An optimal structure

Many treasurers will already be familiar with the implications of applying finance theory to corporate pension funds. One of the main principles of corporate finance theory is that changing a company's debt/equity structure does not increase its value – excluding tax and bankruptcy charges[1] – and this argument can easily be extended to encompass pension assets and liabilities as part of the corporate structure.

Under these conditions, all else being equal, shareholders are indifferent between companies with different capital structures (where capital structure for this purpose incorporates pension liabilities and corresponding assets). In this idealised world, shareholders are smart and rational enough to see through any suggestion that a company is 'saving money' by investing a higher proportion of its pension assets in equities and thereby paying lower contributions. Our smart investors will immediately risk-adjust their valuation of the company and demand a higher return to compensate for the higher risk involved. Put another way, investors can take the equity risk directly themselves if they wish, so a company taking this risk on their behalf in its pension fund adds no value for the shareholder.

Extending the basic corporate finance result above to the real world, with its complex tax and bankruptcy charges, suggests that corporate value is actually increased to the tune of the tax shield on issued debt and that the optimal capital structure is reached at the point where the value of a marginal increase in debt is entirely offset by the expected value of additional bankruptcy charges. In other words, our rational investors are looking for companies to maximise the use of debt as a way of minimising the tax burden on earnings.

While many people may be shaking their heads at this point and mentally pooh-poohing as a result of their real-world experience with capital structures and 'rational' investors – or lack thereof – it should be clear that any pension scheme investment strategy involves trade-offs between members and shareholders. Just as altering the riskiness of a company shifts value between equity and debt holders, so altering pension fund investment strategy shifts value between shareholders and members[2].

LIABILITY HEDGING If a company is bearing all the risk of a pension fund's equity investment (as is now likely to be the case under current UK legislation), then are shareholders also getting all the potential rewards? This is unlikely for the following reasons:

- It is tax-inefficient to hold equities in a pension scheme and bonds/cash on a company's balance sheet. If shareholders are taking all the risk and getting all the rewards of the pension scheme equity exposure, then why isn't this exposure restructured (in other words, moved to the company's balance sheet) so as to make it more tax-efficient?
- Trustees are responsible for pension scheme investment strategy. How do trustees justify a risky (that is, an equity-based) asset structure as being in members' interests if the company is getting all the benefit of equity outperformance? And why would a company want such a risk exposure out of its direct control?

Executive summary

- Rational investors are looking for companies to maximise the use of debt to minimise the tax burden.
- Pension scheme investment strategy involves trade-offs between members and shareholders.
- Altering the pension fund investment strategy shifts value between shareholders and members.
- It is much more difficult to achieve an asset strategy that hedges the risks in the underlying pension scheme cashflows.
- An asset strategy can be made more coherent by a risk management approach that integrates consideration of the pension scheme into the overall capital structure.

MICHAEL MOLONEY WONDERS WHETHER YOUR COMPANY'S PENSION FUND ASSET STRATEGY IS RATIONAL.

Exposure to equities would be justified if it provided the best match for pension liabilities. But, with all the recent legislative changes, pension scheme liabilities have become increasingly debt-like in nature and therefore effectively represent (long-dated, largely index-linked) corporate debt of the sponsoring employer. On this basis, the best match for liabilities must be a portfolio of bonds or bond-like assets.

Of course, there are some problems which need to be resolved to achieve such a matching strategy. In particular, what is the most efficient way of getting increased duration and inflation matching?

While it is relatively easy to achieve an asset strategy that effectively hedges the liability that appears in a company's accounts, it is much more difficult (and expensive) to achieve an asset strategy that hedges the risks in the underlying pension scheme cashflows. Companies need to consider the options and determine their priorities to achieve the most efficient asset strategy.

THE EFFICIENT RATIONAL STRATEGY If theory suggests that the rational pension scheme strategy from a company/shareholder perspective is to invest in matching bonds and take risk elsewhere, why do most companies support significant equity investment through their pension fund?

There are a number of reasons:

- Equity investment allows a more favourable accounting treatment of a pension scheme in a company's accounts, although it remains to be seen whether the accounting standards boards will continue to permit this. In fact, this accounting treatment exposes shareholders to a potential conflict of interest/agency issue with their corporate managers, since allowing advance credit for an equity risk premium through earnings provides a positive incentive for holding equities rather than debt.

- Analysts and shareholders are not generally encouraging companies to switch pension scheme assets out of equities and into bonds.

- A reluctance to take extreme positions relative to competitors because of a line of thinking that goes something like this: "It's all very well to talk about rational arguments but we don't know that markets are pricing pension fund risk properly into company valuations. What we do know is that if we can distribute less cash to shareholders as a result of high pension fund contributions demanded on the back of holding more bonds in the pension fund, we will have some difficulty explaining to shareholders whether it is theoretically the right move or not."

- Valuing pension liabilities using a discount rate which includes excess return on equities over bonds can allow a pension scheme to be presented as being better funded than it is if benefits are actually guaranteed (and, as a result, defer the need for extra cash contributions).

BOX 1. European investment strategies

From a wider European perspective, it is interesting to compare the investment strategies of European pension funds.

Figure 1 shows total pension assets for those European countries where companies sponsor material private defined benefit pension arrangements. It is still difficult to get a comprehensive, consistent measure of corresponding liabilities, but these asset figures provide a broad picture of the relative significance of employer liabilities between jurisdictions. As the chart shows, the UK accounts for most of the overall liability, followed by the Netherlands, Switzerland and Germany.

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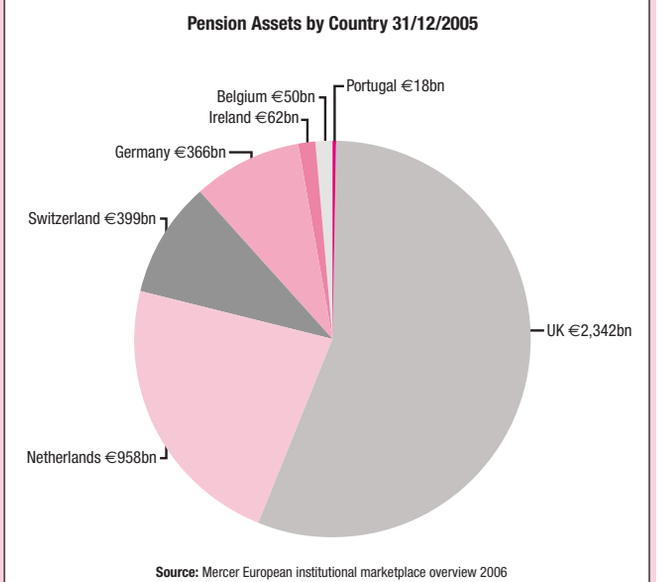
Figure 1. Principal European corporate defined benefit markets



Source: Mercer European institutional marketplace overview 2006

BOX 1. European investment strategies (continued)

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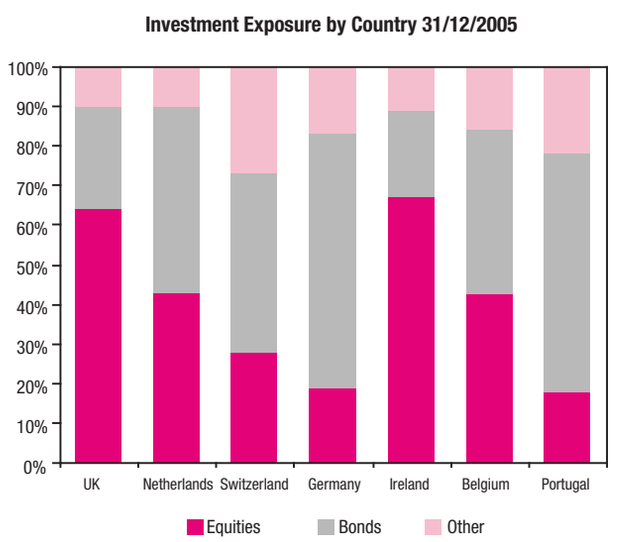
Against this background, *Figure 2* shows a broad breakdown of how these assets were invested on average at the end of 2005.

It is clear from the chart that the UK and Ireland have substantially higher equity exposure (64% and 68% respectively) within corporate pension plans than other European funds. It is difficult to draw any conclusions from the graph without a deeper appreciation of the impact of local legislation and tax regimes on investment policy, which is beyond the scope of this article. However, without doubt, UK and Irish pension funds are, on average, exposed to materially higher levels of pension fund investment risk than their European counterparts.

Irrespective of the degree to which you accept financial economics tenets, the downside of higher risk exposure has been all too evident over the last five years, and will doubtless affect corporate earnings for some time to come. What is less clear, of course, is the degree to which investors are reflecting differences in pension fund risk in their calculations, particularly when comparing similar companies based in different countries. Continuing improvements in the level of transparent information made available through international accounting disclosures should make it easier for investors to look at this factor. As a result, they are likely to expect a higher return on average for UK companies (if they do not already) to compensate for the higher pensions risk.

Figure 2. Average pension fund asset allocation



Source: Mercer European institutional marketplace overview 2006

OPTIMAL STRUCTURE Given all this, how then should a company assess an optimal pension scheme asset structure? Well, irrespective of whether investor behaviour is rational or not, it should start by understanding the investment risk/return trade-off in terms of shareholder value. This is particularly important if the pension scheme's members are bearing part of the risk or potentially getting some reward from risky investment; explicitly recognising this position will allow explicit decision-making around adjusting theory to the real world.

It will also be important to understand the implications of the pension scheme funding risk in terms of its potential impact on

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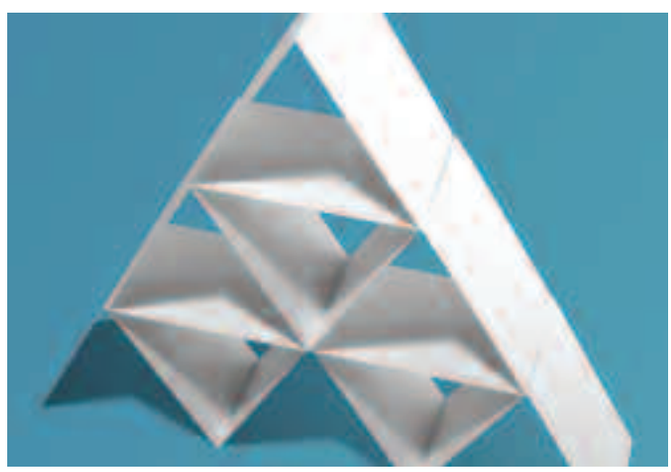

corporate accounts (such as risk to earnings per share) and the company's credit rating – Monte Carlo simulations of potential funding outcomes over different time horizons and value-at-risk measures are very useful for this purpose.

Finally, it is important to understand what your shareholders and the analysts think, to know how this thinking is evolving, and to keep an eye to where accounting standards are headed and how changes might drive investor behaviour.

While there is no single optimal solution, it is likely that an asset strategy can be made more rational (and shareholder value-enhancing) by adopting an up-to-date risk management approach, integrating consideration of the pension scheme into the overall capital structure of the company and looking closely at the level of investment risk inherent in the scheme. Inevitably, this will also require careful communication and education both within the company (and pension scheme) and to analysts and shareholders.

Professor Charles Sutcliffe discusses the arguments for and against equity investment by pension funds in his paper *The cult of the equity for pension funds: should it get the boot?* in the *Journal of Pension Economics and Finance* (2005), 4, pp57-85.

1 The well-known Modigliani-Miller Debt Irrelevance Proposition.

2 For an interesting analysis of pension fund investment policy by looking at a pension fund as a collateralised loan from members to the company and then applying option pricing, see B Alexander, *Gentlemen Prefer Bonds*, 2002 thesis, London Business School.

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