Crucible

Issue 11 | September 2019
By Singapore Bullion Market Association
MCI (P) 093/01/2019

UNLOCKING PRECIOUS LIQUIDITY & BEYOND

BY RUTH CROWELL - PAGE 3-5

FEATURE: GOLD'S ENDURING SAFE HAVEN APPEAL & OPPORTUNITIES IN ASIA

BY SBMA - PAGE 8-9

GOLD PRICE: END OF AN ERA OR NEW DAWN?

BY FINEWS ASIA - PAGE 11

CYANIDE-FREE GOLD GRABS INTERNATIONAL ATTENTION

BY CLEAN MINING - PAGE 13-14

SBMA NEWS

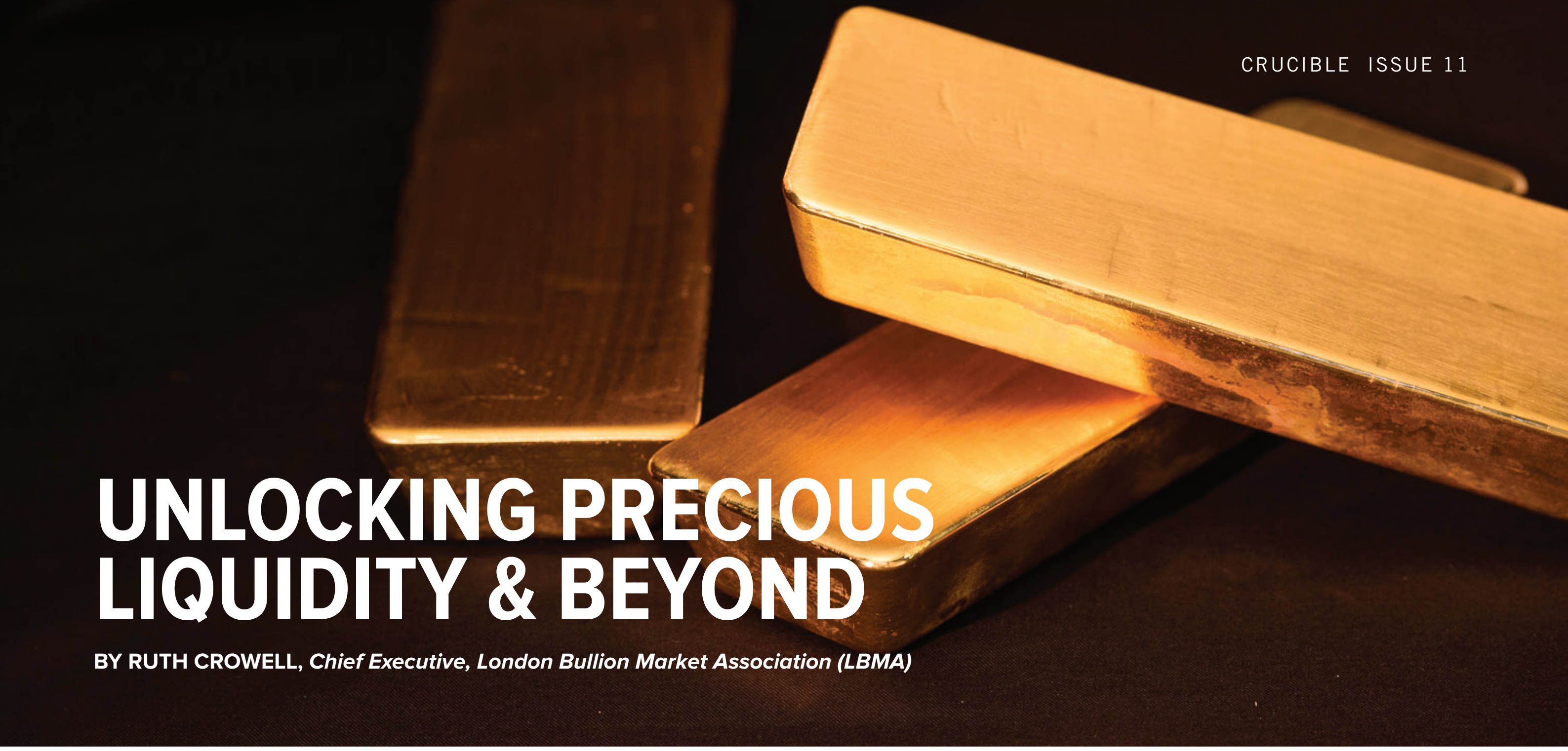
BY SBMA - PAGE 16

4th ASIA PACIFIC PRECIOUS METALS CONFERENCE

7-9 June 2020
Singapore

MARK YOUR DATES

www.asiapacificpmc.com



UNLOCKING PRECIOUS LIQUIDITY & BEYOND

BY RUTH CROWELL, ***Chief Executive, London Bullion Market Association (LBMA)***

I am delighted to be writing for *Crucible* in what is the 25th anniversary of SBMA. We have always enjoyed working closely with the association on mutual areas of interest and wider industry initiatives. We are also always happy to support SBMA publications and events. In June, I attended and spoke at the Asia Pacific Precious Metals Conference and LBMA also sponsored the conference dinner. With this article, I thought that I would bring *Crucible* readers up to speed with some of the things LBMA has been doing as well as some of the things that have happened in the wider industry.

So far, 2019 has been another busy year for LBMA. One of our biggest news stories has been the publication of trade reporting for precious metals, which demonstrates the deep liquidity in the market that we always suspected but have been unable to prove. Our Responsible Sourcing Programme has also expanded to encompass new criteria for Environmental, Social and Governance goals.

LBMA-I TRADE REPORTING

LBMA launched its trade reporting service in November 2018 with the publication of weekly gold and silver trade reporting data through our LBMA-i online service that is provided and managed by NASDAQ (previously Simplitium). Since then, we have added further data sets including daily data for gold and silver, daily and weekly data for platinum and palladium as well as data on strike price and tenor.

LBMA-i market data makes it possible for market participants to gauge the size, shape and liquidity of the OTC market as represented by LBMA members. By enhancing transparency, LBMA-i is assisting the forward market and helping market participants better understand gross turnover and liquidity in loco London and Zurich.

This transparency of trade reporting data helps LBMA members understand their share of the OTC market but will also provide stronger support for regulatory lobbying, most notably Basel III's Net Stable Funding Ratio (NSFR), where we are working closely with key stakeholders to gain a full exemption for precious metals and clearing. To date, the trade data has provided positive evidence of gold's liquidity and the argument that NSFR should not apply to gold in the same way it does to other commodities.

Using this new trade reporting data, LBMA has undertaken an analysis of the liquidity of gold and the other three precious metals. This preliminary analysis has been compared against the European Banking Authority's (EBA) data from its 2013 report and is set out in Table 1. It demonstrates that gold in particular is an attractive liquid asset, which compares very impressively against other asset classes and indeed even outperforms the Extremely High Quality Liquid Asset (HQLA).

Figure 1: Trade reporting weekly turnover (12 week moving averages to the period ending 01 September 2019).

Figure 2: Gold trade reporting – 12 week moving averages (million ounces).

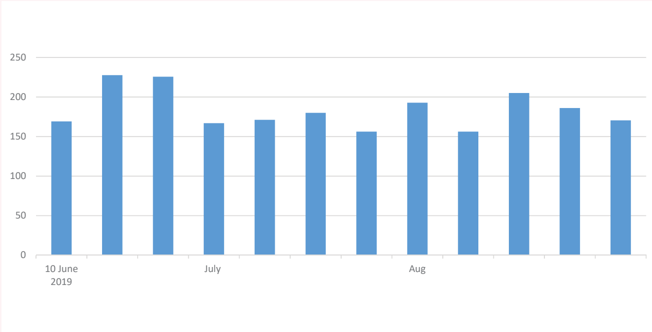


Table 1: Liquidity assessment of gold and other precious metals

	Asset class[1]	Amihud illiquidity ratio (%-points per million EUR)	Price volatility (in %-points)	Price change (in %-points)
2013 EBA Report	Government bonds	0.059	1.001	3.143
	Covered bonds	0.090	0.725	1.830
	Corporate bonds (excl. financials)	0.188	0.904	2.807
	ABS (incl. RMBS)	0.208	2.927	5.830
	Equities	0.406	3.294	17.112
	Gold	–	4.042	9.115
2019 LBMA liquidity assessment	Gold	0.000018	0.368	1.164
	Silver	0.000204	0.623	2.606
	Platinum	0.001532	1.127	2.600
	Palladium	0.001665	1.660	2.925

Extremely HQLA | HQLA | Insufficiently liquid

GOLD AND SILVER HELD IN LONDON VAULTS

Let's not forget that underpinning the trading volumes is a significant amount of physical gold held in London vaults. As of April 2019, there was 7,650 tonnes of gold, valued at $315.4 billion and 36,067 tonnes of silver valued at $17.4 billion. This equates to approximately 612,025 gold bars and 1,202,222 silver bars. We publish the information on gold stored across the London vaults publicly on a monthly basis on our website.

CENTRAL BANK GOLD AGREEMENT WON'T BE RENEWED IN SEPTEMBER

The European Central Bank announced on 26 July that its 20-year-old Central Bank Gold Agreement was no longer necessary, and that the renewal due in September 2019 would not take place. This is a vote of confidence in the depth and liquidity of the global gold OTC market.

It is reassuring to see that signatory banks also confirm that gold remains an important element of global monetary reserves. This agreement dates back to 1999 and was designed to limit the amount of gold that was collectively sold by (mainly) European central banks to 400 tonnes per year. It was renewed in 2004, 2009 and 2014.

LBMA'S MISSION

Our mission is to ensure the highest levels of integrity, transparency and leadership for the global OTC market. If you are not already a member, come and talk to us. We'd love to tell you more about LBMA and how we can benefit your organisation.

At the start of 2019, the Board set a number of new targets for LBMA as part of its new three-year strategic vision. This requires us to extend our outreach to engage more closely with sectors of the market where LBMA is under represented, for example, the mining, investment and central bank communities. Our message is that LBMA is the voice, standard setter and quasi-regulator for the global OTC precious metals market.

> *It demonstrates that gold in particular is an attractive liquid asset, which compares very impressively against other asset classes and indeed even outperforms the Extremely High Quality Liquid Asset (HQLA).*

SETTING THE STANDARDS

One of the key strengths of LBMA is establishing best practices and setting standards through its Responsible Sourcing Programmes, the Good Delivery List and the Global Precious Metals Code. These standards deliver integrity and credibility to the industry, which all LBMA members benefit from. We are continually striving to improve standards, with the latest iteration (Version 8) of the Responsible Gold Guidance introduced on 1 January, encompassing Environment, Social and Governance issues.

> *As we reflect back on the last 100 years of the Gold Price, we equally look forward to the future and the next 100 years. Today, the Gold Price continues to be set in London and remains the international benchmark price for the gold market.*

FIRST LONDON GOLD PRICE CENTENARY

This year 12 September 2019 marks the centenary of the first gold "fixing", or what is now known as the LBMA Gold Price.

On 12 September 1919, the Bank of England made arrangements with NM Rothschild & Sons for the formation of a free gold market and the establishment of a daily gold price. The first "fixing" took place at 11 a.m. when the price of gold was settled at £4 18 s 9d by the five founding members: NM Rothschild & Sons (chair), Mocatta & Goldsmid, Pixley & Abell, Samuel Montagu & Co. and Sharps Wilkins. The bids were made by telephone for the first few days, but it was then decided to hold a formal meeting at New Court, the London offices of NM Rothschild & Sons (whilst the original building is no longer with us, the new Rothschild offices stand on the site).

As we reflect back on the last 100 years of the Gold Price, we equally look forward to the future and the next 100 years. Today, the Gold Price continues to be set in London and remains the international benchmark price for the gold market.

Since 1919 the price has evolved and modernised following the closure of the Gold Fixing Company in 2015, when responsibility for the administration and governance of the price was transferred to an independent administrator, ICE Benchmark Administration. The auction is no longer conducted by telephone but on an electronic platform to help enhance transparency and provide for independent governance. The auction now has 15 direct participants, with the potential to grow since central clearing was introduced in 2017.

> *It is important to restate that the benchmark is set when transactions between buyers and sellers are matched within a certain defined and published tolerance.*

London, the world's leading financial centre, remains at the heart of the price as it did 100 years ago. The guiding principle that all business, whether for large or small amounts, is conducted solely on the basis of a single published price remains as true today as it did 100 years ago. Clients around the world wishing to buy or sell precious metals may all do so at this price, which continues to be globally accepted as the basis for pricing a variety of transactions by all sectors of the international precious metals market. It is important to restate that the benchmark is set when transactions between buyers and sellers are matched within a certain defined and published tolerance. This is also as true today as it was 100 years ago.

LBMA Asia representative Jeremy East, Senior Advisor (left)

LBMA Asia representative Bonnie Li, Executive Assistant (right).

LBMA IN ASIA

LBMA continues to extend its global engagement in Singapore and throughout Asia via its arm in the Far East, LBMA Asia. Representing us in the region are Jeremy East, Senior Advisor and Bonnie Li, Executive Assistant (pictured above). Broader industry engagement is crucial to LBMA's success in fulfilling its mission to represent the interests of the global precious metals industry.

Given that we are raising our profile in the region it is appropriate that our annual conference this year brings us to Shenzhen on 13-15 October. China is the most important producer and consumer of precious metals in the world so it is important that we engage closely with the market. We hope to see many of you there.

For further details about topics covered in this article as well as other issues, please visit www.lbma.org.uk.

RUTH CROWELL is responsible for the strategic development of LBMA, in partnership with the Chairman and the Board. She maintains accountability to and the quality of, the Association's membership and Good Delivery refiners as well as representing LBMA's interests in relation to regulators, investors, media and international precious metals markets. Prior to joining the LBMA, she worked in bank finance and US corporate law and also acted as a monitor at the UN Commission on Human Rights in Geneva.

MET


BUY
TOUCH
SELL
metalmarket.sg
MetalMarket
Asia
Member of SBMA

GOLD'S ENDURING SAFE HAVEN APPEAL & OPPORTUNITIES IN ASIA

Gold is still a safe haven, especially when compared to the dollar, but it is not the only one, Rhona O'Connell, INTL FCStone head of market analysis, EMEA and Asia, said in her keynote address at the third Asia Pacific Precious Metals Conference about where the precious metals market is headed.

She said that in the current environment, gold is still liquid, deep, comparatively stable, ands a hedge against risk. "It is truly a global commodity and predominantly a currency," Ms O'Connell said.

Alistair Hewitt, director of market intelligence, World Gold Council, said that gold's attributes – returns, diversification, liquidity, portfolio impact – give it an important role in investment portfolios, which are struggling with return generation, market volatility, liquidity risk, and capital preservation.

Gold production is well-diversified, and the yellow metal is a deeply liquid market, he said. Additionally, gold is a global market, which means it is exposed to different business cycles and different customs and cultures. This manifests itself in terms of demand, which is diverse and dynamic.

Bart Melek, global head of commodity strategy, TD Securities, agreed. He said that it is an important hedge as it has intrinsic value – even if it gets hit, its value will go down but not to zero, adding that emerging markets still have room to grow their gold reserves.

ASIA PACIFIC STILL GROWING

There is enormous opportunity in **Myanmar** for the gold community, Marcus Loke, senior constant, Myanmar Gold Development Public Company, said. The country's five-year average growth rate (6.92%) is one of the highest globally. The country's gold jewellery consumption reached $1.88 billion in 2017. In terms of production, the four large mines and 300+ small-scale mines produced 80-160 kg of gold daily, and there are another 1.3 billion tonnes of primary gold ore reserves to be exploited.

Gold is already exportable, but due to supplier payment terms, there is some resistance to contracts being done in Myanmar, Loke said, adding that there has been mining interest from East Asia and Australian companies. While the one-stop service centre, which launched in September 2018, has helped promote gold exports, Loke said more fine-tuning is necessary to iron out payment terms and to improve the movement of gold out of the country.

Physical gold demand in **Vietnam** remains strong, with 10% year-on-year growth. Gold bar consumption stood at 40.7 tonnes, while jewellery consumption reached 18.3 tonnes, making the country the top market for gold in ASEAN after Indonesia and Thailand.

Changes are afoot with the ratification of the New Decree on Gold Management Policy expected in Q3 2019, with a raft of changes that is expected to give this sector a boost, said Huynh Trung Khanh, managing director of Vietnam Gold Consultants. In particular, the production and sales of gold jewellery will be completely liberalised and become an unconditional trading activity (no need for licensing by the State Bank of Vietnam), while the production and sales of gold investment will be relaxed, he said.

Malaysia one of the few jurisdictions where there is no tax on gold, Erwin Siow, advisor, Federation of Goldsmiths & Jewellers Association of Malaysia, pointed out. The current tax-free status gold provides easy access for foreign players, and several big foreign players like SK, Chow Tai Fook, Emperor, Lukfook, TSL, Joyalukkas, and Malabar, have already entered the market.

The new government has had no significant impact on the gold industry, and here has not been an upswing in sales post-GST removal and SST exemption, he said, pointing out the increasing imports of 24K gold jewellery mainly from China, likely to cater to Chinese tourists from the mainland. Opportunities also exist in digital gold as apart from Hello Gold, no other players have had a significant impact on market. Additionally, there are 19 operating gold mines in the country, but only four have sizeable capacity, with a combined annual output of 6-8 tonnes. There are no regulations and no duty on gold dore/scrap exports, though they must be declared.

Indonesia's gold market grew 12% year-on-year, with 26 tonnes exported and domestic market consumption of about 40 tonnes, Muhammad Abi Anwar, general amanger, PT Antam said. He noted that by law, all gold mined in Indonesia has to be refined before export. He also highlighted the Treasury's new app, Brancas, that is helping drive a new approach to gold investing.

The members of the panel also pointed out the importance of the pawn shop business to the gold industry in the region, saying that it is an area to look at when entering a market, being a source of supply and part of the ecosystem when running a refining or jewellery business, and allows players to enter micro financing.

GROWING SIGNIFICANCE OF AUSTRALIA

Australia, the world's second-largest gold producer, mining more than 315 tonnes of gold in 2018, has an important role to play for the Asian market, said Thuong Ngyuen, an economist with the Australian government. Australian gold exports are already dominated by Hong Kong and China, which accounted for 37% and 31% in 2018 respectively. Thailand (8.2%), Singapore (6.2%), and India (3.8%) are also important destinations for Australian gold, he said.

The country has five of the world's 20 largest mines, or 2.8% (95 tonnes) of annual global gold production, with an all-in sustaining cost of US$742 per troy ounce – more competitive than the United States, Canada and South Africa. Australia currently enjoys favourable market conditions, with high prices in US dollar terms, and its long-term future and sustainability is reflected by the growing exploration expenditure and its economic demonstrated resources of gold, which is the largest in the world at 10,070 tonnes – able to last another 30 years at the 2018 rate of production, Ngyuen said.

INDIA'S MARKET DEVELOPMENT

India's gold sector faces a number of challenges, including its unorganized and fragmented nature, lack of a central authority, large grey market, as well as the lack of price transparency and a fair and effective trading market. However, there is a "general feeling that gold can become a major contributor to the economy" but authorities want this sector to be transparent, Somasundaram PR, World Gold Council managing director for India, said.

Since 2015, the country has seen a raft of policy and regulatory changes to improve transparency and ease of business, as well as to spur inclusive growth and digitalisation. He pointed out that the changes are already showing its effects – the gold market is now more organised, with 30% of market now part of regional and national chains, as opposed to 95% unorganised before.

"The direction is very clear – we will see a very organised Indian gold market, which is good news for the global industry", Somasundaram said, adding that digital platforms are emerging as a strong influencer of gold demand and that this space is growing exponentially.

CHINA-ASEAN TIES

A major topic of conversation was regional connectivity and the growing economic ties between China and ASEAN – which stood at US$600 billion in 2018 – and the opportunities this presents for the precious metals industry.

Jewellery fabrication is one area brimming with potential given ASEAN's demand for gold jewellery and China's strength and innovation in this area. The country already fabricates one-third of global production and continues innovating in this sector with new products, intelligent fabricating processes, and more, said Roland Wang, World Gold Council managing director for China.

He pointed out China and Hong Kong together exported $621 million of jewellery and 4.6 tonnes of gold jewellery to ASEAN in 2018, a fraction of the region's consumption (for example, the demand in Vietnam was 40 tonnes of gold jewellery and 97 tonnes of jewellery in total). "As such, it is strategically important to foster development and foster connectivity", Mr Wang said.

BRINGING GOLD INTO THE 21ST CENTURY

To grow gold's popularity and revitalise the gold market, products and marketing channels should be catered to the new generation of gold buyers, retailers said, while other gold players highlighted the growing importance digital gold is having on the industry.

Bobby Liu, executive director of Hong Kong-based jewellery retailer Chow Tai Fook, pointed out that the younger generation is a different market, so retailers should leverage multi-channel sales channels and use new designs to attract new customers. He felt that the shopfront is still important to the customer experience, though it would evolve over time. He noted that younger customers, who have grown up with computers, prefer to use machines in store to browse and buy products and that such innovations are making sales more efficient and appealing to them.

The panel on technology in the precious metals industry pointed to the increasing digital applications gold has, particularly in addressing many of the industry's pain points, which include the settlement of transactions, as well as the lack of transparency and capital. Participants also noted that the tokenisation of physical asset-backed coins can have a transformational impact on the market in the years to come, especially in the way transactions are settled.

TALKING POINTS: REGULATION, ESG

Precious metals players are recognising that climate change is a mainstream issue and it is how the world is moving terms of what expectations are, especially in terms of investing. In the precious metals industry, consumers are now demanding gold that is produced in an ethical, responsible and environmentally friendly manner.

SUPPLY CHAIN ACCOUNTABILITY IS NOW MAINSTREAM, NOT FRINGE. IT'S TRULY MAINSTREAM IN TODAY'S MARKETS.

According to Terry Heymann, CFO, World Gold Council, the precious metals sector has to show a willingness to engage in the dialogue on climate change and demonstrate its commitment to responsible business practices such as responsible mining and responsible sourcing. "This is something we need to think about collectively", he said.

Heymann said that WGC is hoping to address such issues with its draft Responsible Gold Mining Principles, a new framework that sets out clear expectations for investors, downstream gold supply chain participants and other stakeholders as to what constitutes responsible gold mining.

Participants on the panel on supply chain regulation discussed the increased regulation in the precious metals supply chain, not only because of market regulations, but also investor demands.

"Supply chain accountability is now mainstream, not fringe. It's truly mainstream in today's markets", Perth Mint CEO Richard Hayes said. He noted that while gold mining is heavily regulated in most countries, the gold supply chain is highly fragmented with many regulations, and that there is no one overarching regulation of the gold industry.

Sakhila Mirza, LMBA general counsel, explained the value of self-regulation, describing it as a way to stay ahead of the regulators and increase process efficiencies. Mirza said that regulations have largely achieved their intended aim, but not all refiners are LBMA accredited or will abide by this or other programs. Areas that still need to be addressed are refiners that cheat rules and grandfathering arrangements that go against the spirit of such regulation, and penalties for non-compliance, which are currently unclear or weak.

"I think standards have to be higher and be respected. This is something the market has to recognise and assess", Metalor Technologies' head of laboratories and new business development, Jonathan Jowdry, said.

Find out more about the Asia Pacific Precious Metals Conference at www.asiapacificpmc.com.

GOLD PRICE: END OF AN ERA OR NEW DAWN?

BY FINEWS ASIA

SEVERAL CENTRAL BANKS – AMONG THEM THE BANKS OF CHINA, RUSSIA, INDIA, AND TURKEY – ACQUIRED SIGNIFICANT AMOUNTS OF GOLD IN RECENT YEARS, NOT LEAST TO REDUCE DEPENDENCE ON THE DOLLAR.

Unexpectedly, two dozen central banks nixed a gold pact they had sealed years earlier. With the price of gold already at a six-year high – how far will it go?

The agreement, which came into force in 1999 and was cancelled last week, aimed at coordinating the sale of gold by central banks across Europe in a way designed to keep the price of the metal steady. The large-scale offloading of the precious metal came after a re-evaluation of the function of gold in central bank policymaking.

The erstwhile link between the U.S. dollar and the gold price had lent the metal a crucial role in monetary policy. However, gold became free-floating in 1973 only after the Bretton Woods system had been abolished. The link between currencies and gold lost its predominance.

SPEED OF DEVELOPMENT

Several central banks harboured such intentions and therefore they sat together and came up with a plan to prevent undue downward pressure on gold – the Central Bank Gold Agreement (CBGA) of 1999. Now, after a three-time extension of five years each, the pact has reached its end.

THE ERSTWHILE LINK BETWEEN THE U.S. DOLLAR AND THE GOLD PRICE HAD LENT THE METAL A CRUCIAL ROLE IN MONETARY POLICY.

The reason behind this step was the maturing of the gold market, but also the fact that none of the participating banks had been an active seller recently.

INCREASE IN RISKS

It means that gold nowadays is one investment opportunity among others. Geopolitical uncertainties, Brexit, the escalation in Hong Kong, war risks in the Gulf or also the negative interest rate environment might all contribute to a further rally.

Several central banks – among them the banks of China, Russia, India, and Turkey – acquired significant amounts of gold in recent years, not least to reduce dependence on the dollar.

STILL MORE SCOPE

This year so far, gold has added 12 percent in value. The ounce reached the threshold of $1,500 in early August – but the record of $1,900 reached in 2011 is still a long way off.

The boom doesn't look to abate anytime soon. The U.S. Federal Reserve cut its benchmark interest rate on 31 July, which will lead to a weakening of the dollar and hence boost the price of gold. The dollar and gold tend to move in opposite directions.

This article previously appeared on Finews Asia (www.finews.asia).

BullionProtect security feature

High level security ink solution for bullion protection

BullionProtect solution is using SICPA high security inks to unequivocally authenticate a genuine precious metal bar.

A unique ink offering **3** levels of authentification:

1. Visual security by human eyes
2. Fast security check while observing changing patterns and colors, using the SICPA OASIS® blinking light system or credit-card sized validator

3. By machine-assisted detection using dedicated handheld devices

BullionProtect is an all-round global security solution:

- Highly secured
- Simple and Immediate verification
- Compatible with any bullion
- Customizable solution
- Cost and Time effective

SICPA

SICPA, the Swiss-based leading provider of global security solutions for currencies, has jointly developed with Metalor Technologies a technology-based security feature – BullionProtect – in line with LBMA guidance, enabling all actors within the supply chain to authenticate the genuineness of precious metal products.

www.BullionProtect.com

refining@metalor.com
www.metalor.com

METALOR®

CYANIDE-FREE GOLD GRABS INTERNATIONAL ATTENTION

BY CLEAN MINING

The CSIRO/Clean Mining demonstration plant in Western Australia

When Clean Mining launched its new cyanide-free gold processing solution in June it knew there would be interest, but what about industry acceptance? The Australia-based company quickly discovered there was an appetite in the gold industry – an appetite that is global and growing.

Cyanide and gold processing have gone hand in hand for centuries, as the toxic chemical provides an efficient way of extracting precious gold metal from low-grade ore. Currently, around 75% of gold extracted from ore is processed using cyanide or mercury.

But as governments, miners and communities have become more aware of the potential negative impacts of the poisonous chemical – on workers, the environment, suppliers and communities – many have sought alternatives, and some countries have banned cyanide all together.

This is where Clean Mining identified an opportunity – a chance to introduce new environmentally responsible technology that could benefit miners, communities and governments by offering an alternative to cyanide that was cost-effective and reusable.

Working with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency, the new technology was tested in the field in Australia, the world's second largest global gold producer.

Clean Mining Managing Director Jeff McCulloch said the trial, conducted in 2018, proved the product was effective and commercially viable. That was the catalyst to launch the solution to the market.

WE'VE FIELDED ENQUIRIES FROM ALL CORNERS OF THE GLOBE AND THE RESPONSE HAS BEEN VERY POSITIVE

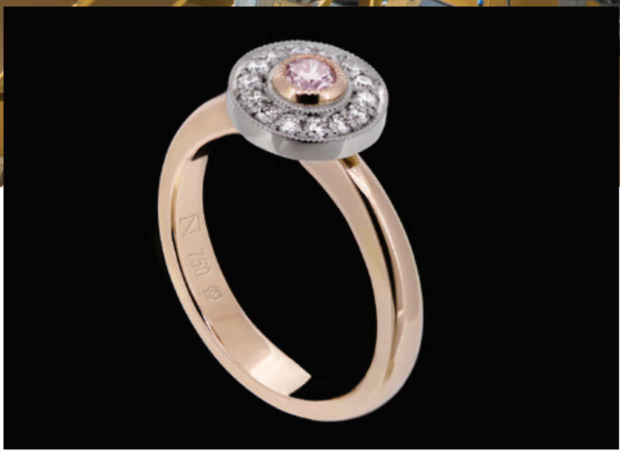
"The trial proved the technology, which uses a thiosulphate solution instead of cyanide, could extract gold from all ore types at an industrial scale", Mr McCulloch said.

Thiosulphate is an inorganic compound, a salt, which is non-flammable and water soluble. Like cyanide, it can dissolve gold from low-grade ore. Unlike cyanide and other alternative reagents, thiosulphate isn't a toxic chemical and the process involved doesn't require the addition of acid, chlorine, high temperatures or pressure vessels.

The reagent is also reusable and, with the addition of the appropriate plant, water consumption can be optimised and tailings dams eliminated, which is a game changer for the gold mining sector.

In the wake of this success, Clean Mining negotiated exclusive rights with CSIRO to sell and distribute new cyanide-free gold processing technology worldwide and launched the new solution on to the market in June 2019.

Since then, the company has been inundated with interest from miners, suppliers, partners and even research organisations, with particular interest stemming from Asia, Africa and the Americas.



Clean Gold™ jewellery produced and sold in Western Australia

"We've fielded enquiries from all corners of the globe and the response has been very positive," Mr McCulloch added.

For small-scale miners, our plug-and-play plant is more economical and sustainable than current cyanide-based plants, meaning it has a much lower capital cost. The plant can be made in modular components and is mobile, therefore, it is scalable and can be relocated to a number of mine sites.

Our solution, therefore, changes the traditional amortisation model of writing the cost of the plant off against the life of a single mine. Instead, we can help miners with high-grade, smaller deposits to get the gold quickly and move to the next site.

As a result, smaller miners can become larger miners via organic, self-funded growth, rather than raising or borrowing vast amounts of money for a single large-scale project. They can exploit previously uneconomic or stranded deposits that may not be viable for the large miners.

Over time, we also expect large miners that use cyanide will realise the massive costs associated with cyanide use – including regulatory compliance, health and safety, ancillary chemicals and acids, monitoring and reporting, tailing dam management, cyanide destruction and rehabilitation – and treat our technology as an opportunity that will provide them with a competitive advantage.

Just a month after the launch of the product, discussions are underway with various miners. The company is also focused on bedding down its ethical, reliable, quality supply chain to ensure it can meet the growing demand and deliver an exceptional product.

"Meetings have been held with suppliers in Asia to design and build the tank leaching systems and economical dewatering solutions that enable dry stacked tails and eliminates tailings dams," Mr McCulloch said.

We are also expanding our team with world-class metallurgists and gold mining process engineers and welcome expressions of interest from qualified professions who have worked in the gold sector and who can support the technical design and build process for our clients.

Clean Mining is also assessing technologies that will enable clients to use the Clean Gold™ branding to mark their ethically and sustainably produced product. The technology will enable consumers to trace gold from the mine to the refiner and onto the jeweller.

"Clean Gold™ certification provides consumers with the assurance that the gold has been mined responsibly and without the use of mercury or cyanide", Mr McCulloch said.

We believe this level of transparency and assurance is what consumers are seeking across all commodities, and our trial in Western Australia showed that consumers are prepared to pay a premium for ethically produced gold that minimises impact to the environment, is free from human harm, exploitation and conflict.

We believe this is already reflected in initiatives under way within the jewellery market, including Kering's Sustainability Strategy, which commits to 100% of its suppliers meeting standards of environmental stewardship, traceability, animal welfare, chemical products and working conditions.

The introduction of strategies like this, as well as toxic chemical levies, more active and mobilised communities and the rising costs of rehabilitation, remediation and litigation will drive change over time. Clean Mining is certain of that and we're pleased to be part of the solution.

Learn more about Clean Mining and its cyanide-free processing solution at www.cleanmining.co.

JEFF MCCULLOCH has expertise in financial services, business start-ups and commercialisations having worked for more than 30 years in a range of businesses and roles. Current Managing Director of Clean Mining, Jeff is a Certified Practising Accountant and a graduate of the Australian Institute of Company Directors. He was formerly an executive at CSIRO and has worked with a range of blue-chip companies.

SBMA News

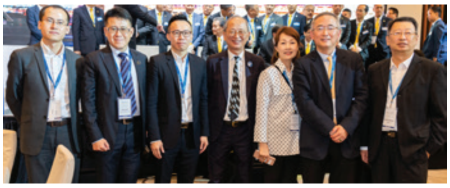
BY ALBERT CHENG, *CEO, Singapore Bullion Market Association*

SBMA successfully concluded the 3rd Asia Pacific Precious Metal Conference (APPMC) in June 2019. The conference has just ended, but as the industry voice in Singapore, we are taking into account the discussions and idea exchange to support the development of the sector in the Asia Pacific region. We want to thank all who participated and celebrated a special milestone with us at the conference – SBMA's 25th anniversary!

Here is an update of our activities:

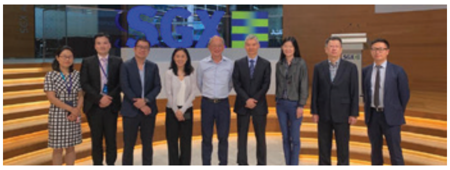
JUN 9-11: SBMA organises the 3rd APPMC with the support of Enterprise Singapore. SBMA aims to play a greater role in the region by bringing together the bullion markets of the ASEAN countries through the conference by developing and strengthening a unified body in Southeast Asia for the bullion market. See **Page 8–9** for a summary of the event.

SBMA welcome CGSE Delegation of over 40 representatives to APPMC 2019.



From left, Shulei from Gold Circle, Gerry Chen from World Gold Council, Edmund Chau from Shenzhen Batar Investment Holding Group, CEO Albert Cheng, Business Manager Margaret Wong, Roland Wang from World Gold Council, DCE Gordon Cheung.

JUN 12: SBMA arranges visit by the Shanghai Gold Exchange to the Singapore Exchange to discuss future co-operation opportunities.



SBMA brought a delegation from SGE to visit SGX.

JUN 19: SBMA members attend the Ministry of Law's 3rd Onboarding Conference for the industry to provide an overview of the regulatory and registration requirements under the Precious Stones and Precious Metals (Prevention of Money Laundering and Terrorism Financing) Act 2019 (PSPM Act).

AUG 1-4: CEO Albert Cheng represents SBMA at the 16th India International Gold Convention (IIGC) in Amritsar, India.

CEO Albert Cheng with Vinayak Meharwade (left) and Srivatsava Ganapathy (right) from Foretell Business Solutions at the 16th IIGC held in India.

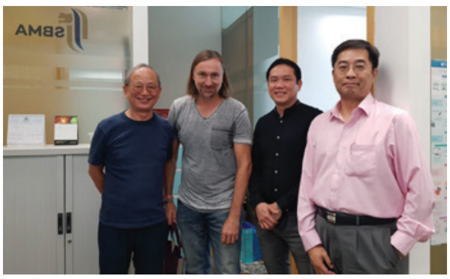
AUG 29: CEO Albert Cheng represents SBMA at the Islamic Finance News (IFN) forum in Singapore and speaks in the panel discussion "Gold – Opportunities for Financial Innovation".

CEO Albert Cheng represents SBMA and participated in the panel session on "Gold – Opportunities for Financial Innovation" at the IFN Singapore Forum.

Exploratory Meetings

During the quarter, we scheduled meetings with the following companies: China Gold News, Foretell, Gold Circle, IBMC Ltd, ICE Futures, INTL FCStone, Jacaranda Capital Partners, Metals Focus, Metal Market, Mileage Communications, NUS – LKY School of Public Policy, PT Nikijojo, Shanghai Gold Exchange, Singapore Exchange, UOB China, and World Gold Council on membership and matters related to market development.

From left, CEO Albert Cheng with Jeraldine Ong from INTL Asia and Riadi Waluyo from PT Nikijojo after introductory meeting held at SBMA office.



From left, CEO Albert Cheng, Paul Walker (former Director of GFMS), KL Yap from Metalor Singapore and Robin Lo (former Director of YLG Bullion) after meeting held at SBMA office.

MEMBERSHIP

SBMA's total membership consists of 46 companies, including three Category 1 members, 32 Local Associate Corporate members, nine Foreign Associate Corporate members, and two Affiliate members.

UPCOMING EVENTS

13–15 October 2019. Shenzhen, China.

LBMA/LPPM Global Precious Metals Conference 2019

Senior representatives from all sectors of the precious metals market will meet in Shenzhen, China, for the premier event in the industry. Please visit www.lbma.org.uk for registration and event details.

27 October–1 November 2019. London, United Kingdom.

LME Week 2019

Representatives from the entire supply chain meet to discuss current trends in metals markets, what to expect for the year ahead, and to network with industry peers and colleagues. Please visit https://www.lme.com/Education-and-events/LME-Week for registration and event details.

About Crucible

Crucible is published quarterly by SBMA.
If you would like to contribute an article, news or information to Crucible, place an advertisement in Crucible, or if you require further information, please contact:
Singapore Bullion Market Association,
9 Raffles Place, Level 18, Republic Plaza II,
Singapore 048619, Singapore.
Tel: +65 6823 8011
Email: mail@sbma.org.sg
Web: www.sbma.org.sg

Printing Office
SC (Sang Choy) International Pte Ltd
9 Harrison Road
#02-01 Harrison Industrial Building
Singapore 369651, Singapore
Tel: +65 6289 0829
Licence number: L017/03/2019