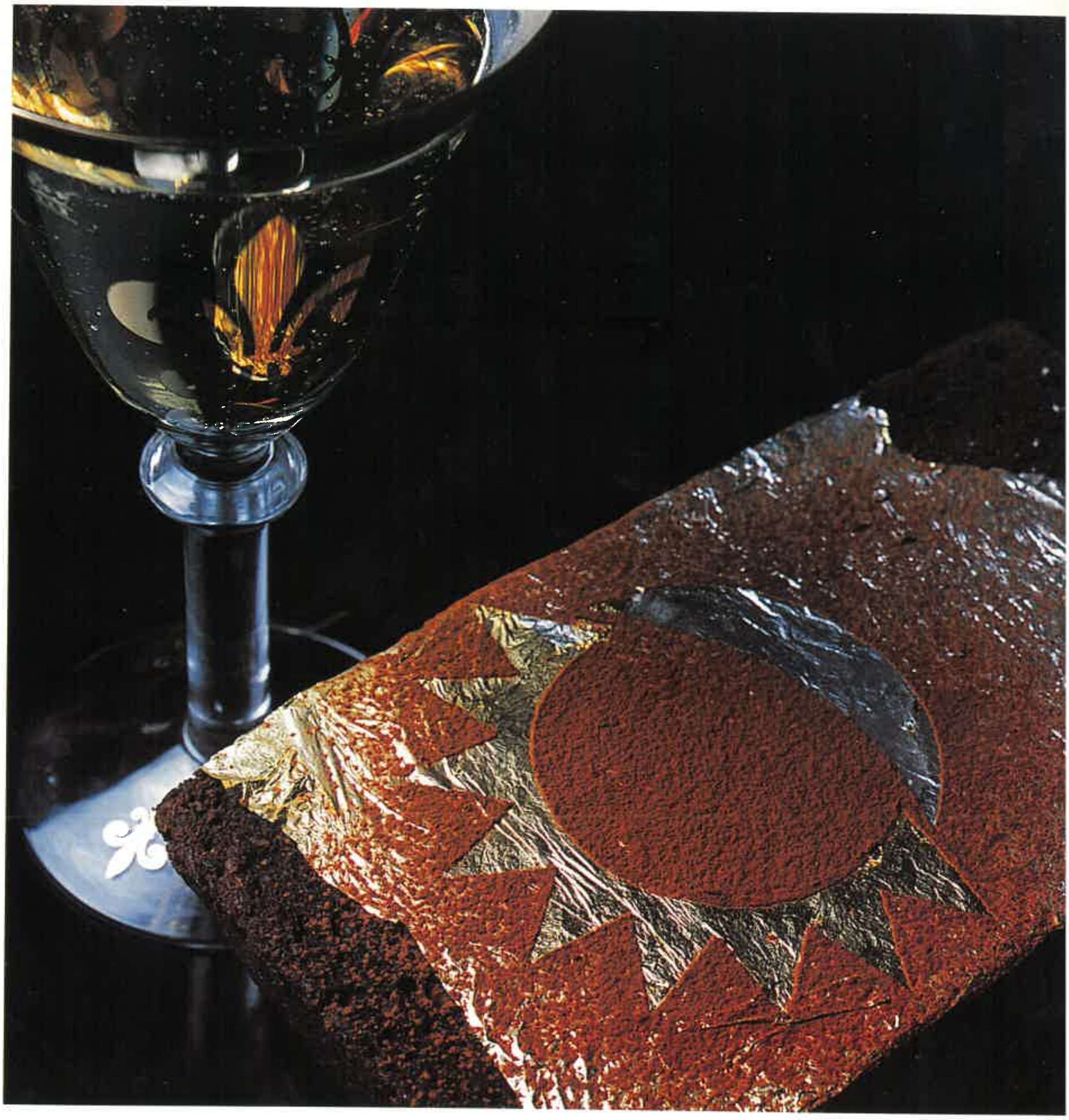
Alchemist

The London Bullion Market Association ISSUE 29 December 2002

LBMA

In this issue



Gilt by Association – this issue marking the LBMA's 15th anniversary features a timeline of milestones (page 5) and an article on the culinary uses of gold and silver – including a recipe for Good Delivery Bar Cake (page 15).

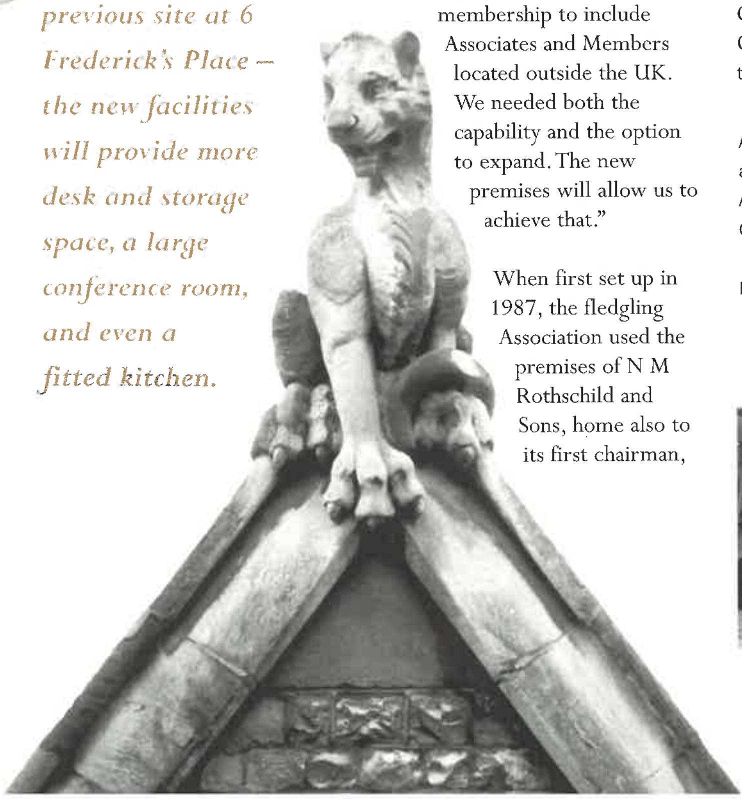
Fixed to a New Spot

The LBMA Trades Spaces

By Susanne M Capano, Editor

Update your Palm Pilots: the LBMA is on the move. Just after celebrating its fifteenth birthday, the LBMA has relocated into its own custom-designed offices.

Occupying the third floor of 13-14 Basinghall Street – across from Guildhall and a five-minute walk from the previous site at 6 Frederick's Place – the new facilities will provide more desk and storage space, a large conference room, and even a fitted kitchen.



"This is a long-awaited and much-needed improvement – for our members and, especially, for our staff", said chairman Simon Weeks. "The workload of the Association has grown sharply, especially over the past few years with the institution of the annual Conference, preparations for the implementation of proactive monitoring of the Good Delivery List and the expansion of our membership to include Associates and Members located outside the UK. We needed both the capability and the option to expand. The new premises will allow us to achieve that."

When first set up in 1987, the fledgling Association used the premises of N M Rothschild and Sons, home also to its first chairman, Robert Guy. About a year later space was sublet from the London Investment Banking Association at 6 Frederick's Place, a quiet cul-de-sac in the heart of the City, where Queen Victoria's favourite prime minister, Benjamin Disraeli, once worked.

The new offices also overlook a very historic site – some 1,800 years ago, the yard around Guildhall was the location of the City's amphitheatre, built during the Roman era. ■

Above left, the LBMA's new location at 13-14 Basinghall Street
Above right, the view overlooking Guildhall

Below, Guildhall

Following are some well-wishes from around the market to the Association on its 15th anniversary and relocation.

Happy birthday LBMA! We are grateful for the hard work and effort that the LBMA has put into the bullion markets over the past 15 years, and wish it well going forward. We hope you enjoy your new home.
– Sir Howard Davies, Financial Services Authority

Through its ever-increasing activities, the LBMA remains the association to which all refiners of gold proudly seek membership.

And as the gold producers' operating environment has changed, mainly through further international expansion and consolidation of the gold industry, the role of the LBMA will be more important than ever to ensure that the high standards in the bullion refining and trading market are maintained.

– Ferdi Dippenaar, Harmony Gold Mining Co Ltd

The LBMA is rightly proud of the robust arrangements for clearing and settlement in the London Bullion Market and of the mutual trust between its members and their customers. Together, these form the indispensable basis for an effective over-the-counter market.

It has been a pleasure to see the increasing international dimension to the Association's work in recent years, reflecting London's role in world financial markets. Looking forward, the LBMA can rely on the support of the Bank of England in meeting its principal objectives - promoting the efficiency and effective regulation of the London Bullion Market.

– Sir Edward George, Governor, Bank of England

Many congratulations to the LBMA on its 15th Birthday.

One of the great strengths of the Association has been, from day one, the active involvement of so many market participants working for the good of the market as a whole. Long may this continue.

– Robert Guy, NM Rothschild & Sons, Founding LBMA Chairman

Congratulations to the LBMA on its 15th anniversary – and on moving into its own office. We have always highly valued the work of the LBMA, which has brought together market participants and users from all over the world and has created more structure in the market. We especially appreciate the LBMA's document standardisation, Good Delivery Lists and website, notably the statistics page.

– Jan Lamers, The Nederlandsche Bank

We send our greetings, congratulations and best wishes to all at the LBMA on your 15th birthday.

May the LBMA glitter like gold in its activities carried out truly for the benefit of the bullion industry, trading community and traders.

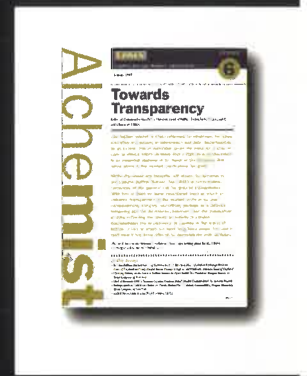
– Harish Pawani, Bin Sabt Jewellery L.L.C.

Having been in the bullion market for some 20 years, I am particularly proud to be the current LBMA Chairman. Without the outstanding contribution to the fundamental activities of the precious metals business that the Association has made, the markets would not be as well developed and run as they are today.

As the organisation celebrates its 15th birthday, I am particularly excited by the opportunities that lie ahead on the international stage and very much look forward to the LBMA playing a central role in their development.

– Simon Weeks, LBMA Chairman

Fifteen Years of the London Bullion Market Association



24 November 1987 – The five members of London Gold Market, together with other major market participants, set up the LBMA

1 October 1988 – Space is sublet for the Association from the London Investment Banking Association at 6 Frederick's Place. In 1996, 6 Freds becomes the registered office

17 July 1989 – Introduction of the GOFO page on Reuters. Contributed by the LBMA Market-Making Members and with a structure similar to LIBOR, the daily means show composite rates for gold swaps for the first time

April 1993 – The LBMA produces a handbook containing detailed information on the structure of the Association, procedures for Good Delivery, regulation and statistics. The handbook incorporates the first published Good Delivery Lists for gold and silver

1 October 1994 – The International Bullion Master Agreement (IBMA) is introduced, providing a common set of terms for bullion transactions in the international market

June 1995 – The first edition of the Alchemist is published. Article titles include 'Golden Days are Here Again?', Looking to the Future: Gold and Silver Prospects in 1995 and 'Going for Gold – Encouraging Signs of Life'

Autumn 1995 – The Association produces a brochure giving a broad overview of the benefits of trading gold and silver in the London market

January 1997 – The LGLR page is introduced on Reuters to show midpoints for gold lease rates based on GOFO and LIBOR means

29 January 1997 – The first set of gold and silver clearing statistics for the London market are released at a press conference

19 February 1997 – The first LBMA overseas event – a debate on the practice of hedging – is held in Johannesburg

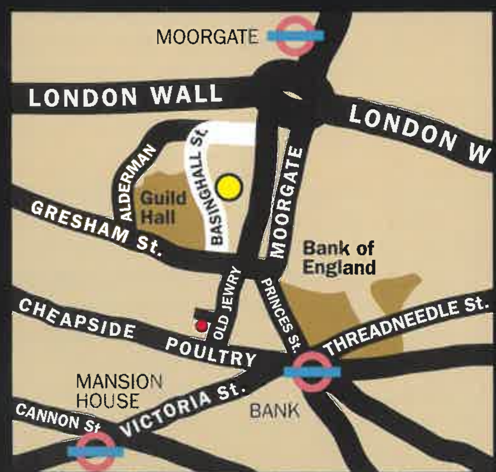
5 March 1998 – A working party, established on an LBMA initiative and headed by ISDA (the International Swaps and Derivatives Association) publishes ISDA Bullion Definitions. The product coverage is much wider than that of the IBMA, and platinum and palladium are included

November 1998 – SIFO – a page of composite indicative swap rates for silver – is introduced on Reuters

31 March 1999 – www.lbma.org.uk, the Association's website, is launched

January 2000 – International Associates – a new category of membership – is introduced, for the first time allowing companies based outside the UK to join the Association

February 2000 – By the Industry. For the Industry: The first LBMA Conference is held in Dubai, attracting more than 250 delegates from around the world



16 October 2000 – ISDA Standard Documentation for Gold Interest Rate Swaps is published

May 2001 – A Guide to the London Market, a comprehensive description of the products and services available in the London market, is launched at the Association's second annual Conference in Istanbul

January 2002 – Modifications are made to the membership structure. The International Associate category is changed to Associate in order to allow UK-based firms providing services to the London market to join the LBMA, and full Members – including Market-Makers – based outside the UK are able to join for the first time

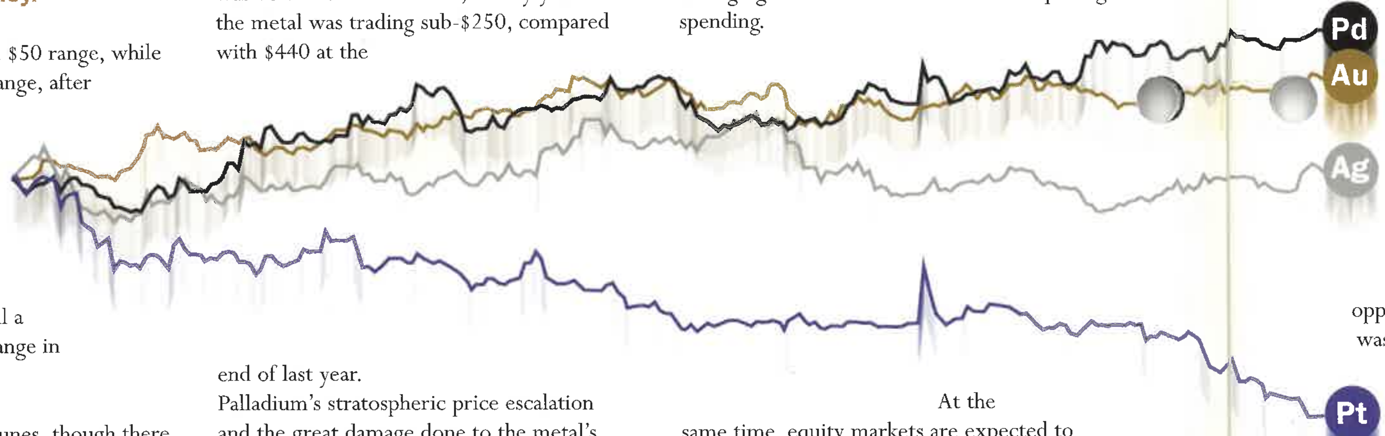
16 December 2002 – The LBMA moves to its new offices at 3rd Floor, 13-14 Basinghall Street, London EC2V 5BQ

2002: A Year of Mixed Fortunes for Precious Metals

By Kevin A. Crisp, Director and Precious Metals Strategist, Dresdner Kleinwort Wasserstein London

There should be no complaints about the opportunities presented to the astute trader by precious metals in 2002. There was something for everyone – although timing was still everything when it came to making money.

Gold prices traded across a $50 range, while silver managed a 90-cent range, after briefly breaking above $5 mid-year. Once again, though, pgms provided the real spectacle: platinum traded within a $150 range while palladium spanned almost $190 (large, but still a mere shadow of its $775 range in 2001).



It was a year of mixed fortunes, though there always appeared to be a story running in at least one metal at any given time. Measured on price performance alone, gold for once looked good, supported by a cocktail of producer 'de-hedging', dollar weakness and generally improved sentiment. After opening the year under $280, it reached a high for the year of $330 and was trading 17% higher by early December, just shy of its year high. It finishes the year with an annual average of $309: a 14% improvement over 2001 and the first +$300 average since 1997.

However, in other currencies, the weakness of the dollar contributed to a less impressive performance – with yen gold rising 10% over the year and euro gold by just 4%. The rand gold price actually registered a 15% decline, a reflection of that currency's recovery against the dollar.

In contrast, average dollar prices for silver and platinum rose a more modest 5% and 2% year-on-year to $4.60 and $535, respectively – although these still looked stellar against the 2002 performance of most equity markets. However, simple averages understate platinum's performance – the positive demand picture being painted by many for the metal in 2002 and upbeat market sentiment attracted investor interest, and by year-end platinum was trading back at $600, up 24% from the start of the year and 32% above its February low.

There was no doubt as to the loser of the year: the annual average $340 price for palladium was down 43% from 2001, and by year-end the metal was trading sub-$250, compared with $440 at the end of last year.

Palladium's stratospheric price escalation and the great damage done to the metal's industrial base market on the back of unpredictable Russian supplies became very apparent during the year – as did the financial damage administered by the whole affair to some of the metal's largest industrial consumers.

Taking a wider view of the market, there was plenty of seat shuffling among participants. The overall trend of further staff attrition was confirmed, with many major players re-orienting business to more profitable areas and cutting costs. The year also saw the exit of a number of well-respected analysts from both the commodity and equity side of the business – although some of this slack was taken up by increased activity on the part of several of the independent research houses. The ripple of change extended into the wider industry universe. There were changes in key senior personnel at the World Gold Council, while the Gold Institute, the Washington-based lobbying organisation, announced it was closing its doors.

Historic reviews are interesting - and unavoidable (it's that time of year) - but far more concerning is the outlook for 2003.

At the end of 2002 there is considerable uncertainty over what the coming year holds in store. Risks are high that economic performance will consistently fall short of expectations next year – while international tensions remain high and the threat of terrorist attacks persists. As economic growth remains weak, unemployment may rise, damaging consumer sentiment and dampening spending.

At the same time, equity markets are expected to remain soft as the industrial-led worldwide economic slowdown intensifies over the winter and into the spring. Governments and their central banks are likely to keep interest rates low and perhaps, as in the case of the US Federal Reserve and the ECB, there may even be further rate cuts. For precious metals this is a scenario that presents many challenges – and perhaps even a few opportunities.

When it comes to meeting these challenges, the precious metals markets have already been adapting to an environment in which, despite some interesting price action, trading volumes have not expanded. The declining monthly clearing volumes published by the LBMA for both gold and silver in 2002 bear testimony to this. Many market participants are re-assessing or have already re-assessed their approach to these markets, the types of products sold and the trading platforms used.

The rapid consolidation by the gold mining industry into just a handful of major producers and the general swing away from the practice of hedging – while positive for price – has been a critical factor in this change of approach. The decline in producer hedging has had a knock-on effect on the gold liquidity market, and 2002 saw gold lease rates fall to extremely low historic levels.

Falling demand for borrowed gold and near-zero interest in turn contributed to the decision over the course of the year for a number of central banks to reduce their gold lending activities, in certain cases quite significantly. While lending may have been cut, there was no let up in central bank sales – although the pressure might have been off, given that media attention to this issue subsided once the last of the Bank of England's gold auction was out of the way.

If volumes were less last year, then there was also evidence of a further shift towards electronic trading at the expense of more traditional systems. Fragmentation of the market among different trading systems was further compounded by the opening of smaller local metals exchanges. Indeed, market liberalisation is now seemingly synonymous with the proliferation of local precious metals exchanges (with China the major new entrant this year) and the construction of local refining capacity (further exacerbating the over-capacity in international precious metals refining capacity).

Where there are challenges, there are opportunities, and palladium's challenge was evidently platinum's opportunity as the metals' fortunes suffered a key reversal over the year. Although the demand picture for industrial metals may look weak – especially in the case of silver – platinum looks set to be a major beneficiary of the tighter emissions controls now coming into force and the continued switch to diesel-based autos. After years of anticipation, platinum is also set to benefit as fuel cell technology moves closer to entering the mass market. Demand-side drivers have thus continued to swing further in favour of platinum even as producers embarked on a period of major supply-side expansion.

The prospects for gold remain more contentious. While its performance in 2002 was the best in years, it failed to meet the expectations of many. So in traditional fashion, what the gold market may have lacked in price action it made up for in words. Open season seemed to be declared on just about every market statistic in 2002 and there was no shortage of willing conference speakers stepping onto the podium to give their interpretation of the story. If there was bonanza for anyone in 2002 it was must have been conference organisers. The editors of precious metals websites were also beneficiaries, with substantial increases in their traffic – a sign (hopefully) of broadening interest in these markets.

Interestingly for gold, while the traditional jewellery demand base took a beating in 2002 this was largely overlooked as attention was drawn to the increasingly vocal debate on 'gold as an investment'. Whether 2003 turns out to be the renaissance year for gold investment is, by definition, not yet clear. What was evident though over the course of 2002 was an increased receptiveness by investors to include gold in wider discussions on asset allocation and portfolio diversification into alternative assets classes.

As the largest and most liquid market, gold presented a rather ambiguous picture for much of the year. This may seem a strange comment to make given the positive performance by gold prices and gold equities in 2002. Nevertheless, given the proliferation of column inches (nay miles) devoted to gold in both specialist and more mainstream press over the past year, and with the entry of ever-more eminent gurus into the fray, the principal result seemed to be an ever-widening polarisation of opinions on the metal.

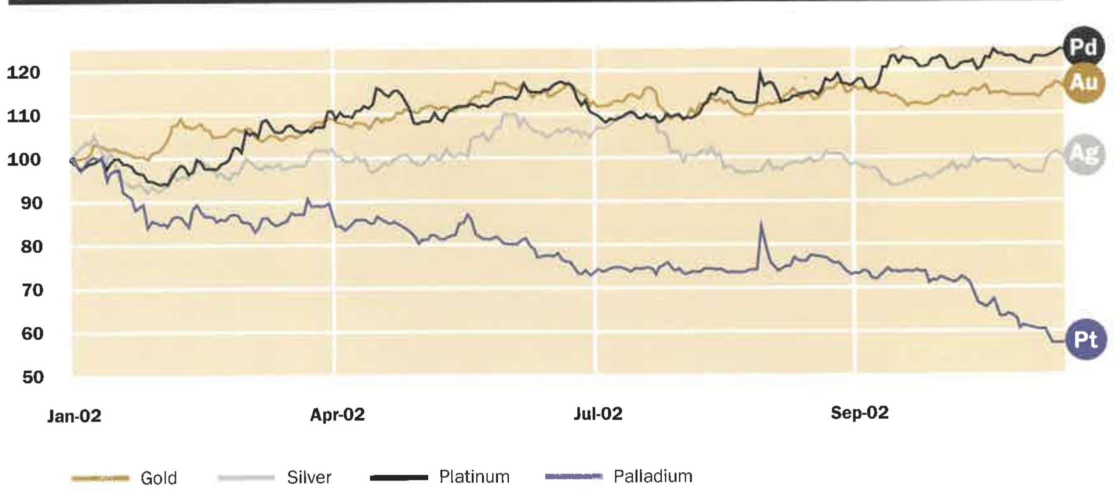
Opinions on gold are fiercely held at the best of times, but this ferocity reached new heights in 2002. As the best performing market sector for much of the year, gold's investment credentials were necessarily dissected from every angle. Pro-gold arguments focussed on a market believed to be structurally short and set to benefit from deflationary pressures, leading ultimately to rising inflation. Gold's counter-cyclical attributes were also seen as supporting the metal's inclusion in more defensive portfolios. Against this, other research suggested that, since 1980 at least, there has been no common denominator to spikes in the US dollar price of gold. In short, 2002 witnessed a great deal of talk about gold's investment attributes (including the possible introduction of a gold dinar, suggested by the prime minister of Malaysia), but not a great deal of action.

That position could well change in 2003, but for 2002, gold investment remained principally the domain of southeast Asian and Japanese investors, with only limited involvement in the US and Europe. Indeed, the 'new and improved' data on gold demand introduced by the World Gold Council highlighted the continual disinvestment of gold from Europe for much of the year. Hence, potential new investors in gold were often barraged by diametrically opposing views on gold from the same podium – contributing perhaps to the still rather faltering nature of actual investor activity in the market. ■

Kevin Crisp is precious metals strategist and a director of the Precious Metals Group at Dresdner Kleinwort Wasserstein's London office, where he is responsible for research and market analysis. In addition to positions as analyst and strategist at GFMS and JP Morgan, his most recent prior appointment was as strategist with CSFB's global precious metals group.

A graduate of the Royal School of Mines and a former LBMA vice chairman, Kevin's early career includes work in the South African gold mining industry, on mining operations in Western Australia and post-graduate research for the Japanese government studying that country's mining industry.

Precious metals prices in 2002 (All in USD and indexed to 2 Jan 2002 = 100)



Out of the Scrap Heap

Will PGMS' Untapped Source Become Tomorrow's Supply?

By Gillian Moncur, CRU International

PGM prices rose to dizzying heights about two years ago, then fell back as consumers drew down their built up stocks of metal. Over the intervening period, platinum has managed to build on its stronger fundamentals – continued good offtake from both the autocatalyst and jewellery sectors and slower mine production growth from South Africa – and looks set to rise above $600/oz in 2003.

Unlike palladium, platinum market is not overhung by a large stockpile. Consumers – mainly automobile manufacturers – had switched from platinum to palladium in the mid-to-late 1990s as a result of platinum's premium. However, the unreliable availability of palladium's aboveground stocks and the lack of consistent supplies of Norilsk-dominated Russian metal due to bureaucratic delays resulted in these manufacturers returning to higher-priced but secure platinum rather than be held hostage to volatile palladium. Palladium's current price is almost a quarter of the peak set in January 2001.

Planned expansions in South Africa combined with a change in the marketing of pgms by Russia and Norilsk should ensure that supply would not be an issue for palladium for the foreseeable future. In fact, secondary sources of aboveground stocks will become increasingly important and could become the third largest supplier of palladium to the market by around 2007.

The main source of secondary pgms is recycled catalytic converters (autocats), with electronic scrap (e-scrap) providing another huge potential supply. Although much of this scrap currently ends up in landfills or incinerators, both increased economic incentive and tightening government legislation will have an impact on future availability.

The SUV (Scrapped Utility Vehicle)

A large proportion of the autocats returned for recycling are from scrapped vehicles; in most cases, the converter lasts as long as the vehicle, although a small amount of scrap also arises from autocats that have been replaced or are recalled. Since the supply mostly derives from scrapped vehicles, the two key factors affecting the potential availability of pgms will be whether the vehicle was fitted with a converter and if so, its pgm loading.

Scrap arisings now are dependent on developments in the auto industry 10-15 years ago, that being the average life of a passenger vehicle. In turn, the design of catalysts and the pgm loadings have been dictated by tightening emissions legislation.

The US has led the way in emissions legislation – and the use of autocats – having introduced them in 1975. Japan followed closely, introducing emission standards in 1975 and since 1979, all new petrol cars there have been fitted with catalysts.

It was not until 1993 that legislation was introduced in the European Union requiring all passenger cars to be fitted with an autocat, although in some countries, notably Scandinavia catalysts had already been fitted prior to this date. Successive legislation has tightened the emission limits, requiring heavier loadings of pgms. So today, while only a tiny minority of scrapped cars in the US and Japan are fitted with an autocat, in Europe the majority are not – leading to the potential for a huge increase in the availability of scrap autocats in years to come.

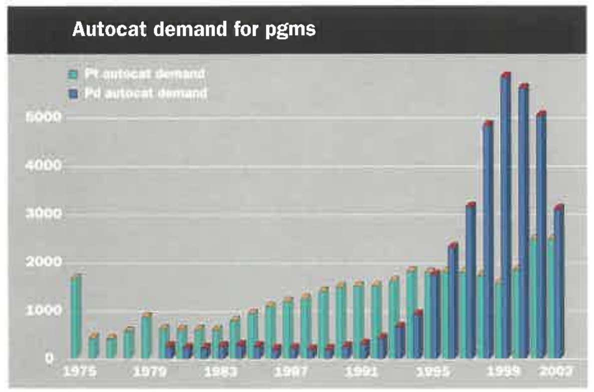
For the recycling of catalysts to be maximised, an efficient collection system needs to be in place. There are two main requirements: firstly that the vehicle itself is recycled, and secondly that the catalyst is removed and returned. In the case of recalls, the spent catalyst needs to be sent to a recycler after replacement. In the US an efficient collection system for scrap catalysts is in place, but in Europe, the collection network is not yet well established.

For vehicles, there has typically been a fairly high rate of recycling for the ferrous and non-ferrous metal components, but a poor rate for other materials such as pgms, glass and plastics. Increasing concern over the environmental impact of the non-recycled components has led governments to try to encourage a higher rate of recycling and the onus has been put on car manufacturers. In Europe, the end-of-life vehicle (ELV) directive, passed in September 2000, stated that all member states should have laws in place by April 2002 to ensure that all ELVs are recycled. Various groups and associations now exist in Europe and the US to encourage and facilitate recycling.

Like Mileage, Recycling Rates Vary

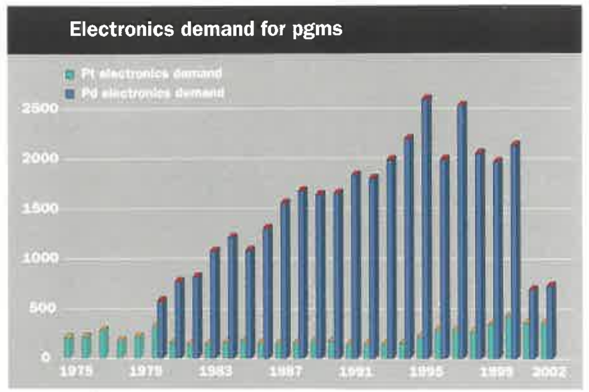
Estimates of the recycling rate for scrap autocats in the US vary from 60% – 75%. According to the US Geological Survey, around 65% of scrap autocats are collected, but only 30% of these are actually recycled in the US – the remainder are exported or just not treated. Most are from ELVs but there is an increasing flow, estimated at around 10%, from cars that no longer meet environmental requirements.

In the US the recycling of scrap autocats is dominated by a couple of players, with A-1 Specialised Services and Supplies accounting for around 55-60% of the market. While we are not aware of any specific legislation in the US concerning responsibility for vehicle recycling, the recycling rate for vehicles is high, at an estimated average of 97.6%. However, the recycling rate for autocats has been estimated at considerably less than this. To boost this, collection of scrap autocats from vehicle dismantlers and shredders needs to be increased.



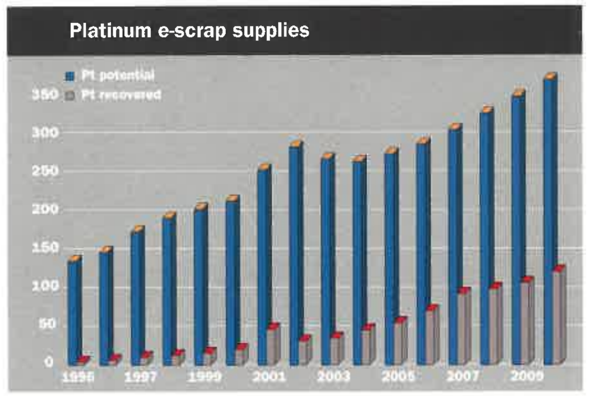
Autocat demand for pgms

Data: Johnson Matthey



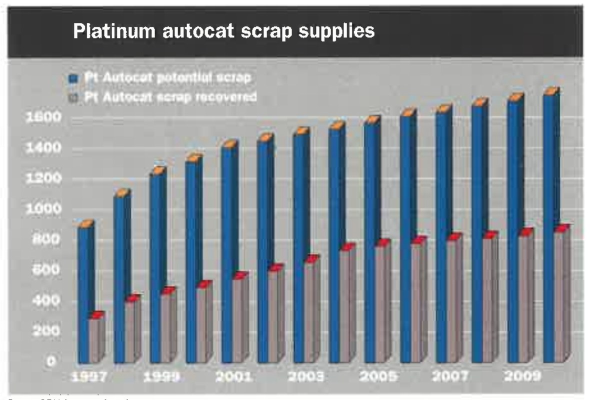
Electronics demand for pgms

Data: Johnson Matthey



Platinum e-scrap supplies

Data: CRU International



Platinum autocat scrap supplies

Data: CRU International

As already mentioned, the recycling of autocats in Europe is still in its infancy. It is only nine years since it became compulsory for all new petrol-engine cars to be fitted with an autocat – and diesel-engine cars have only been fitted with catalysts since 1997 – so many scrapped vehicles still are not fitted with one. However, the industry is expected to grow rapidly over the next few years. Networks for the collection of scrap catalysts are evolving, with the leaders being Umicore and OMG.

The ELV directive mentioned above, which came into force on 21 April 2002, requires that ELVs must be returned to an authorised collection point where all components should be removed and, where possible, recycled. The aim of the directive is that 85% of old cars by weight are recycled by 2006, and 95% from 2015.

In Japan, the Ministry of International Trade and Industry's (MITI) End-of-life Vehicle Recycling Initiative advocates increasing the recycling rate of ELVs somewhat faster than the Europeans, to at least 85% by 2002 and 95% by 2015. In response to this, the automobile-related industries got together to form the Japan Automobile Recycling Promotion Centre, the aim of which is to help industries share concepts and information, to increase ELV treatment through inter-industry collaboration and to advance ELV recycling technologies. A lot of old (5-6 years) Japanese cars are re-sold in Russia and the US; therefore, recycling of autocats does not occur in Japan.

Both potential availability and tonnages of recycled autocats actually recovered are expected to increase sharply over the next five to ten years due to continued growth in the consumption of pgms in autocats as a result of tightening emissions legislation. The recovery of palladium is expected to increase by significantly more than platinum and rhodium because its past preference. In addition recycling rates are expected to increase due to the legislation concerning ELVs and a greater awareness of the need to recycle.

Electronic Scrap

Largely sourced from computers, accessories and mobile phones, electronic scrap (e-scrap) is principally end-of-life material that has either failed or been replaced with more advanced technology. This source has grown considerably in recent years with the rapid growth in the market for computers and changes in technology that quickly make them outdated – the expected life of a PC is only 2-3 years and mobile phones are outdated in less than two years. E-scrap contains only small amounts of pgms – the combined pgm content of a PC is around 0.002% (0.6 g) – but it also contains other precious and base metals.

The pgm content in future e-scrap arisings will be affected by trends in their usage in manufacture. The use of platinum by the electronics sector has increased sharply in recent years with the rapid growth of the computer industry, where platinum enhances the storage capacity as well as the magnetic properties, which enables data to be stored at higher densities and helping improve access times.

Demand for palladium – and therefore its potential for scrap – has mainly come from multi-layer ceramic capacitators (MLCC) used in the computer and mobile phone markets. However, its growth has been severely retarded by a switch to nickel electrode capacitators as well as a decline in the size of the MLCC.

E-scrap is often treated by plants that principally recover base metals, such as Boliden at Ronnskar, Sweden and Noranda at Horne/CCR, Canada. A pgm-containing slime or concentrate is produced and then sold on to pgm refiners.

Recycling 2010: Cans, Bottles, PCs

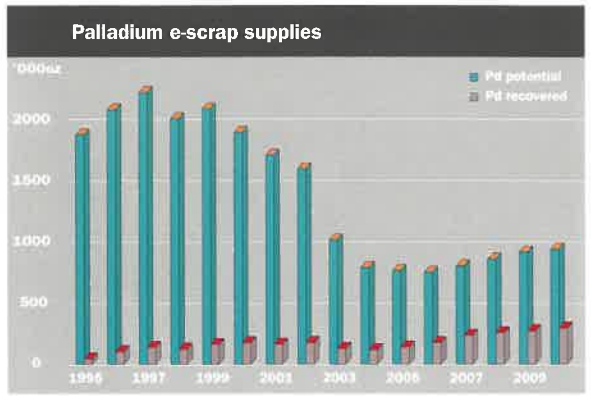
Because of its low value, there is insufficient financial incentive to recycle e-scrap and most of it ends up in landfills or incinerators (the US Environmental Protection Agency has estimated that in 1997, some 3.2M tonnes of e-scrap ended up in landfills).

And many old computers are not immediately discarded – according to a US government report, around three-quarters are stored by consumers. It is estimated that only 15% of computers are recycled in the US. Much of this is exported to Asia, notably India, Pakistan and China. (The dismantling and breaking of electronic equipment is labour intensive and in these countries labour is cheap and there are no health and safety regulations. Under the US Resource and Conservation Recovery Act, exports are exempted from any control if they are to be recycled in the importing country).

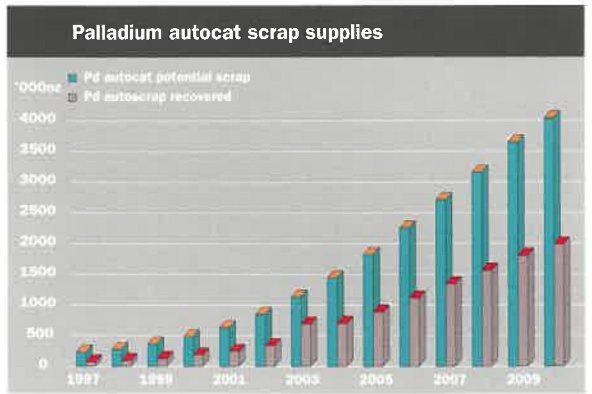
In Europe, it is estimated that on average only 10% of e-scrap is recycled, although the rate is higher in the northern European countries than in the south. Smelters/refiners receive e-scrap typically containing between 250g/t an 800 g/t of combined pgms from shredders or dismantlers. Current networks are unable to handle all the e-scrap arising from both within and outside Europe.

Although e-scrap contains a number of toxic materials, governments have been slow to enforce legislation regarding disposal and there are no federal regulations in the US, although in California legislation has been introduced to ban computer monitors and televisions from landfills.

In Europe, the European Commission has adopted a directive on the collection and treatment of e-scrap and a proposal for a directive on the restriction of the use of certain hazardous substances in electronic and electrical equipment. The former requires producers to take responsibility, financial and otherwise, for the recovery and recycling of waste from electrical and electronic equipment (WEEE). The European countries have adopted the Basel Ban on the export of



Data: CRU International



Data: CRU International

hazardous wastes to developing countries. A similar law to WEEE is in force in Japan, making manufacturers of electronic equipment responsible for its collection and recycling. Take back schemes for electronic goods are mandatory.

Due to the increased use of platinum in hard-disk drives, the potential availability of platinum in electronic and electrical scrap is expected to continue to increase. The availability of palladium will reflect the recent decline in its consumption in these industries due to the substitution of base metals and miniaturisation.

However, for the estimates shown in the charts, we have assumed that the recycling rate for electronic scrap will increase, particularly in Europe, as a result of the European directive on WEEE. We estimate that around 10% of available pgm e-scrap supplies were recycled in 2001 and around 12% will be recovered and recycled in 2002. Scrap from autocats and electronics combined is expected to contribute around 10% of available metal supplies for platinum and palladium in 2002 and 2003, with bigger contributions forecast for 2006 onwards. ■

Gillian Moncur holds the position of senior consultant – precious metals at CRU International's London office. Since joining CRU in 1997, she has worked on a number of research and consulting assignments for precious metal producers worldwide, including market and strategic studies of the gold and pgm industries. She is also the major contributor to CRU's quarterly and monthly services on precious metals.

Prior to joining CRU, Gillian worked at the South African Chamber of Mines and the Rand Refinery. She holds a BCom from the University of Witwatersrand.

The LBMA Biennial Dinner 2002

Sir Edward George Praises Close Ties

Top left – Simon Weeks, LBMA Chairman; Top right – Claudia Walter, Dresdner Bank AG and Jack Allen, Investec Bank
Centre – Claudia Bärdges-Koch, Bayerische Landesbank

On 29 October, Goldsmith's Hall, whose glittering surroundings were the setting for the Association's Inaugural Dinner in 1988, provided the setting for its most recent.

Over 200 members and guests began the evening with a champagne reception, followed by a meal of seared tuna, rack of venison and raspberry and paw paw blini.

The evening featured a welcome speech by LBMA Chairman Simon Weeks and Michael Devaney, the chairman of the Comex Governors' Committee, who gave the response on behalf of the guests.

The toast to the London Bullion Market Association was given by Sir Edward George, Governor of the Bank of England.

In his speech, Sir Edward cited the Bank's long-standing and close relationship with both the London bullion market and – since its founding 15 years ago – with the LBMA. He commended the work the Association had done in making 'London Good Delivery' such a trusted global benchmark and for recognising the importance of the international nature of the City's financial services. ■

Above left, Martin Stokes, JP Morgan Chase and Feng Run Xiang, People's Bank of China.
Above, Sir Edward George, Simon Weeks, Michael Devany,COMEX

The Evolution of the Shanghai Gold Exchange

Building and Developing China's Gold Exchange Market

Excerpted from a speech by Shen Xiangrong, Chairman, Shanghai Gold Exchange

Standing from left to right; Mr. Shen Xiangrong - Chairman of SGE; Mr Albert Cheng - World Gold Council, Mr. Fung Chi Kin - President, The Chinese Gold & Silver Exchange Society and Mr. Aoyagi Moriki - Executive Advisor, Former President of Sumitomo Metal Mining. The gong was used to mark the opening of the SGE by Mr. Dai Sianlong, governor of the PBOC..

The official launch of the Shanghai Gold Exchange (SGE, or the Exchange) on Oct. 30, 2002 represented an important step in the country's gold administration system reform.

It also marked the complete withdrawal of the Chinese government from the physical resources allocation area – and the beginning of market-oriented allocation and regulation of gold resources. This reform will promote the healthy and orderly development of gold production, distribution and consumption in China and create conditions favourable towards new investment products.

At this time, some initial observations can be made. Firstly, all trading, warehousing and clearing systems are operating properly, the trading system works smoothly and the warehousing and clearing systems provide an accurate and timely end-of-day processing service. In Shanghai, Beijing, Guangzhou and Shenzhen, gold is delivered the same day the transaction occurs.

Secondly, the market is determining gold prices, and its role in allocating gold resources is becoming more apparent. Since the opening day, the price has basically traded in line with or slightly higher than international prices. Domestic gold producers and consumers accept this price as reference data for their business operations.

Thirdly, members are beginning to understand how the market operates and are gradually accepting its rules.

Fourthly, in response to the questions and issues raised by members in market operations, the SGE has made some adjustments and improvements to trading, delivery and clearing processes in order to provide better service and improve market functions.

Lastly, related supporting policies such as a special VAT scheme have been implemented through the SGE.

As a part of the financial market system, the pressing issue for the Exchange is to build on the progress made so far and achieve long-term, healthy and steady development. After serious consideration and research, we have developed a preliminary roadmap based on China's national conditions in reference to international gold markets.

Step One: Focus on Investment Business

After achieving the goal of trading gold as a commodity, thereby satisfying the needs of business supply and demand, ensuring the safe and steady operation of spot trading and completing policy transition, we should focus on investment business to make the market more dynamic. We can offer an additional deferred delivery service within the scope of spot trading and give companies the option of placing firm orders in order to lock in costs and manage risks.

Step Two: Gold Trading for Individuals

We should seriously consider introducing a gold trading service for individuals that offers them new investment products. This will provide an important link in the transition of the Exchange from a commodity market to a financial one.

Step Three: Accelerate the SGE's Integration into the International Gold Market

We should accelerate integration of the SGE into the international gold market and make it a market focused on financial investment business, giving strategic importance to the development of gold financial derivatives. As the role of the market gradually grows and the market operation and risk control mechanisms improve, we will launch financial investment products – such as gold futures trading – after getting approval from the responsible authorities under the State Council.

Mr. Dai Xianglong, the governor of the PBOC, noted at the opening ceremony of the SGE that the establishment of markets in currency, stocks, insurance and foreign exchange has greatly contributed to the country's drive to reform, opening up and modernise. The launch of the Shanghai Gold Exchange marks the establishment of all major financial product markets in China, thus greatly improving the financial market system in the socialist market economy environment. ■

The floor of the Shanghai Gold Exchange.

Expensive Taste

By Susanne M Capano, Editor

It can brighten anything from rice to cookies, foie gras to chocolate – even, quite literally, soup to nuts. From New York to New Delhi, the hottest ingredient being used by restaurant chefs, wedding planners and home cooks is something that has no taste, no odour and, at a fraction of a millimetre in thickness, no discernable texture.

But what it lacks in flavour it adds in unmistakeable flair. Whether applied to parsnips or pudding, the result will be the same: the finished dish acquires an air of undeniable luxury. And while some of its applications might today seem cutting edge, gold actually has quite a long culinary history, with its use in the cuisines of countries such as India and Japan dating back hundreds, if not thousands of years. (In small amounts, it's even claimed to be good for one's health, though the same can't be said about large quantities – more about that later). In ancient Egypt, its consumption was thought to make an individual feel better. What woman, or jeweller, would argue that point?

As early as medieval times, the Larousse Gastronomique cites its usage in pates and game dishes – when, for example, peacock was served with all its plumage reattached and the entire head gilded. And The Oxford Companion to Food describes an elaborate dish of gilded fish swimming in jelly dating from the late 1700s.

But be warned – handling gold leaf requires no small amount of patience. The fragile sheets are disturbed by the slightest breath and if touched, tend to stick to fingertips rather than the food they're intended for – hence its very apt name in Japanese, Okin-no-maio, meaning 'fluttering of gold'. The Oxford Companion to Food gives a precise method for applying gold to walnuts used to decorate a tart, taken from a medieval cookbook: dampen them with saffron water, impale on a pin, then "…with that othir hond with a thing made therefore, & blow theron esyly with thy mouth, & that shall make thy gold to abyde." A somewhat easier way of making your gold abide is to use a little beaten egg white.

What part of total annual gold consumption does culinary consumption account for?

It's difficult to find any exact figures, as edible gold falls under the general heading 'decorative uses' and, as can be easily deduced, a little goes a long way.

Edible gold and silver – in the form of gossamer-thin sheets, ribbons or dust – can generally be purchased from bakers' supply stores, chocolate manufacturers or art supply stores. If destined for the dinner plate, the gold or silver content will be quite high, generally around 22- to 23-carat.

So this holiday season, leave it to Marie-Antoinette to let them eat cake. Let your guests eat silver and gold (garnished with the occasional bit of cake). ■

Above, Goldschläger a Cinnamon Schnapps Liqueur with gold flakes

Top left, Gold covered Cardamons www.edilble.com

Far left, Chocolate with Gold Flakes, part of the Gold, Frankincense and Myrrh Christmas range by Rocco Chocolates

Near left, The Ultimate Gold presentation for the finest Beluga Caviar £3,840 from The Cavia House

Above, Shaken – not stirred – Vodka swimming with flecks of gold or silver leaf allows every Goldfinger to turn his tipple of choice into a glittering snow globe.

Above, Pumkin and Coconut Soup, featured on the Christmas Menu at Empire Myna Bird

Right, Chocolate covered Scorpion wrapped in Silver leaf by special request at Empire Myna Bird

Below, Gold Lix a Champagne flavoured lollypop with pure gold flakes www.edible.com

Four-Nines Chocolate Cake

250 grams all-purpose flour
250 grams white sugar
1 teaspoons baking powder
1 teaspoons baking soda
250 grams unsweetened cocoa powder
Dash of salt
150 grams shortening
250 ml boiling water
1 egg, beaten
1 teaspoon vanilla extract
Gold and/or silver (culinary quality)

Directions

1 - Preheat oven to 175 C. Grease and flour a rectangular loaf pan (approximately 10 cm by 15 cm). Sift together the dry ingredients - then set aside.
2 - Pour the boiling water over the shortening, stir till melted, then stir into the dry ingredients.
3 - Melt the shortening in the boiling water, then thoroughly blend into the flour mixture.
4 - Pour batter into the prepared pan and bake in the preheated oven for 30 minutes, or until a tester inserted in the centre comes out clean.
5 - After the cake cools in the pan, turn out and allow to cool thoroughly before Step 6. If you would like to carve the cake into the traditional bullion-bar profile, do that now.
6 - Working carefully, apply the foil leaves to the cake's surface, using the protective paper to tamp down. (The moisture of the cake itself will be enough to hold the leaves - no egg white is necessary.)

HEALTH WARNING:

It is possible to have too much of a good thing. While the cost of gold leaf tends to inhibit its over-consumption, the same cannot be said for silver – as the case of Senator Smurf illustrates. Fearing a shortage of antibiotics over the turn of the millennium, an American politician, Stan Jones, began taking colloidal silver. After his fears proved unfounded, Mr Jones stopped taking the concoction, but too late – his skin had been permanently dyed blue.

Divide and Prosper

Diversified Portfolios Cope Better with Volatile Markets

By Buford Scott, JP Morgan Chase

Most modern investors have an appreciation for the importance of diversification. Indeed, the events of the past year have reinforced the importance of having a portfolio of diverse, non-correlated assets. However, few outside the professional investment management community are familiar with Markowitz's Modern Portfolio Theory – and how these principles can be simply applied to decrease risk in today's volatile markets.

This article examines the basic principles of Modern Portfolio Theory and the potential benefits of its application.

Markowitz's Modern Portfolio Theory

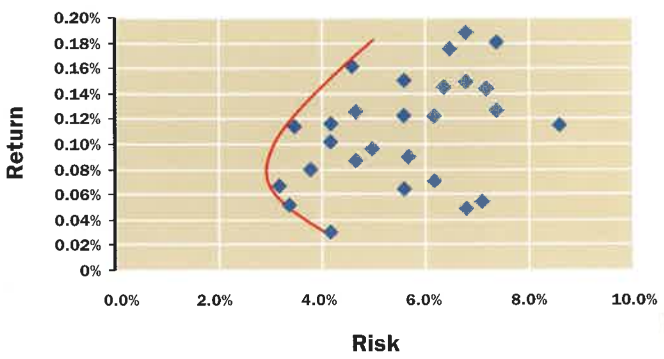
Today's investment managers consider diversification one of the fundamental tenets of investment management – but this was not always the case. Harry Markowitz first analysed the benefits of diversification while writing his doctoral thesis at the University of Chicago in 1952. However, institutional investors did not apply his Modern Portfolio Theory (MPT) widely until the advent of computers in the 1970s, and it was even longer before it became widely accepted. And it was not until 1990, nearly 40 years later, that Markowitz was awarded the Nobel Prize in economics for his pioneering work.

Diversification is the fundamental principle on which MPT is based. It established that by investing the same amount of capital, a mixed portfolio of diverse assets performs better – with less risk – than an individual asset.

Markowitz starts with the assumption that all investors seek to minimise risk and maximise returns. He defines risk as the standard deviation of expected returns – the amount that an asset can vary away from the mean expected rate of return: the higher the standard deviation, the higher the risk of the asset. He also assumes that investors expect risky investments to have a potentially higher rate of return.

Rather than focus on individual securities, MPT asserts that the risk and return of the entire portfolio should be assessed. The more assets in the portfolio, the lower the risk. This risk-lowering effect is greater when the assets in the portfolio have low correlation to each other (more on that later).

Chart 1 – The Efficient Frontier



Considering the number of assets available to invest in, the permutations of a portfolio are limited only by the investor's capital, and the investor can select a portfolio mix that best suits his requirements of risk/return.

Efficient Frontier

The term efficient frontier, often mentioned in financial press, is worth a brief explanation in the context of portfolio construction. Chart 1 shows a random selection of portfolios, each represented by a point. As can be seen, each portfolio has its own risk/return profile. Generally speaking, higher returns come with commensurately higher risk, though this is not always the case.

Clearly most investors would want to avoid portfolios that had high risk and low return! These can be ruled out, concentrating instead on those with the highest return for the amount of risk taken. These portfolios fall on or near the curved line, called the 'efficient frontier'.

The astute investor will pick a portfolio that lies on the efficient frontier (Markowitz assumes that all investors are astute enough to do this); the exact position along the efficient frontier will depend upon his risk profile. An investor seeking higher return, with commensurately higher risk, will seek a point near the top of the curve; a low risk investor will seek a point closer to the bottom.

Correlation vs. Non-Correlation

As mentioned earlier, a portfolio of non-correlated assets achieves a greater degree of risk reduction than correlated assets. The correlation benefit is easiest to illustrate by example. Imagine a portfolio of three assets – if they were Comex gold, London gold, and Zurich gold, they will clearly be highly correlated (probably near 100%). The portfolio will gain little from diversification in this intentionally extreme example.

However, if the portfolio were composed of London gold, S&P500 stock index futures, and Japanese Yen, there would be a clear risk reduction – the assets move independently and hence have low correlation to each other.

Clearly, it is important to consider correlation when constructing a portfolio. Risk declines as assets are added; risk declines further if these assets have low correlation to each other. Thus, it is possible to diversify a portfolio with a low number of assets if these assets are non-correlated. It is still possible to gain the benefit of diversification with correlated assets – it will just take more of them to achieve the benefit (assuming the correlation is not 100%).

As one might expect, stock indices tend to correlate highly, as do some of the major currencies that trade against the US dollar. Gold is a good example of an asset that has low correlation to other asset classes, as highlighted in a recent report by the World Gold Council (the report can be found on www.gold.org/sp_archive/index.php).

Table 1 – Average Monthly Return of Seven Assets

	Average Monthly Return	Standard Deviation
Walt Disney Co	0.48%	8.33%
Eastman Kodak	0.13%	8.11%
McDonalds Corp.	0.84%	6.78%
US 30Y Bonds	0.34%	2.48%
Gold	-0.31%	3.15%
Intel Corp.	2.44%	13.57%
Japanese Yen	0.11%	3.75%

Source: Bloomberg, CSI, JP Morgan

MPT: A Practical Example

Following is a practical example of a basic portfolio constructed using Modern Portfolio Theory.

To keep things simple (and short), the portfolio will ultimately contain only seven different assets. Even with such a small number, the risk-reducing benefits of diversification can be illustrated, as well as the benefit of choosing non-correlated assets. The portfolio starts with a single asset then adds additional assets one at a time to illustrate the risk-reducing benefits expounded by MPT.

The equities in the asset mix are all found in the Dow Jones Industrial Average – typical equities that an investor might have in a portfolio. While many equities tend to have a high degree of correlation, diversification still decreases risk. However, when less-correlated instruments are added, the risk-reducing benefit is even more pronounced.

Table 1 above shows the average monthly return of the seven different assets, along with risk, as measured by standard deviation, over the period January 1993 to June 2002. (These are simple returns for illustration purposes only and do not take into account dividend payments or reinvestment.)

Before deciding which assets to include in the portfolio, the investor should take a look at how they correlate to one another (Table 2).

As might be guessed, the equities in the mix are more highly correlated to each other than the other assets, whereas assets like gold and Japanese yen have very low correlation to the equities.

To illustrate the benefits of diversifying, start with a portfolio of only one stock, Disney, as Portfolio 1, then add assets one at a time. As assets are added, the risk declines, and in many cases, the return also increases. The effect is more pronounced when non-correlated assets like gold are added, as shown in Table 3 below.

Table 2 – Correlation Matrix

Monthly % Moves January 1993–June 2002

	DIS	EK	MCD	USD	GOLD	INTC	JPY
DIS							
EK	29%						
MCD	32%	7%					
USD	3%	5%	-1%				
GOLD	-23%	7%	-1%	-4%			
INTC	47%	40%	8%	15%	-17%		
JPY	-8%	12%	11%	-2%	19%	2%	

Table 3 – The Benefits of Diversifying

Portfolio:	Composition	Monthly Return	Deviation
Portfolio 1	DIS	0.48%	8.33%
Portfolio 2	DIS, EK	0.31%	6.61%
Portfolio 3	DIS, EK, MCD	0.48%	5.42%
Portfolio 4	DIS, EK, MCD, 30Y Bonds	0.45%	4.13%
Portfolio 5	DIS, EK MCD, 30Y Bonds, Gold	0.51%	3.31%
Portfolio 6	DIS, EK MCD, 30Y Bonds, Gold, INTC	0.65%	4.29%
Portfolio 7	DIS, EK MCD, 30Y Bonds, Gold, INTC, JPY	0.58%	3.76%

The Capital Asset Pricing Model (CAPM)

Modern Portfolio Theory was extended in the 60s by William Sharpe to create the Capital Asset Pricing Model, referred to most often by its acronym, CAPM. Sharpe was also awarded the Nobel Prize for his work. CAPM takes the concept of diversification much further, showing that a diversified portfolio can virtually eliminate risk to a particular security and instead leave the investor with net exposure to the overall market.

CAPM seeks to divide the risk of a security into two categories: systematic risk and unsystematic risk.

Systematic risk is the risk of the overall market that, according to CAPM, cannot be diversified away. "The rising tide lifts all boats" is a popular stock market metaphor that describes the concept perfectly.

Unsystematic risk is company specific risk that can be diversified away with a fully diversified portfolio. When CAPM was first introduced, it was believed that a portfolio of about 20 different equities would diversify away unsystematic risk. The current thinking is that something more like 50 different holdings are required.

CAPM introduced the concept of Beta: the responsiveness of an individual security to changes in the broader market. Again, it is easiest to think of Beta in the context of equity markets – an individual stock's Beta will determine the responsiveness of the particular stock to a change in the overall stock market level. A stock with a Beta of one will move exactly in line with the stock market (in percentage terms); a stock with a Beta of less than one will move less than the overall market; a stock with a Beta greater than one will move more than the overall market.

The CAPM formula is:

$$E(R_s) = r_f + \beta_s(E(Rm)\text{-}r_f)$$

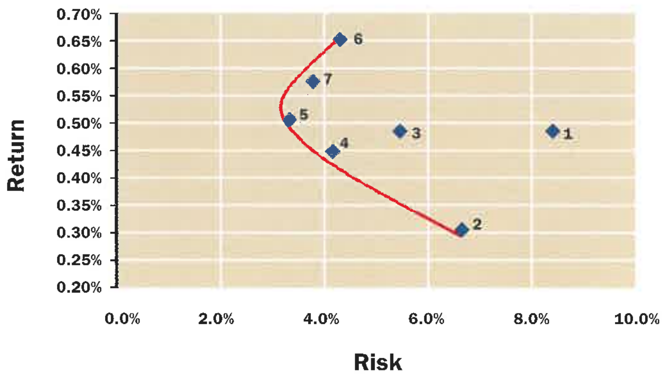
Where
$E(R_s)$ is the expected rate of return of security s,
r_f is the risk-free rate of return (e.g. Treasury Bills)
$E(Rm)$ is the expected rate of return of the market

and
β_s is the Beta for security s.

Beta is used to quantify the unsystematic risk of a security, showing that investors require higher returns to assume higher levels of risk. CAPM is now used extensively throughout the financial industry as the basis for many types of financial decision-making.

Markowitz and Sharpe have both had a tremendous influence on the evolution of the financial industry, and modern portfolio managers now make extensive use of these theories to maximise their returns whilst minimising risk.

Chart 2 – The Effect of Risk Reduction



In Chart 2, the choice of portfolios is displayed graphically, showing the efficient frontier.

It is difficult to get a true picture of an efficient frontier with so few assets, but the risk-reducing benefit of adding non-correlated assets is clear. Portfolio 5 shows the lowest risk, whilst Portfolio 6 shows the highest return (thanks to the addition of a 'tech' stock), though still lower risk than the smaller portfolios.

This practical example illustrates that even in a small portfolio, the application of simple principles of MPT can dramatically decrease risk. When correlation analysis is used to construction the portfolio, this benefit is even more pronounced. ■

Buford Scott has been working as a commodity trader for 16 years in both London and New York. He has served many roles in the trading business, including physical trader, commodity derivatives dealer, and portfolio manager.

At JP Morgan Chase & Co., where he has worked for the past four years, he currently manages the JP Morgan Trend-Following Commodity Portfolio, a diversified, quantitative investment strategy designed for JP Morgan's institutional clients.

The Effect of Lease Rates on Precious Metals Markets

By Merlin Marr-Johnson, Metals Analyst, HSBC Bank USA

In the precious metals markets, lease rates are frequently cited as root causes for metal price behaviour. However, the reason for the lease rate behaviour itself is rarely examined. This short article aims to discuss the main features of the leasing markets that lie behind gold, silver, platinum and palladium.

First, it is probably worth returning to the simplest fundamental of all. As changes in buying (demand) and selling (supply) affect prices, so changes in borrowing (demand) and lending (supply) affect lease rates.

A lease rate is simply the going market 'price' for borrowing or lending the market. If a market is oversupplied relative to demand, prices/lease rates are low, and if a market is undersupplied relative to demand, prices/lease rates are high.

It is interesting to note, however, that an oversupplied spot market does not necessarily mean that the lending market is oversupplied (nor vice versa). Remember that during the late 1990s, when gold prices were declining from $400/oz in early 1996 to $255/oz by mid-1999, the spot market was awash with gold – but lease rates were higher then than they are now. As the chart below shows, one-year lease rates are currently under 1%, but for the four years running from 1996 to the end of 1999, one-year lease rates averaged 2.12%.

Gold

Again, the key to lease rates is in the supply and demand of lending. Staying with gold, the supply side for gold lease rates rests firmly on the large lending reserves available to the market. Central banks currently hold approximately 29,000 tonnes of gold (multi-lateral institutions hold around another 4,200 tonnes). With the perceived economic stability of the 1990s, and strong returns being achieved by most asset classes, central bank reserve managers came under increasing pressure to make assets work for them. Accordingly, central banks entered the market as significant lenders of their strategic gold reserves.

It is ironic that the dollar strength and strong equity market performances drove some central banks to sell gold to avoid an opportunity cost, and that this very same negative sentiment towards gold as an asset led to producers hedging (borrowing gold). Hedging was encouraged by a negative view on gold, and strong interest rates on dollars that meant producers could sell gold forward and borrow it for the interim, taking advantage of the interest rate differential between dollar yields and lease rates. The producers therefore unwittingly reinforced the arguments for a declining spot market and a rising lease rate. The borrowing, of course, helped generate a strong demand environment for borrowed gold, which elevated lease rates to over 2%.

The reason for the shift lower in lease rates since 2000 stems from an almost total reversal of every factor cited in the previous paragraph, causing a marked reduction in borrowing demand, thereby leading to oversupply in the lending market. The vicious cycle of price depreciation, strong dollar yields and producer and fund short selling has been transformed into a positive spiral of price appreciation and producer and fund buying. Lease rates have dropped.

In March 2001 a brief surge in the shorter-dated lease rates occurred as lending was spread further along the curve – up to an unprecedented three years by central banks. The move was in direct response to a lack of return in the shorter-dated contracts, but, as it happened, it unfortunately coincided with some short-term borrowing, and the change in lending patterns caused a short-lived spike in lease rates. Overall, central banks have been powerless to stimulate borrowing demand and, given the current fundamental weaknesses plaguing the major economies globally, we question whether there is likely to be committed short selling in gold in the years to come. Lease rates are likely to remain low.

Platinum

The platinum market is the polar opposite to gold, but the principles remain the same. The main problem facing both the spot and the futures markets is the depletion of above-ground stocks and the lack of a lender of last resort. Charts 3 and 4, at right, illustrate the point clearly. For gold, calculated cumulative above-ground stocks have barely changed over the past 30 years, staying around 32,000 tonnes, but the platinum inventory levels swing between zero and 30 tonnes. Although the quantity of inventory held prior to 1975 in platinum is unknown, we believe that current inventory levels are close to zero.

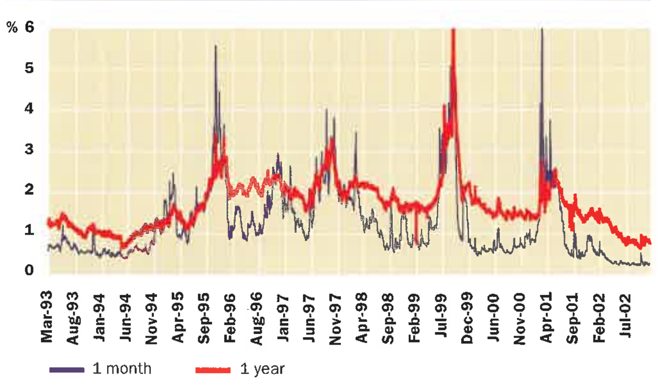
What is more alarming is that with current demand projection the market is forecast to enter uncharted territory with regard to supply and demand deficits. Price risks remain skewed to the upside and there does not appear to be much prospect of a net inventory accumulation at any stage in the next few years coming in to ease the borrowing market. One-month lease rates have averaged 9% over the past two years.

The other key difference between platinum and gold is the role that the Tokyo Commodities Exchange (TOCOM) plays in the market. The volume of material traded in Japan means that the platinum lease rate takes a leading role in driving spot prices.

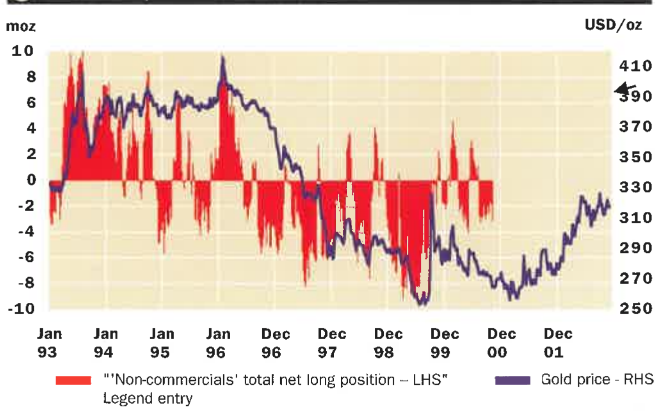
Platinum on TOCOM is a based on a futures contract – the active trading month is 12 months ahead. This gives the public a chance to trade out of the position profitably at some stage in the ensuing 11 months. If the Japanese general public (JGP) sell futures, this position will be offset against trade house long positions, and these trade houses will sell spot loco Zurich to mitigate the 12-month risk. In other words, JGP take an outright position in the market (short in this case) and the trade houses are therefore long futures and short spot, and they have to finance the 11-month gap.

Trade houses borrow material on a rolling basis to meet the short obligations, until the contract expires and the trade houses receive platinum from the public. All very simple, but the net outcome is heavy borrowing of platinum when the JGP are short, and conversely lending when the JGP are long. Platinum lease rates are, unsurprisingly, volatile. The three clearly visible lease rate spikes over the past two years are associated with:

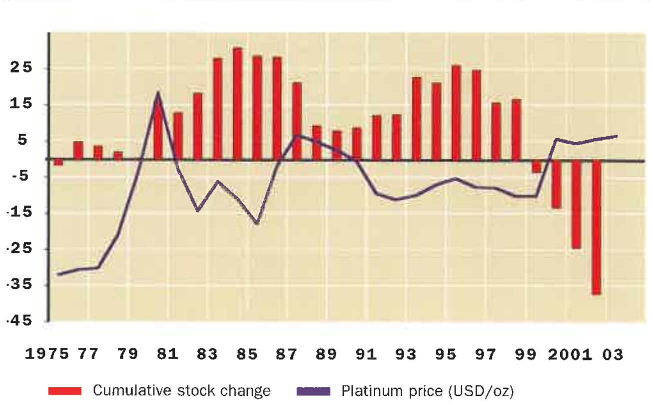
Gold Lease Rates



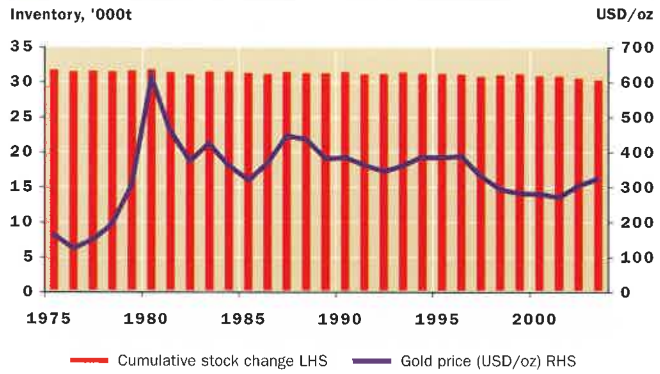
Gold Price/Market Positions



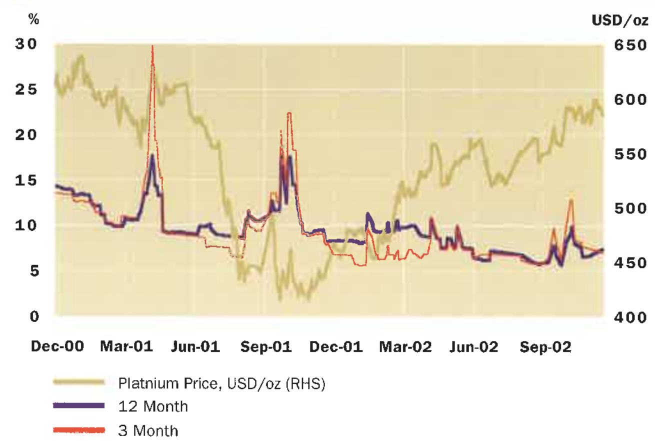
Platinum Inventory/Price



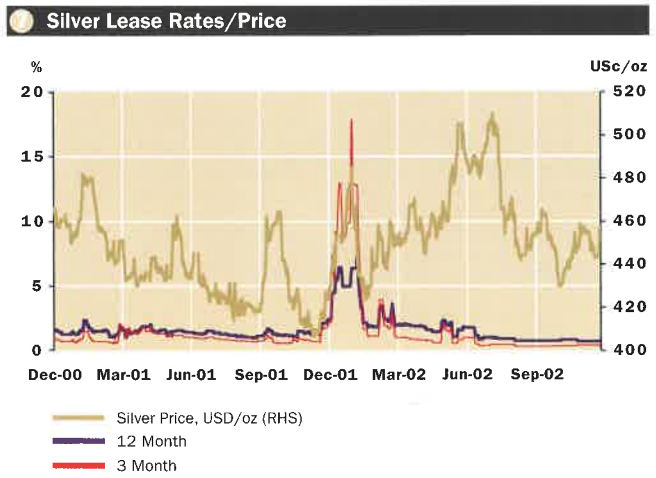
Gold Inventory/Price

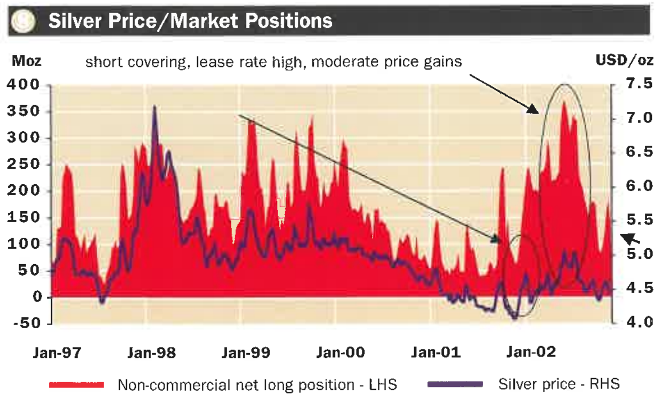


Platinum Lease Rates/Price



Palladium Lease Rates/Price





1) the palladium price high in early 2002
2) short-covering in post 9/11
3) JGP TOCOM short-selling coincident with loco Zurich tightness (in chronological order).

Not only can TOCOM positions change very rapidly, the volumes are large relative to other natural borrowers of platinum. Platinum has long been a mainstream financial instrument in Japan, and the JGP have been known to run with aggregate positions of up to 500,000oz long or short.

To put the TOCOM volumes in perspective, Johnson Matthey forecast combined total consumption of platinum in the glass and chemical sectors to be around 555,000oz. Glass and chemical borrowing for platinum in industrial processes is the main non-speculative source of borrowing, but sector requirements for platinum are met by both borrowing and purchases.

On top of this, NYMEX data show funds are currently holding some 229,000oz net long positions but, again, this varies on an intra-year basis. Remember that this entire process takes place in an illiquid market, with no obvious lenders of material beyond unmatched platinum held by commercial banks and some refiners. Even when the JGP are not running with net short positions, the platinum lease rate continues to stay at levels well above gold lease rates.

Palladium

Moving to palladium, we believe that one can now safely classify palladium as a by-product metal. Barring the Stillwater mine (which is, incidentally committed to expansion), palladium supplies are dictated by nickel/copper production rates in Russia and platinum production rates in South Africa, both of which are forecast to increase. A lack of supply constraints and weak demand indicate that for palladium there is a growing prospect of above ground stockpiles increasing in size.

A year ago Ford announced a writedown of USD1bn of what is believed to be a largely palladium stockpile – although the valuation price remains unknown. Only last month Norilsk declared that it had at least 876,000oz of palladium inventory at its disposal. HSBC sees the palladium market in structural oversupply in the coming years, which has grave implications for the lending market. Firstly industrial borrowing is likely to diminish as purchasing managers see opportunities for outright buying at lower and lower prices ahead. Secondly, a market in oversupply (and with existing aboveground stockpiles) is likely to see rising inventories and increasingly competitive lending – keeping rates low. Small wonder that one-month palladium lease rates have averaged 1.45% over the past year.

Silver

Finally, a few words on silver. Silver lease rates are low (one month 0.35%, one year 0.7%) reflecting low borrowing demand and sufficient lending supply. As at the end of 2001 GFMS had identified 18,440 tonnes of above ground silver stocks, with 9,200 tonnes held by European dealers (mostly loco London) and 5,300 tonnes held by central banks.

On the other side of this large lending potential, borrowing demand is scant. The most actively traded silver contract is the COMEX futures contract, with funds generally holding net long positions. Following the same principles as we worked through JGP activity on TOCOM earlier, funds take outright net long positions on COMEX, which are offset by trade house net short positions on COMEX. The trade houses therefore hold net long positions (loco London) to mitigate the contract risk (usually 2- to 3-month contracts) on COMEX. High levels of lending potential, low levels of borrowing? Result: low lease rates.

The only time lease rates do rally is from sudden allocations of material that shift the lending potential profile within a short space of time. An inventory reallocation last year caused a short-lived lease rate hike, but ultimately the price high of the year was generated by fund long position building, not short-covering, as shown in Charts 7 and 8 above. ■

Merlin Marr-Johnson read geology and worked as a geologist for Rio Tinto before completing an MSc in Mineral Deposit Evaluation at Imperial College in 1997. That same year he joined HSBC, working in mining equity and commodity research. Since December 2001, Merlin has been the metals analyst for HSBC Global Metals Trading, HSBC Bank USA.

La Guida al Mercato Bullion di Londra

VicenzaOro Debuts First OTC-Guide Translation

VicenzaOro is the first event on the international gold calendar. Running from 12 to 19 January 2003, it will host thousands from the international jewellery industry as over 1,500 exhibitors from 30 different countries display their art.

VicenzaOro will also provide the perfect backdrop to launch the newly completed Italian version of *A Guide to the London Bullion Market* - the original version of which was launched at the Association's 2001 Conference in Istanbul.

In recognition of the London market's diverse client base, the LBMA decided to translate the *Guide* into other languages, and Italian was the first version chosen. "There have long been strong ties between the London market and the Italian industry. Having a version of the *Guide* available in Italian will strengthen those ties," said LBMA Chairman Simon Weeks.

A Chinese version of the *Guide* is now in process. A launch is scheduled for the LBMA Conference in Shanghai on 12-14 May 2003.

The *Guide* was designed for those new to or unfamiliar with parts of London's over-the-counter market for gold and silver. It describes the evolution of London's market, provides a thorough description of the products and services available, explains market terminology and practices as well as describing the role and functions of the LBMA.

For more information about the launch, contact the LBMA or send an email to: events@lbma.org.uk.

LBMA News

By Stewart Murray, Chief Executive, LBMA

Membership

New Member
The Commonwealth Bank of Australia was admitted as a Member on 1 December 2002.

Good Delivery List
The Henan Yuguang Gold and Lead Company of China was added to the Good Delivery List for silver on 12 November 2002.

Committees

Management Committee
The main items on the Committee's agendas recently have involved the review and discussion of the work of the main sub-committees.

In addition, the Committee was pleased to accept nomination of new Member representatives on the PAC (Peter Drabwell of AIG and Roy McPherson of EBS) and the Membership Committee (Mark Neuhof of AIG).

Physical Committee
The preparatory work for the introduction of the system of Proactive Monitoring of Good Delivery List refiners has continued. This has been mainly in the form of the collation and analysis of a large amount of assay and cross-checking data related to the sample sets that have been prepared by the refiners that have been going through the process of technical assessment with a view to being appointed as Good Delivery Referees. This comparative data will also provide an invaluable guide to setting the final criteria for the divergences to be allowed when the Proactive Monitoring system is introduced. The additional work in analysing the assay data has meant that the introduction of the new system has been delayed compared with the original timetable. However, the LBMA is determined to ensure that, when the system is introduced, the allowed divergences should be both stringent and practicable, and the additional time work now being undertaken will ensure that this is the case.

Public Affairs Committee
The PAC has focussed mainly on the Indian Bullion Market Forum that the LBMA is holding in New Delhi, India on 30-31 January 2003. The main aim of the forum is to allow market practitioners based in both London and India to work with regulators and other observers with a view to preparing a set of recommendations on the future development of the Indian bullion market. The PAC has also been discussing the programme of speakers and topics for the next LBMA Precious Metals Conference, to be held in Shanghai from 11 to 13 May 2003.

Finance Committee
As usual at this time of year, the Finance Committee has been busy producing the budget for the coming year – a task made somewhat more difficult this year due to the imminent relocation of the Executive to its new home in Basinghall Street (see page 3). ■

Obituary

A Dedication to Christopher Peter Saubergue

02 June 1952 – 22 November 2002
By Valerie Mary Saubergue

Chris was born in the Chinese Year of the Dragon and was also a "Jubilee Baby" – good omens, outlining his destiny to be someone special. He was charismatic and full of fun and laughter with a wonderful enthusiasm for life. Notorious for his extremely fast driving, Chris packed a lifetime of action into his 50 years.

He was predominantly a family man – the beloved son of Peter and Sheila, adored brother of Ann and Dave, best uncle in the world to his nieces Laura and Lisa, and a wonderful stepfather to my son Sebastian. Chris's first marriage produced two children. John currently works as a foreign exchange dealer with Tradition Financial Services and Michelle became a lawyer.

Chris commenced his professional life as a chemist! He joined the city to become an accounts clerk for the Agricultural Mortgage Company. Subsequently, he worked for Midland Bank for many years, seizing an opportunity to become a junior options trader with their precious metals department.

In 1994 he joined the Bank of Nova Scotia, firstly as a senior trader, then ended his career as global head of physical. He was instrumental in assisting the Scotia Mocatta team to become one of the major players in the market. Chris was well respected by his employers, work colleagues, clients and suppliers alike.

He was a very competitive man, a "natural trader" with a wonderful aptitude for mental arithmetic and an appetite for risk. Chris's natural ability to read a future market, forward plan many years ahead and courage to cut difficult positions even extended into his private life, often with brilliant success.

Chris's hobbies were golf, darts and gardening. He was an ardent supporter of Liverpool Football Club and Rock 'n' Roll jive (my influence I am afraid).

Chris and I married on Saturday 25th August 2001 at Loxwood Church. "The Best Was Saved Till Last" (John 2:1-11; The Marriage at Cana).

Chris, we will miss you, but what a privilege it has been to know you.

Correction

In the previous edition of the Alchemist, the article entitled 'Eating an Elephant with a Small Spoon', by Gary Mead, Virtual Metals, incorrectly stated that dowry is very often "extorted from the husband and his family." The sentence should have read "...from the wife and her family."

In the next paragraph, the article correctly referred to dowry as property brought by the marrying daughter to the husband and his family. The author regrets any confusion caused.

Our thanks to Dr Paul Walker of GFMS for pointing out the error.

Season's Greetings from

The London Bullion Market Association

In lieu of sending Christmas cards, the LBMA has made a donation to Square Smile, the London Lord Mayor's appeal for 2002.

This year, Square Smile has financed mental health projects and has made a contribution to The Bart's Cancer Centre of Excellence.

DIARY OF EVENTS

JANUARY 2003

12– 19
VicenzaOro 1
Vicenza, Italy
Tel: +39 0444 969 111
Fax: +39 0444 563 954
E-mail: info@vicenzafiera.it

16
Gold Survey 2002 – Update 2
Toronto, Canada
Tel: + 44 20 7539 7820
Fax: +44 20 7539 7818
E-mail: info@gfms.co.uk
www.gfms.co.uk

26 – 27
2003 Vancouver Investment Conference
Vancouver, Canada
Tel: +1-604-684-3131
E-mail: info@cambridgeconferences.com

30 – 31
The LBMA Indian Bullion Market Development Forum
New Delhi, India
Tel: + 44 20 7796 3067
Fax: + 44 20 7796 2112
E-mail: events@lbma.org.uk

FEBRUARY 2003

4 – 7
Gold 2003, From Deposit to Jewelry and ExpoMining
Moscow, Russia
Tel: +7 095 187 8386
Fax: +7 095 187 8356
E-mail: expo@amscort.ru

18 – 20
Investing in African Mining – Indaba 2003
Cape Town, South Africa
Tel: +1 305 669-1963
Fax: +1 305 669-7350
E-mail: johnpanaro@iiconf.com

24 – 26
SME Annual Meeting and Exhibit
Cincinnati, USA
Tel: +1 303 973 9550
Fax: +1 303 979 3461

MARCH 2003

2 – 6
Symposium on Global Development of Copper and Gold Deposits
San Diego, USA
Tel: +1-519-858-5037
Fax: +1-519-858-5038
E-mail: amtel@skynet.ca

9 – 12
Prospectors and Developers Association of Canada – 2003
Toronto, Canada
Tel: +1-416-362-1969
Fax: +1-416-362-0101
E-mail: info@pdac.ca

25 – 28
MineWorld Russia 2003
Moscow, Russia
Tel: +44-20-7596-5213
Fax: +44-20-7596-5128
E-mail:
oleg.netchaev@miningandevents.com

Physical Demand? In Two Words: India and China

Editorial comment by Kamal Naqvi, Chairman, Public Affairs Committee

India and China are not only the two most populous countries in the world. Past, present and future, they are also, arguably, the two most important sources of physical demand for precious metals.

India is by the far the largest consumer of gold and silver jewellery and the next big marketing target for the platinum industry, while China has surged to become the largest consumer of platinum jewellery – and remains the "great hope" for the gold market. Add to this the rapid rate of economic and social development, along with the weight of history and culture of these two societies, and it is little surprise that these markets are a constant source of fascination and debate for those of us in the precious metals markets.

With good reason, the LBMA is extremely excited to be holding two very different events in these counties during 2003 – two events that are key to the public affairs brief of the LBMA: to disseminate market-related information, help educate the market and the public at large and provide an opportunity for debate and interaction among market participants.

After approaching Indian officials and representatives of the local market, the LBMA has decided to take a proactive approach by facilitating discussion about further development of the Indian bullion market. While there is a very active bullion market in India, it is largely limited to spot trading due to limitations in the ability to hedge risk and in the variety of derivative contracts that are allowed. Many locals believe that greater liberalisation of trading opportunities would see a significant improvement in domestic bullion market liquidity in India. Further, ongoing issues – such as differing local taxes, hallmarking and regulation – also need to be addressed.

To this end, the LBMA will be holding an Indian Bullion Market Development Forum at the end of January in New Delhi, India.

In addition to providing a wide-ranging debate about the full spectrum of potential developments in the Indian bullion market, a proposal paper will be drawn up based on the discussions, which will be submitted for consideration to the relevant government authorities.

For the Entire Industry...

To be held in the Shangri-La Hotel, Shanghai, 12-13 May, the annual LBMA Precious Metals Conference will have a much broader-reaching programme and will be followed by the annual meeting of the World Gold Council. With renewed interest in gold generally, and particular attention focussed on China following the recent start of the Shanghai Gold Exchange, interest is already building in the 2003 Conference.

The most recent 2002 Conference in San Francisco attracted more than 350 delegates from 38 countries, with representation from across the market – producers, central bankers, jewellers, assayers, shippers, investors and bankers.

Always seeking to improve on the past, the LBMA is proud to say that no other conference attracts participation from such a full spectrum of participants in the precious metals industry. And next year in Shanghai, the Association aims to maintain this depth of participation with a conference program that offers, as always, "something for everyone".

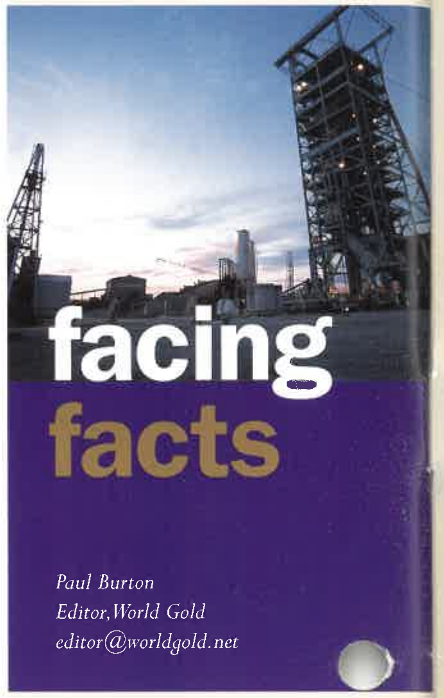
...With Participation from Everyone

As of this writing, the LBMA's Public Affairs Committee is hard at work on the agenda for the Conference, looking for topics that are provocative and relevant for all segments of the market. Potential topics include "Investment Interest in Gold – Dead or Just Dormant?" "The Impact of the Shanghai Gold Exchange", "Challenges to Mining in the 21st Century", "A Look at the Gold Dinar", "Reinventing 'Fashion Gold'", and "What has Changed for Precious Metals?"

The Conference programme is of course still a work-in-progress, and suggestions are actively welcomed from Alchemist readers for topics and/or speakers that address the issues of greatest importance to them. One suggestion included on a number of the 2002 Conference feedback forms was to include more room for debate and discussion – this is planned for 2003.

These events will take place in what may be considered the two most interesting and complex physical markets for precious metals in the world – India and China.

We look forward to seeing you there. ■



With news that Canadian Bema Gold is to merge with EAGC Ventures, and IAMGOLD and Repadre Capital are to merge, the consolidation trend that has been such a feature at the upper end of the industry in recent years has started to become a factor in the middle regions. This follows the business combination that Kinross Gold is leading with fellow Canadian mid-cap gold miners, Echo Bay Mines and TVX Gold, which will see the emergence of a 2-moz/y gold producer in the new year.

The Kinross initiative will create a new major to rival the old Placer Dome, but will fall someway short of the new Placer after its successful completion of the takeover of Australian miner AurionGold. The newly enlarged Placer, which will have annual production of around 3.5moz, had secured around 95% of AurionGold by mid-December as it mopped up remaining minority shareholders through compulsory acquisition.

These latest corporate mergers mean that a significant consolidation of production capacity around the world has taken place over the last five years, and certainly in the last two years. While numerous writers and analysts have, for some time, bemoaned the fact that the gold mining industry is comparatively unconsolidated in relation to the base metal industries and have petitioned for further consolidation, figures compiled by World Gold now suggest that corporate rationalisation at the upper end of the industry has finally had a major impact on global production patterns. The percentage of world production attributable to top ten producers has risen substantially from 26% in 1997, to 49% once the Kinross deal is done.

The merger of Bema, which produces around 100,000 oz /y from a Russian mine, with EAGC Ventures has greater significance than is immediately apparent because the latter has itself just completed a takeover of a 180,000-oz/y South African producer. The North Americans have, with the exception of Placer Dome three years ago, been reluctant to invest in the African country up until earlier this year when Thistle Mining bought a similarly sized operation.

Notable Change in South Africa and Russia

This relaxing of attitudes towards South Africa comes at a time when its new Mining Charter has established the principles, if not all the conditions, by which a proportion of ownership of mining assets will be transferred to "Historically Disadvantaged South Africans". Under the terms of the Charter some 15% of ownership must be transferred within five years, with the figure rising to 26% after ten years.

One of the companies that has most proactive in this regard already, and has voluntarily formed successful unions with black entrepreneurs, is Harmony Gold Mining. Furthermore, simultaneous with its development within South Africa, it has been at the forefront of global consolidation with moves into Australia and, more recently, into another country where few foreigners have ventured – Russia.

Harmony's opportunistic approach to business growth led it to acquire, earlier in the year, a 32% interest for $19 million in a private company, Highlands Gold, which mines gold in Russia and was coming to London's Alternative Investment Market in December. More recently Harmony has completed the acquisition of an approximate 21% interest in Toronto-listed High River Gold Mines. The most significant of High River's assets is a 53% equity interest in Russia's fifth-largest gold producer, OJSC Buryatzoloto, which produces around 150,000 oz/y from two operations in Siberia.

Russia has traditionally been regarded as one of the most geologically prospective regions, but has had a high political risk factor attached to it. But times are changing: perhaps because of the success of Bema Gold's Julietta mine, which is producing gold at a very low $95/oz, the country is attracting renewed interest, particularly in London.

Less Cost = More Profit

A low cost profile is very much desired in today's mining industry where low costs ensure high margins for companies that have to accept a common market price for their product. Results for the September quarter reporting period show a number of companies with low cash costs, the top five of which are shown in the table below.

Company	Total Cash Cost (US$/oz)
1. Randgold Resources	49
2. Goldcorp	86
3. Meridian Gold	101
4. Hecla Mines	121
5. Newcrest Mining	128

London-listed Randgold Resources was the star of the quarter - courtesy of its 40%-owned (AngloGold, 40%) Morila mine, in Mali, where exceptionally high gold grades (up by 433% quarter-on-quarter to 27.7 g/t) cut costs per ounce of gold by half.

But generally within the industry costs are rising, which must be worrying for producers and shareholders alike.

After trending downward for around ten quarters, costs edged up in 2002, with average total cash costs in the September quarter up 9% on a year ago, to $186/oz. Some of the increase can be explained by a strengthening of the South African Rand but in many cases it is due to falling grades.

Gold is the New Money

Finally, two Canadian gold producers have shown their total faith in the future of their product by keeping much of their liquid holdings on their balance sheets as gold bullion.

IAMGOLD and Goldcorp, both non-hedgers, had gold holdings of 94,300 oz (valued at $30.5 million) and 179,000 oz (valued at $57.9 million) respectively at the end of September. Todd Bruce, IAMGOLD's chief operating officer, told delegates at a special lunch presentation at a recent Denver Gold Group investor forum that not only is gold money - but it is the best form of money. "The gold industry is privileged to produce money as output", he claimed. With recent encouraging moves in the gold price, the value of the producers' 'money' is appreciating all the time.

But gold has lost its appeal for one London-based precious metal producer. Lonmin has sold its Zimbabwean gold mining arm, Independence Mining, which produced around 170,000 oz/y, to concentrate on platinum group metals. This old mining house still holds a 32% interest in Ghanaian gold producer Ashanti Goldfields, but is prepared to sell this investment when it deems the price is right. ■

The *Alchemist* is published quarterly by the LBMA. For further information please contact Susanne M Capano, Editor, Stewart Murray or Andrea Smith. LBMA Executive 3rd Floor, 13-14 Basinghall Street London EC2V 5BQ Telephone: 020 7796 3067 Fax: 020 7796 2112 Email: alchemist@lbma.org.uk www.lbma.org.uk

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