

HEDGING AT ITS MOST BASIC

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INTRODUCTION

Do this as a worked example – it saves words.

The gold price has “jumped” to A\$500 per ounce and we, the **Miner**, want to lock this “good” price in for 1,000 ounces to be delivered in exactly 12 months time.

Rates For This Example

Spot price = A\$500 per ounce.

Australian 12 month cash interest rate = 7%

12 month gold lease rate (or gold borrowing fee) = 2%

Banker's profit margin = 0.25% (depends on “credit rating”)

How Hedging Happens

1. **Miner** (ie. our company) advises its “dealer” counterparty (eg. Rothschild Bank) to sell 1,000 ozs **forward for 12 months** at this spot price.
2. **Dealer** immediately borrows 1,000 ozs of gold from a major Central Bank (eg. Bank of England) and sells it into the spot market:

Dealer raises 1,000 x 500 = \$500,000 cash and promises to repay the gold in 12 months plus the interest rate charged by the central bank on gold, usually called the **gold lease rate** or more legally, the **gold borrowing fee**.

3. **Dealer's bank** (eg. Rothschild) immediately invests the \$500,000 onto the cash interest rate market to earn normal interest minus the lease rate.

Therefore, in 12 months time, **Dealer** can pay **Miner** more than the \$500,000 for 1,000 ounces of gold because the **Dealer**:

- Still has the \$500,000 it raised on the 1,000 ozs = \$500,000
- earns cash interest on the \$500,000 of 7% = \$ 35,000
- pays the gold borrowing fees of 2% = \$ 10,000
- takes a bankers fee of 0.25% = \$ 1,250

Net amount payable to **Miner** = **\$523,750**

So, all **Miner** needs to do is deliver 1,000 ozs of gold to **Dealer** in 12 months time to receive \$523,750 – an effective gold price of \$523.75 per ounce.

Nobody has “bet” against the miner/dealer, this all happens because of the prevailing interest rates for cash and gold loans. Nobody loses if the gold price falls below \$500 in 12 months time. **Miner** loses an opportunity to make more money if the gold price rises above \$523.75 in 12 months time because the 1,000 ozs must be delivered into the \$523.75 contract with the **Dealer** so that the gold can be returned to the Reserve Bank.

And that is all that happens in basic gold hedging, the rest is jargon and variations on this theme.

We complicate this process a bit by paying a fee or taking a fee and contractually making the hedge transaction **optional for one or other party**. Option pricing is beyond the scope of this note. Options are a valid activity and are actually not overly complex until we start creating multiple-option “derivatives”.

SOME JARGON EXPLAINED

Contango & Backwardation are a very old trading terms that arose when there was little storage of products and sale-powered trading ships took about 3 months to arrive in Europe from the ports where the trading items (eg. spices) were purchased. The prices in European markets were quoted “spot” for immediate purchases and “3 months” for goods that were paid for now and contracted to arrive in 3 months time.

If the 3 months price was above the spot prices, the market was described as being “in contango”. This usually only occurred for seasonal and/or market shortage reasons.

If the 3 months price was below the spot price, the market was described as being “in backwardation”. Markets usually were in backwardation due to the interest costs and risks on money over the 3 months the buyer had to wait for the goods to arrive.

Because gold is a form of money that can usually be sold forward at prices higher than today’s spot price, gold markets are usually in **Contango**. This contango for gold is effectively:

$$\text{Contango} = \text{Current cash interest rate} - \text{Gold lease rate.}$$

Because there is a huge tonnage of gold in Reserve Banks available for lending and because the lending is only done with highly reputable banks, the gold lease rate is usually lower than the prevailing cash interest rates.

Line Of Credit is a banking facility offered to the **Miner** by the hedging counterparty, in this case, the **Dealer Bank**. This banking facility is a contract that usually spells out the time period limits for the hedging and the maximum quantity that can be hedged and certain covenants/securities that are deal specific.

Hedge Book is a collective term for the total set of hedging contracts held by one entity.

Assumed Gold Lease Rate is often used in a line of credit contract. Most reserve banks will only lend gold for 12 months or less – possibly because national budgets are done annually and national economic conditions can change. But most gold miners hedge over several years (even up to 10 years in some cases) to maximise the gold contango effect which compounds over time and can increase the forward gold price by over \$100 per ounce. For this reason, the counterparty dealer-banks have established a gold lease rate market that trades gold lease rates for up to 5 years.

Gold lease rates can be fixed on a daily basis, monthly basis, annual basis or several year basis. The short-term lease rates are usually below 2% (say averaging 1.5% over a long period) because they roughly reflect the actual low rates between the conterparty banks and the reserve banks. Beyond 12 months, the gold lease rates can climb to above 3.5% because the counterparty banks are bearing all the risk.

For this reason, many hedge contracts fix the spot gold price, fix the cash interest rate and the bank fees but leave the gold lease rate unfixed or floating. Most contracts will assume that an average lease rate applies so that the forward gold prices can be delivered plus or minus a few dollars per ounce. The most common assumed lease rate in hedge contracts is 1.5% but riskier players assume lower rates (and publish outrageously high forward price figures) and more conservative players assume higher rates in their hedge contracts. Note that there is some risk that the assumed gold lease rate cannot be achieved and some opportunity that better-than-assumed rates can be achieved – see below.

Committed and Uncommitted Hedging. A contract is committed if you have to deliver no matter what. A contract is uncommitted if you have the freedom to not deliver.

Gold Loan Rollovers arise when the **Miner** hedges, say, 100,000 ounces of gold over 5 years (ie. 20,000 ozs pa) but has only fixed the gold lease rate for the first year and has left the future gold lease rate unfixed.

If deliveries work to plan, after 12 months, the **Miner** has delivered 20,000 ounces into the hedge contracts but still has 80,000 ounces contracted to be delivered over the remaining 4 years. But **Miner** must fix a gold lease rate for the borrowing of these 80,000 ounces by the **Dealer** (see “How Hedging Happens” above).

This periodic fixing is termed a **gold loan rollover** and usually, the gold lease rate market is calm and the gold lease rate can be fixed at, say, 6 monthly intervals at about 1.5% or better. But sometimes, the gold lease rates can exceed 1.5% and any gold loan rollover. When gold lease rates applying to a gold loan rollover exceed the assumed rate, the **Miner** builds up a debt to the counterparty bank (often settled in gold deducted from the next hedge contract) or earns a bonus (often settled as gold ounces added to the next hedge contract).

Miners are happy to apply an assumed gold lease rate in hedge contracts because the miners can vary the term of any gold rollover when they fall due. For the above example, if the lease rates were high at the time of the gold rollover, the miner may elect to just roll for a month and wait for the lease rate market to settle down before fixing for, say 12 months. Similarly, if the lease rate market is very low, the miner may fix for more than 12 months.

Most miners will stagger their gold loan rollovers – in the above example, the miner may split the rollover into 4 groups of 20,000 ounces falling due for rollover at 3 monthly intervals.

Lease Rate Spikes. When speculative hedge funds trade in gold futures, they sometimes get caught short and need to borrow gold at short notice. During these unusual market conditions, short-term lease rates can spike up and actually exceed cash interest rates, and creating a **backwardation** situation for short periods of time until the large, slow moving reserve banks lend more gold.

Mark to Market is a notional valuation of the **Miner’s** hedge contract or book comparing it to the current spot price of gold and the currently prevailing forward prices at the same lease rate conditions as the Miner’s hedge contract.

Out of the Money – In the Money is a way of describing the situation where a hedge contract or hedge book is positively valued mark to market (ie. “in the money”) or negatively valued (ie. “out of the money”). These mark to market valuations are notional figures only. They represent only the **unrealised cash gains or losses if one was forced to liquidate the hedge contract or book immediately.** Often a hedge book can be seriously out of the money compared to a spot market situation and still be delivering higher gold prices than the prevailing spot price of gold

Margin Limits are often set by the dealer counterparty bank to protect the bank from the build-up of out-of-the-money contracts as potential liabilities on their balance sheets. Margin limits are usually expressed in the form of a maximum “Out-of-the-Money” level. Theoretically, when a Margin Limit is exceeded, the counterparty bank can take remedial action as agreed in the hedge contracts (eg. ask for money or gold to pay-out part of the out-of-the-money problem deals). Often when a margin limit is exceeded but the counterparty bank has a mortgage or similar security over the goldmine, the counterparty bank won’t call margin. They reason that the out-of-the-money position is caused by a rise in the price of gold and therefore, the value of their security (ie. the goldmine) has increased.

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