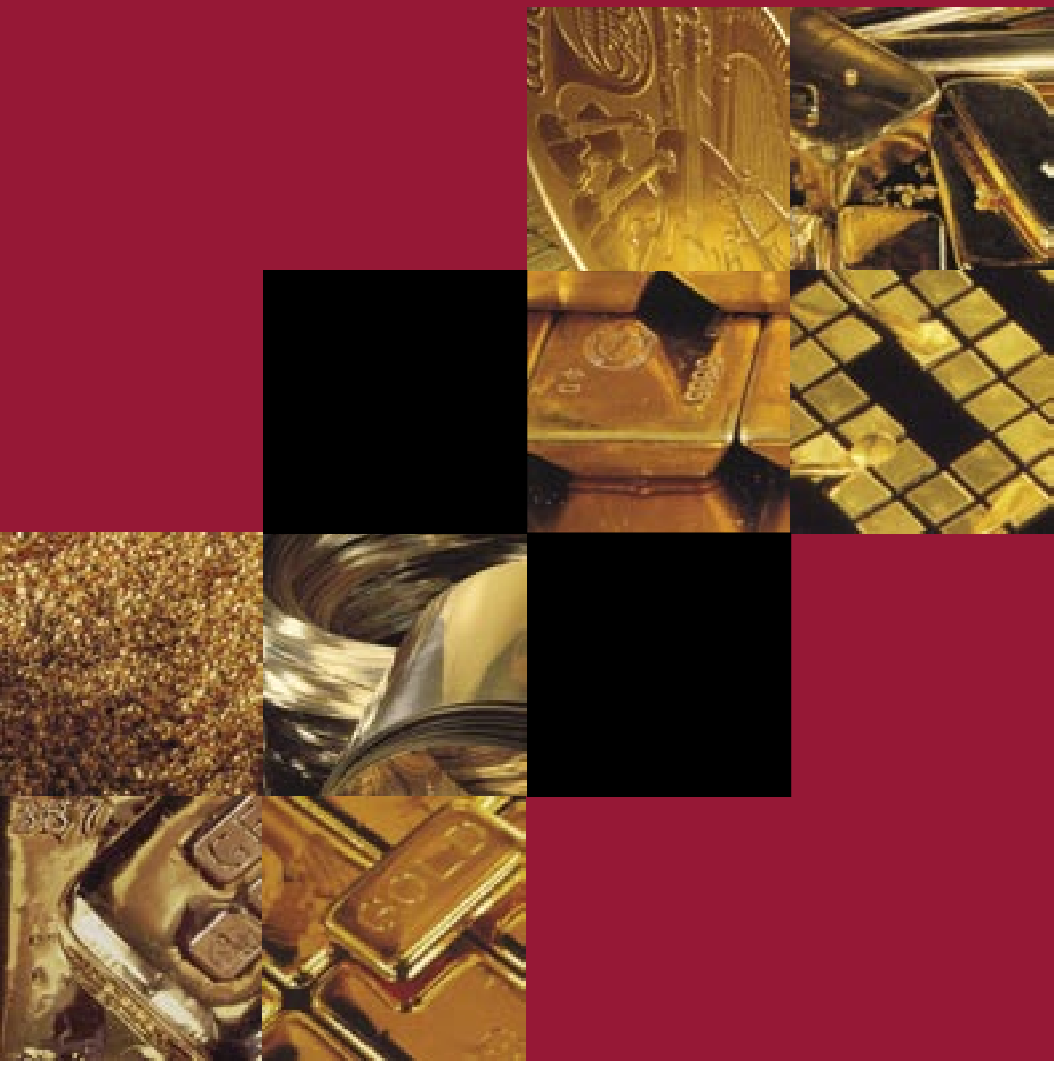
Global Hedge Book Analysis
Q4-2007



April 2008

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1 Source: Les Echos 12/20/04

Contents

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Key Points

- The producer hedge book stood at 26.86 Moz (835 t) at end-2007, the lowest level since 1992.
- The rate of de-hedging decreased modestly from the (revised) Q3 level, to 2.33 Moz (72 t) in the fourth quarter.
- Full year de-hedging amounted to a record 14.34 Moz (446 t) in 2007.
- In spite of the book volume reduction, the value of the combined global book marked-to market deteriorated slightly to negative $9.4 billion.
- Producers' average realised prices increased an appreciable 15% in US dollar terms to $767/oz, almost maintaining pace with the rise in average spot prices.

Composition of the Delta-Adjusted Global Hedge Book (end-period)

(Moz)	07.Q3	07.Q4	Change q-o-q
Forwards & Gold Loans	20.20	18.26	-10%
Options	8.99	8.60	-4%
Total	**29.18**	**26.86**	**-8%**

Note: Totals may not add due to independent rounding. Numbers are provisional and may be revised. At the time of going to press, some companies had not reported their hedge positions. In these cases, GFMS have made estimates.

Source: GFMS

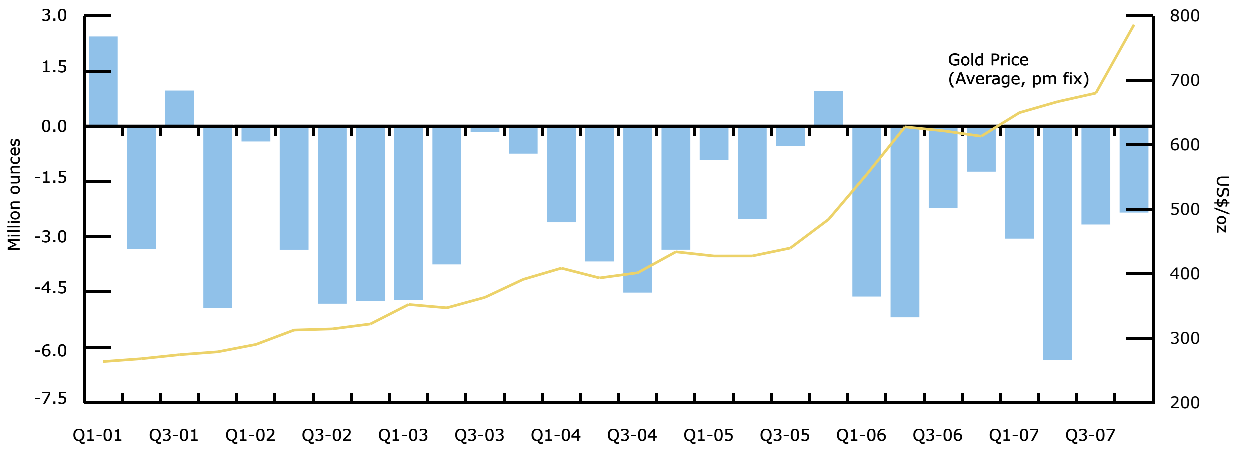
Summary and Overview

A high rate of net producer de-hedging was maintained in the final quarter, with companies collectively removing a total of 2.33 Moz (72 t) from the global hedge book in delta-adjusted terms. This represented a cut of just under 8% to the total remaining hedge position, which now stands at 26.86 Moz (835 t). On an annual basis, net producer de-hedging reached an all time high of 14.34 Moz (446 t). This surpassed the previous record, which was established in 2004, by 0.27 Moz or 8 tonnes.

As shown in the chart below, the bulk of 2007 activity (roughly two thirds) took place in the first half of the year, with 16% of the annual de-hedging figure attributable to events in the fourth quarter.

A small handful of producers provided the driving force behind the activity during the final three

Net Impact of Producer Hedging



Source: GFMS

months of the year: most significant was the continued de-hedging campaign by Newcrest which involved the removal of 0.73 Moz (23 t) of forward bullion sales. In addition, there were outright book eliminations undertaken by Red Back Mining, Highlands Pacific and Lafayette Mining (following the appointment of administrators), as well as cuts to Anglogold Ashanti and Barrick's positions, which contributed an additional 1.03 Moz (32 tonnes). The remaining 0.60 Moz (19 t) of recorded de-hedging was in the form of relatively small scale reductions by more than 30 other producers.

More noteworthy, however was the conspicuous lack of fresh hedging during the quarter. The most substantial addition to nominal contract volumes being a 14,000 oz (0.5 t) addition to existing hedge contracts by Equigold.

Market Commentary

The fourth quarter of 2007 was characterised by a further rise in prices, with a high of $841.10 being reached on 8th November. Although prices did not reach the all-time daily record, the average of $786 for October to December, some 16% higher on the previous three months, did establish a new quarterly average record. In contrast, gold prices in most other currencies experienced somewhat more modest rises, with, for example, the Turkish lira price only 7% higher on the previous quarter, although rupee prices more closely followed the trend in the US dollar, with a 13% increase. Since the end of 2007 gold prices have of course continued to strengthen, breaking through the previous record of $850 set on 21st January 1980. However, while prices at that time immediately experienced a sharp correction (on the basis of the PM fix the yellow metal enjoyed just two days above $800) on this occasion gold prices continued to move higher, barely pausing for breath before breaking through $900. By mid-March, just two months after the first $900-plus PM fix, $1,000 had been realised.

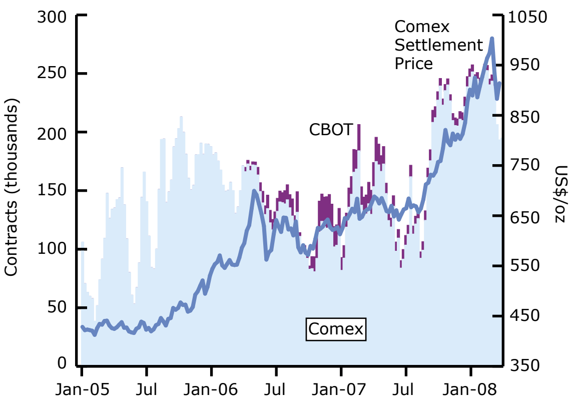
The principal cause for the price strength during the fourth quarter of 2007 and also the start of this

Prices (quarterly average)

	07.Q3	07.Q4	Change q-o-q
US$/oz spot	680.13	786.25	16%
US$ 12-mth	714.11	819.62	15%
Rand/kg	155,278	170,915	10%
A$/oz	803	883.45	10%
Euro/kg	15,903	17,453	10%
Yen/g	2,575	2,858	11%
TL/g	27.96	29.96	7%
Rps/10g	8,950	10,107	13%
Rph/g	202,112	233,137	15%
Rouble/g	557.31	621.87	12%

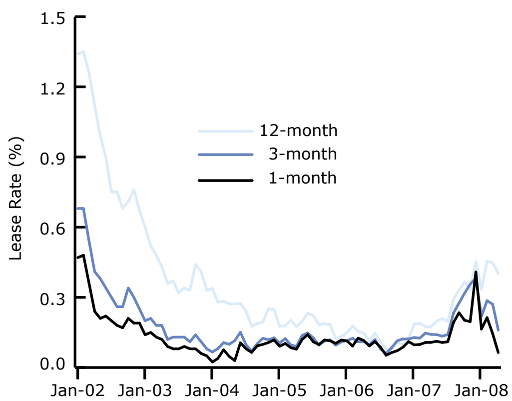
Source: Reuters EcoWin, GFMS

Speculative Net Positions in CBOT & Comex Futures



Source: CFTC, Comex

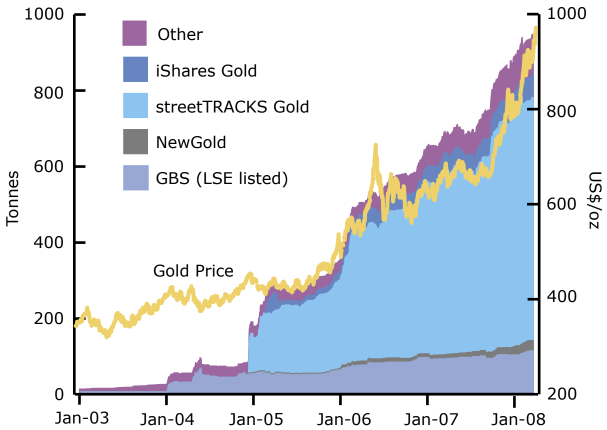
Leasing Rates (monthly average)



Source: LBMA

year was the concerted rise in investment demand, which has compensated for a notable drop in jewellery fabrication. The growth in investment demand has included a rise in speculative inflows into the yellow metal, a proxy for which is captured by the Comex non-commercial and non-reportable positions, as reported by the CFTC. The increase in investment during the fourth quarter was reflected in the rise in the combined net long position, which set a then reporting record on 6th November of 24.0 Moz (on a nominal basis, equivalent to 747 t), some 15% higher than the net long recorded at the end of the third quarter and an impressive 133% above the end-2006 position. As alluded to above, the inflow of speculative funds has continued to rise, albeit at a slower rate, but still sufficient to establish, in February 2008, a new reporting record for the size of the combined net long position in New York. ETFs have also benefited from the inflow of investor funds. By the end of last year, combined holdings had reached 28.9 Moz (899 t), a rise of 9% quarter-on-quarter and 39% above the end-2006 level. Not surprisingly, the growth in ETF holdings has continued into 2008 at a similar pace to that of last year, and by the end of February the volume of metal held in these accounts had reached 30.2 Moz (940 t), equivalent to some US$29bn.

Gold ETFs & Other Similar Products



Source: GFMS, collated from respective ETF issuers' data

As touched on above, the growth in investment has comfortably offset a decline in jewellery demand, which experienced a sharp drop during the final three months of last year. This was a function not only of the rise in gold prices but also the elevated levels of price volatility seen at this time. The trend in Indian gold bullion imports highlights this development; deliveries during the first nine months are estimated to have risen by more than 50% but shipments during the final three months look to have fallen by around 60% year-on-year. Interestingly, field research suggests that the Indian market suffered more from the effects of price volatility than the absolute price itself, pointing to a quite rapid acceptance of elevated price levels.

On the supply side, although fourth quarter scrap supply did respond to higher prices, the growth in recycling was arguably lower than expected. Part of the explanation can be found in the manner price expectations adjusted to rising prices, which in some price sensitive markets had already factored in a move to $1,000. It has therefore been of little surprise to see a marked rise in scrap volumes during the first quarter as these prices expectations have been realised (which, in turn, has led to a sharp drop in bullion imports into many markets as scrap has substituted for new gold in jewellery manufacturing).

Rising gold prices did little to affect official sector activity, where sales were broadly in line with expectations during the fourth quarter, with 95% of gross sales coming from within the CBGA signatories. Purchases from outside this group edged higher but the absolute volume remained modest at best.

Turning to mine supply, it was revealing to see only a limited price response to the news in early October that an accident at Harmony's South African Elandsrand mine had led to 3,200 miners being trapped underground, which prompted the country's Department of Minerals and Energy to enact legislation enforcing temporary mine closures whenever a fatal accident occurs. The comparatively modest impact on the yellow metal reflected the fact that a relatively low proportion of gold mine supply now comes from South Africa (together with the availability of abundant above-ground stocks of the metal). Unlike platinum, where a large proportion of the metal is produced in South Africa, the country's gold production comprises only around 10% of annual global mine supply – South Africa is no longer the significant producer that it was, for example, ten years ago.

Fourth quarter mine production dropped by a relatively sharp 5% year-on-year to total 20.3 Moz (633 t). Significant drops were noted in a number the world's key gold producing countries. As alluded to above, safety initiatives contributed to the 14% drop in South African output. Elsewhere, the heaviest losses were noted in the United States and Indonesia. Interestingly, on a full year basis, Indonesian production registered one of the strongest gains. A running theme among gold producers is heightened waste stripping and development activity, which has led to a temporary reduction to the processing rate of higher grade run-of-mine ore. In the fourth quarter, first pours were seen at several mines including Hambledon Mining's Sekisovskoe, Mercator Gold's Meekatharra and Cross Lake Minerals' QR.

Composition and Sensitivity of the Global Hedge Book

In nominal terms (not considering delta adjustment), the hedge book at end-2007 totalled 32.39 Moz (1,007 t), with the nominal volume of option contracts amounting to 14.13 Moz (440 t) or 44% of the book. Forward sales comprised the majority of the balance. Compared with the end of the previous quarter this represented a contraction of 1.94 Moz (60 t) to the forward sales and a reduction to the options position of 1.13 Moz (35 t).

Sensitivity of Q4 Options Book as of 28th Dec

Move in Volatility (%)	Move in Gold Price ($/oz)				
	-200	-100	0	100	200
4	7.82	8.27	8.56	8.73	8.83
3	7.83	8.29	8.57	8.74	8.84
2	7.84	8.30	8.58	8.75	8.84
1	7.86	8.31	8.59	8.76	8.85
0	7.87	8.31	**8.60**	8.77	8.86
-1	7.89	8.32	8.61	8.78	8.87
-2	7.90	8.33	8.62	8.79	8.88
-3	7.92	8.34	8.63	8.80	8.89
-4	7.94	8.34	8.64	8.81	8.90

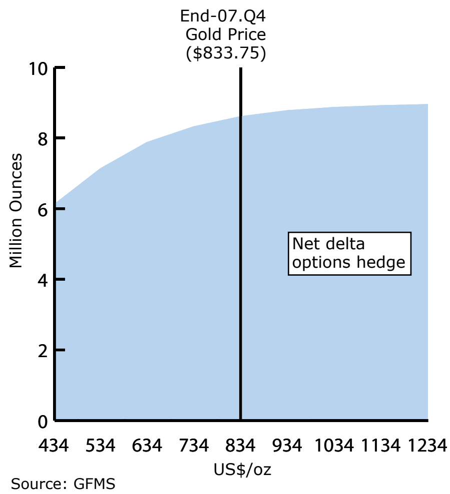
Source: GFMS

Note: The matrix above shows the scope for changes in the delta-adjusted volume under different gold prices and volatilities.

The delta-adjusted total options book at end-Q4 was calculated at 8.60 Moz, based on the end-Q4 gold price ($833.75/oz) and proprietary Société Générale market rates.

The Q4 options book also declined on a delta-adjusted basis, which was a function of the nominal option reductions made by, for example, AngloGold Ashanti and OceanaGold delivering into positions, rather than through delta effects. Looking at the book with regard to specific contract types, a point worth reiterating from earlier reports is that under the higher price used to value the

End-Q4 Delta-Adjusted Position



Source: GFMS

options at the end of the quarter, one might expect, assuming all other variables being equal, to see a portfolio of this structure (with a heavy bias of sold call contracts) to show a greater increase in delta terms. However, with additional consideration of the strike prices of individual contracts (with many sold call positions deeply in the money and already carrying a delta of close to 1), there is little scope for continued price rises to drastically alter the valuation of many of these contracts. Furthermore, the exposure of bought puts - the second most prevalent option type - diminishes as the price increases, since the probability of them being exercised is lowered under a higher price (assuming otherwise uniform conditions).

Top De-hedgers in Q4

(delta-adjusted, spot basis)	% of gross	decline
Company	**decline**	**(Moz)**
Newcrest Mining	31%	-0.73
Red Back Mining	10%	-0.25
Highlands Pacific	10%	-0.24
Barrick Gold	8%	-0.20
AngloGold Ashanti	8%	-0.19
Lafayette Mining	6%	-0.15

Note: Delta-adjusted volumes are calculated on the basis of published company data. As such disclosures are not exhaustive, the GFMS calculated position may not exactly correspond to the delta position reported by the company. In addition, GFMS value the contracts on a spot delta basis, whereas some companies report positions on a forward delta basis. This can lead to minor discrepancies between the calculated and reported delta-adjusted volumes. Where published data was unavailable, an estimate based on the scheduled expiry of contracts has been made

Source: GFMS

The sensitivity of the end-quarter options position is expressed in the chart and matrix on page 7, which model potential exposure of the hedge book to step movements in prices using Brady's Trinity™ risk management software. As can be seen, for the reasons addressed above, the extent to which further price rises will lead to an increased delta exposure of the existing book is relatively limited. On the other hand, there is significant capacity for a falling gold price to reduce the delta-adjusted options book.

Assessing the breakdown of the delta-adjusted global book, Options made up 30% and forwards constituted 70%, while at end-2006 the proportion was 75% forwards and 25% options - demonstrating the continued significant reduction of forward sales and loans relative to options over the course of the year.

Company Activity

Newcrest featured prominently in the top de-hedgers table again this quarter, having eliminated the last of its Australian dollar denominated Gold Bullion Sales Contracts, amounting to 0.51 Moz (16 t) in October, and the subsequent removal of 0.23 Moz (7 t) of US dollar denominated Gold Bullion Sales Contracts. As at 31st Dec 2007, Newcrest did not have any deliveries due before 2012.

Red Back Mining realised its plan to become hedge-free. Having eliminated outstanding commitments against Tasiast (hedged when under ownership by Rio Narcea) in Q3, Red Back went on to eliminate the remaining hedges against the Chirano property in Ghana. The repurchase of the remaining 0.25 Moz (8 t) of contracts was financed through a $110 million fully underwritten share offering at the end of October, leaving the company unhedged.

Lafayette Mining's hedge structure was unwound, amounting to 0.15 Moz (5 t), upon entering into voluntary administration on 18th December, while in November Beaconsfield Gold closed out the remaining 0.05Moz of spot deferred sales, leaving the group completely unhedged going forward. Following delays to the construction schedule at Etruscan Resources' Youga project, the company elected to settle its delivery obligations for September to November 2007, comprising 10,544 oz of call options. In addition 19,548 oz of put options expired unused. Construction delays have also been seen at Austindo Resources' Cibaliung, and consequently during the fourth quarter the company negotiated the roll back of December 2007, March 2008 and June 2008 delivery contracts to 2011.

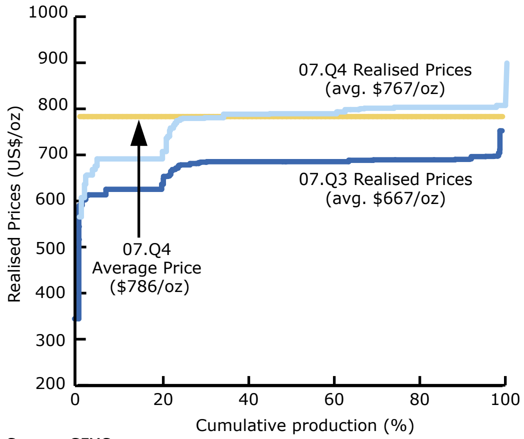
On completion of the sale of the Kainantu mine to Barrick on 12th December, Highlands Pacific closed out its project loan facility and the entire remaining project hedging program, consisting of 0.24Moz of forward sales. In late October, in order to mitigate risk of further gold price rises, pending receipt of the proceeds of the sale, Highlands Pacific converted the project hedging into a monetary loan. This proved to be a fortuitous decision, with the gold price (trading around $750 in mid-October), subsequently moving swiftly up to $814 on 12th December. By converting the forwards into a loan early the company effectively locked in a lower price for the closure of the contracts.

Following review of the data, a noteworthy revision has been made to the de-hedging series: in the past, Barrick's 'floating spot price gold sales contracts' have been treated as a forward sale on the book, with de-hedging recorded at the point of contract delivery. However, these transactions are now treated at the point of conversion from a fixed to a floating price product - rather than when these contracts are delivered into. Within the terms of the floating spot price sales, we understand that the contracts may, at the crystallised deduction to the spot price, be converted back into a fixed price product, up to the point of maturity - in many cases 2019. During Q4, 0.2 Moz (6 t) of were converted to floating price contracts.

The holder of the largest share of the global book, AngloGold Ashanti, continued its active management of their hedge position in order to maximise the value from the existing contracts. Despite the increase in the end quarter gold price, AngloGold's net delta hedge reduced from 10.58 Moz to 10.39 Moz. The principal driving force behind this reduction was a weighty cut made to the company's sold call position, which it is understood, was partly achieved through the use the 'restructure long' position that the company established as an offset against commitments likely to be called.

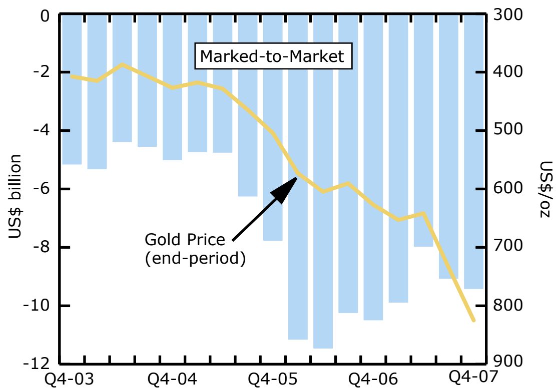
Turning to producer revenues, and as evidenced by the realised prices chart below, it is unsurprising that with the significantly higher average spot price in the fourth quarter (up 16% quarter-on-quarter in US dollar terms, and still more than 10% in the majority of producer currencies) revenues were substantially higher compared with the previous quarter. Indeed, in dollar terms, producers' realised prices increased by 15% to an industry

Realised Prices in Q4



Source: GFMS

Global Hedge Book Marked-to-Market

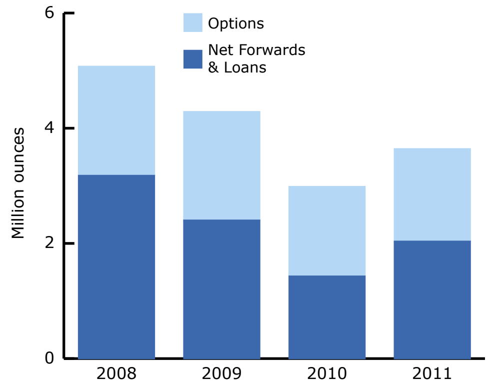


Source: GFMS

average of $767/oz - within $10/oz of the average spot price.

At end-December the total marked-to-market value of the global producer hedge book amounted to negative $9.4 billion, representing a $0.4 billion deterioration versus end-Q3. Similar to last quarter, in spite of a further downsizing of the book in volume terms, the ratcheting up of the gold price at end-quarter (when hedge positions are valued) pushed the overall book further into the red.

Delivery Profile End-Q4 (base case, delta-adjusted)



*potential de-hedging based on contract year of delivery/expiry and confirmed 2008 activity

Source: GFMS

Outlook

Subsequent to the end of 2007, further significant closures of positions have been announced to the outstanding position, the most significant of which was a two-stage clearance by Buenaventura in the first two months of the year. In an announcement on 24th January, the company eliminated the first tranche consisting of 0.14 Moz (4 t) of forward sales contracts, which had been due for delivery in 2010. Secondly, the company announced the complete unwinding of the remainder of its gold commitments by buying back 0.78 Moz (24 t) spread between 2010 and 2012. Consequently all gold production from Buenaventura is now unhedged. Newcrest followed on from the fourth quarter by buying back an additional 0.23 Moz (7 t) of US dollar denominated gold bullion sales contracts.

Two further actions were seen by Crescent Gold and Euro Ressources: on the 9th and 10th January, Crescent closed out their forward sales contracts due between January and June 2008, comprising 15,300 oz. The following day Crescent bought 61,275 oz of call options at a strike price of A$860 to counteract the remaining sold gold forwards. Although technically the company still has committed contracts, Crescent effectively now has zero net exposure to gold hedging, and maintains downside protection at A$850 through bought put options. Euro Ressources removed a further 1,500 oz from its 2008 forward sales obligations, and have indicated that they are exploring opportunities to apply cash-flow to reduce commitments further. By 2009 Euro hopes to eliminate the remaining 0.03 Moz (1t).

With the total producer hedge book standing at less than 850 tonnes, there is increasingly limited scope, especially given recently announced producer activity discussed above, for a significant amount of de-hedging to occur in 2008 compared to levels seen in 2007. This is reinforced by the fact that Barrick and AngloGold Ashanti's combined position now makes up approximately 70% of the total hedge book, and there are continued indications that their intention is to gradually reduce the outstanding positions through a combination of active management and deliveries to maximise the value that can be gained from outstanding positions. Bearing this in mind there is a relatively low probability of AngloGold Ashanti taking the approach of other major producers last year of slashing positions quickly in sizeable portions. It must also be borne in mind that with the current elevated gold price it has become a hugely expensive time for companies to buy-back. Furthermore, with the credit crunch still looming in the background, companies that lack a strong balance sheet may find it difficult to obtain sufficient credit at these high prices to re-purchase unwanted contracts.

The profile charted on page 10 shows the projected deliveries from hedge contracts for the coming years. It does not allow for possible activity relating to unscheduled buybacks, book restructures or fresh hedging. It does however take into account the known first quarter 2008 activities outlined above. For the current year, 158 tonnes of contracts (on a delta basis) are scheduled reach maturity.

In recent years it has generally been cautioned that the delivery profile represents the lower bounds of forecast de-hedging, and should producers apparent aversion to hedging that was demonstrated in the fourth quarter be maintained then this will certainly be the case once again. However, with current prices greatly exceeding the marginal cost of most producers, should gold's rally falter and threaten the handsome margins currently available, then we could envision a meaningful return to hedging - potentially as early as the latter stages of this year.

Technical Annex

The GFMS analysis utilises the Brady Trinity™ Risk Management and Trading system. Each mining company's individual trades have been input to the Brady Trinity™ system.

The use of the Brady Trinity™ system is particularly relevant for the analysis of mining companies' options positions. We have entered each option trade by mid-year of expiry. Moreover, non-vanilla products such as convertible forwards have been broken down into their constituent options. This analysis enables us to accurately obtain key parameters and valuations for each instrument used by each company and subsequently for the global hedge book as a whole. This methodology also allows us to model the delivery profile of the hedge book.

All forward contracts, including spot deferred, floating rate forwards and fixed rate forwards, are input as forward sales. Options contracts, including cap and floor agreements, are entered as their constituent vanilla put and call contracts. Convertible and contingent options are unbundled into their constituent barrier options contracts. Trigger levels for barrier options are taken as the mid-point of published ranges, where available. Convertible forward contracts are modelled as a barrier call option combined with a vanilla put option.

In terms of the GFMS analysis, the key parameter of interest is the delta-adjusted position. As explained in the glossary, the delta of an option (or indeed of a forward) is the rate of change in the value of the derivative for a change in the price of the underlying. In the case of a gold forward sale (or purchase), the forward delta is 1, whilst in the case of an option, this delta is derived from the Black-Scholes option pricing formula.

The counterparties to mining companies' hedging activity (typically banks) will dynamically hedge their exposure through delta hedging. For example, suppose a mining company purchases a put option. The writer of the option (a bank) will be long the delta volume. In other words, if the delta of the option is +0.5 and the nominal volume of the trade is 100,000 ounces, the delta volume will be 50,000 ounces (of which the bank will be long). To hedge this exposure, the bank must therefore undertake a transaction that yields an equal and opposite position (i.e. short). This will typically be achieved by the bank borrowing gold (normally from a central bank) and selling this into the spot market. Through this mechanism, mining companies' hedging activities impact directly on the spot gold market.

It should be borne in mind that the value of an option, as well as the delta, will change in response to movements in key parameters, particularly the spot gold price, but also market volatility, interest rates and time to expiry. In response to this, banks will continuously or dynamically adjust their delta hedge position.

Glossary

Option - An option contract gives the holder the right, but not the obligation, to buy or sell gold at a predetermined price on or by an agreed date.

European Option - An option that can only be exercised at the expiry date.

American Option - An option that can be exercised at any time prior to the expiry date.

Put Option - An option contract which gives the buyer the right, but not the obligation, to sell a specified amount of gold (or other asset) at a predetermined price (the strike price) on or before a specified date (expiry date).

Call Option - An option contract which gives the buyer the right but not the obligation to buy a specified amount of gold (or other asset) at a predetermined price on or before the expiry date.

Barrier Option - An option whose outcome depends on the performance of the price of the underlying during the life of the option and whether that price breeches a predetermined barrier.

Forward - A transaction in which two parties agree to the purchase and sale of gold at a future date.

Gold Lease Rate - The cost of borrowing or return form lending gold, the daily level of which reflects the supply and demand for metal in the lending market.

Writer - The writer or grantor is the party who sells the option and receives that premium income.

Long - A position in an asset (e.g. gold) for which the value will rise should the price of that asset rise.

Short - A position in an asset (e.g. gold) for which the value will fall should the price of that asset rise.

Delta - The rate of change of the price of a derivative with the price of the underlying asset.

Gamma - The rate of change of delta with respect to the asset price.

Theta - The rate of change of the price of a derivative with the passage of time.

Vega - The rate of change of the price of a derivative with volatility.

Rho - The rate of change of the price of a derivative with the interest rate.

Greeks - The basket term for the above hedge parameters (delta, theta, vega, gamma, rho).

Underlying - Shortened term for the underlying commodity on which forwards and options are traded (i.e. in this case gold).

Delta Hedging - A hedging scheme that is designed to make the value of a derivatives portfolio insensitive to small changes in the price of the underlying.

Black-Scholes Model - A model for pricing European options. Developed by Fischer Black, Myron Scholes and Robert Merton. See F. Black and M. Scholes “The Pricing of Options and Corporate Liabilities” Journal of Political Economy 81, 1973 and R.C. Merton “Theory of Rational Pricing” Bell Journal of Economics and Management Science 4, 1973.

Vanilla/Non-Vanilla - Vanilla options are simple put and call options, whilst non-vanilla options are more complex, with pay-offs dependant on a variety of market factors, such as price paths or the price of alternative assets.

Volatility - A measure of the uncertainty or rate of change of an asset price.

About GFMS

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GFMS Ltd, the world's foremost precious metals consultancy, specialising in research into the global gold, silver, platinum and palladium markets. GFMS is based in London, UK, but has representation in Australia, India, Russia, Germany, Spain and China, and a vast range of contacts and associates across the world.

GFMS is credited with producing the most authoritative surveys of the gold and silver markets, the annual Gold Survey and World Silver Survey, and produces a range of other publications dealing with all aspects of the precious metals markets. GFMS also provides consultancy services in the form of tailor-made research into selected areas of the precious metals markets. GFMS' research team of fifteen full-time analysts comprise experienced economists and three geologists.

About Brady plc

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Brady provides the leading trading and risk management software for global commodity markets. On a single platform, Brady provides complete integrated solutions supporting entire commodities trading operations, from capture of financial and physical trading, through risk management, to handling physical operations to back office financials and treasury settlement. Brady has more than 20 years of expertise and more than 800 users worldwide, including some of the largest financial institutions and mining corporations who depend on Brady's software solutions to deliver mission critical business transactions across their global networks. Brady is headquartered in Cambridge with offices in London and New York.

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