LBMA

Alchemist

The London Bullion Market Association ISSUE 75 October 2014

In this issue

The LBMA's 15th Annual Precious Metals Conference takes place this year in Lima, Peru on 9-11 November, 2014. Read all about the conference in the Editorial by Dr Edel Tully on page 30.

LBMA

Save the Date and Call for Papers

The Sixth LBMA Assaying and Refining Conference

The Millennium Hotel,
Grosvenor Square, London
8 - 10 March, 2015

Since 2005 the LBMA has held this event every two years, initially solely for Good Delivery refiners but now other refiners and laboratories around the world may also participate. It is a unique opportunity for technical staff in the precious metals industry to meet and discuss the latest developments in refining and assaying of gold, silver and the PGMs. The 2013 conference was attended by 170 participants from 27 countries. To facilitate networking there will be a welcome reception on the evening of Sunday, 8 March.

Main Conference 9 - 10 March

Conference Themes

- Bar Quality
- Analysis
- Production

Invited Papers agreed so far include

- Proficiency Testing Programme
- Reference Materials
- Fire Assay Splitting Limits
- Use of Eddy Currents for Detecting Fake Bars
- Impact of Impurities on Precious Metal Properties
- Analysis of Gold by Microwave Plasma Atomic Emission Spectrometry
- Analysis of Gold by XRF Spectrometry

Additional Speakers

There are still a few vacant slots in the programme and the LBMA is willing to consider including relevant presentations to fill them. Anyone wishing to speak should send details of their proposed paper to **stewart.murray@LPMS.org.uk** as soon as possible.

Optional Events 11 March

On the morning of 11 March, a number of additional options are available including:

- A half day workshop on XRF Spectrometry hosted by Dr Mike Hinds of the Royal Canadian Mint
- A visit to the London Assay Office
- A visit to the Royal Institution (the home of science in London)
- A visit to the laboratories of Inspectorate International in Witham

Exhibitors and Sponsorship

Companies interested in hiring an exhibitor's booth or taking advantage of sponsorship opportunities should contact **collett.roberts@LBMA.org.uk**.

Details of the programme and information on registration and hotel accommodation will be included in the next edition of the Alchemist and will also be available via the LBMA website from early December.

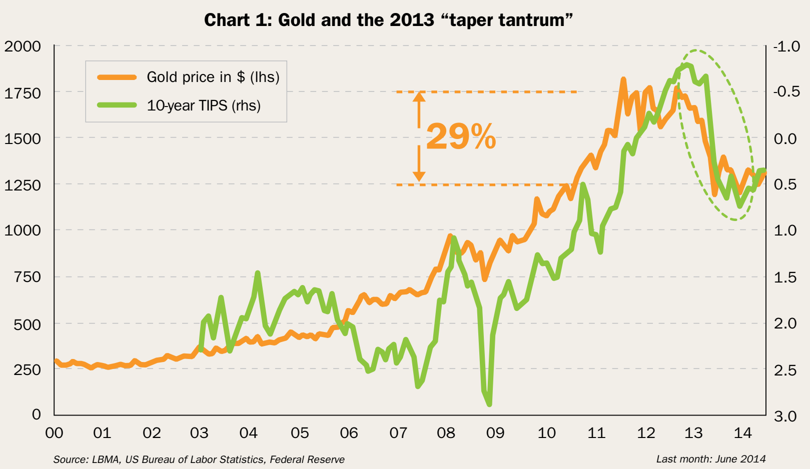
Has the Gold Market Already Discounted Fed Tightening?

By Martin Murenbeeld, Chief Economist, Dundee Capital Markets

Martin Murenbeeld reviews the impact of US monetary policy on the global gold price and considers the extent to which the gold market, and the gold ETF market in particular, has discounted any likely hikes in US real interest rates and the US dollar in 2014-2015.

Gold in the vaults of the Federal Reserve Bank of New York. Reproduced here with the kind permission of the Fed.

Gold prices plunged in 2013 for a number of reasons, not least of which was the 'taper tantrum' where debt markets sold off around the world on fear of Fed policy tightening. Chart 1 highlights just what happened: gold prices declined quite precipitously in the first half of 2013 – right around the time the 10-year TIPS yield (US Treasury Inflation Protected Security) rose. (The TIPS scale is inverted.) US real long-term yields rose and gold declined; indeed, not many gold observers would disagree with the thesis that rising US real interest rates are negative for the gold price!



As it stands, Chart 1 would appear to explain everything that happened in 2013; the 'fit' is tight and the correlation of TIPS with the gold price is a very significant -0.87. Since most everyone agrees that US interest rates must inevitably rise, albeit no one knows just when and by how much, Chart 1 makes the point that gold prices must inevitably decline yet further.

I am bullish on the gold price, but this alone is not a sufficient reason to be critical of Chart 1 and its negative price implications. Take a look at Chart 2. It is the same chart but with one critical difference: the gold price level (i.e. $1,300 per ounce) has been replaced with the year-over-year percent change in the gold price!

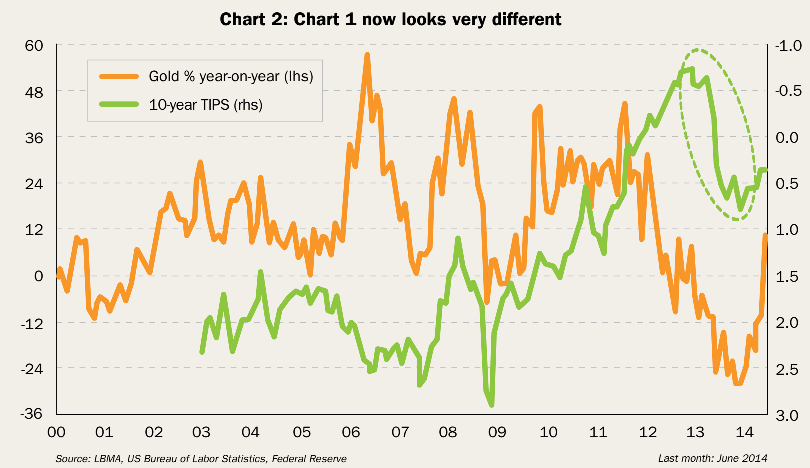


Chart 2 looks quite different; indeed, the high, negative correlation between TIPS and the gold price vanishes. The reader might also observe that the gold price actually turned before the TIPS yield rose.

So, which chart is right? Well, in the forecasting business, if a chart looks good, it tends to be used – right or wrong. And Chart 1 definitely looks good!

But there is a fundamental statistical problem with Chart 1: it compares a 'level' variable with a 'change' variable. (Statisticians call this a comparison of a non-stationary variable with a stationary variable; the latter has a stationary mean, the former does not.) In Chart 2, both variables are 'change' variables and both are now 'stationary'. More important, Chart 2 suggests that Chart 1 might actually be overstating the strength of the relationship between US real interest rates and the price of gold!

To help us unravel this relationship, we constructed a simple model of the year-on-year change in the gold price in terms of US real interest rates and the change in the US dollar. (We added a US dollar variable to the model because the dollar is one of the most important variables for the price of gold; the deletion of the dollar from a model that purports to estimate the impact of real interest rates on the change in the gold price will accordingly lead to a biased estimate.) All three variables in the model are stationary.

Chart 3 highlights this model estimated with data for the period 1969-2014 and Chart 4 highlights the same model estimated with data for the period 2000-2014. (We often change time periods in order to gauge the stability of the model's co-efficients.) Both models have a good fit, but they clearly do not explain all of the changes in the gold price over the respective time periods. Notably, the models do not explain very satisfactorily what happened in 2013; indeed, the percent decline in the gold price in 2013 is much larger than what the models suggested it should have been (note the circles on Charts 3 and 4).

With the help of these two models (and one other estimated with data for the period 1989-2014, the results of which are presented in Table 1), we can estimate just how much the gold price 'should' change on the back of a rise in US real interest rates and/or a rise in the US dollar. (By the way, the models do not use the US TIPS yield but a more common measure of real yields: the nominal 10-year Treasury yield less the current rate of inflation – see Table 1 and the box therewith for a further explanation of the variables.)

Let's assume that the real 10-year Treasury yield will rise 250 basis points in the coming year and that the US dollar index will rise 1,000 points. The nominal 10-year yield is currently about 2.5%, which, with inflation running at about 2.0%, puts the real yield at around 0.5%. A rise of 250 points would therefore take the real yield to 3.0% (the nominal 10-year yield would rise to 5.0% were inflation to remain at 2.0%). I don't think any readers expect such a significant rise in real long-term US yields. Furthermore, a

Chart 3: Model 1969-2014 – gold explained by real yields and changes in US dollar

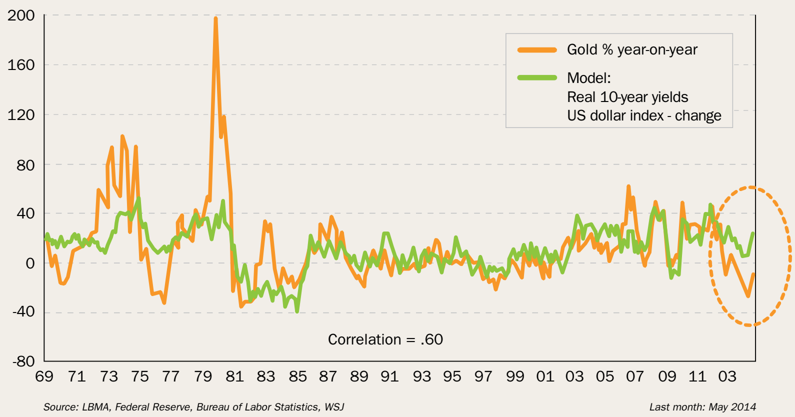


Chart 4: Model 2000-2014 – gold explained by real yields and changes in US dollar

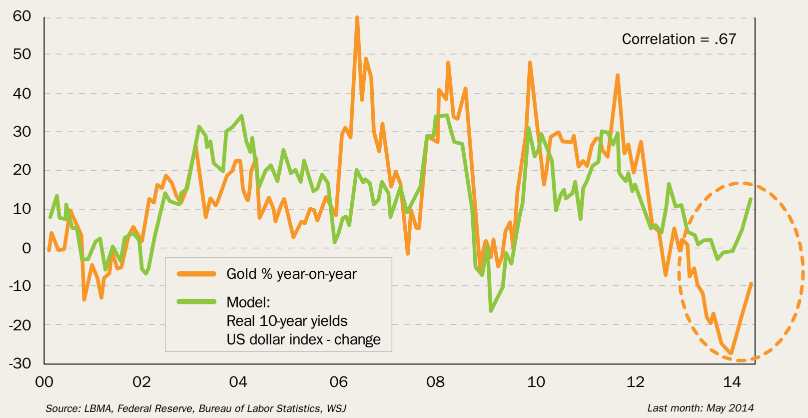


Table 1: Impact on gold of 100-point rise***

	Real interest rates*	In US dollar**
Model 1969-2014 *(R-squared = .362)*	-5.656%	-1.219%
Model 1989-2014 *(R-squared = .475)*	-3.839%	-1.235%
Model 2000-2014 *(R-squared = .454)*	-1.691%	-1.513%

*Difference between 10-year Treasury yields and consumer price inflation (y-o-y)
**Dollar index includes Cdn$, Yen, Pound, Euro (pre-1999: DM, Lira, FF)
*** A 100-point rise in real rates is 100 basis points
*** A 100-point rise in the US dollar is a rise in the index from, say, 75.00 to 76.00

The Table: The table presents the estimated impact of a 100 basis point rise in real interest rates and the impact of a 100 point rise in the US dollar index on the year-on-year percent change in the price of gold. One result stands out immediately: the estimated impact of changes in real interest rates on changes in the gold price has declined significantly as the estimation period is progressively shortened; the estimated impact of a 100-point rise in the real long-term yield is -5.7% for the 1969-2014 period, but only -1.7% for the shorter 2000-2014 period. The US dollar's impact on gold appears to be much more stable going from the longer to the shorter period. (We suspect that exceptionally high interest rate volatility in the 1980s may have something to do with these results; certainly once we deleted pre-1989 data from the estimation period, the estimated impact of real interest rates on the gold price declines significantly.)

The Variables: There are three variables in the models. The first is the year-on-year percent change in the month-end price of gold – US dollars per ounce. The second is a month-end real US interest rate. We tested a number, including an inflation-adjusted 90-day T-Bill yield and an inflation-adjusted 10-year Treasury yield – where the year-over-year US consumer price inflation rate is subtracted from the nominal 90-day and 10-year yields. The TIPS yield was also tested. The inflation adjusted 10-year Treasury yield was the best variable in our configuration – not the TIPS or other real interest rate formulations. The third variable is the year-on-year change in the month-end value of the US dollar index. We tested three different indices, but the dollar index that included only the Canadian dollar, the yen, the pound and the euro (the Deutschemark, French franc, and the Italian lira before 1999) proved to be the best index.

> *"We suggest that, on the evidence of the models, that gold has indeed discounted what the Fed is likely to do!"*

1,000-point rise in the dollar index would take the index from, say, 80.00 to 90.00, which is a substantial rise. (The DXY, a commonly used index for the US dollar, is around 81 currently. We use our own dollar indices however.)

Applying the most negative parameters of the three models, a -5.6% impact for a 100 point rise in real interest rates and a -1.5% impact for a 100 point rise in the dollar index, the foregoing assumptions lead to a change in the gold price over the next year in the order of -29% (-14% on account of the rise in real interest rates and -15% on account of the rise of the dollar).

But gold already declined 29% in 2013! Yes, the TIPS yield and other measures of US real interest rates did rise for a brief period in 2013, and the US dollar index also rose somewhat. But Charts 3 and 4 indicate that these developments weren't nearly sufficient to account for the 29% decline in the price of gold.

Of course, there were other factors that hurt the gold price in 2013, including: (1) EU demands that Cyprus sell its gold to help with the bailout; (2) a significant reduction in the risk of a eurozone break-up; and (3) the continuing surge in equity markets (which erodes investment interest in gold). These factors are not included in the model described above.

Nor does the model include a variable to specifically account for the massive gold ETF sales in 2013! The reader will recall that there was a tremendous concentration of selling from the ETF sector last year; indeed, such concentrated selling might even be regarded as 'herd selling', 'trend selling' or, dare we say it, 'panic selling'! In our opinion, ETF sales go a long way to explain the discrepancy between the models and the actual change in the gold price. Yet, all this raises a fundamental question: has the gold market – and the gold ETF market more specifically – now discounted fully any likely hikes in US real interest rates and any likely rises in the US dollar in 2014-2015?

We suggest that, on the evidence of the models, that gold has indeed discounted what the Fed is likely to do! A 'bear' might argue that the decline in the gold price from (roughly) $1,750 to $1,250 was a return to 'fundamentals' – that gold rose too much in 2010-2012 and had to come 'back down to earth'. Accordingly, the 'bear' would argue that there could well be a further 29% decline in the gold price were the draconian hikes in real interest rates and the US dollar assumed above to come about!

But the 'bear' would then also have to argue from which sector of the gold market the selling would originate. Presumably, the 'bear' would argue that it would be from the ETF sector again. But would those holders of ETFs who did not sell in 2013 finally decide to throw in the towel in 2014 and 2015? (Gold ETFs are much more widely held now that a few heavy hitters sold out their positions in 2013.) Or would the bear argue that Chinese demand will decline precipitously, despite the fact that the average Chinese buyer is not as attuned to US dollar and Fed policy developments as North American and European buyers appear to be. The point is, selling pressure has to come from somewhere, and/or demand has to plunge, in order that the 29% price decline estimated on the back of these assumptions is realised.

> *"No one can say with certainty just how the gold market – or other markets – will react when the time comes for the Fed to hike short-term interest rates."*

The proof of the pudding is in the eating, so we have to wait and see. No one can say with certainty just how the gold market – or other markets – will react when the time comes for the Fed to hike short-term interest rates. (And there are many other variables at play in the gold market – not least of which is the geopolitical variable.) However, Chart 1 does not suggest gold rose too much in 2010-2012; indeed, it suggests, because gold should have been even higher than $1,750 in 2012-2013, that $1,750 is was not necessarily 'too high' at all! Nor does Chart 4 (my preferred chart) suggest that the monthly year-on-year rises in the gold price before 2013 were excessive in the same manner that the monthly declines in 2013 were excessive. Assuming in other words that $1,700-$1,750 was indeed a fundamentally supportable price level for gold at the time, then the analysis suggests that the gold market is now ahead of the curve – that the gold market has already reacted to what the Fed may throw at the markets over the next 12 months.

Let me add further that the Fed's game plan is not to raise interest rates before inflation pressures re-emerge; indeed, it is very likely that real short-term interest rates will remain below zero for most of 2015. (This is also the conclusion one draws from analysing the famous FOMC 'dots'!) And if US real short-term rates do not rise significantly over the next 12 months, it is extremely difficult to expect US real long-term yields to rise by the amount assumed above, i.e. by 250 basis points.

As always, it will be an interesting time in the gold market going forward.

Martin Murenbeeld
Martin Murenbeeld is the Chief Economist of Dundee Capital Markets, a division of Dundee Securities, a Dundee company.

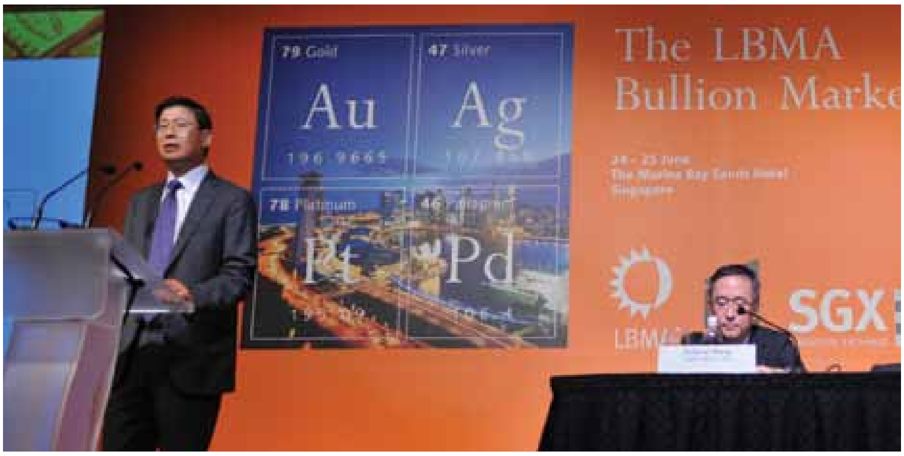
Dr Murenbeeld's group provides independent economic analysis and advice on economic and financial developments to financial advisors and portfolio managers across North America and abroad.

Dr Murenbeeld graduated from the University of California, Berkeley, in 1972 with a PhD in international finance. He then joined the Faculty of Management Studies at the University of Toronto to develop the international business curriculum in the MBA program, where he was a Faculty until 1978. Dr Murenbeeld started M. Murenbeeld & Associates Inc., an economic consultancy in the area of international finance. The company was bought by DundeeWealth Inc. in 2004 and he was Chief Economist of that firm until his departure in 2013 to join Dundee Capital Markets as its Chief Economist.

Frequently quoted in the financial press and a regular speaker at international precious metals and foreign exchange market conferences, Dr Murenbeeld has over 30 years of independent consulting experience in the gold, currency and credit markets and is currently also an adjunct professor (international finance) in the Faculty of Business at the University of Victoria.

The Development and Opening of China's Gold Market

By Xu Luode, Chairman, Shanghai Gold Exchange



This is a translation of a speech delivered by Xu Luode, Chairman of the Shanghai Gold Exchange, at the LBMA Bullion Market Forum in Singapore on 25 June, 2014.

Thank you for inviting me to attend the LBMA Singapore Forum. It's my great pleasure to be here. So now let me give you a brief introduction on our country's gold market.

First of all, let us all have a look at China's current gold production. For seven consecutive years, gold production in China has been the largest in the world, with nearly 430 tonnes produced last year. China has the second-largest gold reserves in the world. This is the latest figure. Before that, China had been ranked third.

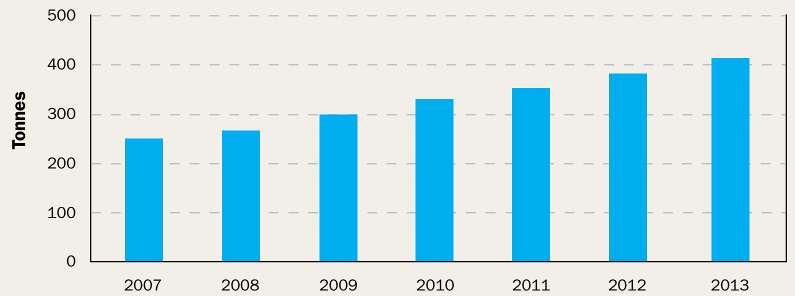
Next is our consumption of gold. According to the statistics compiled by Mr Zhang Bingnan, gold consumption reached 1,174 tonnes last year, and that is also the largest in the world. I slightly disagree with Mr Zhang, as I think we might have consumed even more than that. I think that it is always a good thing to have a higher figure, rather than a lower one. There are two factors supporting consumption in China's gold market. One of them is jewellery. China has an extremely high level of jewellery consumption. Such growth in jewellery consumption shows that China's level of consumption, as in gold consumption, is in a very healthy state. The other one would be gold bullion, as residents are now allocating gold to their asset allocation, and this volume is currently also high.

Next is imports. Data on China's gold imports has not previously been made available to the public. However, gold has historically been imported through Hong Kong, and Hong Kong is highly transparent, disclosing details such as the number of tonnes of gold imported on a monthly basis. Last year, China imported 1,540 tonnes of gold. Such imports, together with the 430 tonnes of gold we produced ourselves, means that we have, in effect, supplied approximately 2,000 tonnes of gold last year.

The 2,000 tonnes of gold were consumed by consumers in China. Of course, we all know that the Chinese 'dama' [middle-aged women] accounts for a significant proportion in purchasing gold. So last year, our gold exchange's inventory reduced by nearly 2,200 tonnes, of which 200 tonnes was recycled gold.

Seeing such a tremendous market in China last year, many of you are very concerned about what will happen not only this year but also in the future. In my opinion, there will certainly be some differences this year compared to last year. One factor is that the growth rate is

Chart 1: Gold production in China

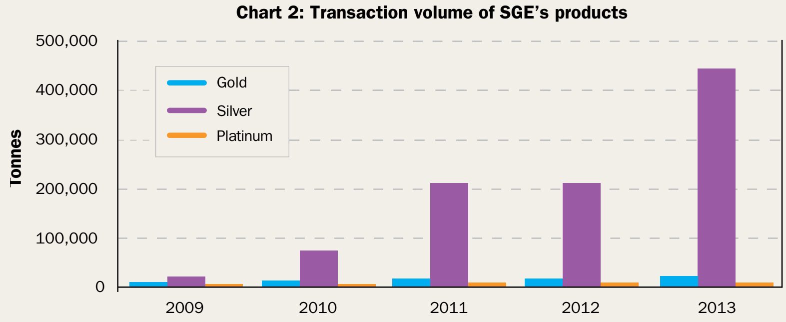


World Gold Production 2013 (tonnes)

Rank	Country/Region	Gold production
	World	2,770
1	China	428
2	Australia	255
3	United States	227
4	Russia	220
5	Peru	150
6	South Africa	145
7	Canada	120
8	Mexico	100
9	Uzbekistan	93
10	Ghana	85

slowing down. In the first quarter of this year, gold consumption was still increasing and the import volume remained steady. In terms of the general trend, Mr Albert Cheng from the World Gold Council has estimated that the per capita gold consumption is only 4.5 grams in China whereas it is as high as 24 grams worldwide. The difference of nearly 20 grams represents the potential growth of the physical gold market in China. So I think that China still has a significant growth potential.

Many of you are very concerned about the structure of the gold market in China at the moment. China is a country that is undergoing a significant degree of market transformation. China's gold market has only undergone 10 to 12 years of development, but has its own distinctive features. There are differences when compared with the gold markets of some of the developed countries and even with



Transaction volumes (tonnes)

	Gold	Silver	Platinum
2009	4,711	16,248	57
2010	6,052	73,615	55
2011	7,439	247,058	65
2012	6,350	208,950	64
2013	11,614	430,501	90

Singapore's gold market. So I call it 'One Body with Two Wings', where 'One Body' refers to our Shanghai Gold Exchange, and 'Two Wings' refers to the sub-market of our commercial banks, as well as the sub-market of our futures exchange. Many of you asked if I have seen ourselves as being too important. Why are we One Body, while others are Two Wings? It is not that I have seen ourselves as too important. I have always held the opinion that any market must have physical commodities as the basis. Be it bulk commodities or other trading markets, transactions are based on physical commodities, and our gold exchange is one based on physical commodities. An exchange with no physical commodities as the basis may grow to a gigantic scale, but there will still be some restrictions when it comes to supporting the physical economy or wielding influence on other aspects of the market. Therefore, I think that as a market trading mainly physical commodities while also trading derivatives, our gold exchange should indeed be playing the role of a central hub in China's gold market. As for the current gold market of our commercial banks, Mr Zhou Ming will be providing an explanation later in his presentation. Our futures exchange is not represented here today, but I can tell all of you that China's futures exchange has also been doing very well in many aspects. Many of you here today are their members.

At the SGE, trading of physical commodities accounts for 35% of total transactions, and investment trading, or rather, derivatives trading accounts for 65% of the total transactions. I believe there will still be changes to this ratio in the future, as in the percentage of transactions accounted for by derivatives may increase further. In my opinion, the desired ratio should be something like 20%/80% or 10%/90%. As for our exchange, let me give a brief introduction to all of you as some of you are familiar while others are unfamiliar with it. The SGE was established in 2001 and officially commenced operations in 2002. Chart 2 shows the transaction volumes of the SGE's products since 2009. As at the end of last year, we have traded more than 11,000 tonnes of gold and 430,000 tonnes of silver. Despite relatively large fluctuations in gold prices this year, we have still managed to maintain a 17% growth in our gold trading volume compared to the corresponding period last year. So the momentum is still healthy. Besides, we have established a system for logistics, delivery and distribution, as well as a funds clearing system. It should indeed be said that the development outlook is still promising.

In terms of development opportunities for the entire gold market in China, I have mentioned earlier that there is a tremendous potential for our physical gold market. However, we think that our market as a whole is facing three critical opportunities. The first one is a critical period of strategic opportunities. The keynote speaker, Jeremy East, from Standard Charted, explained this point very well earlier today (Jeremy's speech is reproduced on page 10). He talked about the impact of China on the world economy, the global impact of RMB internationalisation and the global impact of China's gold market. China's economy is developing at a medium to high speed, with an annual growth rate of 7.5%. I think this level of growth is sustainable for many years to come. Therefore, such a rate is a significant factor supporting the development of China's gold market, as well as a fundamental factor supporting the flow of gold from West to East. So in this regard, China's gold market is currently still in a period of strategic development. The second one is a period of accelerated development. With China's investors becoming increasingly mature, participants in China steadily increasing in number and our products getting richer day by day, especially our continually enhanced innovation capabilities, our market is experiencing a period of accelerated comprehensive development. The third is an increasing international presence. Until recently, China's gold market was a closed market. Other than imports, China's gold is invested in by domestic investors and onshore funds. We think that China's gold market has reached a new phase of opening up. It is because the extent of China's economic openness is getting increasingly larger, and our RMB internationalisation is accelerating, especially when we have set up a free trade zone in Shanghai in which free conversion of RMB is possible. Another reason is that China's gold market has now developed to a reasonable size. That is why we think that the time has come for China to open up its gold market to the world.

As well, we should have an overall goal for the opening up of China's gold market. Just as

“China's economy is developing at a medium to high speed, with an annual growth rate of 7.5%. I think this level of growth is sustainable for many years to come.”

Singapore's Minister for Trade and Industry told us today that Singapore has an overall goal and overall plan for its gold market, China also has an overall goal for the opening up of our gold market to the world. First of all, we should leverage the opportunities presented by RMB internationalisation to open up China's gold market gradually to the world. Secondly, we have technically implemented such opening up through the establishment of our Shanghai Gold Exchange International Board. So how do we open up to the world? The international board will help to open the door and invite everyone into China's gold market. Thirdly, we find that we should have a target of serving global investors to create an influential international gold market in China. In other words, China should still have the opportunity to become a prominent gold market, and Shanghai should become a global centre for gold trading. I think we are rather confident about this. This is our goal. So has such a goal obtained the support of the Chinese government, or rather, the support of our regulatory authorities? I am very pleased to say that this is indeed the case. The international board has obtained approval from our central bank, the PBOC, and received support and made the relevant institutional arrangements. Many of you were very concerned about whether you can trade with US dollars or offshore RMB, and how to participate in trading. Let me tell you, we have now completed the design such that you can trade on the international gold board with your offshore RMB and offshore foreign currency through a free-trade account in the free trade zone. One week before I came here, we signed an agreement with the regulatory authorities for the use of free-trade accounts.

So what are the specific details of the design of our international gold board? I have thought for a long time about how best to explain this clearly to all of you. It is, in fact, very simple. First of all, who are the participants, as in the ones who can participate in trading on our international board? Well, any foreign legal entity or any legal entity that will be established in the Shanghai Free Trade Zone is eligible to apply to become a member of our gold exchange. Of course, there will be many applications, and there will also be some criteria and qualifications for the admission of members. Similarly, there are strict requirements for those wanting to become members of the LBMA. There would still be some requirements in order to participate. We welcome anyone meeting these requirements to join us. Those who cannot meet our requirements can still participate in trading through any of our future international members who can act as brokers.

> *"Secondly, the transactions on our exchange are priced in RMB. I believe that such a design will enrich the international gold market and make it more credible."*

Secondly, the transactions on our exchange are priced in RMB. I believe that such a design will enrich the international gold market and make it more credible. We have US dollar pricing. We have London gold pricing. And we can also have RMB pricing. Earlier, I have reported on the data that physical gold consumption in China's gold market has, in effect, reached more than 2,000 tonnes last year. All of you here are experts in this industry and are very clear about the percentage accounted for by these 2,000 tonnes of physical gold in the global market. So I think that RMB pricing should enhance the entire price mechanism. After fixing the price in RMB, you can participate in transactions on our international board with your offshore RMB or even offshore foreign currencies. These days, I often have friends asking me whether we have two boards, one called the international board, and the other called the domestic board. We have, in effect, only one board where domestic and foreign investors trade together with onshore and offshore funds based on a single price. So they are, in fact, together, not separate. If that is the case, what is the purpose of setting up the SGEI? It has three main responsibilities. The first one is to serve as an IT system interface enabling international members to trade on our main board. The second role is to implement the clearing of funds. I mentioned earlier that trading would be done through an FT account. Incoming offshore funds should still be subject to regulation, meaning that incoming funds can only be used to invest in the trading of products on our gold exchange. You cannot use these funds to do any other thing, such as to buy properties or stocks in China. So the account is needed for you to place your money in it. This account will be opened in the name of our SGEI. Therefore, it serves the role of the clearing and management of funds. And what is the third role? We have created the role of transhipment trade. Many international gold experts have mentioned that Shanghai could serve as a centre for the transhipment of gold. In other words, countries in Southeast Asia or certain parts of East Asia could import gold through Shanghai. So we have, in fact, adopted this suggestion. As such, we designed an important function on our international board for it to be equipped with the ability to conduct transhipment trade. This is an institutional arrangement. For the purpose of such an arrangement, we have set up a 1,500-tonne gold vault in the Shanghai Free Trade Zone. This can serve as a delivery store for both gold imported into China and transhipped to other destinations.

So what is the current status of preparations for the international board? As our market is now transforming from an entirely domestic market to an international market, some of our rules have been adapted. We are also soliciting opinions on this matter from some of our participants, and this is more or less completed. Secondly, the IT system has been built and is now technically online, with the capability to conduct transactions. What we are doing right now is to invite international members to become members of our exchange. Many of the banks, corporations and investment companies or funds that are present here today have established very good relations with us. I might also have sent our invitation to many of you. At this stage, we are only engaging in discussions. We would like to see all of them become members of our exchange, and their responses have been encouraging. They said that they would be very willing to participate in China's market and become a member of our exchange. We expect to launch this international board officially before the end of 2014.

Another thing I would like to elaborate on is that, as our international board is priced in RMB, there are many other opportunities involved. As we all know, there is a difference in interest rates between onshore and offshore RMB funds, or between onshore RMB funds and foreign-currencies. Furthermore, as transactions are quoted in RMB, you are, in effect, using RMB during settlement. So there is an exchange rate difference involved here. We all know that China's exchange rate has appreciated continually over the past few years. However, the RMB exchange rate is now fluctuating more flexibly in both directions, sometimes appreciating and sometimes depreciating. The degree of daily exchange rate fluctuations in China was 1%, but it has now relaxed to 2%. If the exchange rate fluctuates by 2% daily, I suppose this is not a small amount. In other words, investing in such a product from our gold exchange would involve gold price fluctuations, as well as interest rate and exchange rate fluctuations. Therefore, it is, in effect, a three-in-one product that provides investors with the potential for profit.

> *"We expect to launch this international board officially before the end of 2014."*

I think China's gold market is developing very well. So I am very confident about the launch of our international board. I am also very optimistic about the development of our gold market as a whole. So I would like to take this opportunity to thank all of you for your support and welcome your participation in our market. Together with all of you, we will take our global gold market to greater heights! Thank you for listening.

Xu Luode, Chairman of the SGE
Mr Xu Luode, Bachelor of Economics and senior accountant, is the Chairman of Shanghai Gold Exchange. He is also the Vice Chairman of China Gold Association, the Vice Chairman of China Payment and Settlement Association, the Executive Member of China Society for Finance & Banking and the Executive Member of China Numismatic Society.

Before taking the current position, Mr Xu Luode served successively as the Deputy General Director of the General Office in People's Bank of China, the Director General of Payment and Settlement Department in People's Bank of China, and the President of China UnionPay.

Precious Metals International Context

By Jeremy East, Managing Director Global Head, Metals Trading, Standard Chartered Bank

The following article is the Keynote Speech delivered by Jeremy East at the LBMA Bullion Market Forum in Singapore on 25 June, 2014.

Introduction

Thank you very much, ladies, gentlemen, and Minister. I notice there is no session here called 'East goes east'. I have spent most of my career in London. A year ago, I moved to Hong Kong. The reason for moving out to Asia was really a reflection of what is going on in Asia and the development of Asian markets. One of the key reasons that we are here today is because of what is going on out in Asia.

Today, I am going to talk a bit about what is going on in the Asian markets. I will obviously talk a lot about China because it is now the largest market in gold. We will look at the price trends and the impact of Asia on those, and also at what is happening with the physical flows. Where is the gold going to?

Then, as I said, I will talk about China and what is actually going on in China. Why it is becoming much more important on the global stage and why is it trying to become more international with RMB internationalisation?

Finally, I will talk about how this is going to impact the London and New York markets.

Gold Price Drivers

Three years ago, there was another Jeremy here, Jeremy Charles. He was talking about the growth of the ETFs. Three years ago, the ETF was around 70 million ounces. Later that year, it grew to 85 million ounces. The ETF is one of the main developments in the gold market. At the same time, the gold price rose up to $1,900 per ounce, a key driver was the growth of the expansion of ETF holdings. We all know what happened in the following few years, and if you look at the gold price, clearly the liquidation of the ETF was a main driver of that move down too.

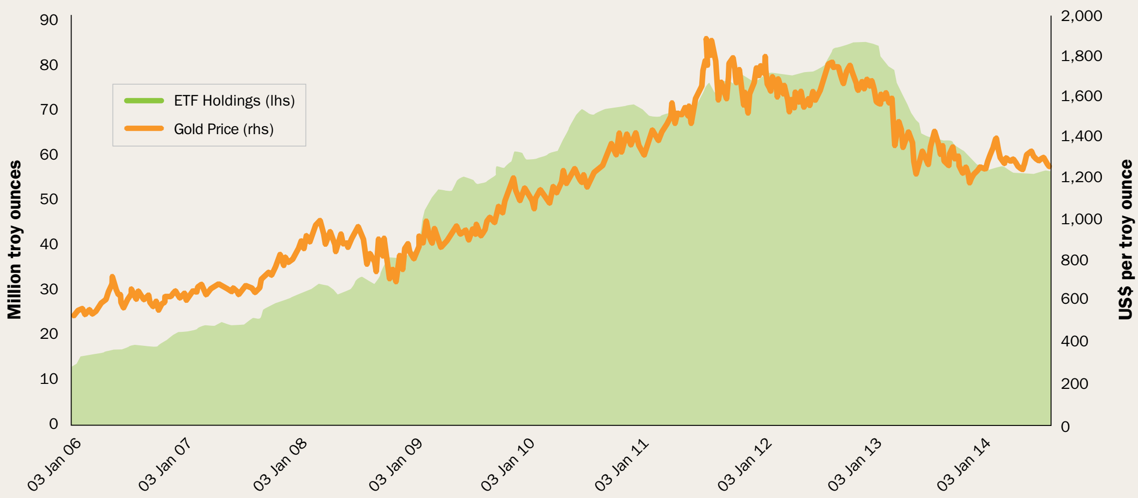
If you look at the key drivers from our colleagues at Goldfield GFMS, they talk about import duties in India, ETFs, quantitative easing, Western budget deficits and US interest rates. These are all the things that we frequently talk about as influencing the gold price. However, there is no mention of the biggest player in the market. There is no mention of China. I think things are changing.

The China Effect

Let us look at this year. When we started this year, everyone was bearish and gold was around $1,200. In the run up to the Chinese New Year, the premium in Shanghai spiked to $1,500. There was a huge flow of physical gold in to China in the first four weeks of the year. Very soon after that, instead of moving lower as everyone expected, the gold price rallied strongly on the back of the demand from China and it moved up to close to $1,400 at $1,390. What happened at that point? I can tell you what happened. The PBOC allowed the Chinese currency to weaken. It had a massive impact on the gold market. Very few people have been talking about it. Within a few days, the premium on the gold exchange had actually turned to a discount. The Chinese demand for gold dried up and within the next two weeks gold dropped $100.

It is important that we now start to see and understand what is going on in China, because it is having an impact on the international prices. Recently, we have seen the gold price bounce back. It came down to around $1,250 and then back up to $1,300. At $1,250, the PBOC allowed the fixing to get slightly stronger in China, and so we suddenly saw a little bit more confidence coming in to the Chinese market, with people more confident in terms of what was going on with their currency and a bit more confident in terms of what they could do with gold. Whether it is a coincidence or not, I think it is important to realise that this is starting to be a major driver.

Chart 1: Total known ETF Gold Holdings and the Gold Price



Source: Bloomberg

Flows of Physical Gold from West to East

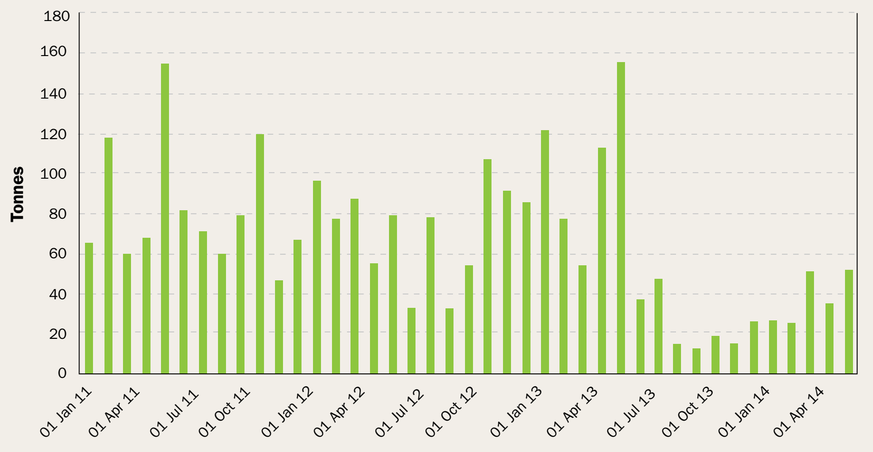
I will now have a look at the physical flows. The ETF built up a stock of around 85 million ounces, but it took many years – a decade or so – to get there. Within one year, approximately 30 million ounces were liquidated, so there was a huge amount of selling. It was not just ETF selling, it was also physical, so there were people with physical holdings liquidating as well. As we saw with the gold price from last year, there was huge selling from investors but also huge selling from people who had held gold as a safe haven, so there was a huge amount of physical selling.

So, where did the gold go?

At least part of it went to India. In the first four months of the year, India imported a huge amount of gold and, thereafter, basically nothing. The imposition of higher import duties and the new 80:20 rule meant that Indian imports were really nothing after May. By September 2013, imports were at their lowest level for 10 years. So, where did the gold go?

Just a few more comments about India: obviously one of the reasons driving India is the current account deficit. I am sure my colleagues will go in to this in more detail this afternoon. Gold was one of the top imported commodities for India. There was a real focus on gold in terms of saying if we can reduce the amount of gold going in to the country that will improve the current account deficit. If you look back to Q4 2012, the current account deficit was almost $32 billion. The government decided to control that and, soon after, as we see in terms of the data, this had an impact, firstly on the gold import volumes and then in the trade data. We saw the current account deficit come down dramatically. In fact, if you look at the first quarter of 2014, it is down to just over $1 billion. Our understanding is that India now believes it is comfortable with a current account deficit which is about 2.5% of its GDP, and current levels are presently below that, at around 1.7%. The expectation is we will start seeing more relaxing of duties or perhaps of the 80:20 rule by the government. I think it is important to understand that potentially the Indian numbers may have overshot on the downside and this may have an impact on the gold market later in the year.

Chart 2: India Gold imports



Source: Standard Chartered Research

China really bought gold last year and it also continued to into this year. My numbers are estimates rather than the exact numbers, but it gives you an idea of what is going on. In the last few years, China has probably imported more than 3,500 tonnes of gold. Last year, it was probably around 1,400 tonnes. You also need to add on 400 tonnes of domestic production, so China is now by far the largest gold market in the world, consuming probably around a third of all gold produced. It has overtaken India; it is now the largest driver in the physical market.

I will say a few words about the physical flows. Obviously, we saw the ETF selling and we have also seen physical selling of gold in the west. The ETF gold selling is 400 ounce loco London bars in vault. These gold bars did not find their way back to London. The majority of this gold found its way out to Asia. The large bars were converted through the Swiss gold refineries and other refineries, and shipped out to Asia and supplied largely to the Chinese market. There were huge logistical challenges last year, such as taking metal out of storage that had been there for many years. The refineries struggled with the volume, in terms of being able to convert the gold into kilo bars for the Asia market, and we saw an unprecedented squeeze on the premiums for physical gold.

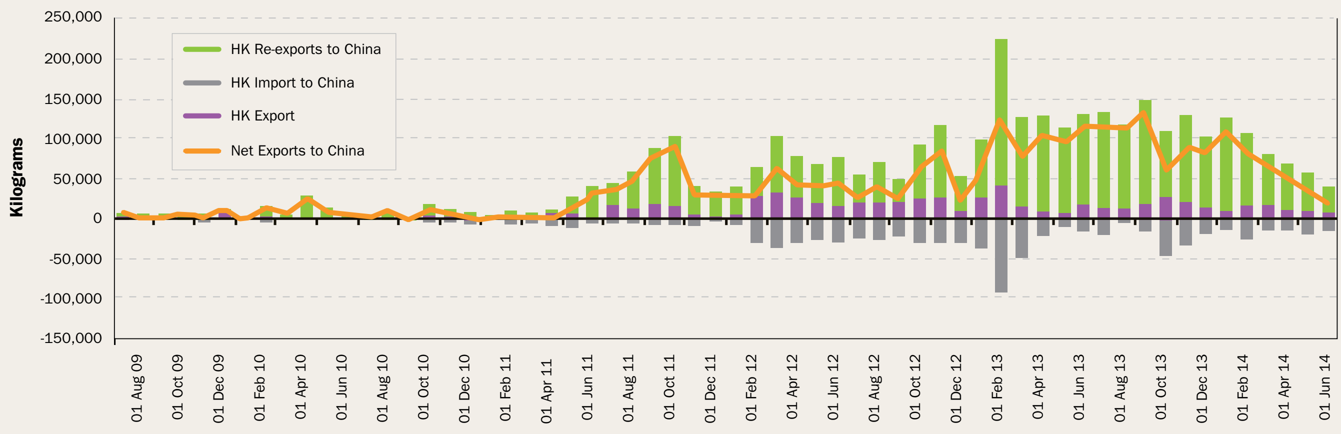
Now, we are actually seeing quite an interesting situation. The Chinese market is still taking gold. This year, we have seen the ETF stabilising and there is no real selling of the ETF. The current level of scrap supplied to the market is low and probably close to non-existent. We are now seeing a growth in supply coming from producers going directly to the Chinese market. We are seeing gold flows circumventing the London market when, historically, gold would typically find its way to London and then out again. So we are seeing a bypass of the London market and, in fact, in times of strong demand from Asia, gold is being drawn out of the London market. From time to time, there is tightness in liquidity and I think this is a trend it is worth keeping an eye on.

Why are the Chinese Buying?

So what is going on in China? Why are the Chinese buying? It only seems to have been happening over the last few years. What is going on?

1. China's Gold Friendly Strategy
I was at the Shanghai Derivatives Forum at the end of May and one of the speakers was a

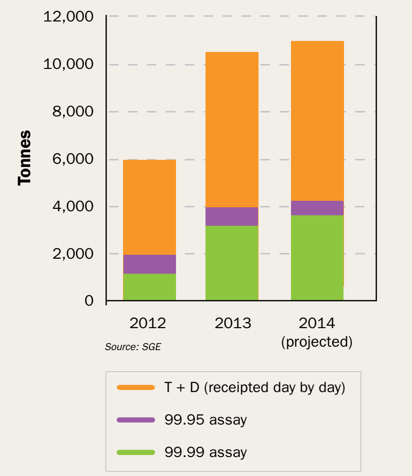
Chart 3: Hong Kong Gold imports



Source: Bloomberg

representative of the Gold Association. He gave us quite an interesting insight into the flavour of what is going on in China from a strategic perspective. Some of the things he talked about included that China planned to change the landscape of world gold markets. He talked about having a strong currency and about having that currency backed by gold, like the US dollar. He also talked about people holding more gold and encouraging more people to hold gold. That is not just individuals, but also the central bank. From that perspective, it is also getting gold into the country in terms of encouraging domestic gold production, but also investing in international mining companies and sourcing the product from them. China has got a very friendly gold strategy.

Chart 4: Shanghai Gold Exchange gold contracts turnover



2. China's Purchasing Power
China is becoming much wealthier. Most economists thought the purchasing power of China would overtake that of the US in 2019. They were five years too soon. It happened this year. The GDP of China is still way below and probably half of that of the US. However, purchasing power is greater. This means that Chinese people have more money to spend. Obviously, we cannot relate it directly to what is happening in the US, but it is a real data reflection on what is actually happening and there is a huge growth going on.

3. Growth of Asia's Regional Markets
In addition to being wealthier, how do you spend that? How do you invest that? China has a very accommodative strategy in terms of promoting gold in the domestic markets. We have seen that in terms of the volumes that have been going through the Shanghai Gold Exchange and also the products that are going through. However, it is not just the Exchange. The government is encouraging the local banks to offer new gold products to their clients. They are building distribution networks for gold investment bars and coins, and pass book accounts. China is now is the largest country for gold processing in terms of jewellery and small bars, and in terms of the jewellery space, there has been a massive expansion of retail space in China in the last year, allowing people to invest in and buy jewellery.

It is not just the physical markets. It is also the futures markets that are expanding. Here, we look at the Shanghai Futures Exchange. Gold from the Futures Exchange is now the second most actively traded contract globally, and silver is the most actively traded contract globally. So the Futures Exchange is also driving the market.

RMB Internationalisation

1. Impact on Dollar Denominated Commodity Markets
China is going through a strategy of internationalising the RMB. This will have a direct impact on international commodity markets. Payments between the US and the rest of the world, and exports from China to the US are seeing a dramatic increase in the use of the RMB rather than US dollars. What we can expect to see is imports into China – for example, commodities – starting to be paid for in local currency. China is probably the largest consumer of commodities globally. It is the largest consumer of copper and iron ore, and we now know it is the largest consumer of gold and oil.

In terms of the strategy for internationalising the RMB, why not encourage the market to pay for these imports in RMB, so when China buys the imports, it will pay for them in RMB? This will help spread the internationalisation of the RMB. Recently, there were some transactions that allowed China to consume iron ore and pay for it in RMB. There was also the recent development of the Shanghai Free-Trade Zone, allowing a corridor for payments from CNY (onshore RMB) to CNH (offshore RMB). It is very important to understand what is going on in the Free-Trade Zone, because that will be, as I said, a corridor for commodity flows, and it will also have an impact on the precious metals market.

2. Benchmarking
How do you get people to use RMB? The way to do it is to use a benchmark denominated in RMB. We are seeing this initiative in the Free-Trade Zone. We have seen the Shanghai Futures Exchange launch a crude oil contract, denominated RMB. This is attracting a huge amount of excitement in China and we expect this to be a very successful contract. This will allow international traders and international companies to supply commodities into China through the Free-Trade Zone and to sell that commodity on an exchange benchmarked in CNH. That means that they are going to be transacting, internationally, in the RMB.

But of course it is not just China that is interesting, a lot is going on in Asia. The Southeast Asian market is a very important market for gold and as we hear today, the launch of the gold contract on the SGX is a key initiative. I would expect the interest in that to be significant, and we are proud to be associated with that initiative.

Lastly, I want to say that when you are using a benchmark, it is important that the benchmark is relevant for you and, importantly here, we are talking about the SGX benchmark for gold and the oil benchmark for China. Why should a country that is importing gold or oil use a benchmark that is set in London or Chicago? Is it not more appropriate that they use a local benchmark for that?

Conclusion

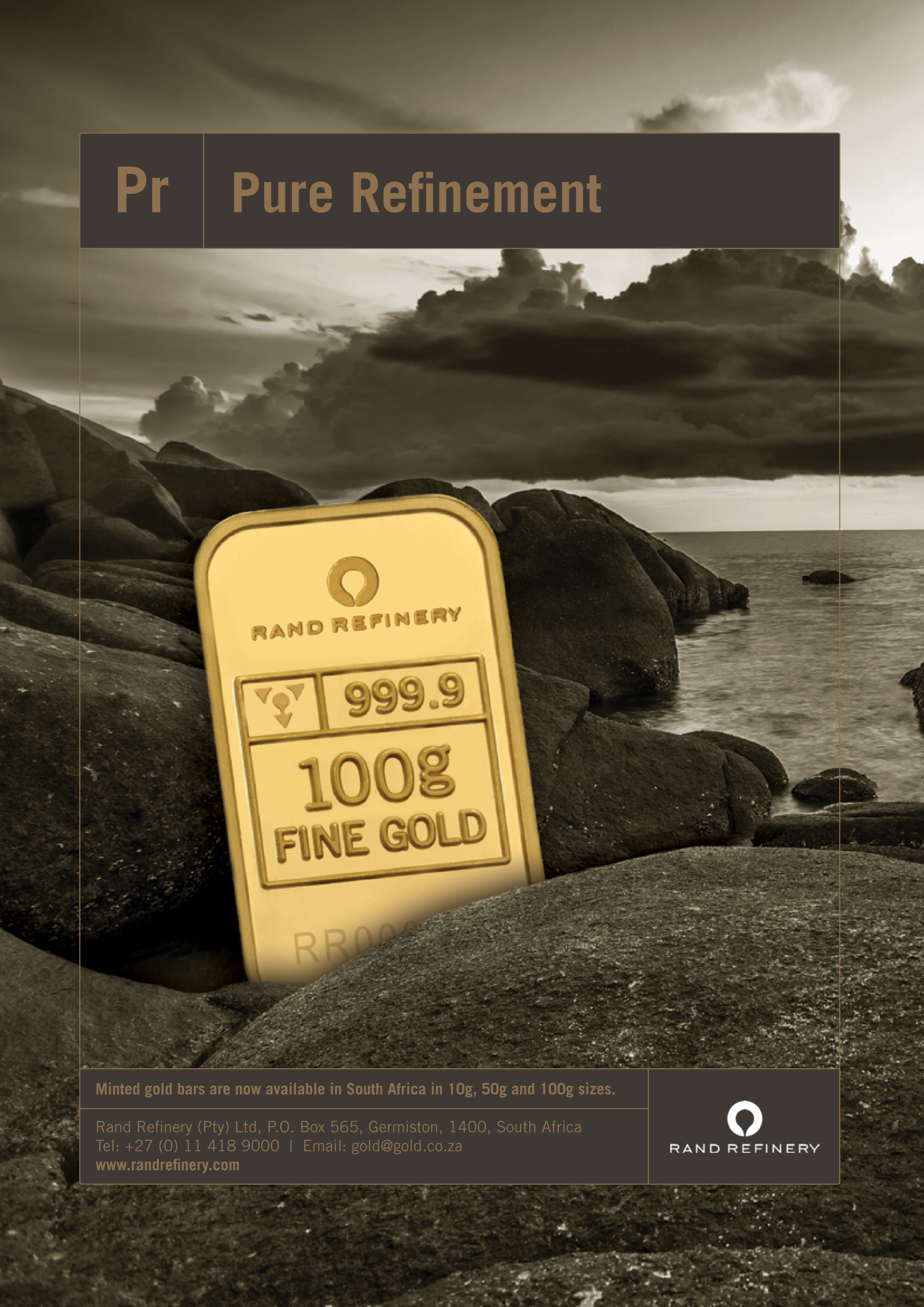
So just to conclude: what does this mean for the market? I talked about China and the impact of prices and flows. The Chinese economy will continue to grow and its pro-gold policy will continue, and I expect that to have much more impact in the future. I picked out a few points today regarding what is going on in China, the huge impact it is having on the global markets, and I think this will become more and more important in the coming years. Also, in relation to the global landscape, the liquidity of China's physical markets and futures markets will continue to grow, and they will overtake the more established Western markets.
Finally, in terms of the internationalisation of benchmarks, I think this will be the biggest challenge for Asia. It is a challenge to be able to change how people use physical contracts against benchmarks. However, I think it is an initiative that will play out in the long term, and in the short term, we are already seeing progress, especially in China. So, I would say, in terms of the benchmarking, watch this space.
Thank you very much.

Jeremy East, Managing Director Global Head, Metals Trading, Standard Chartered Bank
Mr Jeremy East has over 25 years of experience in the metals industry and joined SCB in 2006. His responsibility covers metals trading, hedging, financing and investment solutions covering both physical and derivative products. Additionally, he built up SCB's commodity inventory financing business. The metals trading business has presence in Shanghai, Hong Kong, Singapore, Dubai, London and New York serving its franchise client base mainly in Asia, the Middle East and Africa. SCB is Category 2 member of the LME, member of the LBMA and market making member of the LPPM and was the first international member of the Shanghai Gold Exchange. Jeremy recently relocated to be based in HK, to drive the growth of the metals business in Asia.

Before joining SCB, Jeremy was Global Head of Precious Metals at Commerzbank and also board member of Argor Heraeus – the Swiss gold refinery, where he focussed on a physical precious metals franchise in India, Turkey and in Russia and CIS.

Prior to that, Jeremy started his career with Philipp Brothers, then the largest commodity trading company in the world, where he traded base and precious metals. In 1990, he joined Salomon Brothers to run the precious metals business in London.

Jeremy is an International Advisor to the Shanghai Gold Exchange and on the Management Committee and The Membership Committee of the LBMA.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No More Fixings

By Jon Spall, G CUBED Metals Ltd

It is probably the easiest quiz question to put to anyone in the precious metal community. However, what connects the years 1897, 1919, 1989 and 2014? Obviously, they are the years that the fixings came into being for silver, gold and the platinum group metals (PGMs) respectively. The final date, this year, is likely to see them all cease to exist. Or at least in a way that would have been familiar to those involved in these processes in earlier days.

There have been a number of changes throughout the decades in which the fixings have been in operation – perhaps most notably, for gold, that there was no longer a requirement for gentlemen in top hats (initially in reality and latterly somewhat metaphorically) to stroll around to the offices of N.M. Rothschild at 10.30am and 3pm every trading day. Although, that it took until 2004, around 130 years after Alexander Graham Bell was awarded the first patent for a telephone, is probably noteworthy too. Even then, the change occurred because N.M. Rothschild exited the commodities business and sold its seat on the gold fixing to Barclays – rather than a review of the way that the benchmarking operated. For silver, the most profound change occurred in 1999 when those involved were allowed contact with the outside world. Prior to that innovation, participants were secreted away in an office with a single telephone that was only to be used to ask for the GBP/USD exchange rate once the USD fixing process had been completed.

Platinum and palladium, relative youngsters to the benchmarking system after being established in1989, were not similarly encumbered by the weight of history and banks chose to set the price in a virtual environment while still adopting some of the arcane language and traditions. That some of the original members were the Swiss banks based in Zurich probably helped in the decision that participants did not need to meet face to face to ensure that an appropriate price was arrived at. However, the terminology was consistent across all four metals – such as always giving the selling figure first, but most peculiarly, to outsiders, the notion of 'flag' whenever a declared position needs to be adjusted, discretionary balances and set multiples of participation (be they bars, lakhs or ounces). One thing that is certain in the various reviews that are being carried out into the benchmarking processes is that the word 'fixing' will be consigned to history. Sadly, the connotations are simply too much of a burden in the current environment.

Tradition or Change?

There is little doubt that part of the allure of precious metals to investors is that sense of tradition and permanence in a changing environment. Indeed, it has always been my contention that gold is not an inflation hedge, or many of its other claimed qualities, instead it is a hedge against uncertainty: a far more important property so that the metal can prosper in the seeming polar opposites of inflation and deflation. This sense of continuity remains vital and is deeply routed in the psychological connection that many investors experience when they invest in precious metals.

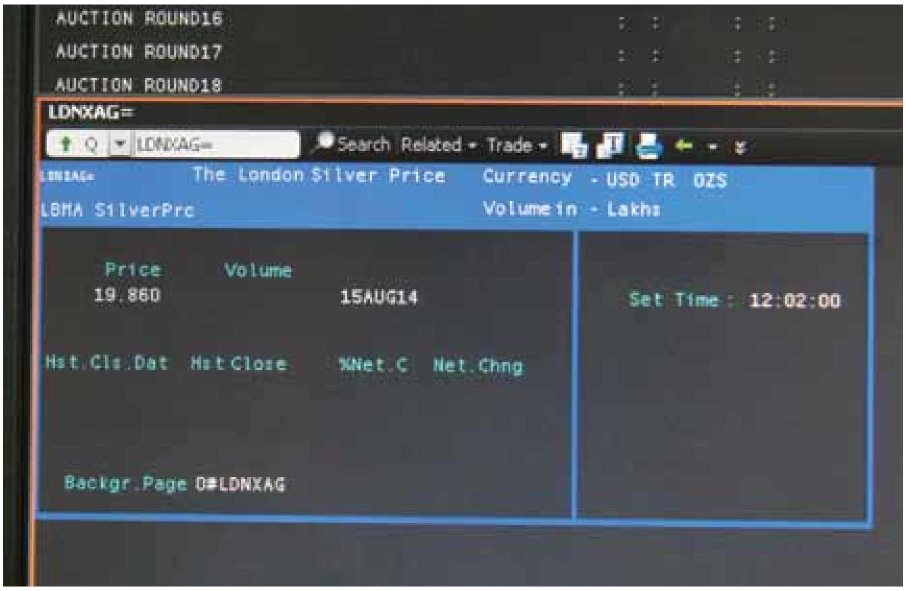
However, in a world where technology dominates our lives and the majority of people embrace the benefits that this brings, often in an unalloyed fashion, then it would seem that there is clear rationale to update the methodology used to set these important benchmarks. Unfortunately, the experience of our industry tends to suggest that change has been a function of necessity rather than choice. Perhaps unsurprising when most of the bodies that are charged with the various responsibilities that ensure the smooth functioning of the market have virtually no full-time employees. Instead, they exist on the goodwill and determination of individuals who strive to fit in a second set of responsibilities that sit alongside their primary: to the institutions (often banks) that actually pay them.

Obviously, the silver market was the first to review, and subsequently change, its methodology for setting the benchmark. Not as the result of an in-depth review of the process to establish best practice, but instead driven by the Deutsche Bank's decision to relinquish its seats on both the gold and silver fixing. The gold fixing has existed several times with only four members, but it was thought, rightly so in my opinion, that in the case of silver,

"The way it used to be. Representatives of the five gold fixing members, circa 1990."

two participants simply did not represent a valid quorum to 'fix' a benchmark. Indeed, the opprobrium with which much of the financial community is now regarded meant that the need for change was clear and immediate.

After the London Silver Market Fixing Ltd's decision to "cease to administer the London Silver Fixing with effect from close of business on 14th August 2014", the LBMA "launched a consultation in order to ensure the best way forward for a London silver daily price mechanism". Ultimately, seven potential solution providers for a new silver benchmarking process were invited to present to bullion market participants on Friday 20 June. This meeting, coupled with two surveys carried out by the LBMA and an independent review carried out by me on behalf of my company G Cubed Metals Ltd, gave the market sufficient information to reach a consensus. Hence, on 11 July, it was announced by the LBMA that: "CME Group and Thomson Reuters have been selected to provide the solution for the London Silver Price mechanism." The first occasion for the LBMA Silver Price, as it is now officially known, took place on Friday 15 August, where the participants were HSBC, ScotiaMocatta and new entrant Mitsui & Co. It is widely anticipated that the list of participants is likely to grow in the coming weeks and certainly before this article is finally published.



"Screen shot showing the first LBMA Silver Price on 15th August with the price set at $19.86".

The London Gold Market Fixing Ltd (LGMFL) announced on 16 July that "with support from the LBMA it has commenced an RFP (Request For Proposal) process with a view to appointing a third-party to assume the responsibility for the administration of the London Gold Fixing." The LGMFL clarified its position in a joint press release with the LBMA on 29 July and that "it will start soliciting proposals and open market consultation in late August". Ultimately, the process was delayed a few days, and on Thursday 4 September, it was announced that the "LGMFL and LBMA are now inviting potential third-party providers who are interested in the RFP process" to join "an open RFP process and all possible solution providers are encouraged to engage".

> *"CME Group and Thomson Reuters have been selected to provide the solution for the London Silver Price mechanism"*

Similarly to the consultation process around the new silver benchmark, all market participants were invited to complete an online market survey in advance of a seminar and a further market survey. The result is expected to be announced in October, with a new solution in place by year-end.

The London Platinum and Palladium Fixing Company Ltd (LPPFC) announced on 31 July that it "seeks an independent third party to assume responsibility for the administration of the platinum and palladium fixing process". Expressions of interest had to be received by 6 August. A subsequent press release on 4 August announced that the LPPFC had appointed G Cubed Metals Ltd and myself as independent chair of the platinum and palladium fixings, and that I would also "support the Board's assessment of responses to the RFP process…". Potentially, by the time that this article is made available, that decision is likely to have been taken with the LPPFC having appointed a new administrator and potentially a fresh approach to setting the benchmark.

An outsider might query as to why four precious metals took three separate processes to determine the way in which the market set its benchmarks and was it a case of inefficiency? The simple, or perhaps lazy, rejoinder would be that the historic fixings were administered by three separate companies and hence all were required to make their own decision. However, having been closely involved in these processes, I think that this does a huge injustice to those involved. Yes, they wanted to make their own decisions but it was because all concerned were fiercely independent of thought and hence wanted the best for their facet of the market. So while that meant CME/TR for silver, it could be entirely different companies for each of gold and the PGMs. One thing for certain is that by the time this article is printed and read, the outcome of these reviews will be known.

What's Next For The Market?

From the extensive conversations that I have had around the redesigning of the benchmarks, it seems many in the industry recognise that with the changes taking place, now might well be the appropriate time to analyse all features of the way in which precious metals are transacted.

- Should producers and consumers participate directly in the benchmarking process?
- Should the market move to a cleared model – for spot, forwards and options?
- With precious metals now being quoted on so many foreign exchange platforms, does the market need to emphasise the similarities with FX at the expense of these markets as commodities?
- With kilobars the medium of choice for much of the market, should they be fungible with 400-ounce large bars in any clearing system?
- Do we need an umbrella organisation with a strong voice to promote the interests of our rather small area of the global financial community?

Certainly, this is not meant to be exhaustive nor am I trying to set forward some sort of wish list or agenda. Instead, I am advocating that the industry get together and work out the best way forward for our market to remain relevant in the 21st century. We need to anticipate and embrace change.

Jon Spall, G CUBED Metals Ltd

After 30 years of working for some of the most prominent names in the precious metals market, including 9 years living in Asia/Pacific, Jon recently established his own consultancy company G Cubed Metals Ltd. His website, anticipated to be online in the near future, is www.gcubedmetals.com. He can be contacted on jon@gcubedmetals.com.

Do Extraction Costs Drive Gold Prices?

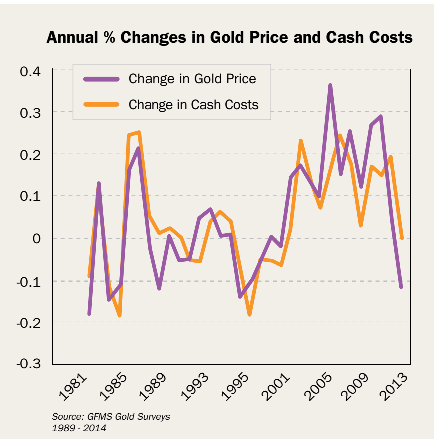
By Brian Lucey, Professor of Finance, Trinity College, Fergal O'Connor, Senior Lecturer in Financial Economics at York St. John Business School (holder of LBMA bursary) and William Tankard, Research Director, Precious Metals Mining, Thomson Reuters GFMS

Some academic studies argue that the cost of gold extraction drives changes in the gold price (see Levin and Wright (2006) as an example). This notion is used to explain the channel through which a long-run relationship between gold and inflation comes about: that as inflationary factors drive up the cost of mining gold, mining companies demand higher prices to compensate them. Here we show that, to the contrary, the gold price should and does cause changes in the cost of extraction.

Under David Ricardo's 200-year-old Law of Rent, the most fertile land is farmed first – or the mine where gold can be extracted at the lowest cost per ounce is mined first. As the demand for gold (or any commodity) increases, its price rises. At these higher prices, it will be profitable for marginal mines, which would have been loss-making at lower prices, to be brought into production. This means that the average cost of extraction for the industry as a whole should rise after prices do and because of the rise. This would make low-cost mines even more profitable and allow overall production to expand to meet increased demand.

Another reason it seems unlikely that miners will be able to set the price of gold in order to compensate themselves for rises in extraction costs is that they seem to lack the market power to do so. Any shortfall in supply can be met in the gold market by a number of types of suppliers and not just miners. Mining companies are not solely required to fill the void.

Gold is unusual among commodities in having a vastly larger accumulated stock than its annual flow from mines, a fact which is due to the very small amounts of gold that are lost from the system each year to reduce the stock. Although it is arguably the most near-market source of potential supply, gold miners only account for a small amount of the gold theoretically available for sale at any given time. This is in contrast to other perishable commodities where the annual supply from production is roughly equal to the total supply available that year.



The amount of gold minded each year relative to the stock of gold available for sale makes it likely that gold miners have low market power and are price takers rather than price setters. From the perspective of the historical gold stocks, gold miners' annual supply adds only about 1.6% to the total estimated stock of gold available (World Gold Council, 2010; GFMS, 2013). Recycling provides a route for less liquid sources of 'supply' through returns from 'demand' sectors such as jewellery back into circulation to meet demand. Indeed, as gold prices increased dramatically between 2003 and 2010, the supply of gold from this channel doubled.

The issue with this proposed channel to explain gold's link to inflation comes into view clearly when we consider what happens when demand falls, causing the price to fall as we saw during the gold ETF sell-off in 2013. Now mines that are high cost are under pressure to modify mine plans to reduce cost, or otherwise cease production. Either way, average extraction costs fall. The cost of extraction is following a market-determined price and not moving ever upwards with inflation.

The graph shows changes in the gold price and changes in cash costs. We test two hypotheses: whether gold prices cause changes in cash costs and that the relationship is positive (a rise in price causes a rise in costs), and also whether cash costs cause prices with a positive relationship. We do this using a Granger Causality test, which assesses whether past gold price changes effect current costs and vice versa.

We use annual gold prices and the world cash costs between 1981 and 2013. This testing allows us to be 99% confident that gold prices cause cash costs. We can be 95% confident that cash costs have an effect on prices, but the analysis gives an unusual result. A rise in gold prices in the previous year causes cash costs to rise by about 76% as much, so that a $10 rise in prices causes a $7.60 increase in cash costs. Only changes in the previous year are found to have causal effect. When we look at the relationship between costs at a national level and dollar gold prices, our findings are confirmed in the vast majority of cases. We also run this test using total production costs and the finding is the same.

This theoretical and empirical evidence points to the fact that gold prices are a determinant of producers' cash costs as we suggested, with rising prices causing rising costs. Another channel is needed to explain why many studies find a link between the gold price and inflation.

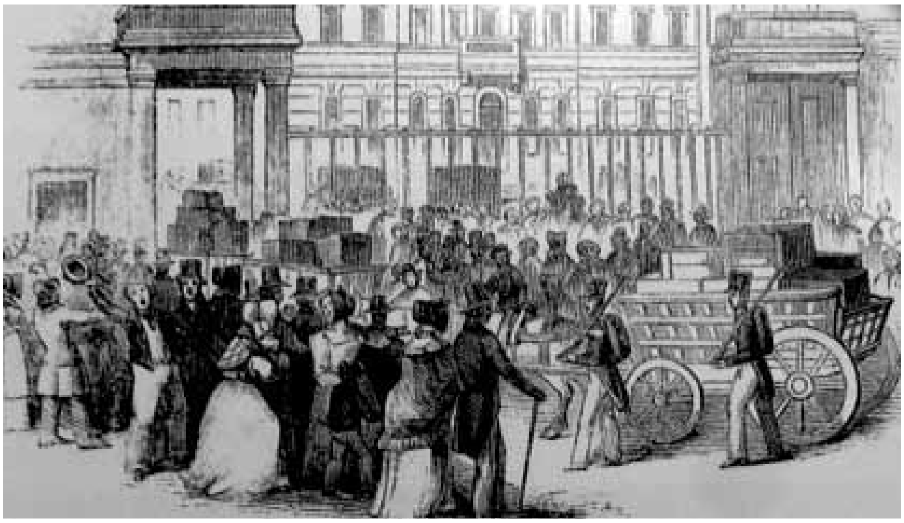
Fergal O'Connor
Fergal O'Connor is the current holder of the LBMA bursary and is Senior Lecturer in financial economics at York St. John Business School.

Dr Brian Lucey, Professor of Finance, Trinity College Dublin
Brian is Professor of Finance at Trinity College Dublin, and he also holds visiting positions at Glasgow Caledonian University and the University of Ljubjanja Slovenia. His research areas include the financial economics of precious metals, behavioural finance, international finance and financial integration and he is editor of two academic journals (International Review of Financial Analysis and Journal of Behavioural and Experimental Finance). He has published over 60 academic papers and several books.

William Tankard, Research Director, Precious Metals Mining, Thomson Reuters GFMS
Having joined GFMS Ltd as a Metals Analyst in 2005 to cover the mining sector, William was brought across to Thomson Reuters in GFMS' 2011 acquisition and holds the role of Research Director – Precious Metals Mining, within Thomson Reuters' Commodity Research & Forecasts division. He has accountability for the mining team's research output of global production, mining costs and producer hedging research across the precious metals.

1897 - 1939, A New Era for the London Silver Price

By Dr Michele Blagg, Research Associate at the Institute of Contemporary British History (ICBH)



The arrival of Chinese booty at the Mint. From the 'Illustrated London News', 1843. 'The Royal Mint, An Illustrated History', p.31. Reproduced with the kind permission of the Royal Mint Museum.

> ***"The more the men of to-day know about the operations that take place in the London Money Market, the greater will be their pride in it, and the greater their ability in upholding its supremacy... for knowledge itself is power."* W.F. Spalding[1]**

As silver enters the digital age with the daily benchmark value of the precious metal now being set electronically, I was curious to learn more about the introduction of the London silver 'fixing' that began in 1897, and the early form it took, which changed little until the outbreak of war in 1939. Over the past 117 years, the 'fixing', while perhaps not as glamorous as gold, was a private auction carried out amongst a select group of precious metal dealers. The relatively calm daily ritual performed an important function by setting an exchange price for silver. In terms of monetary history, silver's price movements over the past century have at times been volatile, erratic and even spectacular.[2] Tracing the origin of the 'fixing' proved more difficult than anticipated, for there has been little published on the history of the London silver market and even less on the 'fixing' process. Tim Green's (1982) *Precious Heritage: three hundred years of Mocatta & Goldsmid* continues to offer the best account of the evolution of the market. Early accounts of both the market and the 'fixing' are found in literature by Benjamin White (1917) in *Silver, Its History and Romance* and W. F. Spalding's (1922) *The London Money Market*. Roy Jastram's *Silver: The Restless Metal* (1981) provides a comparative study of the economic performance of silver between Britain and the United States. While S.L.N. Simha and Janaki Krishnan's *The Saga of Silver* (1980) concentrates on the decline and recovery of silver in the East, Donald McDonald's *History of Johnson Matthey*, together with archival papers located at the Bank of England and at HSBC, offer further insights into the early relations between the London precious metal brokers and casts light on market procedures. Media reports and annual bullion circulars, produced by both Samuel Montagu & Company and Sharps Pixley Ltd., also proved extremely useful.

The decline of silver and its price

Before 1850, silver and gold had both been important monetary metals. Jastram observed that a number of important factors were at work. Firstly, over the next two decades, increased gold production supplied enough gold to displace silver in its monetary role, following the new gold discoveries in the United States and Australia.[3] This presented a substantial advantage of gold as a standard for large transactions, and most European countries subsequently went on to the gold standard during the 1870s.[4] This resulted in monetary demand for silver declining in the Western world, leaving monetary demand mainly confined to Asia. Understandably, the price of silver dropped as there were no longer mints to support a fixed price of silver by free coinage.[5] Following the establishment of the gold standard almost simultaneously by so many nations, a shortage of gold was experienced. During the 1870s and 1880s, as commerce and trade expanded, world production of gold was constant or declining. The resultant international illiquidity, together with the persistent deflation over the three decades from 1865, saw the price of silver fall along with the price of other commodities.[6] Throughout all of this, world production of silver vastly increased from 40 million ounces per year in the 1860s to 160 million ounces in the 1890s.[7] Jastram concluded that "an effect on the price was inevitable". As the crisis in silver unfolded, the London price fell from £0.27 pence per troy ounce (New York $1.42) in 1850 to a low of £0.11pence (New York $0.62) by 1900.[8]

The London silver market, expansion, intervention and co-operation

During the 1850s, the composition of the London bullion market changed. The market expanded as Sharps & Wilkins, Pixley & Haggard (soon Abell) and Samuel Montague & Co joined Mocatta & Goldsmid as approved silver brokers to the Bank of England, a position that Mocatta had exclusively held between 1721 and 1840. The number of approved refiners listed by the Bank of England also expanded and Johnson & Matthey, Rothschild's Royal Mint Refinery and H.L. Raphael's Refinery joined Browne & Wingrove.[9]

London occupied the enviable position as the world's leading silver market. Spalding explained that there were two main reasons

1 W. F. Spalding, *The London Money Market* (London: Sir Isaac Pitman & Sons Ltd., 1922), p.199.
2 By the early part of the thirteenth century foreign trade brought quantities of foreign coin and bullion into the country and it was mainly from this source that the silver for the increasing needs of coinage was obtained. For this purpose each mint had an exchange at which foreign coin or bullion or old coin, when recoinages were undertaken, could be exchanged for new English coin but for this service a charge was levied of which a part, known as a seignorage, went to the King and the other part to the mint-master to pay the expenses of the Mint and to yield him a profit, (see *The Royal Mint, An Outline History*, London 1953, p.8).
3 Roy Jastram, *Silver: The Restless Metal* (Canada: John Wiley & Sons inc, 1981), p.75.
4 Ibid., p.76.
5 From the eighth century the English silver coins contained 92.5 per cent of fine silver and, except for a short interval in the sixteenth century, this composition continued until 1920. Following the first World War the price of silver rose so high that the metal value of the coins was for a short time higher than the face value (see for further details, *The Royal Mint, An Outline History*, London: Private publication, 1953, p.13).
6 Jastram, *Silver*, p.75.
7 Ibid., p.76.
8 Ibid.
9 Timothy Green, *Precious Heritage: three hundred years of Mocatta & Goldsmid* (London: Rosendale Press, 1983), p.26-7; Mocatta & Goldsmid remained exclusive silver brokers to the India Office, which had replaced the old East India Company, and fulfilled large silver contracts for them as long as the British ruled India, p. 27.

> *"In 1871, 26 years before the introduction of the first silver fixing, the four London brokers took steps to protect their market positions against international competition."*

for this. Firstly, London held the lion's share of the Far Eastern trade. India and practically all Far Eastern countries were users of silver and whilst some Far Eastern countries were on the gold standard, or something approaching it, silver was power all over the East, both as a commodity and medium of exchange.[10] Branches of all the Indian and Far Eastern banks were located in London; these were the principal intermediaries for the mercantile trade of the Far East. Apart from this, geographically, London was a convenient centre for supplying the coinage requirements of European nations. Secondly, there were regular weekly shipments of silver from American and Mexican producers to London, which were dispatched to smelters and refiners before being sold to India through the London brokers.[11]

In 1871, 26 years before the introduction of the first silver fixing, the four London brokers took steps to protect their market positions against international competition. Papers located in the HSBC archive include a draft agreement drawn up in that year between Mocatta & Goldsmid, Sharps & Wilkins, Pixley, Abell, Langley & Bland and Samuel Montagu & Co., who joined forces to regulate commission rates, charged at three-eighths per cent, and agreed not to compete with each other for purchases of silver imported into London by banking companies by reducing the commission rate. As far as practicable, it was agreed that each firm should have an equal share in the volume of transactions.[12] In order to effect the equitable division, whichever brokerage negotiated the sale of silver would, immediately the deal was realised, transmit to the other three firms one-quarter of the commission obtained by the sale. Additionally, it was agreed that Montagu's had the right to purchase one quarter of each parcel of dore silver, or its refined equivalent for their operation, providing that they decided upon exercising such right within one hour's notice being given to them by the acting broker.[13] Although no price advantage was given to Montagu, the firm was expected to pay the same as that price obtained for the remainder of the parcel. The final clause concerned withdrawal from the agreement should any "serious difficulty in carrying out this arrangement" arise and required one month's written notice to be given to the remaining three firms. Unfortunately, no accompanying paperwork has survived to suggest exactly why the agreement was drawn up, but I suspect it was in the interest of the London market as a whole by eradicating competition and ending the erosion in commission rates by the four brokers. Abraham Mocatta, in his diary started in 1871, wrote of the "slightly brash rivalry" between the newcomers Pixley and Montagu, who were "always trying to gate-crash Mocatta & Goldsmids long established connections". The draft agreement provides evidence that the four firms were willing to put differences aside and work together, pledging mutual co-operation and trust. Certainly, 1871 appears to have been a good year for Mocatta & Goldsmid. Most of their business was on private account to Bombay merchants. Abraham recorded that "the demand for silver for India has been the chief cause of the year's activity" and "has been a great success.....the profits of £13,429.13.8 have only been matched once during the past quarter century".[14]

Concerns for the continued declining price of silver sparked the formation of the 1876 House of Commons Select Committee to look into the depreciation of silver. The London bullion brokers presented evidence to the Committee advising that large-scale demonetisation of silver had led to a further fall in the price. The Committee in its final report made no positive suggestions.[15] Action over the falling price was taken in the United States in 1878 when a campaign was launched to protect the interests of silver producers. This resulted in the passing of the *Bland-Allison Act*. The Act required the government to purchase silver in the market, with a value of between $2 million and $4 million, for coinage into dollars.[16] Jastram considered that the Act was "entirely ineffective" and it was subsequently replaced in 1890 by a stronger pro-silver law, the *Sherman Silver Purchase Act*.[17] This legislation mandated the Treasury to buy 4.5 million ounces of silver each month, which was almost double the amount actually purchased under the *Bland-Allison Act* and equated to almost the entire output of the mines in the United States.[18] The silver price continued to fall and, in an attempt to reverse it, the *Sherman Silver Purchase Act* was repealed in 1893. Around 1900, silver dropped off the political agenda as Congress passed the Gold Standard Act.[19]

The introduction of the London silver fixing in 1897 marked an abrupt change in British price history and a new era in the market's structure.[20] As London handled the bulk of silver produced, it followed that it was London that called the tune and 'fixed' the price for the whole world.[21] During the summer of 1896, after almost two decades of continuous decline, the silver price reached an all-time low. The volatility of the price made a daily silver fixing necessary. Before the demonetisation of silver, and the great fall in price that followed, the fluctuations as well as the volume of business transacted were so small that the operation of 'fixing' had been carried out by informal change of notes or by verbal messages.[22] The first 'fixing' meeting was held at the offices of Sharps & Wilkins, 32 Great Winchester Street, with the other three London brokers Mocatta & Goldsmid, Pixley & Abell and Samuel Montagu in attendance. The brokers met once a day with their buying and selling orders in hand, where they would then enter a room and negotiate the price for silver based on those orders. The 'fixing' price of silver controlled the price of the metal in every important financial centre throughout the world.[23] The finer details of the 'fixing' process were explained to readers of *The Times:*

"The method was for each broker to total up his orders, and from his 'book' he estimated what he considered the price should be. From the result he sent a note to one or other of the brokers giving his opinion; in return he would get a reply giving other points of view and possibly suggesting a sale to, or a purchase from them, of so many thousand ounces. After an interchange of notes of this nature the price would be mutually agreed upon and officially announced. Nowadays [1933], the partners of the four firms meet and after each broker has balanced his buying orders against his selling orders the price is moved by sixteenths of a penny until the required balance is obtained or disposed of."[24]

> *"As London handled the bulk of silver produced, it followed that it was London that called the tune and 'fixed' the price for the whole world."*

During the 'fixing' process, the brokers had no contact with the outside world or their own firms – of course, in 1897, telephones were the exception rather than the rule. Direct telegraph links with New York and Bombay made the daily price available internationally. Those attending the market were the people who could make decisions about the trading position of their firm. Each broker, whilst he may disclose the excess of his own position as a buyer or a seller

10 Spalding, *London Money Market*, p.172-3.
11 Ibid.
12 HSBC Group Archive, UK/1432/0058/006, 'Draft Agreement', Sep 1871.
13 Ibid.
14 Green, *Precious Heritage*, p.29.
15 S. L. N. Simha and Janaki G. Krishnan, *The Saga of Silver* (Madras, Institute for Financial Management and Research, 1980), p.54.
16 Simha & Krishnan, *The Saga of Silver*, p.61. During the 12 years the Act was in force a total of 291.20 million ounces of silver were purchased at a cost of $308 million.
17 Jastram, *Silver*, p.78.
18 Ibid.
19 Ibid. In the Presidental election in 1896 the defeat of the Democratic candidate William Jennings Bryan, an extreme silverite whose key issue had been bimetallism, saw the end to the 'free-silver' movement which never recovered.
20 *The Economist* made early reference to the term 'fixing the price' in relation to precious metal as it was explained that "the term thus used does not imply a 'fixed price' in the same sense that a 'fixed price' of any other article expressed in money, but to all intents and purposes merely signifies a fixed quantity of metal in the coin" (*The Economist*, 'A fixed price of gold – The balance of power in Europe', 4 Dec 1847).
21 Spalding, *London Money Market*, p.172.
22 Benjamin White, *Silver, Its History and Romance* (London: Hodder and Stoughton, 1917), p.166.
23 Ibid.
24 *The Times*, 'Dealings in Precious Metals, How Business is conducted', 20 Jun 1933.

at a given price, was careful to protect in every possible way the interests of his clients and to preserve their anonymity. It was quite possible for the business done in the market upon a given day to be extremely large, as clients were advised to give a discretion to brokers as to the quantity of silver desirable to operate for their account upon any one day.[25] Within a very short time, two prices were 'fixed' daily at 1.45 pm Monday through Friday and at 11.45 am on Saturday – cash (up to seven days) and two months forward.[26] The average cash price of silver for 1897 was 27.56 pence per standard ounce.[27] McDonald, in his own explanation of the 'fixing', wrote that:

"There was very frequently a small difference between the two rates reflecting the relative demand. Two months was a useful period to enable [for those buying their metal unrefined to arrange for] the refiner to carry out his work and also to cover the transportation of metal already refined. The market was a thriving one, the preponderance of supply coming from the Americas and the demand from the silver using countries of the east and the traffic could go both ways. It can fairly be said that the London Silver Market helped among the other markets, to make that city the financial center of the world."[28]

The two-month delay also enabled those who bought unrefined silver to cover themselves against a fall in the price of silver bought for manufacturing by making it possible for them to

> *"At the turn of the 20th century, business in silver differed from that in gold in several ways."*

sell an equivalent amount of silver 'spot' from stock and to buy it 'forward' for replacement two months hence, so reducing their possible loss to the usually small discount between the two prices.[29] The two periods of delivery – cash and two months forward – were obligatory between brokers, but brokers could, as a rule, make arrangements with their clients so as to suit the latters' convenience with regard to shipping, etc. This may have involved an expense to the broker in loss of interest, etc. and also some risk of failure to keep engagements that he had contracted with another broker in order to execute his client's business.[30]

At the turn of the 20th century, business in silver differed from that in gold in several

Pyramid of LGD silver bars

ways. The most notable was that there was no ultimate buyer with a fixed price. Silver, like any other commodity, is subject to the forces of demand and supply, and is open to political and economic disturbances. The prime cause in price variation was from wars and financial crises, but also an important factor were the varying demands from the economies of India and China, based on silver. As silver rarely occurs in nature as native metal, it was necessary to conduct a complex chemical or smelting operation, or series of operations, by the bullion refiner before the silver could be put into a suitable condition to be offered for sale.[31] Between 1860 and 1914, one of the main sources of supply received in London came from demonetised silver coin. White described the arrival and treatment of a consignment of coins he witnessed whilst visiting the Rothschild Royal Mint Refinery:

"Silver arrives in wooden boxes containing – in case of dollars – about 3,000 pieces, 1000 in a bag. It's interesting to watch the ease with which an expert workman trundles each box into position, tips it upon end, severs the iron hooping and splits the side with one blow of the axe, lets the box slide flat on the floor and, with one more blow, spirits the upper iron band, and lid as well. Then with a blow sideways from the back of the axe, he lays the box upon its side and wrenches the split side open with his hands if loose enough, or with his axe if it clings together; and in less than a minute the three bags are lying loose around the fragments of the box. Each bag of coins is then emptied separately into the scale and weighed. Though more difficult to stack, bags of coin can be built up into a solid wall, provided the two ends are securely held by silver bars or by the sides of the safe."[32]

After 30 July 1914, just preceding the declaration of war by Britain against Germany, the official quotation for forward delivery was temporarily discontinued. War brought silver to the fore again. In 1917, when the price rose to 0.55 pence per ounce, due to heavy demand from India and other countries, the United States, Britain and Canada combined to introduce control restrictions over silver trade and prohibited its export without a licence in their respective territories.[33] In 1918, Britain was forced to appeal to the United States to sell part of its silver reserves, as a shortage of supplies caused a near crisis in India when the market value of the metal rose to equal the bullion value of the rupee. *The Pittman Act*, passed by Congress in 1918, authorised the sale and prevented the large-scale melting down and export of silver coin.[34] These measures were successful in keeping the price of silver in the range of 0.41 to 0.49 pence for the remainder of the conflict.[35] Increased demand for silver for coinage and industrial purposes saw the price double during the years of conflict; however, its revival was short-lived and the price of silver declined over the next two decades.

Dr Michele Blagg (BA, MA, PhD) is a visiting Research Associate at the Institute of Contemporary British History (ICBH) at King's College University. Michele is a Research Consultant for the LBMA, currently engaged on the oral history project 'Voices of the London Bullion Market'. As part if a collaborative doctoral award granted by the Art's and Humanities Research Council, she was based at the Rothschild Archive. Her doctoral research focused on the Royal Mint Refinery, operated by N M Rothschild & Sons between 1852 and 1968, and how it adapted to the changed London gold market.

Her areas of interest are in financial and business history with special regard for the actors and networks located in the London market.

She teaches on the MA in Contemporary British History and assists with the Witness Seminar Programme. She sits on the Business Archives Council Executive and is involve in the annual 'Meet the Archivists' workshop held in the City that aims to explore ways in which research students can identify and use business records in a variety of different research fields.

25 White, *Silver*, p.168.
26 *The London Silver Market* (Private publication, 1982).
27 Simha & Krishnan, *The Saga of Silver,* p.49. Prices of bar silver in London were quoted per standard ounce from 1890 to 1900 and thereafter per ounce of 0.999 fineness.
28 Donald McDonald, *The History of Johnson Matthey and Company, Volume One, The Years of building, 1860-1914* (London: private publication, 1974), p.37.
29 McDonald, *Johnson Matthey*, p.112.
30 White, *Silver*, p.187.
31 McDonald, *Johnson Matthey*, p.38.
32 White, *Silver*, p.189.
33 Simha & Krishnan, *The Saga of Silver*, pp.83-8.
34 The Pittman Act, enacted in April 1918, authorised the conversion and sale of 350 million silver dollars into bullion. Under the Act, 270,232,722 standard dollars were converted into bullion (259,121,554 for sale to Britain at $1.00 per refined ounce, plus mint charges).
35 Simha & Krishnan, *The Saga of Silver*, p.84.

The 2014 LBMA Singapore Bullion Market Forum Review

By Aelred Connelly, Public Relations Officer, LBMA

The LBMA held a Bullion Market Forum at the Marino Bay Sands Hotel in Singapore on 24-25 June, 2014. The purpose of the forum was to highlight developments in the local Singapore bullion market. The LBMA have held similar forums in the past in Moscow, New Delhi and Shanghai to focus primarily on local bullion market issues. As such the forums are typically smaller in scale than the LBMA's annual conference that has a more international based focus. The forum proved a great success with more than 200 paying delegates in attendance, which surpassed expectations.

The forum proceedings opened on the Tuesday afternoon with a Welcome Cocktail Reception, sponsored by IE Singapore. After an evening of networking, the formal forum programme began the following day with a total of 30 speakers and moderators participating in six sessions spread over the course of a full day. The keynote speech was delivered by Jeremy East, Managing Director of Metals Trading, Standard Chartered Bank who provided a fascinating insight into the trends and developments in the international bullion market. Delegates voted for Jeremy as the best speaker and his speech is reproduced on page 10. Another highlight was the speech by Xu Luode, Chairman of the Shanghai Gold Exchange, who described the growth and development of the gold market in China and how it has started to open up to the world. His presentation is reproduced on page 6.

There were many other interesting presentations including those in the Session on the effects of regulatory changes in the Indian bullion market, the development of the Singapore bullion market as well as the next steps for the growth of the physical precious metals market in East Asia.

Delegates enjoyed a wonderful lunch sponsored by Singapore Exchange Ltd. and following a full day of presentations, the evening's festivities began with a Cocktail Reception followed by the Conference Dinner, sponsored by IE Singapore. There was plenty of entertainment too, with the story of the development of Singapore and the four predominant cultures (Chinese, Indian, Malay and Eurasian) told through the mediums of dance, music and food.

Our congratulations and thanks to all the speakers, sponsors and delegates involved in helping to make the forum such a great success. Attention now turns to the annual LBMA Precious Metals Conference which will take place in Lima, Peru during the period 9-11 November. We hope to see you there! Visit the LBMA's website for details on how to register and read more about the conference in the Editorial, by Edel Tully on page 30.

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Regulation Update

By Sakhila Mirza, LBMA General Counsel

Responsible Gold Guidance (RGG)

Refiner audit reports

Since the launch of the LBMA's Responsible Gold Programme in 2012, refiners have worked hard in implementing the RGG standard, which extends the OECD Gold Supplement for Refiners and builds on existing Anti-Money Laundering and Know Your Customer management systems and auditing practices. It also makes what is a voluntary system (the OECD Guidance) mandatory for all LBMA Good Delivery gold refiners wishing to be accredited for the London Bullion Market. As per the RGG, all refiners have three months from the end of their financial year to submit their independent audit reports to the LBMA. For most refiners, this deadline was March 2014, and the LBMA has been in contact with a number of the refiners to confirm that they have passed the 2013 audit programme.

LBMA Refiner Toolkit

The LBMA has launched the final draft of the Refiners Toolkit for consultation before implementation from the beginning of 2015. This optional Best Practice toolkit contains tailored gold supplier checklists, questionnaires and assessment forms to assist refiners conducting due diligence for both mined and recycled gold. These are intended to promote due diligence consistency for all LBMA gold refiners and to assist the auditors in assessing how the refiners are meeting LBMA requirements. Many thanks to Argor-Hereaus, Metalor and PAMP, who have been heavily involved in putting this together.

OECD & EU Update

The next OECD meeting will take place on 3- 5 November in Kinshasa, Democratic Republic of the Congo. The agenda is in development but will undoubtedly focus on the upstream supply chain and in-region sourcing.

The FCO invited the LBMA, as well as the WGC and Intel amongst others, to attend a meeting to discuss the EU's proposed regulation on responsible sourcing of minerals from conflict-affected and high-risk areas (the Regulation) in line with the OECD Due Diligence Guidance.
At a high level, it was accepted that the EU:

- Definition of an importer appears wider and less clear than that of the OECD;
- Has chosen a much broader geographical scope, so there is a lack of consistency in approach;
- Should provide for consistency/alignment with pre-existing initiatives, particularly to avoid duplication of effort/auditing.

The LBMA also met with the Directorate General for Trade at the EU offices in Brussels, as a follow-up to the discussion with the Directorate at the OECD meeting in Paris back in May. The discussion focused on the requirements for all importers' gold (unwrought or in semi-manufactured forms; custom codes 7108, 7108 11 00, 7108 13, 7108 20 00). This requires banks and other downstream participants to arrange an independent third-party audit under the draft Regulation. The EU current draft requires banks to be audited to prove how they import conflict-free materials into the EU. The LBMA did express that such audits were not consistent with the OECD Guidance Gold Supplement, and were unnecessarily onerous, as well as duplicative due to the Responsible Gold programme.

Other regulatory news...

Basel III

The LBMA submitted a response to the Basel Banking Committee, requesting it not to apply a simplistic approach to all commodities by imposing a fixed Required Funding Ration of 85%, which would apply to gold as well, given that gold is a unique commodity and its specific attributes should be taken into account. The LBMA along with other industry groups is part of a working group to continue with its efforts in favour of a more calculated approach to the Required Funding Ratio.

MiFID

The LBMA also submitted a response to the EU on the MiFID consultation, focusing on the definitions of commodity derivatives and the definition of commercial purpose, highlighting that physical gold and silver trades should not be caught by this regulation, otherwise it will end up capturing so many organisations that are not set up to deal with financial regulations.

DIARY OF EVENTS 2014

OCT

1-2
World Commodities Week 2014
ETC Venues, St Pauls, London
www.terrapin.com/conference/world-commodities-week

8-9
The Gold Investment Symposium
Sydney, Australia
www.symposium.net.au/gold

15-16
Africa Dubai Precious Metals Forum, Accra, Ghana
www.adpmf.com

20-23
LME Week, London, UK
www.lme.com/lmeweek.asp

20-23
China Mining Congress & Expo
Tianjin Meijiang Convention & Exhibition Center, Xiqing District, China
www.chinaminingtj.org/en

24-26
13th China International Silver Conference, Tianjin, China
www.silverinstitute.org

NOV

4-5
Europe Precious Metals Summit
Switzerland
www.precioussummit.com

9-11
LBMA Precious Metals Conference 2014
Westin Lima Hotel & Convention Center, Lima, Peru
www.lbma.org.uk

19
RBC Gold Conference
London, www.rbccm/about/cid-202541.html

DEC

1
LBMA Biennial Dinner
Guildhall, London
www.lbma.org.uk

3-4
9th Shanghai Gold Summit 2014
Shanghai, China
www.chinagoldsummit.com

4
Russian Bullion Forum Awards 2014
The Moscow Exchange and Metropol Hotel

2015

APR

12-13
Dubai Precious Metals Conference 2015
Dubai, UAE
www.dpmc.ae

14-16
European Gold Forum
Zurich, Switzerland
www.denvergold.org/gold-forums

MAY

18-22
LPPM Platinum Week
London
www.lppm.com

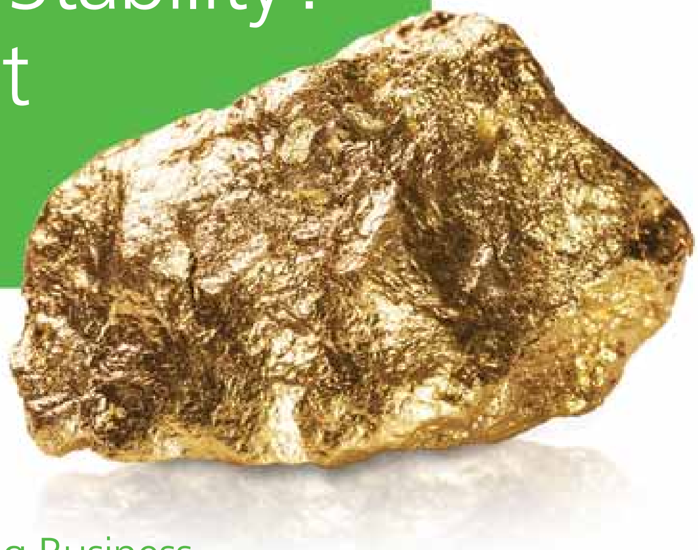
28-29
Hong Kong Precious Metals Summit
Hong Kong
www.precioussummit.com

JUN

13-16
IPMI 39th Conference
JW Marriott, San Antonio, Texas
www.ipmi.org

OCT

18-20
LBMA Precious Metals Conference 2015
Vienna



LBMA News

By Ruth Crowell, Chief Executive, LBMA

MEMBERSHIP

Associates
On 16 June, CJSC 'Sberbank' CIB was admitted as an Associate.

On 11 August, NOMOS Bank OJSC changed its name to OJSC 'Bank Otkritie Financial Corporation'.

On 23 July, Istanbul Gold Exchange transferred its Associate status to Borsa Istanbul A.Ş.

These changes brought the membership to 146 companies, comprising 76 Members (of which 11 are Market Makers) and 70 Associates.

GOOD DELIVERY LIST

On 16 May 2014, the gold refinery of MMTC-PAMP India Ltd was admitted to the Gold Good Delivery List. This is the first time that a gold refinery from India has been accredited by the LBMA. The company's silver refinery was accredited in October 2013.

On 23 May 2014, the silver refinery of Ohio Precious Metals LLC of the United States was added to the Silver Good Delivery List.

On 3 June 2014, the gold refinery of Heimerle + Meule GmbH of Pforzheim in Germany was added to the Gold Good Delivery List.

On 30 June 2014, the silver refinery of Hunan Huaxin Nonferrous Metals Co. Ltd of Zixing City in China was added to the Silver Good Delivery List.

On 17 July 2014, the gold refinery of Metalor Technologies Singapore Pte Ltd was added to the Gold Good Delivery List.

On 12 August 2014, the gold refinery of TCA SpA of Capolona in Italy was added to the Gold Good Delivery List and the silver refinery of Republic Metals Corporation of the United States was added to the Silver Good Delivery List. Republic's gold refinery was accredited in February 2014.

There are now currently 73 refiners on the Gold Good Delivery List and 80 refiners on the Silver Good Delivery List.

COMMITTEES

Management Committee
The Committee worked with the Executive, the Regulatory Affairs Committee and the Market Makers group to ensure that the new LBMA Silver Price was successfully implemented as planned on 15 August. This was a monumental occasion in the history of the London bullion market, marking the end of the 117 years of the London Silver Fix and heralding the beginning of the solution provided by CME Group and Thomson Reuters. There are currently four price participants who have been accredited to contribute to the LBMA Silver Price: HSBC Bank USA NA, Mitsui & Co Precious Metals Inc, The Bank of Nova Scotia – ScotiaMocatta and UBS AG. Going forward it is expected that further participants will be accredited to contribute to the price in the coming months.

The London Gold Fixing Company Limited (LGFCL) announced on 16 July *"that with the support from the LBMA it has commenced an RfP (Request for Proposal) process with a view to appointing a third party to assume the responsibility for the administration of the London Gold Fixing"*. Since then, the Management Committee has been assisting the Executive in preparing for the next stages in this process. An online survey was launched on 4 September, and in parallel with this, expressions of interest were invited from potential solution providers, following which Request for Proposals were distributed to 13 participants, with a closing date for responses of 10 October. The next stage will be to hold a Market Seminar on 24 October. It is expected that a gold price solution will be chosen and be put in place before the end of the year.

The Committee is also considering the long-term strategy and structure of the Association. This is in view of the fact that its role as a trade association and market body has evolved over time. The LBMA's role in providing market infrastructure has increased from the Good Delivery accreditation to encompass benchmarks and now has a broader scope of work to contend with.

The Committee is also reviewing the work of the Sub-Committees below and assisting the PAC with finalising the arrangements for the annual conference in Lima, Peru on 9-11 November, as well as planning for the 2015 conference which will take place in Vienna on 18-20 October 2015.

Regulatory Affairs Committee
One of the main areas of work for the Committee has been co-ordinating with the Management Committee and Market Makers regarding the successful implementation of the LBMA Silver Price on 15 August. The attention of the Committee is now focused on MIFID, MIFIR and Basel III implementation along with the Gold Price consultation and RFP process.

The Committee has also been focused on benchmark regulation with regard to GOFO and the end-of day Forward Curves (administered on behalf of the LBMA by the LME). Due to a dwindling number of contributors, the decision was made to discontinue the end-of-day Forward Curves with effect from 22 September. This decision does not impact on GOFO, which will continue to be set at 11:00am each business day.

Another main area of focus for the RAC has been the Responsible Gold Guidance. For further information, please read the Regulation Update on page 24.

Physical Committee
In the last edition of the *Alchemist*, it was noted that the Physical Committee was monitoring a record number of Good Delivery applications. As can be seen from the list in the Good Delivery section, this work has borne fruit in the form of seven new accreditations, which is a record for reporting in a single edition of the *Alchemist*. Nevertheless, the number of applications that are being processed remains at a high level. They include two gold and four silver applications from refiners in four different countries. In addition, six refineries are thought to be preparing applications that are likely to be submitted in the next 12 months.

At its most recent meeting, the Committee approved some mostly minor changes to the GD Rules. These are listed in the preamble to the Rules, which can be downloaded from the LBMA website. The more important changes are, firstly, that silver GD bars may now, in principle, be manufactured using an induction tunnel system and, secondly, that the LBMA's specifications for bar dimensions shown in sections 8 and 9 of the Rules are now mandatory for new applicants and for refiners that make changes (of any kind) to their GD bars. The Committee has also asked the LBMA's referees to carry out a review of the assay criteria relating to GD applications and Proactive Monitoring based on the considerable volume of assay data that has been accumulated over the past decade, namely since Proactive Monitoring was introduced in 2004. Following completion of this review and consideration of the referees' recommendations, the Committee is likely to make changes in the criteria for the assay testing of applicants and for existing refiners being subjected to Proactive Monitoring.

Ensuring that the quality of GD refiners' large bars is fully compliant with the GD standard (both with regard to physical quality and the assay accuracy of the underlying metal) has resulted in the

Committee requiring three refiners to address such issues and take appropriate remedial action. In one case, a gold refiner was required to undertake the full 24 assay sample test used for new applicants and only after this had been successfully passed was the company's GD accreditation confirmed.

A significant part of the discussions taking place at each Committee meeting now relates to compliance, partly in relation to companies that are already on the GD List, but these discussions have focused recently on how the LBMA should ensure that refiners whose applications are accepted for technical assessment meet the regulatory requirements for listing. Similarly, monitoring gold refiners' compliance with the LBMA's Responsible Gold Guidance is now a staple part of the Physical Committee's workload.

Although monitoring GD applications represents the bulk of the Committee's work, it also has responsibility for a number of vault-related activities such as procedures for weighing. This includes the system for accrediting vaults as Approved Weighers. On 4 June, G4S Cash Solutions' new vault was listed in Annex F of the GD Rules as an Approved Weigher.

Public Affairs Committee
The PAC greatly assisted the Executive with preparations for the LBMA Bullion Market Forum, which took place in Singapore on 25 June 2014. Special thanks to Albert Cheng of the World Gold Council and IE Singapore for their invaluable support of this successful event. A review of the forum can be found on page 22. The PAC also worked with the LPPM in hosting the second annual LPPM/LBMA Cocktail Reception. This was well attended and preparations are taking place for 2015. The PAC is also considering when and where the LBMA will return to Asia, following the successful Forum.

The PAC has been concentrating on preparations for the annual conference, which will be held this year at the Westin Lima Hotel & Convention Centre in Lima, Peru on 9-11 November 2014. The programme for the conference was officially launched in the second half of August and can be viewed on the conference website which can be accessed via the Events section of the LBMA's website. The Committee is also making preparations for the Biennial Dinner, which will take place at the Guildhall, London on 1 December. Registration for the dinner will be announced shortly. The keynote speaker will be Lord Daniel Finkelstein, the Times Associate Editor and government policy advisor.

Membership Committee
The Committee continues to process a record number of membership applications, as can be seen from the Membership list summarised at the beginning of LBMA News.

The main function of the Committee is to ensure that the LBMA's Membership continues to maintain the high standards required upon application. This includes demonstration of active involvement in the London Bullion Market, passing KYC requirements and adherence to the NIPs Code. This is done both at the application stage and also, for Associates, by means of the Associate review system. The review used to be conducted on a three-year rolling programme, but in October 2013, the first annual review was carried out and this has now become an annual feature of the work of the Committee. The Executive also carry out reviews of Members and Associates on a case by case basis when more urgent issues arise (for example sanctions.)

The Committee continues to look closely at the sponsorship system, in particular the issue of due diligence carried out on Associates and also Good Delivery refiners, and in view of the regulatory pressures that everyone in the market is now experiencing, has taken steps to tighten the procedures used for Associate Reviews.

Finance Committee
The recent focus of the Committee has been to review the current year's Management Accounts, along with the budget for the forthcoming conference in Peru. Income has been supported by an ever growing number of membership and GDL applications. But costs this year have also risen, as a result of unexpected legal and consultation costs particularly relating to the consultation work on the silver and gold prices as well as increased staff costs to deal with the Association's ever growing workload.

Annual General Meeting
The 26th Annual General Meeting of the LBMA took place at Glaziers Hall, 9 Montague Close, London Bridge on Friday, 11 July. In addition to the formal business of approving the accounts and appointing the auditors, the meeting received a report from the Chairman and a summary from Ruth Crowell, Chief Executive, of the work of the five subcommittees.

This year, it was the turn of the four Ordinary member representatives to be elected (or re-elected). Grant Angwin, Johnson Matthey, Simon Churchill, Brinks Ltd and Jeremy East, Standard Chartered Bank were re-elected to the Management Committee. Robert Davis, The Toronto Bank Dominion, was elected to replace David Gornall, Natixis London branch plc, who resigned from the Committee (and accordingly stepped down as Chairman). The LBMA would like to extend its thanks and warm appreciation for the time, hard work and dedication that David devoted to the work of the LBMA throughout his three-year tenure as Chairman and prior to that six years as a member of the Management Committee.

The main news from the evening was that Grant Angwin, General Manager, Johnson Matthey was elected as the new Chairman of the LBMA and Steve Lowe was also re-elected Vice-Chairman of the LBMA. Grant has been a Member of the Management Committee since 2011. He has worked for more than 25 years for Johnson Matthey. For most of that time, he was based in the UK and held various positions within the refining business prior to being appointed Head of Sales at the Royston refinery in Hertfordshire. He relocated several years ago to Salt Lake City, USA as Sales and Marketing Director and shortly after that he assumed the position of General Manager.

LBMA Staff
The Executive is delighted to announce the appointment of Sakhila Mirza as General Counsel. Sakhila joined the LBMA on a permanent basis on 1 August having previously worked on a part-time basis since February, 2014 as a consultant on regulation related matters. Sakhila is responsible for all legal and regulatory aspects of the work of the Association. Sakhila brings with her a wealth of experience having previously worked in the energy commodities industry where she dealt with compliance and regulatory issues. Sakhila is a qualified Solicitor, with a degree in law from the London School of Economics.

The LBMA is sorry to announce the resignation of Emma Attridge, as the LBMA's Good Delivery Administrator. Emma's last day was 12 September and we would like to thank her for two years of exemplary service and wish her all the best for the future.

Market Moves

Steve Garwood and Russell Smith join Baird & Co

Steve Garwood has been in the metals markets for over 40 years, beginning with Sharps Pixley on both bullion and LME, and then with Credit Suisse in London and Tokyo, Shearson Lehman Bros., Bank of Nova Scotia and Barclays. Following a break from the market he joined Mitsubishi Corporation, and more recently was at the Mastermelt Group, before joining Baird & Co in their London office.

Russell Smith has over 20 years experience in the precious metals industry across Asia, Australia and the United States in a number of roles for Macquarie Bank and ScotiaMocatta. He is currently based in Singapore and leading Baird and Co's expansion into the Asia-Pacific region.

Giovanni Laureri joins Citi

On 1 July Giovanni Laureri joined Citi from UBS to head EMEA Precious Metals Marketing.

Yvonne Zhang joins CME Group

The CME Metals team has expanded with Yvonne Zhang becoming Director in Singapore.

Alisa Moen joins Dillon Gage Inc. of Dallas

Alisa Moen has joined Texas-based Dillon Gage Inc. of Dallas as General Counsel and President of International Depository Services Group of Delaware and Canada, the company's full-service depositories located in Wilmington and Toronto. Previously, she was a partner in the law firm Blank Rome LLP focusing on corporate and fiduciary matters.

Raphael Scherer, Arnd Gollan, Markus Weiss and Joachim Prior join Degussa Goldhandel GmbH

Raphael Scherer joined Degussa Goldhandel on 1 July 2014 as Chief International Officer (CIO) where he will focus upon the expansion of Degussa's international business. Prior to that, he was Managing Director at Chopard, the Swiss manufacturer of luxury watches and jewellery.

Arnd Gollan joined as of 1 July where he acts as the new Chief Operating Officer (COO) at Degussa. During the past nine years, Arnd was Head of Business Development and Product Management for Agosi AG (Allgemeine Gold- und Silberscheideanstalt AG).

Markus Weiss has also joined Degussa as of 1 August as the new Chief Financial Officer (CFO). He is responsible for finance, the middle and back office functions and systems. He spent several years with KPMG and most recently with Porsche Automobil Holding.

Joachim Prior joined Degussa as manager of the recently acquired precious metals refinery Schellhorn & Roth GmbH & Co. KG in Pforzheim, Germany. Previously, he worked as technical manager at PRIOR Engineering Services AG in Switzerland.

Metalor welcomes Philippe Royer as the new Group CEO

Philippe Royer, 52, has been appointed the new CEO of the Group. He has worked for more than 20 years in the metal-processing industry in operational and top-management positions, both in corporate and private equity environments, as Managing Director (Eurofoil), Business Unit President (VAW, Alcoa) and most recently over the past six years as Chairman and CEO of Manoir Industries, a leading supplier of cast and forged products to the aerospace, petrochemical and energy industries.

Patrick Hendry, Scott Sillitoe and Warren Swick join Prebon Premex London

Patrick Hendry moved from GFI to Prebon Premex. Patrick spent his last 15 years at GFI covering all Bullion products. He joins Prebon Premex as Head of Options to work out of their Dubai office. He will expand the precious metals option business with in the group.

Scott Sillitoe moved from GFI to Prebon Premex. After 17 years covering FX options at GFI in New York and Asia he will move to Dubai and focus on expanding their Precious Metals option business.

Warren Swick moved from BGC to Prebon Premex. Prior to joining he had been with BGC for 20 years, the last five covering Precious Metals. He joins their London desk to cover and expand their existing business.

David Spraggs retires from Sumitomo

After 34 years in the bullion market, and 40 years in the City, David Spraggs is retiring from Sumitomo on 25 September 2014.

Adam Finn and Oliver Watson join Triland Metals Limited

Adam Finn joined Triland Metals Limited on the 6 June as Head of precious metals.

Oliver Watson joined Triland Metals Limited on 1 May from Societe Generale as Precious Metals Dealer.

Changes at Heraeus, New York office

Miguel Perez-Santalla joined Heraeus Metals New York effective 30 June 2014, as the Sales and Marketing Manager. Miguel possesses over 20 years of experience in precious metal trading including seven years with Heraeus. With his knowledge of the business, he will drive the sales activities of Heraeus Metals New York by communicating and promoting various services that Heraeus trading can offer.

John Lawrence joined Heraeus Metals New York effective 8 September 2014, as a Trader. John has a Bachelor of Arts in Business Administration from Berkeley College and a Masters of Science in Finance from Baruch College. He started his career in Commodities Risk Management and Operations for Trafigura AG. John has spent the following nine years with Mitsubishi International Corporation working within Commodity Sales and Trading, precious metals department.

David Holmes joined Heraeus Metals New York effective 15 September 2014, as the Senior Vice President of Trading & Sales. David has over 30 years of experience working on commodity and precious metals trading desks with responsibilities including management, trading, sales and mine finance. Most recently, he held the role of Managing Director and Co-head of Commodity Solutions with Commerzbank AG in London.

LBMA Biennial Dinner 1 December 2014

The LBMA's biennial dinner will be held this year at the Guildhall, Gresham Street, PO Box 270, London, EC2V 7HH.

There will be a Cocktail Reception at 18.30 followed by dinner at 19.30. As usual, this will be a black tie event, and is open to Members, Associates and their guests. The guest speaker this year will be Lord Daniel Finklestein.

Peru's Call

Editorial Comment by Dr Edel Tully, Executive Director, Global Precious Metals Strategist, UBS Ltd

Peru, for although it's a much longer trek from London than the hike up Maccu Picchu, our destination choice for the 2014 LBMA conference couldn't be more suitable in terms of its fundamental links to the precious metals market. Peru's history and culture are deeply linked with gold, and few countries have the same emotional relationship with the shiny metal as Peru undoubtedly holds. But gold has been both a blessing and a curse throughout its history. The Spanish hunt for gold 500 years ago has left its footprint to this day. And now, with Peru as the largest South American gold producer and the second-largest silver producer globally, the fortunes of its economy remain embedded in the precious metals sector. Leaving aside the historical lessons of the past, this year's LBMA conference will be a cosier event, with noticeably fewer delegates. The record attendance levels of recent years will not be repeated here – reflecting not only the long-haul destination but also the more challenging fortunes within the precious metals industry this year. The upside to fewer delegates is hopefully greater interaction and debate.

2014 has been a time of transition for the gold market. For the first year in more than a decade, gold is not a primary focus for investors; indeed, the tourist trade in gold is almost non-existent. There is a lot of consensus about the macro views, particularly on the US economy, and, in turn, gold's use as a macro barometer is quite watered down. Investor money has been channelled into equities at gold's expense, and this is not just a US phenomenon but it's also evident in traditional physical markets such as China. The industry has become quite accustomed to more than a decade of rising prices and high volatility, and adjusting from that state to the range-bound mode of 2014 requires considerable modification. Also, let's not forget that the majority of gold market participants are natural gold bulls; pull back the layers and the natural tendency for most is for an expectation of higher prices. Modifying to a new norm takes time.

> *"For the first year in more than a decade, gold is not a primary focus for investors; indeed, the tourist trade in gold is almost non-existent."*

A more sedate gold market, in the context of price action in previous years, will not take away from what should be an interactive and informative conference. This year, in response to delegate feedback, we've included fewer sessions to allow for more networking and meeting time. Panel sessions also feature more extensively, in an effort to foster greater interaction amongst the speakers and hopefully the audience.

This year's keynote speech will be delivered by Wolfgang Munchau, Associate Editor of the Financial Times. And we utilise Wolfgang's sharp intellect as chair of the investment panel session where he will cross-examine (in a friendly manner!) portfolio managers from Fidelity, Passport Capital and Redkite, along with Tom Kendall from Credit Suisse. While investor participation in gold this year is a slimmed-down version of that of previous years, that's no reason for us not to pull together some top talent from the investor community.

Central bank buying remains a key feature of the current market, and considering our location this year, the official section session includes South and Central American institutions. We also add in the Philippines for some geographical diversity and layer this session with a macro standpoint, through the inclusion of Natixis' Chief Economist.

> *"This year's keynote speech will be delivered by Wolfgang Munchau, Associate Editor of the Financial Times."*

The impact of lower gold prices is being sharply felt by the gold-producing companies, and the focus on cost control has intensified. Tuesday's opening session brings us deep into the world of metal production, and CEOs from Buenaventura and Hochschild Mining will share their insights. No doubt the audience will want to know about the potential for a return to hedging, not just in this region but globally.

The physical markets session includes a compendium of top talent, with focus on both the demand and supply side, from India to China, South Africa and the refining world. How much can South African platinum production recover in the next 12 months? Will India ever ease import restrictions? What's the end destination for all the gold going into China? Let's challenge the experts.

The panel session this year, tasked with addressing key topics facing the precious metals, featuring Jon Spall, Roque Benavides, Katarina Cvijovic, Sean Russo and Amrik Sandhu, is likely to be a very interactive session considering the historical market changes that have occurred this year. Typically, this is one of the most popular sessions of the conference.

The wrap-up session this year, starring the very outspoken John Reade and the often controversial Ross Norman, is likely to be a very lively affair. The task for John and Ross is not to plainly summarise the sessions, but to do a deep-dive into the areas that are most informative and most intuitive. This dynamic duo, in their own unique and colourful styles, will present us with the need-to-know takeaways from the conference. And if John and Ross have a little squabble along the way, then this only adds to the audience's entertainment value!

While many man-hours of the LBMA Executive this year have been dominated by changes to the fixings, here in Peru, it's back to basics – converging in one location to debate the topics du jour. The Public Affairs committee members have worked hard to pick the right speakers, and I must thank them for their efforts. It's a challenging task – in December, we start with a blank piece of paper and dream up ways we can make the conference better. Hopefully, this year's line-up does just that.

Edel Tully, Executive Director, Global Precious Metals Strategist, UBS Investment Bank

Edel Tully is UBS Investment Bank's head of precious metals strategy, with responsibility for forecasting and publishing research on the precious metals complex.

Edel holds a PhD from Trinity College Dublin (2006), awarded for her thesis 'A Tripartite Investigation of the Gold Market: Pricing Influences, Intraday Patterns and Daily Seasonality', and a Bachelor's degree in Business Studies from the University of Limerick (2002). She is chairwoman of the Public Affairs Committee of the London Bullion Market Association (LBMA). Prior to joining UBS in January 2010, Edel was head of precious metals research at Mitsui and Co. Precious Metals Inc., a role she held from 2006

facing facts

William Tankard, Research Director, Precious Metals Mining, Thomson Reuters GFMS

Some 18 months after the first of two big down-legs in the gold price, producers have continued to announce sweeping changes in order to adapt their companies to better suit the lower price environment into which they now produce. In the last two weeks, announcements have included Polymetal International's plan to streamline its project development pipeline and commit to just one major capital expenditure programme, the Kyzyl project in Kazakhstan that it acquired earlier this year, with other projects mothballed. More recent news from South Africa was the announcement that AngloGold Ashanti is exploring the possibility of a corporate restructuring that would see its international assets spun out into a separate vehicle, coupled with a capital-raising to reduce its debt. Although these are the most recent obvious examples of ways producers are re-aligning their businesses, there are numerous others one could cite over the past year.

Stepping back from isolated corporate actions of the past fortnight, producers' proactive strategies to evolve have been plain to see in the headline mining metrics detailed in GFMS' recently released ***Gold Survey 2014 – Update 1.*** Taking a couple of extracts from the report, mine production increased by 4% year-on-year in the first half of 2014. One of the key factors was a handful of significant projects coming on line, those being the product of investments made during the prior years of higher prices and now ramping up to full capacity. Though these developments were clearly important, equally important has been a much broader base of operational changes brought about by many mining companies in response to the 15% average year-on-year drop in the gold price. Nine of the top ten mining companies (see table 1 above) increased production year-on-year, with Barrick's drop in output largely a consequence of its sale of non-core assets. Based on current data, mine production for the full year is expected to clear 3,100 tonnes. In the first half, Total Cash Costs decreased by 6% year-on-year, to $736/oz, indicating that miners have had some success in cutting costs at the mine site, often thanks to lower unit costs on higher production, coupled with efficiency improvements. Although many producers may continue to shun the phrase "high grading", improving grades have been a key feature of this turnaround. However, these efforts have not kept pace with the fall in the gold price, and a comparison of simple margins year-on-year shows a 25% reduction. Although this has not yet resulted in conditions sufficiently hostile to have a detrimental effect on global mine supply, the evidence points to a gold mining industry in a fundamentally unhealthy state. That said, closures or suspensions have so far been limited to small or ageing operations, with the bigger hit to major development-stage projects as part of a drive to reduce non-essential capital spending.

Many of these strategic changes relate to the gold grade of ore mined and processed – 2014 showed the first year of increase to the global average grade processed for more than a decade. This represents a logical response to mine planning by companies' mining engineers and reserve consultants, whose ultimate aim should be to maximise the long-term value of a deposit based on the management's view of long-term prices. Times of exuberant prices naturally led to resources within a mine's lease being scrutinised, with a view to proving-up and converting resources (where feasible) to reserves and building this into mining plans. With prudent producers' aims ordinarily being to maximise the long-term value of assets, this in many cases would involve mine life extensions. As a consequence, we have seen initiatives at mines include major new waste stripping programmes to facilitate additional pushback developments and underground drives into lower grade sections of ore bodies. Such initiatives will now be fewer and farther between. Reserves in many cases are being downgraded to resources as reserve cut-off grades are lifted, with accountants writing down the carrying value of many assets. At GFMS, we have written about this trend and relationship before. The interesting new angle though is that we now have evidence from producers' results so far this year to indicate with confidence that the trend has turned the corner for the full year 2014; the point of inflection was 2013, and based on the analysis of granular data from GFMS Mine Economics on Thomson Reuters Eikon, we expect the weighted average gold grade that producers process in 2014 to come in around 5% higher year-on-year at 1.36 g/t. In Fergal O'Connor's analysis of GFMS cost data on page 17, he identifies the strong statistical link, concluding that price drives miners' total cash costs. GFMS' mining team at Thomson Reuters would concur and argue that the wide array of levers at the hands of producers (to rein costs in and infrequently used in the bull run) are now being showcased in order to adapt and sustain businesses in this more challenging price environment.

William Tankard, Research Director, Precious Metals Mining, Thomson Reuters GFMS

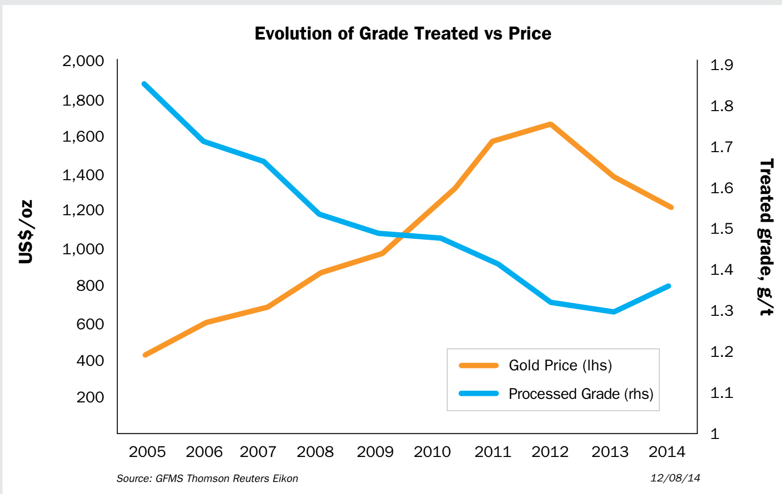
Having joined GFMS Ltd as a Metals Analyst in 2005 to cover the mining sector, William was brought across to Thomson Reuters in GFMS' 2011 acquisition and holds the role of Research Director – Precious Metals Mining, within Thomson Reuters' Commodity Research & Forecasts division. He has accountability for the mining team's research output of global production, mining costs and producer hedging research across the precious metals.

H1 2014 Top 10 Gold Producers (tonnes)

	2013.H1	2014.H1	% change y-o-y
Barrick Gold	112.2	95.6	-15%
Newmont Mining	72.6	75.6	4%
AngloGold Ashanti	57.0	67.0	17%
Goldcorp[1]	39.2	41.3	5%
Kinross Gold[2]	38.3	40.7	6%
Newcrest Mining	36.0	37.0	3%
Navoi MMC[2]	34.0	36.0	6%
Gold Fields[1,2]	26.7	31.6	18%
Polyus Gold International[3]	22.3	23.2	4%
Sibanye Gold	20.4	22.1	8%

1 Includes Discontinued Operations
2 Estimate
3 Including Veduga

Source: Company Reports; GFMS, Thomson Reuters



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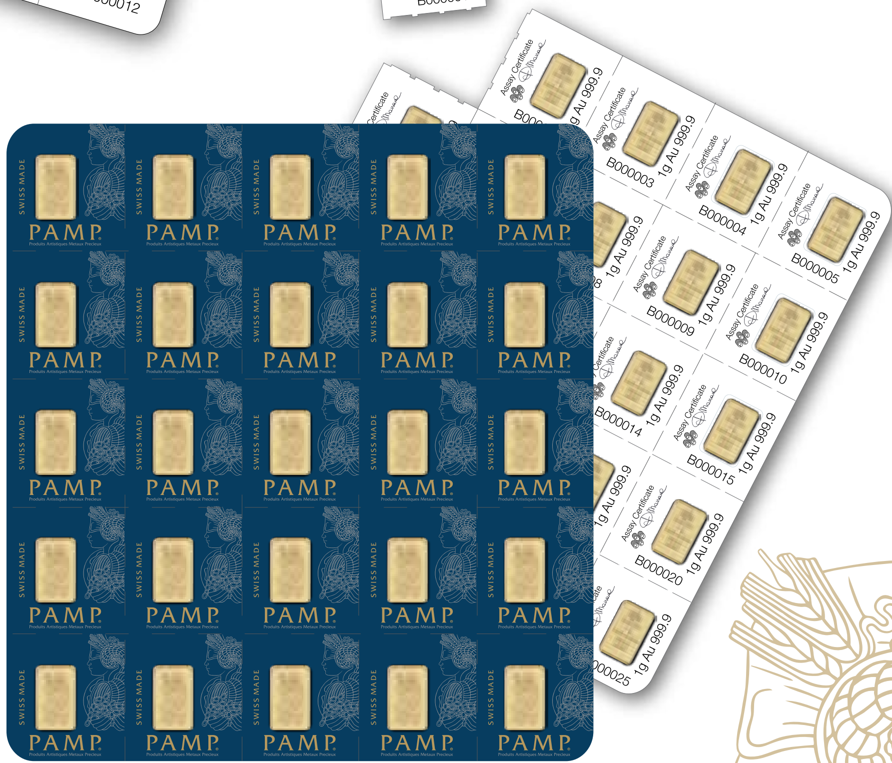

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