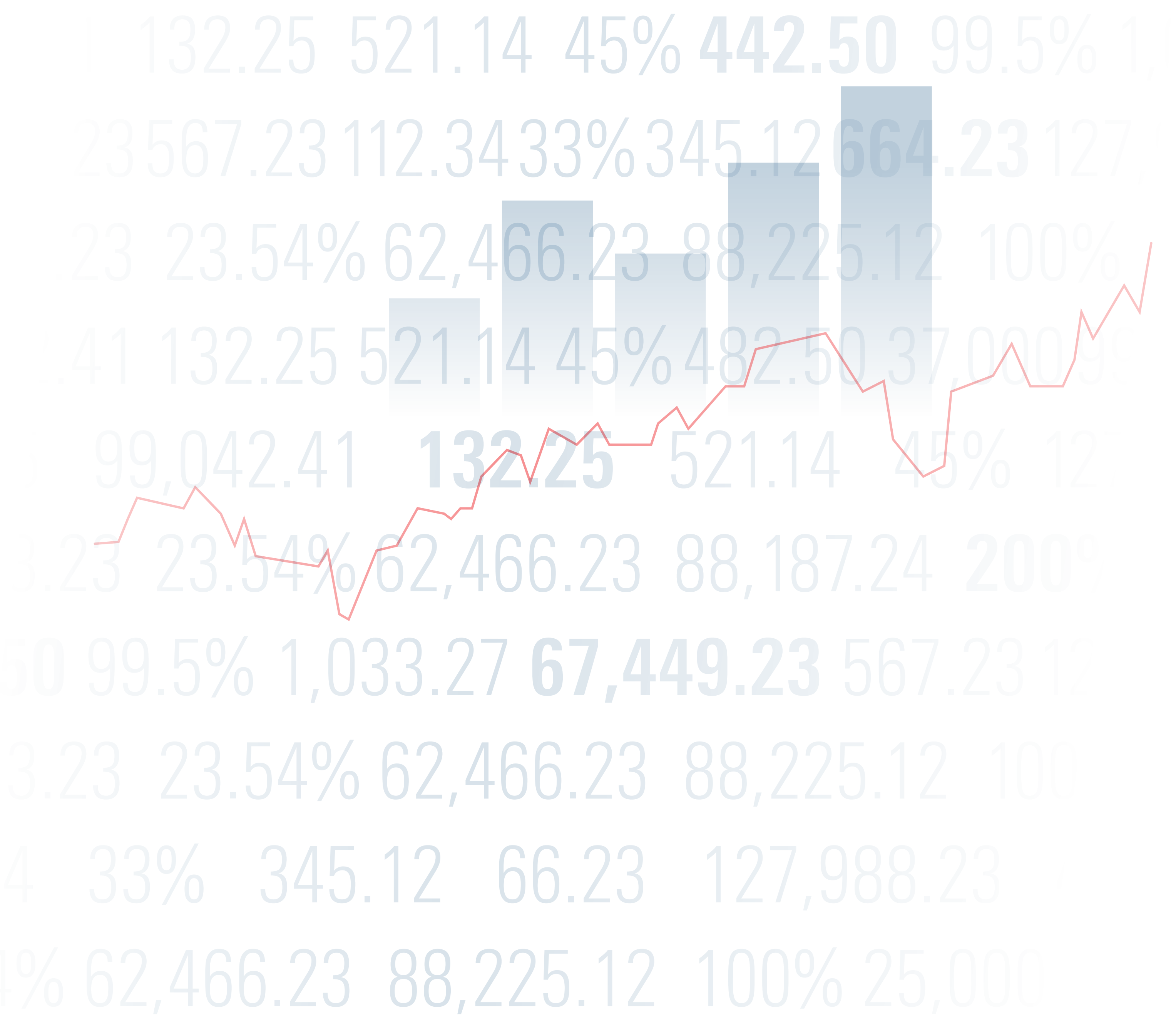
Morningstar's Guide to Fund Selection



1 Origins of Fund Selection

Why Fund Selection?

This guide focuses primarily on the selecting of funds from an asset management perspective. For prospective clients, fund selection and analysis captures the objectives, risks, returns, people, process, portfolio analysis, sustainability, and the costs of a fund. Fund selection works best when structured, consistent, transparent, and trustworthy.

Fund selection can take many forms: from advised selection for investors to discretionary fund management, running a multi-manager fund, model portfolio services, fund ratings, and investment consulting, to pension schemes and institutional investing.

Origins of Qualitative Fund Selection

Modern fund selection can trace its roots back to two main schools; Quantitative and Qualitative analysis. Modern qualitative fund research originates from the marketing mix of: Product, Price, Promotion and Place. Starting first with Harvard's Professor James Culliton in 1948, the 4-Ps was then codified in 1960 by Jerome McCarthy in his text-book, 'Basic Marketing: A Managerial Approach.' McCarthy used 4-Ps to assess an entire end-to-end business, a method that was later popularised by the likes of Philip Kotler in the 1970s. As a generation of Regan and Thatcherite Ivy graduates entered consultancy, 4-Ps was further adopted. In 1981, Booms and Bitner proposed a model of 7-Ps, comprising the original 4-Ps plus process, people and physical evidence. And ultimately, the early multi-managers and investment consultants, like Russell in 1979, adopted the common management approach giving rise of the 'Multi P' model and this has influenced qualitative fund research ever since.

The framework used by Morningstar's fund analysts is based on 5 key Ps:

1. People	2. Process	3. Parent	4. Performance	5. Price

Evolution of Quantitative Fund Selection

In stark contrast to qualitative fund selection; quantitative approaches have their roots firmly in mathematics, statistics and Modern Portfolio Theory (MPT). Despite the name, Modern Portfolio Theory (MPT) harks back to the 1940s and 1950s. It was popularized by the likes of Harry Markowitz, Franco Modigliani, Jack Treynor and later by Eugene Fama and Bill Sharpe. Methods of quantitative analysis have continued to iterate and evolve over the decades.

Developments have accelerated after the start of the new millennium

1950s–60s	1970s	1980s	1990s	2000s
▸ Optimisation (MPT) CAPM	▸ Attribution Arbitrage Pricing Theory (APT)	▸ Heuristics & Behavioural	▸ Stochastic (GBM) ▸ Homoscedastic (correlation) ▸ Value-at-Risk (VaR)	▸ Asset Liability ▸ Fluid Dynamics ▸ Randomness ▸ Heteroskedasticity (ARCH) ▸ Power Laws ▸ Complex Adaptive, Entropic ▸ Extreme Value

Source: Jon Beckert, Chartered MCSI

How Fund Selection Fits into the Investment Process

In terms of the investment process, selecting a fund typically comes after the fact-finding, suitability and asset allocation process. Fund selectors assert the old adage: 'funds are bought never sold.' In other words, a specific fund is considered only once the suitability of an asset class or sector has been determined, or the need to replace another fund arises, or to reflect a change in asset allocation.

Fund Regulations

- *Performance standards*

  In 2010, the Chartered Financial Analyst (CFA) introduced the Global Investment Performance Standards (GIPS) which provide investment firms with guidance on how to calculate and report their investment results to prospective clients. The 2020 GIPS Standards update these principles, ensuring that they are relevant for all asset classes and types of asset managers.

- *Investment Advisor Regulation:*

  The recent Investment Advisor regulations put into focus the segregation of advisory and distribution activities"

❷ The Fund Selection Process

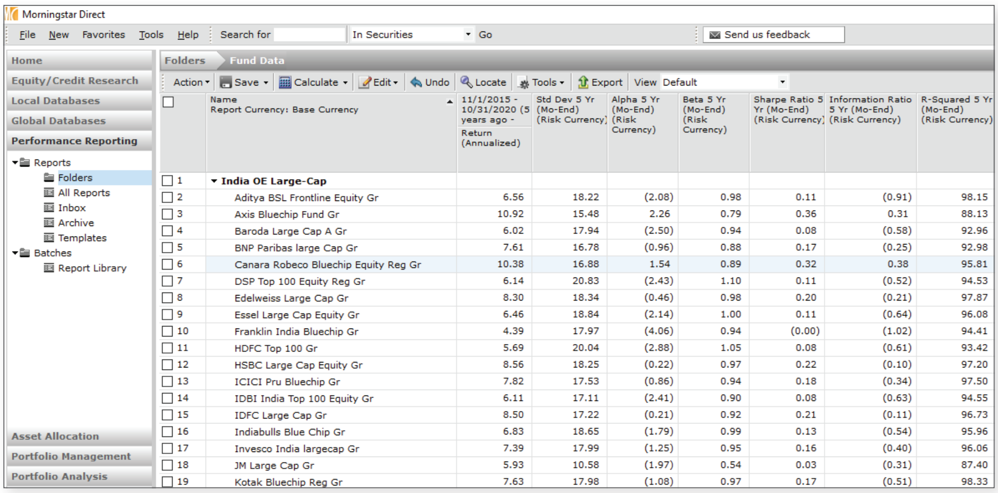
Identification of the manager universe (qualification) setting scope for search, sector, region, asset class, and sub asset class.

Why Fund Selection? There is a wide range of funds with many different investment objectives and investment styles. Each of these funds has an investment portfolio managed by a fund manager, according to a stated objective. Often, the scope of the search is defined together with any restrictions or stipulations, including fund structure, fund domicile, fund size and fund riskiness. The client may add further requirements at this stage.

Although past performance infers a portfolio manager's skill and investment style, it faces:	
1. Chance	The possibility that good performance could be the result of luck, and therefore not consistently repeatable.
2. Statistical Insignificance	Statisticians suggest that a fund manager has to accrue anywhere between 16 and 800 years of past performance data to be statistically significant.
3. Change	Even if good performance is attributable to individual skill; very few portfolio managers manage the same portfolio for any considerable length of time.
4. Style Rotation	The ability to exploit a particular investment style or rotate between styles. This is rarely consistent in changing market conditions.
5. Benchmark Error	Can lead to residual returns driven by different market performance (beta) then being misconstrued as active returns (alpha).
6. Survivorship Bias	The tendency for failed companies to be excluded from performance data because they no longer exist.

Quantitative Screening (creating a long-list, verification of the information)

Analysing a range of Risk Metrics helps to mitigate some of the challenges presented by past performance. For example, fund selectors are interested not just in capital growth and total return figures, but also the volatility of returns.



	Name Report Currency: Base Currency	11/1/2015 - 10/31/2020 (5 years ago - Return (Annualized)	Std Dev 5 Yr (Mo-End) (Risk Currency)	Alpha 5 Yr (Mo-End) (Risk Currency)	Beta 5 Yr (Mo-End) (Risk Currency)	Sharpe Ratio 5 Yr (Mo-End) (Risk Currency)	Information Ratio 5 Yr (Mo-End) (Risk Currency)	R-Squared 5 Yr (Mo-End) (Risk Currency)
1	**India OE Large-Cap**							
2	Aditya BSL Frontline Equity Gr	6.56	18.22	(2.08)	0.98	0.11	(0.91)	98.15
3	Axis Bluechip Fund Gr	10.92	15.48	2.26	0.79	0.36	0.31	88.13
4	Baroda Large Cap A Gr	6.02	17.94	(2.50)	0.94	0.08	(0.58)	92.96
5	BNP Paribas large Cap Gr	7.61	16.78	(0.96)	0.88	0.17	(0.25)	92.98
6	Canara Robeco Bluechip Equity Reg Gr	10.38	16.88	1.54	0.89	0.32	0.38	95.81
7	DSP Top 100 Equity Reg Gr	6.14	20.83	(2.43)	1.10	0.11	(0.52)	94.53
8	Edelweiss Large Cap Gr	8.30	18.34	(0.46)	0.98	0.20	(0.21)	97.87
9	Essel Large Cap Equity Gr	6.46	18.84	(2.14)	1.00	0.11	(0.64)	96.08
10	Franklin India Bluechip Gr	4.39	17.97	(4.06)	0.94	(0.00)	(1.02)	94.41
11	HDFC Top 100 Gr	5.69	20.04	(2.88)	1.05	0.08	(0.61)	93.42
12	HSBC Large Cap Equity Gr	8.56	18.25	(0.22)	0.97	0.22	(0.10)	97.20
13	ICICI Pru Bluechip Gr	7.82	17.53	(0.86)	0.94	0.18	(0.34)	97.50
14	IDBI India Top 100 Equity Gr	6.11	17.11	(2.41)	0.90	0.08	(0.63)	94.55
15	IDFC Large Cap Gr	8.50	17.22	(0.21)	0.92	0.21	(0.11)	96.73
16	Indiabulls Blue Chip Gr	6.83	18.65	(1.79)	0.99	0.13	(0.54)	95.96
17	Invesco India largecap Gr	7.39	17.99	(1.25)	0.95	0.16	(0.40)	96.06
18	JM Large Cap Gr	5.93	10.58	(1.97)	0.54	0.03	(0.31)	87.40
19	Kotak Bluechip Reg Gr	7.63	17.98	(1.08)	0.97	0.17	(0.51)	98.33

Source: Morningstar Direct™

Common risk metrics include:

Using risk ratings like Morningstar Risk Adjusted Return (MRAR) also quickly screens through a fund universe on a risk-adjusted basis. Within each Morningstar Category, the top 10% of funds and ETFs receive 5 stars and the bottom 10% receive 1 star. Funds and ETFs are rated for up to three time periods-three-, five-, and 10-years and these ratings are combined to produce an overall rating.

Multi-factor Analysis and Attribution

Looking at performance returns alone captures what a fund delivered, but not how. Attribution analysis (sometimes known as decomposition) is the method to break down the sources (factors) of return of a fund. It is extremely useful for both separating skill from luck and identifying any significant changes at the portfolio level and understanding if a fund has delivered in accordance with its investment objective. Morningstar Direct™ offers the selector both returns and holdings-based attribution in this regard.

Depending on the type of model/tool, the fund analyst can wok out some or all of the:
1. Risk-free rate of return and fund manager's residual return
2. Fund manager's return from the market (beta) c
3. Fund manager's return from stock selection
4. Fund manager's return from sector selection
5. Fund manager's return from country selection
6. Fund manager's return from cash
7. Fund manager's return from currency
8. Fund manager's return from growth or value stocks
9. Fund manager's return from stock size
10. Fund manager's return from market momentum
11. Fund manager's return from stock quality
12. Fund manager's return from cash flow
13. Fund manager's return from dividend yield
14. Fund manager's return from credit risk, maturity, duration, convexity (bond funds)
15. Fund manager's return that cannot be explained (sometimes referred to as residual)

Active Share

The active share metric provides insight into the activeness of a fund at the stock level. Active share measures the proportion of a fund's assets invested differently from the benchmark.

Metrics such as R-squared, tracking error, style bias, or portfolio concentration can also serve as useful screens. Hence, we recommend using active share in combination with other metrics when screening funds by the level of active management. Active share isn't a foolproof metric, however. If a benchmark has a small number of stocks, for example, it can be hard for a manager to generate a high active share. Similarly the magnitude of out performance for deviating from the index isn't captured.

Qualitative Screening of Manager Attributes

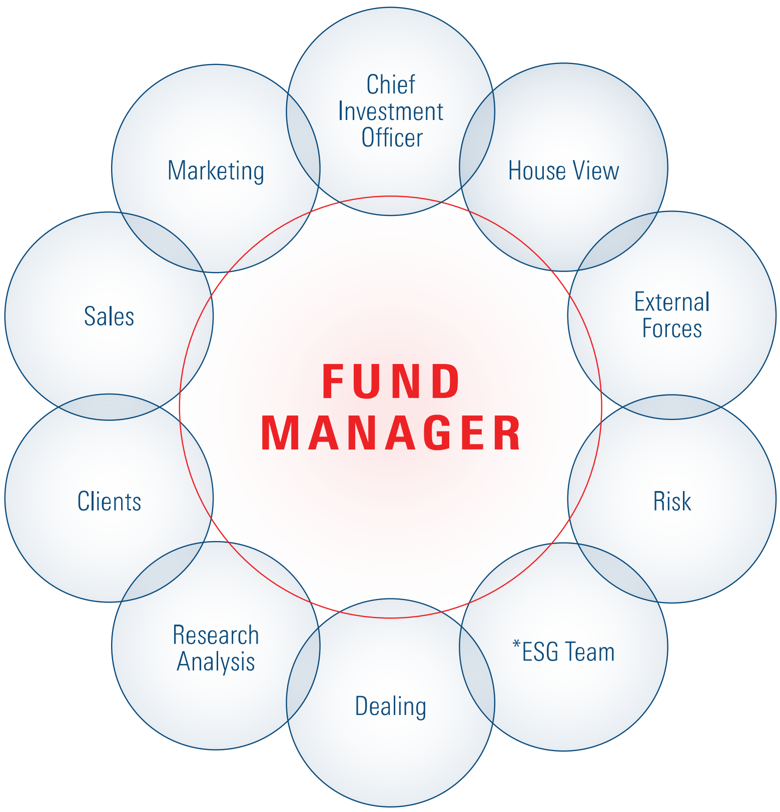
Setting out a range of required characteristics is a useful approach for filtering down a fund universe or refining a fund search.

The selector might screen funds based on attributes like:
1. The aim of the fund (eg, to generate dividend income or long-term growth)
2. The type of strategy it will follow (which will tend to follow from the above)
3. What sectors it will invest in
4. What types of securities it will invest in (equities, bonds, derivatives)
5. A benchmark index that the fund aims to beat (or match, if it is a tracker fund)
6. Thresholds such as maximum stock exposure, section, region, asset class

Peer Comparisons, Scorecard

The ability to select a relevant peer group has become more important as categories have fragmented. It is standard practice for selectors to screen and monitor peer groups on rolling and discrete performance over the previous five years or longer. Screens considering decades of performance may help investors better judge how a fund might perform over extended time horizons and multiple business cycles, or through major market events. Creating a scorecard helps to aggregate different and disparate quantitative and qualitative metrics to allow easier comparison of a peer group.

Fund Manager Interaction Points



Environmental Social Governance remains a relatively new development in due diligence.

Portfolio Inclusion & Allocation

Asset allocation

Once the fund selector has decided to invest, then the next decision is how much to allocate. The selector will first model the effect of adding a fund to the portfolio before investing.

Risk budget

This could be based on any of the risk metrics discussed earlier. For example, contribution to risk (volatility, tracking error, downside) or based on a portfolio metric (price to earnings, debt/equity or duration).

Portfolio X-ray

Looking through to the underlying holdings allows the selector to avoid concentrations at stock, sector or asset level.

Correlation and optimisation

Fund selectors will often run a correlation matrix, which shows how much one fund's returns are similar to the market or other funds. This aids building portfolio diversification when allocating to multiple funds.

Monitoring

Once invested, the work for the fund selector is far from done. The selector will start to monitor a fund, until redemption, to ensure it is behaving and performing in line with expectations. The selector also must be aware of any material changes, such as change of manager fund size or corporate structure. To ensure that investors may judge consistency and cyclicality, performance must be screened over suitable time frames. It is standard practice for reports to include rolling and discrete performance over the previous five years or longer.

Screens using decades of performance may help investors better judge how a fund might perform in the future by showing performance over multiple business cycles, or in relation to major market events. Investors are interested not just in capital growth and total return figures, but also the volatility of returns. Monitoring risk metrics like correlation and drawdown helps the selector spot changes in the performance characteristics and risk profile.

❸ How Has the Fund Selection Process Changed & How are Trends Playing a Role?

Major changes in process

Why Fund Selection? Fund selection continues to evolve. The growing trends in fund research are outsourcing, increased professionalism and the move to better standards of research, selection and governance. With regulatory reform, an important barrier to professionalism was removed: commission retrocession. For the first time, fund selectors will be measured on the quality of their fund choices and no longer influenced by the means by which they are financially rewarded for those choices.

i. Behavioural Economics

Behaviour finance seeks to explain how human behaviour affects financial decisions. For example, over-extrapolation of past performance creates a bias that can lead to excessive risk-taking, or when trying to pick winners among fund managers. Many contemporary studies have found that investing on past performance alone has a less than average chance of outperforming other approaches, as a mean reversion effect applies, (fund managers tend to revert to the mean over the longer-term).

Fund selectors now better understand the cognitive biases that nudge their decision making, such as:	
1. Overconfidence	Excessive belief in the analyst's own ability to pick good funds
2. Over-extrapolation	Predicting future performance based on past performance
3. Projection Bias	Taking a short-term rather than long-term view
4. Decision Short-cuts	Framing, tunnel vision, arbitrary approaches

ii. Environmental Social Governance (ESG)

Investors increasingly want ESG concerns addressed in their portfolios. They want to invest in companies whose activities reflect their sustainability concerns. Ratings can help demonstrate to investors how funds are addressing this need.

Launched in 2016, the Morningstar Sustainability Rating™ gives selectors a way to evaluate funds based on the sustainability profile of the underlying securities. The Morningstar Sustainability Rating for funds is built to enable selectors to directly compare companies across industries, and a refined design aims to make it easier to use as they make investment decisions.

For example, an actively-managed, large-cap equity fund may wish to demonstrate a weighting towards investments with positive environmental, social, and governance (ESG) characteristics.

The Principles for Responsible Investment were developed by an international group of institutional investors, and reflect the increasing relevance of environmental, social and corporate governance issues to investment practices. PRI provides guidelines and support tools on the Selection, Appointment and Monitoring (SAM) of funds in line with the principles.

iii. Liquidity Analysis and Fund Size

There has been a growing focus on liquid analysis, of how easily a fund can manage the maturity of assets relative to cash flows arising from subscriptions and redemptions. There have been many examples when the illiquid nature of the underlying assets has led to gating, suspension or even fund closure. That means either investors cannot access their money, or have to join a queue to get their money back. As an actively managed fund becomes larger, so its performance may suffer (this does depend on the actual strategy and the asset class invested). The reasons for this can be many. For example, a fund manager may have, at any one point in time, a finite number of best ideas. Sales flows often lag fund performance and coincide just as a fund manager's approach/style falls out of favour. This is often referred to as reversion to mean. This gave rise to the term of 'supertanker fund.'

iv. Fees & Cost Pressure

Fund Charges have become a very hot topic in the industry. It is all about clarity and transparency of the ongoing charge figure/fee (OCF), to make sure investors know exactly what they are paying and how firms use these charges when supplying performance. Funds that impose high charges can put the investor at an immediate disadvantage and prove to be a significant drag on subsequent fund performance. However, as performance is normally quoted on a net of fees basis, some fund managers have still managed to justify their higher fees over the years based on past returns *v. Digitalisation/Technology*

The effect of technology in asset management creates what we might refer to as a 'new fund order' that changes the ways funds are managed and selected. In response, fund selectors are evolving, looking to financial technology to automate or improve manual selection processes and thus reduce time pressures on the fund selector.

Key areas of the way technology is changing fund management and fund selection include:
1. Systematic and big data funds
2. Algorithmic and machine learning strategies
3. Machine learning used to improve selection processes

Morningstar launched its own machine-learning rating in 2018. The Morningstar Quantitative Rating™ is "created by a machine-learning statistical model and analogous to the Analyst Rating a Morningstar analyst might assign to the fund if an analyst covered the fund. Gold, Silver, or Bronze ratings are considered positive. The Quantitative Ratings are calculated monthly. Investors can use the Quantitative and Analyst Ratings the same way. The quantitative approach provides a forward-looking assessment of a much broader group of funds than the Analyst Rating."

vi. Rise of passive investments

Passive management is seen in index tracker funds. They are most popularly invested through Exchange Traded Funds (ETFs). The debate about using passive, over-active strategies traces back to the 1970s, but it really started growing in the retail space after Vanguard founder, John Bogle, wrote Common Sense about Mutual Funds in 1999. Conventional wisdom has shifted recently in favour of passives, which are supported by many academic studies that cast a shadow on active managers. When selecting active and passive management, it should be noted that active and passive investments are not mutually exclusive. Index-trackers and actively managed funds can be combined by the selector, such as in a core-satellite approach.

vii. Factor Investing

Despite the name, Modern Portfolio Theory (MPT) has its roots in the 1940s and 1950s, brought to fame by the likes of Harry Markowitz and Bill Sharpe. The rise of factor investing seeks to update MPT by identifying specific market or economic drivers of return. Beta factors arise from the movements, valuations and trading behaviours of equity, credit, commodities or other markets. Macro factors help describe changes in the wider economy, capturing monetary policy, currency, borrowing cost, inflation and volatility. It originates from Arbitrage Pricing Theory, which was first proposed by economist Stephen Ross in 1976, and equity style factors from academics Eugene Fama in 1975 and Fama and Ken French through the 1980s. Funds and indices using factors are sometimes referred to as 'Quantamental,' a hybrid of fundamental valuation or factor analysis.

❹ How Morningstar Can Help

Morningstar Direct

Morningstar Direct™ is an institutional investment analysis platform which brings together all of Morningstar's global data and institutional research, proprietary analytics, and powerful workflow tools. Direct subscribers can gain access to a complete range of securities in Morningstar's global database, including historical portfolio holdings, OE funds, ETFs, stocks, hedge funds and indexes as well as data from third-party providers and integration of the client's private data. Direct can help portfolio managers, investment consultants, product managers, wealth managers, and other professionals select, monitor and develop investments. Create advanced performance comparisons and in-depth analyses of an investment's underlying investment style, as well as custom-branded reports and presentations. Morningstar's qualitative research in Direct can help support ideas with thorough analysis. The content is curated to meet client needs, including actionable research from one of the largest independent analyst teams in the world. Powerful workflow tools in Direct can help build investment selection processes with sophisticated ways to work the data so clients can find the best managers, spot market trends, and assess and build products. Custom peer groups and asset flows can be leveraged for effective peer and trend analysis. Dynamic charts, visualisations, and customised reports can be produced in minutes for in-depth analysis of an investment line-up. Stand out from competitors by positioning products for success by better understanding the investment landscape and responding to demand. Customers can dig deep into the data and research to surface what best sets them apart from other asset managers and appeals to investors around the world.

Learn more about Morningstar Direct: https://www.morningstar.com/products/direct

Manager Selection Services

Morningstar's Manager Selection Services team can help institutions with the Research, Investment Selection, Maintenance, Monitoring and Governance of their party fund ranges. It can help a client's existing internal manager research teams by analysing, creating and monitoring Select Lists of funds for their client portfolios, or can deliver a complete end to end tailored solution where the client does not have the internal capability to do so. Morningstar has a rigorous, independent research process, helping firms deliver better outcomes while helping reduce costs, complying with regulatory and governance pressures, and differentiating themselves from competitors. Ultimately, Morningstar's independence and research-driven approach can guide investors to better investment products.

Learn more about Manager Selection Services: morningstar.com/products/manager-selection-services

Morningstar Essentials

Morningstar® Essentials™ is a marketing toolkit that is designed to help you make use of the Morningstar proprietary statistics that have gained the acceptance and trust of investors and advisors. One of the key components of Essentials is the broad distribution license for key statistics such as the Morningstar Rating, Morningstar Categories, and Morningstar Style Box, plus many more. We too are constantly evolving, from our new sustainability metrics to the Morningstar Quantitative Rating™ for funds.

Learn more about Morningstar Essentials: https://www.morningstar.com/products/essentials

Morningstar Ratings

Morningstar's ratings are used by fund selectors. You can see all the research methodologies here, from Morningstar Analyst rating for funds, to The Morningstar Sustainability Rating.™

Learn more about Morningstar Ratings: https://www.morningstar.com/research/signature

Sources:

- 'Frontiers of Modern Asset Allocation,' by Paul D. Kaplan
- Morningstar Ratings: https://www.morningstar.com/research/signature
- 'New Fund Order 2.0,' by JB Beckett https://www.blurb.com/b/7337318-newfundorder-2-0
- JB Beckett: http://jbbeckett.simpl.com/index.html