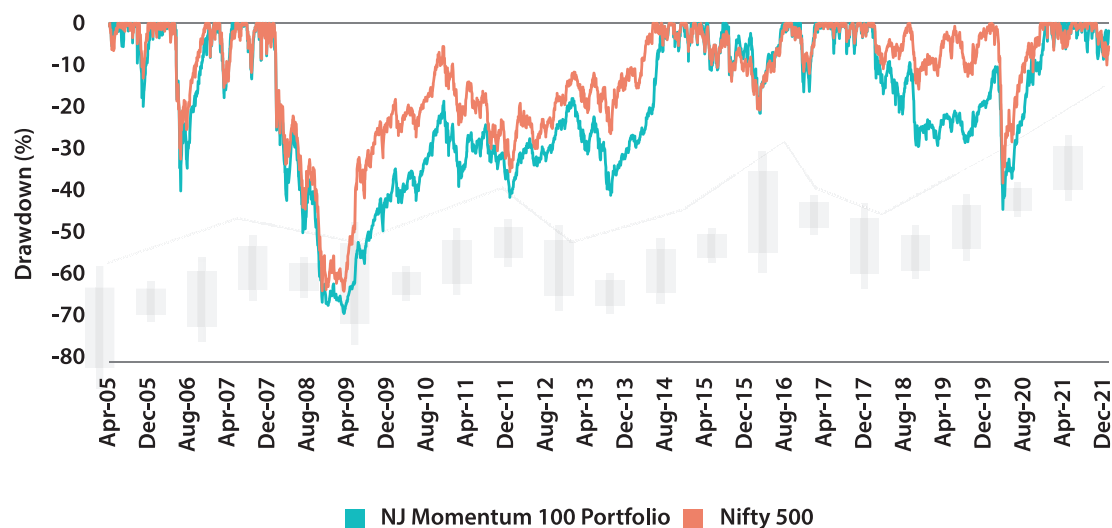Return-to-Standard Deviation (x) — 1 yr, 3 yr, 5 yr, 7 yr, 10 yr

▸ Source : Internal research, Bloomberg, National Stock Exchange of India

▸ The Return / Standard Deviation Ratios have been calculated by dividing the CAGR of NJ Momentum100 Portfolio and Nifty 500 TRI by their respective standard deviations. Standard Deviations for NJ Momentum100 Portfolio and Nifty 500 TRI have been calculated using the weekly returns on the NJ Momentum100 Portfolio and Nifty 500 TRI, respectively. Standard deviations are annualised standard deviations. All the ratios have been calculated as on 31st December, 2021.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Momentum 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

NJ Momentum 100 Portfolio vs Nifty 500: Maximum Drawdown

NJ Momentum 100 Portfolio   **Nifty 500**

▸ Source: Internal research, Bloomberg, National Stock Exchange of India

▸ The Drawdown for a specific date has been calculated by dividing that day's NAV of NJ Momentum 100 Portfolio and Nifty 500 TRI by their peak NAVs up to that date, respectively.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Momentum 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

LOW VOLATILITY FACTOR

“ **Superior investors make more money in good times than they give back in bad times.** ”
-Howard Marks

“ **It's not whether you're right or wrong that's important, but how much money you make when you're right and how much you lose when you're wrong.** ”
-George Soros

For More Details

What is 'Low Volatility' Investing?

As on February 20, 2022 the batsman with the best strike rate in men's one day internationals is Andre Russell of the West Indies scoring 130.22 runs for every 100 balls faced. He is followed by Glen Maxwell of Australia (125.43) and Jos Buttler of England (118.66) (ESPN Sports Media, 2022a).

Fast scoring and exciting as they most certainly are, these same players are nowhere close to the top ranked when it comes to consistency, which is signified by career batting av erages. Russell and Maxwell don't even make it to the top 100 with Buttler sneaking in at 95th rank with career batting averages of 27, 34 and 39 respectively (ESPN Sports Media, 2022b).

While every team needs fast scorers, the foundation for its performance is often provided by those who provide the highest consistency; the kind provided by a Virat Kohli and Michael Bevan with career averages of 58 and 53 (ESPN Sports Media, 2019), respectively (ESPN Sports Media, 2022b).

LOW VOLATILITY FACTOR

How does this kind of consistency relate to the world of investing? In investing, avoiding large losses can be far more important than making big profits. Investment success can be achieved by being consistently right even if it means that the gains from each investment are not the highest. Low volatility stocks offer this consistency to a portfolio.

The low volatility factor targets securities with lower volatility characteristics. This typically translates into generally more consistent returns with lower deviations from long term means.

Several studies, including those conducted by Haugen and Heins (Haugen & Heins, 1972) as well as Frazzini (Frazzini & Pedersen, 2014), have demonstrated the existence of the Low Volatility Effect with empirical evidence of the ability of low volatility stocks to generate better risk-adjusted returns versus high volatility stocks on average, in US, European as well as emerging markets.

Also, many institutional and some retail investors deploy low volatility strategies to lower portfolio risk. The diagram below depicts how low volatility stocks can move the risk-return positioning of a portfolio to a superior position.
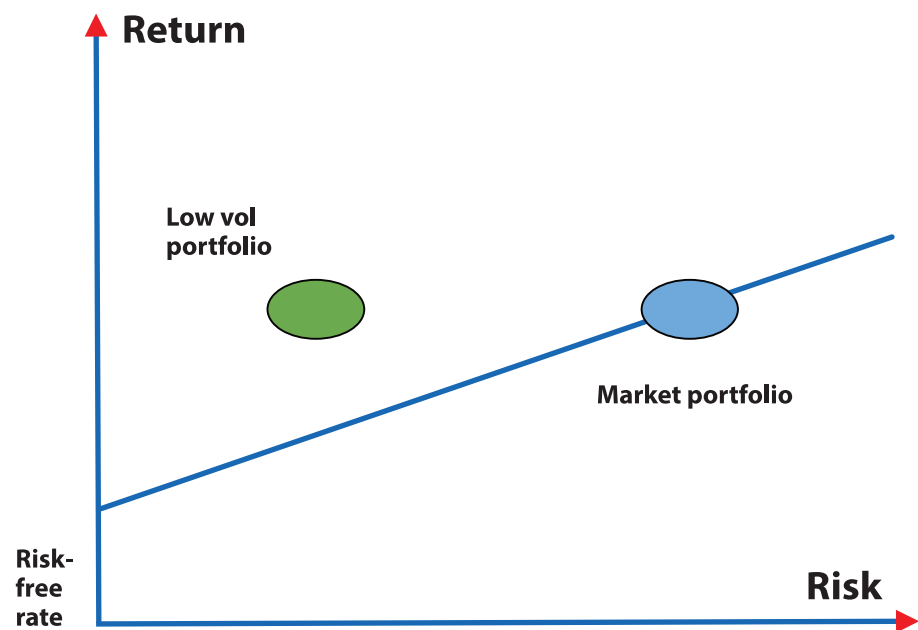
Source : Illustration purpose only

Volatility is usually measured using common statistical tools like standard deviation and semivariance. Like momentum, it offers vast choices in the period for which and over which it is computed, the holding period and whether one uses a single period of analysis or multiple ones.

How is 'Low Volatility' measured internationally?

With a wide array of options there is no standard approach that has emerged as a dominant one among investment managers and index providers. And while standard deviation or related measures are quite popular, the periods of computation differ significantly. The table below describes the different types of low volatility factor indices across the world and the parameters used in their construction.

Index Details	Factor Characteristics	Methodology
Index Name: S&P 500 Low Volatility Index (US) Index Provider: S&P Dow Jones Indices LLC	Standard Deviation of Daily Price Returns (Last 1 Yr/approx 252 trading days)	Tilt the S&P 500 Index (capitalisation-weighted) towards 100 constituents with lowest volatilities, ranked inversely in terms of their realised volatilities.
Index Name: MSCI USA Minimum Volatility Index (USD) Index Provider: MSCI Inc.	Overall portfolio variance using individual variances and covariances between returns of constituents in the Parent Index	Tilt MSCI USA Index (capitalisation-weighted) towards an optimised portfolio which reduces the portfolio's overall volatility
Index Name: Nasdaq Factor Family US Low Volatility Index Index Provider: Nasdaq, Inc	Volatility Change Score and Volatility Strength Score based on realised standard deviation	Tilt Nasdaq US 500 Large Cap Index (capitalisation-weighted) towards 50 constituents having the lowest Volatility Strength Scores, with their weights being inversely proportional to the realised volatilities
Index Name: Nifty 100 Low Volatility 30 Index Index Provider: NSE Indices Ltd	Standard deviation of daily price returns (log-normal) over last 1-Yr period	Tilting Nifty 100 Index (capitalisation-weighted) towards 30 constituents with lowest volatility scores, with their weights being inversely proportional to the realised volatilities

Source: FTSE Russell, Research Affiliates, LLC, MSCI Inc, S&P Dow Jones Indices LLC, Nasdaq, Inc & NSE Indices Ltd
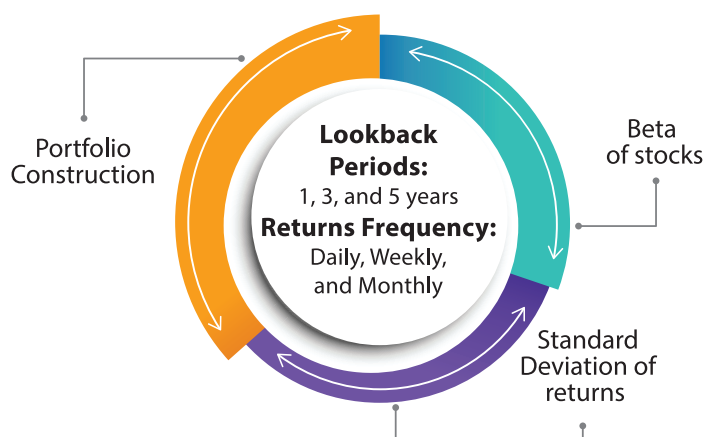
Does the Low Volatility Factor work?

Typically, stocks with low volatility characteristics reward investors with higher risk-adjusted returns compared to a broad market capitalisation strategy over the long term. The benefit of using the low volatility factor became evident among institutional investors in the wake of the Global Financial Crisis (GFC) in 2008 and the Euro Debt Crisis.

In a study covering two decades and all stocks traded on the Bombay Stock Exchange, Agarwalla et al. find that lower volatility stocks can generate superior returns compared to high volatility stocks (Arunachalam et al., 2020,). The authors believe that the lack of access to leverage for stock market investments encourages investors to seek higher risk stocks in an effort to achieve the highest expected return.

NJ's Low Volatility Factor - NJ Low Volatility 100 Portfolio

One of the main concerns of focusing on lower volatility stocks is that they can generate lower returns. Fortunately, due to some unique structural aspects, this has not held true in the Indian context. After studying daily, weekly and monthly volatility over periods ranging from 1 year to 5 years and holding periods ranging from 3 months to 1 year, NJAMC follows a measure that provides the optimal mix of consistency and churn.

Portfolio Construction

Lookback Periods:
1, 3, and 5 years
Returns Frequency:
Daily, Weekly, and Monthly

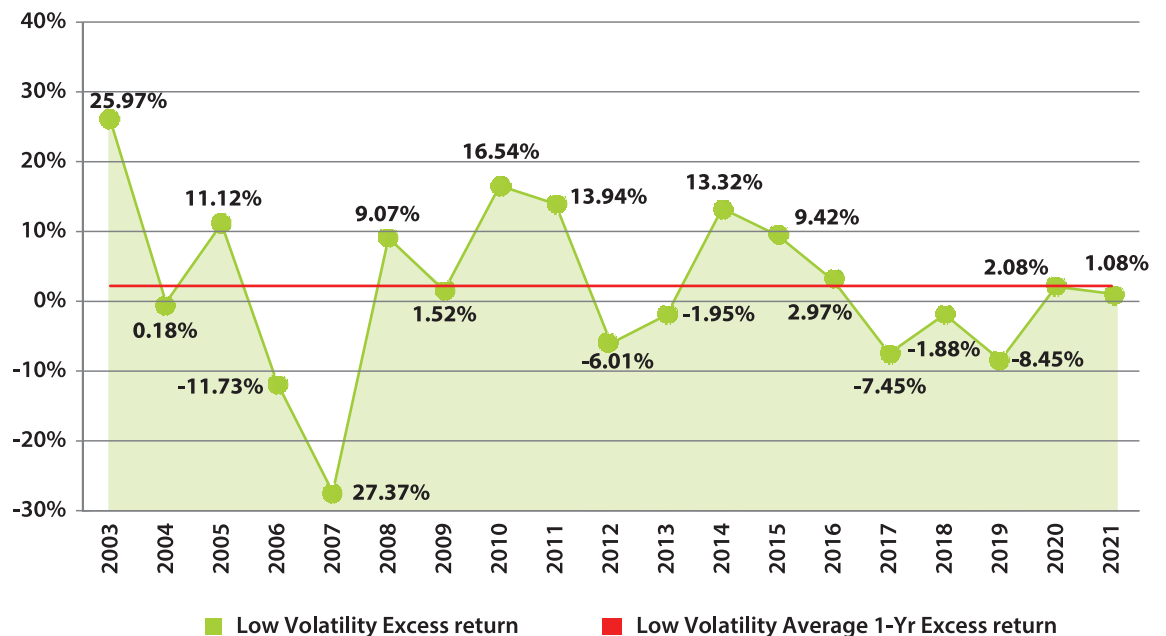Beta of stocks

Standard Deviation of returns

The NJ Low Volatility 100 Portfolio, an equal-weighted portfolio of 100 stocks, is constructed by tilting the float-adjusted capitalisation - weighted Nifty 500 TRI, the investable portfolio, towards 100 constituents with the lowest volatility indicators over the period of analysis

	6 M Volatility (%)	6 M Beta	6 M Semi Variance (%)
NJ Low Volatility 100 Portfolio	10.71	0.72	8.07
Nifty 500 TRI	13.01	1.00	10.26

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ Factor parameters calculated as on 31st December 2021

▸ For Nifty 500 & NJ Low Volatility 100 Portfolio factor definitions are the average of its constituents.

▸ Volatility is calculated using daily returns annualised

▸ Beta is calculated as the covariances of the security with the market divided by the variance of the market.

▸ Semi variance is defined as downside standard deviation annualised

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Low Volatility 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

LOW VOLATILITY FACTOR

Low Volatility Factor 1-Yr Excess Return Against Nifty 500 TRI

Chart data points (Low Volatility Excess return):
- 2003: 25.97%
- 2004: 0.18%
- 2005: 11.12%
- 2006: -11.73%
- 2007: -27.37%
- 2008: 9.07%
- 2009: 1.52%
- 2010: 16.54%
- 2011: 13.94%
- 2012: -6.01%
- 2013: -1.95%
- 2014: 13.32%
- 2015: 9.42%
- 2016: 2.97%
- 2017: -7.45%
- 2018: -1.88%
- 2019: -8.45%
- 2020: 2.08%
- 2021: 1.08%

Legend:
- Low Volatility Excess return
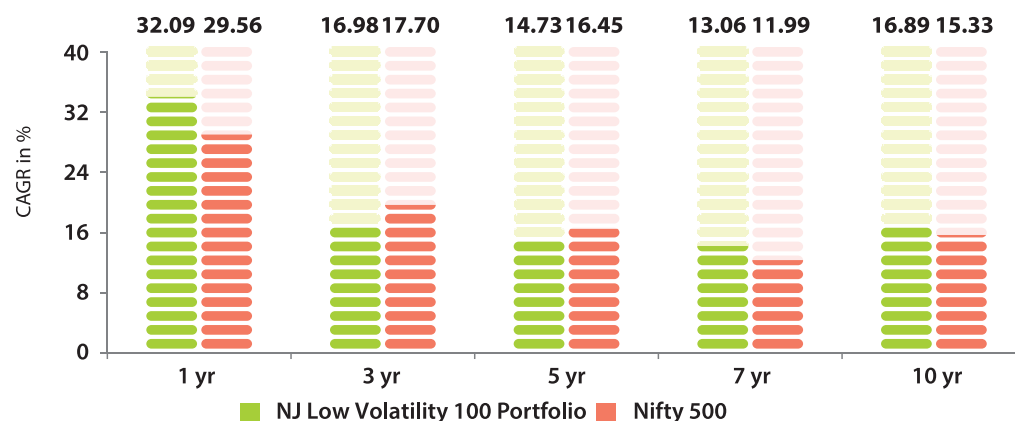- Low Volatility Average 1-Yr Excess return

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ 1-Yr Excess returns are calculated as the difference of the NJ Low Volatility 100 Portfolio returns and Nifty 500 TRI returns on a yearly basis for the period January 2003 to December 2021. The average 1-Yr excess return is calculated as the arithmetic average of 1-Yr excess returns over the period.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Low Volatility 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

The low volatility factor lives up to its promise of generating additional returns compared to the index with lower deviation and greater consistency.
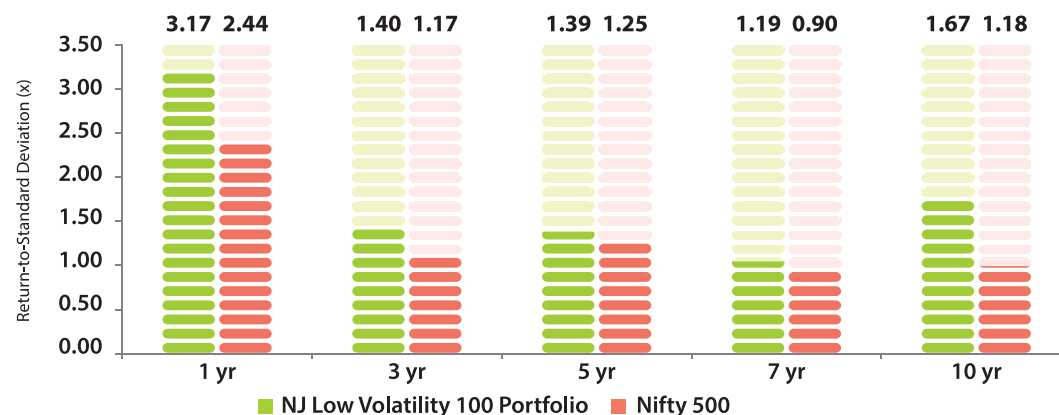
NJ Low Volatility 100 Portfolio vs Nifty 500: CAGR

	1 yr	3 yr	5 yr	7 yr	10 yr
	32.09 29.56	16.98 17.70	14.73 16.45	13.06 11.99	16.89 15.33

Legend: NJ Low Volatility 100 Portfolio / Nifty 500

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ The Compounded Annualised Growth Rates (CAGRs) have been calculated using the daily NAVs of NJ Low Volatility 100 Portfolio and the Nifty 500 TRI. All the CAGRs have been calculated as on 31st December, 2021.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Low Volatility 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.
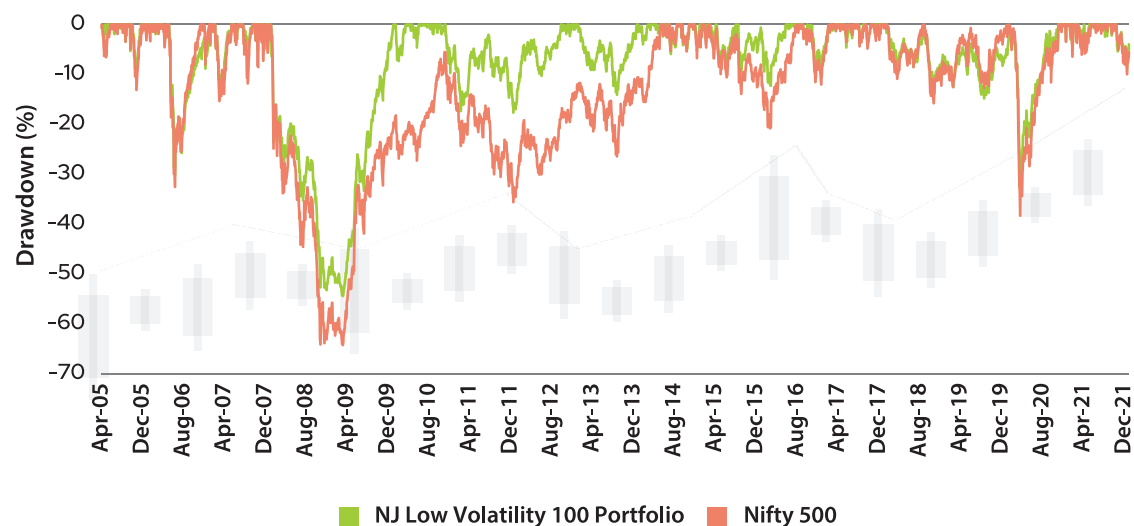
NJ Low Volatility 100 Portfolio vs Nifty 500: Return / Standard Deviation

	1 yr	3 yr	5 yr	7 yr	10 yr
	3.17 2.44	1.40 1.17	1.39 1.25	1.19 0.90	1.67 1.18

Legend: NJ Low Volatility 100 Portfolio / Nifty 500

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ The Return / Standard Deviation Ratios have been calculated by dividing the CAGR of NJ Low Volatility 100 Portfolio and Nifty 500 TRI by their respective standard deviations. Standard Deviations for NJ Low Volatility 100 Portfolio and Nifty 500 TRI have been calculated using the weekly returns on the NJ Low Volatility 100 Portfolio and Nifty 500 TRI, respectively. Standard deviations are annualised standard deviations. All the ratios have been calculated as on 31st December, 2021.

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▸ NJ Low Volatility 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

LOW VOLATILITY FACTOR

NJ Low Volatility 100 Portfolio vs Nifty 500: Maximum Drawdown

NJ Low Volatility 100 Portfolio   **Nifty 500**

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ The Drawdown for a specific date has been calculated by dividing that day's NAV of NJ Low Volatility 100 Portfolio and Nifty 500 TRI by their peak NAVs up to that date, respectively.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

▸ NJ Low Volatility 100 Portfolio is a proprietary methodology developed by NJ Asset Management Private Limited. The methodology will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

MULTI-FACTOR
INVESTING

" **Diversification is the only free lunch.** "
-Harry Markowitz

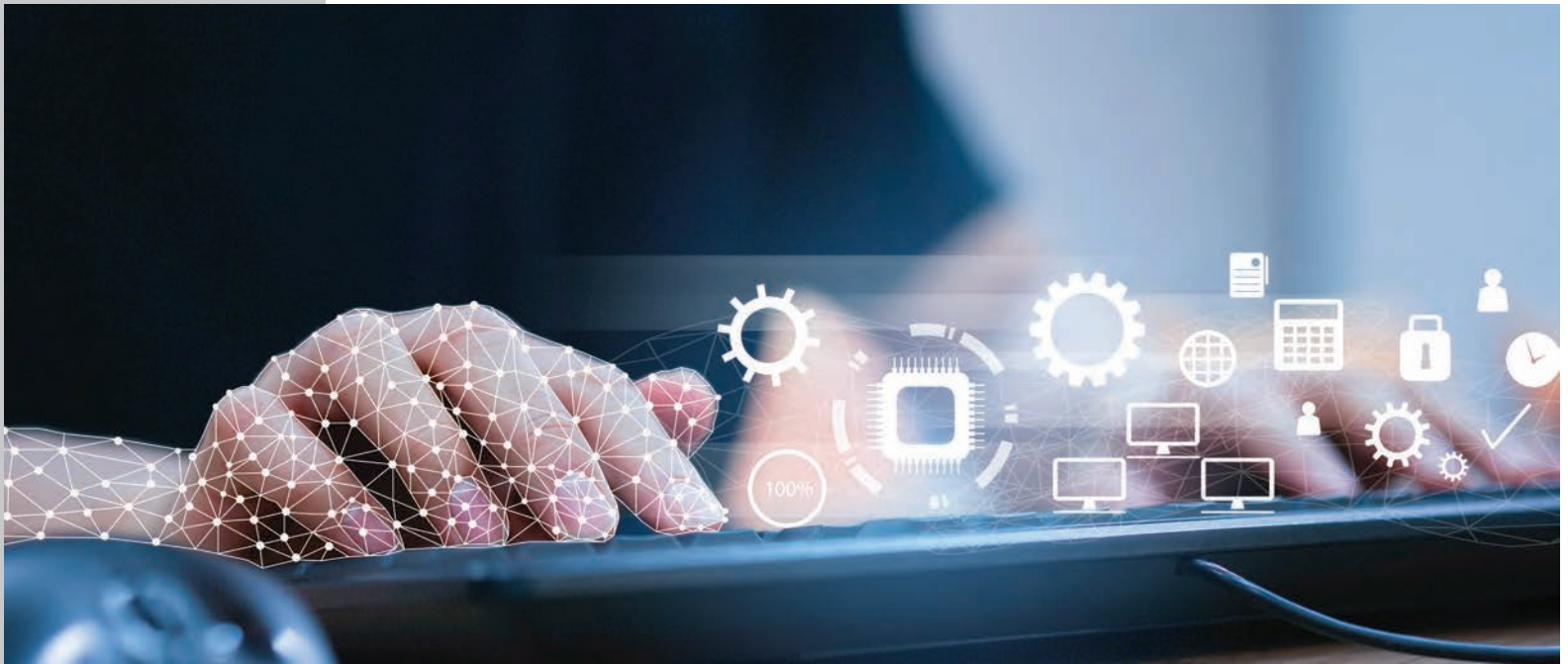" **Other than compounding, diversification is the only real magic.** "
-Rajiv Shastri

For More Details

MULTI-FACTOR INVESTING

A successful team in cricket is often about the composition of the team rather than the individual star player. The relationship between single factor and multi-factor strategies is no different in this regard - the team is the combination of the individual factors into one multi-factor strategy. A factor can undergo prolonged periods of underperformance with disillusioned investors running out of patience before the benefit of exposure to that factor is reaped.

There is no right or wrong answer as to how many and which factors to include in a strategy, but all the benefits of diversification apply to factor investing as well. A multi-factor approach can offer diversification and smoothen the ride through the investment journey by harvesting multiple sources of returns.

The challenge of a multi-factor portfolio is to decide how many factors to include and what approach to take. The answers can be easily found in the investor preference and objectives themselves. Investors who prioritise returns over costs may prefer a portfolio strategy dominated by momentum, while those with a strong preference for stable, consistent returns may consider low volatility to be the foundation of their portfolio. When designing a strategy for an astute investor segment with higher risk tolerance, one may consider concentrated single factor strategies to be appropriate. On the other hand, when designing a strategy for a wide variety of investors, a multi-factor strategy may serve the purpose best.

MULTI-FACTOR INVESTING
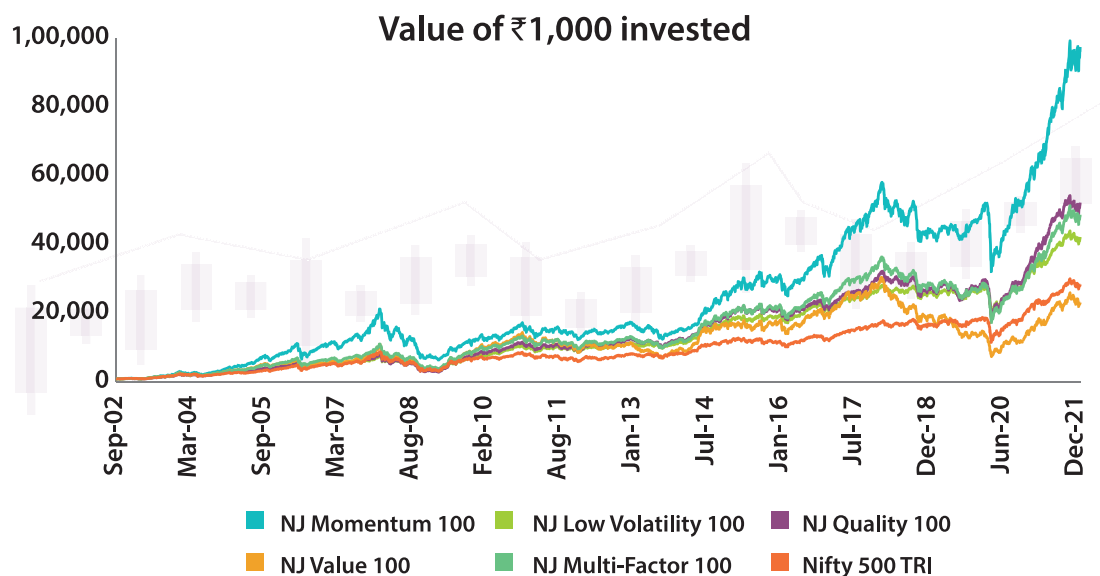
Value of ₹1,000 invested

Legend: NJ Momentum 100, NJ Low Volatility 100, NJ Quality 100, NJ Value 100, NJ Multi-Factor 100, Nifty 500 TRI

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ Calculations are for the period Oct 2002 to Dec 2021.

▸ NJ Value 100, NJ Quality 100, NJ Momentum 100, NJ Low Volatility 100 and NJ Multi-Factor 100 Portfolios are proprietary methodologies developed by NJ Asset Management Private Limited. The methodologies will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

	CAGR (%)	Annualised Volatility (%)	Return Per Unit of Risk (x)	Drawdown (%)
NJ Multi-Factor 100 Portfolio	22.35	19.64	1.14	64.83
Nifty 500 TRI	18.99	21.68	0.88	63.71

▸ Source : Internal research, Bloomberg, National Stock Exchange

▸ Calculations are for the period Oct 2002 to Dec 2021.

▸ NJ Value 100, NJ Quality 100, NJ Momentum 100, NJ Low Volatility 100 and NJ Multi-Factor 100 Portfolios are proprietary methodologies developed by NJ Asset Management Private Limited. The methodologies will keep evolving with new insight based on the ongoing research and will be updated accordingly from time to time.

▸ Past performance may or may not be sustained in future and is not an indication of future return.

FACTOR INVESTING:
THE ROAD AHEAD

" **How many millionaires do you know who have become wealthy by investing in savings accounts? I rest my case.** "
-Robert G. Allen

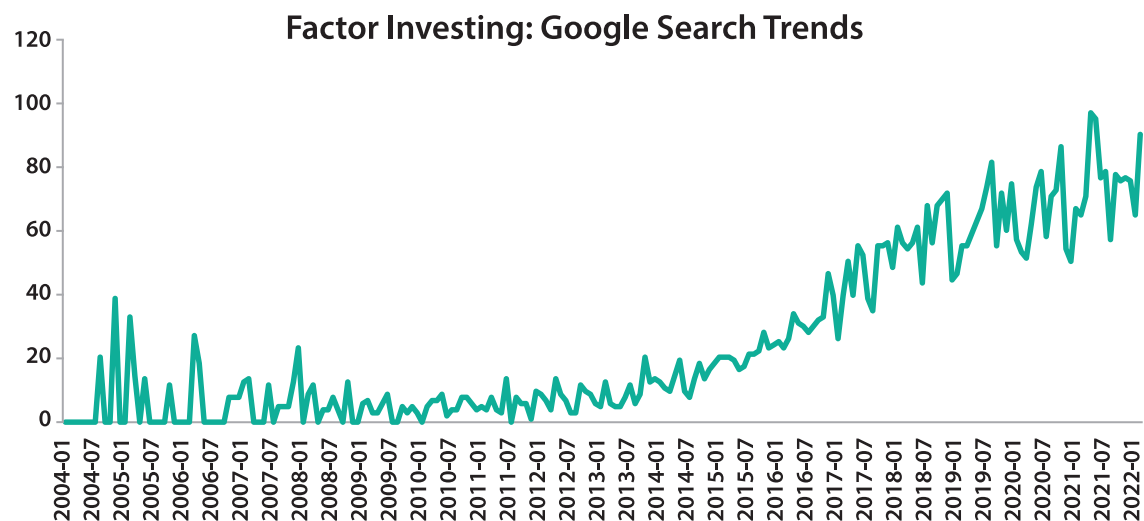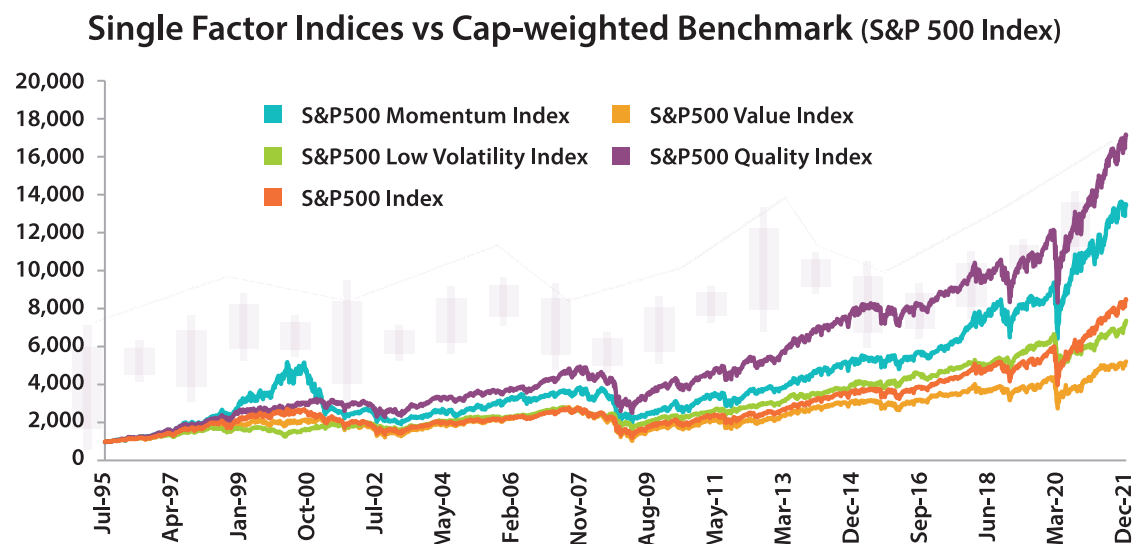" **The biggest risk of all is not taking one.** "
-Mellody Hobson

For More Details

The chart below depicts the global Google Search Trend for the word "Factor Investing" over the period January 2004 to January 2022. As visible, the interest towards factor investing over time has increased exponentially over the last couple of decades.

Factor Investing: Google Search Trends

Source: Google Trends

Single Factor Indices vs Cap-weighted Benchmark (S&P 500 Index)

S&P500 Momentum Index S&P500 Value Index
S&P500 Low Volatility Index S&P500 Quality Index
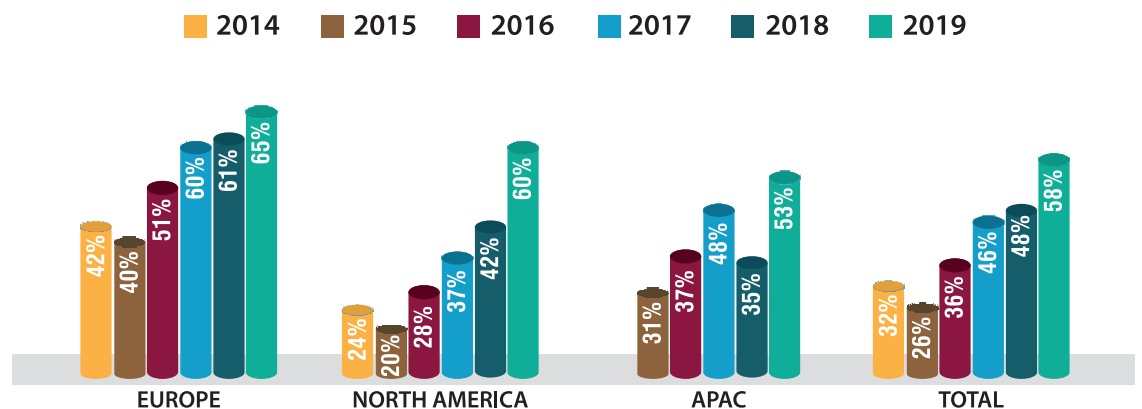S&P500 Index

Source : Bloomberg

This chart depicts the growth in the NAVs of S&P's factor based indices vis-a-vis that of the S&P 500 Index over the period 4th July 1995 to 31st December 2021. All the NAVs are in USD and have not been converted to INR. All the indices have been scaled to 1,000 as of 4th July 1995.

Past performance may or may not be sustained in future and is not an indication of future return.

FACTOR INVESTING : THE ROAD AHEAD

The chart above demonstrates the growth of Standard and Poor's (S&P's) factor-based indices vis-a-vis their benchmark capitalisation-weighted parent index i.e. the S&P 500 index over the period July 1995 to December 2021. As evident, there has been substantial outperformance by Quality and Momentum factors respectively, while there has been some underperformance by Low Volatility and Value factors, of which the Value factor has been the worst performing factor over the entire period.

According to a survey conducted by FTSE Russell in 2019 to evaluate the prevalence of smart beta/factor based strategies among 178 asset managers spanning across various AUM tiers and regions, over 71% of the respondents have adopted smart beta strategies in their portfolios. In addition, of those who were still evaluating such strategies, more than half indicated plans of incorporating them in their portfolios within the next 18 months. Interestingly, the growth of multi-factor smart beta strategies has been especially dominant, with 71% of managers using multi-factor strategies in 2019, as opposed to 49% in 2018. It is also worth noting that over 60% of the surveyed respondents have adopted smart beta strategies to make long-term strategic allocations as opposed to a mere 7% asset managers that primarily use smart beta for short-term tactical purposes. (FTSE Russell, 2019)

	2014	2015	2016	2017	2018	2019
EUROPE	42%	40%	51%	60%	61%	65%
NORTH AMERICA	24%	20%	28%	37%	42%	60%
APAC		31%	37%	48%	35%	53%
TOTAL	32%	26%	36%	46%	48%	58%

Asia Pacific was not included in 2014. Sample size for Asia pacific was 16 in 2015 and 20 in 2018, below the preferred threshold of 30.

Source: FTSE Russell's Smart Beta: 2019 Global Survey Findings From Asset Owners

One of the main reasons for the lack of adoption of such strategies in India has been the relative lack of their availability. Also, the availability of data, across time as well as companies, has been very constrained. Over the last few years, NJ Asset Management has put together high quality data spanning more than 20 years to create a repository of daily factor scores for over 1,500 companies. This database, combined with our in-house data analytics capabilities have provided the foundation for our factor based strategies across our portfolio management and mutual fund offerings.

In terms of future possibilities however, we are just at the beginning of our journey. As computing power, data analytics and evidence based intelligence transform other industries, we are working on adaptive rule based strategies that we expect to define the future.

One of the key areas where we expect progress is the development of protocols that assign weights to individual factors based on prevailing market conditions. This will be a stepping stone to truly adaptive protocols that rely on data driven machine learning technologies to deliver a superior investment experience that is within the reach of all investors.

Consequently, we see investor acceptance of these strategies only increasing from this point with the availability of a diverse range of strategies. NJ Asset Management is the first exclusively dedicated rule based active manager in India and plans to lead this effort.

With almost all mutual fund investments held in discretionary active funds, factor based investments are a natural diversification opportunity. This eliminates human bias at the investment decision making stage along with time-bound rebalancing providing a markedly different approach than the currently dominant strategies.

Moreover, the share of the mutual fund industry in financial and total savings is still extremely low. As the economy matures and inflation experiences a structural reduction, the preponderance of fixed rate savings is also expected to moderate. With a share of more than 50% of financial savings (The Reserve Bank of India, 2020), this pool of fixed rate savings is expected to drive the growth of professional asset management in the coming decades.

NJ Asset Management believes that the success of factor-based strategies in generating positive excess returns in a cost-effective manner and the relentless research to make factor performance more consistent will make the adoption of these inevitable in India over the coming decades.

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OVERVIEW

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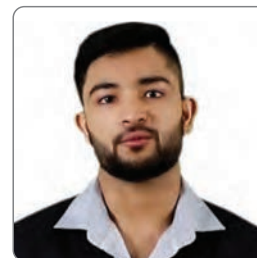## RESEARCH & CONTENT

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