Synthetic funding:

According to conventional wisdom, swaps and options are tools for managing interest-rate and currency exposures, rather than being actual liabilities or claims on existing assets. Mary Gottschalk warns that this view ignores the fact that derivative instruments, unless used with a full understanding of their nature, can lead to large and unexpected costs.

Off-balance-sheet instruments derived from swaps, options and/or forward currency products are increasingly used to generate current cash inflows in exchange for future cash repayments. This type of cashflow arrangement, when undertaken through swaps or options "derivatives", may be called a hedge or "tax-effective" interest-rate management. If it were undertaken through the bank bill or bond market, it would be called a loan and carried on the books as a liability.

Where management relies on cash-based accounting, or has inadequate systems for monitoring day-by-day exposures, such an "in-substance" loan may go unrecorded. In a corporate environment, the failure to recognise explicitly the economic reality of such loans, and the resulting cashflow obligations, may go unnoticed by senior management and the board.

The point is not that the use of derivatives for funding purposes is inherently unsound. From a commercial point of view, it can be very good business, and most corporates using derivatives in this way appear to understand the risks and monitor them carefully. Similarly, the use of structured derivatives with unusual cashflows as part of a hedging program may also make good sense if staff clearly understand the impact of the "structured" transaction on the effectiveness of the hedge. However, where policies are not clearly defined, where reporting is inadequate, or where plain common sense is lacking, a corporate may soon find itself the "victim" of its own risk management.

Underwater rolls

In examining the hidden risks of derivatives, it is instructive to look at one element of the alleged $50 million AWA loss — the foreign currency market's use of historical rollovers. Historical rollovers were maturing currency contracts which were rebooked or "rolled over" at the exchange rate which applied to the initial transaction, rather than the market rate at the time of the rollover. An "underwater roll" was one on which the holder of the position had a mark-to-market loss at the time the rollover was done.

Underwater rolls often make good commercial sense. For example, where an importer wants to defer delivery of foreign currency purchased to pay for goods arriving by ship, historical rollovers avoid the administrative costs associated with settlement of currency contracts that will have to be re-settled again in a short time. The commercial logic, however, has led many

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currency-market participants to overlook the fact that settlement on marketo-market gains or losses is being deferred as well. The deferral is, in substance, a loan from the counterparty with a mark-to-market gain (often a bank) to the counterparty with the mark-to-market loss (often a corporate).

Underwater rolls made less sense where they were applied to speculative positions. As was evident in the AWA situation, historical rollovers meant that a corporate which thought it was hedging, and therefore did not mark its positions to market on a regular basis, was able to defer recognition of trading losses as well as to defer the cash outflows associated with those losses.

With inadequate monitoring and control systems, management could remain unaware for extended periods of the income and/or cashflow implications of an “underwater” position.

The phoenix rises

The use of derivatives raises the spectre of historical rollovers in a new guise, as derivatives can be structured to produce almost any desired cashflow.

The examples discussed here are only a sample of the derivative transactions that have been used in the Australian markets.

- A swap used to hedge interest-rate or currency exposure on term debt can be structured to provide an upfront payment, or a steady series of payments at specified intervals, in return for which the corporate pays an above-market rate of interest during the life of the swap.

- A series of forward contracts intended to hedge trade-related cashflows (be they currency or commodity flows) can be combined into a “Par Forward” or “Flat Forward” in which all of the contracts are executed at the same rate.

Par Forwards are used, for example, by exporters to improve near-term cashflow while sacrificing more distant cashflows. The effect can be dramatic where the “par” exchange rate is substantially off the market, or where the forward contract covers an extended period.

- Unrealised gains or losses on a hedge transaction can be “repackaged” into a transaction which has the same market value, but a dramatically different

set of cashflows. For example, unrealised gains can be converted into a transaction which provides realised (cash) gains and unrealised “losses”. Alternatively, unrealised losses expected to be realised within a short time can be converted into longer-dated unrealised losses.

- A package of options used to hedge a future purchase can convert a transaction recorded as a cash “sale” into an economic loan. In the case of the Rome land deal, for example, Bond sold land in conjunction with a set of options which had the effect of committing him to re-purchase the land at the end of the option period.

- A variety of option structures —


Very few management reporting systems are able to monitor the in-substance loans embedded in derivative transactions or the extent to which cashflows result from off-market pricing.

zero-cost options, ratio options, collars or collars — enable a corporate to use a granted option to “pay for” a purchased option. While the purchased option enables the buyer to hedge against an adverse move in market rates, the granted option gives away some of the potential benefits if the market moves in the firm’s favour. The point is that if the market does move favourably, the company can have a substantial cashflow obligation.

The “action” in structured financing with derivatives increasingly appears to be in the option markets where so-called “rocket scientists” are using high-powered computer facilities to develop ever more exotic hedging strategies.

Unfortunately, corporate information systems have not kept pace. Accordingly, there is considerable potential for structured financing transactions to create more exposure over time than they were ever intended to hedge.

Through the looking glass

Monitoring the impact of derivatives on cashflows and funding costs is more easily said than done, particularly where derivatives are regarded as hedges. The problems include:

Exposure management

Derivatives often involve complex cashflows. While a mark-to-market valuation reflects the “best estimate” of the effect of the transaction on income, this figure provides little guidance as to the magnitude or timing of the individual cashflows.

Very few management reporting systems are able to monitor the in-substance loans embedded in derivative transactions or the extent to which cashflows result from off-market pricing. Very few management reporting systems are able to specify the cashflow effect of options, ie, to assess the forward interest or currency curve to determine whether a long-dated option is in the money and should therefore be included in a cashflow forecast.

Where derivatives have cashflows which differ from those of the underlying exposure, the impact of market fluctuations on the actual exposure and the hedge may not be offsetting. For management purposes, structured derivatives used as hedges should be marked to market to ensure that the hedge remains “effective” over time.

Valuation

Special-purpose derivative transactions are inherently illiquid, and there is rarely a readily observable market value.

The income effect of a given market movement on a derivative position may be difficult to determine, as valuation procedures for derivatives often entail complex mathematical models.

Cost of funds

Funds borrowed through the derivative markets are paid for in the pricing of the deal itself. The lack of observable market values for special-purpose transactions may mean that the true “cost” of a transaction (ie, the spread or profit taken by the counterparty bank) cannot be determined with certainty.
This is of particular concern where the corporate relies on its counterparty bank for valuations, as there is considerable risk that the cost of deal will be as high as or higher than that of more traditional funding.

**Legal and policy constraints**

Where “derivative” funding is used to circumvent debt ceilings or debt covenants, management and board members may find themselves vulnerable to legal action, particularly if the transaction ultimately results in substantial and unanticipated cash outflows.

From a risk-management perspective, the board of a corporation which uses derivatives for funding purposes must ensure that it has adequate delegations and authorities in place.

**Credit risk**

While most corporates tend to be borrowers rather than lenders of funds through the derivative markets, the flows can work in the opposite direction.

Where a derivative has substantial cash inflows in the future, existing credit assessment practices may be inadequate, as credit guidelines for off-balance-sheet instruments tend to gauge exposure in terms of the volatility of currency or interest rates rather than the principal value of the cashflows.

**Keeping a finger on the pulse**

Despite the difficulties of derivatives, a number of “rules of thumb” can be used to ensure that these instruments are used properly and cost-effectively. These rules are thumb:

- It is almost too obvious to mention, but **There Is No Such Thing As A Free Lunch.** Corporates rarely make a profit on derivatives unless they are actively trading them.

As a general statement, it should be assumed that any hedging transaction which generates a positive cashflow will have an offsetting cashflow at some point.

The offset may be in the form of above-market interest rates, of cash outflows embedded in a separate transaction, or of increased risk which the corporate has incurred as a result of the transaction.

**Complex transactions are expensive** — and the more complex a transaction is, the more costly it will be. Thus, where a corporate is using special-purpose derivatives for funding purposes, it can, as a starting point, be assumed that the funding is going to be more expensive than a standard money or capital market loan.

- Count the cash. Even if a corporate cannot make accurate mark-to-market revaluations, it can reduce even the most complex financial market transaction to the present value of the cashflows.

Such an exercise is not as accurate as a proper mark-to-market revaluation, but it will indicate if the value of a transaction has moved in a direction that was not expected. This exercise normally provides a reasonable approximation even for option transactions, unless they are quite long-dated.

- Get competitive quotes. The complexity or confidentiality of special-purpose transactions can lead to excessive reliance on a single bank, a reliance which leaves the corporate vulnerable to rich pricing. In practice, it is always possible to get a range of quotes on a set of cashflows without revealing the intimate details of the deal. As the banks which market derivatives tend, in practice, to use similar pricing models, significant differences in quotes are likely to reflect differences in assumptions about the prices and/or, in the case of options, the volatility of prices.

A corporate which gets widely different quotes for a proposed set of cashflows need only check the dealer’s assumptions against quoted screen rates to determine whether a transaction is fairly priced.

**The view from above**

The finding by the NSW Supreme Court in the AWA trial reinforces the view that management has a clear responsibility to understand and control the activities of its financial staff. While management and the board can use rules of thumb to bring some common sense into the evaluation of derivative strategies, they are not an alternative to effective risk management.

Where derivatives are used, policy guidelines must include:

- a statement as to the willingness of the board to use derivatives for “in-substance” loans, including limits on the maximum amount and maturity profile of the exposures that may be incurred using derivatives;
- an accounting policy which requires that all derivative transactions are priced and accounted for individually, even though they may be part of a “cost-effective” package;
- clearly defined criteria for derivative transactions which may be classified as hedging; and
- the conditions (if any) under which certain types of high-risk hedges such as granted options may be closed out or restructured.

Internal management reporting must include:

- regular revaluation of all derivative positions and the exposures to which they relate (regular revaluation where in-house facilities exist, and regular quotes on “cost to close” where revaluations are sourced from external counterparties);
- periodic review of cashflows implied by all off-balance-sheet transactions; and
- exception reporting to ensure compliance with guidelines.

**APPENDIX: The technical side of the equation**

It may useful to look at two examples of derivative-based “loans”.

**Swaps**

Tax rulings in Australia have given rise to a variety of swaps with cashflows which meet the requirements of the tax office.

The following example will illustrate the concept:
A par forward is a series of forward foreign-currency contracts in which all of the contracts are executed at the same exchange rate. It is based on the simple logic that a series of forward contracts will have an "average price", with some of the contracts above the average and some below. By setting the rate for all contracts at this average, an exporter, for example, can provide currency cover in which the early contracts are at above market rates while the later contracts are below market rates. This gives a par forward certain characteristics of a loan; using the example of the exporter, the early periods would tend to generate "positive" cashflows for the exporter, while the later period would produce "negative" cashflows relative to "at the market" rates.

This is illustrated in Table 1, which shows the cashflows of a 12-period par forward based on a USD/AUD spot rate of 0.7500, Australian interest rates of 10 per cent and US interest rates of 5 per cent. The simple average of the forward rates is 0.7304; in order to generate an NPV of $0.00 for the discounted cashflows of the par forward as a whole, the "par" rate for the deal would be set at 0.7307. The table shows that the exporter's variance cashflows relative to market rates are significantly positive during the early periods, and significantly negative during the later periods.

Where such a transaction is part of a trade-related hedging strategy, market practice appears to be to disregard these opportunistic cashflows for accounting and/or disclosure purposes, even though they bear no necessary relationship to the underlying trade-related cashflows.

Market practice with regard to revaluation for day-to-day risk management purposes varies. If the par forward is marked to market on a regular basis, the gradual shift over time from an initial NPV of $0 on the deal date to a cashflow asset or liability will be reflected. If it is not marked to market, however, the corporate may find itself with a less-than-anticipated cashflow stream based on the "average" hedge rate.

Ignoring the market value and/or cashflows of hedge transactions can be even more problematic where a par forward is not priced "at the market". Table 2 illustrates a set of par forwards which have contract rates only marginally different from the rate in the example above.

In this example, the upfront cash inflows are larger, the later cash outflows are larger, and the NPV of the two transactions taken together is negative (-0.0018). In other words, the exporter is paying a margin to "hedge" its trade-related flows to produce upfront cash inflows.

Table 1: Off-market par forwards — PF #1

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Table 2: Off-market par forwards

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Value of the cashflows 0.0545
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PV of the cashflow 0.0552
Net value -0.0056
PV of the cashflow 0.0018