

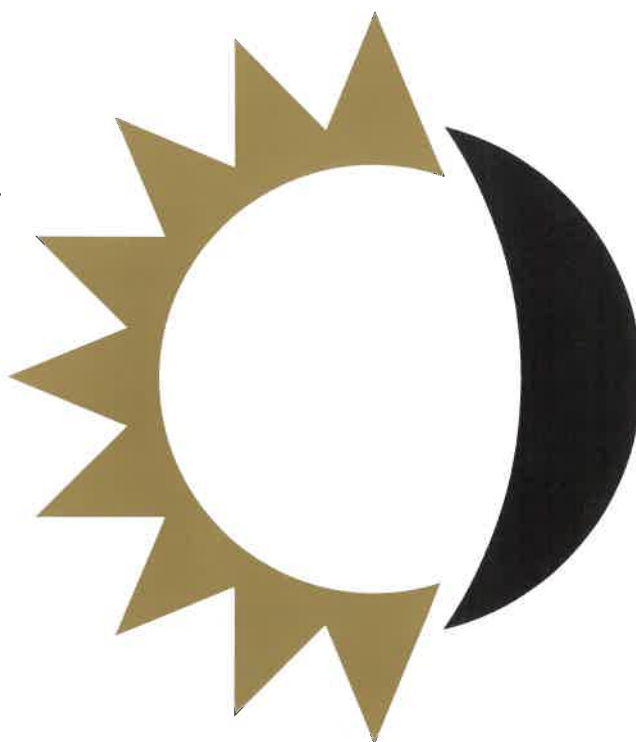
Articles

ISSUE

LONDON BULLION MARKET ASSOCIATION

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LBMA

*The new LBMA logo reflects the early chemical symbols for gold (the sun) and silver (the crescent moon).*

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# EMU GOLD

## Don't Hold Your Breath

by Doug Upton, Head of Commodity Research, HSBC Securities

• **Eleven member states have been accepted for entry into EMU.**

• **The Executive Board of the ECB has been elected and sanctioned by the European Parliament.**

• **The President of the ECB has indicated an ESCB consensus that gold should form 10-15% of the ECB reserves.**

The waiting game continues until the details on gold's role within the ECB and ESCB are announced. The 11 countries entering the first phase of European monetary union (the EMU-11) directly hold 9,906 tonnes of gold in Central Bank reserves, representing 26% of the world official sector reserves. In addition, the EMI holds 2,476 tonnes of gold that belong to the 11 countries, representing 20% of their gold reserves. (Similarly, the EMI held 20% of member country US dollar reserves.) That brings the total to 12,382 tonnes, or 31% of world official reserves. The future of these reserves has been the central issue confronting the gold industry for the past 18 months, and is likely to remain so for some months yet.

The reserves previously held by the EMI have been transferred to the ECB, to be eventually returned to the national central banks (NCBs) of member states at the end of this year. At that time, the NCBs will make their contributions to the official reserves of the new ECB.

The ECB is the executive arm of the European System of Central Banks (ESCB). In other words, its task is to implement the policies of the ESCB. The ESCB, as the name suggests, consists of the ECB and the NCBs of the member states. Policy will be set by the Governing Council of the ESCB which, for the initial phase of EMU, will have 17 members – the six executive board members of the ECB, plus the governors of each of the 11 NCBs.

The nature and structure of the ESCB and its Governing Council is an important factor for the gold market. According to the Maastricht Treaty, one of the four main tasks of the ESCB is "to hold and manage all of the reserves within the system". Effectively, the ECB and the NCBs should begin to behave as a single entity with regard to not just monetary and exchange rate policy, but also the reserve base. (Indeed, this is the whole idea of monetary union.) There has been much speculation that once monetary union begins, the NCBs will be unable to sell (or buy) gold reserves without the permission of the ECB. However, the Maastricht Treaty is not entirely clear on this subject:

**Article 23.1** The ECB and national central banks may acquire and sell spot or forward all types of foreign exchange assets and precious metals; the term 'foreign exchange asset' shall include securities and all other assets in the currency of any country or units of account in whatever form held.

**Article 31.1** The NCBs shall be allowed to perform transactions in fulfilment of their obligations towards international organisations.

**Article 31.2** All other operations in foreign reserve assets remaining with the NCBs after the transfers (to the ECB) and member states' transactions with their foreign exchange working balances shall, above a certain limit to be established within the framework of article 31.3, be subject to approval by the ECB in order to ensure consistency with the exchange rate and monetary policies of the Community.

**Article 31.3** The Governing Council shall issue guidelines with a view to facilitating such operations.

The key phrase is "*consistency with the exchange rate and monetary policies of the Community*". It is by no means clear how this will be interpreted. The ESCB could take the view that all transactions in foreign reserve assets have the potential to impact exchange rate policy. Or it could take a considerably more liberal view, restricting its control to only the largest NCB reserve transactions. In the longer term, we suspect that control will be drawn to the centre, but for the initial guidelines we must wait for the ECB announcements.

The other key announcements, from the point of view of the gold market, will be:

- The structure of the ECB reserves (10-15% gold suggested by Wim Duisenberg).
- The guidelines regarding potential additional reserves called from the NCBs to the ECB.

**Article 30.4** Further calls of foreign reserve assets beyond the limit set in Article 30.1 may be effected by the ECB within the limits and under the conditions set by the Council.

- The extent to which the ECB relies on the NCBs to implement policy.

**Article 12.1** The Governing Council shall adopt the guidelines and take the decisions necessary to ensure the performance of the tasks entrusted to the ESCB under this treaty and this statute. The Governing Council shall formulate the monetary policy of the Community including, as appropriate, decisions relating to intermediate monetary objectives, key interest rates and the supply of reserves in the ESCB and shall establish the necessary guidelines for their implementation.

The Executive Board shall implement monetary policy in accordance with the guidelines and decisions laid down by the Governing Council. In doing so, the Executive Board shall give the necessary instructions to national central banks. In addition, the Executive Board may have certain powers delegated to it where the Governing Council so decides.

### Foreign reserve structure within the ESCB



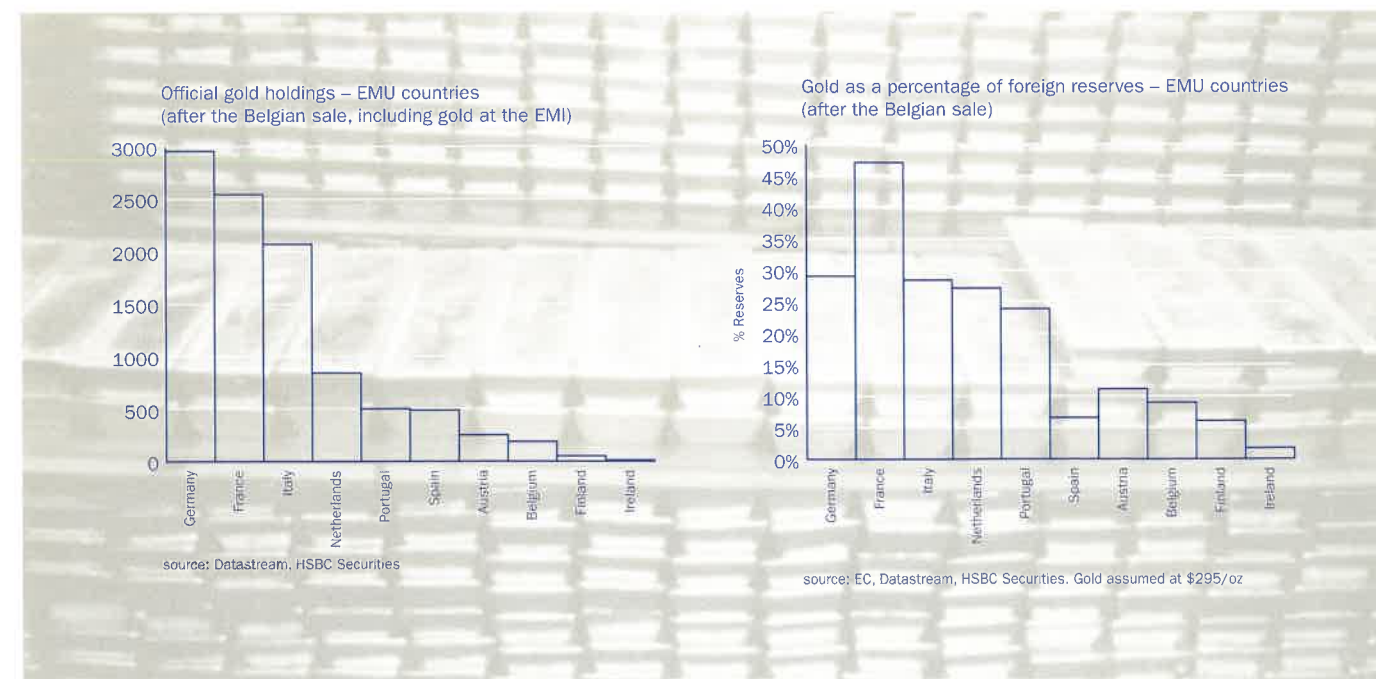
To the extent deemed possible and appropriate and without prejudice to the provisions of this article, the ECB shall have recourse to national central banks to carry out operations which form part of the task of the ESCB.

The ESCB and ECB were formally established on 1 June 1998, but will not assume their full powers until 1 January 1999. Announcements could come at any time up to that date, although it is likely that the framework will have to be set down in sufficient time for the necessary operating procedures and systems to be put in place.

It is unlikely that the gold-related issues will be high on the priority list. The prime aim of the ESCB is to maintain price stability within the EMU zone. This needs to be defined and agreed. Other issues that need to be addressed include the exchange rate policies, monetary policies and the payments system for the Euro zone. It could easily be August or September before the gold market's ECB guessing game is over. ■

**Doug Upton** is Head of Commodity Research with HSBC Securities. He is responsible for research and forecasting of mining-related commodity markets.

Prior to joining HSBC in 1997, Doug served for many years in the mining industry. He spent more than eight years with WMC Limited working in a range of capacities, including financial analysis, acquisitions and divestments, operational and strategic planning, marketing and market research, and business development. Sectors covered include base metals, precious metals, steels, industrial minerals, bulk commodities and fertilisers.





# Facing up to the Price – A View from Africa

by Mr Mark Keatley, Chief Officer, Ashanti Goldfields Company Limited

(condensed from a speech given by the author at the FT World Gold Conference in Barcelona)

**Imagine an industry that enjoys a high price for its output, well in excess of costs of production.**

**Companies operating in this industry find that their shareholders are fairly undemanding, and it is easy to raise equity capital, without having**

**to account too closely for the returns on that capital. Not surprisingly, a large number of companies flourish in this situation, including a great many small and inefficient**

**producers, since merely being able to produce the product**

**guarantees success.**

Not many would identify the above industry as gold mining. But, prior to the crash of the gold price in 1997, gold mining wasn't just a business, it was a 'good business'. That is quite a contrast to the condition of the industry today.

With the gold price at a level that is below the total cost of production for the average player in the industry, companies have to work a lot harder to raise capital. Shareholders are demanding returns on capital that are commensurate with other industries. Only the most profitable companies will survive in this situation. Gold mining has become just a 'business'.

That in itself is not such a bad thing. It is what most companies have to contend with in most industries.

Other industries have suffered major external shocks similar to that in the gold industry. For example, the automobile industry in Europe and North America was a 'good business' until the oil price crisis of 1979. Suddenly, the established producers had to compete with the onslaught of cheap, fuel-efficient Japanese imports. Major players such as Chrysler found themselves marginalised and hovered on the edge of bankruptcy, while Ford and Volkswagen suffered heavy financial losses.

We were confidently told that the automobile industry as we knew it would not survive. And yet, it did. Both Chrysler and Volkswagen restructured themselves successfully, reduced their delivery costs, and are now achieving superior financial returns for their shareholders. Some of the strategies they used can benefit the gold mining industry as well.

The survivor companies were those who succeeded in reducing their operating costs dramatically. Sweeping lay-offs were made and tough deals were cut with unionised labour which guaranteed a future for both sides. In automobiles, there was a major shrinking of the supply chain, inspired by the Japanese 'just-in-time' philosophy. Over five years, Ford Motor Company and Volkswagen are reported to have cut the number of their suppliers by over 30%, achieving major improvements in cost, quality and delivery times.

Survival is not only a matter of reducing costs. Successful companies have consolidated their business units into large-scale, world-class facilities, while closing down small inefficient units, and selling non-core businesses.

Geographical consolidation can be a significant feature. Chrysler successfully regrouped around Middle America and sold off its European operations, having decided that being 'world class' did not mean being all over the world.

How can the survivor companies in gold mining apply these lessons? Survival starts with cost reduction and that starts with labour. Our company has reduced its labour force by 10% over the last 12 months while increasing production by 30%. But sweeping lay-offs alone do not create the loyal and productive workforce that is essential to compete efficiently. The last 12 months have seen path-breaking agreements with unionised mining labour; in Ghana in our case, in South Africa in the case of Anglo and others. Ashanti has worked hard to create focused incentive plans, which the Ghana Mineworkers Union has traded off in return for cuts in overtime. By implementing schemes that protect workers' purchasing power, we have escaped from the syndrome of high

nominal annual salary increases.

A belief in long-term partnership is crucial to achieving such agreements. Ashanti introduced worker directorships over 15 years ago and we have staff and worker representatives sitting on the division boards for each of our six operating mines.

The area where cost reduction has the greatest leverage for Ashanti is in costs of purchased materials. This is because our production is largely mechanised and purchased materials account for about 55% of our production costs. Again, like the automobile industry with its 'just-in-time approach', we are shrinking the supply chain. We would rather deal with fewer world-class suppliers and achieve economies of scale. In total, we are reducing the number of suppliers that we deal with by 50%, to less than 1,000. For our key mining inputs, we have moved to single sourcing at a country level and, in many cases, at a global level. Overall, we have reduced the unit costs of our purchased materials by 16% in two years. We have also reduced the lead-time for routine supplies by 34%.

As in the automotive industry, the successful companies are consolidating their production around large-scale, world-class mines, while ruthlessly pruning small inefficient units. In many cases, the consolidation is being achieved by merging adjacent properties to create economies of scale. Although there will undoubtedly be room for smaller players who hold high-grade properties, the economic factors will mitigate in favour of scale.

There are signs that there may be more geographical consolidation. A driving force in much of last year's merger activity in North America and South Africa was that the dominant players

consolidated their presence in their backyard. In Ashanti's case, Africa is the continent that we understand, and where our strategic advantage is greatest; and our current endeavours are directed at consolidating further our presence there.

In conclusion, the current travails of the gold mining industry are not unique. Other industries have withstood and survived external shocks of an equally severe magnitude. Likewise the solutions are not unique but they require vision, focus and determination. We look forward to that challenge with relish. ■



Mark Keatley

## LONDON SILVER FIX revamped

Recently, the members of the London silver fix – ScotiaMocatta, HSBC Midland and Deutsche Bank – announced procedural changes designed to increase transparency and encourage customer participation.

Previously all orders had to be placed with the fixing members before the start of the fix and could not be changed once the process had begun. The new procedure parallels that of the gold fix, where orders are conducted by telephone and customers may change an order at any point up until a balance is achieved and the final price is declared.

The changes make it impractical to continue to publish forward fixing prices, and only a spot price in dollars and sterling is now published. However, forwards continue to be readily available. "We wanted to make the system as flexible as possible," said Tim Jones, head of ScotiaMocatta's bullion operations. "Customers can now organise forward transactions with their broker on the fix and they can get a commentary on what forward prices are at any point over the phone."

The first silver fix took place in London over 100 years ago, designed to provide an orderly market for purchases and sales. During that time, it has grown to become the world's reference price for silver.



# Quick Study...

## A Commodity-linked Bond

by Peter Hillyard, Vice President and Manager, Precious Metals, Bank of America

**On 16 April 1998, a commodity-linked bond was launched in Italy, the first in Eurolira. The bond pays a single coupon at maturity linked to the performance of a basket of three commodities, one of which is silver. The commodities that make up the basket were chosen specifically for their strong economic demand potential and because they provide a hedge against inflation.**

In this five-year, ITL100 billion deal, the investor pays lire and receives at maturity the greater of 16% or 120% of the average growth of the commodity basket for the first three years of the bond's life only.

Structured notes such as these are selling briskly. They are targeted at investors looking to diversify their asset classes and play different markets. Commodities, including gold and silver, can provide important protection for portfolios because they tend to perform well when financial markets go awry.

### LIRE INTEREST RATES



### Term Sheet:

AMOUNT:	Lire 100 billion
PAY DATE:	15 May 1998
MATURITY:	15 May 2003
ISSUE PRICE:	100
REDEMPTION:	100 + Max. [16%; 120% x (Basket Growth %)]

Where 'Basket Growth' represents any appreciation in the basket of commodities between the monthly average for the first three years only and the price on the payment date.

If, for example, the growth in the basket were 20% over the three-year period then the redemption would be the greater of 16% or 30% (ie, 120% x 20%).

Demand for this product came principally from two insurance companies, but banks were quick to follow. Italian investors have seen a dramatic decline in lire interest rates during the past three years; they have reached levels many investors no longer find attractive. How to increase yields, yet keep a guaranteed minimum rate of return? With shrinking silver stocks and a surge in industrial demand, this deal provides investors with the opportunity to participate in rising silver prices with very limited downside risk.

### How is it priced?

The fund manager receives lire, swaps part of the interest income over the life of the bond for an up-front payment and uses this to purchase out-of-the-money call options on the commodities that make up the basket.

# Gold in Today's Investment Portfolio

## An Idea Whose Time Has Come

by Richard Scott-Ram, Portfolio Strategist, World Gold Council

**Equities, particularly in the United States, continue to achieve new highs in an almost effortless fashion, leaving certain investors concerned about the potential for a sharp correction. Price-to-earnings (P/E) ratios at historically high levels and dividend yields correspondingly low suggest that the stock market is becoming increasingly vulnerable.**

Accordingly, this is an appropriate time to examine the advantages of including alternative assets – such as gold – in an investment portfolio. In the United States, investment managers wary of a stock market correction are now shifting their focus toward strategies aimed at 'preservation of wealth' – in effect, seeking to take out 'insurance policies' for their portfolios. Gold is one alternative that has been gaining the attention of a growing number of investment managers. In its dialogue with US institutional investors, the World Gold Council has identified at least 200 tonnes of bullion held by leading pension funds. In 1997 alone, at least 50 tonnes of gold were purchased by these funds.

### Why Gold?

According to Council research, there are four main benefits of holding gold in a portfolio: (1) gold is an efficient portfolio diversifier; (2) it is competitive with conventional diversifiers (such as Treasury bills); (3) it is more liquid than other 'alternative' assets; and (4) gold can enhance portfolio returns.

### An Efficient Portfolio Diversifier

Gold is the only asset which is negatively correlated to virtually all other asset classes (including conventional assets, such as stocks and bonds), meaning that its price tends to move in the opposite direction from them. For instance, when equities enjoy good returns, gold tends to have a low or negative return (see charts below).

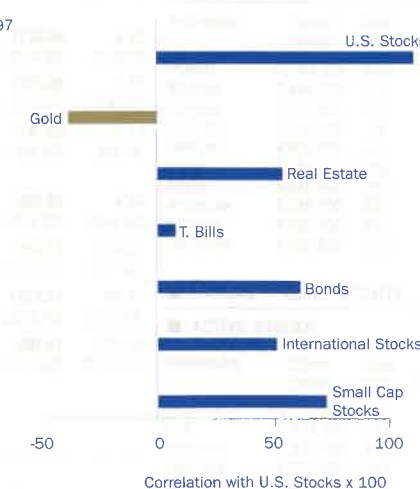
Because gold is negatively correlated with most asset classes, its inclusion in an investment portfolio leads to a considerable reduction in the volatility of that portfolio. This reduction in volatility in turn improves portfolio returns. For instance, it is difficult for a portfolio to recover losses when the declines in asset prices are large.

Gold's usefulness as a component of a portfolio is particularly noticeable in the case of international investments. Research has shown that adding gold to a portfolio comprising a basket of currencies enhances the portfolio's return and/or reduces portfolio volatility: gold is also negatively correlated with several main currencies. The mix of gold and currencies that make up an

### Gold is Negatively Correlated to Other Asset Classes



### Gold is the Most Negatively Correlated Asset to U.S. Stocks





'efficient' portfolio is determined by the use of an *optimizer*. This is a mathematical formula which calculates the specific asset-mix for a portfolio which will result in either a maximum return for each level of volatility, or a minimum level of volatility for a given return. At times, gold's benefits can be particularly advantageous for US investment funds with holdings in emerging markets that are considered particularly 'risky'.

Finally, gold brings benefits to portfolios involved in meeting corporate obligations – as in the case of companies meeting their pension liabilities. **First**, the benefits are especially strong in the case of companies particularly vulnerable to inflation-related wage demands. An example would be a company whose labour force is highly skilled and therefore likely to win demands for increased wages. There is an especially strong need for that corporation to invest in assets (such as gold) that provide protection against inflation. **Second**, gold can be useful to those pension funds that are ‘under-funded’ (that is, where the market value of the corporation’s pension assets is lower than the present value of projected pension liabilities). Since adding gold to a pension portfolio reduces its volatility, it permits the inclusion of higher-return assets in that portfolio without increasing the overall level of risk. And, **third**, in the case of pensions with international liabilities, inclusion of gold in a pension fund’s portfolio provides an effective hedge against foreign-currency fluctuations, as seen earlier.

### Competitive with Conventional Portfolio Diversifiers

US Treasury bills, US bonds and options (such as put options on the S&P stock-market index) are frequently considered to be superior portfolio diversifiers in comparison to gold. Yet it can be demonstrated that a standard portfolio consisting of Treasury bills *without* gold is more volatile than a portfolio *with* gold. Furthermore, since the gold price is usually more volatile than real (after inflation) Treasury bill yields and is also negatively correlated to those yields, including a small proportion of gold in a Treasury bill portfolio provides an excellent hedge against its yield

fluctuations. This advantage for gold is an important consideration for short-term money managers.

Turning to bonds, this asset class no longer acts as a strong portfolio diversifier *vis-à-vis* equities. On the contrary, returns on bonds and equities have been moving in the same direction in recent years, while gold has continued to be negatively correlated to both, making it the superior diversifier.

Finally, investors often believe that the purchase of a put is the best way to protect the value of a portfolio against a stock market decline. This is not necessarily true. Research demonstrates that gold holds certain advantages over a put. For instance, the purchase of a put option is often expensive, especially when the underlying index is volatile, thus diminishing the expected return on a portfolio. Also, the value of a put not exercised will decline until reaching zero at maturity, whereas gold will maintain its value.

### More Liquid than Other ‘Alternative’ Assets

Gold is highly liquid and can even be considered a good proxy for cash. Unlike equities of even the world's largest corporations, bullion can be traded 24 hours a day in markets around the world. Other measures of the degree of gold's liquidity include:

(1) the turnover of gold in world markets is as large as the turnover in several major currencies; (2) the bid/offer spread for gold transactions is as narrow as for such assets as equities and high-grade bonds; (3) changes in the gold price during a typical trading day are small; and (4) it takes about the same time to execute a gold trade as it does in stocks and bonds.

Gold's usefulness as a source of liquidity was powerfully demonstrated during the stock market crash of October 1987, when bullion held its value. Meanwhile, all sectors of the equity market – including gold equities – declined sharply.

## Gold Can Enhance a Portfolio's Returns

Perhaps the most surprising of all the advantages that gold brings to a portfolio is its ability to enhance portfolio returns – both directly and indirectly. Besides any price appreciation which the portfolio's holding of gold may achieve over the long term, gold can help a portfolio's performance in other ways. First, gold can bring particular benefits to portfolios which are 'rebalanced' frequently to targeted asset allocation levels (eg, 65% equities, 25% bonds, 10% gold). Research has shown that the total portfolio return will be greater than the weighted sum of the individual assets. Second, the ability to construct a 'more efficient' portfolio (by use of the optimizer formula described above) by the inclusion of gold in the original can increase a portfolio's return. Finally, the leasing of gold can add as much as 1–2 percentage points to a typical portfolio's return.

## Favourable Conditions

Current financial and economic conditions, particularly in the United States, are distinctly favourable for investment managers to be increasing the gold weighting in their portfolios:

- Gold is at a relatively low price, while equities are at record high levels.
- Portfolio managers are increasingly acquiring 'alternative assets' (such as gold), as investment in purely conventional assets is being questioned for the following reasons:
  - stocks and bonds are no longer strong mutual diversifiers;
  - the movement towards financial-market indexation should result in thinner, more volatile markets;
  - individual emerging markets are no longer strong mutual diversifiers among themselves.
- There is increased exchange rate volatility.
- With the threat of deflation increasing, gold enjoys one particular investment-related over other asset classes: its credit quality does not deteriorate, as is the case with paper assets.
- There is economic uncertainty, particularly in Asia.

Meanwhile, pension funds around the world are experiencing unusually rapid asset growth – not only in the United States, but also in Japan, UK, Netherlands, Switzerland, Germany, France and Australia.

## An Insurance Asset with an Investment Component

Not only can gold provide a measure of safety against portfolio losses, it carries with it an investment component: it tends to perform well when the other asset classes in the portfolio perform badly. This dual benefit makes gold particularly valuable to a portfolio in times of financial market distress. Thus, for any portfolio manager interested in alternative investments, gold is a possibility that must be considered.

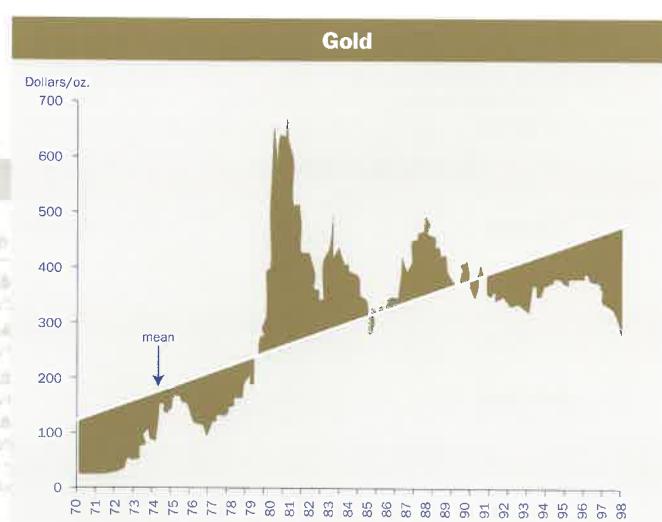
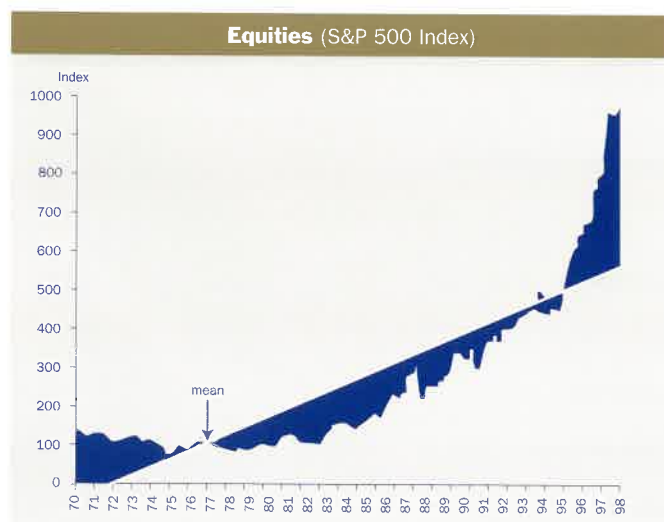
Note: Additional publications on gold as a portfolio asset are available upon request from the World Gold Council's New York office (Telephone: 212 317-3840 Fax: 212 688-0410). ■

## Richard Scott-Ram

*Richard Scott-Ram is Portfolio Strategist for the World Gold Council. His principal role is to explain to US pension-fund managers the advantages of including bullion in their portfolios.*



*Prior to joining the Council in 1989, Richard held several positions including Deputy Chief Economist of Chemical Bank, Deputy Chief Economist of Merrill Lynch, and Deputy Chief Economist of the Conference Board in Canada. Richard has also been Forecasting Chairman of the Forecasters Club of New York and has given testimony to US Congressional Committees on several occasions.*



	Jan. 12	Jan. 9	Jan. 8
W	2,475	2,490	2,000
	880	1,290	2,000
	2,475	1,990	1,000
	110	560	640
	10	80	10
	10	81	60
Volume	612,756,000		
EST. MOVERS			
g-	Class	Days	Days

A close-up photograph of a metal surface, likely a casting, with a ruler placed against it. The ruler shows the number 966.25. The metal surface has a rough, textured appearance.



# Opening the Gold Curtain

by Evgueni Ivanov, General Manager, Department for Precious Metal Transactions, Unexim Bank Moscow

*On 30 May 1998, a Russian private bank, Uneximbank, shipped just over one tonne of gold and 12 tonnes of silver to London. What elsewhere might have been a routine event in Russia represented the ultimate collapse of the state monopoly on foreign economic transactions with gold. It was the first time a private bank had exported gold and silver since the 1917 October revolution.*

It took years of pressure by all the participants in the Russian gold market before the system was liberalised but, as time went on, the need for change clearly grew more urgent. The past decade has seen a steady fall in gold production in Russia. Levels have dropped from a peak of 160 tonnes during the early 1990s to just over 120 tonnes last year (see table). Production and resource capabilities were strained as the general financial situation deteriorated dramatically. The main cause was the delay in payments for precious metals bought by the State and the Ministry of Finance's inability to provide necessary funds during the preparatory period for the summer/autumn production period.

Internal demand from Russian industrial clients has recently been low, causing commercial banks to limit their purchases from producers. During 1997, most of the gold purchased by commercial banks from gold producers (about 38 tonnes) was repurchased by the Central Bank, thus ensuring market liquidity. However, quotes set by the Bank of Russia were

very unfavourable for both its purchases (London fixing minus 2%) and its sales (London fixing plus 2%). Under these conditions, only granting licences to commercial banks enabling them to export gold and silver independently could trigger a more active financing of metal production.

Presidential Decree no. 767 of July 23, 1997, entitled "Some measures to liberalise the export of refined gold and silver from the Russian Federation" gave the Central Bank and authorised commercial banks the right to export precious metal bars starting from 1 October 1997. No licenses were immediately issued, however, as some difficulties arose in determining the precise method to follow in obtaining a licence. At first, a separate license was needed for each individual export transaction on the basis of signed contracts with foreign buyers, however the banks sought to streamline the process, based on practises prevailing in the international market. After some consideration, the Government of the Russian Federation published statement No. 207 on 18 February 1998, allowing commercial banks to receive general licences (no longer requiring references to specific contracts) which would remain valid for 12 months.

The Statement was amended on 8 May making licences valid for three years. So far, the government has imposed no specific quantity limitations. The Joint Statement of the Central Bank and the State Customs Committee, dated

5 May 1998, set the customs and banks control procedure for export transactions undertaken by commercial banks (including bullion export without payment – used as collateral, deposits, allocation on metal accounts, etc.)

In the light of export liberalisation, banks have increased credits and contracts with metal producers. By the end of May 1998, the overall volume of contracts reached 62 tonnes.

Details of the state's involvement in the market via its purchase order remain uncertain. There are provisions in the 1998 Federal budget to buy 60 tonnes of gold, however, not a single rouble has been disbursed so far. The Russian Ministry of Finance has promised to pay international market prices less 1% for precious metals purchased by the state, however, during 1997 we witnessed payment delays of up to six months.

While banks will purchase more metal as cash transactions during the season, as long as the situation with the state remains unclear, it is difficult to predict the overall transaction volume.

Uneximbank started its internal bullion operations in 1997, and has since developed into one of the leaders in volume of

transactions. In 1997, the Bank was one of the organisers of the credit programme for Gokran of Russia (the State bullion buyer) under the Ministry of Finance guarantees for further advance payment to producers. The aggregate amount of credit in the framework of this programme constituted around \$460 million, of which \$240 million was provided by Uneximbank. The Bank has also provided credits to producers of \$40 million.

This year the Bank has been involved in many areas of precious metal trading: providing credit to producers against delivery of metal, selling bullion to the Central Bank and industrial companies on the internal market, and supplying gold and silver to major jewellery manufacturers, using amongst other methods deferred payment.

*Evgueni Ivanov graduated in 1990 from the Moscow Financial Institution with a Diploma in International Economic Relations. From 1990 to 1996, he worked for the State Bank of the Soviet Union and the Central Bank of the Russian Federation.*

*He joined Uneximbank in 1996 to start up the Bank's bullion operations and develop relationships with gold mining houses.*



# The Hedging Advantage

Why Barrick's Gold Hedging Program Delivers Record Results

by Randall Oliphant, Executive Vice President and Chief Financial Officer, Barrick Gold Corporation

Much like fine wine, the benefits of gold hedging just keep getting better with age for Barrick Gold Corporation.

In 1997, the company's hedging programme celebrated its 10th anniversary of exceeding the spot price by delivering its best results ever. For the year, the programme generated a premium of \$88 per ounce, or \$269 million of additional revenue and \$200 million of added earnings. More recent results have continued the pattern. During the first quarter of 1998, Barrick's hedging programme generated \$79 million in additional revenue as the company realized an average price of \$400 an ounce, compared with an average spot price of \$295.

With over 10 million ounces of gold hedged at \$400 per ounce, Barrick has created a \$4-billion position. This hedging asset makes a great contribution to Barrick's ongoing financial strength. Yet it is not reflected in our balance sheet nor is it fully appreciated by the markets.

In this brief article, I would like to elaborate on what benefits hedging has historically provided for Barrick, why the Barrick programme delivers unrivalled results, and why Barrick's hedging provides for protection on the downside and allows us to take advantage of the upside.

**A HEDGING PIONEER** Barrick Gold's hedging strategy to maximise revenue and minimise gold price risk through gold price hedging is one of the principles on which the company was founded.

Barrick largely pioneered the hedging process in the gold industry. When the programme began, it involved simple forward sales. Since then, it has become much more sophisticated, providing better returns and greater flexibility. Over the past decade, hedging has contributed a total of \$765 million in additional revenue and \$580 million in earnings to the company. Thus, hedging provided an average premium of \$46 per ounce, for every ounce sold, over the entire 10-year period.



Excellent equipment maintenance, computerised despatch and a trolley-assist system raise productivity and lower costs in the Betze-Pitt.

**BARRICK'S UNIQUE APPROACH:** Barrick's programme, which is the subject of a case study at Harvard Business School, continues to earn exceptional returns for several reasons.

First, Barrick hedges consistently. While we can select the timing of gold sales, we add to our hedge position on a regular, disciplined basis.

The second reason is that we enjoy the most favourable terms for our hedge contracts. We now have the ability to roll our contracts forward for up to 15 years. These terms recognise the exceptional size and quality of our reserve base, and of our balance sheet, which hedging helped to build.

The third reason is that we manage the proceeds from the original spot sale very actively. At 5% net interest, our \$4 billion hedging asset earns us \$200 million a year in interest income. At 31 December 1997, the mark-to-market gain was \$800 million, representing the amount of money Barrick would receive if we purchased gold on the spot market and delivered against our 10-

## Barrick Hedging – Past, Present and Future

### The Past 10 Years

Consistently exceeded spot gold prices  
Realized price on average yielded a \$46 premium over spot price  
\$765 million in additional revenue

### The Present

10 million ounces hedged at \$400 per ounce  
Three years' production hedged  
Mark-to-market gain – \$800 million  
(value today if we closed-out contracts)

### The Future

Our 10 million ounces hedged at \$400 creates a \$4 billion asset (which generates \$200 million per year in interest income)  
Actively manage the asset to maximise interest income

Barrick will continue to earn a superior return over others because:

1. We hedge consistently.
2. We have longer and more flexible contract terms.
3. We actively manage the hedge asset to maximise interest income.



million-ounce hedge position. We manage our hedge asset as carefully as our mines.

We have developed strategies for maximising the returns on our hedge asset. We have managed to lower the cost of the borrowed gold and improve the yield from the money on deposit. The average yield in the money market these days for the term of our hedges is 5.5%. By choosing the investment vehicles ourselves, we are currently earning about 7.5% interest instead. Each 1% improvement in our interest rate earns us an extra \$40 million a year.



An hydraulic jumbo drill at Meikle Mine drills a blast pattern.

## HEDGING BASICS

### How a hedging contract works

To earn a higher future price under a forward contract, gold is borrowed from central banks through one of Barrick's gold trading banks and sold at the prevailing market price. These proceeds are placed on deposit to earn interest. The interest (or contango) that Barrick receives on its contract in the future is the difference between the interest earned on the proceeds and the interest paid on the borrowed gold. The interest paid to borrow the gold is normally less than 2% per year. The higher forward price is achieved since the U.S. dollar interest rate applied to the invested funds is higher than the interest rate charged on the borrowed gold.

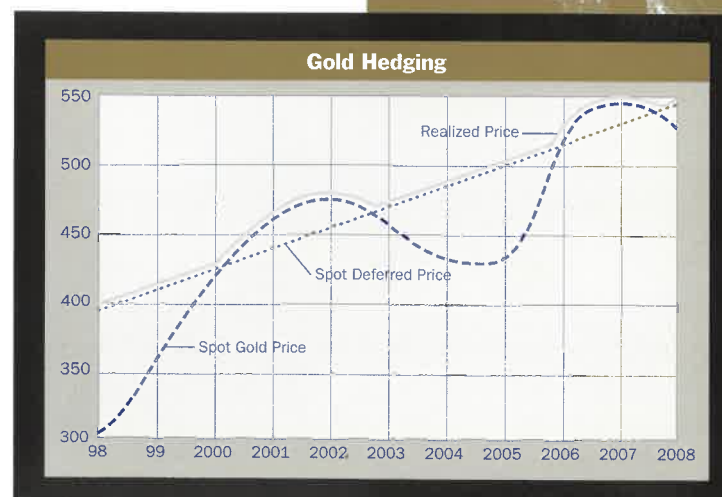
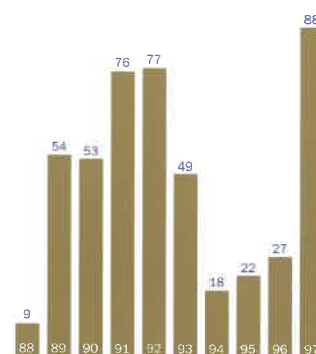
At the end of the contract period, Barrick delivers its newly produced gold which is used by the trading bank to repay the central bank, and receives the net proceeds (the original spot price plus accumulated compound interest earned minus the interest paid to borrow the gold). It is just like putting money in the bank to earn interest — after one year it is worth more and continues to increase the longer the money is on deposit.

### Barrick's Spot Deferred Contract

Barrick uses a version of the forward contract for its hedging called the spot deferred contract. A forward contract is a commitment to deliver a specific quantity of gold, on a specific date, at an agreed price to a purchaser. A spot deferred contract is similar but the ultimate delivery date and corresponding forward price for a spot deferred contract are not fixed.

The flexibility of spot deferred contracts means that when the spot price is higher than the hedge price, Barrick is able to sell its production at spot, and roll the contract forward. When the hedge price is higher, the company delivers its production against the contract. Thus, Barrick is able to realize the higher of the two prices for its gold.

Barrick's Hedge Premium



With the 10 million ounces we have hedged at present and our ability to achieve forward prices on new hedge contracts, even if gold were to remain at current levels indefinitely, we could actually realize more than \$350 an ounce on our entire 50-million-ounce reserve base.

When we look at the impact of our hedge programme historically, it is no exaggeration to say that it has allowed us to be the kind of company we want to be.

First, we are financially strong. Our balance sheet remains the strongest in the business. Indeed, Barrick has the only A credit rating in the gold industry. At 31 March, our cash position was \$439 million, almost the same as our long-term debt. With the dependable stream of hedged cash flow behind us, Barrick can afford major projects, and we can choose our own timing.

Second, we maximise revenue and minimise gold price risk on each ounce produced.

Third, we have financial flexibility. We know our realized price going forward — and not just for the three years of current contracts. Should we choose, we could blend various contracts to extend this hedge benefit out through the life of our reserves, or we can participate in gold price improvement.

If the gold price rises through Barrick's hedge price in excess of \$400, the company will sell its gold at the higher spot price and keep the contracts for a future date when the gold price may not be so attractive. The contracts will rise in value the longer they are outstanding.

Since the hedging programme is structured to allow the company to take advantage of rising gold prices, Barrick's

shares have traditionally moved up over time, showing a strong correlation to movement in the gold price. Thus, Barrick's shares are likely to appreciate consistently with a rising gold market and, at the same time, offer downside protection through its unique hedging programme.

### POWERFUL OUNCES:

Looking at the future, hedging will remain an ongoing, core activity of this company. We do not know where the spot price will be, but we do know that by earning a 5% premium for three years, Barrick ounces will realize, on average, at least the spot price plus 15%.

Hedging works with other elements of our prudent financial approach to benefit the Company and its shareholders. Through hedging, we increase the price we receive for our gold. At the same time, Barrick is focusing on cost containment and increasing production from low-cost mines. Low costs, plus high realized prices, are a powerful combination, and it results in very powerful ounces. One Barrick ounce earns four times as much as our peer group's earnings. This margin will become even greater, as our operating costs decline. And, since Barrick's reserve life is almost 50% longer than our peer group, we not only generate four times as much money per ounce, but we do so for a much longer period of time. ■



(Note: Currency throughout the article is expressed in US dollars)

### Example of a spot deferred contract:

Spot price of gold	\$340
Contract period	3 years
Dollar interest rate	7.5%
Gold lease rate	-2.0%
Contango	5.5%

Using the above example, Barrick will earn contango of 5.5% in each of the next three years, resulting in a forward price in 2000 of \$400 per ounce. The \$340 spot deferred contract increases in value to the \$400 forward price.

If, in 2000, the spot price of gold rises through Barrick's hedge price of \$400 per ounce to \$420, Barrick would take advantage of the flexibility of the spot deferred contract by selling its production at the \$420 spot price and rolling the \$400 contract forward for an additional year. The hedge price would rise because the interest compounds to achieve a new forward price of \$422.

The following year, Barrick would deliver against the spot deferred contract at \$422, if the spot price remained at \$420. If the spot price was higher than \$422, Barrick has the flexibility under the terms of its spot deferred contracts to continue to roll the contract forward for up to 10 years and sell its production at the spot price.



# India

*The definition of solid Investing*

by Susanne M. Capano

*This article originally appeared, in a slightly different form, in the June issue of Commodities Now*

The seafloor between Dubai and India is littered with the most valuable collection of anchors and spent ballast the smuggling world has ever known.

The story begins in the years immediately following India's independence in 1947. At that time, the new government decided to restrict the import, export and, for a time, even the ownership of silver and gold. Inasmuch as they drove the market underground, the laws succeeded. And, in the process, created premiums as high as 80% over world prices.

Smugglers took notice and looked toward the open market in nearby Dubai, where metal could easily be sourced. The preferred form of gold was the ten-tola (TT) bar, weighing 3.746 ounces, about the size of a hotel bar of soap. Twenty or so such bars could be slipped into the pockets of a specially made vest. And when the vest was full, the rounded corners of the bars allowed for more secretive methods of storage.

On a larger scale, hired boats sought to make a run for it with sturdy nets packed with bars draped over their sides. They were usually successful. If on occasion they were spotted by a shore patrol, the nets could be cut and the cargo allowed to settle to the bottom. Like the sea itself, 80% margins easily absorbed these rare losses.

## Sunset on Smugglers' Cove

Traffickers were losing a little but making a lot. The government of India was simply losing. Something had to be done

In 1992, the Government set up the first plan to relax laws against gold imports. Upon re-entering the country, Non-Resident Indians (NRIs) could bring

in five kilos of gold every six months. That year, gold imports took a jump, with legal imports accounting for roughly a third of the total.

The changes continued when, in June 1993, the scheme was expanded, with limited permission given to trade gold. In January 1997, the NRI allowance increased from five to 10 kilos. Then, in October of last year and as the gold price slipped lower and lower, the government decided not to wait and granted Open General Licenses to eight agencies.

Ian McCannah, of the Bank of Nova Scotia – ScotiaMocatta, one of the eight, sees this latest change as very positive.

"The granting of these licenses has definitely resulted in a more competitive market for gold in India. Banks with international bullion expertise can make their services directly available to Indian users for the first time." The cumulative result of all these changes has been a more open, thriving market. How healthy? Since 1981, Indian demand has roughly quadrupled every four to five years. Last year was different. The increase was 55%.

Unlike market analysts, Indians perceived gold at the levels seen last autumn to be cheap – in rupee terms, gold had seen approximately a 50% decline in value between 1990 and 1998. An additional bonus was that October's liberalisation measures caused the gold premium over world prices to decline sharply, from roughly 17% last May, to just under 6% (partly offset toward year's end by a decline in the value of the rupee).

## Sovereign Power on a Counterfeit Coin

An Indian purchasing gold can choose from a wide variety of gold bars, bracelets, earrings, bangles – almost anything and everything – except a national coin.

In part, this is because only producing nations mint gold coins. But, that said, there exists strong demand for unofficial coins and medals in many non-producing nations. In India, this demand has been met by other nations' mints. According to Gold Fields Mineral Service figures, India was the second largest consumer in this category.

The Indian population's interest in coins was engendered by the Gold Control Act 1963, which exempted coins. Provided, that is, they were dated before 1947, when the gold coin of choice would have been the George VI sovereign. It took little time for ten-tola bars to be recast as fake sovereigns. They were all 21 carat, all dated 1946, and proved extremely

popular. The idea took hold. Today, it is not unusual for a grandparent to make a gift of a medal or coin cast not with an image of a foreign king, but with the figure of a god or goddess.

## A Taste for Silver

A fair slice of India's silver usage is quite literally destined for consumption.

Flattened into extremely thin sheets of foil called *vark*, it makes an edible garnish for food, a comestible wrapper on sweets and is even threaded through chewing tobacco. It is part of the one third of the country's industrial silver usage. The remaining two thirds is jewellery, silverware and small gift items.

In rural areas, especially in the north, buyers favor silver for jewellery. Though some pieces may weigh as little as 200 grams, most are quite large. On a single wrist it is not unusual for a woman to wear two kilos (over four pounds). Overall, she might wear five to seven kilos.

In fact, the larger pieces are hard to part with. Once put on, they are hammered solidly into place, becoming almost moulded to the body. "She would practically need a crowbar to take them off," according to Ashok Patni, a jeweller who divides his time between Leicester and Bombay.

Where for women silver is appreciated for its beauty, legend has it that farmers use it as a charm. Based on the belief that it will protect them against a bad monsoon, which would lead to a paltry

harvest and area-wide economic downturn, farmers plant 1,000-ounce silver bars in their fields. Should the first bad monsoon in a number of years occur, it may well be silver bars, and not crops, which are harvested.

## Outlook on Demand

It would be difficult to top or even equal the extraordinary level of Indian gold consumption last year. Low prices, a sharp decrease in premiums and a one-off tax reduction if assets were declared in gold instead of foreign exchange combined for an extraordinary level of demand.

Thus far, India has largely escaped the economic turmoil in Asia, but the recently imposed economic sanctions may prove a wild card. But whatever happens, most analysts believe Indian demand will remain significant, for the simple reason that precious metals are and will remain a firmly established tradition.

Timothy Green agrees. In his 1989 book, *The World of Gold*, he provides a unique perspective on the country:

"When I first came to India 25 years ago to investigate the gold trade, I recall an officer at the Reserve Bank of India lecturing me that banking was spreading fast into the rural areas, and before long the custom of keeping one's life savings in gold would wither. On the contrary, as India has grown more prosperous over the last decade, the habit seems, if anything, to have been consolidated." ■

## Clips and quotes since the previous edition of the *Alchemist*

### Gold Quotes

**A disappointment but not a disaster for gold. That was the majority verdict after Wim Duisenberg, president of the new European Central Bank, said there was a consensus among central bank governors that 10-15% of the Bank's reserves should consist of gold.** Gold trade hopeful on ECB reserves. *Financial Times*, 11 June 1998

Russia's Cash Crunch Roils Metal Prices. *Wall Street Journal* 4 June 1998

**Last year the gold market almost drowned in a flood of liquidity...** Gold loses its lustre. *The Banker*, June 1998

Angogold share ratios revised. *Financial Times* 31 May 1998

Metals mining M&A spending tops \$18bn in 1997. *Financial Times*, 29 May 1998

Trepca complex shrouded in secrecy. *Financial Times*, 29 May 1998

Swiss set to sever franc link with gold. *Times*, 28 May 1998

**Although less public, this feud has more potential of rocking the foreign-exchange and gold markets than the dispute over the ECB presidency.** Amount of Gold in ECB Coffers Set to Cause Stir *Wall Street Journal*, 22 May 1998

Koreans shake gold market. *Financial Times*, 21 May 1998

Hedging blamed for gold's loss of shine. *Financial Times*, 20 May 1998

Further gold supply jump seen as unlikely. *Financial Times*, 15 May 1998

**A year ago a successful hedge programme in most cases simply increased a producer's profitability, but today the survival of many gold mines depends on hedging.** Study says hedging played part in gold price fall. *Financial Times*, 13 May 1998

Anglovaal shake-up will end families' control. *Financial Times*, 12 May 1998

Trichet finds favour with gold traders. *Financial Times*, 2 May 1998

Bre-X Minerals drama continues in the courts. *Financial Times*, 1 May 1998

Resolute joins Gold Mines Index. *Financial Times*, 1 May 1998

Rangold plans rights issue. *Financial Times*, 1 May 1998

Rupiah slide lifts mining groups. *Financial Times*, 30 April 1998



# Financing Mining Projects Alternative Methods

by Michael A. Simon, Senior Manager, Mining Finance, MeesPierson N.V.

**In the face of renewed pressure on commodity prices that continue to redefine the term 'low-cost producer', the mining industry steadily moves forward with vigour and optimism. To compete in this new world of lower prices and negative sentiment, companies are closing high-cost mines and restructuring operations in order to streamline their corporate structures. Even as they struggle in the face of this 'new world order', companies continue to display a serious appetite for debt and equity financing in their quest to bring new projects into production.**

According to a report published by the *Mining Journal*, metal mining companies plan to spend \$34 billion on new mines and expansions over the next three years. In terms of size, in the past 30 months, the number of projects expected to cost more than \$500 million has nearly doubled and accounts for \$19.6 billion of the total, or 57%. Presently, there are six projects that will cost more than \$1 billion each.

In the hunt for new projects, according to a recently released industry report, spending on non-ferrous mineral exploration surged from \$2.1 billion in 1992, to a record \$5.1 billion in 1997. Altogether, this brings the mining industries current annual expenditure on exploration, merger and acquisitions, and capital projects to approximately \$60 billion.

## Where Has the Financing Come From?

In the gold mining industry, about \$3 billion per year is generated internally from profits on existing operations and income from gold hedging. About \$600 million is raised in shares and another \$400 million comes by way of convertibles.

In recent years, there has been an increase in the use of the public bond market to generate funds for mining finance. The mining industry last year collectively issued about \$1 billion worth of new paper. Historically, this vehicle had been used primarily by the base

metals industry, where projects tended to be of sufficient size (roughly \$100 million as a base) to justify their use. However, there have been some notable exceptions in the precious metals mining sector, such as the bonds issued by Newmont and Placer Dome, and the gold-backed issue by Normandy Poseidon of Australia in 1994, which had a highly innovative structure. Judging by the number of issues that have come to market so far this year, and those being planned, the use of bonds as a means to raise mining finance will continue to increase.

The balance of the capital required comes by way of the debt market. The syndicated project loan market is vast and has been used successfully to finance large and risky mining projects in a wide range of countries. This market is accessible to both mining companies with projects located in developed countries, as well as companies in the LDCs when assisted by the role played by the IFC and, recently, the EBRD.

## Sources of Mining Finance

Traditional sources include:

- Export credit financing
- Multilateral institutions
- Commercial bank loans
- Supplier financing & captive finance companies
- Production payment loans and advances
- Debt and commodity-linked securities
- Equity and equity-linked securities
- Internal cash flows
- Joint venture industry partners

There are also some non-traditional sources, such as:

- Host governments
- Leasing companies
- LBO funds
- Individual investors
- Investment management companies
- Institutional investors

## Methods of Financing

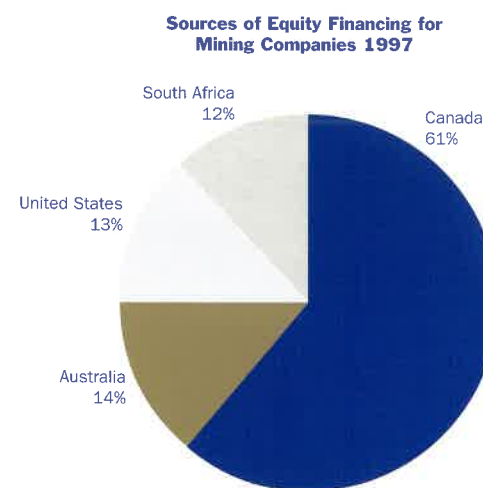
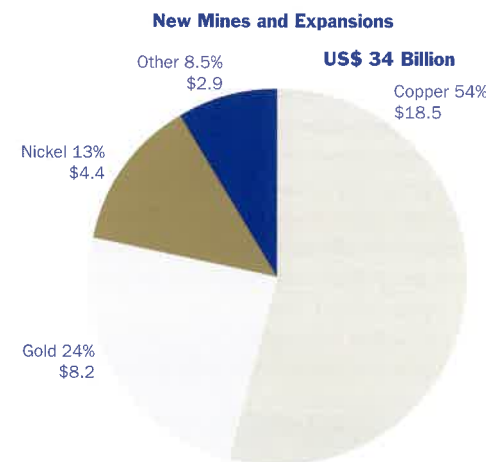
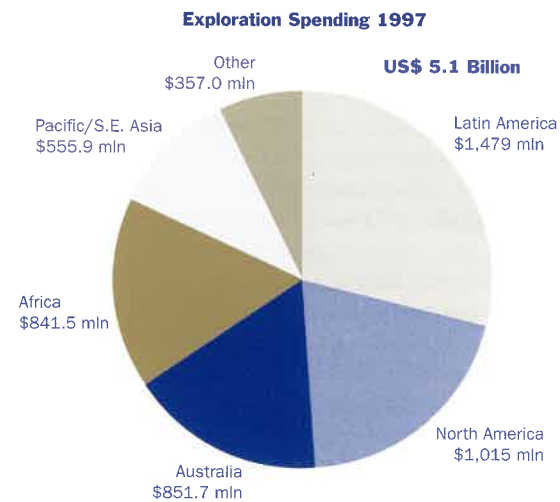
Mine financing methods fall within two categories; debt and equity.

### Equity Markets

Simply put, equity financing means that investors receive a share in the company in exchange for a cash contribution. It can come from existing shareholders or new issues and is, for the most part, permanent.

### Types of Equity Capital

**Ordinary shares** usually form the core of a company's share capital. The holders carry most of the financial risk in exchange for substantial rewards if the company prospers.



**Preferred shares**, as the name implies, afford differential treatment to the holder, which might include priority on dividends, voting right and priority in the event the company is liquidated.

**Convertibles** give right to holders to receive interest and repayment of principal on some specified basis. The holder may exchange the debt into equity of the issuing company, or sometimes a parent company, either over a continuous period or at intervals during the life of the instruments.

**Warrants** are usually associated with debt issues and are attached in a similar way to the conversion option found in convertibles. The warrant is effectively the right for the holder to purchase a specific number of shares at a predetermined price on a predetermined date, or between two specified dates in the future.

## What is Debt?

Fundamentally, it involves lending a sum of money at market interest rates to be repaid at intervals over a certain period of time.

## Types of Debt

### Debt

- Subordinate debt (also known as mezzanine financing).
- Senior debt which is used in project financing and will usually be secured or asset-based.

### Debt Securities and Commodity-Linked Debt

- Bonds (instruments issued in bearer and negotiable form, whereby the issuer agrees to pay a specified amount of money to the holder at a predetermined date. Interest is paid either on a fixed or floating rate basis as agreed at the outset).
- Gold Loans.

## The Balance of Debt and Equity

The appropriate debt to equity ratio for a given project is a matter of negotiation between the sponsor and senior lenders. Many factors are taken into consideration, including customary debt to equity ratios for the particular industry involved, market expectations and risk. The destination of the commodity produced is examined: is it being provided to an assured market, evidenced by an unconditional long-term contract, or is it subject to the uncertainties of general future market conditions?

It is rare for lenders to consider a debt to equity ratio greater than 70:30, with lenders usually ignoring capital expended by the sponsor prior to the feasibility study in this calculation.



FINANCING SHOULD BE NO PROBLEM - WE'RE SITTING ON A GOLD MINE.



## Corporate Versus Project Finance

A mining company looking to carry out an expansion, acquisition or new project development involving a significant capital investment usually seeks some level of debt financing. If recourse financing is used, the lender of the funds has recourse for repayment to the company's cash flow from all its operations, and security over all its assets. The lender's main concern is then with the total economic health of the company, how the new debt will rank with the total debt, and what future ability the company has to service the total debt. A large mining company might finance a project on its own balance sheet, using corporate debt and equity, but this is not generally an attractive option, despite lower transaction costs.

The corporation is at risk for the total amount of capital it has committed to the development of the project throughout the life of the mine, and the resulting burden on the balance sheet restricts its ability to expand further.

## Project Finance

As an alternative to taking projects on their own balance sheet, mining companies have increasingly looked to finance new expansions and acquisitions through project finance. Under these borrowings the capital investment involved will be repaid only from the cash flows generated by the project. The lenders will not have recourse to the company as a whole. Interest rates are higher than for recourse corporate finance, but higher leverage helps reduce the overall cost of capital.

It is the lender, and not the company, which is exposed to the risk of the cash flows being insufficient to service debt. As a result,

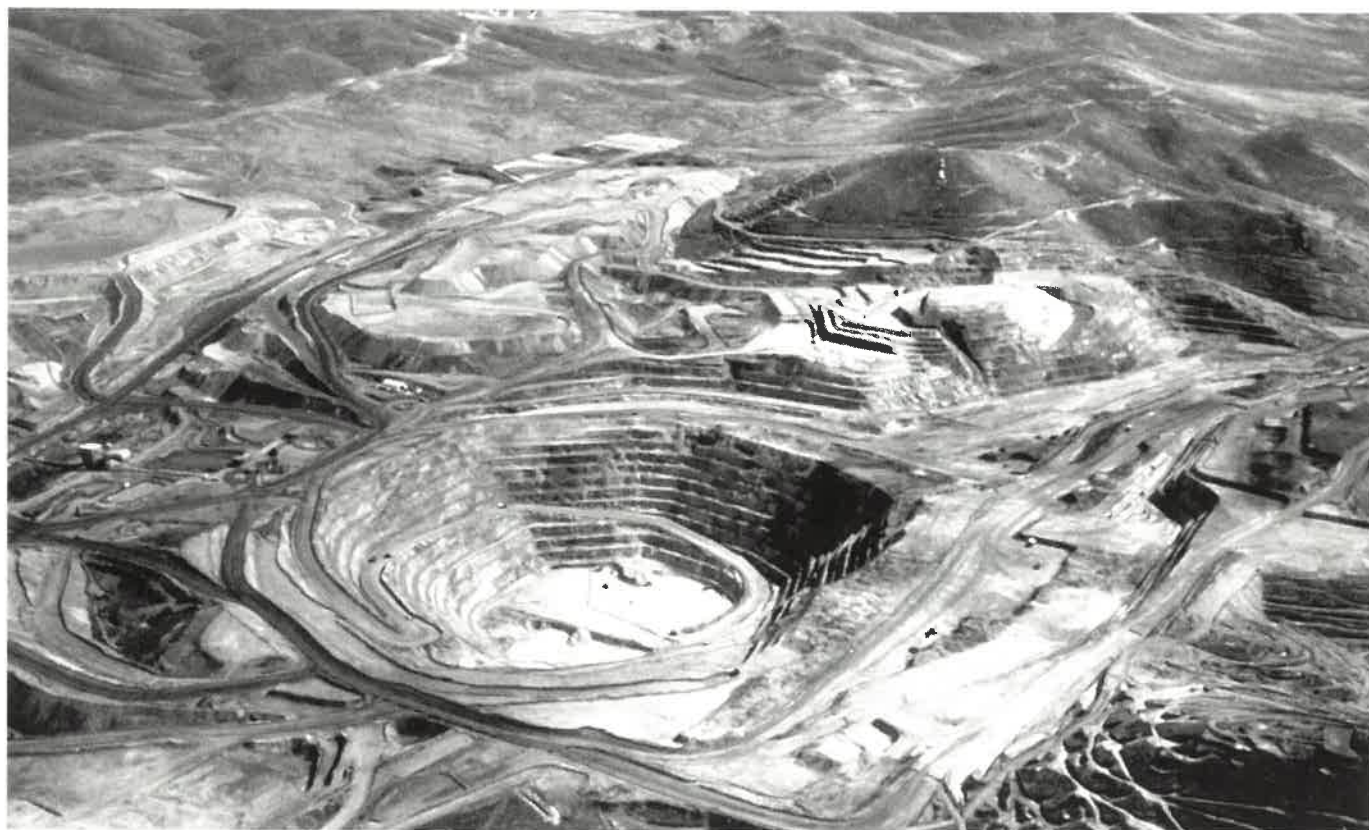
companies are anxious to proceed with projects that can be highly leveraged or financed either entirely or substantially on their own merits. In addition, unlike corporate finance, project finance can be considered off balance sheet debt, thereby allowing a high capital cost project to be developed without having a substantial impact on the mining company's balance sheet, exceeding corporate debt limits or increasing gearing ratios.

## Advantages of Project Finance

It allows a mining company to finance a project beyond its means while preserving existing banking lines, and to explore competing investment opportunities. It limits the risks of a project to the company. It also improves the return on capital invested in a project by leveraging the investment to a greater extent. In an extreme case, the sponsor's credit may be so weak, or the project so large, that it is unable to obtain sufficient funds to finance a project at a reasonable cost on its own. Project financing may then offer the only practical means available for financing the project.

## Disadvantages of Project Financing

Project financing will not lead to lower after tax cost of capital in all circumstances, as it is complex and costly to arrange. It is structured around a set of contracts that must be negotiated by all involved parties. The necessary legal expenses involved in setting up the project structure, researching and dealing with related tax and legal issues and preparing the necessary project ownership, loan documentation and other related contracts will result in higher transaction costs than conventional financing. Project financing typically also requires a greater investment of management's time.



## Evaluating a Project

Providers of project finance will pay close attention to the discounted cashflow or net present value analysis in their review of the projects economics. This is the value of the future cash flows of a project in present terms. In the base case, cash flow and sensitivity runs the discounted value of the future cash flows and should always exceed the amount of the debt outstanding. This ratio is known either as a loan life cover ratio (LLCR), based on discounted cash flows to the end of the loan period, or project life cover ratio (PLCR) to the end of the economic life of the project. These calculations are expressed as:

$$LLCR = \frac{\text{NPV of future cash flow to the end of the loan}}{\text{Debt outstanding}}$$

$$PLCR = \frac{\text{NPV of future cash flow to the end of the project}}{\text{Debt outstanding}}$$

For projects most susceptible to market risks, minimum base case cover ratios might be in the region of 1.75. That is, there is forecast to be 75% more cash in the project than is required to repay the loan.

For less risky projects, minimum ratios could be 1.25–1.5%. If the loan life cover ratio falls below one, then there is insufficient cash in the project to repay the loan.

In addition, lenders will also look at the debt service cover ratios (DSCR) to determine whether the available cash flow in a particular period is able to meet debt service. Typical minimum values are in the range of 1.2–1.4:1. As lenders also wish to see that the project is economically viable after the scheduled maturity of the loan, they will measure what percentage of economically recoverable reserves remain after the loan is repaid. Typically, there is a cushion of 1.5 to 2 times loan life.

## Cost of Funds as a Determinant of Funding Source for Development

The cost of capital is the rate of return required by a group of investors to take on the risk of a project. It is usually expressed as the weighted cost of funds and determines whether the return to investors is as great as the percentage return they could earn in a comparable investment opportunity. It can be described in terms of financing rates showing the weighted average cost of the components of any financing package. For example, a financing package could be 30% debt plus 70% equity; 60% debt plus 40% equity; and so forth.

## Estimating the Cost of Capital

The weighted cost of capital can be expressed as the weighted average of the required rate of return of equity, and the required rate of return for debt.

$$\text{Cost of Capital} = (1 - x)r_e + x(1 - T)r_d$$

## Where:

- $x$  = Ratio of debt financing to total investment value
- $r_e$  = Rate of return for equity
- $r_d$  = Rate of return for debt
- $T$  = Marginal income tax rate on the project's income.

Note: the Cost of Capital is expressed as an after-tax rate of return. Because the returns to equity investors are paid after corporate tax,  $r_e$  is also an after corporate tax rate of return to equity. The return to debt,  $r_d$ , is a pre-tax rate of return; it must be multiplied by  $(1 - T)$  to be converted to an after-tax basis.

## Estimating the Cost of Debt

Briefly, the pre-tax cost of debt can be calculated by the following equation for the rate of return on debt, or  $r_d$ :

$$NP = \frac{C_1}{(1 + r_d)} + \frac{C_2}{(1 + r_d)^2} + \frac{C_3}{(1 + r_d)^3} + \dots + \frac{C_T}{(1 + r_d)^T}$$

where NP represents the net proceeds from the debt issue and C represents the pre-tax cash debt service (interest plus principal) requirement payable in instalments.

## Estimating the Cost of Equity

Debt financing involves repayment obligations; equity does not and, therefore, the procedures for estimating the cost of each vary. The capital-asset-pricing model is useful for estimating the cost of equity for a project. As with any investment, an investor will only purchase a risky asset if he expects to get a rate of return that meets his criteria for the risk he accepts. The greater the risk, the higher the required rate of return. The capital-asset-pricing model expresses the required rate of return as the risk-free rate plus a risk premium:

## Where:

Required Rate of Return =

$$\text{Risk Free Rate} + \text{Beta} \times \left( \frac{\text{Expected Rate of Return} - \text{Risk Free Rate}}{\text{on market portfolio}} \right)$$

The risk premium is a function of two variables. Beta measures the asset's incremental contribution to the riskiness of a diversified portfolio. As a measure of the asset's riskiness, beta reflects the correlation between an asset's returns and those of the market portfolio. The difference (the expected return on market portfolio minus the risk-free rate) is the market risk premium.

If a security's beta is 1.0, its return tends to track the market portfolio. If the market portfolio increases by 10%, the stock tends to increase by 10%. If the stock has a beta of less than 1.0%, it will rise or fall less than the market. Conversely, a stock with a beta of greater than 1.0% will rise or fall more than the market.



## Derivative Instruments

While a lot has been said about the place of derivatives in mining finance, there are a number of these instruments available that can be used to reduce the risk exposure associated with a project. Generally, these are risks associated with funding – costs, currency fluctuation and commodity price volatility. Recently, there has been much debate between mining company executives and fund managers as to the use of these instruments, particularly when used to hedge commodity price risk. Fund managers contend that hedging takes the ability to profit from advances in market prices away from shareholders. Mining company executives, on the other hand, contend that it is their fiduciary responsibility to protect the company – and its shareholders – from the adverse effects of low market prices. This debate will doubtless continue for some time. Generally speaking, however, lenders are very reluctant to provide debt financing to a project not having any form of hedging in place in order to guarantee under base case assumptions, a certain minimum loan life cover ratio.

Without prolonging the debate, it should be noted that the use of derivative instruments has enabled a number of projects that were marginal or unprofitable to obtain financing. In some instances, projects have been able to achieve lower funding costs due to the strategic use of these instruments.

# LBMA

## Third Annual Spring Seminar

by *Susanne M. Capano*

### *Bullion markets are difficult to manipulate.*

***The Hunt brothers would doubtless agree. It took a \$1.8 billion loan to bail out their attempt to squeeze the silver market in the late 1970s.***

Professor Gordon Gemmill, Professor of Finance at the City University Business School, examined several attempts to manipulate, squeeze, corner and otherwise abuse markets as one of two speakers at the LBMA's Third Annual Spring Seminar. After defining what constitutes manipulation in both economic and legal terms, Professor Gemmill found only seven major cases in the US between 1948 and 1984. He also examined cash-market manipulations in the form of cartels in copper, diamonds, bauxite, tin and oil and concluded that success has only been realized in diamonds.

The question remained whether the silver market had again been the victim of manipulation this year in the form of Warren Buffett. Although Buffett's presence in the market had had a positive influence on the price, it could be said that with demand outstripping supply for a number of years, a price rise was overdue. Mr Buffett was taking a perfectly legal punt. Whether he would realize a profit remained to be seen.

## Conclusion

The intricacies of mine financing are formidable, and can easily be misunderstood. As a consequence, they are often misused. While all mining finance structures share common features, they require tailoring to the particular structure of not only the project, but also the individual sponsor. That is where the challenges are and the rewards lie. ■

**Michael Simon** is Senior Manager – Mining Finance for MeesPierson N.V. Headquartered in London, he is responsible for developing the Bank's activities in the mining industry. MeesPierson, established in 1720, is one of the Netherlands' oldest and most influential financial institutions and is part of the international banking, insurance and investment group Fortis. With offices in all major financial centres in the world, MeesPierson is engaged in selective market segments, including corporate and investment banking, and are recognised specialists in international trade and commodity finance. It currently employs more than 4,000 people in more than 25 countries. Before joining MeesPierson, Mr Simon was a Director of the CPM Group, where he specialised in advising mining companies on financing and trading issues. Prior to joining CPM Group, he was Vice President and General Manager of Mocatta, where he was group executive in charge of its client-based trading group in New York and Australia.



### Re-igniting the World Economy

Giles Keating, the Chief Economist of Credit Suisse First Boston took a realistic look at the impact of Asian economic woes on the world economy, focusing in particular on Japan. He felt that Japanese internal deflation is hindering recovery in Asia, while an artificially high \$/yen rate had contributed to what he called the "Fed dilemma": a booming equities market coupled with flat domestic prices.

Someone needs to ignite a spark to revive deficient demand, but who should it be? Not the United States. They have been spending for too long already. Europe can't provide much help unless they can rebalance growth from external to domestic demand – and the EMU Maastricht criteria would interfere here. That leaves Japan.

Japanese interest rates near zero, and government indebtedness in the stratosphere limited the possibilities for reflation. One option open however, was to allow the yen to fall sharply. Keating felt that the yen had not actually depreciated in effective terms against the dollar, as there had been steeper falls versus other Asian currencies. In his view, a more appropriate dollar/yen rate would be 170-180. This would resolve the Fed dilemma, and the resulting boost to Japanese/Asian demand would outweigh conventional competitiveness. ■

# To the editor.



A recent edition of *Metals in the News*, the magazine of the New York Mercantile Exchange, contained an article by John Higgins entitled "Exchange-Based Gold Trading: the Hidden Safety Nets". I found his comparison of the advantages and disadvantages of OTC instruments with exchange-based ones a little one sided, and feel there were a number of inconsistencies. The article began by emphasising counterpart credit risk, and went on to discuss the supposed illiquidity and associated costs incurred when using the OTC market.

I would agree that trading on the futures markets does eliminate counterpart credit risk, but it is important to bear in mind that 90% of the LBMA market makers are AA rated or better and not likely to disappear overnight. Additionally, many banks such as HSBC can offer customers a more comprehensive service than the exchange. Many of our customers in precious metals are also using other areas of our trading rooms to manage foreign exchange and interest rate risk. They feel more comfortable hedging all these associated risks within the same organisation, since one salesperson can talk about all treasury products and not just those traded on the futures market. We are also in a position to watch over a client's entire portfolio and net many risks off without having to ask for daily margin payments.

Mr Higgins used the example of a jewellery manufacturer to promote the benefits of hedging on the futures exchange, a choice I find a little strange. In his example, a jewellery

manufacturer wants to contract with a major retailer for 10,000 ounces of gold to be manufactured into carat jewellery during August and November 1999. He needs delivery of gold in .9999 kilo bar form for specific dates in July and October 1999 in order to give him time to fabricate the carat gold. The article advises hedging by purchasing June and October futures contracts.

It goes on to say that as deals done over the counter are separately negotiated, they consequently are less fungible. I hardly think that the ability of the OTC market to "separately negotiate" a deal to fit a customer's exact requirements should qualify as a disadvantage. In fact, there is no better way to hedge the above deal than to use the OTC market.

The article lists "additional charges" – kilobar premium, delivery charges, contango, handling charge and dealer's 'profit margin' – which must be paid when trading in the OTC market. Anyone requiring kilobars to fill a specific fabrication requirement will ultimately have to pay a premium and delivery charge, no matter how he hedges himself. Price is not the only variable here, although it is the only one that can be hedged on Comex. If the customer waits until unwinding the Comex hedge at the end of the period to purchase his kilobars, he may well find that premiums have fluctuated. The bars may cost him considerably more than he had counted on. Worse still, in times of very tight physical demand they may simply be unavailable.

The contango (forward premium) used by an OTC forward dealer is the same structure built into Comex spreads, so it must be paid in any case. However, the OTC deal can be fixed to the customer's precise dates and not just for specific first notice days.

There is no handling charge. The dealer's profit margin is purely his bid/offer spread, which is virtually the same as the Comex spread between bid and offer, and the dealer will not charge either commissions or margin payments.

By dealing OTC, the manufacturer guarantees himself the exact product he wants, when he wants it, for a precise cost he knows. Hardly a disadvantage.

Turning to the issue of liquidity, turnover on the OTC market is far greater than that on Comex, as proven by comparing published statistics from the LBMA and Comex.

With an OTC trade, the customer knows that the minimum amount quoted for is generally 10,000 ounces. Even for a larger amount, he can easily obtain competitive quotes regardless of the strengths or weaknesses of a dealer's book. The customer can hedge all his risks at one price in a matter of seconds. No one outside of the trader he dealt with has seen the transaction take place. Confidentiality is kept intact.

On the futures exchange you are not guaranteed a fill on an order of any size. Unless you leave a price limit, you cannot be sure what price you will ultimately

be filled at. A weakness of an open outcry market is that unless there are orders to be transacted on the opposite side of yours, the market may well turn against you. You can be left in the position of either having hedged at a far more expensive rate or, worse still, not having hedged at all.

The liquidity of the OTC market remains intact 24 hours a day, therefore enabling the customer to trade into or out of a position at any time. New York trading hours of 08:20 to 14:30 do not suit everyone. Comex does now provide Access, its out of trading hours system, but even the most committed would have difficulty describing it as liquid.

The OTC market offers unmatched flexibility: a specific forward date in any tradable currency, in any form of metal, for delivery anywhere in the world. It also offers competitive clearing facilities, storage charges and insurance rates. Spot and forward prices are available within seconds on wire services on multicontributor pages that allow transparency of price but do not impair confidentiality.

As a spot trader, I use both the OTC and futures markets in daily transactions. I feel that there are advantages and disadvantages to each, and that there is room for both in metals trading.

Yours faithfully,

Paul Voller  
Chief Trader  
HSBC Midland



## THE LBMA Biennial Dinner

by Chris Elston

Thursday, 23 April 1998

Some 200 diners, including 30 guests of the LBMA, enjoyed their black-tie Biennial Dinner in the gilded surroundings of the Gibson Hall on St. George's Day. The evening had started with a splendid reception in the Bank of England Museum where the "Gold, Gold, Gold" exhibition was on display.

The principal guest was Mr David Clementi, Deputy Governor of the Bank of England. In his speech proposing the health of the Association, Mr Clementi covered two main topics – the development of the bullion market over the last 10 years; and prospects for the gold market with reference to the role of central banks, in particular, that of the Bank of England.

Mr Clementi paid generous tribute to the LBMA's role in promoting the efficiency and competitiveness of the market, and drew attention to the close working relationship that exists between the Bank and the LBMA, much of the credit for which is due to the recently retired Terry Smeeton. He also noted the moves towards greater transparency in the form of the GOFO page and the monthly publication of loco London clearing turnover statistics.

The Bank of England's oversight of the bullion market dates from the first fixing in 1919, but had only been formalised with the introduction of the Financial Services Act in 1986. The passing of regulatory responsibility to the new Financial Services Authority would change all that. Nevertheless, Mr Clementi assured his audience, the Bank retained formal responsibility for the overall stability of the financial system; and this meant that the Bank's close interest in the gold market would remain.

On his second topic, Mr Clementi noted the increasing participation of central banks in the gold market – at last count about 70 are now active. This was not always seen

as unambiguously a good thing, he admitted. But he pointed out that central bank gold sales were not the only influence on the recent weakness of the gold price, citing low and stable inflation and the growth of mining output as other contributory factors. Gold, he thought, was now less of a 'special' asset and had to be judged on its expected return and portfolio diversification properties. In this context, efficient reserve management was a legitimate concern for central banks. Looking forward, Mr Clementi saw the major outstanding question as the role of gold in the European Central Bank's portfolio. This, he said, should be decided in the next couple of months.

The LBMA's other main guest – minus his Bank of England hat – was Terry Smeeton, who spoke on behalf of the guests in thanking the Association for a memorable evening.

Terry looked back over his career at the Bank and concluded that the turbulent events of the last 20 years proved that central banking was an exciting life.

He had just missed the \$850 peak in the gold price in 1980, but was quickly involved in the complicated gold swap arrangements which formed part of the plan to release the US hostages from Iran.

In 1991 he had been part of a James Bond-style mission to Moscow, on behalf of the G7 countries, aimed at establishing the size of the Soviet Union's gold reserves for the purpose of collateralising a substantial international financing. In the light of subsequent events Terry viewed it as perhaps fortunate that the gold was nowhere to be found.

In September 1992, Terry was away on bullion market business in Japan when sterling came out of the ERM. Instead of orchestrating support for sterling from Threadneedle Street, he spent the day in the Bank of Japan's dealing room overseeing the BoJ's operations on behalf of sterling. All this led Terry to conclude that central bankers, even if grey-suited and often grey-faced, are frequently involved in colourful historical events. ■

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<i>Aig International Limited</i>	(0171) 709 2500	<i>Deutsche Bank Ag</i>	(0171) 545 8000
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<i>Jordan International Bank Plc</i>	(0171) 493 7528		



# LBMA News

by Chris Elston, Chief Executive, LBMA

## DIARY OF EVENTS

### 9-12 July 1998

West African Mining Exhibition, Accra, Ghana.

### 26-29 August 1998

Second National Congress of Mining, Trujillo, Peru.

### 9-10 September 1998

Investment in Mining Conference, Las Vegas, Nevada.

### 11 September 1998 – London

### 14 September 1998 – New York

Gold Fields Mineral Services Ltd Update I to Gold 1998 published.

### 14-16 September 1998

Minerals Engineering 1998, Edinburgh, Scotland.

### 8-10 October 1998

Miami International Mining Show/Expo, sponsored by International Investment Conferences.

### 11-13 October 1998

Investing in Eastern Europe, sponsored by International Investment Conferences, Berlin, Germany.

### 22-25 October 1998

Asia – Pacific Mining '98 Exhibition, Kuala Lumpur, Malaysia.

### 26-27 October 1998

Global Merging Markets Conference, sponsored by International Investment Conferences, London.

### 8 January 1999

Gold Fields Mineral Services Ltd Update II to Gold 1998 published.

## 10th Annual General Meeting

At the AGM, held at the office of Morgan Guaranty Trust Company of New York on Thursday 4 June, the following were re-elected to the Committee:

### Category 1

Mr Robert Ashley – *N M Rothschild & Sons Limited*  
Mr Jeremy Charles – *Republic National Bank of New York*  
Mr Peter Fava – *HSBC Midland*

### Category 2

Mr Martin Fraenkel – *Chase Manhattan Bank*  
Mr Martin Stokes – *Morgan Guaranty Trust Company of New York*

### Category 3

Mr James Dobell – *Sumitomo Corporation (UK) Plc*  
Mr Colin Griffith – *Standard Bank London Limited*

After the meeting, the Committee unanimously re-appointed Peter Fava as Chairman for a second term and Martin Stokes as Vice-Chairman for a fourth term.

The Association thanks Morgan Guaranty for providing the facilities for the meeting.

## Membership

Name changes:

Deutsche Morgan Grenfell to be known as Deutsche Bank AG.

Bank of America National Trust and Savings Association London Branch to be known as Bank of America NT&SA London Branch.

Marubeni UK plc to be known as Marubeni Europe Plc.

## LBMA Annual Golf Day

This was held on 14 May at Clandon Regis in Surrey. Thirty three golfers participated. Sadly, the weather was not kind to us. Thunder and lightening prevented play in the morning and when the first ball finally got off the ground at around 1pm we were confined to the Stableford Competition for the Jack Spall Trophy. This was won by David O'Neill with 37 points, followed by John Coley with 35 points and Colin Griffith with 34 points. The Guest Prize was won by Peter Montgomery with 36 points. Colin Griffith took the prize for the longest drive and, in the competition for nearest the pin in two strokes, Manny Kido (22") was unlucky to be narrowly edged out by David Jackman (20") – such precision!

We are greatly indebted to Brambles Security Services UK Limited and Mitsui & Co UK Plc for their generous sponsorship of this event.

Next year, we return to Brickendon Grange Golf and Country Club near Hertford and the date will be Thursday 27 May. Please mark your diaries.

Our thanks as ever to John Coley for organising this event which no amount of thunder and lightening could ultimately thwart, and to Stella Thompson of the Executive for her admin efforts.



The *Alchemist* is published quarterly by the LBMA. For further information please call  
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