

# Remapping our investment world

October 2003

Thinking ahead – agenda for change

absolute return

doing assets better

long-term mandates

doing pensions better

diversity

short-termism

derivative strategies

doing governance better

fees and costs

multi-asset management

Risk budgeting

beliefs about beliefs

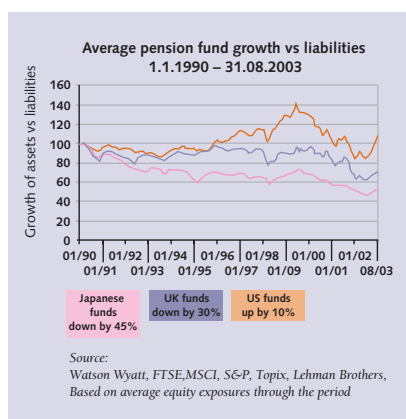


# Remapping our investment world

"It is better to debate a question without settling it than settle a question without debating it."

Joseph Joubert

Institutional pension funds never had it so good until the end of the 1990s – record returns, strong solvency, and better benefits. Now it looks very different. The pensions industry around the world faces a crisis resulting from a combination of difficulties: equities in decline, investment managers under cost pressure, DB scheme closures, DC unpopularity, increased pensions costs, demographic pressures. The chart below shows the growth in pension fund assets relative to their liabilities from 1 January 1990 to 31 August 2003 for the US, UK and Japan. Pension funds have been hit badly, with the impact being only partially offset by market returns this year.



It was against this backdrop, that Watson Wyatt undertook a research project under the heading of 'agenda for change'. As the graphic above indicates, we believe we need to consider the interconnectedness of all things in order to adequately address



the industry's issues. This review contains a number of short research papers, in which we aim to address the wider context. We have grouped the research papers into three sections: doing assets better, doing governance better and doing pensions better.

## Doing assets better

We argue that growing short-termism has become a real problem, and that benchmarks have developed an influence that was never intended, resulting in a lack of diversity. In the light of excessive benchmark influence, we support moves to include absolute return mandates in the asset mix of

pension funds. Such mandates should specify longer-term objectives and be monitored by reference to a number of softer factors. Such mandates might also include fees structured on a fixed (in monetary terms) plus performance/service basis to improve alignment, a basis which would work more effectively in aligning interests on all mandates.

In the assets section, we have also highlighted the opportunities for funds to make more substantial use of derivatives. There are two particularly interesting applications: the use of swaps to manage interest rate and inflation risks, and the use of equity

## Contents

options to refine the risk reward balance of using equities.

### Doing governance better

Rather than address the quantity of the resources devoted to managing the pension fund, we consider how those resources might be alternatively deployed. We argue that successful decision taking requires the application of excellent beliefs; that corporate governance is of increasing importance; and that funds could rethink how they motivate and remunerate the various parties that provide them with services.

### Doing pensions better

We believe that we need to start thinking of pension funds as complex balance sheets, where the liability side is at least as important as the asset side. However, a simpler first step is to improve the clarity of the pension 'deal' – which stakeholders carry what proportion of the risk and how surpluses and deficits should be considered. We can then seek to improve the risk/return profile for the mutual benefit of all stakeholders.

### Important note

*We believe that a better investment framework for funds is possible, but that this will require radical change. This review contains our latest ideas, on both how to frame the issues better, and on how we might begin to address them. We hope this makes a useful contribution to the current debate.*

*These research papers have been written by members of our Thinking Ahead Group who sit within the Investment Practice at Watson Wyatt. Their role is to identify and develop new investment thinking and opportunities and, therefore, the contents of the research papers will not necessarily reflect the opinions of Watson Wyatt. No action should be taken on the basis of any content in this publication without seeking specific advice.*

	page
<b>Doing assets better</b>	<b>2</b>
1.1 Short-termism	4
1.2 Diversity	6
1.3 Risk budgeting	8
1.4 Absolute return and 'Ten-year Mandates'	10
1.5 Multi-asset management reinvented	12
1.6 Investment management fees and costs	15
1.7 Using derivatives to manage risk	17
<b>Doing governance better</b>	<b>20</b>
2.1 Beliefs about beliefs	21
2.2 Corporate governance	24
2.3 Managing the pension fund 'food chain'	27
<b>Doing pensions better</b>	<b>30</b>
3.1 Improving DB design	31
3.2 Improving DC design	34
3.3 DB and contingent claims	36

For more information please contact Carole Judd in the Thinking Ahead group.

# Doing assets better

"The central tenets of an investor's approach to markets emanate from fundamental beliefs regarding the most effective way to generate investment returns to satisfy institutional goals."

*David F Swensen,  
Pioneering Portfolio  
Management, 2000*

## In short

This section explores our thinking on how to 'do assets better'. We do not attempt a comprehensive treatment of all investment matters, but instead consider two new approaches stemming from two beliefs. The beliefs are (a) that short-termism has become an increasingly costly problem, and (b) that pension funds are adversely affected by a lack of diversity. We propose that 'long-term mandates' (absolute return investing) and multi-asset management are two possible solutions to the identified problems.

In considering new investment approaches, we also have the opportunity to consider whether new remuneration structures would be of mutual benefit to both funds and investment managers. The research paper on fees and costs deals with this issue, but also forms the link to the 'doing governance better' section. In a similar manner, we link 'doing assets better' with 'doing pensions better' by considering risk budgeting and

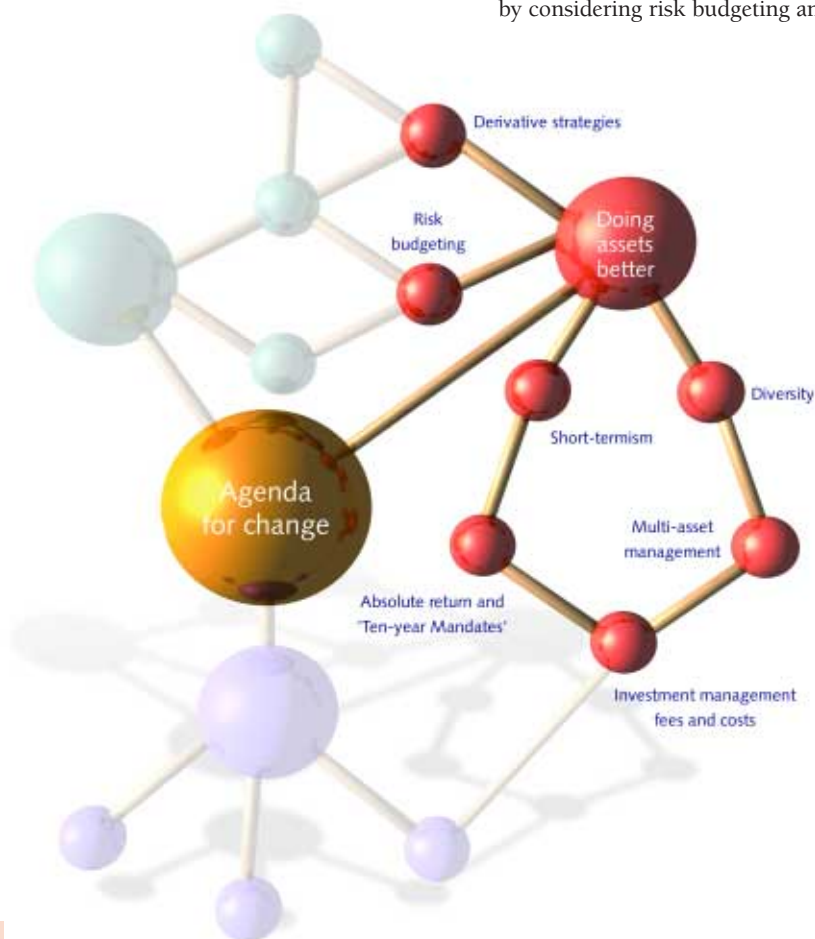
derivative strategies. While both of these subjects could be considered solely in terms of assets, we believe their true importance is highlighted by considering the assets and liabilities together. While we believe that the use of derivative strategies will be adopted only over the medium term, we believe that the risk budgeting discipline is useful for all funds in the short term.

## Short-termism

We explore whether short-termism is a real or an imaginary problem. Mainly for behavioural reasons, we conclude that it is a real problem. These reasons include the pain of incurring losses, the desire for comfort, and overconfidence. The consequences are (1) that costs are too high due to too much trading, (2) that a comfort premium is paid to contrarian investors, and (3) that corporate governance, by necessity a long-term activity, is neglected thereby reducing returns to shareholders. We acknowledge that solutions to the problem are difficult. At a somewhat abstract level, the investment industry will need to grapple with its own behaviour, understand the incentives, and revisit the way decisions are made. On a more practical level, we suggest that absolute return and 'Ten-year Mandates' offer one possible solution to the problem.

## Diversity

We argue that a 'typical' pension fund suffers from a relative lack of diversity. A simple model demonstrates that almost 90% of the typical fund's risk exposure is due to a single bet on equities – the 'equity risk premium' (ERP). The equity allocation may, itself, be well diversified but, relative to liabilities, represents a concentrated risk exposure. We briefly review a number of investment opportunities that would allow funds to increase the diversity of their portfolios. The research paper concludes by suggesting that thinking about exposures to generic risk factors (such as the ERP, liquidity, duration, inflation credit and manager skill) would provide a framework for increasing diversity.





## Risk budgeting

In this research paper we introduce the concept of risk budgeting, which is primarily concerned with answering three key questions: how much risk is the fund taking? is this an appropriate amount? and, where should the risk be taken? We suggest that, by considering these questions together, the plan sponsor and trustee body can draw up a risk 'budget' that will then guide all their investment decisions in a consistent manner. We recommend that such a process of risk budgeting be carried out at least annually to reflect the dynamic nature of investment markets. We then derive three principles; (1) investors should diversify their sources of risk as much as possible, (2) investors should only take risk where it is likely to be rewarded, and (3) if an investor must take a given amount of risk, then he should take it where the expected return is highest. We conclude that the risk budgeting process has three main advantages as a tool for implementing investment policy: by improving governance through greater dialogue between sponsor and fiduciaries; by enhancing investment efficiency through comparing all investment opportunities on a like-for-like basis; and by introducing a more flexible, dynamic decision-making process.

## Absolute return and 'Ten-year Mandates'

This research paper argues both against the misuse of benchmarks, and for the adoption of long-term mandates. We argue that benchmarks have been misused; essentially that they came to define the neutral portfolio rather than simply being one possible measure of performance. Consequently, we believe that they have contributed to the problem of short-termism. We suggest that a solution is to award absolute return mandates, for at least a small portion of a fund's assets, where the performance target is to outperform the inflation index. Setting the outperformance target will be an area of ongoing debate, and will be dependent on the aggressiveness of the mandate. We note that these mandates will be more complex to monitor and will

therefore increase the governance burden. In particular, we argue that managers given such mandates should not be terminated for performance reasons alone. We therefore conclude that the attractions of greater investment manager freedom and creativity will need to be considered against the practical implications.

## Multi-asset management

We suggest a further solution to the problems of short-termism and a lack of diversity may be found in a new form of multi-asset management. This is not a call to return to the old style of balanced. We note its problems, in particular that it evolved from a business of absolute skill, to one of producing relative returns against a moving peer group target. Instead, this new form of mandate could allow us to return to an absolute return orientation, and to access investment manager skill by giving wider freedoms across more asset classes and types of securities. We argue that this new approach is a fresh way of considering the investment 'problem', in an holistic way. We suggest that there are a number of ways to implement it, from appointing a multi-asset manager, through to giving asset allocation responsibility to an in-house executive. We explore the monitoring difficulties and note that the broad skill needed is likely to be in short supply. Nevertheless, for those funds with suitable governance, we believe that this approach represents a valuable addition to the toolkit.

## Fees and costs

Here we argue that the industry-standard fee model, namely *ad valorem* (in proportion to the assets managed), causes a mis-alignment of interests between pension funds and investment managers. (Please also see the governance section of this publication.) The incentive for investment managers to increase their assets under management conflicts with their ability to produce exceptional investment returns. As we believe that the returns from both absolute return investing and multi-asset management will be subject to diseconomies of scale, we propose a

new fee model. This model comprises a fixed monetary component, which is intended to contribute to the investment manager's overheads, and a variable component, which is a reward for skill and/ or service, and would contribute to bonuses and profit distributions. We conclude that aligning interests better is central to managing costs more efficiently.

## Derivative strategies

In this research paper we consider the use of appropriate derivative strategies to manage risk better. We note that futures are relatively widely used by pension funds and their investment managers, but that option strategies are much less common. Now, however, we believe that many pension funds have determined that they are strategically overweight equities, but are reluctant, given current market conditions, to reduce this exposure. However, the desire to manage the risk more effectively remains. We explore how derivatives can be used to change the risk exposure of the fund. In particular, we consider how options can be used to deliver asymmetrical returns (for example, by protecting against market falls), and how swaps can be used to manage a fund's duration and inflation risks. A key reason pension funds have not invested in derivatives relates to the governance requirements. We acknowledge that derivatives are considerably more complex and difficult to monitor than other investments, and that costs are a further complicating factor. However, we conclude that there are a number of reasons why pension funds should be managing risk more carefully in future, and that there is an increasing need for trustees and corporate pensions people to invest time in understanding these opportunities.

## In conclusion

As noted, this section does not attempt to address all possible investment matters. We hope however, that the proposals contained within it contribute usefully to the debate about how the investment industry should evolve to face the challenges of the future.

# Short-termism

## A real or imaginary problem?

### In short

We consider whether short-termism is a real or imaginary problem. We note that many great minds have debated this issue and therefore abstain from presenting a view on the ‘big picture’. Instead we restrict ourselves to considering the smaller world of pension fund governance. Here, we believe there are opportunities to profit from a longer-term view, albeit that it is challenging.

### Is short-termism a problem?

There has been a recent marked upwelling of interest in ‘long-term investment’ within the pension fund industry – whether in growing discontent with benchmarks and tight tracking errors, or the financial stability of the asset management industry, or in the launch of competitions to find original long-term investment solutions. The implication is that short-termism is a problem, and must be defeated. But is this a real problem, or is it merely imagined?

### Philosophical stuff

We need to ask ourselves a simple but (genuinely!) profound question; is the ‘long-term’ different to a succession of ‘short-terms’? While this may appear a stupid question, we will need to be able to answer “yes” if we wish to go on to defeat short-termism. More importantly, we will need to be able to demonstrate *why* the long-term is different to a succession of short-terms. Consider an example: if the stock market were to close tomorrow and not reopen for three years, would you hold a different portfolio to the one you currently own? If so, why?

### A brief history of angst

The issue of the short-term versus long-term has fuelled a long-running debate (occasionally heated) in the world of economics, politics, business and investment. We present the briefest of reviews:

#### Keynes – 1936<sup>1</sup>

Stock market investment is not a long-term activity

#### Wilson – 1965-9<sup>2</sup>

The first government to attempt to tackle the perceived problem<sup>2</sup>

#### Marsh – 1990<sup>3</sup>

The problem is imagined rather than real

#### Hutton – 1995<sup>4</sup>

Short-termism is a problem, the desire for liquidity the cause, and state intervention the solution

#### Myners – 1999<sup>5</sup>

Quarterly trustees’ meeting cycle promotes short-term behaviours

### A mathematical aside

Mathematics has an interesting light to shed on the debate by identifying the (very special) conditions under which it is appropriate for a long-term investor to behave as a short-term one<sup>6</sup>. As these conditions are not met in the real world we conclude, from a mathematical perspective, that a long-term investor should not make the same decisions as a short-term investor. So why might a pension fund end up investing short term?

### Human behaviour

The field of behavioural finance is being seen as having something to offer as far as understanding investor behaviour is concerned. Here we consider some issues arising from human behaviour which we believe, in general, adversely affect the returns of pension funds.

#### Measuring things

The dictum, what gets measured gets managed, can surely be extended to ‘short-term measurement leads to short-term management’. However, high frequency measurement carries a high emotional cost (see *The pain of loss*), and in addition it is almost impossible to distinguish between skill and noise. The classic example here is managers’ track records (noise) having almost nothing to say about future performance (skill). So why do we think more information is better information? Looking at returns for two quarters rather than one six-month period gives twice as much data, but no more information. And why do we

feel more in control with more frequent information? We would argue that the information has limited value – interpretation is everything.

In seeking to invest long term we are implicitly seeking to make infrequent changes, and from experience this is incompatible with frequent measurement. To enhance returns therefore we must be willing to forgo the semblance of control that goes with frequent measurement, and adopt a more appropriate timescale<sup>7</sup>.

#### The pain of loss

While it is obvious that nobody likes losing, behavioural finance has shown that we place twice as much significance on a loss as we do on a gain of the same magnitude<sup>8</sup>. From observation we would assert that the prospect of the pain of large losses tends to cause comfort-seeking behaviour by institutional investors (whether the herding of asset allocations, or funds replacing managers).

#### The pain of being contrarian

We would further assert that the above comfort-seeking behaviour carries a real cost – a comfort premium, which is paid to contrarian investors<sup>9</sup>. So there appears to be a return opportunity in adopting a contrarian approach, albeit with the difficulties that Keynes outlined in 1936. The primary difficulty, of course, is acting long term. Judging a contrarian investor through the TMT bubble would have required a timeframe of several years rather than several quarters, as the momentum persisted for so long.

#### Overconfidence

We humans tend to have higher opinions of our ability in the low-signal, high-noise investment world than is objectively warranted. For example, consider new information entering the system. An individual investor can, with good insight, execute a profitable trade. But we must assume good insight, because at the aggregate level there is no net trade – we are simply shuffling share



certificates and paying for the privilege of doing so. This situation is an example of the *fallacy of composition* which refers to any situation where action that is advantageous for an individual is disadvantageous if attempted by all individuals. So why do we think we will be the winning, rather than losing, investor? In a similar manner to the contrarian approach advocated above, return opportunities will be available to those investors with a clear understanding of any comparative advantage they have, and hence are able to exploit. The chart opposite shows the explosive growth in UK equity turnover. This has enriched the broking community and impoverished the *average* pension fund.

### Game theory

One of the peculiar issues of institutional investment is the proliferation of agents involved in investing the assets on behalf of the owners. The field of game theory within economics deals with the interaction of individuals, each of whom is driven by self-interest. As short-termism is driven by the behaviours of individuals, which in turn are driven by incentives, we need to learn about how to create incentives that engender long-term behaviour – and hope that we are smart enough to escape the law of unintended consequences.



1. *The General Theory of Employment Interest and Money* (1936), ch 12
2. Some have argued that, ironically, the actions exacerbated the problems of short-termism in the UK. See for example, *Corporate Governance in a Political Climate: 'New' Initiatives by 'Old' Labour in the UK, 1965-69* by Bowden and Gamble, University of Sheffield May 2000
3. *Short-Termism on Trial*, Paul Marsh 1990, sponsored by the Institutional Fund Managers Association
4. first published 1995, Random House
5. *Institutional Investment in the United Kingdom: A Review*, March 2001
6. The main condition being that returns are 'independently and identically distributed'. See *Strategic Asset Allocation*, 2002 OUP, by John Campbell and Luis Viceira
7. see *Time to stop looking*, Watson Wyatt, 15 July 2000
8. see for example, Amos Tversky's *Behavioural Finance and Decision Theory in Investment Management*, AIMR publication 4 April 1995
9. see for example the sources quoted in the Background section of *Time to stop looking*, Watson Wyatt publication 15 July 2000

## In conclusion

We believe short-termism is a real problem for the following reasons:

- returns are reduced by too much trading cost,
- paying away a comfort premium to avoid looking wrong in the short-term costs, and
- it leads to a lack of governance, which must be a long-term activity, thereby reducing the aggregate efficiency of the economy.

Solutions will be harder to identify – we will need to grapple with our own behaviour, understand our incentives, and revisit the way we make decisions. In particular, we are advocating 'Ten-year Mandates' with real return targets. Difficult, but the rewards would appear worth it.

# Diversity

## As in life, diversity in investment is both desirable and uncomfortable

### In short

We note the relative lack of diversity in a typical pension fund. We then briefly outline various investment opportunities that could improve portfolio diversification, and propose a new framework for thinking about risks and diversity.

### What is diversity and is it good?

A reasonable definition of diversity is 'the condition of being diverse', with the definition for the latter being 'composed of distinct or unlike elements'.

Most people would readily agree that holding unlike investments is good, but it may not harm to remind ourselves as to why this is so. After all the best return will come from a single bet on the 'thing' that goes up the most. Holding unlike 'things' will reduce that return (by definition), but bring the advantage of acting as a hedge against our single bet being wrong. So diversity is less about seeking return and more about hedging our main bet. That said, should our main bet turn out very badly, the return enhancement from diversity would be welcome.

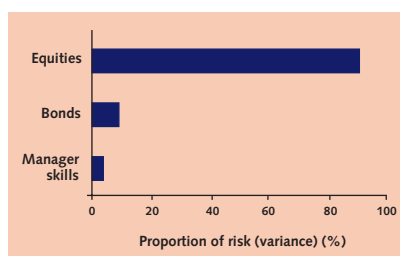
### So, what's the problem?

How diverse is a typical pension fund in its investments? Let us assume highly simplified investment arrangements consisting of 60% equities and 40% bonds, with active management risk of 2%. We can refer to this latter risk as 'manager skill'. For our purposes it doesn't matter whether all of the fund is actively managed in a low-risk manner, or only a proportion is run in a high-risk manner. How diversified is this (or should it be)?

### Old-style risk attribution

Risk attribution has traditionally been done in 'asset space', ie only the risk of the assets was considered, not how they behaved relative to the liabilities (we will consider risk relative to liabilities at the end of the paper). To continue with our typical pension

fund, we will assume that the equity assets have a standard deviation of 20%, the bonds a standard deviation of 8%, and that all of the assets are managed actively with a tracking error of 2%. While risk is reported in terms of standard deviations, when considering combining risks it is necessary to consider variances (the square of the standard deviation). The chart below illustrates the example fund's risk attribution in 'proportion of variance' terms.



We can safely conclude (in this simplified example) that equities are the single big bet. This is not a problem if equities are the most efficient way of producing return, but it is not particularly diversified.

### Diversifying away from equities

The goal for the last few years for many funds has been to diversify the equity holdings – globally (away from large domestic stocks), by manager type (passive/core/satellite), and by style. Nevertheless, all these options essentially just amount to different ways to implement an exposure to the equity risk premium (ERP), and do not meaningfully change the risk profile. However, before leaving equities, we note the emergence of another diversifying option which we believe should be of interest to some funds.

*Volatility capture strategies* are actively managed products that seek to add alpha through not using alpha forecasts. Instead the portfolio is built with all the emphasis being on the risk side, with the aim being to produce a portfolio with more return per unit of risk. While mathematically challenging we believe these products offer good diversification benefits within an equity

programme. However, they do require a skill of a different sort – understanding the risk within the equity market.

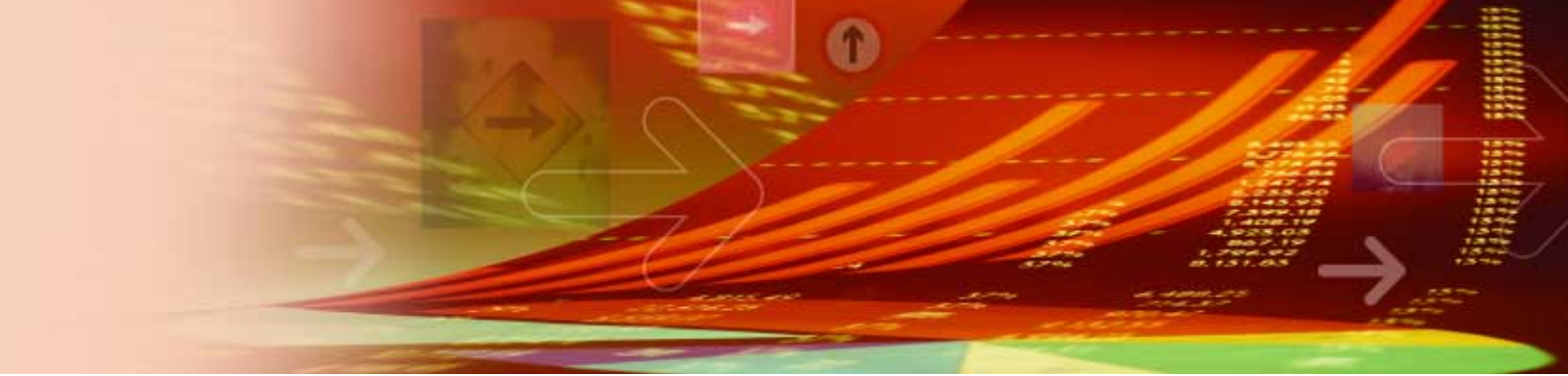
### Different stuff that we can hold

We believe the more significant diversification opportunities fall within 'aggressive bonds' and 'absolute return strategies'.

#### 'Aggressive bonds'

Pension funds have historically held very high quality bonds. Where non-sovereign bonds have been held these have almost exclusively been 'investment grade', with the awarding of 'below investment grade' discretion, or mandates, being rare. We know that the lower the quality of the bond, the higher the yield it must offer to attract investors. The \$64,000 question is whether that higher yield more than compensates an investor for the higher expected losses from default. In addition, the average yield will expand and contract relative to sovereign bonds. High yields represent both (i) the market discounting a higher risk of default and (ii) attractive valuations. Which force prevails cannot be known in advance, however, 'buy at low prices (high yields), sell high (low yields)' would appear to be a sensible way to manage a more aggressive bond exposure.

- *high yield debt*: the yield on high yield bonds, while down significantly from historical highs, indicates a potential opportunity. High yield has a relatively short duration (less interest rate risk) and is dominated by bonds issued by US companies. For those funds concerned about (US) equity valuations, this would appear a good diversifier
- *emerging market debt*: also offers a high yield on short duration assets (but like high yield has performed strongly over the last 6-12 months). It is also much more liquid and cheaper to trade than emerging market equities, and again offers real diversification potential against developed markets equities.



**Absolute return strategies**

The investment opportunities highlighted below do not represent an exhaustive list, but rather those strategies which should be most straightforward for funds to implement. In each case, benchmarks play a much reduced role (being used for occasional assessment of returns, rather than as the neutral point for portfolio construction) and therefore the monitoring of the strategies will be more qualitative, and arguably more demanding on funds.

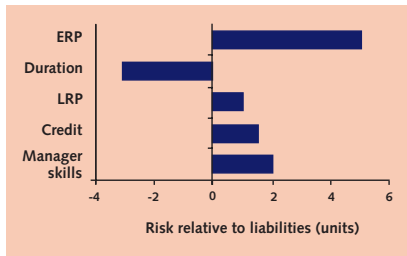
- *benchmark-insensitive strategies*: a benchmark-insensitive manager will typically run a concentrated portfolio of ‘best ideas’, and usually will be unconcerned about which index is used to measure them. The manager may draw from a universe different from the index, or be indifferent to relative active positions, or may judge investments over a timeframe different from the typical 3 to 12 month view of the market
- *equity long-short hedge funds*: we believe long-short hedge funds will come to be seen as a viable way to implement equity exposure alongside long-only approaches. We accept that this approach should lag a strongly rising market, but should protect somewhat against falling markets, and the entrepreneurial approach should add significant value in sideways markets
- *fund of hedge funds*: we would suggest a diversified fund that has a minimal exposure to equity long-short (as we believe this should be considered separately). The different strategies within the fund have

different risk exposures but we see this position as mainly about achieving an absolute return through manager skill.

**New-style risk attribution**

Assuming a pension fund implemented these diversifying opportunities, the risk attribution framework we considered above would be a fairly blunt tool to assess success. As noted, we also need to consider risk relative to liabilities. An example of a new-style attribution is shown in the chart below. In the short term, the dominant source

of risk is likely to remain equities (the equity risk premium – ERP). The negative exposure to duration highlights that the assets have less interest rate sensitivity than the liabilities (which has been a big negative recently). This framework allows funds to target how much risk they want to take where – on the liquidity risk premium (LRP), or credit etc – and should assist in discussion about increasing diversity. The framework covers the principal risks but could be expanded. Inflation or currency are two candidates for inclusion in a fuller list.



**In conclusion**

The purpose of this research paper is to suggest ways in which pension funds can increase the diversity of their assets. In the space available, it has only been possible to provide a thumbnail sketch of each opportunity, but we would be delighted to provide further details on any that are of interest.

# Risk budgeting

## and the art of good risk taking

### In short

Pension funds are asking themselves a number of key questions about the risks they are taking:

- how much risk is my fund taking?
- is this an appropriate amount?
- where should we take risk?

We believe that it is possible for a pension fund to answer all these questions by adapting the principles of risk management used in banking and investment management. By considering these questions together, the plan sponsor and trustee body can draw up a risk 'budget' that will then guide all their investment decisions in a consistent manner. As with setting corporate budgets, we would recommend that such a process of risk budgeting should be carried out at least annually to reflect the dynamic nature of investment markets.

### How much risk is my fund taking?

The investment risks being taken by a pension fund go by many names – equity risk, duration risk, currency risk to name but a few. However, these all form part of one overarching risk:

*The risk that the trustees have insufficient assets to pay members' benefits*

In assessing how much risk the fund is taking there are several ways of measuring risk, including looking at future funding levels and contribution rates. Risk budgeting is a framework for analysing both risk and return over the short and long term, where the units of risk and return are varied to be measures of relevance for each client's situation.

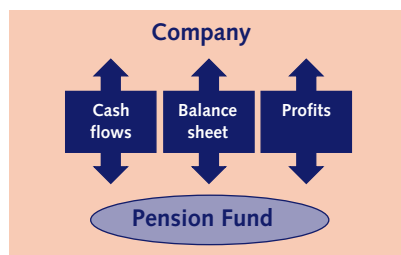
This context suggests that in the same way a global equity manager would be benchmarked against the FTSE World Index, the trustees should benchmark their investments against the growth in a measure of their liabilities.

As with any investment manager, it is then natural to ask whether the assets held are likely to outperform the fund's liabilities and what the range of other potential outcomes is. This range of returns can be estimated by simulating the effects of these investment risks.

These expected outperformance and risk figures are what we collectively call the 'risk budget' of a pension fund and are the most important characteristics of its investment arrangements.

### Is this an appropriate amount?

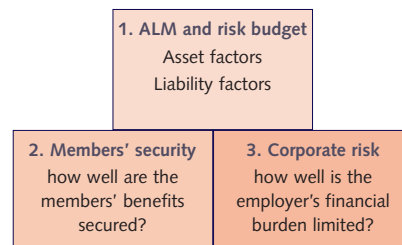
After identifying how much risk is being taken, the next question is whether this is an appropriate amount to take. Answering this question should start with a consideration of the links between the sponsor and pension fund. In the current pensions climate, we believe that plan sponsors will become increasingly involved with setting risk tolerances for their pension funds.



For example using an FRS 17 framework, the risk budget figures quantify the potential balance sheet risk for the company. Asset liability modelling can then be used to translate these risk numbers into potential cash contribution requirements and funding levels.

The final decision on how much risk to take must then be based on a consideration of all these measures overlaid with a qualitative assessment of the security of members' benefits and the corporate risk tolerance.

All things being equal, a lower risk budget improves the security of



members' benefits. However, higher risk budgets offer the potential for higher expected returns and correspondingly lower cash contributions. This observation has in the past led to some corporations taking more risk subject to some overall limit. Some simple metrics can be used to put the risk budget in the context of the plan sponsor and help to establish this risk tolerance.

Pension funds face various risks, other than investment risks, which cannot be matched by bonds. These include the uncertainty of cashflow timing, both through early retirement and mortality changes and through salary inflation. A fund aiming to minimise investment risk by pursuing a bond investment strategy may see these other risks become material. A pure bond policy in this case may not be optimal.

### Where should we take risk?

Having decided how much investment risk to take in total (*the risk budget*), the question then arises as to where to 'spend' this risk (*the risk budgeting process*). For example, should the trustees invest in equities (equity risk), fixed-interest gilts (duration risk) or employ high risk investment managers instead?

One way of aiding this decision is to break down the total risk budget across the different asset classes or investment managers in the same way that a business will allocate costs between its different divisions. Some basic principles of investment can then be applied in the quest for an efficient investment policy.

### Principle 1: Investors should diversify their sources of risk as much as possible

The reason for this is that the riskiness of investments is far more predictable than their returns. If an investor spends all the risk in one place, then there is a chance that it will not be rewarded. For example, equity investors have experienced considerable volatility over the last three years, but this risk has not been rewarded by the returns expected. By spending the risk in different places, some of these decisions should be rewarded at each time. Property, corporate bonds or hedge funds are recent examples.

Market conditions can and do change as we have seen in the last few years. For this reason we would therefore recommend that investors look to reassess their risk budget on an annual basis.

### Principle 2: Investors should only take risk where it is likely to be rewarded

This sounds as obvious as not buying a corporate bond yielding 4% pa when an identical government bond yields 4% pa. However, unless risk and return are considered in the right framework, it is often not clear how much risk or return an investment is contributing.

### Principle 3: If an investor must take a given amount of risk, then he should take it where the expected return is highest

This arises since, all things being equal, an investor is looking to maximise his expected return for a given amount of risk. This objective can be fulfilled by maximising the expected return for each unit of risk that is spent. We can measure this by a simple ratio:

$$\text{Information ratio} = \frac{\text{expected outperformance}}{\text{tracking error}}$$

$$\text{Expected outperformance} = \text{expected asset return} - \text{expected liability return}$$

The two most useful measures of risk are Tracking error and Value at Risk (VaR).

<b>Tracking error (TE)</b> For a given investment policy, this is the standard deviation of returns relative to the liabilities.	<b>Value at Risk (VaR)</b> Losses relative to liabilities at least this severe could be expected to occur one year in twenty.
---	--

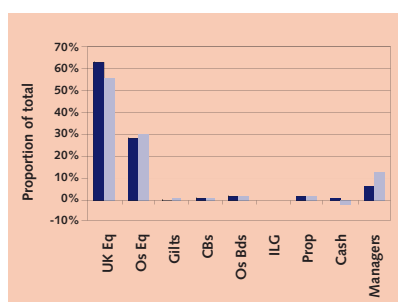
The information ratio is a measure of the overall efficiency of a fund's investment arrangements. Investors should look to maximise their information ratio.

#### Example

The example risk budget below is for a typical UK pension fund.

Risk budget	Current policy
<b>Expected returns % pa</b>	
Expected outperformance	2.5
Tracking error	10.1
Information ratio %	24.8
<b>Expected values £m</b>	
Expected outperformance	25.1
VaR	152.0
<small>Notes</small>	
• Fund size is taken as £1bn	
• Current expected liability return is 5.5% pa	

#### Attribution of risk and return



Applying the principles above it is clear in this case that:

- the trustees are taking a large amount of risk in UK equities
- the fund's bonds contribute little risk
- investment in cash and overseas bonds is adding disproportionate risk to the fund's investment arrangements compared to the additional expected return

- employing active managers or investing in alternatives such as property looks like an efficient way of spending the risk budget since they contribute more to return than they do to risk.

## In conclusion

Running a pension fund requires a partnership between the plan sponsor and trustees. The most important decision they can make is on the amount of risk to take in the fund and this is a decision in which plan sponsors are taking an increasing interest. Risk budgeting quantifies the risk inherent in this decision, providing essential information for both trustees and plan sponsors.

The risk budgeting process has three main advantages as a tool for implementing investment policy:

- governance:** setting the risk budget is likely to involve discussions between the plan sponsor and trustees. However, once this is set the need for company involvement in other investment decisions may be much reduced, since it is in both parties' interests to spend the risk budget as efficiently as possible
- efficiency:** the risk budgeting process graphically illustrates where the trustees are spending their risk budget and how much reward they expect for the risk taken. This aids the creation of efficient investment policies
- flexibility:** the investment markets are more dynamic than a three yearly cycle of asset liability studies might suggest. Risk budgeting is highly flexible and ideally feeds into an annual review of investment policy.

We would therefore recommend that trustees look to analyse their current investment arrangements in conjunction with their sponsoring employer. The results of this analysis could then be included in the fund's statement of investment principles.

# Absolute return and 'Ten-year Mandates'

The wider investment freedoms from absolute return mandates are worth considering

## In short

While funds have given benchmarks to managers for good reasons in the past, going forward they might do better to include mandates where the target performance is expressed in absolute return terms.

## The benchmark approach

Most funds' investment strategy is based on two principal foundations:

- the *strategic asset allocation* for a fund and the accompanying benchmark portfolio which turns the asset allocation into an actual portfolio against which the performance can be monitored
- a series of investment manager *benchmarks* specified for each manager which collectively sum to the benchmark of each fund as a whole.

This approach would generally be referred to as the *benchmark approach* and it carries certain significant advantages.

- the separation of the strategic asset allocation from the manager selection produces two separate competencies for the trustees to concentrate upon
- strategic asset allocation can easily be modelled (generally using ALM) and this can be used to produce efficient specific solutions fitted to client circumstances, like different liability structures
- the performance of the managers can be monitored in a way that isolates their skill.

The above arguments have been viewed positively for many years and as a result this approach is currently followed by almost all pension funds. But this has given rise to a familiar investment issue, that when too many funds follow the same approach problems arise because investment success requires diversity.

Particular disadvantages to the use of benchmarks that have been cited are these:

- they encourage managers to hold investments they do not like solely for risk control purposes
- they discourage managers from holding investments outside the benchmark universe
- in bear market conditions, there is limited protection to offset the downward influence of benchmarks.

It is argued that returns would be higher if these constraints arising from the use of benchmarks were relaxed or removed. These points have suggested to funds that they might consider a new style of strategy in which managers are not given benchmarks but are instead given performance targets related to the fund's goals and liabilities. Such a strategy is generally referred to as an *absolute return approach*.

## Benchmarks and short-termism

The principal other challenge to benchmarks comes from behavioural finance. The use of benchmarks to evaluate short-term performance has become widespread with quarterly relative returns being scrutinised in detail. This short-term perspective produces three problem areas:

- discouragement of the use of contrarian investment styles
- unnecessary levels of turnover in portfolios with consequent costs
- unwillingness to engage with company boards in any activism agenda.

The basic argument is that funds are concentrating too much on short-term trading activity and not engaging enough in long-term investment activity. These are of course problems that arise from the misuse of benchmarks, rather than from the benchmarks themselves, but again we

should consider the possible benefits of removing the benchmark from the mandate and replacement with absolute return targets.

## Setting the mandate

The first challenge with this line of thinking is how such mandates can best be specified such that managers with significant investment creativity and skill can exploit the wider freedoms. The critical issue is in specifying the target performance that the manager is expected to produce as this will be the principal guideline that the manager will follow. With absolute return mandates, the principal target is not related to an investment index but instead to a measure of inflation or the liabilities. These targets will generally require considerable discussion with prospective managers but our suggestions below are indications of what we believe are reasonable for mandates which focus on equity investment.

	Absolute return targets (eg)
Equities	RPI + 6% pa

These absolute return targets are best seen as longer-term goals than those used in the benchmark approach. The principal evaluation period should be at least five years and preferably ten years (hence the reference to *Ten-year Mandates*).

It should be stressed that it is not necessary to commit to a ten-year contract – such an arrangement would be inappropriate for trustees to undertake as greater flexibility is necessary. The long-term nature of the mandate is best secured instead by an undertaking not to terminate for reasons of underperformance alone before the end of the full evaluation period.

This suggests that the governance necessary to monitor and manage these mandates successfully is greater than for the benchmark approach. A summary of the monitoring framework that would be appropriate is given opposite.

## Monitoring of Managers

We advocate the use of one *principal objective* which is the absolute return target in the longer term. The evaluation period might be set at five years or preferably ten years.

As these mandates have no precise benchmark, this requires the monitoring to change its emphasis to include:

- a longer-term framework for evaluating success
- consideration of more qualitative factors
- understanding of the manager's style and strategy.

Other *comparators* could be considered in the monitoring process (depending on the mandate):

- comparisons with the returns of other similar managers and mandates
- comparisons with the returns available on various market indices
- achieved yields on the portfolios (it might be appropriate to expect a higher yield).

We advocate a description of the mandate which includes a full account of the managers' responsibilities and the fund's responsibilities, particularly as regards how the fund would monitor and assess the manager. This form of 'charter' increases the chance of a successful relationship.

## Monitoring of Strategy

- the principal measure of success is achieving the overall absolute return target in the longer term (say five years and over)
- there should be an annual check of the reasonableness of the targets and the appropriateness of the strategy
- targets should be set for both return and risk in the form of a 'risk budget'.

## Selection of Managers

Success in applying this approach is contingent on having skilful managers.

While this may involve using a fund's current managers, it is more likely that changes will occur. The new mandate requires managers who would be able to successfully employ wider investment freedoms over longer time horizons. It would also be helpful for managers to have operated these types of mandates in the past and so they would then have a form of track record to demonstrate that they have the mind-set to be successful with these strategies. In practice we find relatively few managers are currently equipped to operate these styles successfully. We hope that managers become more adept at offering these competencies over time.

## Funds and governance

There is one other scarcity point. Not all *funds* are prepared or equipped in their governance to be sufficiently far-sighted for these approaches. These mandates are challenging and our experience with them is limited. Long-term performance will often follow some short-term disappointments. To be successful with long-term mandates funds should recognise these points:

- investment is a cyclical activity and there will be underperforming moments in the cycle when funds must display confidence that longer-term out-performance is still likely
- successful monitoring will be through emphasising qualitative factors over the quantitative measurement
- choice of managers is very important and success is therefore as much about execution as making the strategic commitment.

## Possible Actions

For funds which find the arguments for long-term mandates attractive and appropriate to their circumstances what actions might be taken? We suggest an initial move to introduce one such mandate as a part of the equity allocation. Such a move is consistent with a style of gradualism in evolving

the investment strategy and allows the fund to study a live experience and track record before deciding on subsequent moves. A part-way change will also give the fund's strategy the critical advantage of greater diversity.

## In conclusion

We have noted some of the attractions of an absolute return strategy and suggested these should be now considered in more detail by funds. We have also highlighted some practical considerations, particularly the monitoring difficulties that arise without benchmarks and the challenge of selecting managers successfully. The key arguments are summarised as the following:

- the best results in investment management come from investment creativity and freedoms in the hands of the most skilled investors
- benchmarks, by being misused, have accentuated short-termism and have at times stifled creativity
- absolute return mandates that focus on meeting future pension outgo can widen investment freedoms and reduce the benchmark hazard
- it is critical to design such mandates well
- we believe relatively few managers are equipped (have the 'mind-set') to exploit these wider freedoms successfully
- we are also concerned that relatively few funds have the patience and governance to be successful with such mandates
- while there is an undoubted opportunity with this approach it does require matching the right skilful managers to the right well-governed funds and paying particular attention to implementation.

# Multi-asset management reinvented

## Righting past wrongs?

*“Investment returns stem from decisions regarding three tools of portfolio management: asset allocation, market timing, and security selection, with investor behaviour determining the relative importance of each.”*

David Swensen,

CIO Yale University

### In short

In this research paper we suggest that one of the possible ways of addressing the historic short-comings of short-termism (principally excessive trading and inadequate corporate governance) and diversity is in a new form of multi-asset management based on a joined-up form of risk management thinking. Multi-asset management has rightly been criticised in the past and we acknowledge that the diverse skills necessary in this area are likely to remain limited.

### Current and historical context

The current institutional fund context is largely one of ALM-derived strategic asset allocations, implemented by specialist managers. The overwhelming use of diversified portfolios means that institutional investors are, rightly or wrongly, limiting themselves primarily to an asset allocation return, and the active return contribution of managers is limited. We have previously argued that this can furthermore be generalised as a concentrated ‘bet’ on equities<sup>1</sup>. However, this situation evolved out of the perceived failure of balanced management and against the background of a 20-year bull market in equities.

### What was wrong with ‘old’ balanced?

One of the major arguments against balanced, and in favour of specialist management, was that in appointing a balanced manager you had to buy areas of weakness, alongside the areas of strength – nobody was excellent in all competencies.

A further criticism of balanced was that managers were either unprepared to take tactical asset allocation (TAA) risk, or were unskilled in TAA. As an aside, old-style TAA was essentially a market-timing approach between equities, bonds and cash. Consequently it had ‘narrow breadth’<sup>2</sup> and episodic performance. When used alongside specialist managers, TAA was typically mis-specified and misused, and also expensive to implement.

In our view, however, the main problem with balanced was that the business subtly changed from one of absolute skill (using investment wisdom to generate absolute returns) to one of producing relative returns against a moving peer group target.

### Why ‘new balanced’?

Recognition of the above difficulties allows us to specify a new form of balanced/ multi-asset management to offer a number of potential advantages. Firstly, it is one way to encourage a return to an absolute return orientation (or an explicit liability-relative orientation). Secondly, we believe it could be an effective way to access investment manager skill, by allowing the manager to exploit wider investment freedoms outside traditional mandates. This could entail a combination of things:

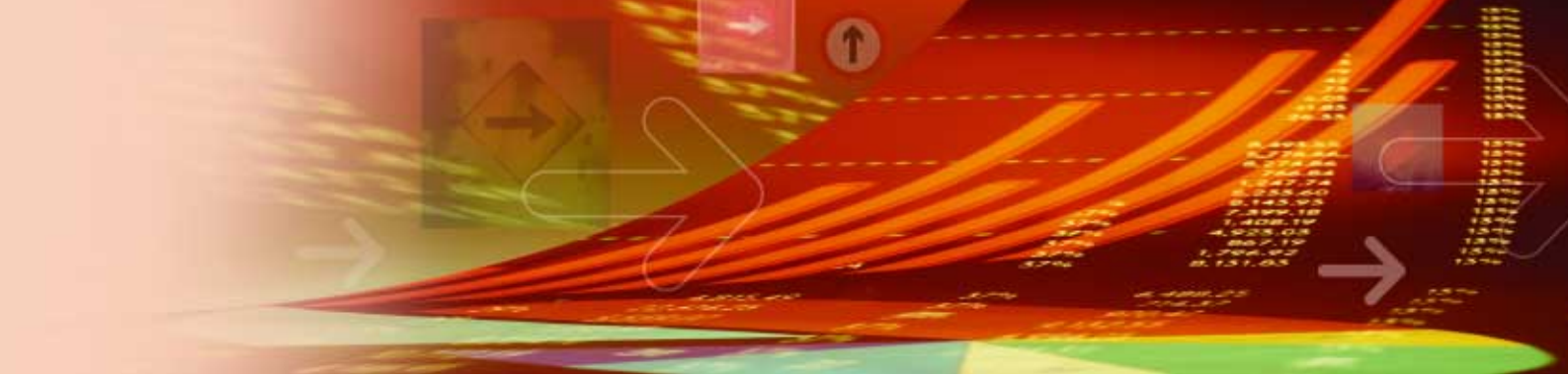
- positions in non-traditional asset classes and unconstrained by traditional benchmarks
- uses of modern investment management techniques like swaps and other derivative instruments
- implementation of positions in the most efficient way, eg buying the warrants or debt rather than the equity.

In essence, there is opportunity here to award mandates with considerable breadth.

Finally, a new balanced investment approach may be better suited to volatile market conditions. A long bull market in equities taught us the merits of ‘buy and hold’ (modified into ‘buy the dips’), but the faster-changing nature of investment markets may mean we need to unlearn this lesson – to be more flexible, in our allocations.

### So how exactly can we improve multi-asset management?

We do not see this new approach to balanced management as a neatly defined, off-the-shelf product. Rather,



we see it as a new way of thinking about the investment problem:

- engaging the client in a valuable discussion on what type of investment goals are most relevant (and in particular the time horizon of investment, which for most is long)
- considering the asset allocation and stock selection pieces together rather than separately
- having discretion to vary the total risk taken relative to changing market opportunities.

These points identify a key issue as to how much risk is taken in each of the three components of investment return referred to in the opening quote. We find lesser evidence of consistent success in market timing than in stock selection, but believe that the skills can and do exist in this area. Swensen himself holds a clear view that timing markets on too short a view is problematic<sup>3</sup>, suggesting that the key judgement is knowing the difference between flexible allocation (which we support) and market timing (about which we have more doubts).

### Who can do this multi-asset approach?

We believe there are three groups who could implement the new form of balanced investment approaches: asset allocators, multi-asset investment managers, and in-house executives. The asset allocators include macro hedge funds and global TAA (GTAA). The hedge funds are attractive as their remit is to scour the world looking for any instrument with an attractive return. But they carry the disadvantages of high fees, are not generally 'institutionally-friendly', and therefore, we believe, will not be more than a satellite component of a fund.

As regards GTAA, this offers greater breadth than old-style TAA (many more markets and currencies), and more efficient implementation. In effect, a GTAA fund can be thought of as a type of macro hedge fund with long and

short futures positions. GTAA may not be able to exploit precisely the same opportunity set as hedge funds, but is more institutionally-friendly, has lower fees, and can be used as an overlay. Clearly the asset allocators can contribute asset allocation skill to a fund (which may be a useful form of diversification) but not stock selection skill. In addition, both the above approaches will have relatively short-term trading orientations.

Multi-asset managers, on the other hand, would generally be thought of as providing stock selection skill, with a question mark regarding allocation. We would note that the mandates we describe do not sit well with the traditional view of a balanced house, which tended to evolve into a series of specialist silos. However, we believe that a limited band of such managers have retained cross-silo skills and have the courage of their convictions to implement meaningful allocation positions. Furthermore, we would expect good managers in this area to have strong quantitative skills – blending market views with risk budgeting/ optimisation.

Finally, we think that new balanced approaches could be implemented by in-house executives, operating at the total fund level, by more flexible and forward thinking asset allocation, while still hiring specialist managers in the required areas. The Yale endowment fund is a good example.

### Implementation issues

#### How big an allocation?

The previous section implied that the new form of balanced could be implemented in different ways – from a satellite exposure introduced to diversify the current strategy, to a whole fund approach which replaces the current arrangements. As the ideas here are untested, for those who like the concept we would generally favour the gradualist approach of introducing it as a satellite strategy (say for 10% to 20% of assets) on the rationale that this is new thinking and needs to be live-tested through real experience.

However, we recognise this might muddy the performance measurement and attribution of the current strategy.

#### What performance objectives?

It is also important for the new approach to avoid the pitfalls of old balanced. This can be positively influenced by performance objectives and we would support setting a target of inflation +x% or liabilities +y%, thereby keeping the focus on absolute/liability-relative returns and allowing full expression of manager skill. The inflation target is effective in its growth orientation but less effective in its focus on meeting client liability-related goals; on the other hand the liabilities target clearly matches up with the client goals but may be difficult to implement because it is so bond orientated.

#### How should such mandates be monitored?

The framework for monitoring these new mandates would be similar to that described for 'ten-year mandates'<sup>4</sup>. We further suggest that consideration of both risk and income progression is a necessary supplement to the test of performance alone. The establishment of some form of risk budget for the mandate is particularly important to discourage the investment freedoms from being used to game the meeting of the target through undue risk. Clearly the volatility of results relative to targets implies that the emergence of meaningful results will be slow. The build-up of return through yield and growth in income may well be more meaningful than the total return, although one must recognise the more subjective evaluation required. Overall we advocate a form of balanced score-card for effective monitoring.

#### Are there enough managers with skills in this area?

This is work in progress for our manager research team. We consider an acid test of any mandate to be how many top-rated managers we can find. In this category, our research has so far turned up a small number of interesting propositions.



## Score card

<p><b>Future Performance</b></p> <ul style="list-style-type: none"> <li>■ Business, people, process factors</li> <li>■ Watson Wyatt FREX rating</li> <li>■ Is the portfolio consistent with the performance objectives</li> </ul>	<p><b>Performance vs target</b></p> <ul style="list-style-type: none"> <li>■ Check sources of return</li> <li>■ Attribution between asset allocation and stock selection</li> <li>■ Skill in achieving these results</li> </ul>
<p><b>Consideration of risks</b></p> <ul style="list-style-type: none"> <li>■ Past volatility</li> <li>■ Risk from concentration</li> <li>■ Risk relative to liabilities</li> </ul>	<p><b>Consideration of income</b></p> <ul style="list-style-type: none"> <li>■ Initial yield</li> <li>■ Progression of income</li> <li>■ Quality of income</li> </ul>

### Are there enough funds with in-house skills in this area?

We have emphasised that this type of mandate needs particularly strong skills from the fund. A significant implementation issue, and a potential drawback, is that on balance we see greater demands on fund governance. This could be countered if a complex manager structure is replaced by a single new balanced manager (or two?) but governance will always be complicated by more qualitative monitoring.

In this light, we would note, that this new form of balanced is unlikely to be implemented by the majority of funds due to (a) a shortage of suitable in-house staff, and (b) economies of scale making it relatively unattractive to smaller funds. Thinking laterally, this could make the pursuit of industry wide schemes or common investment funds more attractive.

## In conclusion

We acknowledge that this new approach to balanced management would not be easy to implement. We also believe that it, as with almost all investment propositions, has limited scale as the relevant skills will be in short supply. However, for some funds we believe that the merits of combining absolute return investing within a multi-asset management framework are worthy of further consideration.

1. see *Diversity*, Watson Wyatt, August 2003
2. Meaning that there are few independent decisions to be made, and therefore limited scope for diversification.
3. From *Pioneering Portfolio Management*, David F Swensen, Free Press 2002, p55
4. see *Absolute return investing and 'ten-year mandates'*, Watson Wyatt, May 2003

# Investment management fees and costs

## A new fee model for better long-term alignment

### In short

Pension funds should focus on the costs incurred in running the fund as well as the added value elements. The largest of these costs relate to investment management fees and brokerage costs<sup>1</sup>. In this research paper we consider the ways in which managers and brokers are currently remunerated and look at alternative approaches.

### The 'principal-agent' problem

A systemic difficulty in the relationship between pension funds and their agents is that fee bases and incentives in the investment management industry are not perfectly aligned to get agents to work effectively in their clients' interests. We perceive the main difficulties to be:

- the focus on *ad valorem* fees which are incentives to managers to become 'asset-gatherers' in their business model
- the lack of transparency in transaction costs
- the inability of trustees to control such costs.

### Current management fee structures

The majority of fees paid to investment managers are based on the size of the assets being managed, known as the *ad valorem* basis. On this basis, the fee is calculated as a percentage of the assets under management.



As more specialist management came into use, performance fees in addition to a base fee became popular. The performance fee has generally been based on a percentage of the out-performance achieved against a benchmark (sometimes cash), while the base fee continued to be on the *ad valorem* basis.

### Why the ad valorem model may be a problem

The key benefit of *ad valorem* fees is the simplicity with which the fee is calculated. There are, however, some mis-alignments of interests when using such a fee basis. Managers have a big incentive to try to win new mandates and to 'gather assets'. This is often in tension with good performance which benefits from diseconomies of scale. It is rarely the case that good out-performance can be maintained after substantial asset growth.

Furthermore, in a rising market the overall level of fees grows, regardless of whether investment performance achieved on behalf of the client has been above or below average. Investors have become increasingly frustrated with paying the same level of fees for below average or negative returns.

From the perspective of the investment manager, the volatility of *ad valorem* fees during periods of unstable market conditions can lead to an unstable business environment, particularly as most costs tend to be fixed. Indeed, the big falls in equity values over the past few years have led to declining manager profitability and, in some cases, to cutbacks which have hit the quality of performance and service.

### A new fee model

We believe it is appropriate to consider a new style of fee arrangement that attempts to overcome some of the problems outlined above.

The new model aims to align the client's and manager's interests and address the issues of volatility in income for the managers.

The fee basis we are proposing is based on two building blocks:

- a **base fee** in a fixed currency which is to cover the overhead costs of the business

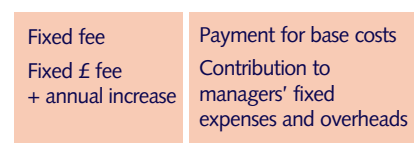
- a **variable fee** related to performance achieved, rewarding the manager for their skill and contributing to bonuses and profit margin.



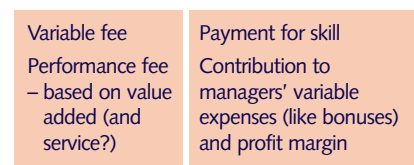
We suggest that the base fee is a fixed monetary value derived as a percentage of the value of the fund at the start date of the mandate. The monetary value calculated as the base fee could be annually adjusted to reflect an inflationary increase by using an escalator such as RPI. This part of the fee is regarded as the 'maintenance fee'.

We suggest that the variable fee payable reflects the quality of the service provided. We would expect this to be predominantly investment performance driven, but may also include other 'soft' factors associated with the general level of service provided by the manager to the client.

The basis for calculation of the performance element of the variable fee may be better aligned with the pension fund's objective of paying pensions if it is based on producing returns in excess of an inflation based target.



+



There are a number of other factors to consider when designing a variable fee, and the performance element in particular.



**These include:**

*The split between fixed and variable fees:* While this may vary by circumstance, a split of around 50:50 for target performance seems well balanced.

*The calculation of the variable fee:* While many current performance fees are based on managers receiving as much as 20% of the value added, this seems far too 'geared' given that performance can be due simply to volatility and luck at times; a more suitable share of value added would be 5% to 10%. This also allows the variable fee to be more symmetrical around the target performance. Performance fees may be conditional upon whether the performance achieved since inception has been acceptable. This is a form of 'high water mark' provision.

*Caps:* An upper bound to the fee or cap encourages the investment manager not to take excessive risk on the upside, and limits the possible cost to the fund. There would, therefore, be a minimum fee payable (the base fee), but also a maximum fee payable (the cap).

*Averaging period:* Averaging periods for variable fees help to smooth the fees paid from year to year which is important for both parties. Where these fees are used in longer-term mandates, it is natural to use an averaging period for the calculation of five years.

**Long-term mandates**

For absolute return long-term mandates<sup>2</sup> such an approach is ideally suited and to be preferred. Such new approaches address the problems of short-termism<sup>3</sup> (principally excessive trading and inadequate corporate governance). The fee structure can reinforce this goal by aligning with the funds' interests to pay for the long-term performance required to meet funds' pension payments.

In the case of normal mandates already in place, the approach may take time to become accepted. In the case of selection processes for new mandates, however, we are finding positive

support from both managers and funds alike.

**Transaction cost transparency**

The second most significant investment expense of funds after investment manager fees is transaction costs. However, there are two substantial problems with how these costs are incurred:

- they are incurred not by direct contracts controlled by the fund but by the actions of the trustees' agents, the investment managers
- there is very limited transparency of these costs, many of which are barely visible (like market impact and bid/offer spreads).

It is clear that the way such costs are managed is unsatisfactory and change is desirable in three directions:

- much greater transparency of all costs
- elimination of soft commissions
- establishment of bundled services in which managers finance all the research required for one fee.

These changes are significant and realistically can only happen in stages.

Better transparency in trading costs is clearly the first step. Under the Pension Fund Disclosure Code<sup>4</sup> level two disclosure reports are now being provided by investment managers. These provide greater transparency of costs incurred on behalf of their clients.

The FSA has recently issued a consultation paper<sup>5</sup> to review commissions paid by investment managers to brokers for the execution of deals on behalf of their customers. It addresses the issue of the lack of transparency within these costs, particularly with respect to soft commissions and bundled research fees and represents an important catalyst for making future changes in which the

trustees' interests are better secured. There has recently been the positive trend of UK based investment management organisations to remove soft commission arrangements from their trading practices for UK clients. There is also a move to provide greater disclosure of costs involved within bundled commissions. Trustees should support continuing steps to produce better management of costs.

It remains our view that management of costs is a significant factor in investment management success and consistent with this belief, our manager research processes treat trading cost efficiency as a key success factor.

1. see Managing the pension fund 'food-chain', Watson Wyatt, August 2003
2. see Absolute return investing and 'Ten-year Mandates', Watson Wyatt, May 2003
3. see Short-termism, Watson Wyatt April 2003
4. The Pension fund disclosure code was issued jointly by the IMA and NAPF, May 2002
5. see FSA's consultation on bundled brokerage and soft commission arrangements (CPI176), issued by the Financial Services Authority, June 2003

**In conclusion**

The crucial issue for managing costs is getting the structure right in order to better align interests between the pension fund and their agents. The new fee model we have outlined, and which has already been implemented in some instances, improves such alignment. Trustees should also lend their weight in support of ongoing initiatives to place transactions costs under greater management discipline.

# Using derivatives to manage risk

## An essential part of risk management for pension funds?

### In short

The declining equity markets over the past three years have led to a renewed focus on risk management. This in turn has led to a greater interest in seeking appropriate derivative strategies to manage risk better.

### What are derivatives?

Derivatives are financial instruments whose value is dependent on some underlying asset (for an introduction to the subject see 'Tools of the trade'). Their purpose is to allow managers to implement investment ideas more efficiently, and to transfer risks among different parties. This is the area that is particularly relevant for pension funds as derivatives can improve the management of their risk exposures. Please see the panel on the last page for an explanation of the derivatives terminology we have used in this note.

### A brief history of futures and options usage

Futures have become increasingly widely used for facilitating forms of 'bulk' purchase or sale of assets. The value of such methods has been demonstrated and the vast majority of pension funds have become comfortable with these instruments, subject to checks and balances.

As regards options strategies, much less usage has historically taken place. The most notable example has been a 'portfolio insurance' strategy. The strategy allows investors to participate in market gains but be protected from losses when the market is falling, using rebalancing rules.

The liquidity of equities and the frequency of rebalancing are critical factors in the success of the strategy. The strategy lost popularity following the 1987 market crash as portfolio insurers were seen as contributing to the selling pressure in the market.

While liquidity has increased since that time, use of options strategies either directly through options contracts or through replication has been limited.

The primary reasons seem to be governance related as the strategies have not appeared to be attractive enough for the management burden involved. While options are regarded as standard tools to corporate treasurers they are seen as unusual to pension funds which have more limited access to treasury skills.

### Why are they interesting now?

At different times in the investment market cycle different strategies provide appeal in their risk/ reward trade-off. Upward trending markets, for example, generate interest in private equity and growth strategies, while downward trending markets generate interest in value strategies and hedge funds. Today's markets are generating interest in derivatives for several reasons:

- the evolution of risk management
- the impact on pension funding levels of the combined effects of falling interest rates and declining equity markets
- changes in corporate accounting of pension funds.

Pension funds with long-term liabilities have long been in the business of taking risk, not eliminating it. Their primary risk management tool to date has been diversification, although pension funds have historically taken significant risk in equities and very little elsewhere<sup>2</sup>.

Many pension funds have determined that they are strategically overweight equities, but are reluctant, given current market conditions, to reduce this exposure. However, the desire to manage the risk more effectively remains. Derivatives can be used to change the risk exposure of the fund.

In particular, *options* provide more flexibility to reflect asymmetries in risk exposures, either where there is a view on the future outcome of the market (eg 'the market is likely to fall'), or where there is a view about the

consequences of a particular outcome (eg 'I am very averse to a market fall').

In addition, *swaps* can be used to provide more flexibility to manage particular risks associated with specific liabilities, through better matching of liability streams.

### Derivatives usage by pension funds today

There are four principal areas where we see clear benefits for pension funds using derivatives:

- in normal investment mandates, they allow investment managers to implement investment ideas more efficiently and at lower cost (particularly the use of futures contracts)
- derivatives can help pension funds manage their transitions to new managers or new strategic benchmarks
- swaps can be used strategically for the management of duration, inflation and currency exposures, and for cashflow matching purposes
- over-the-counter (OTC) options allow funds to implement longer-term strategic risk control, particularly with respect to managing downside risks and controlling exposures to upside rewards.

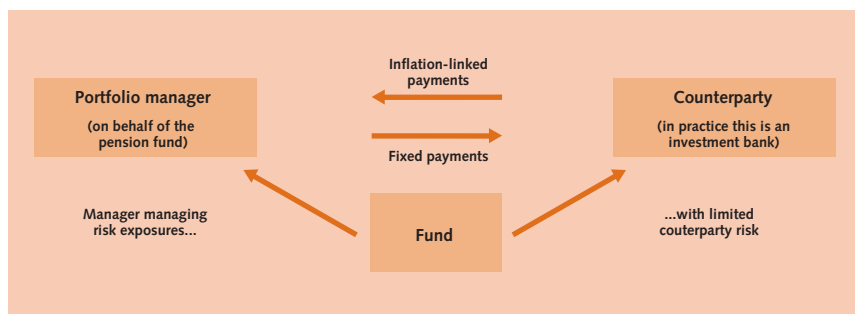
Each derivative instrument and strategy has unique characteristics, and it is not possible to cover them all in this short paper. We therefore focus on two particular examples below.

### Swaps for liability matching

Bonds have traditionally been considered the minimum risk proxy for pension liabilities. But bonds are not a good match for liabilities as they are in short supply (particularly inflation-linked and LPI) and lack diversity in maturity. There are a number of hedging strategies a pension fund can implement, including duration, inflation and cashflow matching.

Duration-matching strategies using interest rate swaps enable a pension fund to manage its exposure to changes in interest rates, particularly an increase in liability value arising from falls in interest rates. Such swaps involve the fund paying a fixed amount annually for payments linked to a particular duration from the yield curve. Inflation swaps enable pension schemes to manage their exposure to inflation. Inflation swaps involve the fund paying a fixed amount annually and receiving payments linked to RPI.

The other party in the transaction is generally an investment bank. While investment banks manage substantial portfolios of risk exposure, the extent to which they will take on risk is related to the extent they can lay off the risk onto other parties. In practice, there are limited opportunities for pension funds to get swaps that are long enough in duration and appropriately exposed to inflation.



The ability to match inflation-linked liabilities is particularly attractive in most markets. There is very limited corporate supply of inflation-linked bonds in all markets, but inflation swaps can be used with fixed interest corporate stocks to create synthetic inflation-linked corporate bonds. The process involves:

- purchasing fixed interest corporate bonds
- swapping a series of fixed bond payments for a series of inflation-linked payments, resulting in

- the pension fund holding a synthetic index-linked bond.

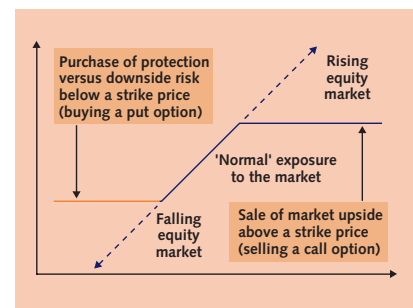
The fund has therefore reduced its exposure to changes in inflation and can more closely match its inflation-linked liabilities.

### Equity option strategies

There are many possible variants but the common feature is improving the risk/ reward profile through adjustment to equity exposures.

- downside protection: The most common type of strategy is purchasing downside protection through combining actual exposure to equities with a put option
- downside protection in a range: A common downside protection variant is the 'put spread' which consists of purchasing a put option (i.e. option to sell the underlying asset to the writer) and writing a different put

the call options receive premium income). Writing the calls effectively passes on the upside potential if the equity market goes up, however, it cuts the costs of the downside protection. This strategy may be appropriate for a pension fund where above a certain level of surplus they can no longer increase benefits. The sponsoring employer often has limited scope for clawing back surplus therefore there is less of a need to take additional risk by investing in equities. The chart below shows how this strategy should work in practice



- sale of upside: The cash generated from selling the calls could be used on its own to improve funding level. In such circumstances, the fund is not protected on the downside.

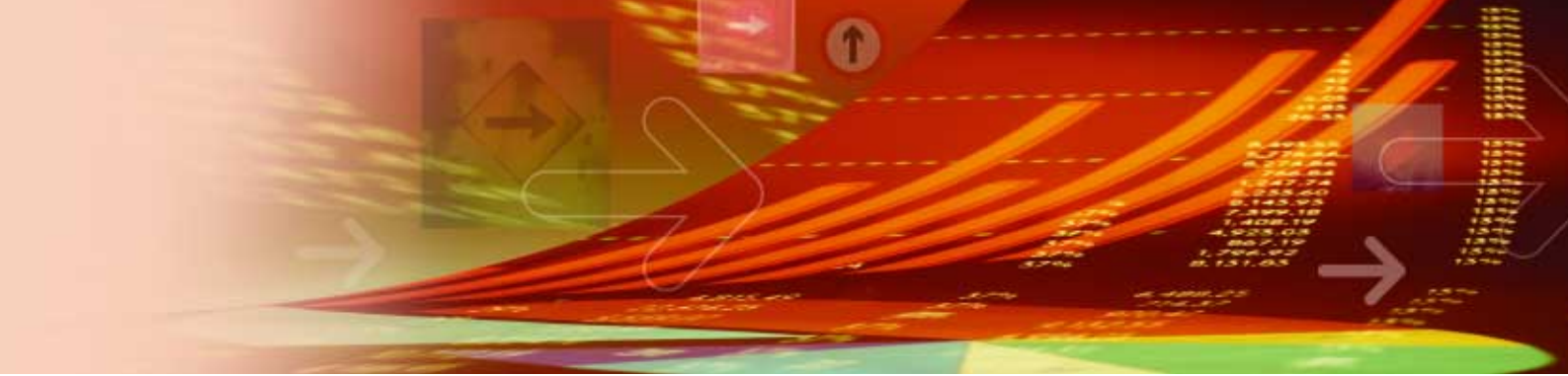
### So why have pension funds been reluctant to use derivative strategies to date?

A key reason pension funds have not invested in derivatives relates to the governance requirements. Derivatives are considerably more complex and difficult to monitor than other investments. This leads to a greater emphasis on understanding the approach and the underlying counterparty risk being taken on. This requires the use of a significant amount of the fund's 'governance budget': the time and expertise available.

Costs are a significant complicating factor in the successful use of these strategies. The precise cost of options in particular is difficult to assess involving the use of complex option pricing models such as the Black

option with the same expiry date but with a lower exercise price. The benefit of this contract is that it is a cheaper alternative to the straight purchase of put options

- combining downside protection with the sale of upside opportunity: It is also possible to enter into an 'equity collar'. A collar strategy consists of the simultaneous purchase of put options and sale of call options with the same expiry date. The put options limit the portfolio losses in the event of a declining market, while the call options help finance the purchase of the puts (the sale of



Scholes model. Funds should be aware that pricing is influenced by demand and buying a put to protect an equity portfolio will be most expensive when there is a lot of demand.

### Derivatives terminology

- **derivative:** financial instrument whose value is dependent on some other underlying asset
- **swap:** an agreement between two parties to exchange one cash flow for another
- **options:** contracts between two parties whereby the buyer (or holder) of the option has the right, but not the obligation, to purchase or sell a specified quantity of the underlying asset at a particular price at some point in the future. The seller (or writer) of the option receives a fee (the 'premium') as compensation for the risk of being 'exercised against'

- **call option:** the right, but not the obligation, to purchase the underlying security from the writer of the option at the 'strike' or 'exercise' price
- **put option:** the right, but not the obligation, to sell the underlying security to the writer of the option at the 'strike' or 'exercise' price
- **premium:** the price of the option. This is paid by the buyer of the option to the seller
- **strike, or exercise, price:** the price defined in the contract at which the holder may exercise the option against the writer. If the market price is above strike price a call option is said to be 'in-the-money' (ie the option has intrinsic value / would generate a profit to the holder if exercised), whereas a put option would be 'out-of-the-money'. Where the market price is below the strike price, the 'moneyness' of put and call options is reversed.

1. Tools of the trade: A basic guide to financial derivatives, Federal Reserve Bank of Boston, <http://www.bos.frb.org/education/pdf/toolsoft.pdf>
2. see *Diversity*, Watson Wyatt, August 2003

## In conclusion

There are a number of reasons why pension funds should be managing risks more carefully in future and derivatives can play a significant role in this regard. We believe there is an increasing need for trustees and corporate pensions people to invest time in understanding these opportunities.

# Doing governance better

"As an investor, as long as you understand something better than others, you have an edge."

*George Soros*

## In short

This section is a little more eclectic in nature, with three important but different topics. Our belief system affects every investment decision we take, and so we explore the quality of our beliefs. We also argue that corporate governance adds value and that this is in the long-term interests of

shareholders. We explore 'principal-agent' issues between pension funds and their managers and advisers, and whether they can be improved.

## Beliefs about beliefs

Investment is essentially about making judgements and decisions in the present, typically with reference to the past, to cope with or exploit an uncertain future. We all do this by using our underlying beliefs about how the investment world works. This research paper explores why beliefs are so important, and demonstrates that the quality of our beliefs is a major determinant of success in investment.

We seek to highlight the importance of beliefs, and to propose that better quality beliefs lead to better quality decisions. We do not attempt to address any particular investment beliefs, but rather to raise the consciousness that they are there.

## Corporate governance

Recent high-profile publications highlight the role that pension funds

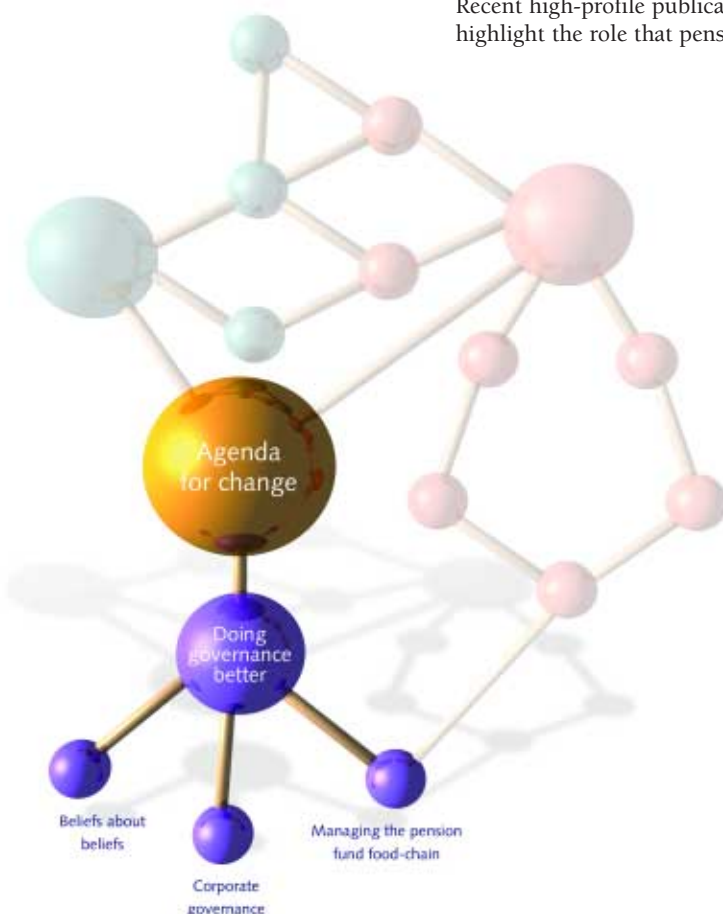
should be taking in promoting the adoption of good governance principles in companies in which they invest. We believe that it is in most pension funds' interests to take stronger stances as owners in their relationships with company managements. Collaborative work amongst pension funds and managers is likely to have the most positive impact overall. In this research paper we argue that good corporate governance adds value. It is therefore in the interests of the beneficiaries of a pension fund that actions are taken that encourage companies to follow sound governance practices.

## Managing the pension fund 'food chain'

In this research paper we suggest that pension funds are not getting the value added they require from the investment 'food chain' – the line-up of agents (principally investment consultants, investment managers and brokers) to whom important investment functions and responsibilities are delegated. To improve the outcome, pension funds must exert stronger and more effective control over these agents. We argue that fiduciaries and their agents need to work harder to understand the motivations, incentives and alignments of interest in the investment industry. Remuneration is a powerful tool, and trustees should exercise more control over what they spend and where they spend it. That will necessitate a rethink of how to act and, we believe, concerted collective action to bring about change. Pension funds need to gain the upper hand in their delegations if they want good value from the food chain. In the 'doing assets better' section, we propose a new fee model for new mandates which specifically seeks to address these issues.

## In conclusion

In this section we explore some of the wider aspects of the foundation of governance. We have suggested ways in which pension funds might work better with their agents.



# Beliefs about beliefs

## On the importance of superior navigational equipment when visibility is limited

### In short

Investment is essentially about making judgements and decisions in the present, typically with reference to the past, to cope with or exploit an uncertain future. We all do this by using our underlying beliefs about how the investment world works. This paper explores why beliefs are so important, and demonstrates that the quality of our beliefs is a major determinant of success in investment.

### Good 'all season advice' for funds

During this phase of pension fund investment difficulties we have maintained a consistent line of advice that the highest priority issue for funds to deal with is strategic asset allocation. We are not advising funds that are busy addressing the choice of their investment managers that they do not have a legitimate agenda. Of course they do. But they must recognise that the influence of their decisions in this area will be less than for strategic asset allocation. Furthermore our advice is that they have more chance of failure in this area because of the considerable influence of the governance employed.

The basis of this advice for all seasons is taken from the core beliefs of Watson Wyatt's consultants and a current set of our relevant beliefs here are included below. We believe these beliefs provide an explicit link to our advice.

#### Watson Wyatt core investment beliefs

- the trustees' first task is to decide the extent of risk to be taken, and how this can be implemented consistent with the governance structure in operation
- given the considerable impact of governance, the sponsor/ fiduciaries should only invest in asset classes for which they and their managers have adequate governance, a flow of useful information, sufficient alignment of interest and reasonable controls

- asset allocation policy is the primary driver of long-term success. Active management can add value over benchmarks but the governance has to have high competency to achieve this.

The key questions are how can good beliefs be developed and successfully used. We hope this more detailed account of beliefs that follows is helpful in this regard.

### Why does investment particularly need beliefs?

There are several reasons for why we find it useful to hold beliefs. In investment you are confronted with assuming either a theoretical world of 'perfect' (complete) information<sup>1</sup> or the (not unreasonable) assumption that the future is 'unknowable'<sup>2</sup>. In both cases beliefs are vital. In the first, we use beliefs as short-cuts in our decision-making saving large amounts of computational time, as the information relevant to investment decisions tends to be substantial; beliefs are critical here as a time-saving device. In the second case, with so much of the puzzle missing (concerning how the future will unfold) beliefs are needed to fill in the gaps; beliefs here are necessary to achieve any sort of quality attempt to add value through more accurate assessment of the future.

In the light of the above, we would assert that all investment advice is based on underlying beliefs, whether recognised or not. Furthermore we argue, surely investors will make better decisions if they understand what they must believe about the world to accept the advice offered<sup>3</sup>. In this respect we believe consultants have typically not done enough in explaining the belief systems upon which their advice is based and it is Watson Wyatt's intention to do more to correct this in the future.

### Beliefs in strategic asset allocation

We can illustrate these concepts, and introduce an important qualification, by considering the setting of the

strategic asset allocation. Fiduciaries could undertake this task themselves with a sufficient investment of time and resources. However, as this would prove too time-consuming (and expensive), most opt to consider the output of an asset liability model (ALM). Implicitly, the fiduciaries must believe that the ALM captures the appropriate data and performs the appropriate calculations, and in doing so can use ALM as a time-saving device.

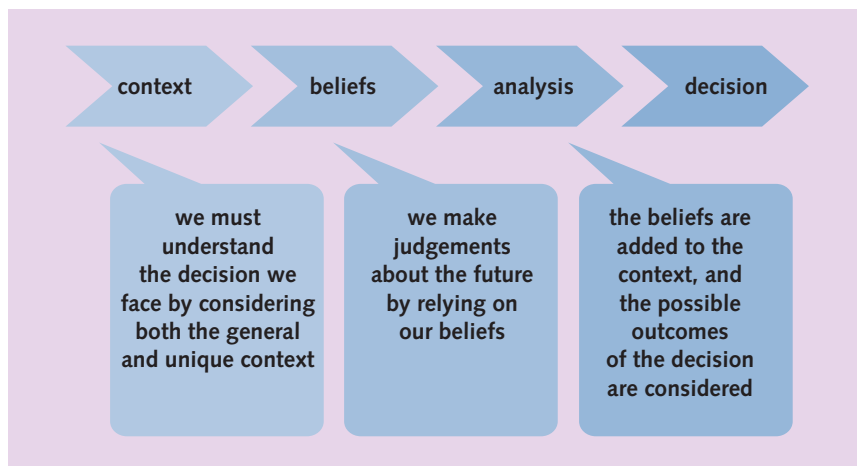
The qualification that we need to make is that beliefs will only act in a value-adding, time-saving way if they are supported by the appropriate competencies. Is the ALM rigorously researched, carefully built, and continually maintained, or is it a black box without 'provenance'?

We often like to use the metaphor of Russian dolls to describe the increasing intricacy of detail as we develop a deeper understanding of investment. We start with the superficial detail of the biggest doll, the completion of the detail on each of the next dolls is challenged by the additional time and knowledge required. This is essentially the underlying rationale for hiring any adviser, if your detail is limited (you have too large a doll), use someone who has more experience and expertise (a smaller doll). The challenge for the fiduciary in working with ALM is how can he assess the quality of the ALM work when it is so specialised (it comes from a much smaller doll). To answer this we need to break down the decision into its component parts.

### The role of beliefs in decision making

A decision can be broken down into three parts; *context, beliefs and analysis*.

Logically, to improve our decision-making performance, we will need to improve our game in each area. However, we will argue that the largest competitive advantages come by improving our beliefs. In a world of imperfect information there may be some scope for improving the context



(better understanding the liabilities, employer covenant etc), but we would argue that the scope is limited. Likewise, the ready availability of hardware, software and bright people to run them, surely means that improving the analysis is also limited in impact. So we would argue that beliefs can make the biggest difference, whether concerning how asset and liabilities will correlate in future, or whether market returns will revert to historical means.

### Are all beliefs created equal?

*"It is with our judgements as with our watches; no two go just alike, yet each believes his own."*

Alexander Pope

To torture Pope's quotation above, if two ALMs give different answers, how are we to judge between them? We suggest the answer will be to understand the beliefs underlying each model. In this respect, we would argue that not all beliefs are created equal. But how can a non-expert tell between the two on the quality gap? In our work we are becoming increasingly conscious of the difference between assertion and demonstration. In general, we would suggest that a belief which can be demonstrated to be reasonable or valid is superior to a belief which can only be asserted. We say 'in general' as this is subject to one important caveat that new theories (assertions) generally expand upon,

and replace, the old theories (demonstrations).

### Progress tends to move in revolutionary steps

*"I do not feel obliged to believe that the same God who has endowed us with sense, reason, and intellect has intended us to forgo their use."*

Galileo Galilei

Human progress can be measured in terms of radical new beliefs shattering established ones; belief in the earth as a sphere, replacing the flat earth theory (despite a handful of advocates clinging on to this day). Galileo's quote above reminds us that he was sentenced to life imprisonment for supporting Copernicus' belief that the earth orbited the sun. In cases such as this – 'facts' (eg the sun orbits the earth) being replaced by new 'beliefs' (eg the earth orbits the sun) – people were left with considerable unlearning to do<sup>4</sup>.

Consequently, history shows us that:

- beliefs are often hard to identify, as they typically parade as certainties
- beliefs can be erroneous
- beliefs can be held with varying degrees of conviction and there is little that is certain.

Our view is that Modern Portfolio Theory has elements that should firmly

be rejected rather than expanded upon. Space in this paper does not allow us to develop the ideas except to say that the theory is most clearly wrong in assuming that:

- there is one pricing model that all investors base their decision taking on
- all investors have the same preferences.

Investment beliefs will be better served once a new *post-modern portfolio theory* becomes the established foundation theory for the investment industry.

### Strength of belief

Beliefs are also unequal in terms of the strength of conviction with which they are held. We would argue that there is a vast difference between *inviolable* beliefs – the core elements of our world that we are unwilling to see violated (eg sentiment plays a very big part in pricing securities) – and *'working'* beliefs (eg losses in investments need to be cut quickly). We would expect inviolable beliefs to be few in number but to be present in some degree in almost all investment decisions. In contrast, we may hold myriads of working beliefs, and these may also be replaced with better beliefs on a frequent basis. The key, of course, is in knowing the difference between the inviolable and working beliefs and in particular recognising the beliefs to cling to no matter the evidence there is to the contrary.

We may draw some more conclusions:

- we should aim to hold the minimum number of inviolable beliefs possible<sup>5</sup>
- we should be willing to adjust working beliefs over time in favour of improved ones
- in general, we should favour demonstrable beliefs over those that can only be asserted
- assertion will be necessary in a changing world, but requires excellent advocacy.



## Building better maps

Consequently, in our own work we are constantly aiming to improve our beliefs, or build a better map. As far as possible we aim to do this through demonstration, but also recognise the limited role historical demonstration may be able to play in a changing world (with non-stationary statistical properties). We therefore also make assertions but try to do so with care, by building on and improving established ground.

The purpose of better maps is largely two-fold; to avoid danger, and to make faster journeys. To stretch the analogy somewhat, we know where 'private equity land' is, and we have a team exploring its interior, but currently the journey there is long and arduous. It would be nice to know whether it is a separate island, or whether an overland journey from 'equity continent' is possible.

## Watson Wyatt current investment beliefs

- the principal goal of investment is to create value by maximising the return per unit of risk, where risk is defined relative to the fund's liabilities
- past performance has very limited predictive power and is only really useful to understand and validate asset allocation strategies and managers' processes and approach
- management, transaction and transition costs significantly inhibit out-performance and should be appropriately weighted in the appraisal of investment management decisions.

1. The concept of perfect information is widely used in finance and economics. It assumes that decision-makers have all the information possible. It says nothing about the quality of that information.
2. Technically, we are introducing the possibility that the world is 'non-stationary', in which case we can never know what relevant values should be, say the equity risk premium.
3. From *Strategic Asset Allocation*, 2002, by Campbell and Viceira.
4. For example, the Catholic church admitted in 1992 that errors had been made by its theological advisers in the case of Galileo (the trial was in 1633).
5. This is a corollary of Occam's razor, 'no more things should be presumed to exist than are absolutely necessary'.

## In conclusion

In this research paper we have sought to highlight the importance of beliefs, and to propose that better quality beliefs lead to better quality decisions. We have not attempted to address any particular investment beliefs, but rather to raise the consciousness that they are there.

# Corporate governance

## Time to stand and be counted

### In short

The Combined Code<sup>1</sup> and, more recently, the Institutional Shareholders' Committee Statement of Principles<sup>2</sup> highlight the role that pension funds should be taking in promoting the adoption of good governance principles in companies in which they invest. It seems to us that it is in most pension funds' interests to take stronger stances as owners in their relationships with company managements. Collaborative work amongst pension funds and managers is likely to have the most positive impact overall.

### What is corporate governance?

Corporate governance relates to the management process of a firm. Exact definitions of corporate governance vary considerably. In the context of this research paper, however, it is defined as:

*The allocation of resource, both human and financial capital, to effect an accountable and transparent process that enhances value to shareholders.*

Companies with good governance in place ensure that there is the right balance of accountability and sound controls within their management structure. Where corporate ownership and management are separate, as is the case with the majority of publicly listed companies, the interests of management and the owners may not be aligned, leading to what is frequently termed 'the agency problem'. Good corporate governance can provide the framework with which pension funds as owners can work in addressing this issue.

### Pension funds as owners

The ownership structure of UK companies has changed significantly over the last forty years. In 1963 individuals owned over 50% of shares on the UK equity market while pension funds owned 6%. By the end of 2002 the ownership by individuals had reduced to 14% while that of pension funds had risen to 16% with other

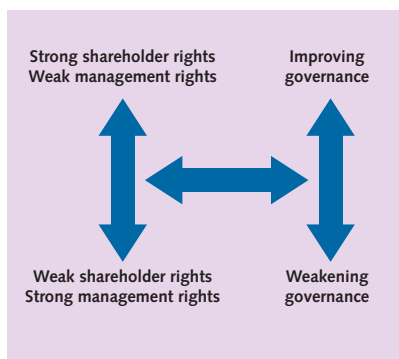
institutions increasing similarly<sup>3</sup>. It would appear that over this period the balance of power in corporations has shifted from shareholders to management, and will continue to do so unless institutions as the new owners seek to exert their influence.

### Does good corporate governance add value?

The key questions for pension funds to consider are whether good corporate governance adds any value to their fund and, if so, what action they can take to most effectively harvest such a gain with respect to their shareholdings.

Several studies have tried to identify a link between corporate governance and value. Much depends on what definition is attached to the concept of 'value'. Some studies, for example, look for superior share price returns while others regard value as being achieved if credit ratings are higher.

In a US based study by Gompers, Ishii and Matrick<sup>4</sup> the power of management relative to shareholder rights was examined. The findings suggested that greater control exercised by management through the employment of corporate provisions such as options detracted from value over the period of investigation (the 1990's). The authors suggested that where greater management control existed, weaker shareholder rights prevailed. Conversely, weak management rights and strong shareholder rights led to higher profitability and better returns.



Similar studies carried out in other countries<sup>5</sup> also conclude that good governance adds value. However, the evidence does not always point to better governance leading to better accounting profitability and share price returns, but rather to better credit ratings. Thus companies with better corporate governance will often have a lower cost of capital and are able to borrow more cheaply, in much the same way that the yield on a AAA-rated bond is lower than on an A-rated bond.

As well as academic studies supporting the thesis that good corporate governance pays, there are practical investment examples. Warren Buffett's investment vehicle, Berkshire Hathaway, for example will actively engage with the management of their holdings and even seek positions on the board. The Californian Public Employees Retirement System (CalPERS) too have actively engaged with target companies on their focus list and have demonstrated that superior investment returns have been achieved<sup>6</sup>.

### Would pension funds benefit?

The balance of academic evidence supports the thesis that good corporate governance adds value. It is not always clear, however, whether good corporate governance leads to overall wealth creation or to a wealth transfer from the controllers (whether management or majority shareholders) to minority shareholders. From the perspective of a pension fund as a minority shareholder, however, there is benefit either way. The benefits gained may be return-enhancing, but may equally be risk-reducing in nature.

The research, and the Gompers study in particular, also indicates that companies with weak shareholder rights are generally worse investments than those with stronger shareholder rights.



By implication a diverse, non-collaborative group of minority investors are less able to influence a strong management to act in accordance with the principles of good governance. This leads to the agency problem discussed earlier and therefore weak shareholders are likely to suffer. However, by collaborating with each other in exercising their rights of ownership (for example in voting) minority shareholders can strengthen their position and reap the resultant benefits of promoting good governance with management. For the majority of institutional shareholders the mechanisms for such collaboration lie with their appointed investment managers.

### Best practice in corporate governance

What is meant by good corporate governance? In the UK the principles of best practice are set out in The Combined Code, as recently strengthened by the revised recommendations of the Higgs' report. This covers the obligations of management in structuring and remunerating the board, in relating to shareholders, and the obligations of institutional shareholders in relating to the company. The Institutional Shareholders' Committee (ISC) has expanded on the Code in its Statement

of Principles, which is endorsed by the NAFI.

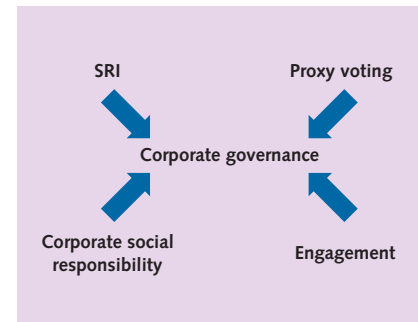
None of the guidance provided is in formal legislation. It is clear from the level of attention and focus being placed on the subject, however, that the issue of dealing with the agency problem will not disappear. Pension funds and other institutions are being encouraged to act as responsible owners without statute book interference and pressure being imposed. If they do not take their responsibilities seriously it is possible that formal legislation will follow when the Government reviews the take-up of the ISC code in November 2004.

### What should pension funds do?

Pension funds need to take their responsibilities as owners seriously. This means *being active*, but does not mean interfering with the day-to-day management of a company. Funds should assess their own requirements for a corporate governance agenda by reference to their beliefs<sup>7</sup> and the extent to which their own context creates value added opportunities. The outcome of this assessment will lead to different actions being taken by different funds.

Being active can encompass a range of possible opportunities:

- ensuring the shareholder's right to vote is used (*proxy voting*)
- engaging with companies to change the way they act (*engagement*)
- ensuring decisions are made in the best interests of all stakeholders (*corporate social responsibility*)
- at the extreme, taking a leadership role in promoting socially responsible investing (*SRI*).



Clearly engagement does not make sense for all types of mandates. If a short-term trading strategy is being pursued, for instance, being active is meaningless<sup>8</sup>. It becomes more relevant for investment strategies which have a longer-term focus<sup>9</sup>. Index-trackers, for instance, are obliged to hold certain stocks and therefore any actions which can enhance the value of that holding would be beneficial. Similarly long-term investment strategies may incorporate active agendas and may even include more extreme engagement as a key focus.

### How should pension funds become active?

Many pension funds are already active in exercising their voting rights, most often through their appointed investment managers. This approach implicitly promotes collaboration between investors as managers will pool the holdings under their influence. There has been some suggestion that votes cast by investment managers have not been registered by companies due to inefficiencies within the reporting system. Consequently, we would suggest managers are requested to also express an opinion on whether their votes were registered. We would hope that this would have the effect of encouraging greater efficiency through time.



Monitoring the effectiveness of the activism of the manager should be an integral part of the normal monitoring process. Furthermore where pension funds choose a stronger leadership role in corporate governance they may become more involved in individual cases of active engagement with company management.

There has been some concern expressed that active corporate governance is costly and the question of who pays certainly arises. These costs, however, need to be balanced

with the additional value achieved on behalf of the investor, particularly through collaboration. In addition, as the trend to greater transparency of agent fees gathers momentum it will be easier to address these concerns.

The message from the Government seems to be quite clear that in order to avoid the threat of future legislation the ISC code will need to be adopted by schemes. Most of the provisions of the code recognise that institutional investors delegate the day-to-day management of their investments to

agents (investment managers) and, as such, expect that the majority of the corporate governance activity will be undertaken by those agents. However, both pension schemes and agents, are expected to have a statement of their policy on activism and how they will discharge the responsibilities they assume.

1. The Combined Code was derived by the Committee on Corporate Governance from the committee's final report and from the Cadbury and Greenbury reports (2000)
2. The responsibilities of institutional shareholders and agents – statement of principles (2002)
3. Data from ONS, Share ownership reports
4. Gompers P., J. Ishii and A. Metrick: 'Corporate governance and equity prices' (2003)
5. Drobetz W., A. Shillhofer and H. Zimmermann repeated the study in Germany (2003) while Black B., H. Jang and W. Kim studied Korea (2003)
6. A study by Wiltshire on the Calpers Effect (1997) showed that target companies on the focus list outperformed by 23% in five years after focus listing, against 89% underperformance in prior five years
7. see *Beliefs about beliefs*, Watson Wyatt, August 2003
8. see *Short-termism*, Watson Wyatt, May 2003
9. see *Absolute return investing and 'Ten-year Mandates'*, Watson Wyatt, May 2003

## In conclusion

In this research paper we have argued that good corporate governance adds value. It is therefore in the interests of the beneficiaries of a pension fund that actions are taken that encourage companies to follow sound governance practices. The benefits are enhanced if investors are able to collaborate in their activism.

# Managing the pension fund 'food chain'

There is many a slip 'twixt cup and lip'

*"In this example of the food chain, lions gain most of their nutrition from eating grass, the grass that their 'agent' the impala has eaten on their behalf. But they must expend considerable energy overcoming the impala's reluctance to be eaten."*

Wildlife Channel

## In short

In this research paper we suggest that pension funds are not getting the value added they require from the investment 'food chain' – the line-up of agents (principally investment consultants, investment managers and brokers) to whom important investment functions and responsibilities are delegated. To improve this problem, pension funds must exert stronger and more effective control over these agents.

## The 'food chain' and agency problem

The first systemic difficulty pension funds face is to do with the 'agency problem'. Pension funds with very few exceptions are not resourced to manage all their activities in-house. So they employ 'agents' in both advice roles (eg investment consulting) and delegated roles (eg investment managers). This exposes them to the 'agency problem' that agents' interests may not coincide with those of the fund.

of professional firms because of the complexity of their activities and the inter action of a number of agents may not make up a cohesive 'team'. The result has been that the costs of employing agents have been high. The figures we currently estimate for managing the investments of the fund (excluding administrative costs) are:

Pension fund 'food chain'					
	US	Canada	Japan	UK	Netherlands
Consultant	3	6	2	2	1
Investment manager	40	35	33	33	20
Broker	23	23	23	23	23
Custodian	3	4	8	3	3
Performance measurer	0	1	0	1	1
<b>Total (bp)</b>	<b>69</b>	<b>69</b>	<b>66</b>	<b>62</b>	<b>48</b>

Source: Watson Wyatt

The key question is whether pension funds are getting good value for this outlay. We have doubts.

## The share-ownership problem

This is the second problem of the current investment system. Pension funds have had good reasons to own equities but this view is complicated by what is meant by this 'ownership'. In general, research suggests that the more distant the owner is from the

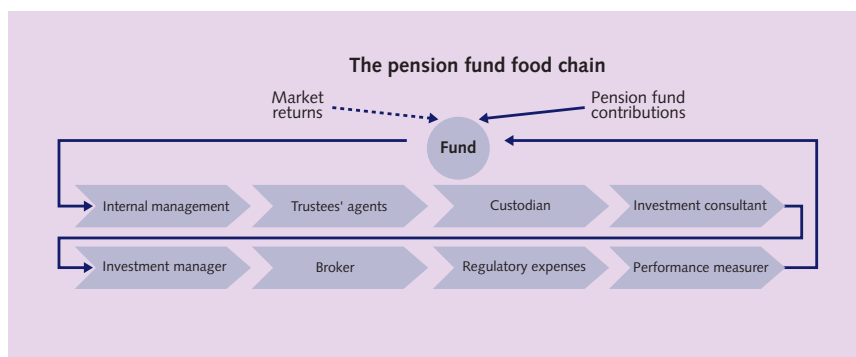
has changed markedly over the last 30+ years. As the table below shows, in the UK while ownership by individuals has declined from 56% to 14%, that of institutional ownership has risen from 36% to 82%.

Ownership of the UK equity market		
Institution	1963	2002
Pension funds	6.4	15.6
Unit trusts etc	12.6	13.9
Insurance companies	10.0	19.9
Overseas	7.0	32.1
<b>Sub total</b>	<b>36.0</b>	<b>81.5</b>
Individuals	56.1	14.3
Others	7.9	4.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: ONS Share ownership (various years), www.statistics.gov.uk

With individual ownership dominant, as was the case in the past, ownership and control were combined. Now that institutional investment is dominant, the ownership interest tends to be more diffused and is often fuzzy. With pension funds, the legal ownership lies with the trustees but their preparedness or capacity to act as influential owners is limited. Furthermore, pension fund liabilities and assets could be considered as an extension of the company's balance sheet, in which case the shareholders of the sponsoring company should be seen as the ultimate owners. However, many of these shareholders are themselves pension funds. Ownership influence could be exercised by the investment managers but only with explicit instructions from their clients – an approach rarely followed to date.

The point here is that if it is unclear who the owners are, they are unlikely to be able to maximise the return on their assets. They may be letting agents (like the managing executives who have become steadily more influential over the years) take too much of the return<sup>1</sup>.



The major issue is that pension funds' goals are tied to paying pensions, whereas agents may be more interested in managing their business in line with their own objectives. Furthermore, pension funds tend to use a wide array

of professional firms because of the complexity of their activities and the inter action of a number of agents may not make up a cohesive 'team'. The other basic tenet is that food chain problems typically arise when ownership and control become separated. This is very germane to all developed markets, where ownership

### Alignment of remuneration

The third systemic difficulty is that the fee bases and incentives in the investment industry are not perfectly aligned to get agents working effectively for their clients' interests.

For a *consultant*, the time charge basis does not provide good incentives to be efficient. There are issues about how the work is done including how the research necessary is completed and such a basis can produce 'ambulance chasing' behaviours. Retainer pricing would generally work better but is difficult to operate effectively. In addition a consultant may find it more profitable selling a product like fund of funds management than giving advice which undermines independence of advice. It is true that the discipline of the market and market pricing act as controls but in a concentrated market that control is limited.

Moving on to *managers*, within the last two decades, investment management has evolved from a profession into a business – a business that is engaged in manufacturing relative returns. That may involve some mis-alignment because pensions are ultimately paid with absolute returns and in aggregate, there can be no positive relative return, only the market return less fees and costs. As for fees, basing these on the value of assets under management acts as an incentive to gather assets which is often at tension with good performance which thrives on *diseconomies* of scale. This has led to excess capacity, as evidenced by product proliferation. At the end of the 20 years ending 2001, the US investment management industry was one third as concentrated as the average US industry, but two to three times as profitable<sup>2</sup>.

*Brokers* also have an incentive problem, which is, of course, that they make money on asset turnover. This is not diametrically opposed to pension funds' interests, but it is close.

### What should be done?

Better answers to these problems can only be realised if pension funds manage their advisers and providers better. We believe game theory<sup>3</sup>, which is the formal study of conflict and cooperation between interdependent agents, can be usefully applied here and suggests the issues come down to:

- alignment of incentives
- disclosure of all relevant information
- monitoring based on meaningful measures of 'success'
- responsible agents having appropriate accountabilities.

This list provides guidance on the key steps pension funds need to take to improve their effectiveness. Five questions need to be addressed:

#### Am I measuring my agents well, and is my measurement period optimal?

Good measurement is key to good management. But all too often the concentration is on short-term measurement which conflicts with long-term goals<sup>5</sup>.

#### What should be done about consultants?

Ultimately, the onus is on the pension funds to ensure that they are getting value for money and alignment of interest from their consultants. Better measurement is critical to this but strict numerical measurement is not possible and we advocate monitoring consultants like Watson Wyatt on a balanced score-card basis<sup>6</sup>.

#### What should be done about managers?

The first consideration is whether a change of fee structure might help better alignment. We advocate consideration of a two level fee:

- a fixed fee in fixed currency which is to cover the overhead costs of the business

- a variable fee related to performance achieved rewarding the manager for their skill and contributing to bonuses and shareholders' profit margin.

A related point is whether current mandates bring an alignment of interest with the fund. Mandates that relate more specifically to a fund's liabilities may have merits and we have described the benefits of absolute return investing and ten-year mandates<sup>7</sup>.

#### What part does manager turnover play in successful governance?

Replacement of managers who have *lost the skill* to perform seems desirable. However, this reasonable goal is often subverted by a simpler rule by which managers who *have underperformed* are replaced. In a more effective model we should read more meaningfully into a period of underperformance by assessing its likely sustainability. We need softer research factors to do this rather than hard measurement. Furthermore, where the skill has slipped there may sometimes be a benefit to clients 'engaging with the manager' (not dissimilar to engagement in corporate governance) to facilitate the changes necessary to resume their previous skill. At the very least it should be worth pointing out the failings that the client sees in the people or process. This is an area where the consultants like Watson Wyatt should be doing more to identify weaknesses for clients and to bring them to the managers' attention. In our view the *turnover of managers*, which generates an average cost for each fund of 0.1% per annum, is too high.

#### What should be done about brokers?

The brokerage expense needs considerable transparency. This represents the minimum that is necessary. The idea of bundling the expense into the investment management fee is logically appealing but may be difficult to execute successfully.

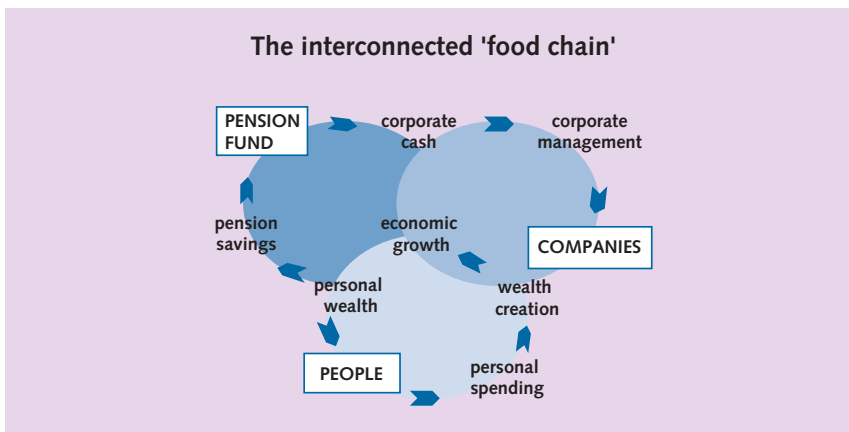
## Refining best practice in governance

Watson Wyatt reviewed best practice in governance in a 2000 paper<sup>8</sup>. One of the key conclusions was how good governance varies from fund to fund but the strongest positive factor is building the in-house governance capacity. The key question to be answered here is: *Am I spending enough on internal resources and should I 'outsource' less?*

enterprises, corporations, markets and governments. Self-investment rules seek to prevent potential abuse of this role.

These close connections in the food chain between the roles of the company, the pension fund and the individual are demonstrated pictorially below. And so, we believe that the key question for pension funds to answer here is: *Am I doing enough as an owner?*

1. A similar issue of 'weak shareholder/ strong management' is discussed in *Corporate Governance*, Watson Wyatt, August 2003
2. see *Losing the winner's game*, Morgan Stanley 4 Feb 2002
3. A useful introduction to game theory can be found at <http://www.cdam.lse.ac.uk/Reports/Files/cdam-2001-09.pdf>
4. see *Time to stop looking*, Watson Wyatt, July 2002
5. see *Short-termism*, Watson Wyatt, May 2003
6. see *Measuring up*, Watson Wyatt, December 2002
7. see *Absolute return investing and 'Ten-year Mandates'*, Watson Wyatt, May 2003
8. *Structured Alpha: the impact of governance on investment decisions*, Watson Wyatt, September 2000
9. see *Corporate Governance*, Watson Wyatt, August 2003



Finally, there is a strong call for pension funds to take a more active stance towards corporate governance for the purpose of adding meaningfully to shareholder value<sup>9</sup>. We should recognise the central place of pension funds in the food chain and their goal to provide value both to beneficiaries (pension savings) and to the companies that sponsor them (workforce advantage). As a holder of assets that need to be invested, a funded pension plan will, by necessity, also have a role as a supplier of capital – to private

## In conclusion

Trustees and their agents alike need to work harder to understand the motivations, incentives and alignments of interest in the investment industry. Remuneration is a powerful tool, and trustees should exercise more control over what they spend and where they spend it. That will necessitate a rethink of how to act and, we believe, concerted collective action to bring about change. Pension funds need to gain the upper hand in their delegations if they want good value from the 'food chain'.

# Doing pensions better

“Everything should be made as simple as possible, but no simpler.”

*Albert Einstein*

## In short

This section explores our thinking on how to ‘do pensions better’. Our underlying belief is that if the existing problems are not addressed, there will be implications for the security of individuals’ retirement. There are also likely to be implications for corporations, shareholders and taxpayers. Our thoughts seek to find a balance between risk and reward. This theme is explored in the two improving pension design papers, which link to ‘doing assets better’ via risk budgeting and derivatives.

## Improving DB design

In this research paper we argue that defined benefit (DB) pension provision will only have a future if it offers an attractive cost-benefit proposition to both employers and members. We identify four factors that will should help this proposition: linking investment strategy and benefit design, finding the optimal amount of risk to take, reverting to a model of (lower) core benefits with discretionary bonuses, and making the exact nature of the DB deal clearer. The underlying theme is that the greater the desire for a certain benefit (the more ‘guaranteed’ the benefit), and the less flexible the investment strategy. DB funds are unique investment opportunities for their members, but will only remain so if made attractive to both members and employers alike. We conclude that there are particular advantages to DB plans in the form of risk- and cost-sharing partnerships.

## Improving DC design

We identify the factors that will help to make DC plans a successful model which includes three investment design features: (1) recognition and application of the principle of lifecycle investment, and models of how individuals will be able to successfully execute to this principle; (2) the use of modern investment techniques, especially manager of managers and the use of

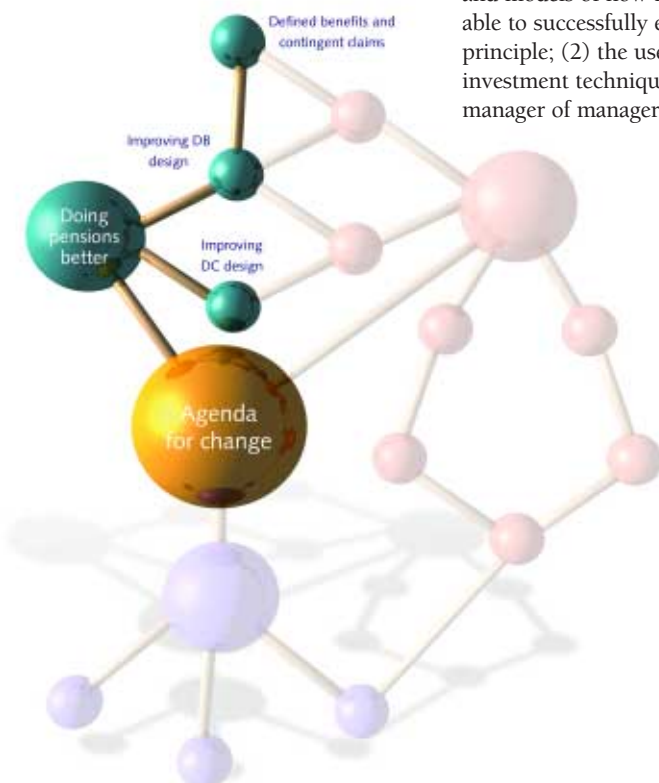
alternative assets; and (3) the use of derivatives for risk control. In addition, we argue that it will be critical to success that members have access to comprehensive information and financial education and are able to apply integrated financial planning to their individual position. We acknowledge that the present imperfections of DC are largely due to implementation and administration difficulties. Consequently, we expect to see pre-packaging of investment strategies to make them easier for members to access and the increasing availability of various self-help tools for members.

## Defined benefits and contingent claims

This research paper builds on the ‘improving DB design’ paper. We use the framework of contingent claims analysis (considering liabilities that may or may not fall due depending on the outcome of events) to take a fresh look at the workings of a pension fund. The main thesis is that a fund can be regarded as a series of options, which become increasingly valuable, and therefore problematic, the further the funding level diverges from 100%. For our purposes, the most important variables are the volatility of the fund and the sponsor’s credit rating. The higher the volatility (crudely, the more in equities), the more valuable the options. With respect to the sponsor credit rating, members essentially get different DB deals from sponsors with different ratings, a factor that might be recognised up front. We conclude that contingent claims can improve our understanding of the workings of that deal.

## In conclusion

Our main contention in this section is that the survival of DB may require considerable change to the current model and practices, but the unique advantages of DB are worth the change required. We also believe that DC provision requires improvement. We have therefore suggested ways in which the pensions deal can be improved, and in which risk can be allocated and managed.



# Improving DB design

## Finding a symbiotic relationship between investment strategy and benefit design

### In short

This research paper is not simply about benefit design or investment but about ways to see them both together. We suggest that the acid test of good benefit design will be where both employer and members find their defined benefit (DB) plan offers an attractive cost-benefit proposition. We cite four key factors that are likely to be present to achieve this:

- linking the benefit design to the investment strategy
- finding a ‘sweet spot’ where the risk taken is acceptable to both employers and members
- structuring DB design with core benefits, and with bonuses generated from surplus
- making the exact nature of the DB deal clearer.

### Back to basics

The term *defined benefit* applies to a whole suite of pension fund arrangements, from cash balance through career average to final salary. The common thread is that the terms of the core benefit to be paid in the future are defined now (although not always with absolute clarity). In contrast, the other method of pension provision – *defined contribution* (DC) – makes no statement regarding the size of the future pension, only the size of the contribution.

In the often complex world of pensions, it is sometimes useful to remind ourselves of the underlying simplicity of the concept:

Benefits	=	contributions + investment return
----------	---	-----------------------------------

The equation is in classic cost-benefit form with the investment strategy – the source of the investment return – critical to the success of the proposition for both the member of the plan and the employer/ plan sponsor. The link between DB design and investment strategy is all too often given limited

consideration, but it is essential that for good DB design we recognise the interrelationships between benefits, cost and investment strategy.

We conclude that: *DB design and investment strategy need to be ‘joined-up’.*

### What is the form of risk-sharing ‘mission’?

*“What is a DB pension plan? A captive insurance company? A risk-sharing co-operative? Or an extension of the employer’s balance sheet?”*

*Dr Jean Frijns, CIO, ABP<sup>1</sup>*

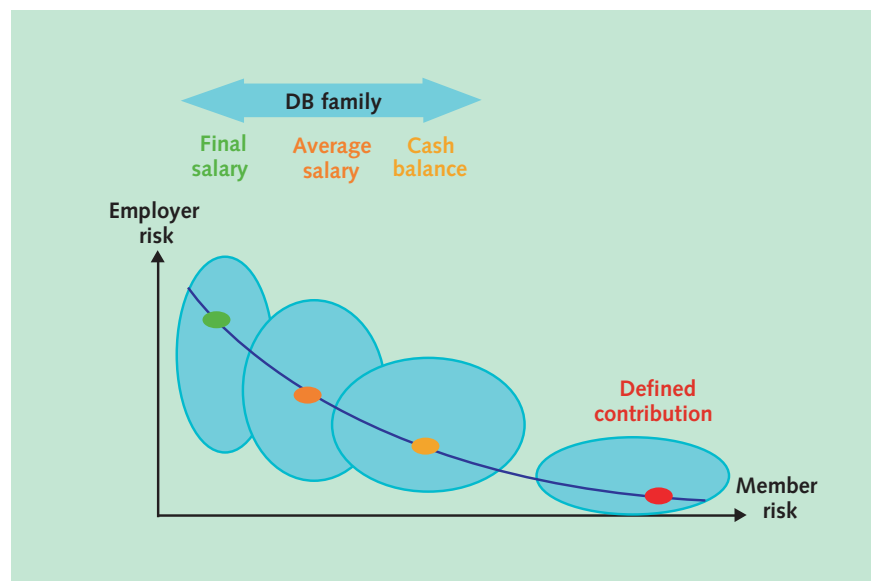
The second critical factor in a DB pension plan concerns the nature of the risk sharing. Dr Frijns has a succinct summary of the issue and the answer is that it can be any of these three:

- if the investment risk of the DB plan is largely hedged (‘insured’), it could be considered a ‘captive insurance company’
- if risk is shared between employer and plan members, it is a ‘risk-sharing co-operative’
- if the employer takes the risk alone, it can be seen as an extension of the corporate balance sheet.

The evolution of UK plans is fairly typical of a change over time towards the third type of ‘mission’. Many UK final salary plans were originally set up in circumstances different from today’s position, particularly as regards no guaranteed increases and no upper limit on funding. Then high degrees of equity investment were common with significant risk sharing (surpluses used to provide discretionary increases) and schemes were fully solvent (but the guaranteed benefits were modest). Now high degrees of equity investment remain common but plans have less opportunity for risk sharing and most schemes are technically insolvent.

Can we judge which of these models is best suited to our cost-benefit proposition? It is unlikely to be the captive approach with its implied insured guarantee. Should the assets be insufficient for the liabilities then the recourse is to the ‘insurer’s’ balance sheet. The economics of the situation suggest that any meaningful guarantee would be backed by bond investment and require prohibitively large premia.

What about the corporate balance sheet approach? We have our doubts about this model going forward. In a sense the difficulties we have seen in the UK and the US seem to suggest that this approach is subject to a



catch-22 situation: with low equity content, the costs seem too high; with higher allocations to equities the risks to the employer seem too great. The costs and uncertainties stretching out through time are inhibiting firms from unconditionally offering their corporate balance sheet as backing for new DB liabilities.

What about the risk-sharing co-operative? Our view is that this is the most promising design of the three but for the financial pay-offs to be good enough we need a fair and effective risk-sharing deal between members and employer.

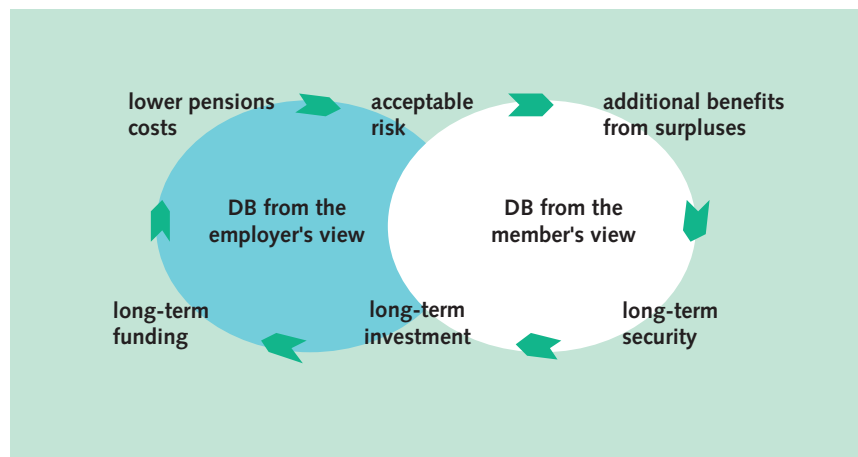
### Effective risk sharing

The acid test of effective risk-sharing is whether we can complement tolerance for risk with a greater allocation to higher returning assets. The amounts of risk taken by employers and members can be plotted for any type of benefit design. We believe that the majority of plans conform to the configurations shown on the previous page.

The key principle is that employer's risk and members' risk need to be aligned with their risk tolerance. Yet it does not necessarily follow that minimising risk is a good thing as this will tend to impact investment returns and the cost benefit proposition. By way of example, contributions of 10% of salary produce benefits expected to be about 25% of average revalued pay over a 30-year career if invested in inflation-linked government bonds. If invested in equities the equivalent benefit is expected to be about 48%, although the actual level would be subject to much greater variation and uncertainty.

The additional potential of equity investment is clear, but what is an optimal amount of risk? This calls for judgement based on individual circumstances as to where the 'sweet spot' of risk exposure lies but we can surmise that:

- for employers, it is that the DB liabilities can remain adequately



funded through a full range of corporate and investment scenarios (this is essentially about the corporate covenant being strong enough that the employer can flexibly fund the benefits over long periods of time)

- for members, it is where they can meet their financial goals through a full range of personal and investment scenarios (this is essentially about their flexibility in when they spend, when they adopt discretionary saving, and in some cases when they retire).

The merits of long-term equity strategies for DB benefits are most evident when this form of risk-sharing is at work. In particular, employers can deal with equity volatility through flexible funding (and flexibilities in accounting) and so exploit the rewards of taking a longer view<sup>2</sup>. This type of risk sharing should create two interlocking virtuous circles, as in the diagram above.

We conclude that: *DB design should seek to find the 'sweet spot' where the amounts of risk taken can generate acceptable benefits within appropriate risk limits for both employer and member.*

### Risk sharing in benefit design

In DB design a low base of benefits plus a risk-sharing approach can be used. In the pre-retirement accrual this

form of DB design can be easily incorporated in average salary and cash balance plans. In the post-retirement case, the obvious design is for pension increases to be paid from surpluses<sup>3</sup>. In both cases these additional benefits do not constitute part of the promise and are only awarded on an 'as affordable' basis.

Of course from the member's perspective, guaranteed increases to benefits seem preferable. However, what matters is whether the extra cost of the guarantee pushes the employer to the point of not wanting to provide DB benefits.

We conclude that: *Good DB design suggests lower base benefits with additional benefits granted from favourable investment experience.*

### Some simple options

So far we have discussed risk and benefits in relatively simple terms but there will always be complications from the 'options' or 'contingent claims' embedded in DB plans. There are two principal options in most DB plans: firstly, the members may have a 'call on the upside' (this is where discretionary increases came from) as it is usually difficult for a company to take surpluses out of the fund. Secondly and conversely, if the investment outcome is bad and the fund is in deficit, the company has a 'put on the downside' (by winding up the fund or

the company going into liquidation)<sup>4</sup>. In the normal course of events, when the fund is around 100% funded, neither option is particularly valuable. The problems arise when funding deviates from 100% and only one of the options has value, creating a 'win-lose' situation. Investment design can help with this by limiting such eventualities. Contingent claims analysis allows us to value these options and address risk sharing accordingly<sup>5</sup>. Good DB design needs to anticipate and manage for these eventualities, particularly the put where there are two principal ways to limit this risk:

- through trying to ensure adequate levels of solvency in the fund at all times
- through an insurance arrangement which would generally be under government control (like the Pension Benefit Guaranty Corporation in the US, the UK is preparing to introduce such an arrangement).

The difficulty with the first is that it would seem an expensive proposition, implying either consistent overfunding or matching investment policies, or both. The second alternative may appear more natural but the moral hazard of running such an arrangement, and the idea that it might turn into a large levy for the majority to cover the sins of a few makes it difficult to operate. But one way or another, limiting this risk is an important proposition.

### Defining the DB 'deal'

Arguably, one of the key problems with DB design to date has been the ease with which one of the stakeholders has been able to change the terms of the 'deal' after the event, depending on how events have turned out<sup>6</sup>. We believe that good DB design going forward should preclude that possibility.

We therefore suggest that: *Good DB design includes a clear statement of the deal specifying the risk-sharing arrangements – how surpluses and deficits will be dealt with, what the investment strategy parameters will be.*

This would be an ideal situation. However, history teaches us that the threat of political interference, changing the deal for all stakeholders, is ever present.

The above views may seem most relevant to new DB design, and yet many employers feel 'locked in' to what are now ineffective DB designs following successive changes. Attempts to move to a new design will be easier

for future service deals of course, but employers may be able to negotiate some change to past service, entitlements, at least for future service if the alternative is the closure of DB plans to new members or new accruals.

1. From *The Ambachtsheer Letter*, June 2003
2. see *Short-termism*, Watson Wyatt, August 2003
3. Most countries still operate under an environment of discretionary increase. The UK's Limited Price Indexation legislation has effectively (except for very high inflation) replaced discretion with compulsion, thereby raising costs.
4. The UK Government is proposing to curtail the ability of a solvent employer to wind up a fund without making good any deficit (on a full buy-out cost basis). This would increase the asymmetry of interest between employer and member, making the provision of DB funds less attractive to sponsors.
5. see *Defined benefits and contingent claims*, Watson Wyatt, September 2003
6. see, for example, *Can game theory build better pension plans?*, *The Ambachtsheer Letter*, February 2002

## In conclusion

DB benefits are unique investment opportunities to members of such plans. In this research paper we have tried to show how such benefits can be made attractive to both members and employers alike. We have concluded that there are particular advantages to DB plans in the form of risk- and cost-sharing partnerships.

# Improving DC design

## Adding greater customisation and investment flexibility to members' accounts

### In short

The popularity of defined contribution is increasing. In this research paper we identify the investment factors that will help to make DC plans a successful model which includes these three investment design features:

- recognition and application of the principle of lifecycle investment, and models of how individuals will be able to successfully execute to this principle
- the use of modern investment techniques, especially manager of managers and the use of alternative assets
- the use of derivatives for risk control.

In addition, it is critical to success that members have access to comprehensive information and financial education and are able to apply integrated financial planning to their individual position.

### The current situation

Individuals in DC plans are generally not well equipped to make long-term investment decisions, but this is exactly what is being asked of them. The gap between a DC member's capability (and indeed willingness) to take investment control and the task presented to them is wide. We suggest that there must be growth in a new generation of investment products and associated services to fill the gap and so to help, largely reluctant, DC investors to achieve successful financial management.

### The fundamentals of good decision-making

For individuals to take investment decisions effectively, they will need to be served by an investment process that incorporates:

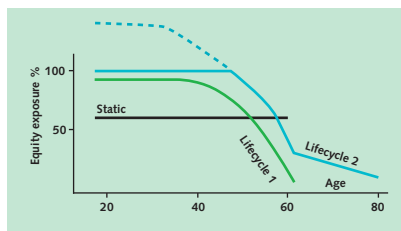
- comprehensive investment education
- timely information as to current and projected members' position

- access to appropriate choices to make investment changes
- administrative ease in making changes.

At present DC is not well served in these areas. The particular problems lie at the start and end of this list. Investment education is patchy and the majority of DC investors have insufficient grasp of the fundamentals of risk and investment planning. Furthermore, when it comes to a platform for the administration of all these separate accounts, the DC investor is rarely served with an efficient and cost effective solution.

### Lifecycle

The foundation to good investing in DC is acknowledging when a DC investor is able to accept risk, and, if there is also the desire by the member to accept investment risk, to proceed to invest in a suitably aggressive manner. Also important is knowing when investment risk is less tolerable, and being able to invest in a suitable low risk manner. Being able to accept risk is a function of the flexibility of outcome (the amount of post-retirement wealth required is not fixed) and the savings flexibility that can be extracted from the member's future working lifetime (future contributions are a powerful stabiliser, and can be used to keep the growth of the DC 'pot' on target).



It follows that a member's asset allocation should vary with age even if the member does not change his risk aversion in relative terms over time. A 'lifecycle' approach aims to alter asset allocation to meet this feature as a member approaches retirement age. This is displayed as 'Lifecycle 1' above,

and is a more efficient investment strategy than the 'Static' strategy.

Lifecycle arrangements require certain core elements:

- an efficient pool of risky assets which target high long term real returns
- an efficient pool of low risk assets which minimises economic risk as the member nears retirement
- opportunities for switching between funds (strategies) with simple administration.

Lifecycle principles should preferably incorporate two additional features. First, there is no 'one size fits all' lifecycle strategy and individuals will have particular reasons (due to employment and/ or other circumstances and/ or due to basic risk tolerance) to be more aggressively or more defensively positioned than the 'norm'. The education surrounding the lifecycle concept should encourage members to make allowance for their situation and take action accordingly.

The second feature is how post-retirement strategy should be organised. At retirement, most scheme members in the UK use their accumulated account to purchase an annuity – essentially a bond type of investment. As the cost of purchasing an annuity is dependent on the level of the bond market, members would typically be progressively switched into bond strategies. This is appropriate where risk reduction is the individual's goal, but many DC investors can afford, and have a desire, to take more risk. This would allow some equities to be held in the post-retirement phase, as shown in Lifecycle 2 opposite. Implementing this greater investment flexibility following retirement requires some care but can be achieved in most DC systems worldwide.

### Improving the return from DC

In DB pension plans, increased returns – for any level of risk – are derived

from working the assets harder in wider diversification of assets and in better choices of manager. DC pension plans have not generally exploited these areas because of the administrative complications introduced. But there are ways to improve investment efficiency by reducing the risk in the 'safe assets' and diversifying the 'growth assets'.

Safe assets	Growth assets
Principally bonds Selected on criteria matched to the member's <ul style="list-style-type: none"> <li>time to retirement</li> <li>inflation sensitivity</li> </ul>	Principally equities Also alternatives Selected on criteria based on investment efficiency (return per unit of risk)
<b>Asset mix = Safe% + Growth%</b> Based on risk tolerance allowing for the member's: <ul style="list-style-type: none"> <li>time to retirement</li> <li>other financial assets</li> </ul>	

### Better management of DC risks

Good risk control for a DC investor requires some inflation protection and sensitivity to the time horizon of the investor. Current bond investment in typical DC plans is not sensitive to either of these. There is scope to apply modern matching techniques although the challenge we comment upon below relates to the level of customisation of strategies to each individual. But we argue that DC investors with better bond management could add some growth (and expected return) to their portfolio without changing their risk profile.

### Improved growth with alternative assets

The current prevalence of quoted (public) equity funds in DC plans puts the reliance squarely upon the equity risk premium to provide long-term returns. In contrast, the focus of institutional investment over the past few years has been diversification of risk drivers within portfolios of return seeking assets into what are commonly referred to as alternative assets. For more sophisticated investors, best practice has evolved to add alternative assets to their portfolios, making use of private equity, real estate, hedge funds, high yield and emerging market debt as well as more aggressive forms of equity management. DC investment efficiency

will be improved if it can access these expanded forms of investment exposure.

### DC governance

It is clear that these non-mainstream investment ideas come with their fair share of complications, particularly with respect to their use in DC investment strategies. The challenge is to make these investment opportunities accessible and acceptable to DC investors. It would seem necessary for these types of investments to make their appearance in DC plans in the form of a packaged solution.

Funds of funds (also known as manager of managers products) offer a particular opportunity here. Rather than holding a single fund manager's offering, different and hopefully best-in-class managers can be mixed together to get the benefit of diversification and streamlined administration. This is the concept behind manager of managers solutions.

These funds are not currently the 'norm' in the UK or the US, but they are popular in Australia and it is likely that their prevalence will increase in the UK over the next decade or so. One interesting consequence of these funds is likely to be a shift in the balance of power away from fund managers and towards distributors and manager of managers providers.

### Derivative solutions

There are a number of ways that derivatives can contribute to improved DC investment. The most important use in future is likely to be the control of downside risk. Many members have limited tolerance for performance below a certain threshold. The use of option strategies and option replication strategies can allow members of DC plans to get the benefits of growth assets while building in some downside risk protection. Option strategies have until recently been effective only in shorter-term investment planning but we see considerable potential for these strategies to be implemented over longer periods as the range of hedging strategies increases.

### Tailoring and advice

With more flexibility being provided to DC members regarding their choice of retirement age and the manner in which they draw their post-retirement income, 'one size fits all' strategies will become increasingly inappropriate. Furthermore there is a greater appreciation of the need for members to consider their particular circumstances, in particular their retirement wealth that is not tied up in their DC assets and their personal future earnings power. This suggests that more, rather than less, investment choice is needed in the future.

This is not to say that choice by itself is sufficient. Rather this choice needs to be accessible and useful to the average member. This means that the majority of members will need assistance in making their investment decisions. One route through which this might occur is by a growth in individual financial advice, either delivered personally or through internet based tools. Another route is for DC plans themselves to devise self-help tools and guidance mechanisms whereby members self-select one of a number of (pre-designed) possible 'solutions' which best suits their personal desires and circumstances. Under both approaches there is considerable importance in providing good investment building blocks, and in making available modelling tools to ensure decisions are made on the basis of an appropriate process.

## In conclusion

The next decade of DC investment in the UK is likely to be very interesting as the market comes of age and addresses some of the present imperfections. We expect to see pre-packaging of investment strategies to make them easier for members to access and the increasing availability of various self-help tools for members. Choice will always be important, but guidance and assistance are critical.

# DB and contingent claims

## The sharing of risks and rewards – what are the options?

### In short

In this research paper we use the framework of contingent claims analysis<sup>1</sup> to take a fresh look at the workings of a pension fund. The main thesis is that a pension fund includes a series of ‘embedded options’, which become increasingly valuable, and therefore problematic, the further the funding level diverges from 100%. We go on to suggest that such options require understanding and advanced planning.

### Cost-benefit analysis

The survival of defined benefits (final salary/ average salary/ cash balance) comes down to the benefits (workforce advantage, valued deferred pay) exceeding the costs. Our focus here is on successfully sharing the risks and rewards, thus improving the DB ‘deal’. Hence we should look for ways to improve the benefits while controlling the costs from the perspective of both stakeholders – the sponsoring employer and the members.

To this end, we will make extensive use of a branch of corporate finance theory called contingent claims analysis<sup>2</sup>, which stems from the Black-Scholes option pricing model (1973) and has expanded to encompass wider understanding of options like the value of being able to change one’s mind. We will see that the degree of flexibility has a large impact on the attractiveness of DB plans.

### The old problem and the new reality

Not that long ago, the parties involved in DB funds debated a problem that many would wish to have back – the division of the surplus between the various stakeholders. Contingent claims analysis sheds an interesting light on this issue. Here the pension obligation can be thought of as debt, and any surplus above this as equity. The equity is rightfully owned by the stakeholders who underwrite the risk of any deficit but who exactly bears this risk tends to vary subtly from DB plan to DB plan. We argue that improving the DB design will involve recognising

*up front* the relative contribution of the different parties.

The current problem under debate is how to rectify deficits. The two most obvious alternatives are to increase cash contributions and to revise investment strategy. To consider the best approach, we turn to embedded options (please see the panel on the next page for an explanation of option terminology).

### What are embedded options?

Embedded options arise as an indirect consequence of contracts. As with market-traded options they give the holder (buyer) the right, but not the obligation, to undertake a course of action contingent upon some triggering event. For example, a DB pension plan sponsor has the option of walking away from the pensions deal and might do so if continuing to support the fund is worse than facing the consequences of walking away<sup>3</sup>. However, unlike market-traded options, embedded options pay no premium to the writer (seller) despite the writer carrying real economic risk. It seems reasonable to suggest, therefore, that a suitable ‘payoff’ for carrying this risk should be in the deal and this could be a share in any surplus, should we return to that happy state.

So what embedded options can we identify in a pension fund? We suggest there are three principal options in most DB plans relative to the starting position that the DB pension promise is a debt on the employer:

- a surplus call for the members in which they share in surplus in the form of discretionary benefit increases
- a liquidation put where the employer can put the deficit onto the members (not fulfil the pension promise) if the corporate goes into liquidation
- a wind-up put in which the employer can put a deficit on to the members by winding up the plan.

This is not a description of every pension plan but it serves to illustrate the majority of DB situations.

### Where you live matters

The Dutch DB plan situation<sup>4</sup> where the benefit is promised in nominal terms allows inflation-linked increases to be seen as ‘discretionary’. So the members have a call on the fund’s surplus as the value of the fund rises above the strike price (100% funded). Analysis shows that this option is extremely valuable, partly because it is always the first to be exercised.

In contrast, successive legislation in the UK which guarantees higher levels of benefits has removed this valuable option leaving a limited call on surplus above the guarantees and the deficit puts. It may turn out that this is an ironic case of the law of unintended consequences – in seeking to protect members’ benefits, legislation may have made the exercise of the deficit put more likely, severely reducing the security of at least some members’ benefits.

The situation is further complicated by current UK Government proposals:

- to introduce a ‘pensions protection fund’, which in essence seeks to protect beneficiaries against the exercise of the deficit put by establishing an industry self-insurance scheme
- to take away an employer’s right to the wind-up put.

The US situation is different again. Here there is little or no history of benefit increases (members hold no indexation call), while the deficit put is underwritten by the Pension Benefit Guaranty Corporation. Consequently, the deal appears clearer with less ‘optionality’. The risk of sponsor insolvency and deficits is covered to some extent by insurance premia to the PBGC.

## Option value drivers

Our understanding of the (currently implicit) DB deal is enhanced by considering the factors that change both the absolute and relative values of these embedded options<sup>5</sup>. We would argue that part of the problem with the current DB deal is that, as the funding level changes, certain options become increasingly valuable ('in-the-money') thereby distorting behaviours.

For our purposes, the most important variables are the volatility of the fund, and the sponsor's credit rating (the funding status will be the trigger event, as defined in each country's legislation). The higher the volatility (crudely, the more in equities and/ or the higher market volatility), the more valuable the options. This indicates the likelihood of exercise.

With respect to the sponsor credit rating, we see that a deteriorating credit rating increases the value of the deficit put relative to the sponsor guarantee. Members should expect different DB deals from sponsors with different ratings.

1. A branch of corporate finance theory dealing with cash flows that may or may not occur, depending on the outcome of pre-defined events. For example, financial options are contingent claims, as are penalty clauses for late delivery.
2. see, for example, the chapter on contingent claims analysis in *Cases in Financial Engineering* (1995), S. Mason, R. Merton, A. Perold, and P. Tufano
3. In the UK, recent government proposals will take away this 'walkaway option' if they become legislation.
4. *Proprietary issues in pension funds from an option theoretical point of view*, 2003, by Cardano Risk Management
5. Quantitative methods for valuing options can be found in most good text books. See, for example, *Options, Futures and Other Derivatives*, 2000, by J.C. Hull

## Options terminology

- *options*: contracts between two parties whereby the buyer (or holder) of the option has the right, but not the obligation, to purchase or sell a specified quantity of the underlying asset at a particular price at some point in the future. The seller (or writer) of the option receives a fee (the 'premium') as compensation for the risk of being 'exercised against'
- *embedded options*: also known as 'implicit' options, as no formal option contract exists. They arise as an indirect consequence of legal contracts or regulations
- *call option*: the right, but not the obligation, to purchase the underlying security from the writer of the option at the 'strike' or 'exercise' price
- *put option*: the right, but not the obligation, to sell the underlying security to the writer of the option at the 'strike' or 'exercise' price
- *strike, or exercise, price*: the price defined in the contract at which the holder may exercise the option against the writer. If the market price is above the strike price a call option is said to be 'in-the-money' (ie the option has intrinsic value and would generate a profit to the holder if exercised), whereas a put option would be 'out-of-the-money'. Where the market price is below the strike price, the 'moneyness' of put and call options is reversed.

## In conclusion

Our underlying belief is that the survival of DB pensions (as defined) from here will require an improved cost-benefit proposition from the DB deal. The single biggest improvement would be to make the deal clear and explicit, documenting who pays how much of the costs, what flexibility there is over changing the terms, and how surpluses and deficits are to be apportioned/ corrected. It would seem sensible to assume that the deal would need to be renegotiated periodically to reflect changing circumstances.

Other suggestions for improving the deal include:

- helping members value the benefit more highly (there is anecdotal evidence that this is occurring through market forces!)
- recognising/ debating the inherent tension between costs (contributions), investment strategy, volatility and chance of default
- encouraging legislators to remove unnecessary rigidities eg upper limits on funding, or compulsory indexation
- negotiating an appropriate degree of flexibility eg defining the deal at a lower base level (such as 1/80ths or average salary) and restoring the concept of discretionary increases.

## Consulting Offices

### Asia-Pacific

Auckland • Bangkok • Beijing  
Calcutta • Hong Kong • Jakarta  
Kuala Lumpur • Manila • Melbourne  
Mumbai • New Delhi • Seoul  
Shanghai • Singapore • Sydney  
Taipei • Tokyo • Wellington

### Canada

Calgary • Montréal • Ottawa  
Toronto • Vancouver

### Europe

Amsterdam • Barcelona • Birmingham  
Bristol • Brussels • Budapest • Dublin  
Düsseldorf • Edinburgh • Eindhoven  
Leeds • Lisbon • London • Madrid  
Manchester • Milan • Munich • Nieuwegein  
Paris • Redhill • Reigate • Rome • Rotterdam  
Stockholm • Welwyn • Zürich

### Latin America

Bogota • Buenos Aires • Mexico City  
San Juan • São Paulo

### United States

Atlanta • Boston • Charlotte • Chicago  
Cleveland • Columbus • Dallas • Denver  
Detroit • Grand Rapids • Honolulu • Houston  
Irvine • Lake Oswego • Los Angeles  
Marlborough • Memphis • Miami  
Minneapolis • New York • Philadelphia  
Phoenix • Portland • Richmond  
Rochelle Park • St. Louis • San Diego  
San Francisco • Santa Clara • Seattle  
Stamford • Washington, D.C.

### Corporate Offices

Washington, D.C., USA  
Reigate, England, UK

W W W . W A T S O N W Y A T T . C O M

Watson House, London Road, Reigate, Surrey RH2 9PQ UK  
Telephone +44 (0) 1737 241144 Fax +44 (0) 1737 241496

Authorised and regulated by the Financial Services Authority