# Designing hedging policies

## using asset and liability management techniques


## Executive summary

- New accounting standards put pressure on treasurers to explain hedging strategy clearly to others, inside and outside the business.
- An Asset & Liability Management (ALM) approach can give treasurers the understanding of the risks a company runs, and an idea on how to hedge those risks.
- ALM also ensures all of a corporate's priorities are taken into account, even where they conflict.
- ALM technologies give a holistic focus allowing treasurers to take decisions based on strategic priorities.


IAS 39 and FRS 17 present chief financial officers and corporate treasurers with more and more difficult decisions about optimising their balance sheets and managing the inherent risks. Moreover, the transparency of these accounting standards means that these decisions are more carefully scrutinised than ever. Cutting edge treasuries are starting to debate how they can:

(i) identify and evaluate the extent of the organisation's sensitivity to the key risks, the correlations between these risks and the extent of any "natural hedges" within the balance sheet;
(ii) balance the economic perspective against the accounting and rating agency perspectives;
(iii) justify implementing a hedging policy that makes sense commercially, but may fall foul of IAS 39; and
(iv) communicate and explain the hedging strategy in a strategic context to the main board, and external parties such as investors, analysts and rating agencies.

Adopting an asset and liability management (ALM) approach provides the framework through which to identify the inherent risks of both current and future policy and provide a means to create a solution. It also offers a more rigorous environment within which to compare and potentially reconcile conflicting objectives when viewed from an earnings, balance sheet, accounting or rating agency point of view.

**HOW SHOULD TREASURERS DECIDE ON THE BEST LIABILITY PROFILE?** Corporate treasurers have traditionally sought to minimise the interest cost of the debt they manage, so as to maximise earnings per share. At the same time, they also look to reduce the risk of interest costs rising sharply. For instance, floating rate debt is cheaper on average than fixed rate debt, but many treasuries continue to keep a high proportion of debt fixed, because this is less volatile. Both of these perspectives are 'liability only' views, because they look at the liability (and its interest cost) in isolation.

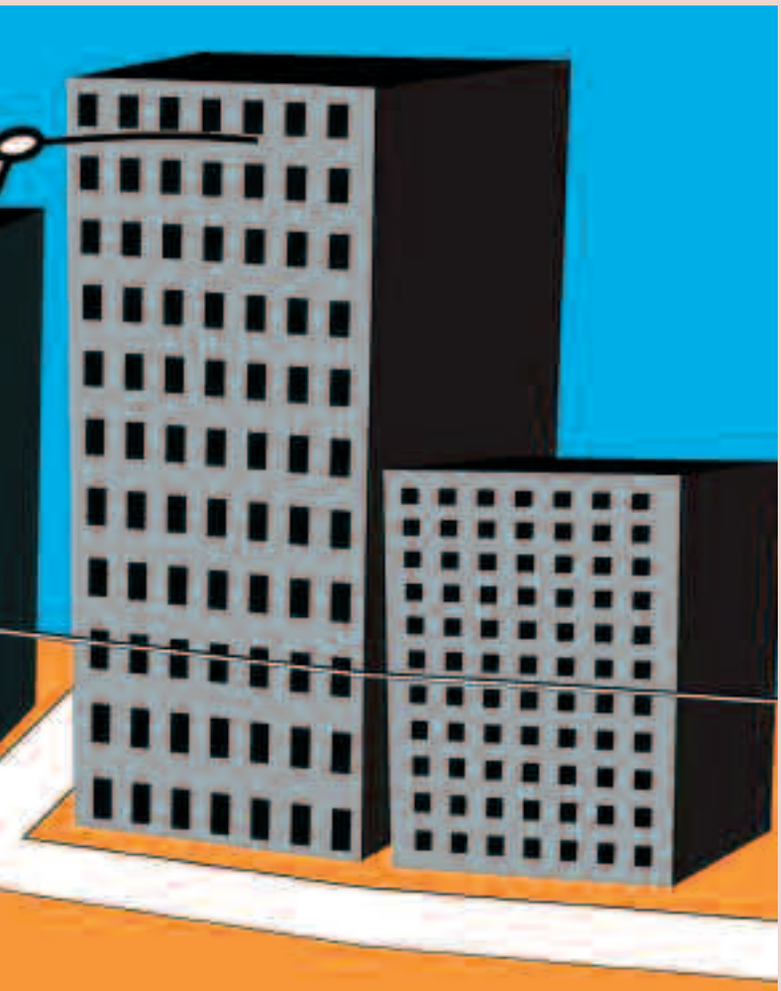
The next step in sophistication is to take an 'asset and liability view'. The key element in this is to look at the interest cost, not in isolation, but in terms of its impact on the overall business. For instance, floating rate debt is more volatile than fixed rate debt. However, it also tends to be highly cyclical. For a company with cyclical earnings therefore, floating rate debt could actually reduce the volatility of earnings, by offsetting volatility in the core business.

**WHY MIGHT ALM TECHNIQUES HELP?** An ALM study establishes linkages between a company's revenues and costs and economic variables, such as economic growth, interest rates, inflation, FX rates, and commodity prices. These linkages and correlations give treasurers an understanding of what risks the company runs, and what they should do to hedge these risks.

The ALM study also proposes the optimal liability and hedging benchmark strategy. It does this by scenario-testing different strategies, and showing how each impacts a strategic corporate metric such as EPS. The linkages established above allow the analysis to encompass the effects of economic variables on both the operations and the financing of the company.

The value of ALM techniques depends on the nature of a company's underlying business. For instance:

- cyclical businesses could benefit from analysing whether floating rate debt would offset some of the cyclicality in their revenues;
- consumer staple and regulated businesses could benefit from analysing whether inflation-linked debt would offset the volatility of



THE INTRODUCTION OF RECENT ACCOUNTING STANDARDS ARE PRESENTING TREASURERS WITH DIFFICULT DECISIONS AS **CONOR HENNEBRY** AND **SIMON HOTCHIN** EXPLAIN.

revenues which are linked, explicitly or implicitly, to inflation; and

- multinational businesses could benefit from assessing the economic impact of currencies. This is not simply the currency in which the revenues are earned. For instance, revenues earned in $ are not necessarily just $ sensitive. Your major competitor may be € based, or a large component may be priced in Australian $, or the ultimate customer may pay in Swiss Francs. ALM techniques look at the underlying drivers of revenues and costs, not just the simple fact of currency of denomination. This can be true of purely domestic businesses too. Competitor pricing, raw material costs etc can all lead to a 100% £ business having a currency sensitivity it had never considered or managed.

ALM can also help to decide the best hedging strategy for a company implementing mark to market accounting for derivatives. In this case, the most economically beneficial hedging strategy may receive an unfavourable accounting treatment. ALM can quantify just how much risk is being added (or return is being lost) by implementing a 'hedge accounting' solution. It can also quantify how much accounting volatility (P&L or balance sheet) is added by implementing the 'non-hedge accounting' solution. This allows corporates to view the hard impact of the alternatives, rather than deciding policy based only on conceptual views.

**WHAT SHOULD I BE TARGETING IN MANAGING MY LIABILITIES?**

Corporates have a wide range of targets, but the five we see most frequently are:

- lowest interest cost/least volatile interest cost;
- highest eps/least volatile eps;
- protecting against breaching bond covenants;
- maintaining a target credit rating (e.g. Debt/EBITDA, Interest Cover ratios); and
- maintaining dividend cover.

A detailed ALM strategy can handle all of these diverse, and sometimes conflicting, aims. It could maximise EPS, within a constraint of not allowing interest cover to fall below a certain level. Or it could show the trade-offs between maximising value and minimising risks, allowing the treasurer to take a view as to where on the risk spectrum he wishes to be. This flexibility ensures that all of a corporate's priorities are taken into account, not just one 'target'.

**HOW DO PENSIONS AFFECT MY OPTIMAL LIABILITY PROFILE?**

Pensions are the elephant in the room in many treasury risk management decisions. *Figure 1* shows how it can impact a typical FTSE100 corporate (the example we have chosen does not even have a large pension problem). Its debt mix, excluding the pension liability, of 70% floating and 30% fixed rate debt seems in line with its policies and objectives. However, if the pension liability (a long-dated, fixed rate and inflation-linked obligation) is included, this mix is completely altered. The company is now a predominantly (78%) fixed rate inflation-linked borrower, gaining little of the cost or diversification benefits of floating rate debt.

Holding bond assets in the pension fund is some help in reducing this risk, but is clearly not enough. Unlike the pension liabilities, the bonds held tend to be short- or medium-term and not linked to inflation. This duration mismatch creates substantial interest rate risk. Moreover, the problem is not just duration. Medium- and long-term interest rates have been diverging in £. As *Figure 2* shows, short- and medium-term rates have been rising, reducing the value of pensions funds' bond assets. However, long-term rates have actually fallen, increasing the cost of the liability. The bond assets have provided no hedge against this interest rate risk.

Pension funds' interest rate positions are not only risky, they are also, usually, loss-making. Sophisticated investors, such as hedge funds, have made large profits in recent years through the 'carry trade': essentially borrowing at short-term interest rates to invest in long-term assets. This is a risky trade, but one with a high expected return (because short-term rates tend to stay lower than long-term rates over the cycle). Corporate pension funds are running the same strategy, but in reverse. They are borrowing at long-term rates, to invest in short-term assets. This exposes them to the same risks as a carry trade, but with a negative expected return – certainly not an attractive investment proposition.

A sophisticated ALM analysis does not examine pensions in isolation, but actually incorporates pensions into an overall corporate analysis.

**Fig. 1 Implications for investment strategy**
Impact on capital structure

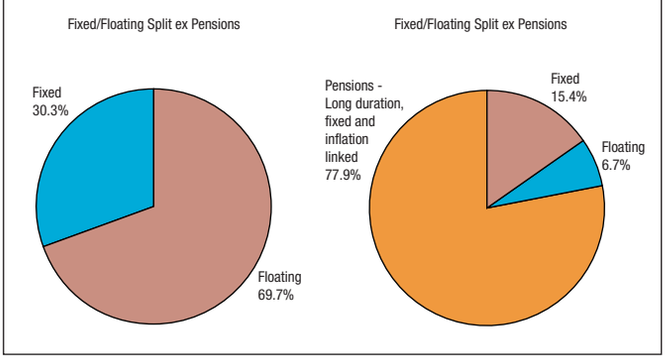



**Fig. 2 Implications for investment strategy**
UK Gilt yield

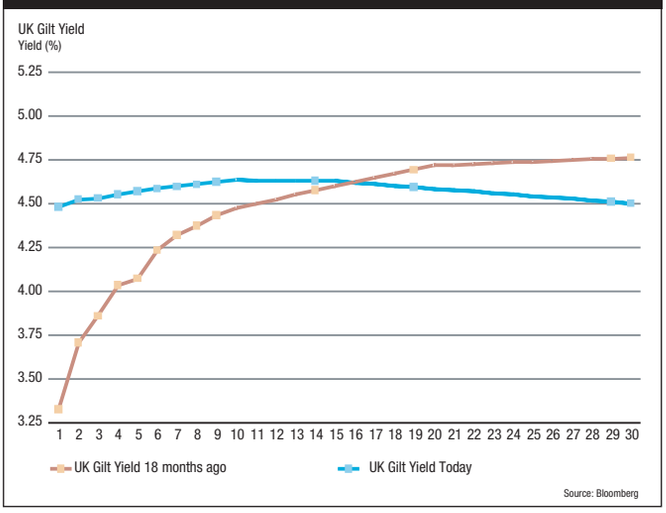
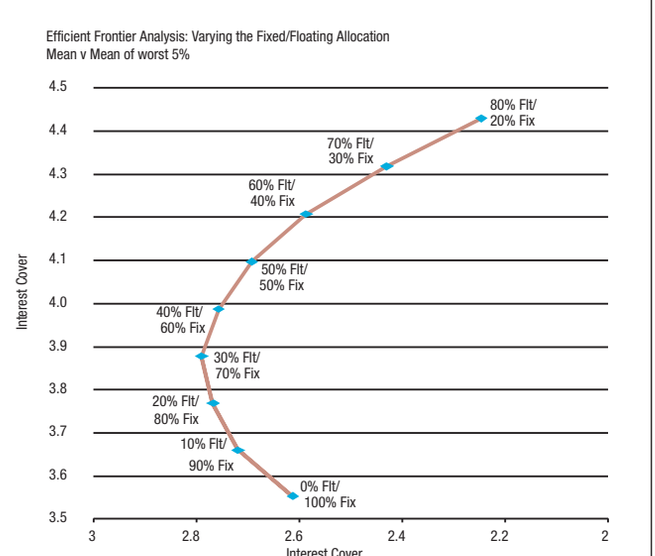



**Fig. 3 Pension fund asset allocation analysis**
Fixed/floating frontier – short term measure




Pension funds sometimes run risks that are offset by risks in the corporate. For instance, pension obligations increase with inflation, but some corporates (especially utilities) benefit from inflation. Looking at either pension fund or corporate in isolation ignores the potential risk offset between the two. Equally, in some cases, corporate risks may actually add to the risks in the pension fund. Only a combined analysis can give treasurers a real view of the risks they are running – not just on traditional debt, but on pension assets and liabilities too.

**HOW DOES AN ALM ANALYSIS WORK?** A detailed ALM analysis must be tailored to the specific corporate in question, so there is no 'off the shelf' solution. A number of key attributes are usually essential:

- the analysis must look to establish the extent to which the company's cash flows are linked to the key economic drivers (inflation, GDP growth, interest rates, FX), based on historic data;
- it is not enough to say that profits are more sensitive to, for instance, a 1% move in inflation than to a 1% move in 10 year gilt rates. A useful analysis must establish how likely such a move is (interest rates tend to be more volatile than inflation). Also it must take into account the correlation between the variables (interest rates and inflation tend to move in tandem), rather than looking at each risk individually;
- Morgan Stanley has developed its own internal risk management framework and capital markets model to generate consistent sets of these projections. We use a sophisticated economic model to project the levels of these capital markets variables in the future in a large number of scenarios (typically ranging between 1,000 and 10,000 scenarios);
- each scenario is independent and generated from a correlated random process which ensures that each scenario is equally likely. Each scenario is also internally consistent in that its inflation, exchange rate and interest rate outcomes have related drivers; and
- any series of cash flows (a bank's swap portfolio, for instance, or a company's pension fund) can be run through this model, and it gives a series of the possible outcomes. This allows us to conclude that there is, for instance, a 5% chance of a certain loss occurring, or a 10% chance of a certain ratio being breached.

An ALM analysis will usually offer treasurers a risk-return trade-off, rather than a single, optimal position. This is because the most important decisions do not have a single, definitive solution. More usually, the analysis highlights certain outcomes as clearly 'inefficient' or unsuitable. This leaves a range of possible outcomes, all of which are potentially efficient. The decision as to which to take is a trade-off: is the extra risk of the cheapest solution worth taking? Or is the extra cost of the least risk option worth paying?

Because of this, the most usual output from an ALM study is a risk frontier, such as shown in *Figure 3*. This particular frontier shows the risk and return trade-off from the decision as to whether to keep corporate debt fixed or swap it to floating. In this example we measure return as the average interest cover ratio, averaged across all the scenarios run (which is on the vertical axis). Because the treasurer's aim is to maximise this, the best outcome is the highest possible level. We have measured risk as the interest cover in the worst 5% of outcomes (i.e. a reasonable 'downside' case). Taken on its own the treasurer's aim is also to maximise this, so the best outcome is the level closest to the left hand axis.

The risk frontier allows a treasurer to decide which options are definitely not worth taking, and also to analyse the trade-offs

involved in choosing between the remaining options. Looking at *Figure 3,* it is obvious that the company in question should not choose to hold less than 30% of its debt floating. 30% floating offers a better return (i.e. a better average outcome), and lower risk (i.e. a better downside case) than any of the options with less than 30% floating. The alternatives with at least 30% floating are on the 'efficient frontier'. None of these is definitely 'better' than the others. The options here that have the highest return also have the highest risk. The decision is rather how much risk the company is willing to take, and how much reward is needed to compensate it for that risk. If the company here has an interest cover covenant of say 2.5 times in its loan agreements then it will not want to increase the floating rate element above about 65%.

**WHAT KIND OF ACTIONS MIGHT AN ALM STUDY RECOMMEND I TAKE?** An ALM study may recommend a substantial change to how a company views and assesses its risk management.

In our experience, the most likely recommendations tend to be:

- adjust fixed-floating mix in the on-balance sheet debt portfolio (including leases if appropriate) to minimise interest cost and/or the risk of breaching a certain interest cover threshold;
- introduce (or reduce) inflation-linked debt, to provide diversification and risk matching;
- adjust currency mix in the on-balance sheet debt portfolio;
- adjust risk profile in the pension fund (by addressing the duration mismatch, inflation mismatch, adjusting the equity/bond mix, diversifying the asset risks, etc); and
- hedge commodity or input price risk (eg oil).

**HOLISTIC FOCUS** ALM techniques are increasingly relevant and important for corporate treasuries. Their quantitative framework allows corporates to develop a robust risk management strategy that is better suited to the more complicated regulatory, accounting, investor and rating agency environment in which corporates find themselves today. Their holistic focus allows treasuries to make decisions based on a corporate's strategic priorities, rather than on narrow treasury targets. And their flexibility allows corporates to set more than one target, and prioritise more than one ratio/variable.

The best way to implement ALM thinking will vary by corporate. It may be a full ALM analysis, or a limited study, or applying logic or rules of thumb to aid decisions. But the insights and recommendations that an ALM approach offers can help treasuries add significant value to their parent companies.

Simon Hotchin, European Head of Asset and Liability Management
Morgan Stanley.
**simon.hotchin@morganstanley.com**

Conor Hennebry, Vice President, UK and Irish Corporate Coverage
Morgan Stanley.
**conor.hennebry@morganstanley.com**
**www.morganstanley.com**