In these days of rising metal prices, hedging is often regarded negatively. However, rising prices also mean that a number of previously marginal deposits are now economic to exploit and a sensible hedging programme has a role to play in underpinning a medium- to long-term business strategy. The main benefits of a hedge are that (1) protects a mine from a future downturn in metal prices and (2) can improve the debt-carrying capacity of the project, leading to an increased return on equity.

There are too many examples of where hedging has gone wrong in the past (Ashanti, Pasminco, Sons of Gwalia, Sumitomo and Metallgesellschaft). The reality is that many of the ‘hedge’ strategies employed by these companies were not true hedges. Common structural faults include:

- committing too high a proportion of underlying production to the hedge programme;
- using overly complicated products with barriers and/or embedded leverage;
- failing to examine how the hedge would perform in both upside and downside price scenarios; and
- disguising price speculation.

So when is hedging appropriate and how can pitfalls be avoided?

First of all, why hedge?

Investors generally do not want their companies to hedge, preferring to benefit, or suffer, from any change in the price of the underlying metal. However, mining is a business with a long time horizon and investors are often the first ones to abandon a poorly performing stock (e.g. an unhedged orebody in a failing price environment). The views of shareholders must be taken into account, but they need to be balanced against the view of other stakeholders and the nature of the underlying orebody.

Often a hedge programme is an integral part of the development plan for an orebody. There are few projects that can be fully funded from the equity markets. Most projects seek debt funding from the banks. The more debt a project can bear, the higher the return on equity and the lower the dilution for existing shareholders. To ensure repayment of debt, even in adverse market conditions, the lenders frequently impose a hedge programme subject to a series of constraints.

Even if a hedge is not required to bring an orebody into production, for all but the highest quality orebodies, a degree of hedging is still warranted. To maximise the economic potential of an orebody, the mining plan is prepared based on a price assumption. It takes time to reconfigure the mining plan in the light of significant deviations of market prices from the price assumption. If the price rises substantially, time is needed to change the mining schedule to access lower-grade areas. Conversely, if the price drops, at what point would the mine be shut down (potentially triggering rehabilitation costs)? While market prices can move erratically within very short timeframes, clearly mines need longer to optimise the mine plan relative to the price environment.

It is not possible to construct a hedge that allows a miner to escape from the vagaries of the market, but a well-structured hedge should deliver a smoothing effect to allow the mine plan to be adapted on the time horizon that suits the orebody (and not the market).
What is a hedge?
A hedge usually consists of a series of outright or contingent sales of metal at fixed prices for an agreed set of forward dates matched to the production plan. Outright sales are generally described as forward contracts, and contingent sales as put options.

A miner does not pay anything upfront to enter into a forward contract. The cost of the forward comes via the commitment to deliver a fixed amount of metal on a delivery date in the future irrespective of the then prevailing market price. That is, the miner is committed to delivering the production at the agreed fixed price even if the subsequent market price is higher.

Put options operate like insurance contracts in that they are only used (or exercised) when the cover is needed (i.e. when the market price falls below the agreed price). There is an upfront premium payable when entering into put options. To defray the cost of puts, miners frequently combine them with call options to form a collar. In a collar, the miner receives a put option to protect against falling metal prices, but sells a call option to pay for the put option. The call option is a contingent purchase of metal and represents a commitment on behalf of the miner. A pairing of a bought put and a sold call have the effect of guaranteeing the miner a minimum price (the strike of the put option) but limiting the maximum price received (the strike of the call option). In between the maximum and the minimum, the miner receives the market price. Such a collar is generally called a zero-cost collar.

Every miner would like a hedge consisting of 100% put options without having to pay for them, but that is impossible. A well-structured hedge has a balance between the degree of protection (i.e. bought put options and forward sales) and commitments given up (i.e. forward sales and sold options).

How much does it cost to hedge?
Just because a hedge is zero-cost, it does not mean that it costs nothing. A zero-cost hedge involves no cash payment upfront; the value is taken by the provider of the hedge by skewing the terms of the hedge in its favour. For example, if the mid-market forward price for gold is US$1,750/oz, the hedge provider may offer to purchase gold from the miner at US$1,700/oz. In this instance, the cost of the hedge is the present value of the difference between the market forward price and the contracted forward price (i.e. US$50/oz) times the volume on the contract.

Hedging can be expensive, and the cost of a hedge can be difficult for a miner to establish. Remember that many hedges are entered into at the behest of lending banks in conjunction with a debt facility. Banks make a lot of money out of hedging, often more than they do from the underlying credit facility. When a debt facility is being evaluated, it is critical to establish the quantum of hedging that would be required under the facility and the cost of that hedging.

The size and timing of the hedge programme and the instruments to be used should be negotiated with the hedge providers. When a hedge is part of a debt facility, the price assumption for the unhedged metal should also be questioned and negotiated.

Pricing of the hedge is a key issue and it is helpful to understand how it is arrived at, although hedge counterparties may be unwilling to disclose it. Credit pricing is a key issue, often using complex proprietary models and may be negotiable. The price of volatility (a key component of the cost of options) can usually be analysed, but a miner may need specialist help to do this. Prior to executing a hedge, it is helpful to request indicative pricing to gauge embedded costs and to establish benchmarks that the executed hedge can be compared against. Where several counterparties are in competition for the hedge, it is useful to run a pricing exercise requesting indicative pricing for a specified hedge structure with regard to specific market conditions. The variation between counterparties can be surprising.

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How does a miner avoid common pitfalls?
Define what is appropriate for the company: In advance of negotiating with hedge counterparties, formulate a board policy. Do not wait to be dictated to by the counterparties.

Do not overcommit: Determine how much production is truly available for delivery into hedge contracts, not forgetting to take account of claims such as royalties and off-takers’ shares. In the past, hedge programmes had up to 70-80% of production committed to the hedge. These days, 50-60% would be considered high.

Match terms to sale contracts: It may seem obvious, but it is important to match the terms of the hedge contract with the terms of the sale of the metal. This can be through an off-take or refining contract that may have some complex timing and option features in it. Failure to do this can, and probably will, result in hedging losses (i.e. hedging that does not work).

Allow for real life: It is worth remembering to allow for delays in production ramp-up. Avoid entering into forward contracts for the first scheduled periods of production. Instead, use bought put options, which do not require delivery.

Keep it simple: Complex products usually have high hidden costs and should only be used if necessary to match the sale terms.

Stress-testing: When structuring the hedge programme, it is worth ‘stress testing’ it, for example, what if the price goes up and production is delayed? Running several scenarios should help to come up with a programme that is robust. It should, of course, be closely tied in to the latest version of the mine plan.

The global financial crisis put the spotlight on the banks, and miners are more conscious of selecting quality counterparties for long-term hedge programmes. A miner has credit risk on a hedge counterparty for forward sales contracts and bought put options. Also choose counterparties that have good access to the market.

Choice of counterparties: There are two key drivers in the choice of hedge counterparty, the first being credit quality and the second being metal market expertise. The global financial crisis put the spotlight on the banks, and miners are more conscious of selecting quality counterparties for long-term hedge programmes. A miner has credit risk on a hedge counterparty for forward sales contracts and bought put options. Also choose counterparties that have good access to the market. Some banks are market takers and lay off the metal risk with the major players after adding on their own margin, thereby increasing the cost to the miner. The major players (i.e. market makers) have better execution capabilities and larger appetite for warehousing metal risk.

Stay involved in the execution: First and foremost, refrain from discussing a proposed hedge in the public domain until it has been executed. Market players monitor newswires for statements about producer hedging and position themselves accordingly, which can move a market against a producer. For a large hedge, execute in tranches, monitoring how the market digests each tranche. If the market
moves against you, be patient and do not chase it. If multiple hedge counterparties are involved, have a plan for each to have a turn executing. Ideally, use up capacity from the larger players first.

A hedge is not just for the day it is executed: Check the documented transaction against indicative pricing proposals and execution notifications to ensure what was discussed and agreed has been executed. Do not wait for the first settlement date to discover that you bought instead of sold! At regular intervals, value the hedge portfolio, assess hedge effectiveness and monitor credit exposures to hedge counterparties. The sooner any issues are identified, generally the cheaper they are to address.

Wisely used, hedging is a potent tool in the corporate treasury armoury and should not be dismissed as irrelevant, even in the current bull market run. Remember, metal prices can fall as well as rise.

Donald Douglas, CEO, Cambridge Risk Limited
Donald’s career in financial services and commodities spans more than 30 years. After qualifying as a chartered accountant, he worked with J.P. Morgan, N M Rothschild and Cambridge Risk, gaining extensive experience developing risk models for banks and financial instruments for clients – in metals, interest rates and currencies. Since establishing Cambridge Risk, he has advised a number of mining companies on hedge strategies, banks on risk models and acted as an expert witness on a number of metal related cases. He has served on the board of the Association of Mining Analysts and has spoken at conferences in Africa and Australia on mining and hedging.

Emma Jenkins, Director, Cambridge Risk Limited
After graduating with a first-class honours degree and a gold medal in mathematics from Trinity College, Dublin, Emma spent more than 14 years at a series of leading investment banks in London and Sydney, including Goldman Sachs and Credit Suisse. She specialised in structuring commodity derivative strategies, particularly in precious metals, for producers, consumers and traders. She frequently integrated commodity risk management strategies with debt financings, and interest rate and FX strategies. Since 2006, she has been operating as a consultant combining commodity consultancy services with delivering commodity training programmes.

LBMA Silver Anniversary Celebrations
10 December 2012, London

Save the Date

The LBMA will mark the 25-year anniversary in 2012, with a special series of events. There will be a Bullion Market Seminar on the afternoon of 10 December. This will be followed by black tie cocktail reception and dinner at the Mansion House in the evening.

LBMA Members, Associates and their guests are invited to attend. See the LBMA website for further information on the events as well as the GD Refiner silver anniversary gift competition.