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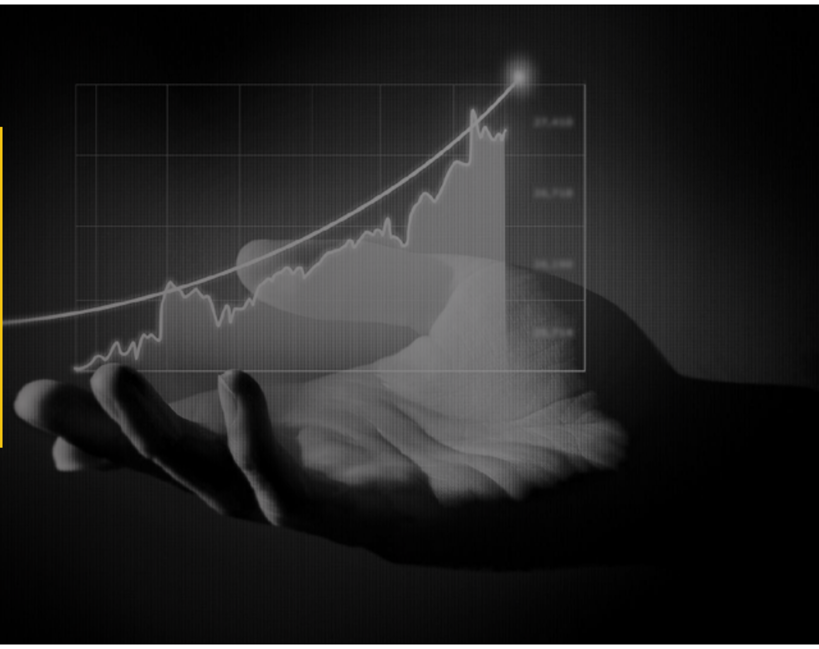
LAYERING QUANT INVESTING WITH FACTORS: STACKING THE ODDS IN YOUR FAVOUR



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Alpha is the holy grail of investing since it reflects the skill and performance of the portfolio manager. Downside protection is equally important as it helps preserve capital and reduce volatility. However, achieving both alpha and downside protection is not easy. It requires a deep understanding of market dynamics, the risk factors at play, and the investment opportunities available. It also requires a disciplined and consistent approach to portfolio construction, asset allocation, and risk management, thereby creating an interesting investment conundrum, i.e., should you gravitate towards alpha generation at all cost or primarily focus on downside protection.

Over the years, investment managers have found quantitative investing to be an ideal solution for this challenge. Quantitative investing helps to achieve alpha and downside protection by using data-driven and systematic methods to understand the long term relationship between the economic and fundamental variables with returns, and use mean reversion to benefit from them.

The trifecta of investment styles

When it comes to investment management, most people either think about actively buying and selling stocks to find the next big opportunity while many others believe that by simply following the market indices they will be able to achieve their portfolio goals. But there's more to it than that. In fact, there are three major styles of fund investment that you need to know: Active, Passive, and Quant.

Investment approach	Active Investing	Passive Investing	Quantitative Investing
Definition	Involves actively selecting and managing individual securities in an attempt to outperform the market. It utilises in-depth research and analysis to identify individual securities that are expected to outperform the market.	Involves tracking a specific index with an aim to replicate its performance by creating a portfolio that mirrors the index in composition. The goal is to achieve market returns without actively managing the portfolio.	Involves complex algorithms and mathematical models to analyse vast amounts of data and make investment decisions. Quantitative strategies employ various factors such as quality, value, and momentum to identify potential investment opportunities.
Style	In-depth research, stock picking, high flexibility	Low cost, index-tracking, broad market exposure	Data-driven, mathematical, models, systematic approach

The shifting landscape

In recent years, the global investment landscape has witnessed a significant shift towards passive investment, with investors becoming more cautious about their choice of approach. One contributing factor to this trend is the consistent underperformance of active funds.

As per the recent report by S&P Indices Versus Active (SPIVA), in 2022, most active funds in the Indian equity large-cap category failed to beat their benchmark, the S&P BSE 100, which gained 6.0% in 2022. In fact, 88% of active funds underperformed the index in 2022, and the underperformance rates remained high over three- and five-year periods, at 96.7% and 93.8%, respectively12. This suggests that the excess returns of active funds in this category are on the decline, as they struggle to generate consistent alpha over the market. Among these, the best-performing category in the long run was Indian equity mid-/small-cap with 50% of active funds in this category outperforming the S&P BSE 400 MidSmallCap Index over the 10-year period ending December 2022. This indicates that active funds in the mid- and small-cap segments of the market have more opportunities to exploit inefficiencies and diversify their portfolios

Exhibit: SPIVA India Year-End 2022: Percent of underperforming active funds in India

Fund Category	Comparison Index	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)
Indian Equity Large-Cap	S&P BSE 100	87.50	96.67	93.75	67.91
Indian ELSS	S&P BSE 200	76.92	69.77	95.35	63.89
Indian Equity Mid-/Small-Cap	S&P BSE 400 MidSmallCap Index	54.90	58.33	44.83	50.00
Indian Composite Bond	S&P BSE 400 India Bond Index	45.39	71.33	95.77	98.17
Indian Government Bond	S&P BSE India Government Bond Index	68.00	70.83	71.05	82.98

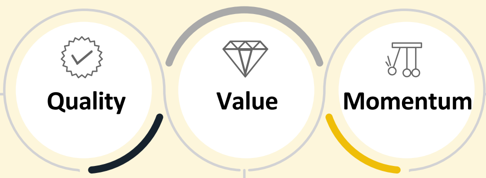
Optimising the quantitative approach

Given the challenges faced by active managers, quantitative investment techniques have emerged as a potential solution. Quantitative strategies rely on comprehensive analysis and statistical models to identify investment opportunities and mitigate the impact of human biases. Quantitative investing has several advantages over traditional fundamental investing, such as:

- It eliminates the emotional and behavioural biases that can affect human decision-making.
- It allows for a systematic and consistent application of a predefined set of rules across a large universe of securities.
- It can exploit market anomalies and inefficiencies that are not easily detected by human eyes.
- It can reduce costs and increase scalability by automating the trading process.
- It can enhance diversification and risk management by incorporating multiple factors and constraints into the portfolio construction.

While there are many approaches to quantitative investing, a commonly followed approach is to add a layer of factors to aid investment decision making. We have studied three factors, i.e., quality, value, and momentum to assess how they play out in the Indian markets and whether adding a factor layer to the portfolio can enhance the potential to generate alpha while protecting downside.

The value factor helps investors find undervalued companies that may have high potential returns.



The momentum factor helps investors capture the persistence of price movements.

The quality factor helps investors filter out low-quality companies that have poor performance or high risk.

We have used these three factors to test the market and evaluate both the recent as well as long term performance of these factors. We expect an increase in returns accompanied with decrease in risk as measured by the standard deviation of each of these factors. Except one, these conditions are met by other factors.

Methodology

For each factor, we divide the stocks into five baskets called quintiles (containing 20% of data). The Q1 quintile will have the top 20% stocks with best values for the factor, while the remaining basket will have the rest 80% of the stocks. We will compare CAGR and standard deviation of both Q1 vs the remaining basket to see whether the Q1 basket generates excess CAGR and minimises standard deviation. We expect a positive excess CAGR and negative values in risk reduction (as it is desirable for Q1 to be a lower standard deviation than the remaining basket).

Quality

Defined by Multi-Act proprietary methodology, a company may have a grade of A, B+, B, B- or C. Companies with A & B+ are called High Quality companies. The quality factor works well in most of the time horizons and across market caps.

Q1 CAGR	Large	Mid	Small
1 year	15.33%	1.41%	-8.87%
3 year	20.52%	29.20%	28.46%
5 year	15.07%	21.50%	17.95%
7 year	12.30%	16.10%	15.87%
10 year	15.18%	21.55%	24.30%
Since 2006	15.31%	21.31%	22.17%

Excess CAGR by Quality	Large	Mid	Small
1 year	5.5%	4.3%	-7.4%
3 year	-1.2%	5.4%	0.8%
5 year	5.1%	10.0%	9.6%
7 year	0.6%	3.1%	4.8%
10 year	1.2%	5.7%	9.4%
Since 2006	1.7%	8.6%	9.8%

Reduction in risk by Quality	Large	Mid	Small
3 year	-20.2%	-0.9%	-12.5%
5 year	-15.8%	-0.8%	-11.5%
7 year	-12.0%	0.5%	-9.1%
10 year	-11.4%	1.1%	-3.4%
Since 2006	-9.6%	0.0%	-6.0%

Source: Multi-Act monthly market snapshot

Value

Defined as Price to Earnings ratio, lower the better. Best class consists of top 20% stocks. The value factor tends to work in smaller caps than in larger ones. In large and mid-caps, the negative excess return as well as positive reduction in risk shows that the Q1 basket of Price to Earnings (the stocks with lowest PE) has a lower yield while the risk is higher compared to the remaining basket. However, further analysis suggests that when coupled with another factor like quality, value tends to pick better winners.

Q1 CAGR	Large	Mid	Small
1 year	8.33%	-1.92%	2.41%
3 year	17.75%	13.85%	31.75%
5 year	8.55%	5.46%	10.13%
7 year	10.64%	9.26%	14.22%
10 year	10.19%	10.71%	18.13%
Since 2006	12.22%	12.33%	15.80%

Excess CAGR by PE	Large	Mid	Small
1 year	-4.1%	-8.5%	5.9%
3 year	-4.3%	-13.2%	5.4%
5 year	-3.5%	-9.0%	1.1%
7 year	-1.3%	-5.2%	3.3%
10 year	-4.9%	-7.2%	3.0%
Since 2006	-2.1%	-1.4%	3.5%

Reduction in risk by PE	Large	Mid	Small
3 year	17.9%	9.0%	20.4%
5 year	10.8%	4.4%	16.1%
7 year	8.7%	4.8%	13.4%
10 year	14.8%	5.6%	16.9%
Since 2006	13.8%	7.3%	10.3%

Source: Multi-Act monthly market snapshot

Momentum

Defined as 12-month price change at the start of the period, higher the better. Best class consists of top 20% stocks that have risen the highest in last 12 months. The price momentum factor works very well in most of the time horizons and across market caps. Only in Small caps, momentum has not reduced risk in recent history.

Q1 CAGR	Large	Mid	Small
1 year	38.46%	15.90%	-1.46%
3 year	26.98%	28.28%	28.61%
5 year	16.59%	13.97%	12.19%
7 year	18.20%	13.68%	13.44%
10 year	18.22%	20.31%	21.06%
Since 2006	17.50%	18.05%	16.84%

Excess CAGR by Momentum	Large	Mid	Small
1 year	34.0%	13.7%	1.1%
3 year	7.0%	4.8%	1.0%
5 year	6.4%	1.7%	3.9%
7 year	7.9%	0.1%	2.5%
10 year	4.9%	4.5%	6.5%
Since 2006	4.3%	5.4%	4.4%

Reduction in risk by Momentum	Large	Mid	Small
3 year	-15.1%	-18.8%	1.3%
5 year	-8.9%	-9.7%	0.2%
7 year	-6.5%	-6.9%	1.6%
10 year	-8.7%	-5.2%	-3.1%
Since 2006	-5.0%	-1.4%	-0.8%

Source: Multi-Act monthly market snapshot

Our analysis indicates that while factor selection remains key, adding a layer of factors can potentially enhance the risk adjusted returns of a portfolio by increasing alpha and reducing risk. However, it is important to highlight that quantitative investing is also a fairly complex exercise as it requires access to vast amounts of data and the ability to effectively parse through the data to identify investment opportunities.

In that context, Multi-Act publishes a monthly report that comprehensively reviews the Indian equity market through the lens of these three factors, i.e., quality, value, and momentum with an aim to identify factors that have performed well in the preceding one and twelve months. The analysis is done basis market capitalisation in order to provide our clients with actionable insights.

The market snapshot for the month of August 2023 can be found **here**.