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A Survey of Corporate Risk Management: Too hot to handle? - The art of risk-spreading (part 6 of 9)

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The best-laid hedges gang aft a-gley

MATTHEW BISHOP IN THE autumn of 1984, Lufthansa, a German airline, signed a contract to buy \$ 3 billion-worth of aircraft from America's Boeing. At that time the dollar was strong and looked set to get even stronger. Lufthansa's chief financial officer partly hedged this exposure by acquiring a forward contract for \$ 1.5 billion. Thus, if the dollar strengthened, the firm would lose on its aircraft contracts (which would cost more in D-marks than when the deal was struck) but gain on the forward contract. On the other hand, if the dollar weakened, the firm would lose on its hedge but gain on the aircraft. But there was a flaw in this plan: Lufthansa's cash flow was also in effect dollar-denominated. When the dollar rose, the company took in more cash. It had what is known as a 'natural hedge'. In the event, the dollar weakened in 1985, falling by around 30% from its peak. Lufthansa's unnecessary forward contract left it with a large foreign-exchange loss. This sort of mishap is not unusual. Deciding to hedge is one thing, getting it right quite another.

The Lufthansa example highlights the problems that can arise when non-financial firms use derivatives in the way they are most commonly employed: for hedging specific transactions such as an order for aircraft, a payment due from a foreign subsidiary, a particular set of interest payments or a contract to buy raw materials. This has the great advantage of being simple and straightforward. But, as in the Lufthansa case, many transactions hedged by firms might have hedged themselves naturally. If so, hedging them individually using derivatives not only incurs unnecessary cost, it could also increase the overall risk to the firm.

Of course, firms may be using derivatives not to hedge their transactions but to speculate on the direction of markets, although few would be willing to admit as much. Consider the following comments by the treasurers of four big American firms, reported in the *Journal of Applied Corporate Finance**. All the firms use derivatives to hedge. But, says Tom Jones of Union Carbide, his chemicals firm 'does not always hedge currency exposures. We will hedge as much as 100% in some cases or we will hedge zero or somewhere in between, depending on what we feel is the trend in the dollar.' Lynn Lane describes the policy of RJR Nabisco, a tobacco and food firm, as 'selective hedging .. it is our philosophy that if you are 50% hedged, that is kind of the neutral position .. we end up hedging somewhere between zero and 100%.'

Lukens, a metals firm, says John Van Roden, 'pursues a strategy of active risk-management - that is, we will hedge only a fraction of our exposures, and the percentage we choose to hedge will be subject to continuous review.' Unlike the first two firms, however, Lukens will speculate

only on metal prices, where it can claim some relevant expertise, and not on interest rates and currencies. Only Jonelle St John of MCI, a telephone company, admitted to hedging 100% of its contracted overseas payments at the start of every year, although 'because we tend to bring in new business during the year and beat our plan, we generally end up • having hedged) less than 100% of our payments.'

A far better approach, both in practice and theory, is to hedge 'strategically', reckons Charles Smithson, an economist at CIBC Wood Gundy, a securities firm. Strategic hedging involves looking at the risk exposures associated with a firm's overall cash flows, not those linked to a single transaction, and using derivatives to reduce them when appropriate. The decision is based on running the firm's budget forecasting model through multiple simulations to reflect different currency, interest-rate and growth scenarios. The chart illustrates a range of possible cash flows that such simulations might produce, and what risk the firm might face of not having sufficient cash to fund its investment plans.

This can yield valuable insights. Take currency risk. Lufthansa's cash flow, although made up of many currencies, particularly the D-mark, turned out to be sensitive mainly to changes in the dollar. Even a firm that does all its business in one country may still face a sizeable currency risk, for example if it is competing against imported products. This would be picked up by strategic risk analysis, but ignored under transaction-based hedging. The modelling process shows on which assumptions the firm will fail to achieve sufficient cash flows to finance its planned investment, allowing the management to make an informed decision on whether and how much to hedge, says Mr Smithson.

Our very own model

Over the past year or so, strategic risk-management has become a buzzword in the derivatives industry. One reason is that it uses firms' in-house budgeting models. According to Lee Barba, who runs Bankers Trust's risk-management advisory business, 'firms are no longer as enthusiastic about taking risk-management products dreamed up by banks; they prefer to develop their own strategies to deal with exposures they have identified.' That may appeal to banks too, if only because they are less likely to be sued for helping firms develop their own strategies than for hard-selling them exotic derivatives.

Yet strategic hedging is not easy to do well. The idea of running budget simulations to produce a 'cash-flow-at-risk' probability has many parallels with a technique that is proving a great success in the banking sector to calculate a bank's 'value at risk' - how much of its capital it might lose in a single day were the financial markets to repeat their worst performance in, say, the previous 12 months. One difference is that financial markets generate oodles of data every day, making it fairly simple to identify risk-exposures that pass mathematical tests of validity. By contrast, data about the cash flow of non-financial firms tend to be sparse, so to achieve statistical significance the firm may have to use historical data which do not reflect its current product mix or present market conditions.

Some firms reckon the concept of strategic hedging should be extended to take account of the hedging decisions of rivals. Not only does this make the process even more complicated, it may also be mistaken in principle. Certainly, if a competitor's hedging strategy might result in a firm facing possible cash-flow constraints on investment, then strategic hedging should recognise this. But mostly, firms mean something else when they talk of hedging as a competitive tool: as a

means of outsmarting their rival. But hedging should not usually alter a firm's market behaviour. For instance, if the cost of raw materials rises and an unhedged competitor raises its prices, it will typically also be most profitable for the firm that has hedged raw material costs to push up prices; the same is true of cutting prices when raw material costs fall.

Intriguingly, one of the outcomes of strategic risk analysis might be to demonstrate the limits of hedging. In a recent paper**, Tom Copeland and Yash Joshi, two economists at McKinsey, a management consultancy, analyse the potential of foreign-exchange risk management for around 200 big American firms. They conclude that over the ten years to 1994, a fairly basic hedging programme would have cut income volatility by more than 20% in only one company in their sample, and by more than 10% in only 20 firms. Indeed, only 5% of firms in the sample even had the potential to reduce volatility by more than 20%. The main reason for that, conclude Messrs Copeland and Joshi, is that firms are affected by many different factors, and foreign exchange is 'but a small contributor to total risk. Eliminating currency risk completely would diminish total firm risk only marginally.'

More to life than derivatives

Once a firm has identified its strategic risks, and decided that it should hedge some of them, it may still face some tricky problems. One is that the appropriate derivative may not be available. Derivatives with which to hedge inflation or recession largely remain on the drawing board, and only a limited range of products tend to be available in emerging markets. Banks will generally be prepared to develop an over-the-counter derivative that allows such risks to be at least partially hedged, but this is likely to be expensive.

So firms may face difficult choices between not hedging at all, using less-than-ideal derivatives, and other methods of hedging. Thirty years ago it was fashionable for firms to reduce the volatility of their cash flow by diversifying into different businesses, often through mergers and acquisitions. This has become highly unfashionable because any benefits of diversification are often outweighed by management's inability to run diverse businesses efficiently. Over the past decade, many of the diversified conglomerates formed in the 1960s and 1970s have been 'unbundled', usually proving that the parts on their own amount to more than their sum.

A more popular strategy today is to use 'natural' hedges wherever possible. For example, if a company is setting up a factory in a particular country, it might usefully finance it by borrowing in the currency of that country. An extension of this idea is 'operational hedging', for example, relocating production facilities to get a better match of costs to revenues. Japanese car makers, for example, which used to supply the American market entirely through exports from Japan, have set up factories in America, thus reducing their exposure to changes in the yen/dollar exchange rate. German firms, worried in part by the strengthening D-mark, are increasingly moving their production out of Germany, closer to their main markets.

Bhagwan Chowdhry and Jonathan Howe, two economists at the University of California, Los Angeles, observe in a recent paper*** that operational hedges are often more costly, imprecise and time-consuming than financial hedges. They argue that operational hedges are likely to make sense only if the firm faces considerable uncertainty about both exchange rates and the prospective demand for its products abroad. Even then, the hedge may be riskier than a financial one, as it is harder to undo quickly should circumstances change.

Hedging can also be done with traditional financial instruments instead of derivatives, points out Steven Kaplan, an economist at the University of Chicago. Much the simplest hedge for a firm fearing that rising interest rates might hurt its cash flow and undermine its investment plans is to borrow at a fixed rate of interest, rather than use the floating-rate debt preferred by many companies. And there is always good old-fashioned money. In April 1995, Kirk Kerkorian, a Las Vegas-based financier, launched a hostile takeover bid for Chrysler, in part to force the big American car maker to offload some of its \$ 7.5 billion cash mountain. In rebuffing the bid, Robert Eaton, Chrysler's boss, said the money was needed to help finance the firm's \$ 23 billion five-year investment programme should the market turn down. In other words, it was a hedge.

When deciding a firm's hedging strategy, then, managers need to answer three questions, none of them straightforward. How well do they understand their firm's risk exposures? If they can identify the firm's main risks, would hedging them make shareholders better off? And, if so, is it possible in practice to hedge these risks adequately?

* 'Roundtable on Derivatives and Corporate Risk Management'. Journal of Applied Corporate Finance; Autumn 1995

** 'How to Evaluate Corporate FX Risk Management Programs'. By Tom Copeland and Yash Joshi. McKinsey working paper; 1995

*** 'Corporate Risk Management for Multinational Corporations: Financial and Operational Hedging Policies'. By Bhagwan Chowdhry and Jonathan Howe. UCLA working paper; 1995

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