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Active Management or the Equity Risk Premium: Place Your Bets

by The Investment Risk Working Party

Abstract

The investment risk taken by a pension fund comprises strategic risk (i.e. the risk of the strategic asset allocation relative to the liabilities) and active risk (i.e. the risk of the fund relative to the strategic benchmark). In this paper we discuss:

- The relative merits of these two types of risk to the pension fund
- Possible rationales for the levels of strategic and active risk typically adopted
- Mechanisms for capturing manager skill without taking on equity risk
- Issues in setting liability-based benchmarks for investment managers

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Editor's Note: This article is reprinted with permission. It was a paper that was submitted at a previous conference held in June 22-24, 2003 for the Faculty and Institute of Actuaries Finance and Investment Conference. The Investment Working Party consisted of Mike Brooks (chairman), Leon Beukes, David Bowie, Hugh Cutler and Michael O'Brien.

This paper appears on the Web site for the UK actuarial profession, which can be found at www.actuaries.org.uk. The link to "Resource Centre/Conference Papers" points to the presentations for the last three Finance and Investment Conferences. Readers are encouraged to check out this treasure trove of information.

Executive Summary

- The minimum investment risk position for a pension fund can be represented by the "Liability Benchmark Portfolio," which typically comprises nominal and index-linked bonds.

- The pension fund may wish to move away from this minimum risk position with a view to enhancing returns and reducing the long-term contributions to the scheme for the sponsor (and/or enhance member benefits). There are two ways that this might be achieved:
  - Through an allocation to asset classes with the potential for higher returns (e.g. equities), taking on strategic risk.
  - Through employing active managers to add value relative to the market, taking on active risk.

- The relative merits of strategic risk and active risk are summarised in the table below.

Strategic Risk	Active Risk
• Positive equity risk premium implies risk likely to be rewarded over the long-term	• Zero-sum game, but…. • … pension funds may have advantage in accessing "alpha" • … risk return trade-off superior if skilful managers can be identified
• Costs of up to about 10 basis points (based on passive investing)	• Cost between 20 and 200 basis points depending on size and nature of fund (i.e. higher for long-short)

- Currently, pension funds typically have far higher levels of strategic risk than active risk. This may reflect:
  - o An aversion to active risk relative to strategic risk
  - o Lower return expectations from active management
  - o An inability to generate high levels of active risk, as it is diversified across managers
  - o An unintentionally high level of strategic risk due to lack of clarity in the definition of investment risk historically

- Given the ability to diversify active risk, even small levels of genuine long-term alpha (after fees) should be highly valued by pension funds.

- In reality, the decision on the split between strategic and active risk will be down to the subjective views of the trustees and their advisors. This will be influenced by their behavioural biases, level of investment expertise and the amount of time that they are able to devote to the investment policy.

- We expect to see a greater diversity of investment strategies being followed in the future. There are likely to be more long-term mandates being awarded although care needs to be taken on the clarity of risk and return objectives in order to avoid pitfalls from the past.

- Regardless of the investment approach adopted, one of the key messages from this paper is that pension funds should endeavour to ensure that the investment risk budget is clearly defined and that the risk return trade-offs of different investment decisions are understood. There is no one-size-fits-all solution to investment policy.

1. Background

"The focus of consulting actuaries used to be on how to maximise the long-run investment returns of pension funds and reduce costs to the sponsoring companies. Now the emphasis has shifted to the measurement and management of short-term solvency problems and the protection of beneficiaries."

This quote in a recent article written by Barry Riley in the *Financial News* highlights the increased focus on investment risk within UK pension funds. This is the result of an amalgam of factors creating the perfect storm currently buffeting the industry, including:

1. An increasing use of market-based valuation measures both within the actuarial profession and in company accounts (i.e. FRS17, IAS17, etc).
2. Weak equity markets, a questioning of the positive equity risk premium and an inability/unwillingness to sell out of equities at current (perceived) low levels.

3. Greater accountability/expertise expected from fiduciaries in terms of the management of pension plan financing and investment—primarily through the Myners recommendations

4. Higher profile of pensions risk management among the credit ratings agencies.

5. Increasing media coverage of pension scheme disasters, with some members close to retirement being left with nothing, having previously felt their pensions were assured.

These factors do not only call into question the level of investment risk being taken by pension funds, but also where it should be taken to most efficiently enhance returns. This working party's paper in 2001 demonstrated that for the majority of pension funds the investment risk coming from strategic asset allocation swamps the risk from active management. These findings supported two of the recommendations from the government-sponsored Myners report:

...funds should set both targets and risk controls which reflect this, allowing sufficient freedom for genuinely active management to occur.

- "The attention devoted to asset allocation decisions should fully reflect the contribution they can make to achieving the fund's investment objective."

- "Where they believe active management to have the potential to achieve higher returns, funds should set both targets and risk controls which reflect this, allowing sufficient freedom for genuinely active management to occur."

The latter recommendation is in tune with a general feeling that active managers should be given longer-term mandates that are less focused on tracking error and short-term performance relative to indices. In this paper we develop this debate:

turn to page 30

- Section 2 discusses the definition of investment risk and the minimum risk portfolio.
- Section 3 contrasts the relative merits of strategic and active risk to the pension fund.
- Section 4 analyses, and attempts to explain, the current typical split of investment risk.
- Section 5 provides an introduction to market-neutral investing.
- Section 6 highlights the importance of behavioural biases on the split of risk.
- Section 7 discusses future directions including the trend to longer-term mandates.

2. Defining the minimum risk strategy

Investment risk can be defined as the risk to scheme solvency resulting from the investment policy adopted. A theoretical zero-risk strategy is one in which the scheme will maintain the current solvency level regardless of the investment conditions that might prevail.

Whilst this definition sounds simple enough, it becomes fraught with confusion and controversy when one looks to define the basis for calculating the value of liabilities and assets. The industry has been in a state of flux in recent years with battles being fought between the traditionalists, favouring actuarially smoothed valuations, and the financial economists, favouring market-based approaches.

A more sophisticated approach might take explicit account of the incidence of likely cashflow.

Traditional actuarial approaches held sway until the ill-fated Minimum Fund Requirement (MFR) test was introduced in the late 1990s. While flawed in its design, it was the first acknowledgement that the markets dared to move away from actuarial theory and began the process whereby actuaries adopted more market related approach to valuations. More recently the new accounting standard, FRS 17, has provided yet another way of measuring liability value. The latest and, in our view most appropriate, candidate for the minimum risk position is the Liability Benchmark Portfolio.

The Liability Benchmark Portfolio

In their paper "A note on the relationship between pension assets and liabilities," Speed et al propose the concept of a liability benchmark portfolio (LBP). In essence, they define the LBP as the portfolio of assets that, in the absence of future contributions, benefit accrual or random fluctuations around the demographics and would maintain the current solvency level as economic conditions change.

Once the LBP has been identified it can be used as a (scaled) proxy for the liabilities. The relationship between the assets and liabilities will be demonstrated by how the LBP changes over time relative to the assets actually held (including the effect of any active portfolio management).

From the paper, the authors propose that the LBP should consist of fixed income and index-linked gilts that are chosen taking account of the liabilities':

- Duration;
- Sensitivity to inflation; and
- Incidence of cashflows.

What they do not propose is the use of corporate bonds as the constituents of the LBP (unlike FRS17). One other fundamental difference with FRS17 is that it is based on benefits due on discontinuance, whereas FRS17 treats the scheme as a going concern (and hence allows for future salary increases). In effect they propose that the liability measure should typically correspond to the liabilities on the defined accrued benefit method (DABM) as advocated by McLeish & Stewart (C M J.I.A. 114 338-424).

A more sophisticated approach might take explicit account of the incidence of likely cashflows. However, in most instances a portfolio identified entirely in terms of gilts with appropriate duration is likely to be adequate for practical applications.

Uses of the LBP

The LBP aims to meet a number of criteria, namely:

- Providing key decision makers with the expertise, education and information to carry out their responsibilities effectively.

- In particular, providing the key decision makers with a clear and measurable definition of the liabilities.

- Enabling the key decision makers to regularly monitor the effectiveness of their investment policy in the context of relative performance and risk.

- Making available the measurement of the liabilities on the same frequency as the assets.

It is important to note that use of the LBP does not advocate investing in bonds. It merely highlights to trustees, members and plan sponsors the risks to discontinuance solvency of the investment policy adopted. This then allows these stakeholders to make an informed decision on investment policy based on a clearer understanding of the risks to the security of members' benefits.

3. Establishing the Risk Budget

Having identified the minimum risk position we now need to consider the extent to which the pension fund may wish to move away from this position. The rationale for taking on investment risk is the belief that extra returns can be generated and this will reduce the long-term contributions to the scheme for the sponsor (and/or enhance member benefits)[1].

As Urwin et al (2001) discuss, the desire to take on investment risk will depend on a number of factors:

- The employer/sponsor **covenant** to meet future funding (and comfort with movements in FRS17 solvency levels). The stronger the covenant, the more risk can be taken.

- The **maturity** of the scheme. The longer the funding period, the more risk can be taken without compromising the security of final benefit payments.

- The current **funding position** (i.e. surplus/deficit). The larger the funding excess, the more risk can be taken.

- The **risk beliefs** of the trustees (i.e. their subjective views on risk and return).

We would add that the clarity of definition of investment risk is also key, given that the various liability valuation bases (e.g. MFR, FRS17, LBP) offer different views on the risk of an equity-based investment strategy.

Strategic or Active Risk

The two types of investment risk that a pension fund can take are strategic risk and active risk. Strategic risk arises from moving out of bonds and investing in asset classes with higher return potential such as equities[2]. Active risk refers to the risk that an active manager takes on relative to a benchmark in an attempt to produce outperformance.

There are fundamental reasons why we would expect equities to outperform bonds over the long-run (i.e. to compensate for higher economic risk and volatility of returns). A decision to invest in equities is therefore likely to be rewarded by higher long-term returns at the expense of greater uncertainty.

In contrast, active management is generally viewed as a "zero sum game," i.e. the average investor will perform in line with the market (and will underperform net of transaction costs and fees). Active risk will be rewarded over the long-term if, on average, the active managers selected by the pension fund genuinely possess investment skill (and this outweighs the costs associated with active management)[3].

turn to page 32

1) Financial economists would argue that there is no economic benefit to taking on investment risk within a defined benefit pension fund (see Exley et al). However, in practice most trustees take a "scheme-centric" view and do not explicitly consider the impact of pension fund investment decisions on the shareholders of the plan sponsor.

2) For simplicity, we equate strategic risk and equity risk in this discussion, although in practice the strategic asset allocation may include other asset classes such as property. There are a number of complications with the split between strategic and active risk that are discussed in more detail in the appendix.

3) Some investment markets may be particularly inefficient and offer more scope for outperformance. These include currency markets where central banks may be prepared to lose money for political reasons, and markets with major distortions in share ownership (e.g. the Japanese market in the 1990s).

Table 1: Typical Investment Strategies Based on Appetite for Strategic and Active Risk		Active Risk	
		No	Yes
Strategic Risk	No	Liability-matched bond strategy. No active management. (1 – 20 basis points)	Liability-matched bond strategy. Market-neutral active management overlay. (20 – 200 basis points)
	Yes	Allocation to equities, passively invested. (5 – 20 basis points)	Traditional balanced benchmark with long-only active management. (20 – 60 basis points)

Whilst the "zero sum game" principle applies across all investors, there are a number of reasons why pension funds may have the playing field tilted in their favour relative to individual investors. For example:

(a) Being able to negotiate lower fees

(b Because the assets—such as private equity opportunities—are effectively available only to large pools of money

(c) Because institutional investors can more cost-effectively lobby the investment managers to take an active role (or at least interest) in corporate governance

(d) Through greater access to manager research that enables them to identify the more skilful managers.

The implicit "ifs" above are probably quite significant. However, since active risks are typically non-systematic, shareholders can diversify them by using multiple active managers. Any 'alpha' being generated is then wealth that is added to their funds without taking on significant levels of risk.

The table above highlights some of the investment strategies that could be adopted based on different appetites for strategic and active risk. Whilst the vast majority of pension funds have taken on both strategic and active risk in the typical peer-group benchmarked balanced approach, there is now greater flexibility for funds to tailor this mix through the use of index-tracker funds and market-neutral investing strategies.

We have provided indicative costs of each of these strategies in the table. The range typically relates to the size of the investor with larger investors paying lower fees as a percentage of funds under management. However, for the market-neutral strategy this reflects the typical performance fee structure of these funds and the difference between portable alpha (low) versus long-short (high).

4. An analysis of the current position

According to the widely used WM and CAPS surveys, between 65 percent and 80 percent of the assets of UK pension funds were invested in equities as of 31 December 2002.

There is less data available on the levels of active risk used within typical pension funds. However, among clients of the working party members the levels of plan level risk from active management vary from close to zero (a 100 percent index-tracking strategy) to about 2 percent (all invested with one active manager). We believe this is typical (certainly for larger schemes with segregated arrangements) and that a level of active risk much higher than 2 percent at a plan level would be unusual.

Implications of current asset allocation and use of active management

Consider a pension fund with 70 percent invested in equities and with a typical active risk level of 1 percent a year:

1. Bonds are an approximate match for the liabilities of a typical pension plan, and almost all of the strategic risk will come from the investment in equities.

2. Equities have volatility (i.e. standard deviation) relative to pension fund liabilities of approximately 13–18 percent a year.

3. The volatility of the assets relative to the liabilities would therefore be on the order of 9.1 percent to 12.6 percent a year.

4. The volatility from active management is 1 percent a year but, assuming the active and strategic risks are uncorrelated, this only increases total volatility to 9.2 percent to 12.8 percent a year—i.e. substantially the same as the policy risk alone.

Why is the active risk so low relative to the "policy risk" from the strategy of investing in equities?

There are a few possible explanations for this:

1. Plans are concerned with their competitive position and this influences their strategy. In effect they are concerned with the risk of underperforming their peers rather than losing money relative to the liabilities. They are more averse to active risk than to strategic risk and are happy to take on the same level of strategic risk as other funds.

2. Plans are expecting a much higher return from equity investing than they are from active management. On average, active management adds no value, whereas economic advances can be expected to give a positive equity risk premium. Plans may not believe they can identify active managers that will deliver positive net active performance.

3. There is insufficient active risk available, and it is diversifiable. As you increase the level of active risk for a given manager (assuming they can only take long positions), the information ratio will tend to reduce[4]. If you invest across several active managers, the overall active risk level is quickly diversified.

4. Due to a lack of clarity in the definition of investment risk in the past, the policy risk (and hence total risk) may be unintentionally too high.

5. The more explicit measurement of active performance over the short-term has resulted in low levels of active risk due to myopic risk aversion.

We can use mean-variance optimisation techniques to develop some insights into the first two of these possibilities.

Higher risk aversion to active risk?

One way to look at this problem is in terms of a general utility function (see Waring et al).

Utility = Return – risk aversion * variance of return

If we assume a separate risk aversion to active risk and policy risk, we can derive some possible values for the risk aversion by finding the maximum utility (see Waring et al for further details).

It turns out that for maximum utility the policy risk aversion is equal to the policy return divided by 2*policy variance. So for a fund that is expecting equities to outperform bonds by 4% a year[5], with 70% in equities (a total policy excess return of 2.8% a year) and a total policy risk of 10% a year, the risk aversion to policy turns out to be 1.4.

turn to page 34

4) This working party's paper in 2001 discusses this issue in more depth (see Brooks et al).

5) We do not wish to get into a debate on the prospective equity risk premium here. We have used an assumed 4 percent (arithmetic) equity risk premium as this equates to a geometric risk premium of 2.8 percent, which is broadly in line with the median view in industry surveys.

We can do a similar calculation for active risk aversion. For a fund expecting active outperformance of 0.4% for 2% active risk, their risk aversion to active risk turns out to be 5.

We are expecting a ratio of excess return to risk of 0.28 for policy and 0.20 for active returns. That is even though we are expecting equity investing to be a more efficient source of returns than active management, the higher risk aversion derived to active risk implies that the plan is much more worried about taking on active risk than policy risk.

Low expected return to active management

An alternative way to use the same result is to derive how much active return is implied for the risk aversion to be the same (in our example 1.4).

Based on our example of a 2 percent active risk and a 4 percent equity risk premium, the expected active return would need to be 0.11 percent a year to imply the same risk aversion to active risk as to policy risk. The implied ratio of active return to active risk (i.e. the information ratio) falls to 0.06.

This example suggests that if a pension fund believes that their active manager(s) can deliver a (net) information ratio in excess of 0.06, then the level of active risk should be increased. Given the diversification benefits from employing multiple active managers, even lower levels of net information ratio would be sufficient from each manager[6].

Insufficient active risk available

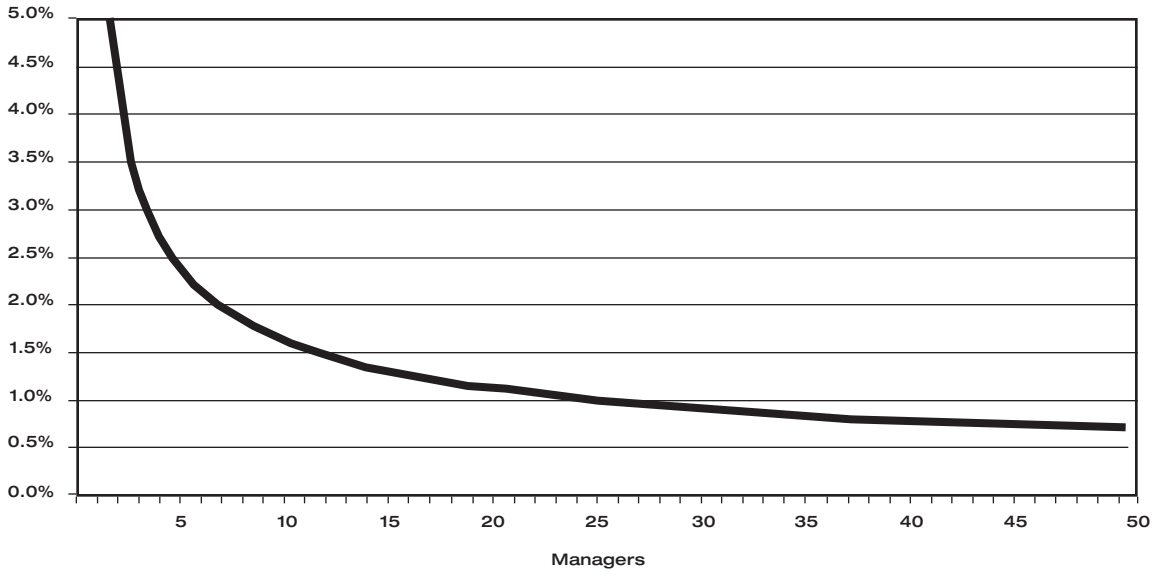
Once a plan is sufficiently large to consider multiple managers, the active risk level rapidly drops. For example, a plan appointing five uncorrelated 5 percent risk managers for 20 percent of the portfolio each will have a total active risk of a little over 2 percent. The change in risk level with an increasing number of managers (assumed uncorrelated and each with 5 percent active risk) is illustrated below.

To achieve higher levels of active risk, plans will need to look toward long-short investment strategies—this has the added benefit of increasing the efficiency as any positive information ratio will not necessarily reduce with increasing risk.

5. Market-neutral investing[7]

Whilst a pension fund can vary the level of strategic risk being taken by varying the allocation to equities,

How active risk varies with number of managers



6) This has interesting ramifications for measuring the success of a manager. Whilst fund objectives may target information ratios of around 0.5, this type of analysis suggests that almost any level of net outperformance over the long-term should be highly valued.

7) Jelicic and Munro provide a more detailed report on market-neutral investing.

8) Although we focus here on market-neutral investing in equities, it is important to note that market-neutral techniques can be used in any type of asset (e.g. bonds, currencies, commodities) to add value without introducing any systematic risk to the portfolio.

it is more difficult to vary the levels of active risk, especially if the fund does not want to take on any strategic risk. In this situation, a market-neutral strategy is required, either using portable alpha techniques or long-short investing[8].

Portable alpha

The portable alpha approach allows the pension fund to receive a return that is equal to the outperformance from an actively managed portfolio plus the return on their desired base asset (e.g. cash, gilts, corporate bonds, etc) with the equity risk being hedged away.

In practice, the implementation of this strategy would involve investing in a long-only equity fund and having a swap overlay which returned the difference between the fund's equity benchmark and the base asset.

Long-short investing

A genuine long-short approach involves the manager holding favoured stocks whilst short-selling stocks that are expected to underperform. The portfolio is market-neutral if the long portfolio and the short portfolio are of equal weights (or more precisely of equal market exposures).

Advantages and disadvantages of the two approaches

Long-short investing benefits from not having to take positions relative to an index benchmark. This has a number of advantages:

- It provides greater scope for managers to add value through shorting stocks. Within a long-only or portable alpha approach, the manager can only underweight a stock by its weight in the benchmark. With a genuine long-short portfolio there is no such restriction.

- All positions directly reflect the manager's views. With a long-only or portable alpha approach, there will be a tail of stocks that the manager does not hold and hence is underweight without necessarily any strong view.

- The potential alpha can be geared up directly and efficiently by gearing up the size of the positions (assuming liquidity allows), e.g. doubling all of the positions doubles both the risk and the potential alpha, leaving the information ratio unchanged. With a long-only or portable alpha approach, the information ratio reduces with increased levels of risk.

Against these theoretical benefits, many investors have concerns over whether long-short funds can genuinely deliver good long-term performance given their relatively short history, high fees, lack of regulation and transparency, and typical emphasis on short-term trading.

In contrast, portable alpha is a relatively simple way of taking a manager's proven long-only strategy and hedging the market risk. This may be an attractive option to pension funds who have a strong conviction in a manager's long-only performance but want to reduce strategic risk.

6. Place Your Bets

The relative merits of strategic and active risk are summarised in the table below.

Strategic Risk	Active Risk
• Positive equity risk premium implies risk likely to be rewarded over the long-term	• Zero-sum game, but.... • ... pension funds may have advantage in accessing "alpha" • ... risk return trade-off superior if skilful managers can be identified
• Costs of up to about 10 basis points (based on passive investing)	• Cost between 20 and 200 basis points depending on size and nature of fund (i.e. higher for long-short)

In our view, there is no clear winner, and whilst we yearn for a mathematical answer, the reality is that the decision will be down to the subjective views of the trustees and their advisors who will face a number of difficulties in making their decision:

turn to page 36

- While equities have outperformed bonds by 5 or 6 percent over the past 100 years, most forward-looking estimates are in the 2 – 4 percent range.

- Alpha is difficult to predict. Most studies find that past performance does not provide a useful indicator for future outperformance. However, whilst investment consultants tend to focus on more qualitative aspects of investment managers (such as people, process and stability of business), recent short-term performance still has a significant impact on the decision-making process for most trustees[9].

Hodgson et al discuss the range of behavioural biases that impact the trustees' decision-making process and estimate that almost half the decision-maker's attention is focused on these biases. Issues that are of particular relevance to the active versus strategic risk balance include:

- The trustees' previous experience of active management.

- The desire to avoid regret risk by adopting similar policies to other funds. It is common practice to adopt significant strategic risk, whereas it is rare to invest significant amounts in long-short funds. A decision to invest in equities is therefore less likely to be criticised if it backfires than a decision to invest significantly in aggressive active management.

The level of investment expertise of the trustees and the amount of time that they are able to devote to the investment policy will also have a crucial bearing on the end result. The Ontario Teachers pension fund (see De Bever et al, (2000, 2003)) provides an interesting case study of how more complex risk budgeting structures can be adopted.

7. Future directions

In the last couple of years there have been some signs that the herd has been dispersing as trustees pay greater attention to investment policy, largely as a result of the Myners report. This will lead to a greater diversity of investment policies rather than the one-size-fits-all peer-group benchmark.

The move away from the peer-group benchmark has been coupled with a general feeling that active mandates should be more long-term and less focused on market indices. The recent competition run by the Universities Superannuation Scheme (USS) and Hewitt Bacon and Woodrow typifies this view.

The trend to long-term, liability-based benchmarks certainly helps focus minds on why the assets are being held. It should also result in an increase in the level of active risk being taken and remove the situation where an active manager is (implicitly or explicitly) forced to hold a significant position in the likes of BP and Vodafone, regardless of their view on the stock, for "risk reduction purposes." Trading costs could also fall as there is less short-termism and rebalancing to stay within tracking error limits.

However, the industry has been here before and needs to be wary of the pitfalls that befell it previously. In particular, the search for a suitable measure

9) If institutional investors can subdue this behavioural bias, then this may provide an underlying rationale for why they can outperform whilst retail investors chasing the hot funds underperform.

of success for managers led to the peer-group benchmark, and natural risk aversion (on the part of both trustees and managers) led to herding around this benchmark. There are a number of issues that therefore need to be addressed with such a mandate:

- What is the split between equity risk and active risk? Who decides on the amount of equity risk to take? If it is the manager, then what risk guidelines are they given?

- How is success measured and rewarded? An absolute or liability-based return target may be inappropriate if discretion for the equity allocation is not within the manager's remit[10].

- The loosened constraints will lead to a far higher risk of large underperformance especially over short periods (e.g. 3 years or less). Can the trustees overcome the natural inclination to look at short-term performance? Will they be able to turn a blind eye if the manager underperforms by a large amount over 3 years?

Regardless of the investment approach adopted, one of the key messages from this paper is that pension funds should endeavour to ensure that the investment risk budget is clearly defined and that the risk-return trade-offs of different investment decisions are understood. There is no one-size-fits-all solution to investment policy—appropriate strategies will range from 100 percent in bonds to 100 percent in equities and from fully passive to aggressively active.

Appendix: Distinction between strategic risk and active risk

Typical bespoke benchmarks comprise a set of weights ascribed to various standard security market indices. The benchmark will also usually include a rebalancing regime, e.g. the benchmark is assumed to be rebalanced monthly, or quarterly, or according to some range limits, etc.

The perception is that if the fund invests fully in line with the benchmark, they will then be exposed only to systematic or pure market risks, which in turn is often perceived as being the 'theoretically correct' position. However, these perceptions are usually mistaken because:

- The index for any particular asset class may represent a mismatch relative to 'the market' of that asset class.

- The overall underlying 'market' may be different from the weighted aggregate of the indices.

- The rebalancing of the benchmark and the rebalancing of the fund are often disjointed.

Index and market mismatch within the asset class

The stylised interpretation of modern portfolio theory is that investors should invest in the market and lever their risk up or down by borrowing or investing in risk-free assets. In one sense, 'the market' represents a sensible starting point for comparing the performance of one's investments.

turn to page 38

10) There may be a perception that over a period as long as 10 years this will even out. In practice this is far from the truth.

However, practical issues have made the definition of 'the market' somewhat hazy and, more pertinently, different from the theoretical notion of 'the market'.

The market as defined in theory contains many assets that typical investors are unable to acquire, even when an exchange exists. Active investment managers have therefore pressurised index providers to create indices of investible assets—an example of this might be the free-float indices. In one sense this is 'fair' since the benchmark is otherwise unattainable by the investment managers.

On the other hand, it can make the comparison 'unfair', not only because the index no longer represents the underlying market espoused by theory, but also because the assets are priced taking into account the fact that not all the shares of a security are traded. This mismatch of pricing basis and performance measurement basis might lead to easy pickings or, conversely, an impossible task for active managers.

Furthermore, in some highly concentrated markets, individual stocks dominate the market and it is difficult to claim then that a fund invested in the index is not exposed to stock-specific risk. Managing money against such an index can lead to decision-making becoming more focused on how a stock will perform against the largest constituents in the index, rather than any exploitable inefficiency in the pricing of the stock. Some alternative indices, such as the multinational and local indices, do deal with these issues albeit somewhat indirectly.

Overall benchmark and overall market mismatch

Apart from individual indices not perfectly representing the individual asset class markets, there is another source of mismatch that manifests itself at the aggregate benchmark level.

This source does not rely at all on the individual indices being inappropriate, but rather on the fact that typical benchmarks are not market-weighted aggregates of the asset classes. For example, in UK DB pension schemes, scheme benchmarks often have 30-50 percent of their funds invested in UK equities, even though the UK market represents less than 15 percent of the capitalisation of the world's stock markets, let alone all the other assets.

If we assume that there are multiple systematic risks (pricing factors) in the market, then any particular combination of indices other than a strictly market-weighted combination will mean that the systematic risk exposures are likely to be tilted away from the market exposures. These tilts generate a 'tracking error' relative to the whole market and a practical question arises as to whether these tracking errors should be considered an element of 'active' risk, or systematic risk.

Arguably, risk should be decomposed into:

a. (market vs. minimum risk portfolio) risk +

b. (benchmark vs. market) risk +

c. (portfolio vs. benchmark) TAA active risk +

d. (portfolio vs. benchmark) stock selection active risk.

The second component (b) is rarely if ever acknowledged, let alone measured. There are, of course, many practical reasons that make it very difficult to measure (b) quantitatively. These include the difficulty in specifying exactly what the market is since it should strictly include a whole lot of untraded assets, as well as the thorny practical and theoretical issue as to how much of that market exposure should be currency hedged.

There also remains the issue of how to take into account other risks that may not be reflected in the market—for example, there is conceivably a risk in investing away from the domestic market because any political or regulatory changes within a country may give preferential treatment to domestic investors at the expense of overseas investors. In other words, there should be a natural home bias in order to mitigate non-economic and non-financial risks.

Rebalancing issues

A final practical issue that makes the distinction between active and strategic risk confusing occasionally is the timing of any rebalancing specified in the benchmark. Although the rebalancing between equities and bonds (where bonds proxy the liabilities), is a non-contentious way of keeping the risk relative to the liabilities reasonably constant, it is less clear how, for example, rebalancing within the equity portfolio should work.

The market itself, of course, does not 'rebalance' and in most bespoke benchmarks there is little or no attempt to rebalance the individual stock weights to be the same as they were when the index was incorporated into the benchmark. However, there is usually a rebalancing of the geographic or sector weights. So, for example, the benchmark may be rebalanced each quarter so that there is 50 percent in UK equities, no matter how the individual stocks within the UK have performed. Any manager attempting to manage this on a global basis will have to take into account some fairly complicated offsets in order to maintain the same risk/reward profile over time as the benchmark changes character.

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