

THE LONDON BULLION MARKET ASSOCIATION ISSUE 13 NOVEMBER 1998

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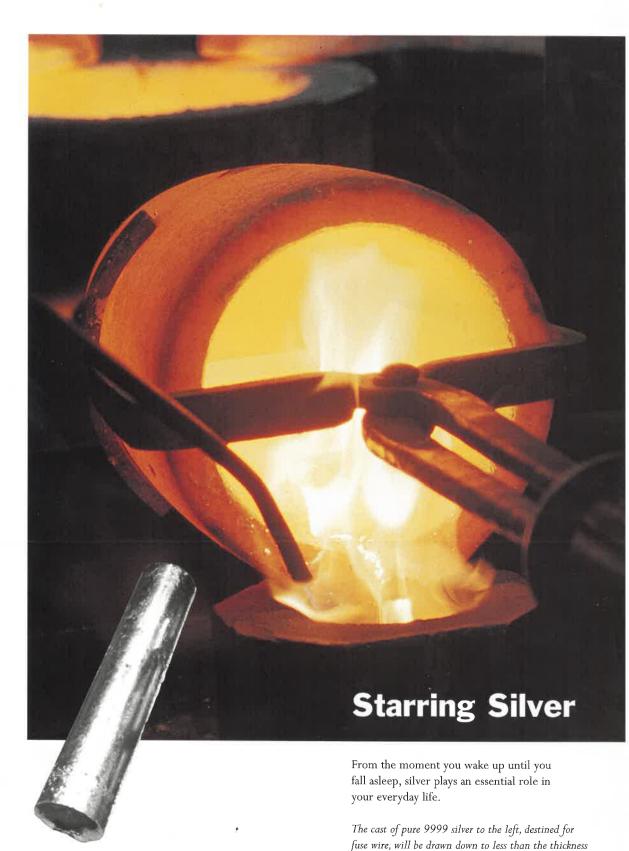
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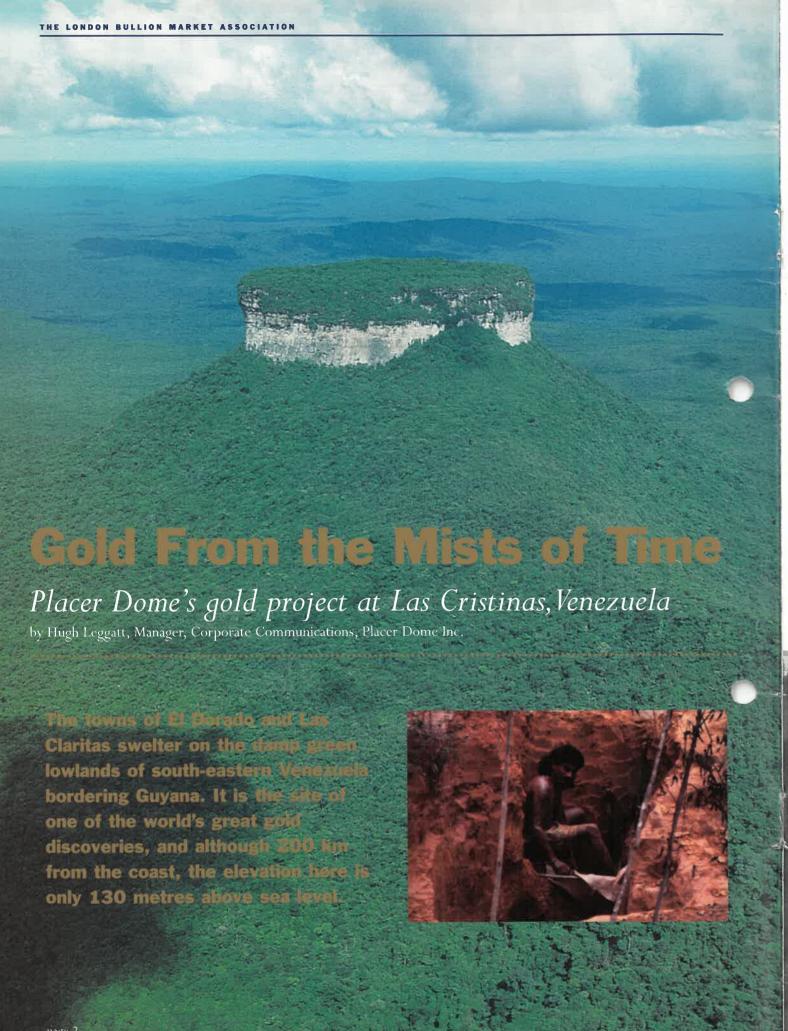
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of a human hair. (see page 16)



But as you head south on the blacktop highway towards the Brazilian border, you mount the Roriama Plateau, climbing through densely forested slopes. After a short journey, you enter another world, where the air is crisper despite being only 600 km from the equator. Here the forests have given way to grassland, and the plateau, cut by rivers, forms spectacular waterfalls over vertical escarpments. This is Canaima National Park, a UN-designated World Heritage Site, about 70 km south of Las Cristinas, Placer Dome's new gold project in Venezuela. Canaima's mysterious flat-topped mountains, called tepuis, their summits rendered inaccessible by dizzying cliffs, inspired Sir Arthur Conan Doyle's famous 1912 adventure novel The Lost World.

The Guyana Shield, the name for the geologic unit of rocks that make up the north-eastern corner of South America, was once joined to what is now West Africa. Scientists believe that when the earth's crustal plates spread apart between 70 and 180 million years ago, South America took leave of Africa, leading to the formation of the Roraima plateau, a vast sandstone block composed of material from eroding mountain ranges on the Guyana Shield.

As unimaginably old as these events are, the formation of gold preceded them. The gold of Las Cristinas is about 1,500 million years old, when mineral deposits, chiefly concentrations of gold, uranium and iron, were formed by hot fluids from within the still cooling earth, which infiltrated the hardening layers of the young earth's crust. Millions of years of geological events such as erosion and deformity deposited the gold in the weathered rocks of the

These were among the last creation events before the opening of the Atlantic. Hence, across the ocean in West Africa, in rocks that bear a family resemblance to the Guyana Shield, reside the gold mines that enriched the world of the Egyptians, Greeks and Romans and still remains one of the great gold provinces of the world.

Mining Conditions

"For a miner must have the greatest skill in his work, that he may know first of all what mountain or hill, what valley or plain, can be prospected most profitably, or what he should leave alone; moreover, he must understand the veins, stringers and seams in the rocks..." - Georgius Agricola, De Re Metallica, 1556

In the recent past, the environs of Las Cristinas were worked by thousands of migrant hand miners, using sluice boxes and running water to extract visible gold. They left behind piles of discarded gravel, or tailings. The government put the area out to tender, envisaging that an international company could develop a new mine as well as process additional gold from the tailings. No one had yet drilled into the bedrock using modern exploration techniques.

Placer won the tender in 1991 and began testing over the course of five years to determine the extent of the gold present in the bedrock and to delineate the size, shape and depth of the orebody in order to choose the most efficient method of mining. The top of the orebody was found to consist of a heavily weathered, reddish-brown soft earth called saprolite, basically compacted sand. It contains little gold but can easily be dug without blasting to reach the carbonate bedrock that contains the ore.

The drilling results and estimation work using fire assay and other methods built up an increasing reserve and resource estimate. The deposit has been found to contain 12 million ounces, and the \$575 million project to develop it will include the largest gold processing plant in the Placer Dome Group, with a capacity of 45,000 tonnes of ore per day.

The low grade ore at Las Cristinas lends itself to open pit mining, allowing speedy processing of large quantities of ore – where an underground mine might process 1,000 tonnes of ore a day, that quantity can take 10 minutes in an open pit mine. Because the gold is mixed with large quantities of copper, it will be necessary to develop two processing streams – one to produce doré, the other to produce a coarse grey gold/copper concentrate to be sent out to smelters for processing.

Millions of years of geological events such as erosion and deformity deposited the gold in the weathered rocks of the Guyana Shield.

Environmental Concerns

The previous decades of hand mining have left the area around Las Cristinas scarred. The concessions are a patchwork of undisturbed forest broken by hundreds of hectares of cleared areas with heaps of discarded gravel and numerous water filled pits. River channels have been altered by dikes and the scouring of river banks by past hydraulic mining. Some rivers carry heavy sediment loads from on-going illegal mining upstream of the concessions. Flooding and changes in







Present, future and beyond (top) Las Cristinas Project area in 1997 before development, where artisanal miners panned for gold for 20 years.

(centre) Conventional open pit mining technique will use large hydraulic excavators and haulage turcks to mine the gold.

(above) After at least 20 years of mining, a successful closure and rehabilitation plan will restore forests and create lakes.

drainage patterns caused by previous mining have produced waterlogged forest areas where trees are dying because of poor drainage. Migrant miners used mercury to amalgamate gold into clumps, then discarded the mercury, which contaminated the soils of cleared areas and river sediments.

Mercury is no longer used in modern gold recovery processes. The cyanide now used in the extraction of the gold will be recovered for re-use at the processing plant before tailings are pumped to the tailing pond. In addition, a cyanide destruction plant will be constructed at the tailing pond to treat any remaining cyanide in the pond water before discharge to the environment.

An extensive water management plan has been designed to control surface runoff and to protect groundwater quality. The dam walls are being 'overbuilt' with sloping sides inside and out, and the slopes will be vegetated to inhibit erosion. Dam heights have been designed to provide capacity to store water from extreme events, such as a 24-hour rainfall, a three-month rainy season and a once-in-200-year storm event.

Planning for the Future

In previous times, when an open pit mine ran out of ore, it was simply abandoned, leaving a gaping hole into which rainwater would wash and leach out trace metals into the environment. Today, the goal is to return impacted areas to as natural a condition as possible.

At Las Cristinas, rehabilitation work has already started on some of the previously damaged areas, and will continue throughout the operating period as disturbed areas are no longer required. Joint research with Venezuelan universities and research institutions is determining the most effective methods for conditioning soils, choosing and planting vegetation species and developing animal and fish habitat.

Piles of waste rock will be covered with topsoil and seeded, and will quickly become covered with vegetation in the lush tropical climate of south-eastern Venezuela. Once the mine is finished, the pits will be allowed to fill naturally from the rising water table. The flooded pits should have no impact on ground-water quality because mine walls that might otherwise generate acid rock drainage will be submerged and rendered inert by lack of oxygen.

A mine can help kick-start a whole new local economy, not only through the immediate impact that construction jobs will provide. It can encourage the growth of businesses that produce goods — for example agricultural products — that will attract additional customers outside of the mine.

Placer Dome has been relating successfully to communities and environmental challenges in Papua New Guinea for decades. Through its new sustainability policy the company is raising the stakes to make Las Cristinas the reality of an even better model.



Hugh Leggatt

A 1966 graduate of Rhodes University in South Africa, he was a reporter with the Johannesburg Star for 13 years. After emigrating to Canada in 1980, he worked briefly for the Vancouver Province, then started a new career in corporate information with Cominco Ltd., a base metals mining and smelting company based in Vancouver. After six years, he moved to Director of Information Services with the Ministry of Economic Development of the Government of British Colombia, promoting business and trade. He joined Placer Dome in 1988 as Communications Specialist. As Manger of Corporate Communications since 1990, he is responsible for the full range of Placer Dome's public, media and internal information programmes, excluding investor relations.

The LBMA Autumn Seminar

Thursday 19 November, 11:15 – 2:00 Ironmongers' Hall Barbican London EC2

programme

11:15 am: Registration, followed by coffee 11:45 - 1:15 SEMINAR

Introduction by Mr Martin Stokes, Vice Chairman, LBMA

"The Asian Financial Crisis:

Prospects for the region and implications for gold"

Dr Ric Simes, Chief Economist, NM Rothschild & Sons (Australia)

"Europe and the Global Economy"

Mr Bruce Kasman, Chief European Economist, JP Morgan

1:15pm - Buffet Lunch

Oracle

"Yes, these are difficult times, but as Mrs Thatcher used to say—give me your solutions, not your problems...And solutions are necessary. It seems to me that the current low gold price demands action on several fronts. In the marketplace. In the mining industry. And in the Central Banks."

- Robert Guy, NM Rothschild & Sons Ltd, FT World Gold Conference, 22 June, 1998

"This market has proved it is open and free to trade and has an unparalleled level of liquidity. In the first quarter of this year, one investor bought a year's supply of silver without disrupting the market. The same can be said of gold; volumes of \$11bn a day pass through the 'loco London' clearing."

- Peter Fava, HSBC Midland, FT World Gold Conference, 22 June, 1998



"It is clear that the LBMA will have to become more of a self-regulator with powers given to it by the FSA. We must ensure that market-makers quote fair prices, that clearing members give a good service to their customers and that all the members of the Association remain financially sound...Even in a market 300 years old, regulation continues to evolve as the markets change."

-Peter Fava, HSBC Midland, First International Conference in Russia: Precious Metals, 21-22 September 1998

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THE LONDON BULLION MARKET ASSOCIATION

GOLD AND THE EURO

By Dr Rudolf Trink,

Head of Treasury, Strategy Division, Austrian National Bank

"...a monetary union between sovereign states without disadvantages for one or the other contracting party can only come into existence on the basis of equal solidity of monetary policy in the single states..."

This quotation is in fact one hundred years old, and therefore refers not to EMU, but to the Latin Monetary Union, involving France, Belgium, Switzerland, Italy and Greece, which lasted from 1865 to 1927. Although Austria was not a member, it led an initiative for the USA to produce gold coins for the union, which led to the minting of a trial coin by the name of Stella, with a face value of \$4, which corresponded at the time to 8 Austrian Gulden.

These historic references show that the dream of monetary integration is an old one – in fact even much older than these examples – and that historic experience is relevant both for the public and for central banks not only in the development of monetary integration, but also in their attitude towards gold.

In acting as a hedge, gold has two aspects which are relevant for central banks – against inflation and against currency risks. Those aspects ultimately help determine the possible role of gold for the ECB as well as the possible future gold policy of Oesterreichische Nationalbank (OeNB, the Austrian National Bank).

At first glance central banks are a sort of strange species with supposed inconsistencies in their decisions concerning gold. However, the sometimes hidden logic behind this has to do with central banks' hierarchy of policy objectives. This involves some rather paradoxical issues.

Gold is broadly considered an asset that is useful as a hedge against inflation as measured by an index of representative goods and

In the case of Austria, the index holds more than 700 single items. a mere three of which are directly linked to gold; they account for a total weight in the index of approximately 0.5%. Therefore, why should a commodity representing the 200th part of an inflation index be considered an adequate hedge against inflation? The answer lies, of course, in the nature of gold compared to that of the other

goods and services in the index. Services by their very nature cannot be bought on stock, and the same is true for many commodities, which are not of a durable nature.

But even if these commodities were sufficiently durable, there are good reasons for not keeping them in bigger quantities, even under the assumption of rising inflation. Gold, however, is considered

to be a feasible hedge against inflation – not only because of the expectation that it will show a price development highly correlated with the CPI, but also because it is available in any denomination and can be easily exchanged against other commodities if need be.

There is the first paradox: if gold is an adequate hedge against inflation, it might seem strange from an asset allocation point of view that central banks - whose main product is monetary stability, or, in other words, low

inflation - should hold substantial amounts of gold in their balance sheets. It would basically mean that central banks that successfully fight inflation suffer losses on their gold holdings.

However, statistics do not show gold to be a reasonable hedge against inflation unless measured over the very long term - for example, from 1600 onwards in half-century intervals. Under such a (sometimes doubtful) assumption, central banks which have been especially successful in "producing" low inflation might indeed be confronted with valuation losses on their gold holdings. This leads us to paradox number two, namely the fact that while losses on external assets in general are harmful for the standing of a financial institution, this is not necessarily the case for central banks.

If the domestic currency is under strong international demand, it is unavoidable that the market value of the central bank's assets (including gold) will go down. As the historic example of the Bundesbank shows, such losses may occur particularly in times of very high credibility.

Paradox number three concerns the potential stabilising role of gold as a compensatory asset class in central banks' balance sheets. The introduction of the euro reduces the investment universe at the disposal of central banks - not only so far as currencies are concerned, but also in terms of actual investments in different instruments like bonds. This may lead to an enhanced importance of gold as an asset class in National Central Banks' (NCB's)

Holding gold in a central bank's balance sheet may also be seen as paying an insurance premium (namely opportunity costs in the form of missed interest income) against a highly improbable risk. From a commercial point of view this might be considered expensive. However, public confidence in central banks is largely based on the fact that they are not primarily income-driven institutions, but institutions responsible for maintaining confidence and trust in the currency. Therefore, psychology is (and should continue to be) a very important factor in the holding of gold by central banks. The fact that gold is no one's liability is one of the pillars of public confidence.

When it comes to gold, psychology always matters. Under normal circumstances, individuals only have a choice between consumption and saving. The benefits attached to consumption are (at least partially) offset by setbacks through the concomitant reduction of saving. With gold it seems that - strangely enough - one can have one's cake and eat it, too, without paying the price. Gold clearly contains elements of saving and, being a commodity, consumption (particularly when it takes the form of coins and the like). This might be one of the explanations for the long-lasting attractiveness of gold.

Gold as a hedge against crises has been common to the collective consciousness not just for a few generations, but for thousands of years. Therefore it is possible that, depending on an adequate trigger situation, the old unconscious patterns could readily be called on - and at a somewhat more philosophical level, central bank gold reserves could be looked at as an expression of the awareness of this situation.

Gold within the European Central Bank

There seems to be a substantial degree of misunderstanding about the character of the ECB's reserves. It should be kept in mind that within the European System of Central Banks (ESCB), the ECB's and the NCBs' reserves have different functions that complement each other under the heading of a uniform foreign exchange and monetary policy.

The external reserves to be transferred from the NCBs to the ECB in an amount of up to EUR 50 billion basically form the ECB's mass for interventions. This, of course, has implications for the composition of these reserves. As gold can only be used indirectly for intervention purposes, this de facto puts a certain limitation on the share of gold in the ECB's reserves.

In this light, keeping a relatively small proportion of gold in the balance sheet would be quite natural and should not be misinterpreted as a general aversion of the ECB and the national central banks to gold. This issue should rather be looked at from the perspective of the ESCB as a whole. In this context, I do not share the fears expressed in some recent papers that the NCBs might be induced to sell gold reserves in order to bring them in line with the ECB's gold percentage. Of course, future gold sales by NCBs cannot be excluded, but probably not from taking the share of gold in the reserves transferred to the ECB as a benchmark.

The ESCB overall holds a very substantial part of the world-wide official gold holdings (Chart 1). While this gold no longer plays a monetary role in the historic sense, by its very nature (being no one's liability) it is still a very useful asset to cover parts of the circulating central bank money. The importance of gold for the system is underlined by the envisaged prior approval system of the ECB. Operations by NCBs involving gold - not only purchases and sales, but also gold/USD swaps - could be subject to the ECB's prior approval above a certain threshold. Thus, the ECB's actual approval policy might exert a potentially strong influence on the gold market. In exercising this power, the ECB will take all relevant factors into account, but the fact remains that the monetary unification of some of the world's biggest gold holders is a highly relevant system change. Of course, future gold sales cannot be excluded, but one should bear in mind that numerous portfolio adaptations have already taken place in recent years.

GOLD - Sales by the AUSTRIAN MINT

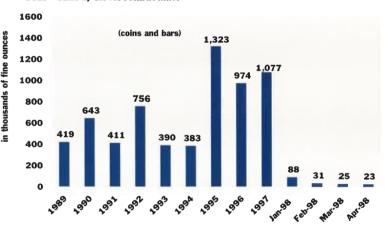


Chart 2

The OeNB, like other NCBs, has already started to reconsider its

portfolio management priorities. Instead of the traditional hierarchy of investment objectives as security - liquidity - profitability, a new hierarchy giving more weight to profitability can be envisaged.

Until now, as the central bank of a small economy, the OeNB has had to be permanently ready to intervene in order to stabilise the exchange rate of the ATS versus the DEM. However, in the new environment there will no longer be an external exchange rate target. The monetary policy relevance of a country like Austria will be more or less nothing but a regional statistical event.

GOLD: Above-Ground Stocks

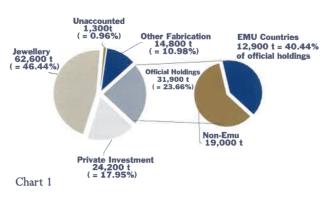




Chart 3

20.00

10.00

This might lead to some changes in the area of gold. NCBs might consider longer-term engagements to be appropriate forms of investment, meaning greater importance could be placed on the quality of our respective counterparts for gold/dollar swaps or gold deposits. The new Austrian National Bank Act has added both gold deposits and derivative instruments to our spectrum of eligible instruments from May of this year.

The OeNB is quite confident that it will be possible to maintain successful co-operation between itself and the Austrian Mint (Charts 2 and 3). Market participants have become fully accustomed to gradual gold sales to the Mint over time, and transactions never reached dimensions that would have entailed negative signalling to the markets.

Conclusion

The paradoxical factors mentioned above do not really provide strong arguments for central banks to hold gold. However – and

this is the most important point - central banks have the primary objective of ensuring monetary stability. In order to attain this goal, credibility in the public eye is indispensable. Having a certain portion of gold doubtless adds to this credibility, and it is under this aspect that I expect central bank holdings to play a somewhat different but nevertheless very important role in the new ESCB environment. After all, history shows that currencies come and go, but gold has always remained. Central bankers have a reputation for thinking in very long-term dimensions, and gold as a reserve asset has a natural place in such considerations. The ESCB is the direct descendent of the best European central banking cultures. It is fair to expect that the ESCB will not neglect one of the very, very few long-proven recipes to bolster confidence in the new currency: to hold gold as part of its reserve assets.

RudolfTrink joined the OeNB (the central bank of Austria) in 1978 after having received his doctorate from the Vienna University of Economics. He spent two years in the domestic and international research division and subsequently transferred to the treasury section. In 1986, he was appointed deputy head of the domestic bond division. He became head of the co-ordination office of the banking department



in 1989, giving him responsibility for the safekeeping of the bank's domestic gold holdings. He participated as a gold expert in the United Nations ROP (Return of Property) program in Ar-Ar, Saudi Arabia in 1991. In 1992, he became head of the strategy division within treasury. From 1994 onward he was the Bank's representative in the FXP (foreign exchange policy subcommittee) at the EMI. In 1998, Mr Trink was appointed director of the OeNB's treasury section.

Royalty Financing

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An Alternative Equity Financing Mechanism

By Stanley Dempsey, Chairman and Chief Executive Officer, Royal Gold, Inc and Thomas Loucks, Executive Vice President, Royal Gold, Inc.

Recent woes of the gold market and markets for gold stocks give us reason to reflect on methods of raising capital for gold mine development projects. Royalty companies offer an alternative method of raising capital, particularly for operators where the cost of equity is high and debt financing is unavailable.

This paper examines a case where \$5 million is required for reserve development, drilling and feasibility work on a million ounce discovery that has already reached the prefeasibility stage, and compares scenarios where the capital is raised via the sale of equity or the sale of a royalty.

Selling a royalty causes less dilution than joint venturing, and preserves existing shareholders' interests at the corporate level. Depending on the likely cost structure of the mine, the operator may seek to sell a net profits interest or a net smelter returns royalty. In down markets, the Net Profits Interest (NPI) offers more upside for the royalty financier

and less risk for the operator, and thus may be an attractive alternative to the conventional Net Smelter Returns (NSR) form of royalty.

The disadvantages of conventional mine finance become particularly pronounced in times of a down market. When equity markets are buoyant, the sale of equity

Common Sources of Mine Development Finance

Sale of equity

Sale of a joint venture interest

Taking on debt

can be an inexpensive source of finance; conversely, when the markets are in the doldrums, selling equity can seriously erode the existing shareholder base because low share prices force too much of the company to be sold. The most common alternative to selling equity is to joint venture. While joint venturing presents an attractive variation, it still results in dilution to shareholders at the level of the property. It can also make life more complicated if the interests of the partners start to differ. Debt financing may be an alternative for more advanced projects, but most smaller or earlier stage companies may find required debt covenants overly restrictive (the Company may be prevented from selling assets or restructuring existing contracts).

Selling a Royalty Interest Presents a Viable Alternative

Guards the operator's 100% working interest Retains 100% of ownership for existing shareholders Company still books 100% of reserves and production

Selling a royalty interest to finance further development and a feasibility study can present an acceptable solution to raising capital while simultaneously avoiding dilution or new partners. In countries with accounting conventions similar to those in the United States, a royalty payment is a cost of sales and is accounted for as an expense. For a gold producer looking for annual ounces of gold production and reserve base, the Company books all of the gold production for its own account and subtracts the dollar amount of the royalty as a cash cost of production. The royalty burden does not reduce the number of ounces of gold that the operator can claim to produce, and the operator retains the full amount of gold reserves on its books, undiluted by the royalty

The two most common forms of mineral royalty interest are the Net Smelter Returns and the Net Profits Interest

NSR Royalties

An NSR royalty is calculated in percentage terms based upon the amount of proceeds paid by a refinery or smelter for doré or concentrates. Depending on the commodity or product produced, an NSR can vary widely. An NSR royalty on a gold mine where the product is doré closely approximates a percentage of the gross value of gold produced; however, if the gold is contained in concentrates, the smelting charges will exceed those incurred in refining doré, and the royalty will be commensurately less. Smelting charges for base metals constitute a large portion of the value of contained base metals, implying that an NSR on a base metal mine (even one with a precious metal credit) will be even smaller. For purposes of this paper, assume that an NSR royalty equates to a percentage interest in 99% of the revenue (1% being deducted for transportation,

insurance, and refining). NSRs are commonly used because of their relative ease of calculation; however, because they are tied to revenue, with essentially no consideration for costs, NSRs place most of the risk on the operator, who faces paying the royalty whether commodity prices are high or low.

NPI Royalties

An NPI royalty is calculated in percentage terms, based upon the net profits of the operation. Therein lies its attractiveness: the NPI spreads the risk between the operator of the mine and the owner of the royalty. Both share in the profits, therefore, their interests tend to be more aligned. The mine operator knows that the NPI will diminish if profit margins are squeezed, but he/she must give up more of the upside when times are good. From the owner's perspective, there is much more of a burden to understanding the complexity of mining and processing costs and having access to the operator's production and sales information. Due to these latter considerations, it behooves the owner of an NPI to have considerable skill and capability at monitoring and auditing the

Innovative Royalty Terms

A classical royalty burdens a mine for its entire life. Flexibility can be provided when developing royalty financing packages by allowing for changes in royalty rates or capping of royalties at absolute dollar levels. Royalty financiers tend to value mines on proven and provable reserves. Reductions in royalty rates on metals in excess of proven and provable reserves may overcome the owner's reluctance to extend a royalty for the life of a mine.

Performance Comparison: NSR vs. the more leveraged NPI

NSR: Tied to mine revenue, offers higher payout in down markets, places risk on operator, no leverage.

(A 17% increase in the gold price from \$300/oz to \$350/oz results in a 17% increase in the royalty).

NPI: Tied to profits, offers higher yield in up markets, operator and owner share risk, highly levered.

(On the same 17% increase in gold price, an NPI offers 50% increase in profits and payout).

	NSR	NPI	NSR	NPI	Increase
Revenue/oz	\$300.00	\$300.00	\$350.00	\$350.00	1.7%
5% NSR pmt/oz	\$15.00	na	\$17.50	nā	1.7%
Operating costs/oz	\$200.00	\$200.00	\$200.00	\$200.00	
Profit/oz	\$85.00	\$100.00	\$132.50	\$150.00	
15% NPI/oz	na	\$15.00	nā	\$22,50	50%
Net operating profit/oz	\$85.00	\$85.00	\$133.00	\$127.00	

Dilution Analysis: Royalty Financing vs. Equity Offering

Feasibility stage projects are generally worth twice what a prefeasibility stage project commands, and prefeasibility multiples¹ are recently about \$10/contained ounce of gold. Keeping in mind that the multiple for a project bearing a royalty must be reduced (by 15% for a 5% NSR at \$300 gold), we can see that existing shareholders are \$3.67MM better off (having avoided a 33% dilution) raising capital by selling a royalty than they would have been by issuing equity:

	Pre-feasibility (before capital)	Feasibility (sell equity)	Feasibility (sell royalty)
Resource/reserves (oz)	\$1,000,000	\$1,000,000	\$1,000,000
Multiple (\$oz)	\$10	\$20	\$17
Enterprise value (\$)	\$10,000,000	\$20,000,000	\$17,000,000
# shares outstanding	\$10,000,000	\$15,000,000	\$10,000,000
Price/share	\$1.00	\$1.33	\$1.70
Dilution		33%	none
Value of original s/h stake	\$10,000,000	\$10,000,000	\$17,000,000

Choosing between cash or royalty

company stock

Raising capital via a royalty company such as Royal Gold offers the operator additional flexibility: he/she may have the option of choosing between cash, stock, or a combination thereof. For instance, Royal Gold can offer to purchase a royalty in exchange for registered shares, and therefore the operator can meter out the registered shares to realise proceeds as needed. The timing of such sales may provide tax benefits, and the operator can also enjoy the benefit of capital gains should the royalty company's shares appreciate during the period in which the operator is selling.

Royalty Financing – "Mine Financing By Miners for Miners"

At Royal Gold we see ourselves as very much aligned with the interests of the miner. We succeed only if the miner produces. In the case of an NPI, we succeed only if that production is profitable. We are mindful of this when we put the terms of a financing together. We will not overlook a miner, as we want the miner to succeed

1. Gold mining projects are worth more as the related risk is reduced. For instance, gold projects, depending on their stage of development, are valued at dollar multiples that vary with the development stage of the project and quality of the project. Exploration projects are currently valued at \$6-7 per ounce, prefeasibility-stage projects at \$9-15 per ounce, feasibility stage at \$30 per ounce, and a producing mine is worth its profit margin per ounce – about \$70-125 per ounce.

Stanley Dempsey has been in the mining business for more than 35 years. He received a degree in geology and a J.D. from the University of Colorado, and completed the Program for Management Development at the Harvard Business School. Previously employed by AMAX, Inc, he held various engineering, legal and operating positions within the company and was vice president from 1977 to 1983 before becoming chairman of AMAX Australia Limited from 1981 to 1983. Mr Dempsey practised law as a partner of the Washington, DC and Denver firm of Arnold & Porter from 1983 to 1986.

Royal Gold, Inc. is a Denver-based, publicly owned gold royalty firm. It operates in the western United States and owns a 20% net profits royalty interest in the South Pipeline project, Lander County, Nevada, and a 1.75 net smelter returns royalty in the Bald Mountain property, White Pines, Nevada.

Tom Loucks has worked in the mining industry for the past 23 years and is Executive Vice President and Treasurer of Royal Gold. Prior to joining Royal Gold, Mr Loucks was employed by Newmont Mining Corporation and worked in the areas of corporate planning, acquisitions and divestitures.

Before joining Newmont, Mr. Loucks was a senior project geologist with AMAX, Inc. in mining project development and

evaluation and also spent over six years in foreign and domestic mineral exploration with Kennecott Copper Corporation. Mr Loucks has an M.B.A. from the Stanford Graduate School of Business and A.M. and A.B. degrees in geology from Dartmouth College.



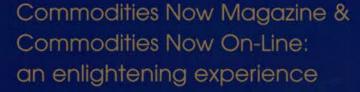
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The London Good **Delivery List**

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by Chris Elston, Chief Executive, The London Bullion Market Association

As its name implies, the London Good Delivery List is a list of those refiners around the world who produce large bars of gold (roughly 400 ounces) and silver (roughly 1,000 ounces) which are accepted without question as good delivery in London. In fact, because the LBMA imposes on applicant refineries a series of stringent criteria and rigorous testing procedures, London good delivery bars are widely accepted in other bullion centres around the world and the list is used as the basis for other bullion centres' contracts. As a result, more by accident than design, or at least almost as an accident of history, the LBMA has taken on the informal role of policeman for maintaining the acceptability of gold and silver bars worldwide. We therefore have to, and indeed do, take this responsibility very seriously.

There are in fact two separate Good Delivery' lists, one for gold and one for silver, At 1 September 19982 there was a total of 72 refineries from 29 different countries on the two lists – 55 refineries from 26 countries on the gold list, and 57 refineries from 25 countries on the silver.

There are also two lists of Former Melters and Assayers of Good Delivery Gold and Silver Bars. Refiners have been known to go out of business or to merge with another or for other reasons to cease large bar production. But their bars live on and retain their good delivery status. There are currently 39 refineries on the Former List for gold and 28 on that for silver.

It is not at all clear how the Good Delivery list originated. In the last century, the Bank of England used a small number of refiners in London to assay the gold it received for cash, as well as to refine the large quantities of gold beginning to come into London as the safest haven from the new discoveries in California, South Africa and Australia. This probably provided the basis for the list. Over time gold-producing countries developed their own gold-refining capability and the list of acceptable refiners no doubt lengthened. It must also have been formalised at the time of the first London gold fixing in 1919. But the first published list we are aware of for the gold market dates from 1934. That list contained a mere 20 names in 8 countries, with the Royal Canadian Mint, the Australian

Branches of the Royal Mint and the Rand Refinery listed under Britain, By 1962, the list had been extended to 49 Melters and Assayers in 14 countries. At this time separate Melters and Assayers were accepted, but the LBMA now accepts only those with both a melting and an assaying capability.

While it is well known that globally there is considerable overcapacity in the refining industry, there has been in recent years a steady stream of new applicants for the Good Delivery list. At the present time, there are some 12 refineries going through the application process, including five now independent Russian refineries that previously came under the umbrella of the USSR State Refinery. This is not an exceptional number over recent years and it largely reflects the desire of developing - and in many cases gold- and/or silver-producing - countries to establish their own refining capacity.

What, then, does the LBMA require of new applicants to enable them to pass our rigorous testing procedures for inclusion in the Good Delivery List?

First, any application must relate only to one refinery in one specific location with its own brand mark. Companies seeking to register the products of more than one refinery have to submit an application for each.

Secondly, we look for reputation, viability and financial standing. To provide an overview of the company, we request brief details of its history, current business operations and ownership structure We require the applicant to have been in existence for at least five years and involved in refining the metal for which it is applying for good delivery status for at least three years. In addition, annual production of large bars must be at least 10 tonnes for gold and 30 tonnes for silver. The applicant must provide figures for production levels of large bars for the previous three years as well as projected production levels for the next two. Importantly, we look for a tangible net worth of the equivalent of at least £10 million and expect applicants to have healthy profitability and a positive cashflow. If another company controls the refinery, we would normally expect to review the controlling company's financial position as well.

1. The London Good Delivery List is a copyright of the LBMA.

2. Gold and Silver Good Delivery Lists are published quarterly on 1 March, June, September

Specifications for a Good Delivery gold bar

The unit of dealing is a bar conforming to the following specifications

minimum gold content: 350 fine ounces (about 10.9 kilograms)

maximum gold content:430 fine ounces (about 13.4 kilograms)

The gross weight of a bur should be expressed in ounces troy in multiples of 0.025 rounded down to the nearest 0.025 of a troy ounce and complying with the specified LBMA weighing procedures

(b) Fineness: the minimum acceptable fineness is 995 parts per 1000 fine gold.

Assay Stamp of Acceptable Refiner

Marks should be stamped on the larger of the two main surfaces of a bar.

(d)Appearance: bars should be of good appearance, free from surface cavities and other irregularities, lavering and excessive

shrinkage. They must be easy to handle and convenient to stack.

Finally, an applicant's home central bank must support the application with a letter testifying to the applicant's standing and reputation within its country and to the quality of its products.

With all this information we require an applicant to submit photographs and technical line drawings of its bars. This enables the LBMA's Physical Committee to satisfy themselves in a preliminary way that the bars meet the LBMA's physical requirements and bear the appropriate marks.

Once these requirements are satisfied we ask the applicant to send 10 of its bars to a nominated LBMA clearing member, accompanied by a weight list measured in troy ounces'. The nominated clearing member, along with two other clearing members, first visually inspects the bars and checks them to the accompanying weight list. The inspection will be aimed at ensuring that the appearance of the bars satisfies the LBMA's requirements. All the relevant stamps should be clear and on thetop (larger) surface, there should be no undue irregularities such as surface cavities, layering or excessive

shrinkage or bubbles, the edges should be rounded rather than sharp and the bars should be convenient to handle and stack.

When this stage is passed, the bars are divided between two independent Referees appointed by the LBMA. The Referees will first assay samples from the bars and they will then melt and assay the whole bar in order to ensure consistency.

Once it is established that the independently verified assays of the bars agree with the stated finenesses, the application can move to the final stage. Each Referee prepares twelve samples about the size of a shirt button of gold and/or silver. Each sample has an agreed assay within the range of 9950 to 9999 for gold and 9990 to 9999 for silver. These samples are then sent to the applicant. He is required to assay them and report his results in a specified form to the LBMA Executive to pass back to the Referees for checking.

 $3.\,A$ troy ounce is the traditional unit of weight used for precious metals and is attributed to a weight used at the annual fair at Troyes in France during medieval times. One troy ounce is equivalent to 1.0971428 ounces avoirdupois or 31.1034807 grammes.

Specifications for a Good Delivery silver bar4

The unit of dealing is a bar conforming to the following specifications:

(a) Weight: minimum silver content: 500 fine ounces (about 15.6 kilograms) maximum silver content: 1250 fine ounces (about 38.9 kilograms)

The gross weight of a bar should be expressed in ounces troy in multiples of 0.10 rounded down to the nearest 0.10 of a troy ounce and complying with the specified LBMA weighing procedures.

(b) Fineness: the minimum acceptable fineness is 999 parts per 1000 fine silver. Serial number

(c) Marks:

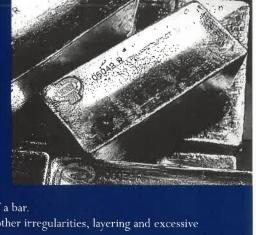
Assay Stamp of Acceptable Refiner

Weight in ounces troy or kilograms

Marks should be stamped on the larger of the two main surfaces of a bar.

(d) Appearance: bars should be of good appearance, free from surface cavities and other irregularities, layering and excessive shrinkage. They must be easy to handle and convenient to stack.

4. Some of the specifications of a Good Delivery silver bar are currently under review.



page 12

It is at this stage that failure is most likely, since we ask refineries which are often geared largely to producing metal of 9999 fineness to analyse samples of lower quality fineness. But it is important that an applicant can demonstrate its capability to assay across the permitted range for Good Delivery bars.

Once the results of this test are to hand and are submitted by the clearing member to the Physical Committee, the Physical Committee is in a position to recommend acceptance to the Management Committee which under normal circumstances duly endorses the Physical Committee's recommendation. Only then, after this lengthy procedure, is the Association able to welcome a new refinery to the Good Delivery list.

Refiners generally remain on the Good Delivery list unless or until, for whatever reason, they cease producing large bars. In recent years therefore the LBMA has introduced a monitoring system under which we send out a periodic questionnaire to refiners to ensure that they continue to meet the LBMA's criteria for production levels and financial soundness. And we require refiners on the list to inform the LBMA Executive of any subsequent changes in ownership, name or location of a refinery, and of changes to brand marks or size and shape of bars. Such information is then disseminated to the market to facilitate the recognition and handling of bars.

It is this set of detailed requirements and rigorous testing procedure together with our follow-up monitoring which seeks to ensure that the London Good Delivery list remains the acceptable global benchmark for the professional gold and silver markets.



Chris Elston was appointed as the first Chief Executive of the London Bullion Market Association in June 1995. Before that he had spent a 35-year career at the Bank of England.

Educated at Cambridge (BA Classics) and Yale (MA Economics) Universities he joined the Bank of England in 1960. He was seconded for two years (1969-71) to the Bank for International Settlements in Basle. From 1979 to 1983 he was on secondment as Financial Counsellor at the British Embassy in Tokyo. From 1983 to 1995 he was Senior Adviser in the Bank's International Division covering Asia and Australia.

As Chief Executive of the LBMA, he is responsible for servicing the various Committees and executing their policy decisions.

What does acceptance to the Good Delivery List actually indicate?

It is similar to passing a driving test: at the time of acceptance, the applicant has attained the required level of proficiency. The LBMA couldn't possibly test each bar produced by every refiner on the list year in and year out. However, as the bars continue to enter the market on an on-going basis, they become self-tested over time.

Why does the LBMA require line drawings along with photographs of the bars? To aid recognition in the market. They demonstrate technical proficiency — you must replicate the bar's dimensions very accurately. The specifications of the drawing become the dimensions for the moulds.

Why is the physical appearance of the bars important?
Bars shouldn't show cavities, excessive shrinkage or layering, which could result from improper cooling methods.
Cracks or crevices can attract dust and dirt, which would affect the weight.

Why shouldn't the weight be stamped on a bar?
First, the bars may have been weighed on scales that were sufficiently accurate for use in the country of origin, but may

not meet London's standards.
Re-weighing the bars to
London standards might result
in a different weight result,
which would in turn necessitate
changing the weight stamps.
The second reason is that since
bars often have a long life, they
are passed from depository to
depository. In the handling
process, the bars may become
slightly nicked or scuffed,
which again could affect their
weight.

What is the most difficult part of the process to pass? While an applicant can fail at any stage from the initial application onwards, the most difficult point is the assay testing of the sample buttons.

Why is it necessary for a refiner to test samples from the LBMA if the bars they produce pass the assay test? Once a refinery has achieved Good Delivery status, it will be

able to solicit business from many new clients outside its own country. These clients may want their gold refined to any assay between 995 and 9999, and it is vital that the refinery be able to produce each assay accurately.

Also, whereas a dishonest refinery could recast bars that had been made elsewhere and submit them, they would find it difficult to cheat on the assay test-at least, without collusion.

If the application is not successful, can a refinery reapply?
Definitely. The LBMA tries to work with all applicants and will allow them to either repeat the process, or target any specific problems by suggesting appropriate training.

Quick Study...

A costless "live-in" ratio collar

By Jason Thiel, Director, European Derivatives, Bankers Trust Company

Low Prices Encourage Enhanced Hedging Products

The price of gold has fallen some \$100 (26%) over the last 2 years. With the substantial risk of sustained Central Bank sales overhanging the market, producers have continued to search for more structured hedging products that enhance their effective forward sale prices.

The market has seen a whole range of products offered within this low price environment, and the study below outlines a popular alternative hedging structure.

COSTLESS "LIVE-IN" RATIO COLLAR

This trade is essentially a traditional Ratio Collar, but with the added feature that the call options will only appear if the spot price trades at or above a pre-determined trigger level which is set above the call strike.

STRUCTURE

- The producer buys a put option with a strike above the prevailing market forward.
- b) The producer sells multiple call options (2:1 is a favoured ratio but any multiple can be structured) struck at a higher price than the put. These calls however will only become "live" if the spot price trades at a pre-determined trigger level at any time during the life of the trade. This trigger level is generally set well above the call strike level.

PRODUCER BENEFITS

- a) Obtains downside price protection at a level above the prevailing market forward for zero premium.
- b) As gold prices move higher the producer participates up through the call strike, up to the trigger level.

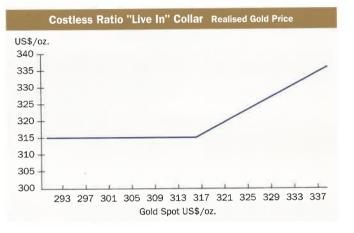
EXAMPLE PRICING LEVELS

SPOT:	\$296.00
FORWARD	\$311.50
MATURITY	2 years
PUT K	\$315.00
PUT VOLUME	50,000 ozs
CALL K	\$332.0
CALLVOLUME	100,000 ozs
TRIGGER LEVEL	\$352.00

PAY OFF DIAGRAMS:

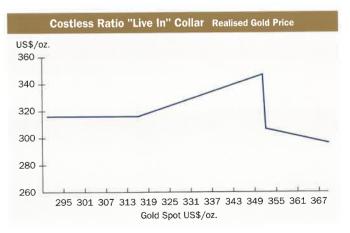
TRIGGER LEVEL NOT REACHED

If the trigger level is never reached through the life of the structure, the producer is left with a put option on 50,000 ozs at \$315 purchased for zero upfront premium.



TRIGGER LEVEL REACHED

If the trigger level is reached, the producer is left with a call option on 100,000 ozs at \$332 and a put option on 50,000 ozs at \$315.



Starring Silver

by Susanne M. Capano

An average day.
The alarm clock wakes
you, and you switch on
the light. You take a
shower, heat water for
coffee. You drive to work,
take the lift to your office,
switch on your computer.
Just a typical workday,
but it wouldn't be possible
without silver.

You use silver every time you turn on a light or run water out of a tap. Silver alloys help your tray of ice cubes freeze and your towels warm on a rack. A coating of silver turns a piece of glass into a mirror. At the flick of a switch, it helps ice melt from the rear windscreen in your car. When you travel, it is present in nearly any form of transport you choose.

Silver is the best conductor of electricity and best reflector of light, and is second only to gold in workability. Its antiseptic properties have been known since ancient times, when a silver lining was used

to coat containers to keep drinking water potable. It alloys well with other metals, giving it hundreds of uses in brazes and solders.

At Thessco's twelve-acre site in Sheffield, if it has to do with silver, they probably either

manufacture it or supply someone who does. Their products range from the decorative to the practical. They manufacture bars approved for London Good Delivery, coin blanks,



hollowware and flatware, as well as a gamut of products used by the chemical and electrical industries: anodes, sheet, strip, wire, tape, tubing, casting, powder, crystal, and brazing alloys.

Thessco's involvement with precious metals as The Sheffield Smelting Company dates back over 200 years. Today its refining, melting and raw materials production form part of the Solpro Group, which was formed in 1967 by Mr Paul Tear.

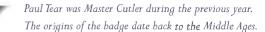
From Croesus to the Bundesbank

In the museum at the Bank of England is a tiny disc made of a natural gold/silver alloy known as electrum. One of the first coins ever minted, it was produced in Lydia, a part of Asia Minor, during the 7th century BC. King Croesus, who ruled Lydia from 564 to 560 BC, established the first government mint.

Though today's methods allow for a bit more precision and speed, the basic process hasn't changed all that much. Back then, a disc was cast, placed on an anvil and covered with a die, then hit with a hammer to imprint an image onto the disc. Every year, Thessco stamps out many millions of thin discs whose destinations are mints around the world. Blanks of 999 silver can be used in circulation, but are a bit soft. Most coins used in circulation — such as a 10 DMK piece — have copper added for durability.

Planes, Trains and Automobiles

The word brazing dates back to the Middle Ages, when the process for joining together plates of armour using brass powder or wire became known as 'brassing' and later brazing. "The Master from the Worshipful Company of Armourers and Braziers showed us an



world are gliding on blades attached with bits of silver brazing

alloy – and it is the strength of those bits that allows them

to jump six feet in the air and land on an edge," Paul

armoured glove from the 1600s with articulated fingers, all brazed together," said Paul Tear. "It was an amazingly sophisticated piece of work."

Unlike welding, the advantages of soldering and brazing become clear when joining two different metals with two dissimilar melting points.

Otherwise, when the two metals are heated, that with the lower melting point would dissolve into a molten pool of spreading liquid while the second metal remained solid. But a third metal – the solder or braze –melts at a much lower temperature and sticks onto both parent metals to form a bond. Because silver alloys easily with so many other metals, it is an ideal choice to create brazes and solders with a wide range of melting points and applications.

Thessco regularly manufactures 250 different alloys, of which about 100 are brazing alloys with countless applications. They are invaluable to the home appliance industry, to hydraulics and pneumatics, and heating and ventilating. Their strength enables them to withstand the contraction and expansion caused by shifting temperatures. They can fill any sized space to create a solid joint.

"Silver brazing alloys are available for both thick and thin joints," explains James Tear, second generation to the founder of the Solpro Group. "Thin brazes flow like water into the tiniest cracks and crevices to form a tight seal. But imagine trying to fill a wide gap with water — it would spill out all over the floor. So when joining together a wide gap, you use a stodgy braze, one with the consistency of treacle or molasses, to fill the gap." The result is a smooth, attractive and above all strong joint.

In one application or another, silver alloys are used in virtually every form of transport — bicycles, trains, buses, trucks, automobiles, bicycles and ships. And ice skates. "The skaters of the

Tear points out.

What Silver Hath Wrought

When Samuel Morse typed out "What God hath wrought" on the first telegraph in 1832, it was silver that formed the contacts. As an unparalleled conductor of electricity, its applications naturally grew along with the industry.

Thessco manufactures strips, tapes and wires for electrical products such as contacts and fuses. Their wires start out as 4 inch thick billets, but can be drawn down to about 30 microns – roughly one third the thickness of a hair. In one unusual application, this fine wire is knitted into a gauze, which is then used in specialist seawater batteries for torpedoes and the like.

The silver used in a fuse must be very pure, in order to ensure that the fuse dependably carries current — and equally dependably blows as soon as it is overloaded. Because silver conducts electricity so well, only tiny bits are needed. The fine wire consistently carries the correct amount of current without breaking — but must burn through as soon as the current is overloaded.

When making a switch, a small silver contact is brazed onto a large copper block. While copper isn't as good a conductor of electricity, it's there for economical reasons. "You try to achieve a balance between size and expense when designing a switch," says James Tear. "Expense is an overriding factor. You could use only silver, but then people would want to steal switches for their silver content."

Electrical contacts are used for switching on anything from a bedside light to a power station. Thessco's customers produce





various grades of switches. The largest might switch on the power to an entire hospital. The next size down might isolate one floor. The next, one wing. The smallest would switch on a monitor for a single patient.

Chemical Catalysts

"What does a bar of silver have in common with a cow?" asks James Tear. "Silver is a necessary catalyst in the production of formaldehyde, which is used not only for preserving laboratory specimens, but by the artist Damien Hirst to pickle animals for use in displays."There seems no limit to the artistic possibilities

Thessco manufactures a range of products under carefully controlled conditions for more conventional uses in the chemical industry. High purity anodes are produced for silver plating, and flake and crystal for the production of catalysts.

In the electrical industry, what isn't in a given silver product can be as important as what is. Savs Paul Tear: "The standard 999 bullion bar is good enough for a trading tool, but as far as industry is concerned, it contains far too many unwanted elements. We use our refinery as a laundry to clean up the impurities. Our chemistry laboratories are the most up-to-date in the world, and can determine impurities down to 1 or 2 parts per billion - a necessity for products used by the photographic industry."

The art of silver

Of all the uses of silver, ornamental silver has perhaps the longest history: silver accessories have been found in tombs dating from

4000 BC. It is second only to gold in terms of workability, and is more practical: many pieces would become prohibitively expensive if fashioned out of gold.

A Solpro Group division manufactures cutlery (any item with a cutting edge), flatware (knives, forks and spoons) and hollowware (basically any large piece, from a candelabra to a bowl, or a teapot to a tray). Thanks to the use of computers, the time needed to manufacture each piece has been greatly reduced.

Some patterns used by Solpro date to the earliest designs ever produced, while others can be brand new, individually created for a special customer. From a drawing of a single piece, they can produce the tools and dies needed to manufacture a full set of flatware. Then each piece will be cut, stamped, polished and, if desired, enamelled and gold-plated.

While Thessco can create an eye-catching piece of art such as a 3-foot tall incense burner, most of their silver operates efficiently in small amounts behind the scenes of everyday life, "Traders probably don't realise that the metal that they think of as an investment, a hedge, has very serious manufacturing uses," says Paul Tear. "When I go down to visit my broker in the City, they all stand and stare at me and say 'There's the guy who actually uses it'. When they get new traders, they ask if they can send them up here to Sheffield, because they've generally never seen the stuff." And you generally never see the stuff either. Except every time you look in a mirror...turn on a light...replace a fuse...set an alarm

Asian Gold: Decline in Demand

By Helen McCaffrey Treasury Analyst, N M Rothschild & Sons Ltd

June 1997 – investors changed their mind.

They suddenly began to withdraw funds from Thailand, which had become dependant on capital inflows to fund its trade and current account deficits. The resulting pressure on the currency forced the government to devalue the baht on the 2nd of July. That devaluation became the spark that touched off a severe crisis across a region which had experienced rapid economic growth for an extended period. Asian economies had safely weathered storms such as the 1991/92 recession across Europe and the US as well as the Mexican crisis of 1994. Initially, the Thai difficulties did not cause undue alarm. It was only months later that the world sat up and took notice, as the meltdown continued to grow deeper and more widespread.

The results have been devastating. Local currencies have collapsed, stock markets have crashed, asset prices/values have plummeted and credit has been squeezed. A year later, the end is not in sight.



North Asia

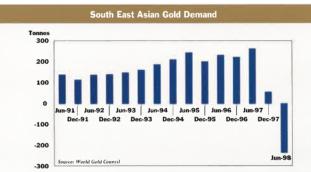
South East Asia and South Korea

Among the many casualties has been the region's appetite for gold, which, after recording its strongest year ever in 1997, contracted so sharply at the beginning of 1998 that some countries turned from being key regions of consumption into net suppliers. It was not difficult to see why. Plummeting currencies in several market centres resulted in an explosion in local gold prices, which not only dampened demand, but also caused a rush to sell back to the market.

South East Asia becomes a net supplier

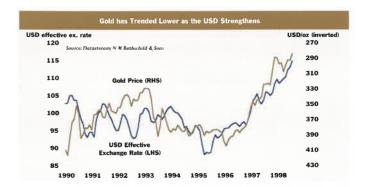
Over the first half of this year, the unprecedented selling resulted in the South East

Asian region becoming a net supplier to the rest of the world for the first time in recent history and perhaps for the first time ever. Such sales of gold back to the market, principally in the form of



high carat jewellery, have originated mainly from Indonesia, South Korea, Thailand, and Malaysia. Government schemes to collect gold from the public in order to raise foreign currency reserves were widely publicised and, in the case of South Korea, hugely successful. Patriotism was not the only force at work, however, as profit motivated selling has also added to the supply.

The exact amounts are difficult to gauge. According to the World Gold Council (WGC)1, South Korea, Indonesia and Thailand collectively sold back 353.5 tonnes over the first six months of this year, with net dis-hoarding (taking into account new demand) from





scrap flows over the first half out of South Korea and Indonesia alone totalled a massive 437 tonnes.

For the South East Asian region as a whole, net dis-hoarding reached 235.3 tonnes. The majority of the dis-hoarding reflected the South Korean government's campaign to collect privately held gold, which netted 243 tonnes, 228 tonnes of which were exported. The Thai government ran a similar scheme starting in early January, but as the Thai economy was hardest hit in late 1997, it came too late to spark interest and had to be abandoned.

Although organised government collection schemes finished long ago in March, local gold prices have stayed relatively high, and dishoarding has persisted in the form of continued profit-motivated selling. Anecdotal evidence suggests that panic related selling out of Indonesia, which has had the largest currency depreciation to absorb, has continued. Traders estimate that between 140 and 170 tonnes have been sold back into the market out of Indonesia so far this year. This compares with the conservative WGC estimate that 83 tonnes was dis-hoarded during the first half of the year.

Stark contrast to last year

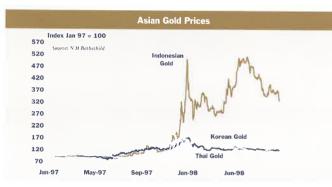
A combination of lower USD prices and good income growth contributed to a surge in new demand last year, when demand in the South East Asian region surged over the first half by 13% to a record 263.2 tonnes. Even in the absence of the economic crisis, it would have been difficult for the first half of 1998 to show substantial new demand growth over those extraordinary levels.

South Korea has swung from consuming 62 tonnes over the first half of 1997 to supplying 213.5 tonnes = a turnaround of nearly 280 tonnes. Indonesia meanwhile absorbed 79 tonnes over the first half of last year, versus dis-hoarding between 140 and 170 tonnes this year - a turnaround of at least 219 tonnes.

1 World Gold Council, Gold Demand Trends, Quarterly publication

Japan said to be oversupplied

As the Yen continues to slide, so does Japanese demand for the yellow metal. According to the Japanese Finance Ministry, gold imports in the first six months of this year plummeted 53.2% to 33.16 tonnes from the same period last year, yet the market is still said to be oversupplied. Since 1981, Japanese imports of gold have been consistently above 100 tonnes. However, 1998 looks set to be the first year imports will fall below that level, as Japanese demand over the first half totalled 45 tonnes, down 33% from the same period last year.



North Asia

After holding up relatively well over the first quarter, North Asian gold demand fell 23% during the second quarter year-on-year, mainly due to a sharp drop in demand from Taiwan and Hong Kong. Deteriorating confidence and contracting demand elsewhere in the region finally took their toll in Hong Kong, as first quarter economic growth fell for the first time since 1985. The jewellery sector was severely hit.

Although Chinese growth has slowed recently, the country has so far avoided most of the problems facing neighbouring countries. The Yuan was devalued by 35% in 1994 and thus has not been as vulnerable to the collapse as its neighboring currencies. Gold demand therefore has remained relatively stable, falling only 7% to 101.6 tonnes according to WGC figures. Recent evidence suggests that a large amount of gold has gone into China as a devaluation hedge, i.e. purchasing gold in anticipation of a fall in the Yuan. In what was seen as a move to become more competitive in the domestic market, the People's Bank of China lowered its official purchase price on 18th August by 2.92% to 78.15 yuan/g (equivalent to\$293/oz).

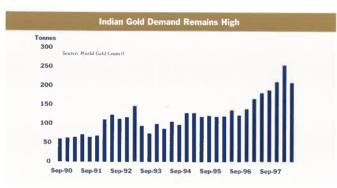
The risks are low but increasing that the Chinese authorities will devalue the Yuan, forcing a new round of competitive devaluations across the region. Nervousness over a possible devaluation has recently caused China to tighten controls over outflows of foreign currency. If China does devalue, then we will see a lot of selling of gold back into Hong Kong and far less Chinese and East Asian demand.

Premiums slump while refiners work overtime

The majority of the dis-hoarded gold has been exported to refineries in Europe and Australia, with some finding its way into Hong Kong. Reflecting the slump in physical gold trade in the region, prices for kilo bars in the Tokyo, Singapore and Hong Kong markets collapsed. While historically kilo bars in this region have commanded premiums of around 60 - 80 cents, for most of the past six months, they have traded at flat or even at a discount to the world USD price.

Gold price comparatively stable

It is indeed remarkable that the gold price has held relatively stable whilst absorbing all this material. Who is doing all the buying - or rather, who else has stopped selling? According to GFMS, 1997 saw a massive increase in liquidity with a record combined contribution to supply from forward sales, option hedging and implied disinvestment - a total of 773 tonnes. In addition, net official sector sales totaled 406 tonnes. By contrast, at a recent seminar, GFMS reported only modest increases in producer hedging and net official sector sales during the first half of 1998. With less gold to absorb from the official sector and producers, more room was left for the dis-hoarded Asian gold.



India stands alone

The only bright spot left in the region is India, where demand remains robust and the conclusion of the eleventh successive good monsoon provides reason for optimism. Deregulatory

measures and liberalisation also continue to encourage demand. Over the first quarter, buying for the wedding season pushed demand to a record first quarter of 252.1 tonnes. Despite a fall in the rupee and a rise in customs duty, low USD prices have helped keep local prices around their levels of a year ago heading into the festival season. We therefore expect Indian demand to remain relatively healthy this year.

Outlook for demand

The question preoccupying the gold market is whether the worst of the dis-hoarding is now behind us and demand in the region can begin to recover. Over the short term, the outlook for overall Asian gold demand over the second half of 1998 does not look positive. Many of the

ramifications of the turmoil in Asia will take time to work through the system and are only now beginning to be felt. Unemployment will continue to rise as business failures intensify over the remainder of the year. As long as the economic and political situation remains uncertain, gold demand in the region will suffer.

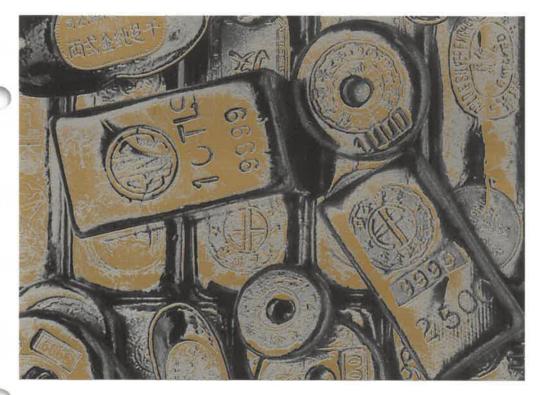
Will demand in India suffer as well? While it is possible that Indian demand will suffer from the effects of a poor harvest next year, another looming concern is the potential for an economic slowdown to impact negatively on incomes. In addition, the threat of currency devaluation also

applies to India. The outlook for gold consumption in India remains a key determinant of the outlook for the gold market as a whole.

Longer-term, however, prospects remain auspicious. Gold has proved a good investment, with the dis-hoarding only reinforcing the role of gold as a store of value. Offtake will rebound once these economies recover. In addition, a slowing US economy should see the USD weaken over the over the next couple of years. This will result in a fall in local gold prices, helping to stimulate demand.



Helen McCaffrey joined the
Economics Division of NM
Rothschild & Sons (Australia) in
1994. She transferred to London
in 1996 to establish a research
unit for the bank based in the
Treasury Division with particular
focus on precious metals.
Helen has an economics degree and
an arts degree (political science
major) from the Australian
National University. She is a
member of the I.BMA's Public
Affairs Committee.



SIFO A Benchmark for Silver Forwards

Gold market participants have had GOFO (for gold swap rates) and more recently, LGLR (for indicative lease mid-rates) to provide benchmarks in the forward market.

Now for the first time, the silver forward market will have a composite benchmark level.

The twelve Market Making members of the London Bullion Market Association plan to introduce a Silver Forward (SIFO) page on Reuters, which will become available at the end of November. Due to periods of extreme volatility in silver forwards, the rates shown will initially be indicative for a trial period, but the contributors plan to review the process with a view towards making the rates live in the near future.

In a format similar to GOFO, the levels will be expressed in US\$ interest rates at which the contributors are prepared to lend silver and take dollars on a swap basis. The periods to be covered are one, two, three, six and twelve months. Individual contributions will be listed and will feed through to a 'lead page'. At 11:00 am each day, a mean will be calculated for each period by taking the average of all the contributors' quotes after discarding the highest and lowest. These rates will be published on the lead page.

The new page will provide a benchmark useful to a whole range of silver market participants for marking outstanding positions to market, and will provide a degree of transparency not before seen in silver forwards.

World Gold Council - 12th Annual Meeting

"...Most mining output is virtually anonymous as far as the end user is concerned. [Whereas] iron ore means a motor vehicle or a building to the end user, a high carat gold product means primarily 'gold' to the end user or holder, not simply an item of adornment or a keepsake.

This 'matching' characteristic is shared only by gem quality diamonds and to a lesser extent by the other precious metals (because of their larger industrial usage). But all primary producers in these sectors recognise this direct relationship with the end user, and in aggregate, invest pretty seriously in marketing.

- ...The facts are irrefutable. Most gold stocks are held by private individuals some 87,000 tonnes according to GFMS. Individual buyers accounted for 91% of total demand last year. Of readily mobilisable holdings, 73% are in private hands. ... Whilst actual or potential central bank sales unjustifiably dominate the headlines, actual or potential sales from consumer held stocks are at least as important. ... My appeal to you then is not to lose sight of the importance of the individual buyer and holder, as we worry about central banks, the elusive speculator and the dark princes of the media and analyst community."
- -- from Introduction to the Annual Review of Activities Elliot M Hood Chief Executive Officer, World Gold Council

Clips and quotes since the previous edition of the Alchemist

Gold Quotes

ECB seen as active market participant, Financial Times, 23 June 1998

Gold little changed by ECB news, Financial Times, 7 July 1998

They offer the gifts of everlasting life and the hope of turning base metal into gold. Yet alchemists have, through history, been deeply reviled.

Fathers of science-or phoneys?, Financial Times, 18-19 July 1998

Drive on costs lifts AngloGold, Financial Times, 21 July 1998

Saudi Arabia to lift production, Financial Times, 21 July 1998

Peru's gold mines set to grow output by 34%, Financial Times, 29 July 1998

Ashanti overcomes weaker gold price, Financial Times, 31 July 1998

Bolivian Gold: Another Bre-X or a Big Find?, Wall Street Journal, 3 August 1998

SA gold mines bring down costs, Financial Times, 5 August 1998

Analysts are skeptical if the upturn represents renewed appreciation for bullion as a safe-haven investment.

Gold Rises After U.S. Stock Fall, But Outlook Remains Uncertain, Wall Street Journal, 6 August 1998

Bonhomie subdued at Diggers and Dealers gold forum, Financial Times, 11 August 1998

Gold price forecast at \$200-\$300 over five years, Financial TImes, 12 August 1998

Buy-out at GFMS, Financial Times, 13 August 1998

So far there's been no sign of a flight to gold...

Commodity Prices Hurt by Fear of Global Slowing, Currency Ills, Wall Street Journal, 14-15 August 1998

Russia seen as unlikely to sell from reserves, Financial Times, 20 August 1998

Gold price goes into 'free fall', Financial Times, 29-30 August 1998

Swiss divided over sale of gold reserves, Financial Times, 9 September 1998

'Clinton effect' helps lift gold price, Financial Times, 10 September

Gold price up by \$4 an ounce, Independent, 12 September 1998

Gold prices affected by US crisis, Financial Times, 12-13 September 1998

Central banks predicted to sell more gold, Financial Times, 14 September 1998 India: Special Report - Why Dehli has power over gold, Daily Telegraph, 15 September 1998

Modern anti-bullion types are missing the point. Gold, being priced in...paper currencies, reflects them. If prices are low, so will be the gold price. If inflation takes off, the gold price will do likewise, thus 'indexing' your original investment.

Avoid the golden fleece, The Guardian, 19 September 1998

Gold lifted by short covering, Financial Times, 22 September 1998

Gold jumps after Greenspan's hint on rates, Financial Times, 25 September 1998

Gold and Silver Seesaw as Market Reacts to Stocks, Fund Rescue, Wall Street Journal, 28 September 1998

In the land of gold bugs and gold-stock holders, 300 is a very nice number.

Global Market Mayhem Leads Investors to Strike Gold Again, Wall Street Journal, 2-3 October 1998

Investors in gold have seen more false dawns than most.

Shares slump puts new shine on gold, Sunday Telegraph, 4 October 1998

Their knee-jerk reaction ignores the fact that we seem to be looking at an outbreak of deflation, not inflation.

Wrong About Gold: Yellow-metal fans misread today's turmoil, Barron's, 5 October 1998

Summer of Discontent: How bad was the quarter? So bad that gold funds actually looked good, *Barron's*, 5 October, 1998

You can never ignore the appeal of the Golden Calf.

Gold - the standard is back, The European, 5 October 1998

Scientists sitting on a gold mine with plants that absorb precious metals, Scotsman, 8 October 1998

It was not nostalgia that prompted Federal Reserve Chairman Alan Greenspan to mention in testimony before Congress last month that the systemic risks posed when currency mismatches lead to insolvency do not occur under a gold standard.

Time for a New Bretton Woods, Wall Street Journal, 15 October 1998

Silver Spot

Many [companies] have shelved plans to explore for gold while prices remain weak and are looking for silver and other associated metals instead.

Mexican gold cloud has silver lining, Financial Times, 9 July 1998

Buffett's silver tarnished as price slides, Financial Times, 14 August 1998

Geologist taps a rich silver stream, Financial Times, 28 August 1998

British lion is replaced by a number in the age of the Euro hallmark, Independent on Sunday, 20 September 1998

GET PROMOTED NEXT YEAR

Advertise in the Alchemist

The Alchemist is now accepting business-to-business advertising.

Starting with the first issue of the New Year, full colour, three colour and black and white ad space will be available at competitive rates. Schedule discounts and discounts for LBMA members are available.

For further details, contact Susanne M Capano, Editor.

LBMA News

By Chris Elston, Chief Executive, LBMA

Membership

There have been a number of changes to membership details since the last issue:

- •The Market-Making Membership formerly held by Union Bank of Switzerland was assumed with effect from 29 June 1998 by UBS AG following the merger between Union Bank of Switzerland and Swiss Bank Corporation. At the same time Swiss Bank Corporation relinquished its Ordinary Membership.
- Tradition Financial Services Ltd became an Ordinary member on 1 August 1998. Their address and telephone no. are:

Fourth Floor East India House 109-117 Middlesex Street London E1 7JF Tel. (0171) 375 1188.

• Kanematsu (UK) Ltd resigned as an Ordinary Member w.e.f. 31 March 1998.

The address and telephone no. of Gerald Limited is now:

30-34 Coleman Street London EC2R 5AN Tel (0171) 726 8388.

- Name changes:
- Fleet National Bank is now known as Fleet Bank N.A. UK Representative Office.
- Itochu (UK) PLC is now known as Itochu Europe PLC.
- Prudential-Bache Futures Limited is now known as Prudential-Bache International Limited.

Good Delivery List

The following recent changes have been made:

Transfers to Former List

Gold - Brazil: Goldmine Fundidora Ltda, w.e.f. 13 July 1998. Japan: Nippon Mining & Metals Co., Ltd, Hitachi Refinery, w.e.f. 1 October 1998.

Silver - Canada: Royal Canadian Mint, w.e.f. 29 July 1998.

Gold and Silver - United Kingdom: Engelhard-CLAL UK Limited, w.e.f. 1 October 1998. (Engelhard-CLAL remain as one of the LBMA's independent Referees for testing the bars of applicants to the Good Delivery list).

Name change

Silver - Australia: The Broken Hill Association Smelters Pty Ltd is now to be listed as Pasminco Metals Pty Ltd.

Committees

Management Committee

LBMA Constitution: the Management Committee's main pre-occupation recently has been with the LBMA's Constitution. As foreshadowed by Chairman Peter Fava at the AGM in June, changes in market structure and the regulatory environment call for a need to consider our own structure after 10 years of the current arrangements. To this end the Management Committee held a whole-day meeting on 28 September to try to decide the direction in which we should be moving. Their aim is to draw up proposals to put before an Extraordinary General Meeting of the Association in the new year. In the light of that meeting a revised Constitution will be drawn up and put before the members at the Annual General Meeting in May or June.

EU VAT Harmonisation: as described in the article on p. 26 the EU regime for VAT on investment gold is expected to be harmonised on a tax-exempt basis from 1 January 2000. Members of the Management and Physical Committees have participated in meetings of HM Customs and Excise Gold Liaison Group which has done much to achieve the desired result in Brussels. Discussions continue on implementation of the new Directive.

SIFO: see note on p. 21

Public Affairs Committee

The PAC have continued their oversight of the content and production of the Alchemist and Market Statistics. A decision has been taken to accept advertisements in the Alchemist and a rates schedule is available on request from the Editor, Susanne Capano, in the Executive.

An Autumn Seminar has been arranged for Thursday 19 November at the Ironmongers' Hall. A broad sweep of the world – Asia and Europe – will be covered. See box on page 5.

Work continues on setting up the LBMA's web-site.

The LBMA Brochure will shortly be due for a reprint and the opportunity will be taken to up-date and revise.

Physical Committee

Good Delivery applications: some 13 refiners are currently going through the application process at various stages, including the five now independent Russian refineries. To keep up with the work, the Physical Committee is now meeting twice a month.

Y2K: the Physical Committee are as keen as everyone else to ensure that the Millennium bug causes no bullion market disruption and in particular that the settlement system works smoothly over the

Millennium. This means that we have an interest in ensuring that not just our members are taking all necessary steps to be 2000 – compliant, but all clients, counterparties and others connected with the bullion market. Please, therefore, complete the enclosed questionnaire and fax it to the Executive.

Electronic Clearing: getting closer. Successful user-trials have been undertaken and the small bugs discovered will be removed for a second round of testing in November.

Silver Delivery Standards: specification and weighing procedures are under review.

Finance Committee

Nick Frappell of Sumitomo Corporation (UK) PLC has joined the Finance Committee in place of Paul Middlemas, formerly of Engelhard Metals Limited. The Chairman, Colin Griffith (Standard Bank London Limited), paid tribute to Paul for his efforts on our behalf over a substantial period.

Golf

The annual match v the LME took place on 14 October at Kingswood Golf Club in Surrey. Sadly the LBMA suffered the same fate as last year and one not dissimilar to the gold price over recent years — they went down. Starting with bullish enthusiasm a healthy position was in place at the half-way stage but some light profit-taking was seen in the second session which led to activation of stops resulting in a net loss on the day. In other words, a healthy 3-1 lead at lunch, which was being well maintained after nine holes in the afternoon, was ultimately squandered to a rampant opposition on the last hole to give the LME a $4^{1}/2 = 3^{1}/2$ win. Next year the LBMA (still bullish?) will try again at Coombe Hill on 4 October.

The LBMA's own Annual Golf Day next year will be on 27 May at Brickendon Grange Golf and Country Club, near Hertford.

DIARY OF EVENTS

3 November 1998

CPM Group's Gold Summary 1998, New York Mercantile Exchange, NY

11 November 1998

Seventh City of London Central Banking Conference Skinner's Hall, London

10-13 November 1998

Structured Trade & Commodity Finance, Horsley Towers, UK Euromoney Masterclass Tel: +44 171 779 8753 Fax: +44 171 779 8693 Email:

hmccann@euromoneytraining.com

19 November 1998

LBMA Autumn Seminar, Ironmongers Hall, Barbican (see page 5)

29-30 November 1998

Western Investment in Mining Conference,San Francisco, International Investment Conferences

Tel: +1 305 669 1963 Fax: +1 305 669 7350 Email liconf@iconf.com

30 November &

1 December 1998

Structured Commodity & Trade
Finance, Fourth Annual Global Forum
Steigenberger Hamburg, Hamburg,
IBC Conferences.
Tel: +44 171 453 5498
Fax: +44 171 636 6858/453 5500

30 November - 4 December

Email: lizpowieck@ibcuk.co.uk

Northwest Mining Association 1998 Conference, Spokane, Washington Tel: +1 509 624 1158 Fax: +1 509 624 1241 Email: nwma@hwma.org

17 December 1998

LBMA Disco, Farmers' & Fletchers' Hall, Barbican. 6pm Contact Stella Thompson in the Executive

8 January 1999

Gold Fields Mineral Services Ltd Update II to Gold 1998 published

2-4 February 1999

Investing in African Mining, International Investment Conferences, Capetown S.A.

28-30 March 1999

Gold and Silver Institutes 1999 Annual Conference Scotsdale, Arizona

27 May 1999

LBMA Annual Golf Day, Brickendon Grange Golf and Country Club, Herts.

14-15 June 1999

FT World Gold Conference, Inter-Continental Hotel, London

NEW E-MAIL ADDRESSES

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Please note that e-mail addresses for the LBMA Executive have been changed to.

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The Time Has Arrived

Editorial comment by James Dobell, Sumitomo Corporation (UK) Plc and Chairman, Public Affairs Committee

Interesting times. Correction. Very interesting times. The developed world's financial markets look like a house of cards. The emerging markets have behaved like a house of cards. There is almost certainly more bad financial news yet to surface and that must bode well for an asset such as gold.

Surely there remains no good reason to buy gold? There is still a large proportion of production with a healthy margin of profit and producers are keen to hedge. Physical demand is greatest from those countries whose downturn has been the most severe. Inflation, the curse of the seventies and the main engine of gold's rise then, is no longer a threat. The official sector holds 10 years' production at least. The fundamentals look daunting.

However it will only take a fractional change in the way gold is perceived to render all current fundamentals insignificant. The lubricant of the global economy is the US dollar and a loss of confidence in it might start governments looking to reassess the composition of their reserves. It seems unlikely at the moment but what if the US stock market crashed? A stock market collapse might be the catalyst for a new monetary regime. Also no one can possibly predict the effects of the new monetary order in Europe from next year. Certainly commercial banks have a few more "Long Term

Credit Managements" under wraps. Potential danger is lurking everywhere.

The official sector is obviously

a vital function of any gold equation. The threat of Central Bank selling has kept gold under pressure for years. More pertinently the IMF is widely thought to be short of funds due to heavy financial commitments and by selling its gold reserves would generate much needed finance. This selling though is already largely discounted into the gold price. Furthermore, a loss of confidence in the dollar would reduce the likelihood of Central Bank sales as gold became a relatively more important asset. Could it be that official sales are no longer the threat they once were?

Gold as an investment cannot be compared to most interest or income bearing assets although no one could deny that over the last eighteen years it has not been a good investment. In the financial atmosphere the world is currently experiencing gold is, at the very least, a secure asset that is cheaply priced with limited downside. Now the time has arrived for a change in perception.



EU LEVELS PLAYING FIELD

VAT Removed on Investment Gold

By Henry Kozlowski, Johnson Matthey & Douglas Beadle, NM Rothschild & Sons Ltd

The year 2000 will bring at least one tax innovation: investment gold will be no longer be subject to value added tax across any of the 15 member states of the European Union.

That is the objective of the new EU Gold Directive, adopted in Brussels on 12 October 1998. It is proposed that the Directive become effective on 1st January 2000, although there may be slippage of a few months while some States implement the relevant internal legislation.

The LBMA worked closely with HM Customs and Excise over the course of many years to make this legislation a reality, and is indebted to the VAT Policy Directorate for being the driving force behind the new legislation during the UK presidency in the first six months of this year. The LBMA had two objectives:

- first, to establish a level playing field for investment gold across Europe and eliminate the various disadvantages faced by individual member states.
- second, to protect the unique requirements of the London market as the world's main bullion clearing centre whilst recognising that such benefits should not be London's exclusive prerogative. The new legislation achieves both.

Discussions focused on formulating a precise definition of what should constitute investment gold (see box). Consideration was given not only to the treatment of tax on the purchase and sale of investment gold, but also on its production and distribution.

There is a provision allowing the seller in a transaction in investment gold to "opt to tax", a provision particularly important for refiners, manufacturers and bullion traders alike. This will enable the supplier of the investment gold to treat his supply as Standard Rated (taxed at 17.5%) rather than Exempt. Why might a supplier choose to opt to tax? The advantage lies in the treatment of the supplier's costs.

Exempt from tax, then any VAT

incurred in its processing or supply (for example, on office equipment) is not recoverable. Under Standard

Rating, VAT on supply becomes recoverable either in full or in part depending on the supplier's Partial Exemption rate.

When an item is

It is understood that such VAT will be accounted for under the Reverse Charge regime. Under this regime, the buver accounts for the seller's Output tax, thereby reducing the opportunity for VAT fraud as well as avoiding cash flow funding costs.

There are specific provisions for transactions on a regulated bullion market. Following is a brief comparison of

current arrangements in the UK within the Black Box with the new legislation:



Membership of the LBMA brings the member within the scope of the Terminal Markets Order, an arrangement better known as the "Black Box".

• Sales of gold/gold coins between members are Zero Rated.

• Sales of gold both allocated and unallocated (but not gold coins) between a member and a non-member are Zero Rated provided the member retains effective physical control or the gold is exported from the UK by the member on behalf of the non-member.

NEW ARRANGEMENTS

• Sales of investment gold to EU individuals in their private capacity will be Exempt.

 Sales of investment gold between members of the LBMA will be

compulsorily taxable with tax suspension and a waiver of the record keeping requirements.

- Sales of investment gold between an LBMA member and a non-member will be Exempt except where both parties to the transaction are liable to be registered for VAT within the UK, whereupon VAT will be chargable and and subject to the Reverse Charge regime.
- Special arrangements will permit an LBMA member rather than its non UK customer to account for VAT on an investment gold transactions to avoid that overseas customer having to register for

This article is intended to provide a brief overview of the main points of the new tax legislation. We recommend talking to your tax advisor for more



The exemption of VAT on gold will apply to:

 Gold in the form of a bar or wafer of weights accepted by the bullion markets with a fineness of at least 995. Small bars or wafers weighing less than one gram may be excluded.

Non-numismatic coins of a purity greater than 900 minted post-1800 which are or have been legal tender in their country of issue. The premium on the coin must not exceed 80% of the open market value of the gold content. Each year, the EU will draw up a list before 1 July of the coins which meet the criteria.

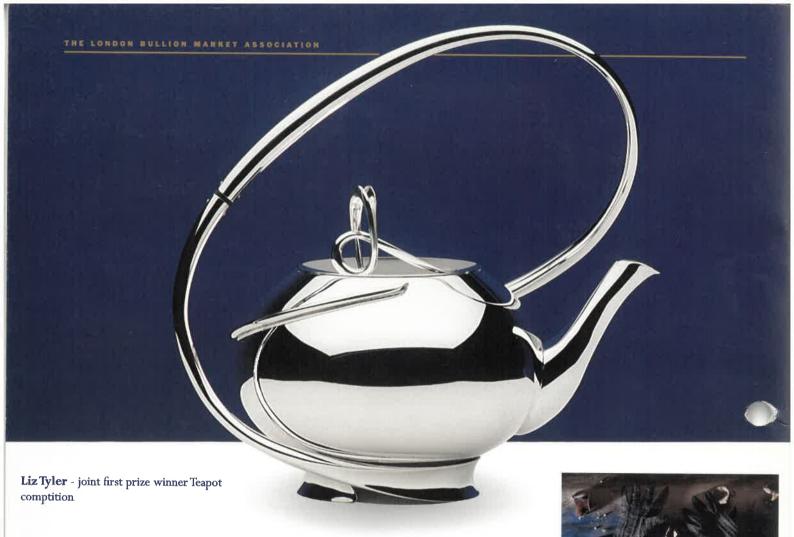
Gold-related securities and forward/futures transactions.

Henry Kozlowski has been VAT Manager for Johnson Matthey since 1989 and has responsibility for compliance and planning of all UK tax matters as well as being involved in international tax discussions for the company. He is a member of the Chartered Institute of Taxation. Prior to working for IM, he worked for HM Customs & Excise for three years.

Douglas Beadle is an Assistant Director of N.M. Rothschild & Sons Limited whom he joined in 1964. He is primarily responsible for treasury legal documentation, but represents the LBMA on VAT working parties. He is also a member of the LBMA Physical



"Somehow I don't miss the old duty-free so much."



 $J_{0h_{DSOn}}$ Matthey

GOLD TRADES \$450!

SILVER REACHES \$15.00!

Have a different opinion? Enter the 1999 Alchemist Annual Survey and win an ounce of gold.

In a Letter to the Editor of April 1998, Tony Dobra praised the courage of the 19 analysts who contributed to our 1998 price forecast survey for gold and silver.

We agree. And in recognition of that courage, a prize will be awarded for the most accurate price forecast for each metal — for silver, basis the average London fixing, and for gold, on the average of the am and pm London fixings. In case of a tie, the winner's name will be drawn at random.

The winner in each category will be awarded a one-ounce gold bar, generously contributed by Johnson Matthey.

It's not too soon to think ahead. The contest for 1999 is open to all participants in the precious metals market. Entrants must provide a high, low and average price for the calendar year for each metal, and in 100 words or less, a rationale backing up your forecast. Multiple entries not accepted. Decisions of the Public Affairs Committee are final.

Selected responses will be published throughout the year.

Susan Cross - Hand crocheted silver wire gloves and earrings. Gold plated silver wire with oxydised silver.



The annual Goldsmith's Fair, held in the heart of the City of London, displays the work of some of Britain's finest jewellers and silversmiths.

The Alchemist is published quarterly by the LBMA. For further information please call Susanne M. Capano, Editor, Chris Elston or Stella Thompson LBMA Executive
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