



Delegates listen to a keynote address at the second Asia Pacific Precious Metals Conference (Image: SBMA).

IN THIS ISSUE

Malaysia's Precious Jewellery Market

By Ermin Siow, President, Federation of Goldsmiths and Jewellers Association of Malaysia, 2014-2018

Page 3-4

Why Do Turkish Banks Hold Gold at the Turkish Central Bank?

By Aslı Şahin, FX & Precious Metals Specialist

Page 5-7

The Impact of Artificial Intelligence on Trading and Finance

By Gordon Cheung, Deputy Chief Executive, Singapore Bullion Market Association & Avirath Kakkar, Head of Strategy, EIS Global Capital Management

Page 8-9

Gold and Blockchain: A Win-Win Combination

By Nikita Knyazev, Head of Commerce, A-Ventures

Page 11-12

Asia Pacific, Technology Expected to Drive Transformation of the Gold Market

By SBMA

Page 13

Singapore Showcases Growing Role in Regional Bullion Market at 2nd Asia Pacific Precious Metals Conference

By SBMA

Page 14-15

SBMA News

By Albert Cheng, SBMA

Page 16



Artificial Intelligence Application in Algorithmic Trading: Two-day Workshop

16 & 18 October 2018

Course Details (Subject to change)

Workshop Dates: 16 & 18 October, 2018 (Tue & Thu), 9:00am - 5:00pm

Venue for Workshop: SGX Centre, SGX Academy Room 1 & 2, 2 Shenton Way, Singapore 068804

Fees: S\$400 (SBMA members); S\$500 (non-SBMA members). Price is inclusive of 2 coffee breaks for both days of workshop.

Cancellation policy: We reserve the right to cancel or re-schedule the program. In case of cancellation, we will refund 100% of the fee duly received.

Course Content

Part One: Introduction to Artificial Intelligence	
<ol style="list-style-type: none"> 1. What is A.I.? 2. Why now? 3. <i>Machine Learning</i> – major models 4. <i>Deep Learning</i> – major models 5. Assessing model performance 6. Pitfalls: Shortcoming and expensive errors <p>Key takeaway: Flash cards where algorithms are defined in a few lines with no (almost no) mathematical reference.</p>	<p><u>Trading Heads/Managers</u> are also welcomed (complimentary) to attend this session. We will make a quick introduction to AI technology to those who do not have any prior exposure to AI algorithms, and who are capable of driving change in their organization and want a quick adequately detailed understanding of what is in the algorithms.</p>
Part Two: Artificial Intelligence Rigor	
<p>Algo Suite One</p> <ol style="list-style-type: none"> 1. Logistic regression 2. Linear discriminant analysis 3. Regularization <p>Key takeaway: Practical implementation of Algorithm to trade <i>gold futures in any time frame</i>.</p>	
<p>Algo Suite Two</p> <ol style="list-style-type: none"> 1. Decision trees 2. Ensemble methods 3. Support vector machines <p>Key takeaway: Practical Implementation of Algorithm to trade <i>correlation</i>.</p>	<p>This session is for <u>traders</u>. We will cover all the major algorithms in detail and deliver an intuition behind the mathematics of each algorithm. We will implement live programing exercises with participants. This is for participants who want to launch themselves into the rigorous application of machine learning in trading financial instruments.</p>
<p>Algo Suite Three</p> <ol style="list-style-type: none"> 1. Neural networks 2. Multilayer perception and hyper parameter tuning 3. Convolutional networks 4. Recurrent neural networks 5. Unsupervised learning algorithms <p>Key takeaway: Practical implementation of Algorithm to trade <i>listed options</i>.</p>	

Register Now



Malaysia's Precious Jewellery Market



By Ermin Siow

President, Federation of Goldsmiths and Jewellers Association of Malaysia, 2014-2018

The precious jewellery market (PJM) comprises gem-set jewellery and plain precious metal jewellery. In Malaysia, it is predominantly a plain gold jewellery market, which takes at least 85% of the total PJM. As for gem-set jewellery, diamonds set in 18K or 750 yellow gold or white gold are more popular. The other popular gems sold here are ruby, blue sapphire, emerald, pearls and jade.

Unlike some other countries, especially neighbours like Thailand, Indonesia and Philippines, silver jewellery is not popular in Malaysia. When the price of gold hit an all-time high of US\$1,900/oz in 2011 after a ten-year bull run in prices, efforts to promote silver and gem-set jewellery in silver were not successful. The intrinsic value of gold jewellery still remains a major factor behind the purchase of gold jewellery.

Domestic jewellery market

The domestic market for PJM is estimated at approximately RM6 billion per year. This is based on an annual consumption of approximately 25 metric tonnes of gold. 22K or 916 gold jewellery makes up almost 90% of the total plain gold jewellery sold in the market. 24K or pure gold jewellery, which is more popular in the East

Malaysian states of Sabah and Sarawak, has a small niche among Chinese consumers, particularly for weddings, and also caters to Chinese tourists from mainland China. 18K white gold mainly caters to the young, and is mostly used in gem-set jewellery for casings and machine-made chains.

There are approximately 3,500 retail stores, most of which are run by single-store operators. Almost 10% of the retailers are chain stores, and each chain has 15 to 100 outlets. As in other Southeast Asian countries, chain store outlets are usually located in large shopping malls in cities. The mushrooming of shopping malls since the early '90s has encouraged shops to be located within malls to tap on their heavy customer traffic and for security.

Currently, there are three publicly listed jewellery companies. All of them are chain store operators with more than 30, 70 and 100 outlets respectively. Their outlets are mostly located in shopping malls. Most of the products they carry, namely 22K yellow gold jewellery, are sourced from local manufacturers. The 24K, 18K and gem-set jewellery are mainly imported from Hong Kong, Italy and Turkey.

Exports

Malaysia exports quite a fair bit of plain gold jewellery (mainly 22K) to the world market. In fact, Malaysia exports more than it consumes (Table 1).

Table 1: Plain gold jewellery exports

Year	RM (mil.)	MT (approx.)
2014	6,827	40
2015	7,766	45
2016	7,186	52
2017	6,714	40

Gold jewellery exports have averaged about 50 tonnes annually for the past four years. The main export markets are Middle Eastern countries and Singapore, from where they are re-exported. About 85% of gold jewellery factories are located in the northern peninsular state of Penang with the remaining in Kuala Lumpur and Johor. Exports took off in the early '90s, and when the state lifted the 10% import duty on gold bullion, exports really boomed. This move has proved pivotal in helping the industry grow.

As Malaysia only produces a limited quantity of gold from its very small gold mine operations, it imports gold bullion as raw materials for manufacturing (Table 2).

Table 2: Annual gold bullion imports.

Year	RM (mil.)	MT (approx.)
2014	10,933	70
2015	11,338	68
2016	9,603	70
2017	13,932	84

After enjoying tax-free status for more than a decade, the government finally introduced Goods and Service Tax (GST) on precious metals in April 2015. With the introduction of GST, only LBMA-accredited gold bullion or kilo bars were exempt from the 6% tax. Diamonds and precious stones were also subject to GST at 6%. This negatively impacted the whole industry. Exports were hampered by new GST-related rules and regulations, and domestic sales of precious metal jewellery were also significantly affected, especially during the first year of its introduction.

Since the introduction of GST, the PJM, through the Federation of Goldsmith and Jewellers Association of Malaysia (FGJAM) worked very hard to lobby the government and engaged with the relevant authorities, especially the Customs Department, to help to iron out issues related to the implementation of GST.



Zero-rated GST on precious metals

The General Election held on 9 May 2018 saw the incumbent party, which has ruled the country since its independence in 1957, being overthrown by the opposition. With the new government sworn in, changes were put into place, following its election manifesto. True to its promise, GST for precious metals was zero-rated in June 2018, and the government promised to take steps to abolish the GST once the parliament is convened in August.

Though a new tax regime known as Sales and Service Tax (SST) will be introduced, it is generally acknowledged that the PJM will be exempted. In fact, the new finance minister has already announced verbally in a function held on 4 August 2018 that SST will not be imposed on the precious metal industry when it is fully approved by the parliament in September 2018.

What's in store?

Though free of taxes that would hamper both export and domestic growth, the industry is not without its problems. PJM is seeing strong competition for consumers from industries like tourism, electronics and more, which has greatly reduced its share of consumer dollars. A lack of innovative designs and poor marketing efforts have also contributed to the dwindling consumer demand among the young.

The rise of online jewellery sales, though common in China and becoming more popular in the United

States, has not yet gained traction in Malaysia. It is hoped that with the tax-free environment and the brand-new government promising a business-friendly, clean and efficient economy, industry players will take the opportunity to venture out, develop more innovative products and learn from more advanced countries to boost the domestic market, which has been stagnant for some time. Likewise, exporters will explore new markets to boost export tonnage, which has been negatively affected by the introduction of GST. There is now a sense of optimism across the industry, and barring unforeseen circumstances, PJM in Malaysia can certainly look forward to a better future.



Ermin Siow graduated from University Malaya in 1981 with Bachelor of Science (Hons). He joined Poh Kong Jewellers as its managing partner in 1989 and was elected as one of the Executive Directors

when Poh Kong Holding Bhd became a public listed company in Bursa Malaysia in 2004. He was the President of Kuala Lumpur, Selangor, Negeri Sembilan and Pahang Goldsmiths and Jewellers Association from 2010 to 2014, and the President of the Federation of Goldsmiths and Jewellers Associations of Malaysia from 2014 to 2018.

Why Do Turkish Banks Hold Gold at the Turkish Central Bank?



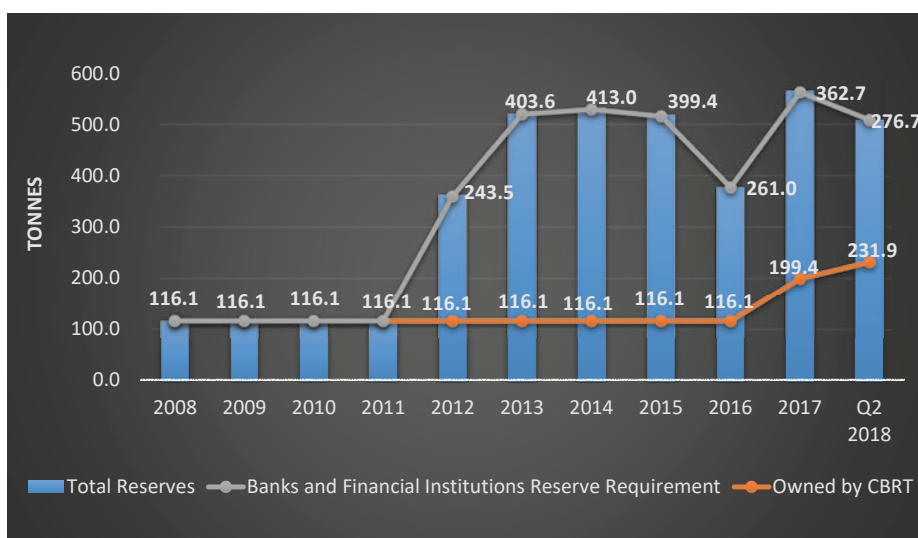
By Aslı Şahin
FX & Precious Metals Specialist

Turkey, the world's fourth-largest consumer of gold, has had a long history with the precious metal, dating back to when the Kingdom of Lydia minted the first gold coins known in history over 2,500 years ago in present-day Western Turkey. Gold has a close connection with the Turkish life and culture, but it has also been used historically as a hedge against inflation and currency fluctuations, resulting in a vast amount of gold accumulated in form of jewellery, coins and bars.

Gold has a close connection with the Turkish life and culture, but it has also been used historically as a hedge against inflation and currency fluctuations.

Physical gold owned and held outside of the financial system by Turkish citizens is kept in households or private vaults, and is known as "under-the-mattress gold". While the total amount held is unknown, the former Turkish deputy prime minister pointed out in 2017 that it is over 2,200 tonnes, while in 2015, the World Gold Council estimated it to be at least 3,500 tonnes. For many years, under-the-mattress gold was of little interest to banks.

Turkish Central Bank Gold Reserves



Source: CBTR, WGC

Although the gold market underwent liberalisation in 1993 and the import of gold has been permitted since 1995 with the establishment of the Gold Exchange, the majority of Turkish banks have kept their distance to gold. Instead, the Grand Bazaar in Istanbul has remained the centre for gold trading in the country. This changed in late 2011 with a new policy introduced by the Central Bank, which enabled banks to hold physical gold in their blocked accounts at the Central Bank as reserve requirement instead of Turkish lira.

A new policy introduced by the Central Bank in late 2011 enabled banks to hold physical gold in their blocked accounts at the Central Bank as reserve requirement instead of Turkish lira.

The new regulation initially allowed the banks to hold up to 10% of their Turkish lira reserve requirements as Good Delivery gold bars at the Turkish Central Bank's account in the Bank of England. Since then, the limit has been increased to 30%, and the coefficient for each gold facility and ratio for different maturities have been adjusted. In September 2016, an additional 5% was allowed, which can be scrap gold. In early 2015, As part of efforts to encourage banks to keep gold, they were given the option to store gold at the Borsa Istanbul vaults, at almost the half the storage cost compared to BOE. In January 2017, the definition of reserve option mechanism was expanded to include 1-kilogram gold bars, in addition to large bars.

These initiatives and changes in regulation were part of the Central Bank's efforts to make it attractive for individuals to bring their physical gold to banks and increase the Turkish lira's liquidity in the banking system. This was a way of monetary easing for the Central Bank. On the other hand, from the perspective of the banks, holding gold instead of lira creates value because of the interest rate difference between gold and Turkish lira. The banks were able to use this excess Turkish lira for lending purposes instead of keeping it in the blocked accounts of the Central Bank.

The new policy has been welcomed by banks and by individuals looking to receive interest on their gold while not necessarily holding it as allocated physical gold. As a result, the policy has become the main stimulant boosting the Central Bank's gold reserves in recent years. The Central Bank's Annual Bulletin shows that its gold reserves topped 565.1 tonnes in 2017, which is 21.9% of its total reserves. The ratio of utilisation by the banks was 90.9% for Turkish lira requirements and 71.2% for gold deposit accounts. However, the Central Bank only started to purchase gold outright in May 2017, though it had already accumulated 116.1 tonnes by then.

As such, the rapid growth of its reserves in recent years has been a result of the new policy. Banks are able to hold physical gold at the Central Bank in different ways, and the options of holding it at the Bank of England or Borsa Istanbul gives them the flexibility to react to the market and manage their costs.

As such, the rapid growth of its reserves in recent years has been a result of the new policy. Banks are able to hold physical gold at the Central Bank in different ways, and the options of holding it at the Bank of England or Borsa Istanbul gives them the flexibility to react to the market and manage their costs.

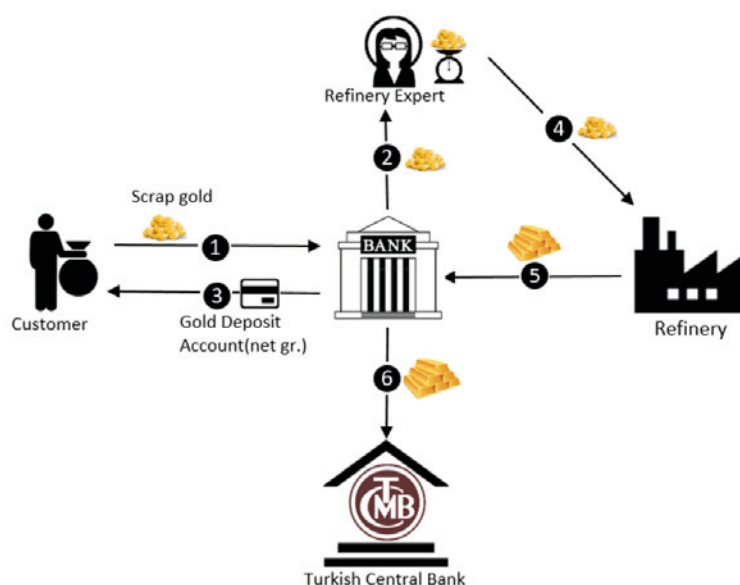
Most of the gold banks are able to use for their reserve requirement needs comes from swaps or gold leases.

Although the main goal of the policy is to encourage people to bring their physical gold to banks, banks are not limited to customer gold deposits to fulfil the Central Bank reserve requirement.

The gold can also be provided by borrowing gold or with a buy and sell gold swap, depending on the bank's counterparty limits, liquidity or market conditions. For example, some banks buy physical gold on the local market when it is trading at a discount to fulfil their reserve requirement.

According to the Thomson Reuters GMFS Gold Survey 2017, only approximately 55 tonnes of scrap gold has been collected since the regulation was introduced, which is a small share of the total amount of under the pillow gold estimated to be held by private individuals in Turkey. The 362.7 tonnes of gold held by banks and financial institutions at the Central Bank shows that most of the gold banks are able to use for their reserve requirement needs comes from swaps or gold leases.

How do Turkish banks generate gold to hold at the Central Bank?



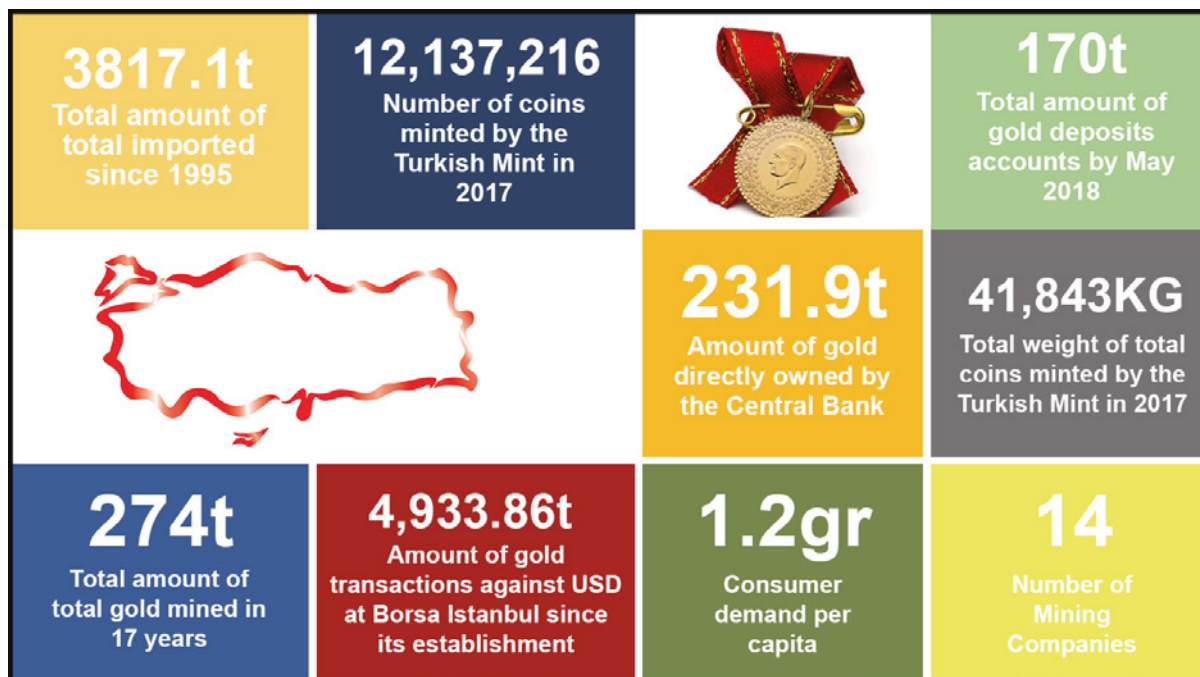
• Gold deposit accounts

For many banks, offering an attractive interest rate for time deposit accounts in gold to encourage clients to deposit their scrap gold has been one of the ways for banks to generate the physical gold they need for the reserve option mechanism. However, one of the major barriers for banks in collecting scrap gold is assaying and determining the purity and weight of the gold. This has been successfully managed by arranging certain days at bank branches where an expert from a refinery is present to examine the scrap gold that clients bring to deposit. After the purity and net gold weight is confirmed, the next step for the bank to credit the gold in grams into the client's gold deposit account. The client can either open a time deposit account and receive an interest or keep it in a demand deposit account and sell the gold at the market rate when they choose to do so.

It is important to note that what the bank doing is not safekeeping the scrap gold for the client or providing an allocated gold account. Instead, the bank credits the net grams in an unallocated account for the client. The refinery the bank has an agreement with will melt the scrap and produce Good Delivery kilobars or minibars and deliver it to the bank's vault. The refinery does not have any ownership and is only paid a production fee. At this point, the client has their unallocated gold credited and the bank has the bars at its vault. At the reserve requirement term, which is calculated every other Friday, the bank may either transfer it to the Central Bank account at the Bank of England or Borsa Istanbul.

Banks are able to pay an interest to the customers with time deposit gold accounts because the amount of gold they receive from

At a glance: The Turkish gold market



Source: CBTR, WGC, Borsa Istanbul, Turkish Gold Miners Association.

the client and keep for their Turkish lira reserve requirement frees up liquidity that can be allocated as Turkish lira loans. Banks currently pay an interest ranging from 0.5% to 2.75%, depending on the gram amount and maturity of the time deposit account. A major input for the banks in determining the interest they pay is US dollar Libor rates and the market rates for gold lease, which indicates the opportunity cost of obtaining gold elsewhere.

Additionally, if a bank is already holding 35% of its Turkish lira requirement in gold at the Central Bank (the maximum level allowed), the interest rate the bank will offer to new clients that bring scrap gold would not be as competitive compared to a bank that is holding only 15% of its Turkish lira requirement in gold at the Central Bank.

In summary, considering the high Turkish lira interest rates, the difference between the interest paid for gold in a time deposit account and the Turkish lira interest rate is a valuable source of additional revenue for the bank (excluding costs, such as expert assaying fees and storage fees at the Bank of England or Borsa Istanbul).

• Gold lease

For some banks, depending on their capabilities, leasing gold can be a less costly way or an alternative to offering gold deposit accounts if the amount of scrap gold that can be collected from individuals fails to fulfil the bank's reserve requirement needs. In this case, the bank would borrow gold and require its correspondent bank to allocate the bars and transfer the allocated London Good Delivery bars to the Central Bank account.

• Buy and sell swap

A buy and sell swap loco London could be an option for banks to consider. Similar to leasing gold, the bank asks its correspondent bank to allocate the ounces and to transfer the London Good Delivery bars to the Central Bank's account.

What's next?

In addition to regulations on the reserve option mechanism, other steps are being taken to develop Turkey's gold market, such as the expansion of Borsa Istanbul's vaulting capacity from 100 tonnes to 1,600 tonnes in January 2017, new regulations that entitle the Central Bank to be the primary buyer of the gold bars produced by Turkish refineries, gold-backed bonds and Sukuk issued by the Treasury with a maturity of 728 days and a six-month interest rate of 1.2%, which resulted in the accumulation of a 3.8 tonnes of physical gold from around 7,100 individuals, the development of a market-making facility for exchange members, and lastly the recent establishment of an electronic funds transfer (EFT) system to move gold stored by individuals in Borsa Istanbul to different banks. However, despite the initiatives taken, the amount of physical gold collected so far shows that most Turkish individuals are unwilling to give up their coins, jewellery and bars in return for an annual interest rate of up to 2.75%. The public remained very much in favour of keeping their physical gold within arm's reach. With inflation at 15.4% in June 2018, the highest in 14 years, gold will certainly continue to strengthen its role as a hedge against volatility in Turkey and an asset for times of financial hardship.

As a Turkish myself, I always ask people why they prefer to own physical gold. It ultimately boils down to the same reasons, no matter where in the world they are from: is easy to invest in gold, and the precious metal is liquid, confidential, tangible, and outside the banking system. So what could be the next steps to encourage more under the pillow gold to enter the banking system?

- Provide more transparency and understanding about what is unallocated, allocated and pool allocated gold, and ensure similar practices are maintained for these gold accounts among Turkish banks.
- Enable blockchain and physical gold to work together in order to explore new possibilities for ownership, transfer and use in payments of physical gold which can potentially surpass the perceived benefits of holding gold under the pillow.



Aslı Şahin is a FX and precious metals specialist from Turkey who has strong relationships within the Turkish Market. She was a senior dealer at the treasury marketing unit of Denizbank in Turkey

for nine years, where she also worked on electronic trading related projects. She has international experience gained at Allocated Bullion Solutions, Singapore and the Perth Mint Treasury. Aslı holds a bachelors degree in Capital Markets.

— How Artificial Intelligence Has Revolutionised Trading



By Gordon Cheung
Deputy Chief Executive, Singapore Bullion Market Association

- Vision Fund, founded by Masayoshi Son in 2017 with \$100 billion, invests in artificial intelligence (AI) technologies and robotics.
- Trading giants like Bridgewater Associates, Renaissance Technologies, Citadel and D.E. Shaw use AI-driven automated trading strategies to generate remarkably high returns.
- More than 60% of the staff working for XTX Markets, a leading electronic market maker in a wide range of asset classes behind prime brokers, are data scientists and algorithm engineers.
- JP Morgan Chase's Contract Intelligence (COiN) uses deep learning algorithms to analyse and review over 10,000 credit documents in seconds. The bank also established a Machine Learning department to develop AI technologies for its banking operations.
- Wells Fargo set up an AI Enterprise Solutions team to run its innovation lab.

Today, machine learning and deep learning play an increasingly important role in calibrating trading portfolios to match strategic and risk objectives. In fact, automated strategies can eliminate all the deficiencies of manual trading. Traders no longer need to strain their optic and brain nerves non-

It's not too late to start embracing what's going on in the data science realm and equipping yourselves with algorithmic trading skills.

Meeting Artificial Intelligence Technology at the Crossroads



Finance as an industry is remarkably advanced in collecting and storing data, much more than most others and it's only a question of time when AI technologies are deployed at scale.

By Avirath Kakkar

Head of Strategy, EIS Global Capital Management

What exactly is behind all the excitement surrounding artificial intelligence? Is it just media hype? Is it meant to power a few Silicon Valley stocks? Is it just another thing that too shall pass?

The answer to all the above is, quite emphatically, NO. The excitement is about our civilization being at a very important crossroads. A crossroads arrived at after years of advancement in neuroscience, computing, and mathematical algorithms. Let's see how.

The one thing that differentiates us from other species is the state of development of the frontal cortex. When opened up, it's probably no bigger than a paper napkin. But it's because of this frontal cortex that we have developed art, sciences, culture and technology to the extent that no other (known) species has been able to. Now bear in mind, the frontal cortex evolves and grows. A newborn baby doesn't know as much as an average adult. An average adult today knows more than the average adult 500 years ago. The point being, that the frontal cortex can be trained to acquire knowledge.

Ok that's one part. But here's where it gets exciting.

Machine learning algorithms have been around for a long time – at least since the 1960s – and have always been modelled on how the human brain works. However it is only now, with advances in brain scanning technologies, that we can study in great detail how exactly the 300 million neurons in our brain work. We are in a position to monitor what each cell is doing, which external stimuli is

triggering which set of cells and how these cells are processing the stimuli that inform our thoughts, moods and actions.

So if we know in great detail how our brain works, and if we know we can teach it to perform really complex tasks (remember, we teach our babies all the time), then what's to stop us from replicating it. And if we can replicate it and it doesn't need to be confined to the size of a paper napkin, then its power will be exponentially greater than what we have now. Its impact on civilisation will be astronomical.

That's not all.

With the advances in nanotechnology (and maybe cloud computing), we will be able to physically compress the above into extremely small devices. According to the inventor and futurist Ray Kurzweil, by 2030 these small devices will be physically integrated into our brains. So within a few years, we won't just have 300 million neurons to do our thinking, we will be able to access 300 billion non-biological neurons to help us think.

The above, coupled with sizable improvements in the algorithms, will provide a strong tailwind. Some of us probably have already noticed the evolution in Google search results. It has evolved from performing complex web searches in a fraction of a second, to giving suggestions as to what may interest us (memory), and following up with us on our past searches and actually interpreting our requests.

Developing an AI business requires time, significant computing power and sizable amounts of data. Finance, as an industry, is remarkably advanced in collecting and storing data more frequently than most others and it's only a question of time when the above technologies are deployed at scale.

Let's take a step back. As a trader – and I think I speak for other fellow traders as well – I have always wanted to know how best to effectively model all the inputs I consider before executing a trade, how best to position size, how to manage risks, and little tricks that could give an edge in trading. AI algorithms provide rigorous techniques for addressing the above concerns.

Gordon Cheung has over 25 years of trading experience in the interbank bullion market. Before joining SBMA as its Deputy CEO in March 2018, he spent 12 years as the head of trading and hedge fund sales at leading bullion banks in Singapore and Hong Kong.

Avirath Kakkar is the Head of Strategy, EIS Global Capital Management, a mid-sized hedge fund in Singapore applying AI technologies to portfolio trading. He was previously a structured deal expert at JP Morgan and head of commodities options at ICBC Standard Bank Singapore.

SBMA will be organizing a workshop on "Artificial Intelligence Application in Algorithmic Trading". Please visit <http://bit.ly/2wHUwjX> or see page 2 for more information.

Let's grow together

YLG BULLION SINGAPORE PTE., LTD.



COME INTO YLG ECO SYSTEM



Physical Shipment



24 Hour
Online Trading



Transfer
Loco London



We are the best business partner

Member of:



Contact Detail :

YLG Bullion Singapore Pte., Ltd.

Singapore Office

16 Collyer Quay, #26-04 Income at
Raffles, Singapore 049318



+65-6536-8480 (Office Singapore)
+65-9277-1280 (Mr.Robin)



YLG Bullion singapore



ylg singapore



@ylgsingapore



YLG Singapore

Gold and Blockchain: A Win-Win Combination



By Nikita Knyazev
Head of Commerce, A-Ventures

Financial and retail investors are having a tough time in the market today. The US stock market is looking overvalued and the S&P 500 is near all-time highs. Other assets like housing and real estate also seem to be unstable. Gold has been under pressure for years and may not be ideal if you are expecting a bull run, but it will surely hold its value. However, according to the World Gold Council, there was a 7% decline in gold demand in 2017, which was largely investment-related.

I fully agree with Ross Norman from Sharps Pixley that a critical component in investment demand for gold is its publicity. Google Trends charts for the keyword “investment gold” shows a downward movement from its peak in 2011. For most journalists and bloggers, gold simply went out of fashion. Because of this, the crisis is deeper than the independent research houses indicate. It is obvious now that Bitcoin, Ripple, Ether and other cryptocurrencies have taken much media spotlight from our industry. For instance, you can go through the Thomson Reuters 2018 Trading Client Cryptocurrency Survey, which shows that investor interest in cryptocurrencies is stronger than the year before. In particular, one-third of survey respondents said they were “thinking about” trading cryptocurrencies and almost 90 percent of them said they planned to do so in the next 12 months.

Various players in the gold market are exploring how to leverage the popularity of blockchain and cryptocurrencies to raise interest in the gold market. Some of them are offering cold storage services and access to trading Bitcoin, Ethereum in addition to their usual gold business. For example, International Depository Services Group, a privately owned subsidiary of Dillon Gage Metals, is now offering cold storage for Bitcoin



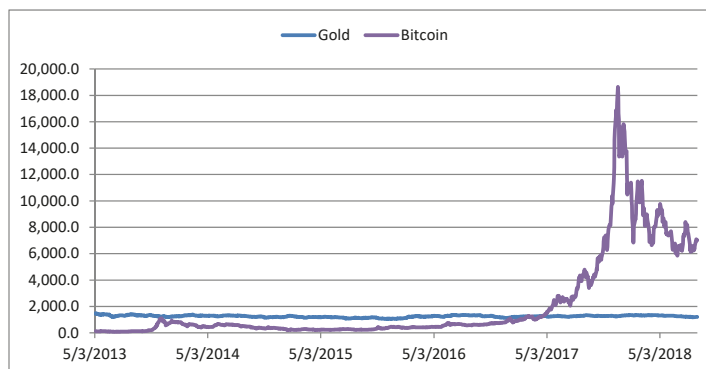
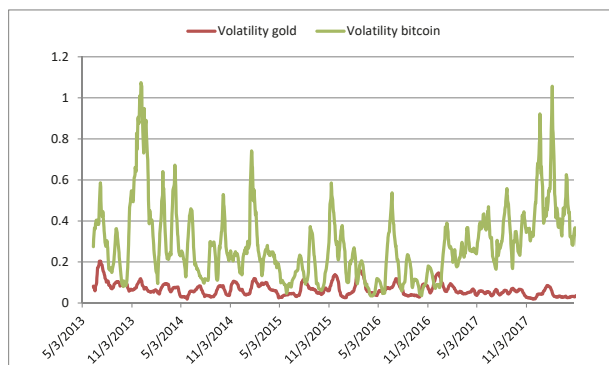
and Ripple at its Dallas location. Dubai-based gold trading company Regal RA DMCC received a cryptocurrency trading license, which allows the company to open a cold storage vault. Goldmoney has also recently expanded its cold storage by adding Ethereum and Bitcoin Cash.

But this vaulting synergy is only the first step of collaboration between gold and the blockchain industry. Gold, a liquid asset with low volatility that is traded within an established regulatory framework, is an important part of the global financial system. The distributed ledger mechanism that underpins cryptocurrencies has the potential to become an established part of the financial system. This new technology presents many opportunities for building new applications, including tracking gold's provenance across the

supply chain, introducing efficiencies into post-trade settlement processes and transforming gold into a digital asset, which may be the most important change. While the other changes may improve business process, turning gold into a digital asset can bring new investors to the gold market.

First, the blockchain can help in managing smaller amounts of gold (such as a 1 ounce or 1 gram). I believe this lower barrier of entry for potential gold investors can bring increased liquidity to the market. The idea of trading gold in such small volumes has been around for many years. Usually, it was a product offered by online gold trading platforms that pooled buyers into a closed-loop system with a single counterparty. The owner does not own an actual physical gold coin or bar, which is

Volatility and Price Chart



instead segregated and allocated among buyers. They are captive to that particular platform, with potentially poor liquidity, monopoly pricing and counterparty risk exposure. This is the problem of unallocated gold.

Now we are seeing allocated digital gold electronically traded with direct ownership, such as Royal Mint Gold and VaultChain Gold. The general idea is that allocated gold in the vault has immutable records of ownership that are maintained on a cryptographically secure blockchain database. In case of RMG, the gold vault will be provided and managed by The Royal Mint, and the CME Group will provide the trading platform. In case of VaultChain Gold, gold will be provided and managed by the Royal Canadian Mint, and trading will be performed on the Tradewind platform. In both cases, investors have the option of redeeming physical gold and have a zero annual cost of carry. Due to the fact that the cost of acquisition is not specified in both cases at the moment, there should be some premium to cover such costs and some margin for the refinery and platform.

Second, gold may become a stable asset for crypto investors. A lot of early holders of Bitcoin, Ethereum and other crypto assets are now sitting on large gains, which have unbalanced their portfolios.

Imagine if you started with \$10,000 and invested \$1,000 into Bitcoin at \$500, and the rest in bonds. Realistically this is what occurred: you made 3% on the bonds for approximately two years ($1.03 \times 1.03 = 1.0609$), while bitcoin grew from \$500 to \$7,000, giving you a 1,400% return. So in monetary terms, your \$9,000 worth of bonds is now worth \$9,548.1, while your Bitcoin investment is now worth \$14,000. Your portfolio is now worth \$23,548.1. At this point, experienced investors would be thinking about diversifying. OK, but into what asset? Bonds have negative returns, and stocks are at all-time highs. Real estate is not also a good choice because of their illiquidity, and commodities run the risk of becoming a victim of trade wars between the United States and China.

Crypto investors also prefer holding decentralised assets, so part of their capital gains would likely go towards new ICOs, but these investments are also rather illiquid and volatile.

As such, a "stable coin", or a cryptocurrency that is pegged to another stable asset, is necessary. This currency would have to be global, not tied to a central bank and have low volatility, which would allow for its practical day-to-day use. Short-term stability is important for transactions and long-term stability is important for holding. An ideal stable coin should be able to withstand a great deal of market volatility, be affordable to maintain, be scalable in terms of liquidity, have easy-to-analyse stability parameters, and be transparent to traders – like the US dollar or gold! A fiat or gold-backed scheme is also highly regulated and constrained by legacy payment rails. There are several projects working on this problem and each one has advantages and disadvantages.

Popular stable coins

Tether is 100% backed by fiat currency assets in a reserve account. The conversion rate is 1 tether (USDT) = US\$1. The Tether platform is considered to be fully backed if all tethers in circulation are less than or equal to all fiat that is held in the bank account.

Advantages: Close to a like-for-like swap from fiat to crypto, well integrated and established, near \$3 billion in turnover per day.

Disadvantages: Centralised, not trustless, audit refusals.

DGX is a spendable digital warehouse claim for gold, with ownership validation on the Ethereum blockchain. Digix promises transparency: warehousing of gold in vaults that are certified members of LBMA, with "real-time transparency; immutable on-chain auditing records for viewing from inspectorate and PWC".

Advantages: Planned fees appear to be similar to ETF fees, transaction fees will be 0.1% of the transacted amount, audited reserves.

Disadvantages: Centralised emission, small turnover, rate for redeeming gold not yet specified.

GOLD is a cryptocurrency asset that is 100% ensured by gold, stored in a variety of well-known storage facilities around the world. GoldMint is committed to buying back GOLD from users. It is planned to decentralize emissions, by vending gold storages "Custody Bot", connected to the blockchain.

Advantages: Audited reserves; emissions currently centralised and aligned to the amount of gold brought by the company.

Disadvantages: Small turnover, independent auditor not yet specified.

Will gold tokens change the gold market?

It will take time for gold tokens like GOLD or DGX to grow in popularity and have trading volumes like Tether. But according to history, gold is more valuable and decentralised than the US dollar.

In all the projects described above, blockchain technology is used to create an immutable, distributed, and transparent record of asset ownership and to increase liquidity in the gold market. However, trusting intermediaries is necessary in all cases – whether they are for storage or transportation – and the market will need time to adjust to this. However, there is a potential for the bullion market to receive new investors and become an entry point and bridge for investors in cryptocurrencies.



Nikita Knyazev is the head of commerce at management company A-Ventures, which has a focus on precious metals trading. He holds a degree in applied physics and mathematics from the

Moscow Institute of Physics and Technology and a degree in Corporate Finance from the Higher School of Economics. In his previous roles, he has worked in market risk, and in an investment company where he was responsible for hedging operations in commodity markets and maintaining an optional part of structural products as a derivatives trader. He was also previously the deputy CEO of Ekaterinburg Non-Ferrous Metals Processing Plant, a refinery on the LBMA Good Delivery list.

Asia Pacific, Technology Expected to Drive Transformation of the Gold Market



Delegates at the 2nd Asia Pacific Precious Metals Conference held in Singapore.

SBMA's second Asia Pacific Precious Metals Conference showcased the sector's tremendous growth in Asia Pacific on the back of high demand for physical gold and technology that is making precious metals trading more accessible and efficient for consumers.

By SBMA

Wealth is the most significant factor driving the price of gold, the World Gold Council's Market Intelligence Group Director, Mr Alistair Hewitt, said at the 2nd Asia Pacific Precious Metals Conference in his keynote address, "The Gold Market in the Next Five to Ten Years and its Implication for Asia Pacific Countries". With global GDP continuing to rise and Asia contributing to a bigger share of the pie as its capital markets develop, the demand for gold can only be expected to grow, Mr Hewitt said.

Asia Pacific consumers are getting richer, but their preferences are changing. As such, consumer-facing gold businesses need to adapt and evolve.

According to him, Asia Pacific consumers are getting richer, but their preferences are changing. As such, consumer-facing gold businesses need to adapt and evolve, he said, citing a generational shift in views and attitudes towards gold. Mr Hewitt pointed out that growing education, better internet access, and increased urbanism and international travel are contributing to changing consumer behaviour. He cited the competition

gold jewellery is facing from diamond jewellery in urban India, and the competition it is facing with technology in China, particularly among younger consumers, who would choose a smartphone or tablet over fine gold.

At the same time, new markets are opening up with the introduction of gold-backed exchange-traded funds that are making the precious metal more accessible; the gold spot exchange that is being developed in India, the world's biggest gold market after China; and the Shari'ah Standard on Gold, which is creating new products and stimulating demand among Muslim consumers.

New markets are opening up with the introduction of gold-backed exchange-traded funds that are making the precious metal more accessible.

Mr Hewitt also added that technology is changing the landscape of the industry – a sentiment echoed by participants of the Technology in the Precious Metals Industry panel, who discussed the rapidly evolving gold fintech landscape. While the

panellists agreed that fintech is making gold more accessible and is making trading more efficient and safe, no one was certain about how they expected things to pan out.

Digital gold and technology have a range of benefits for the precious metals industry, Gregor Gregersen, Founder, Silver Bullion and The Safe House, said, including reducing settlement risk, enabling real-time settlements, providing clarity in asset provenance, inventory/collateral management, and streamlining trade finance. Innovations discussed during the panel included bullion-secured peer-to-peer lending (The Safe House), making transactions in gold from a debit card (Glint), how digital gold can reduce settlement risk (Paxos), as well as blockchain tracking for gold (Everledger).

While all these innovations leverage gold's reliability and function as a store of value, the current manual processes the industry relies on limit the benefits of digital gold, Mr Seth Philips, Executive Director and Head of Precious Metals at Paxos, said, adding, "Digital gold will provide massive benefits to the wholesale precious metals market, but we have to lay the groundwork now".

Singapore Showcases Growing Role in Regional Bullion Market at 2nd Asia Pacific Precious Metals Conference



MOU signing between VGTA and SBMA, represented by SBMA Chairman Martin Huxley and VGTA Deputy Chairman Do Minh Phu.

By SBMA

Singapore Bullion Market Association (SBMA), with the support of Enterprise Singapore, welcomed 358 delegates from 173 companies in 29 countries to the second Asia Pacific Precious Metals Conference in early June. The event, which is a platform for developing and strengthening a unified body in ASEAN and Asia Pacific for the bullion market, brought together industry participants and stakeholders for two days of discussions, sharing of best practices, networking, and more.

The growth of the conference since its inaugural edition in 2017 is “an indication that Singapore has become a strong, vibrant marketplace for gold marketplace participants”, Guest of Honour, Deputy Chief Executive of Enterprise Singapore, Mr Ted Tan, said in his opening address. He highlighted that the continued shift of global gold demand to the east bodes well for Singapore, which is strategically located between mineral-rich countries and major demand centres, and that the country is well-positioned to facilitate such international trade flows, given its strong network of precious metals players and ecosystem of supporting services.

Mr Tan also pointed out that the volume of gold traded out of Singapore has been growing at a five-year compound annual growth rate of 40%, reaching over 1,700 tonnes in 2016. The total traded volume of precious metals scrap grew even faster, at a compound annual growth rate of 124%, reaching 520 tonnes in 2016.

The conference also witnessed the signing of a memorandum of understanding (MOU) between Vietnam Gold Traders Association, represented by Deputy Chairman Mr Do Minh Phu, and SBMA,

represented by Chairman Mr Martin Huxley, to foster closer cooperation between Singapore and Vietnam on the development of the Vietnamese gold market.

According to Mr Huynh Trung Khanh (Managing Director, Vietnam Gold Consultants), who spoke at the conference roundtable on ASEAN gold markets, Vietnam’s gold market is going through a period of liberalisation – there will be no more licensing on jewellery manufacturing and trading, and the state will allow the import of raw gold material by key jewellery manufacturers. Additionally, the State Bank of Vietnam (SBV) is drafting a new Gold Management Policy, which will provide the base for a future Gold Monetization Scheme and its derivatives Gold Metal Loan or Gold Sovereign Bond.

“Vietnamese gold market players have an established relationship with many SBMA members that goes back to the last decade when physical trading was active in Vietnam; the hiatus for the past 4 years was due to SBV’s intervention to control inflation and adjust the balance of payment. The situation has improved, as SBV is now ready to reopen the market. The signing of MOU between us on closer cooperation is a testament to our long-term relationship and their value on our inputs in the further development of the gold market in Vietnam”, SBMA CEO Mr Albert Cheng said.

The first keynote address by Dr Paul Fisher (Chairman, London Bullion Market Association) focused on global risks – in particular for the Asian gold market. He cited the three main risks to be international regulatory changes, monetary and fiscal policy changes, and climate

and sustainability, which he called “the biggest existential threat to global and Asian economies and markets”, and closed by saying, “Forget the politics – this is about business opportunities and risks. Precious metals have a role to play in both”.

In the second keynote, Mr Alistair Hewitt (Director, Market Intelligence Group, World Gold Council) discussed the changes that can be expected in the gold market in the next five to ten years and its implications for Asia Pacific countries. “Gold is a rapidly developing landscape ... no one knows how things will pan out”, he said, but cited four trends he thinks will have the most impact: 1) increase in wealth in Asia Pacific, 2) changing consumer preferences, 3) exchange traded funds (ETFs) making gold more accessible, and 4) markets opening up and becoming more efficient.

The last keynote, by Mr Lianhui Ning (Vice General Manager, Shanghai International Gold Exchange), was about SGE’s efforts to create a “world-class comprehensive gold exchange”, and how it has been pursuing market-oriented improvements and internationalisation. In particular, he cited the cross-border cooperation that has been taking place under the framework of the Belt and Road Initiative, and the opportunities there has been to strengthen product innovation, establish overseas delivery routes, and better serve the diversified needs of international markets.

The conference also saw sessions that focused on regional market opportunities, technology, precious metals management policies, growing the precious metals supply chain, and building a harmonised and fungible kilobar market in Asia.



Guest of Honor, Enterprise Singapore Deputy CEO Ted Tan, delivering the Welcome Address.



Huynh Trung Khanh from Vietnam Gold Traders Association speaking at the roundtable on ASEAN gold markets.



London Bullion Market Association Chairman Paul Fisher speaking about global risks and its effects on the Asian gold market, the first Keynote Address.



Alistair Hewitt, Director, Market Intelligence Group, World Gold Council delivering the second keynote address, 'The Gold Market in the Next Five to Ten Years and its Implications on Asia Pacific Countries'.



Lianhui Ning from Shanghai Gold Exchange International speaking on 'Development on the Back of Marketization and Internationalization'.



Kilobar stakeholders roundtable on brand preference, premium disparity and fungibility.

I would like to thank all our delegates for their overwhelming support. The attendance here has been tremendous and obviously reflects the interest of the region. We believe it is now one of the major events in the bullion calendar. We look forward to welcoming delegates at the 3rd edition of APPMC in June 2019.

Martin Huxley
SBMA

I think it is well organised. I like the fact that participants are from different domains of the supply chain. This is very important to us. I would say that this conference is more supply chain focused and I must admit that this conference is better in this perspective than most of the other conferences I have attended

Fred Jones
Jutland Capital Management Ltd

It was a fantastic event as always and for me and LBMA. It is now a standing feature in our annual agenda and so we look forward to participating in it next year. I liked two things most in the conference - first, the content is original and high level, and second, the participation is varied

Ruth Crowell
LBMA

We came across amazing companies and had great meetings. It is especially significant because this part of the world is completely new to us. Next year we will be definitely be here with a bigger presence and I recommend others to come because if anyone wants to explore Asia, this is the best place to come to initiate networking and build relationships in the region

Francesco Cattoni
Certiline

It is a really enjoyable conference. I am impressed by the enthusiasm of the attendees to share ideas. This is a huge potential market for growth and at the same time, standards need to be built and policies need to be placed to support the network. So, it has been wonderful conference and Albert Cheng and SBMA have really done an excellent job

Alistair Hewitt
World Gold Council

It has been a very strategic conference for Singapore. We have the presence of all industry people here. Some of the topics are very interesting and most importantly participants have come from various places of the world to exchange their views and ideas. I am looking forward to this conference happening on an annual basis

Baskaran Narayanan
Brink's Global

This is SBMA's second conference and I feel they have done an extremely good job. I find extremely good speakers and I think this conference has extremely strong relevance considering the location and attended delegation. And, of course, I am already a big fan of this conference

Nicholas Frappell
ABC Bullion

I am really enjoying the conference – it is always nice to come back to Singapore. LBMA now has permanent members based in Hong Kong to be a voice in Asia. We need to make sure that various initiatives that we have taken in respect of standards and codes must be understood in Asia to maintain the integrity of the global market

Paul Fisher
LBMA

SBMA News

By Albert Cheng
CEO, SBMA

Our 2nd Asia Pacific Precious Metal Conference (APPMC), held in June, was a success. The conference was attended by 358 delegates from more than 170 companies from 29 countries. Since then, we have been busy working and following up with stakeholders from within and outside of the ASEAN region in efforts to progress with our Singapore initiatives. We are also pleased to inform you that we have relocated to a new office within the same building. Our new address and telephone number is listed in the 'About Crucible' section. Here is an update of our activities:

June 3-4: SBMA organises the 2nd 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 12-14 for a summary of the event.



SBMA secretariat, SBMA management committee members and APPMC organising Committee after the conclusion of the 2nd APPMC.

July 13: Metalor Singapore organises a lunch meeting at Enterprise Singapore for Mr E Kato from Tanaka Tokyo to brief the SBMA Management Committee on the physical gold consumer market in Japan.



Clockwise from bottom left: Jos van Wegan (Brink's), Vinh Nguyen (INTL Asia), E. Kato (Tanaka), KL Yap (Metalor), Lester Lu, Amreeta Eng and Emmanuel Lam (Enterprise Singapore), Gordon Cheung (SBMA), Kazuya Naoki (ICBC Standard Bank).

July 16: SBMA holds its second Strategic Review Committee Meeting.

July 24-26: CEO Albert Cheng and DCE Gordon Cheung represents SBMA at the China Gold Congress and Expo 2018 in Beijing, China. Albert was the moderator for panel discussion on "China Gold Market Internalization Development" and chaired the panel discussion on "Maritime Silk Road: Gold Jewelry Opportunities in Emerging Markets".



From left, Albert Cheng (CEO, SBMA), Robin Martin (Head of Market Development, LME), Li Hui (Director, SHFE), Zhang Ainong (Research Director, SGE), Paul Fisher (Chairman, LBMA), Young-Jin Chang (Executive Director, Global Head of Metals, CME Group), Henry Luo (Greater China and Head of Global Markets Asia, ICBC Standard Bank) and Yang Yue (General Manager, China Minsheng Bank) at the Panel Discussion on "China Gold Market Internalization Development".

August 5-7: CEO Albert Cheng represents SBMA at the 15th India International Gold Convention in Kochi, India and at the signing of an MOU with the Indian Bullion Bankers Association



CEO Albert Cheng representing SBMA at the signing of the MOU with the Indian Bullion Bankers Association (IBBA) at the India International Gold Convention.

Exploratory Meetings

During the quarter, SBMA held exploratory meetings with the following companies: DerekDoris Limited, GVS Asia, Sakthi Trading Group, RoyalSilver Hong Kong Limited, EIS Global, Gudangemas, ICBC China, PT Bank Syariah Mandiri, PT Tamasia Global Sharia, TradAir, Raffemet, Sempsa JP, Sichuan Tianfu Bank and TPS Group on membership and matters related to market development.



SBMA welcomes visitors from Indonesian gold startup Gudangemas to its new office.

Membership

Onboarding of CME Group Singapore Operations Pte Ltd and Mahesh & Co Pte Ltd as Local Associate Corporate Member, LH Precious Metals Investment Pte Ltd and Perfect Hexagon Limited as Foreign Associate Corporate Member and Myanmar Gold Development Public Company Limited as Affiliate Member.

SBMA's total membership consists of 45 companies, including three Category 1 members, 29 Local Associate Corporate members, nine Foreign Associate Corporate members, and two Affiliate members. Five companies are pending membership approval.

Upcoming Events

3-4 October 2018. Perth, Australia.

9th Precious Metals Investment Symposium (PMIS2018)

SBMA is proud to be the industry partner of PMIS2018, the largest and most comprehensive precious metals investment event in Australia. CEO Albert Cheng will be attending as a key-note speaker. Registration and details can be found at <http://symposium.net.au>.

16 & 18 October 2018. SGX Centre, Singapore.

Artificial Intelligence Application in Algorithmic Trading Workshop

This two-day rigorous and intensive program for traders provides a foundation in data science and how it can be applied to trading in the financial markets. Please see Page 2 for more information.

28-30 October 2018. Boston, USA.

LBMA/LPPM Precious Metals Conference 2018

SBMA CEO Albert Cheng will represent SBMA at what is widely regarded as the premier event in the industry calendar. Please visit www.lbma.org.uk for registration and event details.

30-31 October 2018. The Fullerton Hotel, Singapore.

121 Mining Investment Singapore

Supported by The Singapore Mining Club, 121 Mining Investment Singapore is dedicated to miners and sophisticated investors. SBMA Deputy CEO Gordon Cheung will be attending as a speaker. More information can be found at <https://www.weare121.com/121mininginvestment-singapore/>.

SBMA will be holding its Annual General Meeting (AGM) in November. More information will be shared closer to the date.

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

Disclaimer

© 2018 Singapore Bullion Market Association

The information and articles provided in Crucible are intended to be a guide of a general nature and for educational purposes only. They are not intended to be recommendations or advice of any sort and therefore must not be construed as such. While we try to ensure that the information contained in Crucible is accurate and complete, SBMA cannot accept any responsibility for any mistakes, errors, or omissions for any action taken in reliance thereon. We also disclaim all responsibility for any loss, injury, claim, liability, expense or damage of any kind resulting from, arising out of or in any way related to any errors in, omissions from or reliance on any part of the information, views or opinions expressed in this publication.

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: L020/03/2018