SPONSOR'S STATEMENT

CALYON
CORPORATE AND INVESTMENT BANK
CRÉDIT AGRICOLE GROUP

Structuring away asset and liability mismatches

The perfect storm at the turn of the decade may now seem a world away. At that time record negative returns from the equity markets eroded pension fund assets at the same time that declining interest rates increased benefit obligations

Conditions have since improved markedly since 2000, but even this upturn and the recent growth in corporate contributions to pension funds, has failed to stem deficit problems: the asset and liability mismatch is as prevalent and perturbing an issue today as it ever was. A report published by the German consultancy firm, Rauser Towers Perrin recently found that underfunding in global corporate pensions worldwide, (ex Australia and Great Britain) rose to 4% at the end of the first quarter this year. Companies in the eurozone reported the worst funding position in the study, with a funding position of 52% – the lowest since January 2001. Localised figures are no more reassuring. The UK consultancy Lane Clark & Peacock's 12th annual 'Accounting for Pensions Survey' found that the total deficit for Stoxx 50 companies Europe-wide increased by €1.67 billion in 2004, reaching a hefty €155.89 billion by year-end.

Squaring up to the pensions problem

Scary headline figures like these have put the spotlight firmly on asset and liability mismatches within corporate pension plans. Investors and rating agencies have upped their levels of scrutiny, and in parallel moves regulators have upped their own requirements, putting additional burdens on the private sector. The introduction of the new IAS accounting standards has not helped either, having as they do unwelcome impacts on companies' balance sheets.

The new accounting rule, IAS 19, requires corporates to value their pension liabilities as a discounted probable cash flow, with discount rates not higher than the returns offered by AA-rated corporate bonds. Such probable cash flows must be calculated taking into account estimated retirement dates and turnover probabilities, salary evolutions, life expectancy and any annuities indexation. Thus the future value of corporate pension obligations are dependent on possible fluctuations in a number of variants, including the Consumer Price Index, employee demographics – such as turnover and longevity and, of course, on the yield curve of AA-rated corporate bonds. Corporates not only have to reserve against the deficit widening when this exceeds a pre-defined threshold, but also to increase their annual contributions to the pension fund when these deficits occur.

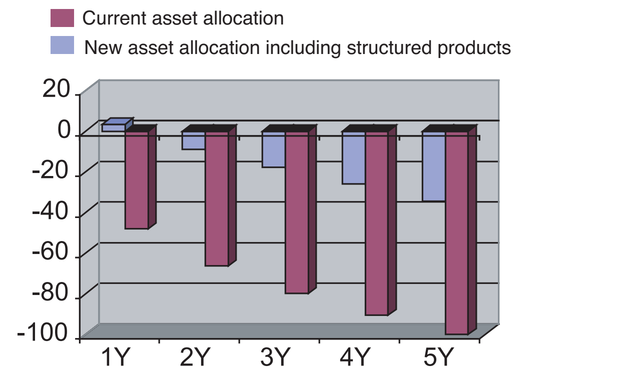
Corporate pension fund management is thus clearly becoming an evermore complex task. The new international financial reporting standards accounting regulations will highlight possible short falls within corporate pension funds, putting additional pressure on companies to find a means of limiting them. Needless to say market conditions are not helping anyone to do this. Though equity markets have recovered they are not offering the sort of outperformance needed to meet future liabilities; interest rates and bond yields are also at all-time lows. And then there is the unavoidable truth that straightforward bond or equity market investments will never offer the kind of consistent returns that pension fund servicing demands, means that standard solutions can not answer firm's needs. But there are other potential solutions – most notably structured ones.

Liability driven solution

The key advantage of structured products is that they can achieve risk/reward profiles otherwise unattainable and provide strategic long-term solutions to face these increasingly complex problems. Well-designed, tailored structured products can allow corporates to minimise mismatch and investment risks, and avoid the difficulties inherent in managing sometimes complex trades separately. Structured products avoid burdening corporates' risk and finance departments with the onus of conducting multiple trades simultaneously, of identifying appropriate derivatives counterparts and instruments, and of building sophisticated trade entry and risk monitoring systems. What is more, the payoffs can be designed to suit particular investment horizons, and tailored to fit the specific needs of individual funds.

Jaya Patten, Calyon's head of risk solutions explains: "The corporate pen-

1. VaR with/without structured solutions



Source: Calyon

sions issue had traditionally been viewed and dealt with as an asset management issue. IAS 19 is forcing both plan sponsors and trustees to review this approach, which is leading to the development of liability driven solutions." Assets and liability mismatches can be sizeably reduced by the appropriate overlay structured hedging solutions. Calyon worked with a European pension fund to tackle these ALM issues. The structured solution, which was designed by Calyon's Driss Lamrani, a pensions and ALM specialist, was based on three basic products:

- a duration-gap closer note with a payoff linked to the five–10 year swap spread
- an equity CPPI that coupled capital protection with upside exposure
- an inflation-linked note.

Peter Bergman, executive director capital markets sales at Calyon Nordic, explains: "We deployed the so-called duration gap closer in this instance to manage the mismatch between the fund's fixed income portfolio and liabilities. The fund was invested in five-year assets, but faced 10-year liabilities, meaning that even the most minimal movement in the five–10 year spread would have increased its deficit. The introduction of this product ensured that such negative movements would be offset by the positive revaluation of the note itself."

The equity CPPI product was meanwhile employed to protect against possible downside risks in the equity portfolio. In the case of negative equity market performance, equity exposure is reduced and the note weights the risk free asset (a zero coupon bond) more heavily, while in boom equity market conditions, the note increases its equity allocation, ensuring the fund has maximum exposure to upside performance.

The third element was again exactly calibrated to fit the specific needs of the corporate in question, enabling it to reduce the inflation indexation risk of its pension fund. The inflation-linked note paid a compounded rate of return based on fixed real interest rates, plus realised inflation

Says Bergman: "This tri-partite product was based on complex technologies, but delivered in a simple and understandable format. It not only provided an optimal long-term asset solution to the client, but also reduced the firm's value-at-risk (VaR) mismatch significantly."

Calyon's pension fund offering

Calyon's capabilities to service corporates looking to overcome these seemingly insurmountable hurdles, is nested within risk solutions in capital markets. The bank's strong structuring and derivatives expertise coupled with the asset management presence and capabilities of CAAM (Credit Agricole Asset Management), means that the bank is uniquely placed to offer the full range of liability-driven solutions. Besides, Calyon's equity and fund derivatives unit is a global organisation with more than 140 professionals working in 22 markets worldwide. The unit is supported by Calyon's multi-asset class research, trading, structuring and sales teams based in Europe, Asia and the US. These groups offer a full range of derivatives instruments and structured products covering clients' investment and hedging needs.

Methodology, approach and mechanics

☐ In order to monitor the risk driven asset allocation efficiency, Calyon employs the VaR measure within a defined confidence level. For instance, were this to be set at 95% as in figure 1 (see left), the product would be designed to ensure that under 95% of the possible outcomes, the corporates' future contribution rates would not exceed a pre-defined risk budget.

Six step project plan

Phase I	Analysis of current pension guarantees
Phase II	Corporate actuaries discuss information requirements necessary for overlay portfolio calibration;
Phase III	Value-at-risk calculation and definition of corporate risk budget;
Phase IV	Overlay design, term-sheet definition and presentation to corporate pension fund trustees;
Phase V	Asset management selection and selection of derivatives counterparties;
Phase VI	Documentation and execution.

☐ Calyon uses the liability value development over the life of the fund in relation with the evolution of financial parameters, such as inflation and interest rates, enabling it to design and calibrate an appropriate derivative portfolio, that will maintain the contribution rate within an acceptable level over time.
☐ Calyon's approach is based on and measured against actuarial studies on the possible contribution-rate variations produced under different financial market scenarios. In doing so, it can ensure each pension fund's future solvency, under different sets of scenarios such as steep variations in inflation, interest rates and expected retirement ages.

Why Calyon?

There is some understandable fear surrounding structured solutions. Corporates, fund trustees and their beneficiaries may sometimes be reluctant to use 'black-box' products about which they know little; for fear that providers may be levying exorbitant charges or engaging in inappropriate trades. But, far from providing the sort of "black-box" type products, that can harbour these hidden costs and unwelcome surprises, Calyon's structured solutions are constructed on an open and collaborative basis. The bank's six-step project plan ensures company management and trustees understand the products, the strategies, the rationale behind their employment and the costings involved. Far from delivering an opaque off-the shelf solution, Calyon's teams will work closely with all involved constituents to ensure a full level of understanding and that the most suitable solution is delivered in a timely manner.

Calyon's pension proposition is based on structured and efficient asset allocation solutions that can reduce the probability of additional reserving. Based on the future cash flow projection, calculated on the back of salary inflation and demographic assumptions, and future corporate cash flow contributions, Calyon is able to design tailored structured solutions that enable funds to meet their future pension cash outflow obligations. Says Bergman: "These structured products can deliver inflation-linked cash flows, at the same time as taking into account future corporate contribution and specific pension obligations. Carefully constructed they can offer a unique solution to a growing problem." ■

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