Wealth and Investment
Management

BARCLAYS

The Science and Art of Manager Selection

Manager research at Barclays

White Paper | December 2015

Contents

Investments can fall in value and you may get back less than you invest.

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Introduction

Dear clients and colleagues,

In a single sentence, our advice to clients is:

> Design, implement, and maintain a diversified[1] portfolio that is consistent with your financial situation and your financial personality.

In a White Paper published late 2010, *Asset Allocation at Barclays Wealth*, we laid out our approach to asset allocation and explained why we believe most portfolios should include nine asset classes in proportions that reflect the investor's level of risk tolerance and composure.[1]

In this paper we turn our attention to the subject of implementation. Some investors choose to invest only in self-selected individual securities: stocks, bonds, futures contracts, properties, cash instruments etc. However, much more often, implementing some or all of a portfolio involves directing money to one or more professional investment managers. These managers use an index fund, a mutual fund or a separate account to buy and sell individual securities on an investor's behalf. For some asset classes, such as Alternative Trading Strategies, there is no choice; you invest in a fund or not at all. So, whether or not the managers perform their job well goes a long way to determining how an investor's overall portfolio performs over time.

In recognising the importance of this aspect of the investment process, Barclays Wealth and Investment Management has developed a deeply considered and rigorously applied global process for evaluating individual managers. To apply this process, we have assembled a significant team of experienced and dedicated due diligence professionals. Through our process and our people, we identify the investment managers who, in our view, are most likely to perform well in the future. The phrase "Past performance is no guarantee of future results" has become a cliché of disclosure language. For us, it is a core belief.

We want our colleagues and clients to understand the breadth and depth of the process we go through to identify those select managers we include on our roster. So, in this White Paper, we articulate our approach to the science and art of manager analysis, selection, and "de-selection."

Sincerely yours,

Jaime Arguello

Global Head of Multi Management and Manager Research

[1] Diversification does not protect against loss.

Overview

Building the portfolio most likely to achieve your financial goals requires getting two things right. First, you need to identify the right asset allocation. Second, you must implement that asset allocation in the right way. For many investors, implementing an asset allocation involves hiring professional managers, either through a separate account or a fund, to build and maintain the various asset class portfolios. However, while most investors are familiar with the things that make a company's stock attractive (high earnings growth potential, cheap valuation etc), the process of manager selection is often poorly understood.

We all know that a manager's historical performance record is no guarantee of future performance. So, how do we estimate future performance? At Barclays Wealth and Investment Management, we regard manager research and selection as both a science and an art. Like science, our process is formal, structured and repeatable to create comparative data points across institutions and asset managers. Like art, our process is informed by a philosophy that guides our collective judgement. This means integrating our objective findings in a creative way. Our combined approach gives us the confidence to identify and recommend managers to clients.

Inevitably, discussions about manager selection get caught up in the debate over whether investment managers in general are capable of adding value over an index[2] over time. But we are not addressing the active management versus indexing argument here. In fact, we believe there is a place for both investment management styles in portfolios, and we seek to understand each client's financial personality to determine which is the more appropriate investment strategy[3] for them. For investors more suited to active management, this paper explains how we go about identifying, analysing, selecting and monitoring investment management organisations.

[2] Manager research is also important for investors who choose to use index funds wherever possible because not all indexes or index funds are created equal. Some do an excellent job at replicating an index performance, others much less so. A discussion of this branch of manager research is beyond the scope of this paper.

[3] The Wealth and Investment Management unit of Barclays developed a proprietary assessment that combines insights from the science of behavioural finance and psychology with modern theories of portfolio management to help us create an investment portfolio tailored to each client's financial personality and objectives.

Why does a manager selection process matter?

Historically, there's been a lot of time spent studying active manager returns versus indexes to establish whether the average manager can outperform. However, we're not interested in investing with the average manager. Our goal is to invest with some of the best managers in each investment universe, which we define as achieving top quartile risk-adjusted returns over a market cycle, typically three to five years.

That's an important definition, and one that's grounded in empirical evidence. Historically, top quartile managers within each asset class peer group have outperformed the respective index, despite the issues cited in research around survivorship bias.[4] That's why it's worth spending time and effort on manager selection. Figure 1 shows mutual fund 'excess returns' (i.e. the return of the fund (after fees) minus the return of the relevant index) by peer group across a number of common asset classes over the 10 years ending 2014.

Figure 1: Net excess returns (%) of top quartile mutual fund managers by investment style

	Trailing Excess Returns		Calendar Year Excess Returns										
	5Y	10Y	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Average
US Equity Large Cap funds													
Peer Group 5th Percentile	1.72	2.06	9.35	5.49	15.43	6.84	24.95	8.51	4.04	4.29	8.12	1.95	8.90
Peer Group 25th Percentile	-0.35	0.16	3.86	0.29	5.27	0.03	10.14	2.92	-0.98	0.61	3.01	-0.67	2.45
Peer Group Median	-1.86	-0.92	1.03	-2.35	-0.25	-2.68	3.63	0.56	-3.74	-1.70	0.09	-3.11	-0.85
# Funds Ranked	1,601	1,155	2,098	2,230	2,338	2,328	2,179	2,144	2,077	2,077	2,068	2,196	2,174
US Equity Mid Cap funds													
Peer Group 5th Percentile	1.40	2.25	3.20	6.04	21.83	14.86	19.71	5.54	5.68	5.99	9.44	2.07	9.44
Peer Group 25th Percentile	-0.49	0.74	-1.17	1.05	11.39	6.78	5.12	-0.04	0.00	1.20	2.96	-1.49	2.58
Peer Group Median	-1.89	-0.50	-4.01	-2.61	3.67	2.52	-2.42	-3.21	-2.59	-1.56	-0.26	-4.56	-1.50
# Funds Ranked	429	328	537	593	621	632	573	544	551	537	534	548	567
US Equity Small Cap funds													
Peer Group 5th Percentile	2.42	1.60	8.75	7.66	21.78	9.20	20.71	7.19	6.89	4.61	12.40	1.46	10.07
Peer Group 25th Percentile	0.14	0.09	3.31	2.52	10.98	2.87	1.78	1.33	2.23	-0.28	4.62	-1.63	2.77
Peer Group Median	-1.27	-0.93	0.61	-0.83	3.77	-2.09	-7.36	-1.90	-0.62	-3.27	0.35	-3.67	-1.50
# Funds Ranked	433	337	562	615	642	626	562	539	541	538	536	566	573
Global Equity Funds													
Peer Group 5th Percentile	0.49	1.22	10.73	11.03	12.44	10.61	21.99	7.69	3.00	5.51	4.54	1.88	8.94
Peer Group 25th Percentile	-1.73	-0.46	4.38	4.84	4.69	-0.34	9.10	2.38	-2.22	1.15	-0.50	-2.00	2.15
Peer Group Median	-3.57	-1.61	1.19	0.95	0.40	-3.60	3.22	-0.39	-5.93	-1.25	-4.11	-4.92	-1.44
# Funds Ranked	1,781	1,114	2,047	2,244	2,381	2,498	2,532	2,485	2,472	2,443	2,422	2,468	2,399

Note: All the time periods longer than one year are annualised. Excess return measures the return, net of the respective mutual fund's management fees and expense ratios, relative to an index. The number of mutual funds in the study period is shown net of those who have dropped out or gone out of business.

Source: Morningstar, 2015

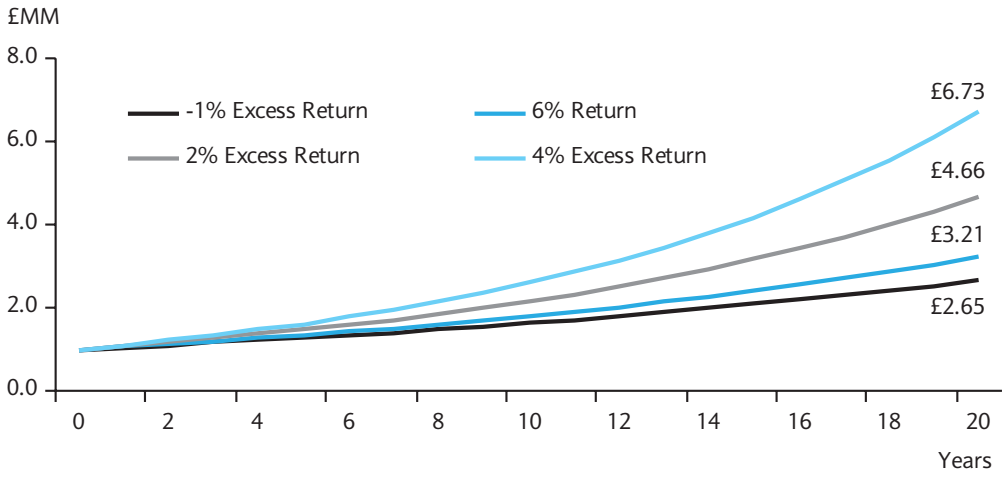
[4] In finance, survivorship bias is the tendency for failed companies to be excluded from performance studies because they no longer exist. It often causes the results of studies to skew higher because only companies which were successful enough to survive until the end of the period are included.

There are a number of conclusions to draw from the data:

- Over the past 10 years, the 5th and 25th percentile managers in each asset class have, in most of these example asset classes, outperformed (i.e. had a positive excess return) on a net-of-fees basis over long-term periods and in each calendar year.
- For top quartile managers, the degree of excess return is highly volatile. This suggests that even if individual managers generate substantial short-term outperformance, they often revert to the mean over time.
- The average (or median) manager's performance, even without taking into account managers who may have dropped out of the peer group, is in most cases below the index.

The compounding effect of these excess returns can have a meaningful impact on a client's wealth over time. Consider Figure 2, in which we map the nominal growth of £1,000,000 over 20 years, assuming an annual return of 6% and varying levels of excess return. The outperformance over time results in significantly more value.

Figure 2: Growth of £1,000,000 based on various return assumptions



Returns are annualised and are illustrative only. Source: Wealth and Investment Management

Over 10 and 20 years, the power of compounding at a higher rate is substantial, with more than a £3.5MM difference in the end value based on a 10% return versus a 6% return on an initial £1MM investment. Obviously this difference can work in both directions, as poor manager selection leading to a lower annual return would have the opposite impact.

Past performance is not a reliable indicator…

If you do buy into the premise that there are managers who can outperform on a long-term basis, and that this can be meaningful to the value of an overall portfolio, then can you just invest in managers who have done well for long-term periods and expect the performance to repeat itself? This paper answers that question on many levels, but an illustration of actual manager returns can help explain why it's not as simple as relying on a manager's past performance.

In Figures 3 and 4, we show Morningstar data from the US large cap and US mid cap manager peer groups that can be used to answer the question: do top quartile managers tend to stay there? The data represents all mutual funds still in existence at the end of 2014 that had at least 10 years of actual past returns. The calendar year data was then grouped into pairs of contiguous three-year and five-year returns.

For the first time period in each pair, managers were grouped into quartiles; the performance of the top quartile managers was then analysed in the second time period. Based on this data, it's clear that top quartile managers do not tend to stay there.

Figure 3: US large cap top quartile managers' subsequent performance

Top Quartile Performance	Subsequent 3 Year Periods Quartile Rank			
3 Year ending Period	4th	3rd	2nd	1st
2007	29%	23%	22%	26%
2008	35%	30%	20%	16%
2009	22%	24%	25%	29%
2010	22%	22%	22%	34%
2011	18%	22%	22%	38%
Average	25%	24%	22%	28%
Top Quartile at 5 Year	**Subsequent 5 Year Periods Quartile Rank**			
Ending Period	**4th**	**3rd**	**2nd**	**1st**
2009	24%	24%	28%	24%

Note: All the time periods longer than one year are annualised. Excess return measures the return, net of the respective mutual fund's management fees and expense ratios, relative to an index. The number of mutual funds in the study period is shown net of those who have dropped out or gone out of business.
Source: Morningstar

Figure 4: US small cap top quartile managers' subsequent performance

Top Quartile Performance 3	Subsequent 3 Year Periods Quartile Rank			
Year ending Period	4th	3rd	2nd	1st
2007	35%	23%	21%	22%
2008	36%	30%	23%	11%
2009	46%	14%	16%	24%
2010	33%	29%	15%	23%
2011	23%	23%	21%	34%
Average	34%	24%	19%	23%
Top Quartile at 5 Year	**Subsequent 5 Year Periods Quartile Rank**			
Ending Period	**4th**	**3rd**	**2nd**	**1st**
2009	45%	21%	23%	12%

Note: All the time periods longer than one year are annualised. Excess return measures the return, net of the respective mutual fund's management fees and expense ratios, relative to an index. The number of mutual funds in the study period is shown net of those who have dropped out or gone out of business.
Source: Morningstar

Consider the "average" data for the three-year periods for both large cap and mid cap mutual funds; on average, only about 25% of top quartile managers in one three-year period remained in the top quartile in the subsequent period. The data is worse for the five-year periods, where 24% and 12% of the top quartile managers stayed there. In other words, as you have read over and over again, *past performance is not a reliable indicator of future results*. While this data focuses on long-only US stock mutual funds, the conclusion holds true for non-US equity funds. The conclusion is less true for hedge funds and not applicable to private equity.

Despite data like that in Figures 3 and 4, performance continues to be the most important aspect in most investor decisions whether to invest with a manager or not. And that's the biggest reason why most investors fail at manager selection. This paper details a different approach.

Different entities pose different challenges

Investment management firms and investment products come together in many different forms, each posing different challenges to a manager selection team. Despite the wide variety, firms and products can be segmented into three categories:

- Traditional or long-only funds or separately managed accounts
- Liquid Alternatives
- Private equity or private real estate funds

These groups differ in terms of how they should be analysed, the amount of information available, and the business terms they provide investors (see Figure 5).

Figure 5: Investment manager classifications

	Traditional Long Only	Alternative UCITS	Private Assets
Ownership	Varies	Varies	General Partnership
Regulatory Oversight	Local regulator	Local regulator	Limited Regulation, Local regulator where applicable
Transparency	High	Mixed	Mixed, Low
Publicly available information on Managers	Public/Private databases	Private databases	Private databases
Publicly available information on underlying investments	Yes	Yes	No
Fees	Management fee only	Management fee + Incentive	Management fee+ Incentive above Preferred Return
Liquidity Terms	Generally daily	Generally weekly	None, 7-12 Year Time Period
# Products	70.000+	800+	3.000
Investment Entities	Mutual Fund, Managed Accounts	Mutual Funds	Limited Partnership

Source: Barclays Wealth and Investment Management.

Traditional investment management is the 'easiest' group to research. There is a wealth of information available through numerous public and private subscription databases and other sources about managers and the components of their portfolios, which are made up of marketable public securities. The challenge is navigating all this information and organising it in a reasonable manner, as well as searching out firms or information that is not readily available to the average investor.

Alternative funds are harder to study due to the lack of public information. Although a number of private subscription databases provide good information on Alternative fund managers, they do not cover the entire investment universe. Also, Alternative fund managers understandably tend to be secretive about their underlying portfolios, especially with respect to their short sales, which make validating the investment process more difficult. The combination of limited public information and less transparency requires manager research analysts to conduct more manager on-site visits with Alternative funds and to assemble more of the required information themselves.

Finally, publicly available information is rarest for firms that make private investments (generally private equity or real estate). Although subscription-only databases exist, they lack the breadth of data that's available in comparable databases for traditional and Alternative fund investments. Further, because the investments in individual private equity funds are drawn down irregularly over long periods of time, and returns are paid out irregularly as well, it is very hard to compare return data among private managers. While managers making private investments tend to be fully transparent with what they own, the lack of public data on the underlying investments themselves makes analysis or comparisons of the portfolio difficult.

Defining success

Any investment process should be held accountable for the results it provides investors. How we define 'success' is crucial.

In situations where a low cost index alternative is available, we seek to identify managers able to add alpha, or risk-adjusted excess returns, of greater than 2% for Equities Strategies (1% for Fixed Income strategies) annually to readily available passive solutions over a market cycle. This definition of success applies to traditional management where there's an ability to invest easily and cost-effectively in the beta (the overall market movement) of a given asset class.

With Alternative funds and private asset manager selection, where no simple index alternatives are available, our definition of success refers to:

- An absolute return target: returns should be positive over the life of the investment or over a market cycle.
- The return should be greater than that of the closest liquid substitute available in the public markets. For example, a merger arbitrage hedge fund manager should do better in terms of risk-adjusted returns than a mutual fund that specialises in merger-related special situations.
- Peer group performance: we seek to generate excess returns relative to published peer groups of other Alternative funds or private equity managers who are investing in a similar manner and time period.

Having a defined measure of success allows us to judge ourselves objectively and creates accountability within the research process.

The art and philosophy guiding our investment manager selections

Investment management is a unique business in that success is harder and harder to replicate moving forward. Hence, the industry's well-known disclaimer, "past performance is not a reliable indicator of future results." Our core belief is that there is a minority group of managers in the investment community who, over reasonable time frames, can be expected to produce alpha. We believe that these managers may work within any type of company, from a small boutique to a very large investment house, and may adopt one of many investment styles. The team is comfortable selecting 'star' managers, who act with a high degree of autonomy, as well as more team-based processes, while being aware of the potential risks inherent in both.

Given these beliefs we do not automatically screen out certain investment styles or manager types in our selection process. Rather, the approach is to try to identify managers whose success has been based on their investment skill (rather than luck).

We believe that there is no one simple way of verifying the presence of such skill and hence the manager selection process draws on a multitude of qualitative and quantitative techniques which, when combined, give an informed view. At all stages in the selection process our manager research analysts are looking for evidential support for the presence of key manager skills and verification of the manager's stated investment style and process.

Notwithstanding our approach to organisations of all sizes, particular attention is given to a good degree of alignment of interest with investors both from the structure of the organisation (boutique or large managers with the proper incentives) as well as to management of capacity. Independent organisations that are majority employee-owned will generally do a better job of managing asset size. These organisations tend to have a direct ownership stake in their business, more of their own money invested in their actual products, and fewer points of distribution to various channels. We believe this ownership structure creates a stronger incentive to keep the asset size from getting too large.

The science of due diligence in four parts

Our manager due diligence process can be divided into two distinct steps: the investment due diligence which identifies best in class managers and operational due diligence to ensure operational structures are aligned with our requirements. As we believe in the value of specialisation, these two components of our Manager Research process are implemented by two different teams with well-defined approaches.

Investment due diligence is implemented following defined steps covering:

- Quantitative screening
- Investment team and organisation attributes
- Investment process structure
- Analysis of historical track record and statistics

Operational due diligence has established expectations and standards of how an external investment management firm should be structured and operate, and our due diligence evaluates how well a given organisation meets them. At times this can be subjective and require judgement, drawing on the expertise and experience from the team and dependent on the strategy, fund structure, dependency on service providers, etc. Operational practices usually vary from one organisation to another. Should some aspect of a firm's organisation or operations not meet our overall assessment, the operational due diligence team may issue a fail and the fund will not be approved.

In contrast, with investment processes or historical performance statistics, we don't have a predetermined set of standards. Evaluating the investment process is the most time-intensive and difficult component. Different firms with entirely different structures and track records can be very good investors, and it's important to remain as open as possible to reviewing each entity independently. The critical aspect is that we view the track record a firm has produced as a *validation* of the quality of an organisation and its operations and investment process, not an *indicator* of a 'best-in-breed' manager.

Quantitative screening

The investment universe available to implement our Manager Selection process is extremely large. This characteristic of the investment management industry is a direct justification of the need for a robust and consistent Manager Selection process aiming to identify a limited number of managers across asset classes. Quantitative screening is a useful tool in filtering down an investible universe into a much more relevant peer set of managers who are likely skilled and display the attributes expected of skilled managers. The quantitative screening has two key characteristics:

The screening criteria must remain sufficiently broad such that it does not over-concentrate on certain manager styles during favourable price regimes in our sample period, i.e. short-term momentum managers during bull markets.

The quantitative screen cannot solely verify who is a skilled manager, but identifies characteristics expected during observation of a skilled manager's track record.

The aim of our quantitative screening is not to build a complicated approach but to conduct a simple but effective search. We rank fund managers by using a limited number of statistics deemed necessary that will reduce an investible universe into a more researchable list of suitable managers. We screen over both three and five years, with a preference towards longer track records.

Investment team and organisational attributes

Human capital: Investment talent is the key resource that investment management firms must have. Identifying investment talent is the most difficult task for manager selection teams. It is our belief that to claim our own skill in manager selection, it is key for our team to have prior experience in investment management. It is only by having developed real experience of allocating risk that our team can properly evaluate external managers as peers.

We believe investment talent is defined as a superior capability of individuals to gather and synthesise public information, correctly anticipate market movements and express their conviction via meaningful active exposures. In addition, exceptional managers exhibit portfolio management talent in the way they leave winning positions to run and cut losses rapidly. Detecting investment talent is more art than science and a deep knowledge of the technicalities of asset management, coupled with experience, are the necessary prerequisites to perform manager selection. We aim to identify key features of the portfolio manager's investment philosophy as well as his or her attitude to risk-taking. To assess risk-taking behaviours of portfolio managers, face-to-face interviews with the investment team are combined with detailed analysis of past performance. It is indeed of significant importance to compare the facts with the narrative. This is a key component of our manager research role.

We believe portfolio managers need to be supported by sufficient analytical resources (macro, equity, credit) to effectively implement their investment process (i.e. to facilitate risk-taking and monitoring of investment cases). Through interviews and background reviews, we seek to assess the quality of the analyst team and identify any particular analytical edge these teams might have. It is also important to analyse how the investment team operates, particularly with regards to decision-making. Our preference is for clearly identified risk allocators and flexible decision processes.

In parallel to the investment team structure, we will review the organisation structure of the investment team. The aim is to gauge the continuity of the firm and whether or not non-investment factors could possibly impact its process and ability to replicate its past performance or success.

At Barclays Wealth and Investment Management, we believe the organisational structure should encourage, not hinder, continuity in the firm's investment process. In general, we favour firms with substantial, broadly distributed ownership among employees, offering focused product line-ups in portfolios of appropriate size for their markets.

We look at a firm's current and historical ownership structure. Firms can be 100% employee-owned or majority employee-owned; they can be public companies; or have parent ownership by a financial or strategic owner or an insurance company. All else held equal, we prefer firms where employee ownership is substantial and broadly distributed because we think this structure limits turnover of key investment professionals and supports a long-term strategic perspective on the business. Employee-owned firms tend to be less sensitive to asset growth issues and better at managing their capacity, whereas all the other structures tend to create risks to the business that could impact performance in the future. When examining a firm owned by a parent or 'financial conglomerate' we seek assurances that these companies will be able to retain key employees. These firms also tend to be larger by nature to justify their scale of operations, and may be less capable of properly managing capacity. We particularly scrutinise publicly owned firms, especially the larger ones. Public firms answer to two sets of clients: investors and shareholders. The interests of these two can be at odds, as shareholders look for asset growth, which can be a deterrent to future returns that investors seek. This conflict of interest may make the decision to close a product more difficult at public firms.

Employee compensation structure: We review each firm's compensation practices for its key investment professionals and analysts, preferring firms that compensate key investment professionals in a manner that's competitive and in line with our long-term performance goals and expectations. Many firms have adopted compensation schemes based on rolling multi-year performance in line with their investment time horizon. We believe this is the most appropriate method of bonus compensation. It's also critical that key investment professionals continue to be tied to the firm in terms of equity ownership and/or deferred compensation. Compensation structure is a key determinant to employee turnover, especially in competitive markets like New York, London, Hong Kong, and Singapore.

Assets under management versus capacity: We view excessive asset growth as a potential impediment to future returns and believe it's crucial that investment firms manage their product capacity properly. For every investment product we research, we go through an exercise to determine what we believe is a reasonable capacity for the product.

We are looking for managers that have a thoughtful plan in place regarding their capacity and whose estimate of their capacity is reasonable and similar to ours. Over time, our view on a manager's capacity may change, but any change in the manager's investment process as a result of asset growth or with the intention of increasing capacity raises a red flag.

Our estimates and criteria on capacity differ according to investment style and vehicle (long-only, hedge fund, private equity). If we have any concern about a manager's size or impact on its markets, we review public disclosures around the manager's ownership of its current positions. Our liquidity estimate for equities is a simple formula to calculate days to liquidate 85% of the portfolio using 33% of average daily volume over the past 12 months.

Long-only managers typically provide daily liquidity. Therefore, we want to be very careful that the majority of a manager's portfolio could be liquidated very quickly – if the number of days required to liquidate 85% of the portfolio is above 10, we are concerned and would limit our exposure to that specific fund.

Liquid Alternatives generally offer less frequent liquidity, so we can look at the Days to Exit versus the fund's liquidity terms. As Alternative UCITs funds replicate strategies implemented in less liquid vehicles in many cases, we want to make sure the fund's core positions can be easily liquidated in that timeframe without swamping the market.

For non-marketable investments like private equity, the issue is not liquidity, because liquidity is offered to investors at the manager's discretion. The real issue is the impact that asset size has on the opportunity set (i.e. what a manager can buy) and the ability to create liquidity events (i.e. how hard the position will be to sell). Private investing is unique, however, in that managers are not necessarily burdened by their asset base, because they raise distinct funds. A manager may choose to raise a larger fund because he/she believes the investment opportunity is substantial, but the manager also has an ability to raise a smaller fund in the future if the opportunity set is diminished. This is in stark contrast to traditional and hedge fund managers, who have continuous funds and almost never retain discretion as to when to return capital to investors.

Investment process review

We seek to answer three critical questions when conducting due diligence on any investment research process.

(1) Does the manager have a special advantage in the way he/she picks investments arising from either the kind of information he/she collects or from the way he/she analyses the information? We review the overall distinctiveness and depth of this information compared with other investment managers and publicly available information and data. We also ask ourselves how the manager's process of gathering and analysing information is likely to lead to superior performance under various market conditions.

(2) Has the way the manager uses the information to make investment decisions added value? It is possible an investment manager's information is identical to that of others, but he/she may be able to zero in on important information more astutely, or develop an investment idea from the information that others may not see.

(3) Have the manager's formal, explicit process, discipline and guidelines – the sell-discipline or risk controls – added value to the overall investment process? These guidelines can often serve as effective checks on the emotional aspects of investing. They also help ensure the process is repeatable.

All of our research on a firm's investment process is designed to answer these questions as comprehensively as possible. This is how we go about it:

Review of decision-making structure: Our review of the Investment Process begins with understanding the decision-making process, and how securities are bought or sold in the portfolio. We want to identify who is making those decisions, and make sure that the process has been in place consistently throughout the period of the track record.

We generally prefer processes where the key investment professionals decide on the main risk exposures as opposed to a consensus team model. We prefer investment processes that are structured and comprehensive but do not involve a series of complex steps or excessive bureaucracy.

We believe there are essentially two critical pieces to any investment research process. The first piece is assessing the information a manager gathers to make their investment decisions. We analyse the quality and depth of this information compared to other investment managers. The second piece is the judgement that a manager uses in making investment decisions.

Review of the research process: In the majority of cases, decision-making will be preceded by in-depth research of either macroeconomic conditions, equity fundamentals or credit fundamentals. This is implemented either by a dedicated team of analysts or by the portfolio managers themselves. We seek to identify which specific characteristics of the research process are unique or which features of the research process demonstrate a specific edge versus the research processes of the majority of the investment management industry.

Review of portfolio construction: Here the focus is on making sure that the portfolio has met certain guidelines over time on a consistent basis. The guidelines may have been established by the manager, such as a cap on residual cash exposure, leverage or relative sector weightings. Or, they may relate to one of our own criteria, such as our belief that active managers generally need fairly concentrated portfolios in order to outperform. Analysing data such as concentration levels, the overall leverage, gross/net exposures and the cash weighting at various points in time, the review focuses on verifying that the various characteristics have been consistent over time and that the process is replicable in the future. Any substantive change in these factors could call into question the replicability of past results. We also evaluate portfolio managers on: 1) their ability to express conviction in their ideas through meaningful active exposures; and 2) how and when they choose to exit both winning positions and losses.

Sell discipline: Having a viable exit strategy should be a key component of every manager's investment process, and we pay particular attention to how securities are sold from the portfolio. The decision to exit a security can be just as important as the original purchase and may be more challenging for a portfolio manager due to emotional attachment to a particular investment. We review the manager's stated criteria for sales and compare these with the actual securities they have sold. We are looking for consistency and accountability for these decisions.

Review of historical holdings and exposures: This information may vary greatly based on the type of investment manager and product that we are researching. For a long-only manager, this is generally a simple data request for historical securities on a quarterly basis back to inception or at least through a full market cycle. For Alternative fund managers, there may be issues with transparency or the complexity of the underlying portfolio. Alternative fund managers tend to be more secretive regarding their investments on the short side, but we can obtain overall levels of exposures and historical information. For private equity, we can get all of the historical positions, but because the securities are not marketable, it is much more difficult to get relevant information about the underlying holdings and pricing. In all cases, we are seeking to confirm that our understanding of the manager's investment process correlates with what has actually been owned in the portfolio. This analysis serves as the basis for many of our questions to the manager to assess information, judgement and portfolio construction.

Risk Management process: The approach to risk management varies significantly across asset classes and investment styles. We look for managers that demonstrate a consistent approach between their investment philosophy and their risk process. For example, Fixed Income managers, where risk allocation is very granular and diversified, should have very detailed risk management processes. On the other side of the spectrum, an equities portfolio manager, having a high conviction strategy and an agnostic approach with regards to market benchmarks, will have a more simplistic approach where risk is assessed at the company level instead of specific ex-ante measures.

On-site review with the portfolio manager and team: These meetings are the culmination of our assessment of a manager's investment process. They involve a review of all the questions that arise from the analysis outlined above, plus an overall assessment of the quality of the investment process, the investment team and the efficiency of the markets that the manager trades. At a minimum, this process involves a lengthy meeting at the manager's offices, but more often entails multiple on-site visits and conference calls.

Analysis of historical track record and performance statistics

Every investment organisation has produced some sort of historical performance track record over a given time period, whether it's just a month or 20 years or more. While a track record is an important aspect of the overall analysis, it represents what an organisation has done in the past, and we're much more interested in ascertaining what it's likely to do in the future. We review quantitative data over rolling periods that are consistent with our view of the manager's investment time horizon, typically between one and five years. Rolling periods tend to smooth out the results so that short periods of substantial outperformance or underperformance are not given undue weight, providing a good perspective on consistency of results.

Performance and statistical analysis versus indexes and peers: With long-only managers, we isolate the relevant rolling period that matches a manager's investment time horizon and focus on these factors; excess returns,[5] alpha, beta, standard deviation, Sharpe ratio, Jensen Alpha, information ratio, risk/reward, up/down capture ratio, consistency ratios and correlation. Then we compare these statistics to the market benchmark that best represents the manager's investment universe. Whether the manager made or lost money over time is important to us, but to a large degree, our main gauge of long-only managers is in relation to the relevant market index. This is why we accept some level of volatility and drawdown with long-only managers. However, with Alternative fund returns, we analyse the return stream using shorter rolling time periods to match shorter manager investment time horizons. We focus on absolute returns, standard deviation and Sharpe ratio. Here, our comparison evolves to an absolute level of return or return in excess of cash, although we also make evaluations versus peer groups of other similar hedge fund managers.

Risk statistics: We analyse risk in two ways:

- consistency of volatility and risk-taking over time, and
- magnitude of the largest drawdown.

When comparing long-only managers with relevant market indexes, we look for consistent levels of correlation with the market and of return volatility relative to the benchmark over time. Of course, absolute levels of volatility in the market will change over time, but we want to see that a manager's positioning versus the market is fairly stable; for example, a "defensive" manager's returns should be consistently less volatile than market returns. In addition, we look at what was happening in the market during individual periods of drawdown and how well the losses were recovered relative to the market. With hedge fund managers, the analysis of the risk-taking is more absolute; we want to see consistent levels of volatility over time. We pay particular attention to an Alternative fund manager's drawdowns – the reasons for the loss and how the managers reacted. Drawdowns can be particularly difficult for Alternative fund managers given their compensation structures (incentive fees as a percentage of positive performance and the use of high water marks) and the impact losses can have on capital outflows from the fund.

Historical performance attribution: Performance attribution generally leverages the same data and information as the review of the historical holdings and exposures, but here we try to recreate the manager's performance over time. We need to understand how a manager has driven performance, so we can explain the track record and assess whether it is consistent with the manager's investment style and process characteristics.

For a long-only manager, we look at the individual holdings and analyse the contribution of each security to performance, as well as the contribution of each sector and of cash holdings. This allows us to assess the consistency of the results and what has driven performance over a distinct period (we typically look at calendar years). This analysis is key to validate the description of the investment process as provided by the investment team. For Alternative funds, we generally look at the long positions or at key contributors to the performance of a given period, such as the top 10 contributors and detractors. For private investments we look at each investment that is made as part of a particular fund and how that investment contributed to overall results. We also evaluate the individual internal rate of return (IRR) and the multiple of capital that the investment generated. We look at how individual securities impacted performance, checking for consistency of decision-making, and we seek to verify that the track record has been created in a manner that is consistent with our understanding of the investment process. What we want to know is whether the manager's historical performance is attributable to a small number of very big winners or to a high proportion of moderately profitable investments. The latter pattern is more likely to be replicable in the future.

[5] See the Glossary for definations of these and other terms.

Performance statistics versus assets under management growth: As outlined above, we think the size of a manager's asset base can have a critical impact on performance – with bigger not necessarily better (or worse). To make sure that as the manager's asset base has grown, the quality or nature of the manager's track record has remained consistent, we compare excess returns, standard deviation, alpha and profitability with growth of assets over time.

Private equity and real estate returns: Analysing returns of non-marketable asset classes like private equity and real estate is complicated but important to an overall manager research process. Because returns are based in dollar-weighted internal rates of return as opposed to the widely accepted time-weighted rate of return in the long-only and hedge fund community, return analysis is more challenging. Dollar-weighted returns effectively mean that a manager's decisions over the timing of capital calls, the deployment of capital, and the return of capital, are all significant components of the quality of the return. The overall return generated and the multiple of capital returned are both essential components of the return. Dollar-weighted returns can be overstated if a small gain was generated in a very short time period, which is why using the overall multiple of capital contributed by investors is critical.

Further, there are no simple comparisons for non-marketable managers. The industry generally uses peer groups of other similar investments in private assets to arrive at a comparable universe. But not only do you have to line up the investment universe, you also have to find managers who were deploying capital in similar time periods – the investment's 'vintage' year. Thus, to perform a reasonable analysis of a private equity manager, you have to compare both the IRR and multiple of capital generated to a universe of similar investment mandates, with similar investment time periods. Despite its complexity, it's important to do this analysis of a private equity or real estate manager's previous funds because non-marketable investment managers have, for the most part, done a better job than other types of investment managers of replicating strong past performance in future investments. So, identifying top-quartile performance is all the more critical when dealing with this group of managers.

Operational due diligence

The purpose of operational due diligence (ODD) is not just to defend our clients from operational related loss, but to provide an overall assessment of the investment manager's business and effectiveness of their control environment. We believe that a well resourced, strongly controlled firm will help deliver investment performance in line with our investment due diligence expectations.

We examine and monitor the business risk, operations and control environment of all of investment managers we recommend to our clients, but the most detailed ODD process focuses on our more sophisticated liquid alternatives, hedge funds and closed ended private equity/real estate funds. These vehicles pose the most obvious non-investment risks to our clients: where the organisations may be smaller and resources may be limited; the funds may be private placements; transparency can be challenging; each fund may deal with multiple transaction counterparties and numerous external vendors; and regulatory focus remains high with such funds. Our ODD process focuses on four critical steps in coordination with the investment team.

- Document and Legal Review: Funds are required to have constitutional documents such as a private placement memorandum, subscription documents and, in some cases, a limited partnership agreement. These documents provide extensive information about the offering, its investment guidelines and its terms, all of which need to be reviewed. In addition, the funds will have audited financial statements, which enable us to obtain further information on past performance, financial instruments used, asset valuation practices, fund expense levels and the audit opinion.
- Verification of External Relationships and Vendors: We contact key external providers in order to confirm that the relationship does exist, and as the manager has described. In the case of a fund's administrator, we seek to verify critical fund data such as assets under management, performance, independence of NAV calculations and general relationship with the fund.
- Background Checks: We hire external vendors to perform background checks on the firm, senior members of the front and back office who play critical roles in the management and control environment. The background checks seek to verify an employee's biographical details (such as education and previous employment), search court records, credit checks (where possible), civil findings and media records, confirm property records and analyse regulatory bodies for any adverse findings.
- On-Site Visit: Similar to the investment due diligence, an on-site visit is a critical final part of any rigorous ODD process; it allows us to spend significant face-to-face time with members of the operations team, where we are able to review operational processes first hand and discuss any issues raised by the first three parts of the process. A typical on-site visit involves a discussion of key external vendor relationships, cyber security, the organisational structure, internal administrative and accounting functions, compliance procedures, trading operations, valuation methodologies, fund governance and other key areas of the operational control environment.

For long-only managers that are in a separate account or regulated mutual fund structure, our emphasis is on the firm's trading and execution capabilities, its governance structure, cyber security and business continuity. This is because we have transparency into holdings, and may even custody the assets ourselves, so proper checks on fraud or manipulation of assets are already in place.

We firmly believe that an independent operational due diligence process is a critical component of any manager research effort. In fact, we have built deep enough experience here that managers we have evaluated have been known to ask our advice on how to improve their controls and their operations. Our investment and operational due diligence processes are integrated and overlap to ensure we have proper checks and balances while conducting our research. At the end of day, an operational process tends to be 'pass/fail' oriented; if we do not have a comfort level with the operational structure of any investment manager, we do not invest.

Ongoing monitoring and review

The discussion of our investment and operational processes details the due diligence we perform prior to investing with an investment manager or recommending the manager to our clients. However, a reliable manager research process requires extensive ongoing monitoring to make sure continued investment with a given manager is advisable. After an initial investment, we continue to perform the following for each time period:

Daily/weekly: We monitor news and information on our managers, in real-time, in industry publications and news alerts, to glean any information on the manager, its employees or its key investments. We also monitor performance updates that we receive for any unexpected developments. For our managers who are separate-account equity managers, we receive daily uploads of holdings so we can performance risk analysis and performance attributions.

Monthly: We review managers' performance monthly relative to the standards we have set. Performance can provide a key clue to real-time changes in the portfolio or holdings. In addition, we monitor a portfolio's holdings or levels of exposures, such as gross and net exposures, top positions, or sectoral, regional, or asset class concentrations. If there are any concerns we can't resolve, we discuss them with the investment manager.

Quarterly: We undertake a more detailed formal performance review focused on the relative performance, market factors that impacted the portfolio, and positions that had the greatest positive or negative impact. We also update our long-term quantitative analysis with the most current quarter. We bring any unresolved questions to the investment manager.

Semi-annual: We speak to all our managers on a regular basis; the frequency depends on the complexity of their process and the transparency we have into the underlying investments. The greater the transparency, the less need for direct communication. At a minimum, we speak with each of our managers formally at least once every six months, even if performance and results are completely within our expectations. We formally review any changes to the organisation, investment process, portfolio and performance, and have conversations and meetings with the manager.

Ongoing evaluation: Throughout various steps of ongoing monitoring, we keep our internal scoring or internal rating of managers up to date. This is implemented to ensure that, at any point, the appointed managers remain above the thresholds we have defined to be present in our roster of external managers. In addition, we have implemented a formal monitoring cycle to ensure that our ODD analysis remains current. Subsequently we may change our pass rating if there is a significant change in our operational risk assessment.

Sell discipline and termination process

Our goal in selecting managers is to be invested with them for long-term time horizons, because that will result in the highest returns, and we recognise that excessive manager turnover is detrimental to performance. However, not all investment organisations continue to meet our standards, or manage their organisations properly. The following outlines our thoughts on the criteria which would give rise to considering terminating an investment manager.

When we are analysing a manager's performance track record as part of our due diligence process, we focus on three- and five-year rolling periods. We believe this time horizon gives managers a long enough period to prove their investment acumen, and avoid short-term market cycles. Given this time period in analysing returns, we use the same period in evaluating a manager's actual performance. It is important to understand this time period prior to investing. Our patience in analysing a manager's returns or dealing with poor performance, assumes other aspects of the organisation and investment process are consistent with our initial investment.

We believe the following occurrences are detrimental to a manager's ability to repeat their historical performance:

- Departures of key investment professionals
- Unsustainable growth in assets (or asset decreases impacting business/product viability)
- Negative change in a firm's ownership structure
- Unexpected change in investment process
- Mismanagement of human capital (talent management, retention, succession)
- Deterioration in compliance procedures

We review these factors on a continuous basis and, if needed, the strategy will be placed under our Watch status on the following cases:

- Departure of key professionals requiring analysis of new team structure
- Deterioration of performance requiring detailed analysis and specific review with the investment team
- Change in corporate structure requiring analysis of impact on investment team and process
- Deterioration of liquidity conditions due to portfolio allocation or strategy

Once we decide to terminate a manager, we make every effort to be as judicious as possible in managing the transition. We do not believe that most managers' performance will suffer immediately from organisational issues or the criteria listed above. Nor is it in our clients' best interests to "run for the exits." More often, we attempt to move our clients out in a methodical manner over three to six months, and occasionally longer if it makes sense. We always make our recommendation known immediately, so that clients and their advisors can manage their priorities around taxes and performance.

Conclusion

The stated goals of our manager research process are to identify: (1) traditional investment managers capable of producing excess returns over relevant market indexes after management fees and, if applicable, after taxes; and, (2) Alternative funds and private equity managers producing positive returns, as well as risk-adjusted results and excellence among their identified peers. Consistently identifying these types of managers and investing in them is not an easy task, and the difficulty is compounded by the nature of the industry, especially in the way in which success in the past can work against performance in the future. Thus, we believe success in selecting managers requires having a process that differs from what other investors in the marketplace are using.

Our research philosophy and process have a distinct view on the types of organisations that are likely to create environments for long-term investment success, and we actively seek investment managers that fit this perspective. At the same time, we believe there are multiple types of investment processes that can provide sustainably strong performance, and our investment process review is designed to be as flexible as possible to identify a range of investment firms that can provide our clients with long-term satisfactory results. In researching managers, we emphasise tangible qualitative factors that are backed by rigorous quantitative research. Most importantly, we do not let past performance determine our decision-making. We believe this approach yields a roster of top-quality external investment managers which, in a variety of combinations and in combination with an appropriate asset allocation, provides our Wealth and Investment Management clients with the best chance of achieving each of their unique investment goals.

Glossary and definitions

Alpha: A measure of performance on a risk-adjusted basis. Alpha takes the volatility of an investment and compares its risk-adjusted performance to a benchmark index. If a Capital Asset Pricing Model (CAPM) analysis estimates that a portfolio should earn 10% based on the risk of the portfolio, but the portfolio actually returns 12%, the alpha is 2% (the excess return).

Beta: A measure of volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Simply, the tendency of a security's return to respond to swings in the market.

Company Float: Refers to the total number of shares outstanding for a public company that are actually available for trading. Calculated by subtracting restricted shares from outstanding shares.

Consistency Ratios: A measure of manager performance that compares similar rolling periods, such as quarters or years, to a benchmark, and reports the % of the periods that the manager return has exceeded the benchmark return.

Correlation: A statistical measure of how two securities move in relation to each other. The computation of correlation ranges between -1 and +1. Perfect positive correlation is +1, and implies that securities move completely in lockstep. Perfect negative correlation is -1, and implies that securities move in complete opposite directions.

Excess Returns: Excess return refers to the performance of a security, portfolio, or investment product's return for a stated period minus the return of the benchmark. Excess return implies a positive number, but can be negative if a portfolio returns less than a benchmark.

Alternative Funds: Regulated funds that cover a range of investments but are generally known as being able to use leverage and short securities, and aim to provide absolute return not directly linked to market indices.

Information Ratio: A ratio of portfolio returns compared to the returns of a benchmark focusing on the volatility of excess returns. The more consistent excess returns are over a period, the higher the information ratio will be per unit of excess return.

Private Equity Funds: Unregulated private investment partnerships that are open to a limited number of investors (limited partners). Private Equity funds generally are only available to "sophisticated" investors who qualify based on levels of wealth or income. Consists of investments directly into private companies or conduct buyouts of public companies that result in a delisting of public equity. Private investment often demand long holding periods to allow for turnaround of a company or liquidity such as an IPO or sale to another company.

Sharpe Ratio: a ratio developed to measure risk-adjusted performance. Calculated by subtracting the risk-free rate from the portfolio's return and dividing the result by the standard deviation of the portfolio's returns.

Standard Deviation: A measure of the dispersion of a set of returns from its average. The more spread apart the returns, the higher the deviation.

Traditional/Long-Only Managers: Refers broadly to the long-only or separate account investment manager universe investing in equities and bonds. Generally defined by Separate Accounts, Mutual Funds, and ETFs.

Up/Down Capture Ratio: A statistical measure of a portfolio's performance in a specific market (up or down). Down-market capture ratio is used to evaluate how well or poorly an investment manager performed relative to an index during periods when that index has dropped. Expressed as a percentage.

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