

Alchemist

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¹Gold, silver, platinum, palladium.

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EDITORIAL

OUR MAN IN HONG KONG

BY JEREMY EAST, LBMA'S FAR EAST CONSULTANT

It was at the LBMA conference in Barcelona last year when Ruth and I first discussed the idea of LBMA having representation in Asia.

A few months earlier, I had left Standard Chartered Bank, after 11 years running the metals business. The most recent five years were spent in Hong Kong, where I had relocated to focus on the fast-growing Chinese gold market.

GROWING INFLUENCE OF CHINA

China had become the largest gold market globally, in terms of both consumption and production. The development of the market was underpinned by the launch of the SGE (Shanghai Gold Exchange) in 2002 and the new law in 2004 allowing the general public to own gold for the first time since the 1950s. I was fortunate enough to be asked to act as advisor to the exchange at the outset, and I have enjoyed a long and friendly relationship with the exchange, its chairman and staff over the years.

More recently, I have been closely involved with two exciting new developments at the exchange. Each of these developments was a key step forward for the Chinese market.

Firstly, the launch of the SGEI (SGE International Board): government initiatives such as 'one belt one road' and encouragement of the internationalisation of the RMB supported the opening of the Chinese gold market to international players who could now access gold trading in RMB.

Secondly, the creation of the onshore gold benchmark: the launch of the benchmark specifically to cater for the gold business in the domestic Chinese market. This fair and transparent pricing mechanism has not only been used for local physical flows, but also allowed the development of an onshore investor product market.

PHYSICAL MARKET

However, it is mainly via the physical market that China was forging its closest links to LBMA. China imports 900 mt to 1200 mt of physical gold per annum. Almost 2/3 of the gold enters the country at Shenzhen and is delivered by armoured truck via Hong Kong. Shenzhen is the key supply zone for the Chinese jewellery industry, which is centred in southern China. The gold supplied to China is in the form of 9999 kilo bars produced by LBMA accredited refiners and is mainly supplied by the bullion banks. This physical gold supply is generally priced against a Loco London reference price.

The physical and Loco London trading connection between the offshore and onshore markets has recently led to Chinese banks becoming members of LBMA and participants in the global benchmark, the LBMA gold price. A significant number of Chinese refiners have also been accredited by LBMA.

It is not only China which has the connection to London. Across South East Asia, market activity is widely based on the trading of physical gold. Many countries such as Singapore, Thailand and Vietnam are active importers and traders of kilo bars produced by LBMA accredited refiners. The connection with London and LBMA does not stop there. As with China, many, if not all, of the major players in the Asian physical markets are active in using Loco London gold to hedge their market risk.

GROWING LBMA MEMBERSHIP

Asia with its growing markets is becoming increasingly relevant to LBMA, with both trading of physical and of Loco London gold.

However, despite the recent pick-up in membership from Asia, it is important to note that many of the regional participants are neither members of LBMA nor are they fully aware of all the key initiatives recently launched by LBMA, such as Responsible Gold Guidance, the Global Precious Metals Code and trade reporting.

Historically, LBMA's strategic approach to the region has been to maintain a long-distance relationship, which has its limitations.

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Responding to its growing importance, LBMA has now decided to take a regional approach to Asia and have local representation.

The focus will be three-fold:

1. To support the existing LBMA membership and be the point of contact for potential new members. In fact, we have received a number of new expressions of interest in the past weeks!
2. To help drive the key LBMA initiatives in the region, by interacting not just with the members but also with regional trade associations, exchanges and central banks.
3. To feed back to LBMA in London, market views and strategic developments from the region.

As more members of the international community focus on the markets of North and South East Asia and, in turn, Asian institutions become members of LBMA, it is important to see key partners maintain close working relationships. The setting-up of regional representation will promote this, as LBMA writes a new chapter in its history.



Jeremy East is LBMA's Far East consultant based in Hong Kong.

He is also Chief Executive of East Wind Capital, a commodity consultancy. Prior to this he spent 11 years with Standard Chartered Bank, as Managing Director and Global Head of Metals Trading & Commodities for Greater China and North Asia (GCNEA). Other roles have been as member of LBMA Management Committee, advisor to the SGE and also the HKExchange.



The Silver Krugerrand Has Arrived

BY RICHARD COLLOCOTT, EXECUTIVE COMMERCIAL HEAD OF RAND REFINERY (PTY) LTD AND DIRECTOR OF PRESTIGE BULLION (PTY) LTD

The August 2018 launch of the silver bullion Krugerrand is an important milestone for the physical precious metals markets, and is the first new bullion product being delivered under the Krugerrand brand since the launch of fractional gold Krugerrands in 1980.

The introduction of a new bullion product from this iconic global brand will likely attract interest from global investors and collectors alike.

ABOUT THE GOLD BULLION KRUGERRAND

The gold bullion Krugerrand is credited as being the first modern gold bullion coin. It was launched in 1967 as a vehicle for adding value to South Africa's gold mine

production and as a tool to allow for private ownership of gold. The gold Krugerrand was the brainchild of the South African Chamber of Mines and was innovative in that one of the unique characteristics of the gold Krugerrand is that it is denominated in ounces of pure gold, making it the only meaningful gold coin that has a gold face value, rather than a fiat currency one.

Gold bullion Krugerrands tapped into a significant pool of demand globally, resulting from the fact that its launch was shortly before the lifting of the ban on the private ownership of gold in the USA and other countries in the world. Peak demand for the gold bullion Krugerrand was reached in 1978, when over 6 million ounces of Krugerrands were sold. The gold bullion Krugerrand operated more or less without competition until 1979, when the Canadian Maple Leaf coin was launched.

GROWING DEMAND

Demand for the gold Krugerrand remained strong until 1984, when USA-led sanctions were introduced against South Africa, which had a negative impact on export sales of Krugerrands. The US Mint launched the gold Eagle coin in 1986, the Perth Mint launched the gold Nugget in 1987 and the Austrian mint launched the gold Philharmonic in 1989.

PEAK DEMAND FOR THE GOLD BULLION KRUGERRAND WAS REACHED IN 1978, WHEN OVER 6 MILLION OUNCES OF KRUGERRANDS WERE SOLD.



Demand for the gold bullion Krugerrand returned in 2007, at the beginning of the great financial crisis, when investors globally sought quality assets as the equity and debt markets struggled.

ALLURE OF THE KRUGERRAND

In 2016, the gold Krugerrand regained its position as the world's top-selling gold bullion coin and it repeated this in 2017. Based on current data and market information, it looks likely that the gold Krugerrand will be the top-selling gold coin in 2018.



The Krugerrand's success is attributed to its:

- Liquidity – With over 60 million Krugerrands sold since launch, the Krugerrand is the most widely held and traded gold coin in the world.
- Durability – The 22-carat alloy used makes the coin harder and more durable than 24-carat coins, making secondary trade easier.
- Consistency – There have been no changes to the design since launch in 1967. This means that buyers can trade and realise value for coins no matter what year they were produced in.
- Trust – Having a track record of over 50 years gives consumers confidence in the product and its origins.

The new silver bullion coin will bear the same iconic design as the gold bullion Krugerrand, featuring the springbok designed by Coert Steynberg on the obverse.



THE NEW SILVER BULLION KRUGERRAND

Building from over 50 years of success and in order to provide the Krugerrand to physical investors in a more accessible form, the South African Reserve Bank authorised Prestige Bullion to proceed with the creation of a silver bullion Krugerrand during 2018. This authorisation has allowed Rand Refinery and the South African Mint, the partners in Prestige Bullion, to develop and deliver the silver bullion Krugerrand, which gives physical silver investors the option of buying the Krugerrand as a silver coin.

The silver bullion Krugerrand launch has been contemplated for a few years; in fact, all of the other major gold bullion coins already have a silver companion. By offering a silver option, the Krugerrand joins its highly respected peer group and offers a credible new silver investment product.

SPECIFICATION AND DESIGN

The specification, finish and many elements of the design will be instantly recognisable, as the Krugerrand’s design has not changed since its introduction in 1967.

The new silver bullion coin will bear the same iconic design as the gold bullion Krugerrand, featuring the springbok designed by Coert Steynberg on the obverse. The reverse of the coin features the bust of Paul Kruger, designed by Otto Shultz, surrounded by 200 serrations. Each coin has a face value of R1.

ALL SILVER USED IN THE MANUFACTURE OF THE SILVER BULLION KRUGERRAND IS SOURCED IN FULL COMPLIANCE WITH LBMA’S RESPONSIBLE SILVER GUIDANCE.

The silver Krugerrand will be produced in unlimited mintage depending on market appetite. Weighing 31.107g with a diameter of 38.725mm, the silver bullion Krugerrand will be made from silver with purity exceeding 99.9%. All silver used in the manufacture of the silver bullion Krugerrand is sourced in full compliance with LBMA’s Responsible Silver Guidance.

It is expected that the silver bullion Krugerrand will join its global peers as a leading physical bullion investment product, and its price shall be determined based on the daily official LBMA Silver Price benchmark. The coins will be available in tubes of 25 or in monster boxes containing 500 coins. Prestige Bullion does not sell directly to members of the public, but rather sells through a well-established network of international bullion dealers.

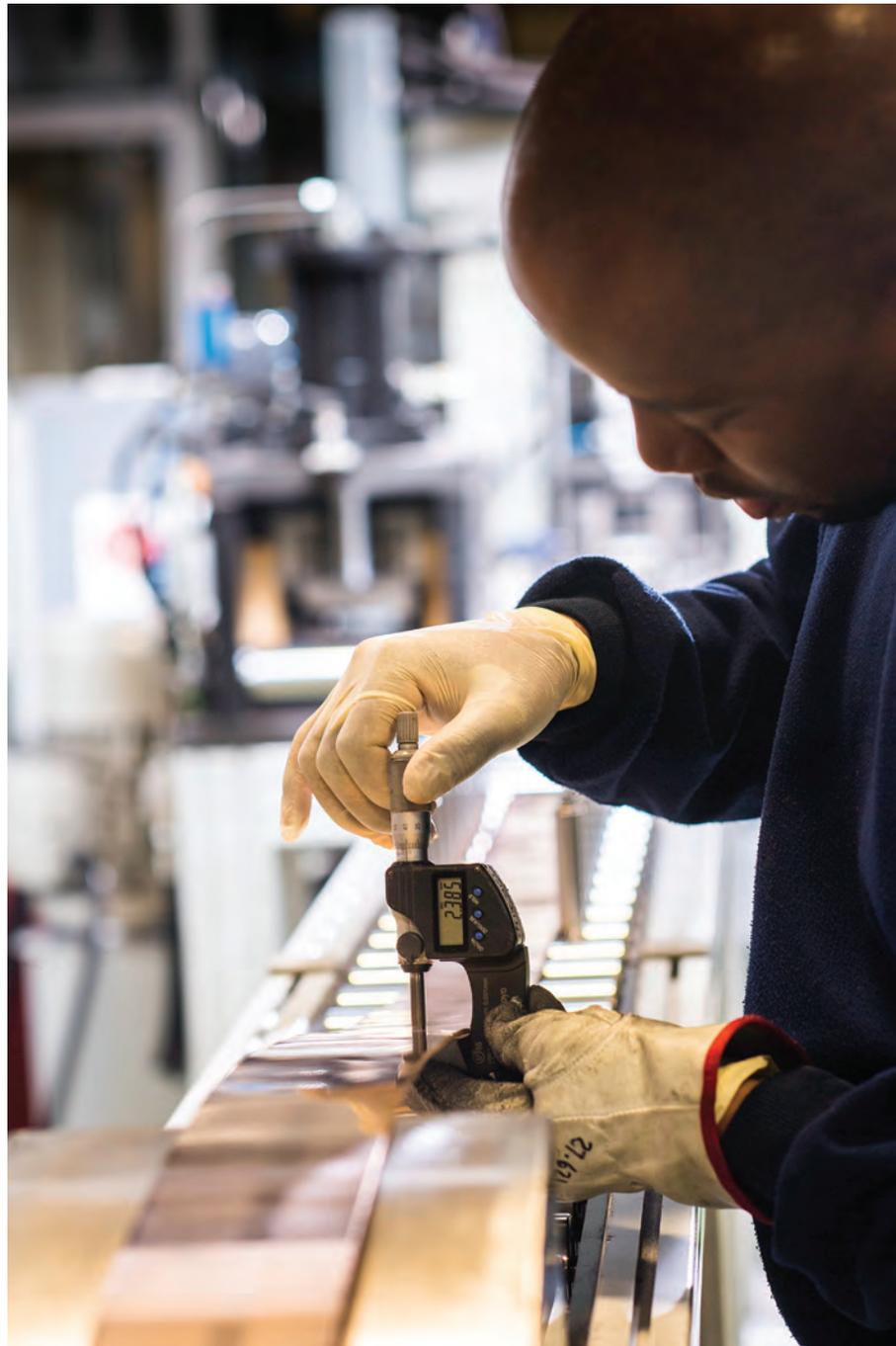


Richard Collocott is Executive Commercial Head of Rand Refinery (Pty) Ltd and a director of Prestige Bullion (Pty) Ltd.

Richard is responsible for commercial matters for Rand Refinery and global marketing and sales for Prestige Bullion.

Prior to joining Rand Refinery in 2014, Richard worked in a variety of leadership roles in the base metals, precious metals and diamond industries.

Rand Refinery is one of the world’s leading gold refineries and has been a good delivery refiner since 1923. Prestige Bullion is a joint venture between Rand Refinery and the South African Mint RF (Pty) Ltd, a 100% subsidiary of the South African Reserve Bank, and is responsible for the management of all South African issued legal tender bullion coins.





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THE SOUTH AFRICAN RESERVE BANK (SARB) AND SOUTH AFRICA'S GOLD

BY MR DANIEL MMINELE, DEPUTY GOVERNOR,
SOUTH AFRICAN RESERVE BANK (SARB)

There was a time when the SARB was one of the main participants in the global gold market. This was back in the 1980s and 1990s, when South Africa was the largest gold-producing country in the world.¹ Much had happened up to that point, and much has happened since. The SARB has had a unique relationship with South Africa's gold industry over the decades, which has shaped its operations in gold over time.

BEFORE WORLD WAR II

The SARB was established in 1921, but it was only in 1925 that it first purchased gold from the local mines and consequently began to take an active part in the gold market. The Department of Finance at the time (now known as the National Treasury) appointed the SARB as its agent to manage South Africa's official gold reserves and market the country's gold output. The central bank thus became the main channel through which South African gold producers had to sell their production gold within the entire Bretton Woods system and throughout the Dollar Standard era until 1997.

The initial arrangements between the SARB and the gold producers consisted of the central bank undertaking to buy the gold they offered at the prevailing market prices. This transactional arrangement continued until 1926, when the SARB started buying gold under a new agreement with the Transvaal Chamber of Mines.

**THE CENTRAL BANK
THUS BECAME THE MAIN
CHANNEL THROUGH
WHICH SOUTH AFRICAN
GOLD PRODUCERS
HAD TO SELL THEIR
PRODUCTION GOLD
UNTIL 1997.**

GOLD OPERATIONS IN THE 1980s AND 1990s

After the International Monetary Fund abolished the 'official' price of gold and until 1982, the SARB bought the newly produced gold at a price based on the average of the latest two London Gold Fixings, less a nominal realisation charge, converted into rand. Gold producers continued to be paid in the local currency until 1983, after which payments were made in US dollars.

At the beginning of 1985, in an attempt to alleviate the pressure on the rand caused by international sanctions against the apartheid government, the SARB announced that the proceeds from the gold that the gold producers sold would be paid 50% in US dollars and 50% in rand. However, by the end of that year, after South Africa had been forced to declare a debt standstill a few months earlier, gold producers were paid in the local currency only. The SARB only resumed paying the gold producers in US dollars in 1988 and continued to do so until 1997.

The SARB exclusively sold gold on a spot basis until 1986, after which it also became involved in the trading of gold in the outright forward, swap and lending markets. At the same time, the SARB also started trading in the options markets, mainly to hedge a certain portion of its gold purchases against adverse market conditions and to generate premium income.

Throughout the 1990s, the SARB had a policy of drawing down on its short-term foreign-credit facilities to supplement its gross reserves. These facilities consisted of bilateral gold loans, pre-export financing facilities for gold, money-market credit lines and syndicated loans. A gold-denominated syndicated loan for US\$500 million was signed in 2000 and repaid in 2003.

In 1995, local mining companies were granted permission to hedge their gold production against price risk in the international bullion market. This was done through local South African banks but was subject to exchange-control approval. Such approval was customarily granted, but it was subject to two conditions: the position had to be closed out prior to maturity, and the production gold still had to be delivered to the SARB.

¹ South Africa was the top gold-producing country in the world until 2006 and presently ranked seventh.

In 1996, the SARB and the Rand Refinery agreed that the central bank would purchase the gold that had been delivered to the Rand Refinery in the form of doré bars² at the London afternoon Gold Fixing price. Prior to this agreement, the SARB would generally have purchased 400-ounce bars of 995 fineness, the so-called 'Good Delivery bars', from the Rand Refinery.

The announcement in 1997 by the Minister of Finance lifted the SARB's exclusive responsibility to sell gold. The gold producers elected the Rand Refinery as their agent, the Rand Refinery tried to achieve direct sales of 50% of their total production and the SARB continued to purchase the balance of their production in doré form.

GOLD CONTINUES TO BE A SIGNIFICANT PART OF THE SARB'S OFFICIAL RESERVES.

THE ICONIC KRUGERRAND COINS

From 1967, the Minister of Finance gave the Chamber of Mines the dispensation to sell South African gold that was earmarked for the production of Krugerrand coins, independently of the SARB, with an understanding that the Chamber's Krugerrand sales would not exceed one-third of the annual gold production. This change to the then prevailing arrangement to offer all gold output to the SARB was precipitated by the success of the Krugerrand (a legal-tender bullion coin). In 1998, the Rand Refinery took over the responsibility for all the marketing and sales of the Krugerrand-denominated bullion coins. Since 2013, the production, marketing and sales of the Krugerrand have been undertaken by Prestige Bullion, a joint venture between the Rand Refinery and the South African Mint. The Krugerrand celebrated its 50th anniversary in 2017 and remains the most famous gold bullion coin in the world.

INVOLVEMENT IN THE GOLD JEWELLERY INDUSTRY IN SOUTH AFRICA

In 1989, the SARB introduced a collateralised gold loan scheme for manufacturing jewellers via authorised dealers (local commercial banks). The main objective of this scheme was to promote and contribute to a viable export market for jewellery manufactured in South Africa. The implementation of a gold loan scheme meant that manufacturing jewellers were able to access work-in-progress gold at bullion lending rates plus a margin for a maximum period of six months.



South Africa was the top gold-producing country in the world until 2006



DEVELOPMENTS SINCE 1997

In 1997, the Minister of Finance announced policy amendments to the effect that gold producers could now sell their own output – on condition that the SARB had given the necessary exemption from the relevant Exchange Control Regulations.

The SARB's role in selling the country's gold production would thus be modified as the government embarked on a process to liberalise exchange controls. The changed procedures for the sale of gold that came

into effect after 1997 did not fundamentally alter the position of the gold-mining industry in South Africa.

In 1998, certain mining companies gave the Rand Refinery the mandate to act as their agent in the pricing and selling of their gold. Other gold producers approached the SARB for exemption from the relevant Exchange Control Regulations to allow them to sell their gold directly to approved counterparties.

As from 2001, the SARB has not purchased any production gold from either the Rand Refinery or mining companies.

2. Doré bars are a form of gold which needs further refining to attain an acceptable status.

SOUTH AFRICA'S GOLD RESERVES

As of December 1989, the SARB's gold holdings averaged approximately 75% of total reserves. From January 1990 to December 1999, this ratio declined to an average of 48%. It fell further, to an average of 12%, between January 2000 and today, mainly due to the increase of foreign-exchange reserves over the period. The gold holdings have been kept virtually constant at 125 tons for the past 20 years.

Although the SARB was not a signatory to the Central Bank Gold Agreement, it elected to conduct its gold reserves management within the ambit of the Agreement to show its support for responsible trading in gold.

A GOLD-DENOMINATED SYNDICATED LOAN FOR US\$500 MILLION WAS SIGNED IN 2000 AND REPAID IN 2003.

Today, while the SARB's activities in gold are much more akin, by design, to those of other central banks, and although it maintains mostly a passive management strategy when it comes to its gold portfolio, the central bank of South Africa continues to be keenly interested in the activities and developments in the gold market, and is also cognisant of the important role that the gold-mining industry plays in the development of South Africa and the potential impact it has on the local economy.

Gold continues to be a significant part of the SARB's official reserves. The precious metal continues to play an important role as a 'safe haven' in times of financial crises, as a store of value and in diversifying reserve portfolios.



Mr Daniel Mminele has been Deputy Governor of the South African Reserve Bank (SARB) since July 2009.

He oversees Financial Markets, International Economic Relations and Policy, Legal Services as well as the

Human and Operations Cluster at the SARB. He is a member of the Governors' Executive Committee, the Monetary Policy Committee, Financial Stability Committee and the Risk Management Committee of the SARB. He is Chairperson of the Reserves Management Committee as well as Chair of the Board of the Corporation of Public Deposits.

He currently serves as the G-20 Central Bank deputy for South Africa, as well as the Chairman for the IMFC Deputies. His experience before joining the SARB includes credit-risk analysis, corporate banking, and project and structured finance at private banking institutions in Germany, the United Kingdom and South Africa.

THE IMPACT ON THE SILVER MARKET OF THE AUTO SECTOR ELECTRIFICATION

BY RHONA O'CONNELL, HEAD OF METALS – GFMS, SUPPLY CHAIN AND COMMODITY RESEARCH AND FORECASTS, THOMSON REUTERS

On the surface, the outlook for global silver demand to 2020 is pedestrian, with the total varying very little year to year. Jewellery continues its sluggish recovery from the 2016 fall, coins and bars are under pressure, and photovoltaic (solar cell) is easing after overproduction but ahead of renewed demand. Ethylene oxide is on a strong upward march, but from a very low base.

This is only a small part of the story, however, and the longer-term view is much brighter as technological changes drive different flows through the market. For example, silver demand was for many years dominated by the silver halide photographic sector before the onset of digital technology sent photographic demand for silver into a tailspin. In 1983, 35 years ago, photography accounted for roughly 49% of world silver offtake – now it is just 4%, dropping from over 4,500 tonnes to 1,325 tonnes.

But new technological developments favour silver, with the electrification of the vehicle fleet prompting a considerable boost for silver demand. The electrical and electronics sector is already benefiting from early changes and there is fresh upside for the use of solar technology in autos – the sector currently absorbs over 3,000 tonnes per annum of silver from a standing start less than ten years ago.

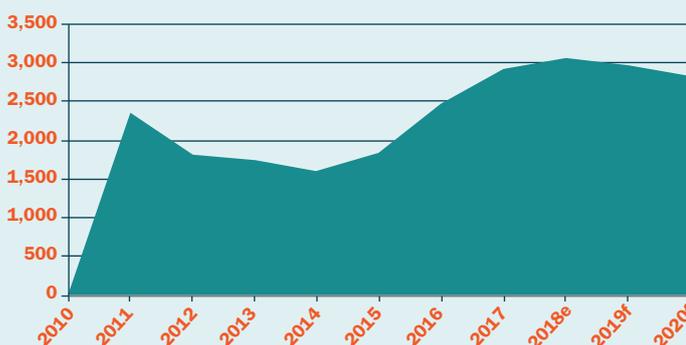
Solar cells will be an integral component of some all-electric cars in future in order to circumvent any difficulty with ground-based power delivery networks. Indeed, in some places, this technology is already being employed. The Toyota Prius was the first model (2016) to employ a solar panel roof,

to prevent overheating while parked – when a certain temperature is reached, a power supply is triggered to a fan. Since then, a small number of vehicles have been announced that use solar panels to deliver power into a battery, enhancing driving ranges but not supplying 100% of requirements. One such is on the horizon

for next year but in extremely limited numbers. Future energy independent vehicles will have various energy generating sources for continuous power, quite possibly including any rotating part that generates friction and heat. Solar panels in the side bodywork as well as the roof are an additional option under investigation.

35 YEARS AGO, PHOTOGRAPHY ACCOUNTED FOR ROUGHLY 49% OF WORLD SILVER OFFTAKE – NOW IT IS JUST 4%, DROPPING FROM OVER 4,500 TONNES TO 1,325 TONNES.

SILVER USAGE IN SOLAR CELLS (TONNES)



CURRENT AUTOMOTIVE USAGE AND THE CHANGES ON THE HORIZON

The auto sector currently accounts for approximately 1,610 tonnes of silver demand, equivalent to 10% of industrial offtake or 5% of total offtake (excluding ETPs), but this is set for dramatic expansion. Growth should be solid in the internal combustion engine (ICE) sector, but all-electric vehicles and particularly hybrid vehicles are poised to deliver substantial increases in offtake, and are expected to account for half of silver’s automotive use by 2040.

Silver has the highest electrical conductivity of any metal and this is key to its widespread use in the sector. The majority of electrical connections in a modern automobile use silver-coated contacts; for example, silver membrane switches are used to start the engine, move electrically-powered seats, open/close electric windows, and silver is also endemic to heated seats, window demisting touch technology and luminescent displays. In higher-end models, it also appears in areas such as autonomous emergency braking. Meanwhile, while thrifting has generally been successful, the need for reliability at high temperatures and in corrosive environments has rendered substitution with nickel-coated or copper-coated components unsuccessful.

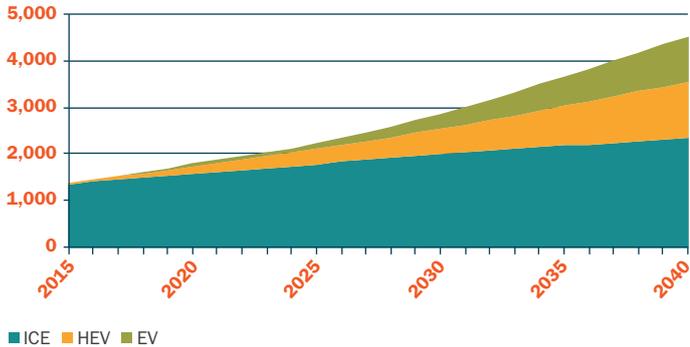
THE AUTO SECTOR CURRENTLY ACCOUNTS FOR APPROXIMATELY 1,610 TONNES OF SILVER DEMAND.

Silver usage in the global ICE fleet is expected to grow from 1,491 tonnes this year to almost 1,800 tonnes in 2025 and towards 2,350 tonnes by 2040. This is predicated on auto production rising from 90 million vehicles this year to 95 million in 2025 and holding broadly steady thereafter but with per vehicle silver use continuing to rise.

While ICE vehicles stabilise, electrified and electric vehicles are likely to deliver stellar growth. There is a fine point of definition here: ‘electrified vehicles’ are typically hybrid and referred to as Battery Electric Vehicles (BEVs) or Hybrid Electric Vehicles (HEVs), while all-battery cars are referred to as Electric Vehicles (EVs). The global 2018 market share of HEVs and EVs is estimated at 6% and 2% respectively. By 2025, they will approach 14% and 6%, and the 2040 shares are projected at 27% and 22% respectively.

The emphasis on these two dates is because they are among the keystones of government targets in a number of nations for the elimination of ICE. They do look somewhat optimistic, although the ground-breaking work at Volvo, targeting 2019 as the year in which all the vehicles rolling off its production line will be partially or completely battery powered, is a sign of things to come. Potentially more significant are VW’s far-reaching plans which will involve much greater volumes, although over a longer time horizon for implementation.

PROJECTED SILVER USE IN THE AUTO SECTOR (TONNES)



SILVER USAGE IN THE GLOBAL ICE FLEET IS EXPECTED TO GROW FROM 1,491 TONNES THIS YEAR TO **ALMOST 1,800 TONNES IN 2025 AND TOWARDS 2,350 TONNES BY 2040**





Rhona O'Connell is a recognised authority in the precious metals sector.

She has worked as a metals market analyst in many aspects of the industry, including the mining sector, LME brokers Rudolf Wolff, and the equity markets; as well, as acting as the group precious metals analyst at Shearson Lehman.

She is now the Head of Metals Research and Forecasting for the GFMS division of Thomson Reuters, responsible for a team of over 15 analysts.

She holds an honours degree in Law from the University of Cambridge.

All brands are investing heavily in electric powertrains, with the primary focus on Asia. In the western hemisphere, progress will be slower and focused on pick-up trucks and SUVs as this is where the demand (and margin) lies. In a KPMG report of early 2018, 72% of senior executives surveyed in the United States said that they would invest in Full Hybrids and Plug-In Hybrid EVs, 69% in pure EVs, and 67% in both battery electric vehicles with a range extender fitted and in Fuel Cells. The dates in the table below are aspirational rather than cast in stone and carry GFMS opinion in the right-hand column.

IF THE TRAJECTORY FOR 2040 PROVES ACCURATE, THEN THE COMBINED HEVS AND EVS SECTOR OF THE AUTO INDUSTRY COULD ACCOUNT FOR ALMOST 2,200 TONNES OF SILVER.

The implications for silver from the development of this technology stem from its importance in complex electronics and a host of safety features, as distinct from the solar cell aspect. Combined usage in 2018 in HEVs and EVs is estimated at 123 tonnes, and is forecast to double by 2020 and to reach 450 tonnes in 2025. If the trajectory for 2040 proves accurate, then this sector of the auto industry could account for almost 2,200 tonnes of silver in that year.

Automotive silver usage is thus expected to grow by an annual average of almost 4.8% per annum. By 2040, the industry could be absorbing over 4,500 tonnes of silver annually, up by almost 3,000 tonnes against today's levels, a gain equivalent to just under 10% of current global demand.

Country	Plan	New EVs only	Comments
China	Banning new ICE sales		Actively considering and studying a ban
Norway	Becoming 100% electric	2025	Very likely. Leader in field. Made great progress
Netherlands	Banning new ICE sales	2030	Very likely. Leader in field. Made great progress
India	Becoming 100% electric	2030	Proposed. Very ambitious
Israel	Banning new ICE sales	2030	Energy minister proposed ban. Looks likely
Germany	Banning new ICE sales		Hotly debated topic kicked off with diesel bans in some cities
France	Banning new ICE sales	2040	Proposed
UK	Banning new ICE sales	2040	Very likely. Commitment present
Scotland	Banning new ICE sales	2040	Very likely. Commitment present
California (U.S. state)	Banning new ICE sales	2040	Bill proposed

LBMA NEWS



Net Stable Funding Ratio (NSFR) haircut has been reduced from 85% to 50% and we are working with the EU member states to reduce this further.



LBMA-i – 100% of Market Making members have signed legal agreements to report trades.



25 service providers submitted responses to our Request for Proposals (RfP), and we are looking at technology, including blockchain, to strengthen supply chain provenance.



75% of members have already signed statements of commitment to the Global Precious Metals Code (the Code).



Responsible Sourcing Guidance for platinum and palladium has been developed and published recently.



An independent **Effectiveness Review** of LBMA Board has been recently commissioned, which we will be updating you on later this year.



NSFR

The European Parliament (EP) recently adopted the proposal to lower the 85% haircut for all four metals under Net Stable Funding Ratio (NSFR) to 50%. The EP will use this to negotiate a common position with the member states. Whilst clearly this is welcome news for the market, we continue with our lobbying efforts with member states, in order for them to recognise the need to exclude both precious metals financing and the LPMCL clearing model from NSFR (see Regulation Update for further details).

LBMA-i TRADE REPORTING

It is anticipated that the true size of the global over-the-counter market in gold, silver, platinum and palladium will be known later this year. Not only will the actual volume be known for the first time, but the data collected will help form LBMA's dialogue with regulators (see Regulation Update for further details).



The amount of gold held is sufficient to make

2m
FIFA world cup
TROPHIES

ONE FOR EVERY
PERSON LIVING
IN PARIS

GOLD AND SILVER HELD IN LONDON VAULTS

As at end March 2018, there were 7,780 tonnes of gold, valued at \$331.2 billion and 33,786 tonnes of silver valued (as at end March 2018) at \$17.7 billion. This equates to approximately 622,423 gold bars and 1,126,214 silver bars.

THE CODE

75% OF MEMBERS HAVE ALREADY SIGNED STATEMENTS OF COMMITMENT.

The remainder have been authorised an extension on the basis that firms could demonstrate steps taken towards compliance and provide a future date for submitting a statement.

Market participants (in particular refiners and industrials) should adopt a proportional approach when implementing the requirements under the Code. Those institutions that choose not to publicly attest their commitment to the Code will, after a grace period, face a range of sanctions and, ultimately, revocation of their LBMA membership.

To assist members and market participants in adherence to the Code, LBMA has developed a training module in partnership with ACI Financial Markets Association (ACI). This will provide LBMA member institutions and individual practitioners with access to an E Learning, Attestation and Certification (ELAC) portal. By offering access to the ELAC portal, LBMA has ensured that its members participate in a standardised, high-quality training and education programme. For further details, please contact regulatory.affairs@lbma.org.uk.

RESULTS OF THE AGM



LBMA'S 30TH ANNUAL GENERAL MEETING TOOK PLACE AT GLAZIERS HALL ON 12 JULY.

This year was the turn of the three Full Members of the Board to stand for re-election. Mehdi Barkhordar, Hitoshi Kosai and Grant Angwin were re-elected for a further two-year period.

After 10 years' service on the Board, Steve Lowe was required to stand down. Edel Tully, UBS was elected to replace Steve as a Market Making representative. LBMA would like to thank Steve for his service, contribution to LBMA and the wider market.

Details of the subcommittee and Chairman's reports are available on the member's section of our website.

LBMA MEMBERS



144

member companies

88
members

56
associates

in **30**
COUNTRIES

We currently have 144 member companies – 88 members (including 13 Market Making Members and three Exchange Affiliates) and 56 Associates located in more than 30 countries.

Any companies including refiners, miners or central banks that may be interested in applying for membership are invited to contact the LBMA Executive at: mail@lbma.org.uk.

100 ACCREDITED REFINERS

We now have **100 refiners** on the Good Delivery Lists, with **68** listed for gold, **83** for silver and **51** refiners on both lists.



 **68**
GOLD

 **83**
SILVER

CURRENT APPLICATIONS

There are currently **9** active Good Delivery applications.



Keynote Speaker Confirmed for the 2018 Biennial Dinner

The Rt Hon the Lord Hague of Richmond will deliver the address to LBMA at the biennial dinner on 5 December at the Guildhall. During a distinguished political career, he served as Conservative Party Leader, Foreign Secretary and Leader of the House of Commons, and is now serving as a peer in the House of Lords. With his own inimitable sense of humour, he will share his unique insights into world affairs, different styles of leadership and why he pressed the Prime Minister on the existence of Father Christmas!

Any members who would like to register for the dinner please email events@lbma.org.uk

REQUEST FOR PROPOSAL (RfP)

LBMA is focusing on how blockchain or other technology processes can help to ensure the highest levels of integrity, transparency and quality for the global precious metals market. This is in line with the strategic intent of LBMA. Consequently, the RfP is designed to develop the market by introducing:

- i. new technology, which helps to mitigate the risk faced throughout the life cycle of the bar and helps to securely record bar-specific data (i.e. brand, origin, custody, location) on a trusted platform, and
- ii. a security feature or security process adopted for bars to help ensure that any bar can be registered and reliably identified with confidence.



LBMA has been engaged in discussions with various service providers to better understand the benefits of blockchain and whether this can help the market, or if there is other technology which is preferable.

RESPONSIBLE GOLD GUIDANCE (RGG)



LBMA is working on Version 8 of its RGG, expanding the scope to include Responsible Business Practices, particularly in the areas of Environment, Sustainability and Governance, further strengthening the links the LBMA programme has with both upstream and downstream sectors.



LBMA Outreach and Industry Events in 2018/19

We recognise that global presence is vital in encouraging meaningful dialogue with the key regions; therefore, LBMA has stepped up its engagement in and travel to markets around the world. We have also engaged Jeremy East as a Senior Advisor based in Hong Kong. You can read Jeremy's Editorial on page 3.



24-26 Jul 2018

China Gold Congress and Expo '18, China National Convention Center, Beijing
en.china-gold.org

LBMA Executive participated in the 'Gold Supply Chain Forum' and the China Gold Market Internationalization Development Forum.



14-15 Nov 2018

Electrical and Electronic equipment and the Environment Conference London Hilton, Heathrow, TW6 3AF
www.rina.org/en/media/events/2018/11/14/eee-conference

Sakhila Mirza will be speaking at the event on *Tracing Gold in Supply Chains* to explain how to trace metals in supply chains responsibly and the issues faced by the gold user sector, how we have addressed them and how we continue to develop LBMA's responsible sourcing programme.



13 Sep 2018

LPPM/LBMA Members' Cocktail Reception Lotte New York Palace Hotel, New York
www.lppm.com



5 Dec 2018

LBMA Biennial Dinner Guildhall, London
www.lbma.org.uk/events



23-26 Sep 2018

29th Denver Gold Forum Broadmoor Hotel & Resort, Colorado Springs, Colorado
www.denvergoldforum.org

Neil Harby will be attending the event as LBMA's representative.



17-20 Mar 2019

Assaying and Refining Conference The Royal Garden Hotel, Kensington, London
www.lbma.org.uk/events



28-30 Oct 2018

LBMA/LPPM Precious Metals Conference Boston Park Plaza Hotel, Boston
www.lbma.org.uk/events



K R U G E R R A N D
S I L V E R

A New Legacy is Born



In an article entitled *'Has the Gold Market Already Discounted Fed Tightening?'*, which appeared in the October 2014 issue of the *Alchemist* (issue 75), we discussed the relationship of gold with US interest rates and the US dollar. The relationship had been particularly robust, and we felt it could be used to judge whether the plunge in the gold price in 2013–2014 had gone too far.

An Update on Gold, **Real Interest Rates** and the Dollar

BY DR. MARTIN MURENBEELD, PRESIDENT, MURENBEELD & CO INC

GOLD AND THE US DOLLAR



Source: Bloomberg, Murenbeeld & Co.

GOLD AND THE 10-YEAR TIPS



Source: Bloomberg, Murenbeeld & Co.

Just to recount, gold opened 2013 with a pm fixing of \$1,693.75 and closed the year with a pm fixing of \$1,204.50 – posting a nearly \$500 decline for the year. This decline was part of a global ‘taper tantrum’, which included a 130 basis point rise in the US 10-year Treasury yield and a 160 basis point rise in the US 10-year TIPS yield (Treasury Inflation Protected Securities). The Fed, however, did not actually raise short-term interest rates in 2013 – it raised rates for the first time since the Great Recession on 16 December 2015!

Employing a model of the gold price based on an inflation-adjusted US 10-year yield and the US dollar index, the Alchemist article concluded that the gold price had plunged in 2013-2014 by more than the 160 basis point rise in the TIPS yield (and the modest rise in the US dollar) warranted. Gold had accordingly quite possibly already discounted several more years of Fed policy tightening, along with any likely further rise in the US dollar.

As it turned out, gold closed 2014 with a pm fixing of \$1,206.00, within \$2 of its final pm fixing of 2013. To be sure, the gold price did modestly decline further in 2015, averaging \$1,160 for the year. The gold price dipped just under \$1,050 on 17 December 2015 however – the day after the Fed hiked the Fed Funds-rate for the first time since the Great Recession. But 17 December 2015 proved to be a turning point for gold, with the gold price averaging \$1,250 in 2016, \$1,257 in 2017 and \$1,324 through to May 2018.

This article updates the relationship of the gold price with US interest rates and the US dollar for the period 2014 to the present. The updated relationship is then used, together with some plausible scenarios for US Treasury yields and the US dollar, to estimate two gold price scenarios (a bullish and a bearish) for the coming quarters.

The first two charts (above) compare the gold price with the US dollar and the US 10-year TIPS yields. (These charts are featured regularly in our Gold Monitor report.) Daily data are used, and annual correlations are presented along the top of each chart.

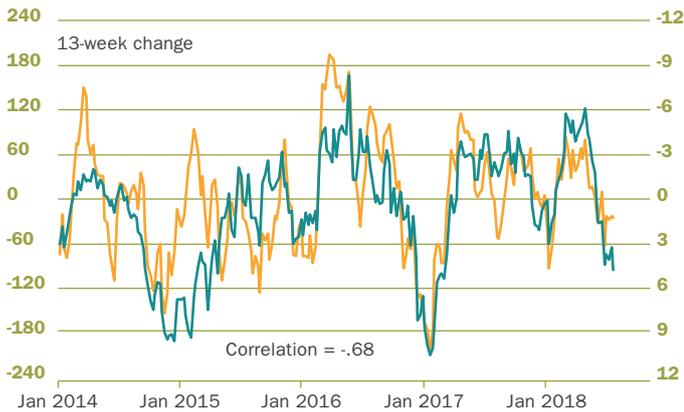
The correlation of gold with the US dollar index is -0.75 for 2018 to date. (The dollar index charted, EFXROC, includes only the euro, pound and yen. It’s a narrow dollar index – an index that includes the Canadian dollar has a higher correlation for 2018 to date, but not for previous years.)

The correlation of gold with the 10-year TIPS yield is a relatively low -0.40 for 2018 to date – the correlation was extremely high in 2016 however. Gold and the 10-year TIPS yield appear to have parted ways since late 2017.

THE FED raised rates for the first time since the Great Recession on **16 December 2015!**



GOLD VS US DOLLAR INDEX



— Gold Price (\$/OZ) Latest week, June 15 2018
 — US Dollar Index (EFXOC Includes: Euro, Yen, Pound) – axis inverted

Source: Bloomberg, Murenbeeld & Co.

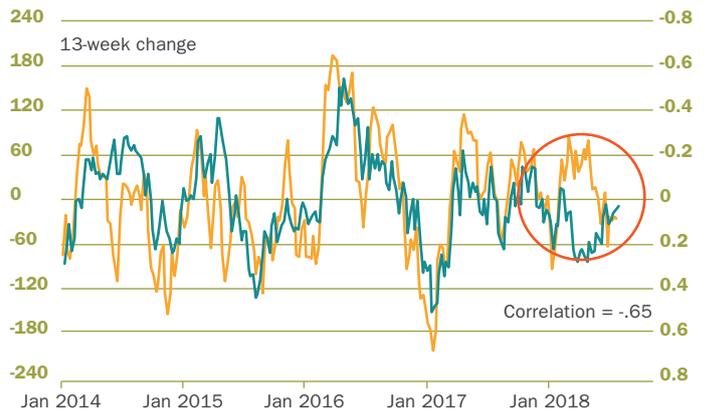
The next two charts (above) plot the 13-week change in the gold price with the 13-week change in the US dollar index and the 13-week change in the TIPS yield. The correlations are for the whole period 2014 to the present.

The red circle in the second chart also indicates that gold and the TIPS yield parted company in late 2017. We do not know how long this condition will persist, but we expect a strong negative relationship to reassert itself, because theory holds that when real interest rates rise, gold should decline, all else being constant.

We are not the only ones to note that the correlation of gold with the US TIPS yield has declined significantly in recent quarters, by the way. In an analysis entitled 'Investment Update: Gold tracks the dollar as rates take a back seat' (*World Gold Council*, April 2018),

WE EXPECT A STRONG NEGATIVE RELATIONSHIP TO REASSERT ITSELF, BECAUSE THEORY HOLDS THAT WHEN REAL INTEREST RATES RISE, GOLD SHOULD DECLINE, ALL ELSE BEING CONSTANT.

GOLD VS US 10-YEAR TIPS YIELD



— Gold Price (\$/OZ) Latest week, June 15 2018
 — US Dollar Index (EFXOC Includes: Euro, Yen, Pound) – axis inverted

Source: Bloomberg, Murenbeeld & Co.

the authors note that while annual gold price correlations with the US dollar were highly negative in recent years, as expected, annual gold price correlations with US interest rates (both real and nominal) had recently declined.

The table below summarises correlations between a 13-week change in the gold price and a 13-week change in various US dollar indices and various US short-term and long-term interest rates.

The darker green cells highlight the highly negative correlation of the gold price with the US dollar and with the US TIPS yields. The red cells highlight the significantly lower correlation of

changes in US dollar indices with changes in US interest rates. This is of some importance when estimating a regression model for the gold price using both US interest rates and the US dollar. (Note also that the widely followed US dollar index, DXY, has a lower correlation with gold than the other dollar indices.)

CORRELATION: GOLD WITH US DOLLAR INDICES, NOMINAL US INTEREST RATES, AND INFLATION-ADJUSTED US INTEREST RATES (TIPS)

Weekly data from 1/03/2014 to 6/01/2018 - 231 observations

	GOCH	DXYCH	EFXR0CH	EFXR0CCH	NEFXRCH	TBUSCH	LTUS10CH	LTUS30CH	TIPS02CH	TIPS10CH	TIPS30CH
GOCH	1.000										
DXYCH	-0.530	1.000									
EFXR0CH	-0.600	0.914	1.000								
EFXR0CCH	-0.675	0.903	0.893	1.000							
NEFXRCH	-0.553	0.954	0.978	0.875	1.000						
TBUSCH	-0.012	-0.229	-0.117	-0.203	-0.184	1.000					
LTUS10CH	-0.523	0.049	0.108	0.206	0.034	0.377	1.000				
LTUS30CH	-0.484	-0.014	0.030	0.131	-0.028	0.298	0.950	1.000			
TIPS02CH	-0.319	0.058	0.242	0.163	0.189	0.144	-0.095	-0.143	1.000		
TIPS10CH	-0.650	0.161	0.374	0.354	0.263	0.364	0.741	0.682	0.435	1.000	
TIPS30CH	-0.580	0.069	0.222	0.232	0.139	0.292	0.754	0.831	0.215	0.880	1.000

GOCH: GOLD PRICE - 13-WEEK CHANGE (in dollars)

DXY: US DOLLAR INDEX - 13-WEEK CHANGE (in index points - index includes cdn\$, yen, euro, pound, swiss franc, swedish krona)

EFXR0CH: US DOLLAR INDEX - 13-WEEK CHANGE (in index points - index includes cdn\$, yen, euro, pound)

EFXR0CCH: US DOLLAR INDEX - 13-WEEK CHANGE (in index points - index includes yen, euro, pound)

NEFXRCH: US DOLLAR INDEX - 13-WEEK CHANGE (in index points - index includes cdn\$, yen, euro, pound, swiss franc, renminbi, indian rupee, aussie\$)

TBUS: 90-DAY US TREASURY BILL RATE - 13-WEEK CHANGE (in basis points)

LTUS10CH: 10-YEAR US TREASURY YIELD - 13-WEEK CHANGE (in basis points)

LTUS30CH: 30-YEAR TREASURY YIELD - 13-WEEK CHANGE (in basis points)

TIPS02CH: 2-YEAR US INFLATION PROTECTED SECURITY (TIPS): 13-WEEK CHANGE (in basis points)

TIPS10CH: 10-YEAR US INFLATION PROTECTED SECURITY (TIPS): 13-WEEK CHANGE (in basis points)

TIPS30CH: 30-YEAR US INFLATION PROTECTED SECURITY (TIPS): 13-WEEK CHANGE (in basis points)



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La plupart de ces informations sont également disponibles en français à monnaie.ca/vigimonnaie.

**US DOLLAR TURNING POINTS...
WHEN THE DOLLAR TURNS, SO DOES THE GOLD PRICE...!**



Source: Bloomberg, Murenbeeld & Co.

**US DOLLAR TURNING POINTS...
THE DOLLAR WILL DECLINE AGAIN...!**



US Dollar Indices

- Murenbeeld-EFXRO (Jan 1999=100)
- FED MAJOR (March 1973=100)
- Murenbeeld-NEFXR (Jan 1999=100)

The next table (below) presents the results of a regression analysis where the dependent variable is GOCH and the independent variables are TIPS10CH and EFXROCCH (with each variable a 13-week change variable). The R-squared is a quite credible 0.65 and the chart of the regression model ('fitted' versus 'actual') appears to be quite robust.

The result indicates that a 1% rise in the 10-year TIPS yield (i.e. a 100 basis point rise) over a 13-week period will knock gold back by \$173.38 over the same period, and that a 1 point rise in the dollar index over a 13-week period (i.e. from 88.00 to 89.00) will knock gold back \$10.05 over the same period. (By way of reference, the maximum 13-week change in the 10-year TIPS yield for the period 2014 to the present is 57 basis points, and the maximum 13-week change in the US dollar index is 10.7. Such large changes together would affect the gold price by some +/- \$200!)

At the time of writing, the 10-year TIPS yield is around 0.80% (80 basis points) and the US dollar index (EFXROC: euro, yen and pound) is around 102. From this starting point, we consider the two (possibly somewhat extreme?) scenarios:

- 1. Negative scenario:** the dollar will rise another 10 points, to 112, and the TIPS yield will rise another 70 basis points, to 1.50%. The regression model suggests that the gold price should then decline about \$100 because of the dollar's rise and about another \$120 because of the rise in the TIPS yield – for a total decline of about \$220. This would take gold back to its low of late 2015 (i.e. \$1,050).
- 2. Positive scenario:** the dollar's recent mini-uptrend runs out of steam; the index declines 10 points, back to 92. The TIPS yield drifts back down to 0.50% because US inflation expectations are set to rise, albeit modestly. These two assumptions should boost gold about \$150 according to the regression model. (Note that without an economic crisis, the TIPS yield is unlikely to turn negative again, because the financing of a rising US budget deficit will likely require high/higher nominal US Treasury yields.)

There are many scenarios of course and, with the help of the regression data, the reader can construct their own.

10 YEAR TIPS

Gold and the 10-year TIPS yield appear to have parted ways since late 2017.

It must be noted here that the gold price is affected, of course, by more factors than simply the US dollar and US interest rates. Equity markets can and do affect the gold price, oil prices too, and there is a long list of non-quantifiable factors that can have a dramatic impact on the gold price. Heightened global political and economic tensions on account of a highly erratic US President may encourage more investment demand for gold, for example. And can anyone fully rule out an Italian exit from the Eurozone and the financial crisis that would follow?

DEPENDENT VARIABLE: GOCH

Regression data: 01/03/2014 to 06/15/2018

Variable	Coefficient	Std. Error	t-Statistic
C	10.75	3.02	3.56
TIPS10CH	-173.38	15.39	-11.27
EFXROCCH	-10.05	0.82	-12.19
R-squared	0.650		

GOLD MODEL (WITH 10-YEAR TIPS YIELD AND US DOLLAR INDEX)



Source: Bloomberg, Murenbeeld & Co.

Mine supply is set to peak, rising global debt levels may cause a crisis even before the next global recession, and is a Chinese debt implosion on the back of a trade war too farfetched? (A trade war with the US will damage Chinese growth and dry up foreign direct investment flows!) The latter could lead to yet more gold investment demand in Asia. Not to be overlooked, a global trade war will reduce global growth and potentially force central banks to reverse policy (to cut interest rates again in a worst-case scenario and reintroduce quantitative easing).

Heightened global political and economic tensions on account of a highly erratic US President may encourage more investment demand for gold.



Hey, it's never clear what the future will bring! What is clear to us, however, is that turning points in the gold price invariably come together with turning points in the US dollar. (Many commodity prices turn up/down when the dollar turns down/up, in fact!)

We think the US dollar is overvalued, and this overvaluation is one of the key reasons (though not the only reason) why the US posts such large trade deficits. Unfortunately, Trump's tariffs will not lower US trade deficits. Tariffs may curb the demand for US imports very modestly, but tariffs will not lower the price of US exports in overseas markets. Worse, foreign tariff retaliation will almost certainly reduce US export volumes.

The US Administration should devalue the dollar instead, as it did in the early 1970s and mid-1980s. China and South-East Asia exporters have enjoyed undervalued currencies far too long!



Dr. Martin Murenbeeld is President of Murenbeeld & Co Inc. and writes the weekly Gold Monitor.

Other corporate publications include the bi-monthly Economic Monitor and Equity and Bond Observer. He frequently speaks at international mining and economic conferences and is often quoted in the press.

He graduated from the University of California, Berkeley in 1972 with a Ph.D. in international finance. He joined the Faculty of Management Studies at the University of Toronto but left in 1978 to start M. Murenbeeld & Associates Inc., a consultancy specialising in gold markets, foreign exchange markets, and general domestic-international financial and economic trends.

M. Murenbeeld & Associates Inc. was purchased by Dundee Corporation in July 2004 and Dr. Murenbeeld was appointed Chief Economist. He left Dundee Corporation in 2016 and in early 2017, in association with Brian Bosse and Chantelle Schieven, set up Murenbeeld & Co Inc.

Germany, too, has no business exporting its output at a \$1.15-\$1.20 euro – a \$1.80 euro is more appropriate for Germany. And if a \$1.80 euro proves too expensive for Italy and Spain... well... maybe a North/South Eurozone split should finally be considered!

LOTS TO PONDER FOR THE GOLD MARKET!

EIGHTH LBMA ASSAYING AND REFINING CONFERENCE



Registration opens in August

17-20 March 2019

The Royal Garden Hotel,
Kensington, London

A Networking Reception will take place on Sunday 17 March, followed by formal Conference proceedings on Monday 18 and Tuesday 19 March. The Gala Dinner will take place on Monday 18 March and an optional workshop will be held on Wednesday 20 March.

For further information please contact events@lbma.org.uk



REGULATION UPDATE

BY SAKHILA MIRZA, LBMA GENERAL COUNSEL
AND EXECUTIVE DIRECTOR OF LBMA BOARD

NET STABLE FUNDING RATIO (NSFR)

Under NSFR, part of the Basel III framework, precious metals had been allocated a Required Stable Funding (RSF) factor of 85%. This meant that 85% of liquid assets must be held against the commodity to achieve the RSF. This would have had a detrimental impact on the clearing and settlement services provided by London Precious Metals Clearing Ltd (LPMCL) and also potentially increase the cost of financing and/or lead to market participants exiting the market.

LBMA, together with LPMCL and the German Precious Metals Federation, have been working with Norton Rose Fullbright LLP to lobby against the 85% RSF factor, asking for short-term precious metals contracts to be carved out of the rules.

Recently, the lobbying efforts have had a positive impact. The European Parliament's Committee on Economic and Monetary Affairs (ECON) has adopted amendments to NSFR, which have included lowering the RSF factor for assets used for providing clearing and settlement services, and for financing transactions of precious metals from 85% to 50%. On the basis of this agreed position of the European Parliament (EP), the rapporteur of the file and his shadow rapporteurs will now enter into informal discussions with representatives of the member states to negotiate and agree upon a common position. The negotiating position of the member states in the Council does not include any amendments to the RSF for precious metals dealings. Discussions are expected to run at least until the end of 2018.

The objective of any upcoming advocacy activities remains securing a full exemption for precious metals clearing and settlement services, and financing transactions from the application of the RSF. The ECON's amendments, adopted on 19 June, set the ground for future advocacy and allow targeted lobbying activities.

Amendments to NSFR
have included lowering
the RSF Factor from

85% TO 50%

**It is mandatory for
all LBMA members
to participate in
LBMA-i by reporting
their transactions**



TRADE REPORTING

It is anticipated that the true size of the global OTC market in gold, silver, platinum and palladium will be known later this year. Not only will the actual volume be known for the first time, but the data collected will help form LBMA's ongoing dialogue with regulators on matters such as NSFR and other measures under Basel III. LBMA-i is the vehicle by which trade reporting will be collated. It has been set up by Simplitium (formerly known as Boat Services Ltd) on behalf of LBMA. This was in response to the recommendations of the Fair and Effective Markets Review – which was led by the Bank of England and co-chaired by the FCA and HM Treasury – for greater clarity in the financial markets.

All LBMA Market Making Members have signed the necessary documentation, with the majority already connected and successfully reporting. Progress continues for other trading Full Members of LBMA. In line with other trade reporting mechanisms, LBMA-i has established de minimis thresholds in order to be able to collect the majority of data, whilst allowing some smaller traders an exemption from reporting.

It is mandatory for all LBMA members to participate in LBMA-i by reporting their transactions, and there are sanctions for those that do not comply.

**ALL LBMA MARKET
MAKING MEMBERS
HAVE SIGNED
THE NECESSARY
DOCUMENTATION,
WITH THE MAJORITY
ALREADY CONNECTED
AND SUCCESSFULLY
REPORTING.**



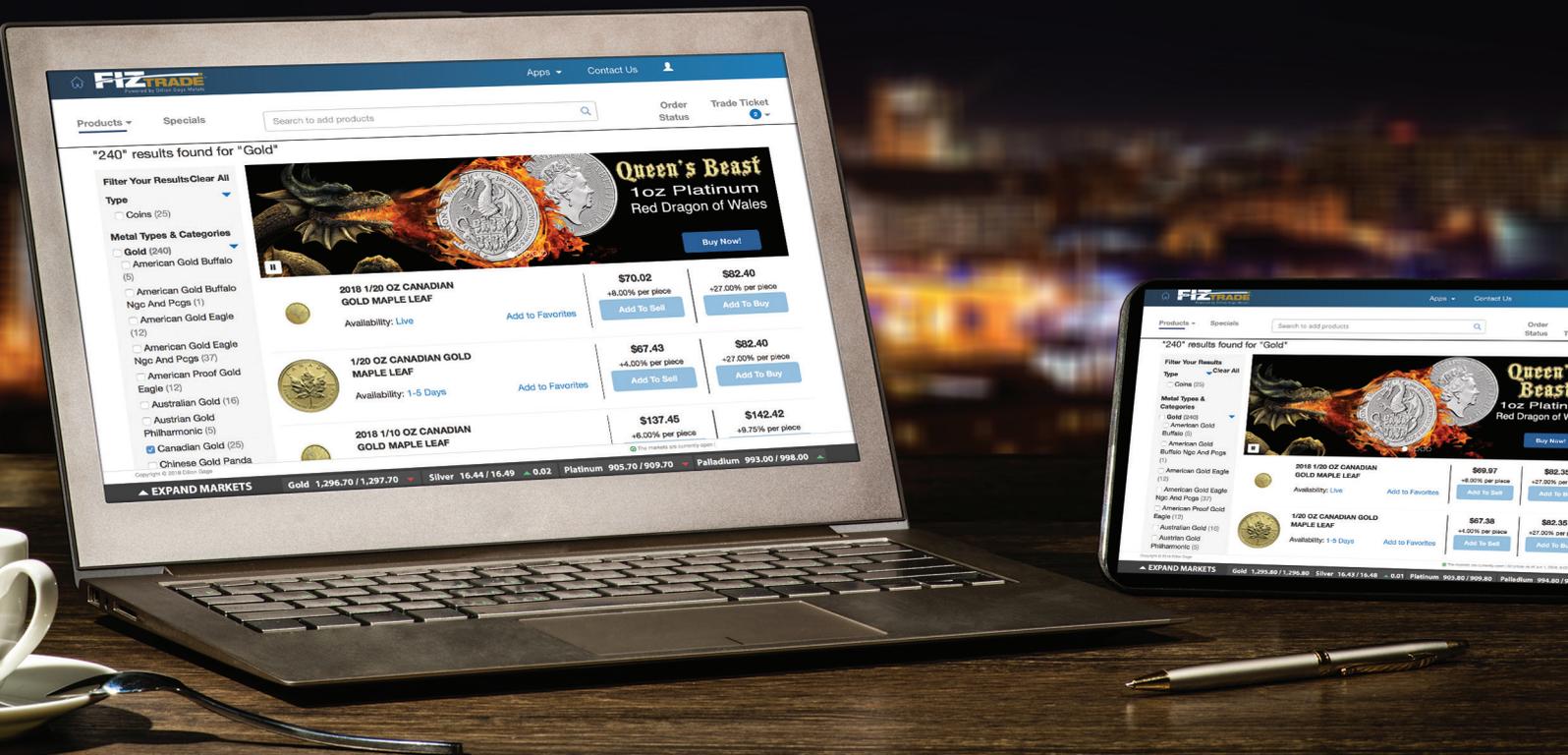
Sakhila Mirza, LBMA General Counsel and Executive Director of the LBMA Board

works very closely with the CEO on the strategic development of the association, leading on a range of market development initiatives. She also takes responsibility for all the legal work affecting the Association, lobbying on matters affecting the

market and building key relationships with governmental officials and regulators around the world.

She previously worked in the energy and commodities industry on compliance, legal and regulatory matters. She read law at the LSE and is a qualified solicitor.

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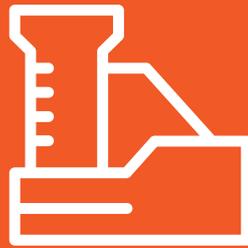
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FACING FACTS



PRODUCERS MEET AGAIN AT THE HEDGING TABLE

BY DANTE ARANDA, SENIOR MINING ANALYST – GFMS, SUPPLY CHAIN AND COMMODITIES RESEARCH, THOMSON REUTERS

The global producer hedge book expanded by 57 tonnes on a delta-adjusted basis during the first quarter of 2018 – the largest expansion since Q2 2014. The growth was primarily led by Gold Fields and Newcrest, using a combination of collars and forward contracts. As a result, the hedge book stood at a total of 268 tonnes at the end of March, representing a 27% increase on the total hedge book at the end of 2017.

Unlike past quarters, Q1 2018 was a particularly interesting one as geo-political tensions and a slight equity market correction took gold's three-month implied volatility from an eight-year low of 9.18% on December 2017 to 12.81% in early February 2018. With prices trading near US\$1,350/oz, producers saw an opportunity to provide further cash flow stability and top up their existing hedges as their capital investment programmes continued.

Over the first quarter, South African and Australian-based operators accounted for almost the entirety of the gross hedging, with the majority of the net hedging coming from Gold Fields (32.3 tonnes), followed by Newcrest (14.1 tonnes) and Westgold Resources (4.5 tonnes).

Activity during the first three months of 2018 was dominated by Gold Fields, which over February and March, added to its existing hedges due in 2018 using forwards and options. Prior to the end of 2017, the company had hedged 64 koz of South African production using rand denominated zero-cost collars. A similar structure was followed to hedge production from Ghana (489 koz or 72% of expected 2018 production) and Australia (674 koz or 78% of FY 2018 gold production guidance). In the case of the latter, forward contracts covering 221koz at an average price of A\$1,713.8/oz were also used.

Given the company's relatively high hedge ratio (covered production/expected deliverable ounces for the period), we do not expect the company to add any further hedges for delivery in 2018.

Following a string of modest hedging since Q1 2016, Newcrest announced forward sales covering 14 tonnes of production out to mid-2023 – well beyond the usual 30-month period it is accustomed to cover. Activity during the first three months of 2018 did not see any other producer, with the exception of Newcrest, hedge production beyond a 24-month period. This transaction involved hedging a portion of Telfer's production with the intention of locking in positive margin to support future development on the mine. The

company added to its existing forward sales contracts due in 2018 and 2019, and also hedged a portion of its production out to mid-2023. Based on our estimates, this hedge covers almost 50% of gold production over the course of the period, with the possibility of further hedging not ruled out.

THE CURRENT COMPOSITION OF HARMONY'S HEDGES LEADS US TO BELIEVE THAT FURTHER HEDGING ACTIVITY WILL BE ANNOUNCED IN ITS FY 2018 REVIEW POST THE QUARTER END.

GLOBAL TOP 10 HEDGE BOOK HOLDERS - DELTA ADJUSTED

	Moz	Tonnes	% Total
1 Gold Fields Ltd	1.08	33.7	13%
2 Newcrest	1.06	33.1	12%
3 PJSC Polyus	0.92	28.7	11%
4 Petropavlovsk	0.45	13.9	5%
5 Regis Resources	0.41	12.9	5%
6 Harmony Gold	0.37	11.5	4%
7 Northern Star Resources	0.32	9.9	4%
8 Evolution Mining	0.31	9.7	4%
9 Saracen Mineral Holdings	0.27	8.4	3%
10 Westgold Resources	0.27	8.3	3%
Others	3.15	98.0	37%
Totals	8.62	268.1	100%

Total Book Size 268 Tonnes (As At End March 2018)

THE HEDGE BOOK STOOD AT A TOTAL OF
268 TONNES
 AT THE END OF MARCH, REPRESENTING A
27% INCREASE
 ON THE TOTAL HEDGE BOOK AT
 THE END OF 2017.

Overall, 23 companies saw net increases in their hedge positions, while 25 companies decreased the size of their hedge books. Of the net de-hedgers, Harmony Gold saw the largest hedge book reduction as the company exercised 2.2 tonnes of forward sales, followed by Acacia Mining and Yamana Gold.

At the end of March, the delivery schedule for Q2 2018 amounted to 45 tonnes. Prior to the end of the second quarter, few reports of new hedging surfaced to counter this scheduled de-hedging activity. Amongst the larger players, the current composition of Harmony's hedges leads us to believe that further hedging activity will be announced in its FY 2018 review post the quarter end.

Recent announcements and management commentary suggest that gold producers are developing a more open attitude towards hedging; however, it should be noted that most of the activity announced to

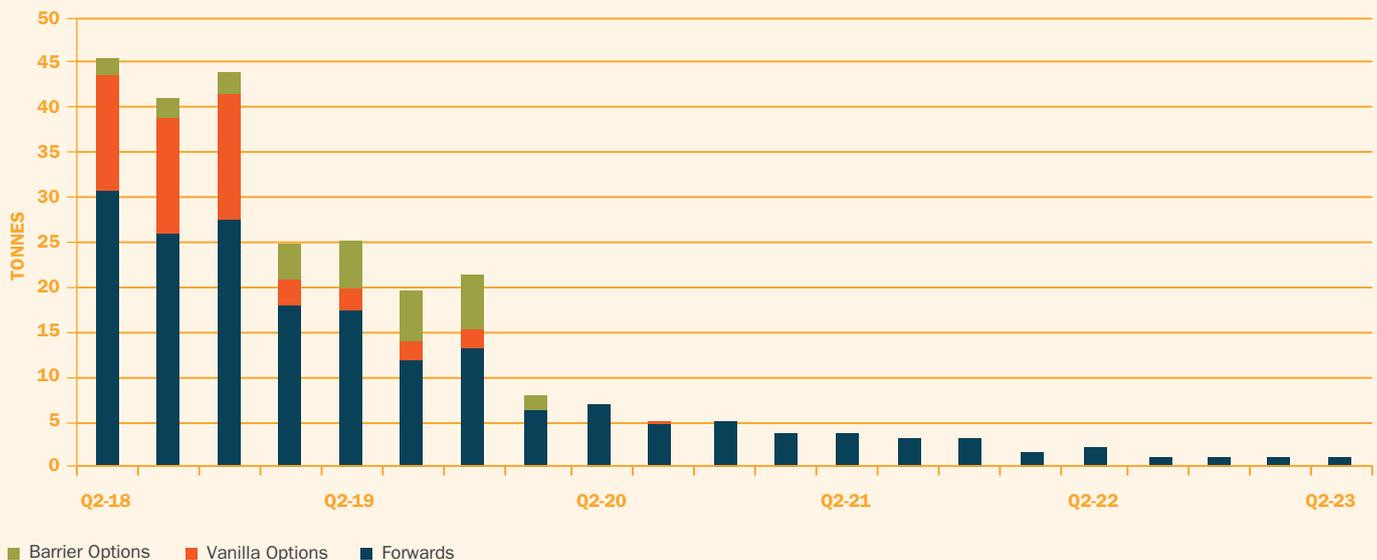


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date remains modest by historical standards. Furthermore, with an apparent trend to hedge over shortening tenors and with prices expected to post gains over the medium term, hedge volumes are becoming increasingly established as intra-year activity, which will limit the growth of the hedge book. Despite the large increase in the hedge book reported year to date, we must remember that all 32 tonnes hedged by Gold Fields will expire by year end.

Although new hedges might be put in place before the end of 2018, we don't believe new hedges will outweigh the scheduled delivery of forwards and options. As a result, GFMS forecasts that a modest 18 tonnes of de-hedging will emerge in 2018.

GLOBAL HEDGE BOOK DELIVERY PROFILE (TONNES)



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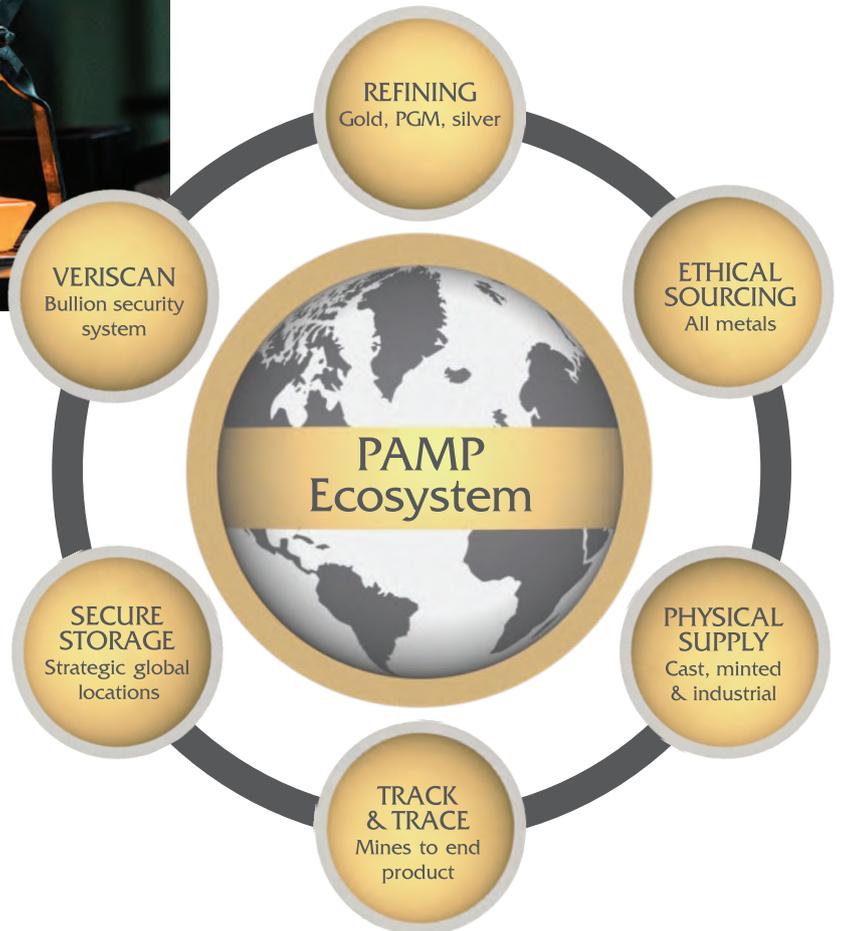
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