Cash down, gold up
Ken Rogoff on the value of gold in a cashless society
Contents

Foreword

The curse of cash and the allure of gold
Cash is increasingly irrelevant but supply keeps rising. Explaining why this has implications for taxes, terrorism and monetary policy, renowned economist Ken Rogoff argues in favour of a cashless society and a greater role for gold.

Central banks turn to gold
Central banks own more than 30,000 tonnes of gold. Now they are buying even more, while many are returning to the market for the first time in years. World Gold Council Director Ezechiel Copic assesses the reasons behind this trend.

For all times’ sake
Sovereign wealth funds are designed to generate wealth from one generation to the next so their investment time horizons are exceptionally long-term. Loy Cheow Chew, who helped shape commodity policy at Singapore’s GIC, explains why this makes long term gold an ideal investment for these institutions.

The fall of Lehman Brothers in 2008 precipitated the greatest financial crisis in living memory. Paul Fisher, a senior figure at the Bank of England for 26 years, looks back at the crisis and questions whether it could happen again.

The gold perspective – 10 years after Lehman Brothers failed
The Global Financial Crisis rocked markets, transformed industries and triggered many years of economic downturn. As World Gold Council Chief Strategist John Reade reveals, the crisis also prompted a sustained shift in demand for gold.

Gold’s role in a low-carbon economy
Amid rising concerns about the impact of climate change, investors are calling on companies to show that they are addressing the associated risks and opportunities. Terry Heymann, CFO at the World Gold Council, discusses work undertaken by gold miners and analyses gold’s carbon footprint.

Hedging FX risk
Gold is priced in US dollars but it is bought by investors around the world. Francisco Blanch, Head of Commodities and Derivatives Research at BofA Merrill Lynch Global Research, questions whether investors should hedge their foreign exchange exposure when they consider gold.

Goldhub: the definitive source of gold data and insight
In a digital world, informative data is an invaluable resource for investors. With that in mind, the World Gold Council has launched Goldhub, bringing together key gold market data, expert research and interactive tools. The platform’s aim is simple: to help investors make more informed decisions about gold.

Market outlook for 2019 – Encouraging signs for gold
The drivers of gold demand are wide-ranging but, as we move into 2019, a number of key economic, political and social developments suggest increased support for gold demand. World Gold Council Director of Investment Research Juan Carlos Artigas explains why.
Foreword

Aram Shishmanian
Chief Executive Officer
World Gold Council

In January 2009, the world was in the grip of the Global Financial Crisis. Markets were in turmoil, economies were falling into recession, policymakers were panicking.

That was when I became CEO of the World Gold Council, a time when attitudes towards gold as an investment asset were just beginning to shift.

Ten years later, as I prepare to step down as CEO, the world is in a very different place. But the repercussions of a prolonged period of stagnant economic growth still linger. Interest rates, while slowly starting to rise, remain at record lows. The US current account deficit is at an all-time high. Traditional assets are volatile, after an extensive bull run. And China’s influence is significantly greater than it was.

In such an environment, gold’s unique attributes as an investment have become increasingly apparent.

Back and forth

In this edition of Gold Investor, we look back to the financial crisis; we consider the effect on the gold market since then and we look to the future.

Ken Rogoff is one of the most widely respected economists of modern times, known for his trenchant views on the benefits of a cashless society. Here, he dismisses cryptocurrencies but suggests that gold’s role is likely to increase as paper money is phased out (The curse of cash and the allure of gold).

Decentralised cryptocurrencies did not even exist when Paul Fisher joined the Bank of England. A senior figure at the Bank for nearly three decades and Executive Director for Markets from 2009 to 2014, he deliberates on the origins of the financial crisis and questions whether it could happen again (Reflections on the Great Financial Crisis of 2007–2009).

Complementing this analysis, John Reade, Chief Market Strategist at the World Gold Council, discusses the sustained increase in demand for physical gold among a range of investors, from Chinese savers to central banks (Gold – 10 years after Lehman Brothers failed).

Sovereign wealth funds (SWFs) are a relatively new class of investor. Loy Cheow Chew, who helped shape policy at the GIC, Singapore’s sovereign wealth fund, explains why gold has a valuable role to play within SWF portfolios (For all times’ sake).

And we take an in-depth look at central bank buying patterns, as reserve managers increase their gold holdings, often returning to the market after long absences (Central banks turn to gold).

Increased interest in gold comes amid a growing focus among asset owners on sustainable investment. Today’s investors are keen to understand whether and how companies are responding to climate change. The gold industry is under scrutiny too but, as we explain in Gold’s role in a low-carbon economy, the impact of gold on investment portfolios is rather different from initial expectations.

Greenhouse gas emissions are just one area where investors need clear information from business. In recognition of a growing appetite for objective, consistent and accessible data, the World Gold Council has launched Goldhub, a central repository for research and data on the gold market (Goldhub: the definitive source of gold data and insight).

I hope you have enjoyed recent editions of Gold Investor and I particularly hope you enjoy this one, my last edition as CEO of the World Gold Council.

Do send your thoughts to goldinvestor@gold.org.

Aram Shishmanian

The World Gold Council is the market development organisation for the gold industry. Working with world-class organisations across the supply chain, we stimulate demand, develop innovative uses of gold and take new products to market. As the global authority on gold, we offer comprehensive analysis of the industry, giving decision makers unparalleled information and insight into the drivers of gold demand.
In the news

New CEO Designate at the World Gold Council

David Tait, former Global Head of Fixed Income Macro Products at Credit Suisse, has been appointed CEO Designate of the World Gold Council. Starting out at Goldman Sachs, David has led a highly successful career in the City, while also raising more than £1 million for the NSPCC by climbing Mount Everest on five occasions. Awarded an MBE for his services to charity, David will succeed Aram Shishmanian, who is stepping down as CEO after 10 years. David said: “This is a pivotal role for the gold industry and one that I am truly excited to take on. Global markets have undergone immense change over recent years and the case for investing in gold is as relevant today as it was for investors a century ago.”

Moving against the US dollar

Profound geopolitical shifts, concerns about US-China trade wars and punitive sanctions imposed on Russia and Iran are causing nations around the world to challenge the dominance of the US dollar as the pre-eminent global reserve currency. The European Commission (EC) has proposed measures to boost the euro’s status as a reserve currency and decrease dependence on the dollar in international trade. Russia is considering ‘dedollarisation’ plans, under which Russian companies would use roubles, euros and the Chinese renminbi rather than the US dollar. And Iran has seen a surge in gold-mining activity to counter the effect of US sanctions and boost employment and economic growth. Demand for gold bars and coins has also soared within Iran.

Gold ETFs in demand

Global gold-backed ETFs and similar products rose by 69 tonnes (t) to 2,440t in 2018, equivalent to US$3.4 billion (bn) of total inflows. Growth was fuelled primarily by European funds, which increased by 10% during the year, led by demand from Germany and the UK.

North American funds led outflows, although this was reversed in the last three months of the year, with particular demand for low-cost, US-based ETFs, a sign of growing support for gold as a long-term, strategic asset.

Overall, the value of gold-backed ETF holdings ended the year above US$100bn, for the first time since 2012.

A new era in the gold mining industry

The gold mining industry is going through an unprecedented period of change in a bid to increase efficiency and drive returns for stakeholders. Following the US$18.3bn merger of Barrick Gold and Randgold Resources, which became effective on 2 January 2019, Newmont Mining announced the acquisition of Canada’s Goldcorp in a cash-and-shares transaction to create the world’s largest gold mining group, known as Newmont Goldcorp. The two transactions are expected to trigger further consolidation across the industry.
The curse of cash and the allure of gold

In his book *The Curse of Cash*, leading economist Ken Rogoff suggests that excessive reliance on paper money is responsible for ills ranging from tax evasion to terrorism. He also believes that monetary policy would be more effective in a largely cashless society. Cryptocurrencies are not an effective replacement for paper money, he says, but gold’s role is likely to increase as cash fades from view.

First there were cheques, then debit and credit cards, then electronic transfers and, most recently, smartphone applications. With each innovation, cash has become less relevant. At the turn of the century for example, 35% of all legal transactions by value were conducted in cash in the United States. Today, that figure has declined to 7% and it is expected to fall to around 2% in the next decade.

At the same time, however, the supply of paper money keeps rising, as Ken Rogoff, Professor of Economics and Professor of Public Policy at Harvard University, explains. “Cash is totally in decline. But supply keeps going up. It is almost all in large denomination notes and it is mainly used for tax evasion, regulatory evasion and of course crime.

“Eventually these notes will be so little used in legal transactions that people won’t be able to launder them anymore and then the central banks will just have to buy them back. But I think the process should be accelerated,” he adds.

Fair taxation is one of the principal reasons that Rogoff cites in favour of a largely cashless society. “The US Internal Revenue Service estimates that around 15% of all taxes owed are never collected. Cash-intensive businesses account for about half of those uncollected revenues. In Europe, the figures are much higher, particularly in Italy, Spain, Greece and Germany. And the problem is that this makes taxes higher for the rest of us,” he says.

Fewer notes, more taxes

In the US alone, the sums involved are substantial – around US$500 billion (bn) at a federal level and a further US$200–300bn at local and state level, according to Rogoff.

“The Federal Reserve makes around US$80bn from printing cash but if it could recoup even a portion of those unpaid taxes, that would more than compensate for the loss of printing revenues. And in a modern digital world, central banks will have plenty of opportunities to make money – as trusted parties, clearing houses of last resort and such like,” Rogoff suggests.
The curse of cash and the allure of gold

“Our, if we kept smaller bills in the United States, which account for 5–10% of total bills in circulation, the Fed would still be making up to US$8bn a year. And the chances are that if we got rid of larger notes, the number of smaller notes would rise a lot – so central banks would continue as profit centres, even if we became largely cashless,” he adds.

Rogoff suggests too that if the only cash in circulation comprised small notes and coins, central banks would be more able to introduce negative interest rates, if and when appropriate, because savers would not have much option but to keep most of their money in the bank. This could have widespread economic implications.

“Monetary policy is an essential fine-tuning tool. Fiscal policy is obviously critical too but it’s highly political – and it’s always going to be that way. Quantitative easing is mostly smoke and mirrors. So being able to introduce effective negative interest rates is very important, at certain times. And it would be much easier to do in a cashless economy,” he says.

Follow the money

In the meantime, Rogoff believes that central banks should do more to find out how the cash they print is used. “I don’t advocate getting rid of paper currency quickly but I do think it’s time to think about our approach to regulation of anonymous transactions. There is an incredible disconnect between the fact that cash is already disappearing in legal, tax-compliant transactions but exploding in terms of how much central banks are printing.

“At the very least, central banks should devote serious resource to studying where the cash is going and who’s using it. When that’s done, it will become very obvious that most countries are losing more by printing mountains of cash than they are gaining,” he says.

To mitigate these losses, Rogoff advocates taking US$50 and US$100 bills out of circulation over the next five to seven years, possibly followed by US$20 bills. In 50 years’ time, we may just have coins, he says.

Until then, there are other ways to reduce the link between large bills and crime. “It could become illegal to do transactions above, say, US$1,000 in cash. This would definitely help, because if you have US$5 million in US$100 notes and you can only spend them on small transactions, the whole process becomes a lot more difficult. That is already happening in parts of Europe, like Italy, Spain and France,” he says.

Croesus, King of Lydia from 595–547 BC, perfected refining techniques that standardised the purity of his coinage, which meant his coins rapidly became the world’s first internationally accepted currency.
The curse of cash and the allure of gold

Crypto-sceptic

Some people believe that cryptocurrencies could – and possibly should – replace cash over time. They are digital, they refute the need for banks and they are virtually anonymous. Rogoff is highly sceptical, however.

“The idea that a few geniuses in Silicon Valley can create a world that governments can’t touch is stupefyingly naïve. And the idea that cryptocurrencies will replace the dollar is equally foolish,” he says.

Rogoff suggests that if cryptocurrencies became more pervasive, they could limit the effectiveness of fiscal policy and, ultimately, monetary policy. But he does not believe this will ever happen. “Cryptocurrencies are not a currency. And they will be regulated. We see regulation starting to happen in the UK and the US and it will keep ramping up. The only reason it hasn’t done so already is because cryptocurrencies just don’t matter that much.”

Rogoff suggests that regulation is relatively straightforward: governments simply need to limit the outlets where Bitcoin and its ilk can be spent. “Most people want to be able to use it in a store or take it into a bank so that’s the way to limit its development,” he says.

This does not mean digital currencies have limited potential – just that the systems behind them are likely to be rather different in future. “Money supply will increasingly be digital. In 20 years’ time, pretty much all the central banks will be issuing digital retail currencies of a sort and you should be able to hold at least a digital savings account with your central bank.

“Cryptocurrency enthusiasts talk about permissionless and permissioned systems. Blockchain is permissionless because it does not rely on or need a central trusted authority. I think the digital currencies of the future will operate via a permissioned system with a central party, so they may be encrypted but they won’t be anonymous,” Rogoff predicts.

A history lesson

Even as cash becomes a dwindling resource and regulation changes the nature of cryptocurrencies, Rogoff believes that gold will retain and almost certainly increase its value.

“If you look at the history of currency, gold has a unique role and I don’t think it’s accidental. Some people say that if gold hadn’t been selected as a currency thousands of years ago, it would not have a role today. I don’t agree. Gold has a lot of useful properties and unique features so I don’t think its status is in any way accidental. It’s a monetary asset and I think if you replayed history another way, you would come out with gold again,” he says.

“As we have less and less paper currency, there will still be a need to store wealth, to have privacy and to carry out transactions between parties who don’t trust one another – gold fills that role. It’s probably the best substitute for paper currency so it’s hard to imagine its transaction value won’t go up over time. And there are all kinds of uses for gold in new technology that nobody even thought of years ago. So overall, it’s hard to see gold’s role diminishing,” he adds.

In addition to gold being a store of wealth, Rogoff takes the view that it is a valuable long-term investment too – both as a diversification- and risk-mitigation tool.
More gold needed

He is particularly concerned about the amount of gold held by emerging market central banks, suggesting they should increase their gold reserves by several percentage points.

“Emerging market central banks should hold fewer dollars and more gold as a way of diversifying their portfolio. It’s a simple question of diversification. At the moment, most emerging market central banks hold 1–2% of their reserves in gold, with 70–80% in dollars and the rest in euros and other currencies. I think a 5% allocation seems a natural position to take as part of an effective diversification policy – although it could be higher. After all, the US share of the global economy is shrinking, power is being centralised and we don’t know what the future holds,” he says.

Rogoff’s rationale is clear: the US dollar is increasingly dominant on the global stage yet US deficits are increasing and may well continue to do so.

“The dollar is more widely used than ever. A growing chunk of European corporate bonds are in dollars, not in euros. Whenever Asian countries issue debt abroad, they do so in dollars. Reserves are in dollars and numerous goods are priced in dollars. So the dollar is more dominant today than under Bretton Woods – but that doesn’t mean it’s stable,” he says.

“We already have trillion-dollar deficits right now and they’re manageable. But if corporate, local, state and federal debt is allowed to grow, there will come a point when the US gets stressed. And if deficits have doubled or tripled by then, inflation is bound to ensue. Our system is not built for high inflation so it would cause incredible financial turmoil and stress. It may take decades but these things always tend to blow up at some point. And, as the US economy becomes proportionately smaller and the dollarisation of the global economy becomes larger, the equilibrium becomes increasingly fragile,” he adds.

Risk mitigation

Against this backdrop, the rationale for holding gold becomes even clearer. “The point is, Treasury bills are not a riskless asset. They may be for two to three years but not necessarily for the long term, so if you want to build a 40-year plan, you should have some diversification. Let’s face it – if you’re a hedge fund manager and there is a 3–4% chance you will get wiped out and a 96% chance you will get very rich, that’s a bet worth taking. If you’re a country, that’s not such a smart bet,” Rogoff explains.

“As a hedge, gold has enormous value. So it makes sense for HNW individuals and even for some pension funds to hold a small percentage of their assets in gold.”

He believes that institutional investors and wealthy individuals should also allocate a proportion of their portfolio to gold. “As a hedge, gold has enormous value. You never know what’s going to happen and when something really bad happens, gold is probably going to be worth a lot to you. So it makes sense for high net worth (HNW) individuals and perhaps even for some pension funds to hold a small percentage of their assets in gold,” he says.

Looking ahead, Rogoff suggests that gold is also likely to increase in value as its global role evolves. “I suspect gold’s value will go up in real terms. I think the trend towards digital currencies will strengthen the value of gold. As emerging markets expand and trust the US less, that will also strengthen the value of gold. So, as part of a larger portfolio allocation, it seems very reasonable to me,” he concludes.
Central banks are among the world’s largest investors in gold, with total holdings of more than 30,000 tonnes. Now, they are increasing their gold reserves still further, while many are returning to the market after multi-year absences. World Gold Council Director Ezechiel Copic assesses why.

Ezechiel Copic
Director
World Gold Council

Central bank gold reserves are rising. Net purchases totalled 351.5 tonnes in the first 10 months of 2018, up 17% year-on-year and the strongest showing since 2015. Momentum is growing too, with net purchases of 148.4 tonnes in the third quarter alone, up a full 22% year-on-year.

As buying patterns change, the number of central banks entering the market is changing as well. Historically, countries such as Russia, Kazakhstan and Turkey were among the most consistent buyers, making regular monthly purchases. In 2018 previously inactive central banks, including Poland, Hungary and India, also bought gold.

The breadth and diversity of central banks that have recently purchased gold are matched by an equally broad and diverse set of reasons for these purchases. Traditionally, central bank reserve managers prioritise safety and liquidity when investing, which is why gold, the ultimate safe-haven asset, has long been a mainstay for central bank reserve investment.

“Other central banks, such as Poland’s, have returned to gold after long periods of absence, for diversification purposes, fuelled by worries over global political and economic uncertainty.”
Today, safety and liquidity remain the priority for reserve managers, but the sources of risk to these principles are changing, from specific issues such as macro-economic conditions, financial sanctions, escalating trade wars and political uncertainty to a potential structural shift in the international financial system.

**Safety in diversity**

For Russia, the largest and most consistent buyer of gold, the key driver is undoubtedly one of safety – specifically, its desire for assets that are free from political risk. Russia’s enormous accumulation of gold is in direct response to pressure from financial sanctions imposed by the West. Gold has become a strategically important asset because, as First Deputy Governor of Russia’s central bank Dmitry Tulin noted last year, it is a “100% guarantee from legal and political risks.”

The substantial increase in Russian gold holdings has been accompanied by an equally substantial decrease in the country’s holdings of US Treasuries, reflecting the Bank of Russia’s long-standing policy of dedollarisation.

**Chart 1: Russian financial holdings**

![Graph showing Russian financial holdings over time](chart)

Source: US Treasury Department; World Gold Council

---

**Net central bank gold purchases** (January 2017 to October 2018)

<table>
<thead>
<tr>
<th>Country</th>
<th>Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asia</strong></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>+28.7</td>
</tr>
<tr>
<td>Mongolia</td>
<td>+13.3</td>
</tr>
<tr>
<td>Thailand</td>
<td>+1.6</td>
</tr>
<tr>
<td><strong>Philippines</strong></td>
<td>+1.6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>+0.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>+0.5</td>
</tr>
<tr>
<td><strong>Middle East</strong></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>+6.5</td>
</tr>
<tr>
<td>Jordan</td>
<td>+2.2</td>
</tr>
<tr>
<td><strong>Egypt</strong></td>
<td>+1.9</td>
</tr>
<tr>
<td>Qatar</td>
<td>+1.6</td>
</tr>
<tr>
<td><strong>Latin America</strong></td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>+7.1</td>
</tr>
<tr>
<td>Argentina</td>
<td>+5.0</td>
</tr>
<tr>
<td>Suriname</td>
<td>+0.6</td>
</tr>
<tr>
<td><strong>Former Soviet Union</strong></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>+450.9</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>+83.1</td>
</tr>
<tr>
<td>Kyrgyz Republic</td>
<td>+5.5</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>+5.1</td>
</tr>
<tr>
<td>Belarus</td>
<td>+0.6</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>+153.2</td>
</tr>
<tr>
<td>Hungary</td>
<td>+31.5</td>
</tr>
<tr>
<td><strong>Poland</strong></td>
<td>+25.0</td>
</tr>
<tr>
<td>Serbia</td>
<td>+1.4</td>
</tr>
</tbody>
</table>

Bolded countries are those that had been absent or inactive in the gold market for at least five years prior to 2017. Turkey’s figure excludes changes to commercial gold held at the central bank as part of its Reserve Options Mechanism. Poland’s figure includes all announced gold purchases, although only approximately half of those purchases are reflected in official reporting.

Source: IMF IFS; Respective central banks; World Gold Council

---

Other central banks, such as Poland’s, have returned to gold after long periods of absence, probably more for diversification purposes, fuelled by worries over global political and economic uncertainty. Indeed, according to UBS Asset Management’s 24th Annual Reserve Management Survey (published in September 2018), central bankers’ biggest concerns about the global economy centre on trade wars and political developments in both the EU and US. The CBOE Volatility (VIX) Index, often described as the market’s fear gauge, jumped to its highest level since mid-2015 in 2018, highlighting investor disquiet. Such concern may be focused on the deteriorating long-term fiscal outlook in the US, Japan and Italy, coupled with the ongoing uncertainty around Brexit – all of which could make advanced-economy sovereign debt less attractive.

At the same time, central banks may be evaluating the need for greater downside protection, as they explore riskier asset classes. According to the UBS survey and the Invesco Global Sovereign Asset Management Study (released July 2018), for example, reserve managers are moving into previously untapped markets, such as equities, corporate debt and real estate. Adding gold can act as a counterbalance against these investments, as it is almost completely uncorrelated to alternative assets.

**Structural shifts**

Against this backdrop, some central banks, such as Hungary’s, are looking to gold for long-term “stability objectives,” observing that gold has “a confidence-building feature,” according to the central bank’s statement accompanying its October 2018 gold purchase. Hungary’s recent gold purchase is particularly notable not just because the central bank increased gold reserves ten-fold after years of being inactive in the gold market, but also because it commented that gold acts “as a major line of defence under extreme market conditions or in times of structural changes in the international financial system or deep geopolitical crises.” While extreme market conditions and deep geopolitical crises are nothing new for financial markets, nascent structural changes are more unusual. Yet they are beginning to preoccupy investors, especially given the emergence of the Chinese renminbi (RMB) on the international stage.

A recent report (RMB Internationalisation: Where to Next?) by the Reserve Bank of Australia noted, “[I]f China continues to gradually open the capital account and move towards a more flexible exchange rate, the [next] phase of internationalisation could see the RMB emerge as a widely used regional currency in Asia.” As RMB allocations grow over time, there is the potential for a long-term structural shift towards a more multi-currency system, rather than the current system that principally revolves around the US dollar. Such a shift could be both destabilising and dollar negative: gold can serve as a hedge against both. While there is widespread market debate about the timing of such a change – which will be linked to the pace at which China fully liberalises its financial markets – perhaps Hungary’s statement is evidence that, for at least some, these changes are expected to happen sooner rather than later.
Loy Cheow Chew was instrumental in the launch of the Commodities and Gold Group for the GIC, the Government of Singapore’s sovereign wealth fund. Loy Cheow led the Group from 2004 to 2008, helping to shape and drive the GIC’s policy on gold and other commodities. He believes that gold has a valuable role to play in sovereign wealth fund portfolios.

In 1953, the Kuwait Investment Authority established the first sovereign wealth fund (SWF) to invest its surplus oil revenues. Today, there are more than 70 SWFs, with collective assets under management of around US$8 trillion (tn).

Norway’s assets alone amount to more than US$1tn but many others, including the GIC, manage assets worth several billion dollars. As such, they are an influential force in today’s financial markets. But their investment criteria are rather different from central banks, their closest peer group.

Central banks, responsible for protecting their currency, focus on liquid assets so they can make large-scale sales if the need arises. SWFs manage their reserves with future generations in mind. Their horizons are exceptionally long term and many are focused primarily on security and returns. Nonetheless, there is a clear place for gold within the SWF portfolio.

A glance back in time helps to explain why. Throughout history, gold has been perceived as a safe haven and an asset of last resort, particularly during periods of political, economic and financial unrest.

When US President Nixon reneged on the gold standard in 1971, for example, the price of gold soared from a fixed rate of US$35/oz to a floating rate of more than US$800/oz in less than a decade. Demand was fuelled by the relative scarcity of gold, combined with growing concerns about the economic environment. Inflation, in particular, reached double digits during the 1970s and gold was seen as an effective hedge against depreciating fiat currencies.

“History demonstrates that gold is uniquely placed when trust is shaken. And today, trust has been badly shaken.”
Reserve managers, especially those without substantial gold holdings, were left scrambling for supplies. In the 1980s and 90s, however, many reserve managers sold gold, particularly those who had held it since before the 70s. Those who sold excessively were wrong-footed on three counts.

First, central banks began to cooperate to ensure that sales programmes were undertaken in an orderly fashion, starting with the Washington Agreement in September 1999. This helped to reverse the long bear market in gold.

Second, gold benefited from the broader bull market in commodities that began just a couple of years later.

And third, attitudes towards gold have shifted definitively since the Global Financial Crisis (Chart 1).

For, not only did the world’s pre-eminent central bank, the US Federal Reserve, embark on a market support scheme that ballooned its balance sheet, but its fiscal partner, the US Treasury, engineered a bailout of some of the country’s leading banks. Europe followed suit, bailing out banks considered too big to fail and taking up QE with enthusiasm.

Investment in gold was a natural response. A supranational currency, gold does not depend on any sovereign authority and its value tends to rise as the circulation of fiat currencies soars. By 2011, therefore, the gold price had surged to almost US$1,900/oz.

The 1980 record of US$850/oz had now been surpassed. However, the price was still several hundred dollars below that peak, on an inflation-adjusted basis. It remains so to this day (Chart 2).

Shaken and stirred

The years leading up to the crisis were typified by “irrational exuberance”, as Alan Greenspan, former chairman of the US Federal Reserve, memorably put it. The crisis itself undermined investor faith in the entire financial system.

As banks collapsed, markets reeled and several countries battled to stay afloat, governments responded with waves of quantitative easing (QE). The rationale was clear – economies needed support to avoid prolonged recession. But the strategy had several notable consequences, in particular, a mistrust of central banks by foreign exchange and financial market participants.

For, not only did the world’s pre-eminent central bank, the US Federal Reserve, embark on a market support scheme that ballooned its balance sheet, but its fiscal partner, the US Treasury, engineered a bailout of some of the country’s leading banks. Europe followed suit, bailing out banks considered too big to fail and taking up QE with enthusiasm.

Investment in gold was a natural response. A supranational currency, gold does not depend on any sovereign authority and its value tends to rise as the circulation of fiat currencies soars. By 2011, therefore, the gold price had surged to almost US$1,900/oz.

The 1980 record of US$850/oz had now been surpassed. However, the price was still several hundred dollars below that peak, on an inflation-adjusted basis. It remains so to this day (Chart 2).
Today, who knows how or when the inflation dragon may return? Or how gold will respond if it does? If the past is any guide, inflation tends to alert investors to gold’s value as a wealth preservation tool, although other commodities may have similar properties.

Where gold comes into its own, however, is as an asset that carries no counterparty or credit risk, a supranational asset that exists independently of governments, banks and financial institutions, and an asset that was historically the collateral behind currency issuance.

Trust deficit

Over the years, return-focused SWFs have steered away from gold, because it offers neither coupons nor dividends. As history demonstrates, however, gold is uniquely placed when trust is shaken.

And today, trust has been badly shaken. The financial crisis exposed the moral hazard inherent in financial markets, where taxpayers were forced to subsidise bankers’ excessive risk-taking. Regulators have made a concerted effort to deliver change but many believe they should have shared the blame for the initial crisis, rather than escaping without penalty.

There is also the fear that little has changed within the banking sector, even as years of austerity have fostered social inequality and fuelled discontent.

As social unrest persists, political turmoil continues and the stewards of the world’s currencies continue to print money and keep interest rates at historically low levels, what might happen next? If misbehaving governments follow misbehaving bankers, there is no bailor of last resort.

For this reason alone, SWFs should consider allocating a percentage of their holdings to gold, as an allocation can provide a potential hedge against calamity, today or in the future.

After all, bonds and equities can slump as well as rise. And a currency is just an IOU. Gold is a permanent asset.

Paul Fisher was a senior figure at the Bank of England for over 26 years – a member of the Monetary Policy Committee from 2009–2014 and Executive Director for Markets during most of the Great Financial Crisis. He considers the origins of the crisis and whether it could happen again.

What caused the Great Financial Crisis (GFC) of 2007–2009? Many fingers have been pointed at the global banking system, which had got out of control, and failures in regulation. That is true to a large extent, but in my view the root causes go much deeper and are to be found in well-meaning, but ultimately misguided, policy actions by various authorities around the world.

The United States is often considered to be the home of free markets, but there is a surprising degree of intervention by the authorities, some of which can be market distorting. The Community Reinvestment Act 1977, for example, encouraged – and in some cases directed – the US financial system to lend money to people in poor districts. Subprime lending took that encouragement to extremes – arranging mortgages for people who could not really afford them, but who could gain enough equity in their homes to support their loans, as long as house prices continued to rise. And after all, house prices had historically never fallen across the whole of the US, had they? So there was no real risk, was there?

Also relevant was the contribution of the US Federal Housing Agency and related bodies, such as Fannie Mae and Freddie Mac. Although not formally supposed to be financially backstopped by the authorities, the market traded these bodies’ debt as if they were – an assumption which proved to be justified in September 2008, when Fannie Mae and Freddie Mac were taken into official ‘conservatorship.’ These institutions did not create subprime assets but, with cheap funding sources, they were able to buy up ‘conforming’ mortgages, and effectively make mortgages cheaper and more accessible than market forces alone would warrant, helping to increase home ownership and house prices.

“The United States is often considered to be the home of free markets, but there is a surprising degree of intervention by the authorities, some of which can be market distorting.”
A third US factor was low interest rates – as the Fed kept rates low for a long period after the burst of the dot-com bubble during 2000–2002.

It should not have been a surprise that these policies combined to fuel a US-wide residential property boom, which eventually went bust (Chart 1).

US imports

Meanwhile in Asia, many authorities had been burned by their own crises in 1997, which witnessed massive outflows of foreign capital and (to them) unpalatable remedies prescribed by the International Monetary Fund. Such countries adopted a new economic model of being export led, with exchange rates either linked to, or generally suppressed against, the US dollar to help make their exports more competitive.

Low US short-term interest rates were thus imported around the world. And with high savings needs in Asia, especially by the ageing populations of China and Japan, and a shortage of real-economy investment opportunities elsewhere, the result was low real interest rates globally.

The various consequences of that strategy choice in Asia have been huge: large trade surpluses in the region, with the (arithmetic) corollary of exporting capital, in some cases to richer economies, in a complete reversal of the usual model of economic development (Chart 2). Those capital flows out of Asia helped to fund a huge current account deficit in the US (6% of GDP in 2006) – and collectively they helped fund the issuance of dollar financial assets, including those backed by US mortgage loans, especially subprime.

Prior to 2007, the financial system appeared to be in robust health. But when things are going well and risks are not crystallising, it is human nature to relax – which of course helps cause an unexpected crisis. Modern methods of risk management went badly astray, partly from extrapolating the low volatility observed in markets or simply from misestimating tail risks. Financial regulation looks to have been asleep at the wheel: many regulators thought that new financial instruments had successfully dispersed risk around the system. But the largest intermediaries were holding too little liquidity and capital. Furthermore, of these, a number seemed to be run by charismatic and egocentric chief executives seeking to drive up returns competitively.

“Financial regulation looks to have been asleep at the wheel: many regulators thought that new financial instruments had successfully dispersed risk around the system.”

---

**Chart 1: US house price inflation and Fed Funds rate**

<table>
<thead>
<tr>
<th>Year-on-year % change</th>
<th>Annual house price change</th>
<th>Fund funds rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1991</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Federal Reserve Bank of St. Louis

**Chart 2: China’s current account as share of GDP**

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2</td>
</tr>
<tr>
<td>2001</td>
<td>2</td>
</tr>
<tr>
<td>2002</td>
<td>2</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
</tr>
<tr>
<td>2004</td>
<td>2</td>
</tr>
<tr>
<td>2005</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>2</td>
</tr>
<tr>
<td>2008</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>2</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: World Bank

---


Gold Investor | February 2019
Liquidity regulations were generally weak and were not always applied. The risk-weighted Basel system of capital weights relying on internal models was being quietly exploited by some banks to minimise capital requirements. Also, many of the capital-raising securities that were issued to meet those requirements turned out not to be loss absorbing.

All-round failure

It is easy to blame the regulators but it is noticeable that banks in many different regulatory regimes failed, despite big differences in national approaches: intrusive vs non-intrusive; dynamic vs static provisioning; principles-based vs rules-based. The dominos all toppled regardless. Interestingly, the most prominent developed economies where banks did not crash seemed to be commodity producers such as Australia, Norway and, to some extent, Canada.

In Europe, subtle forces were at work. In searching for yield, European investors were buying US assets, especially securitisations based on subprime mortgages with misleadingly high credit ratings. One of the first firms to fail because of this was Germany’s IKB Deutsche Industriebank, back in July 2007. When the subprime assets it was responsible for turned out to be far riskier than the bank had realised, IKB was sunk. But the issues went much deeper than a misjudgement of credit risk.

Many European investors were holding dollar-denominated assets, which required an equal supply of dollar funding. To secure that funding, European banks and related financial institutions were selling large quantities of short-term, dollar-denominated paper to US money market funds (MMFs). According to a BIS estimate, in mid-2008, European banks relied on US MMFs for around US$1 trillion of funding – an eighth of their total dollar funding needs. And for US MMFs, over 40% of their assets were those same debt instruments of European banks. For the banks this was a classic borrow short, lend long strategy, backed by as little capital as investors could get away with, and with assets sometimes held in special purpose vehicles of various types (such as IKB’s conduit, Rhineland Funding, which was the cause of its problems).

The MMFs were a key mechanism through which the crisis was propagated. Arguably, it was when the Reserve Primary Fund ‘broke the buck’ following the crash of Lehman Brothers in September 2008, that a severe crisis turned into a full-scale panic.
When US MMFs started to appreciate the doubtful credit position of European banks, they bought much less of their debt – leaving those banks both with a credit headache in their assets and desperately short of dollar funding in their liabilities, at the same time and at relatively short notice. Dollars also became expensive or dried up in other funding markets. In fact, most public bank funding markets in Europe closed partially or completely as no one firm could be sure who was at risk of failure.

Spare me a dime

In 2008, I was the Head of the Foreign Exchange Division at the Bank of England (and Markets Director from March 2009). Until September 2008 we had not seen any significant shortage of dollar funding in London. The European Central Bank (ECB) had seen such pressures earlier and had started to lend dollars to European banks in December 2007.

On 15 September 2008, Lehman Brothers filed for bankruptcy. Then AIG went bust, the Reserve Primary Fund broke the buck and the financial system broke comprehensively. Banks in Europe became desperate for dollars. Overnight dollar interest rates in Europe became extremely volatile – soaring to over 10% in the morning when no one had spare dollars to lend and then crashing down to near zero in the afternoon, once the Fed was open.

Within a week, the central banks of the then five major global currencies (the Fed, ECB, Bank of England, Bank of Japan and Swiss National Bank) were undertaking new operations, borrowing dollars from the Fed and lending them overnight, every night, in an operation which was as much about US monetary stability as anything else. But it quickly became clear that the underlying problems were European, structural and long-lasting. We got as high as lending US$86 billion in total in London. By late 2009, the dollar shortage had abated in London, although by that time some of the most famous names in global banking had failed, as well as some lesser-known entities.

The structural issue of continental European demand for dollar funding took longer to ease and is still not completely resolved. It remains evident in several places, including the cost of swapping euros for dollars in foreign exchange markets – the so-called basis swap – and in the ECB dollar lending operations which are still drawn upon occasionally, particularly at year-end or other reporting dates.

“There will be another crisis – most likely when the generation that dealt with the GFC have all retired. The banking system should be more robust. But financial crises never repeat themselves exactly.”

Moving on

Considerable progress has been made since the GFC. The capital regime for banks has been significantly strengthened and a new liquidity regime is in place. Banks are now subject to coordinated stress tests in the US, Europe and the UK.

In the UK we went further, restructuring the entire regulatory system, creating a new Financial Policy Committee, and establishing a ‘twin peaks’ regulatory model of separate prudential and conduct regulators (the Prudential Regulation Authority and Financial Conduct Authority) to correct a mistake in the architecture dating back to the 1990s. The Bank of England has created a new set of wide-ranging liquidity-support operations. The UK has also introduced a new Senior Managers Regime to make sure that senior bankers take their responsibilities seriously (and can be held to account for their actions if not).

Will all these changes be enough? Probably not. The financial sector is good at lobbying, chipping away at the various measures that have been put in place. We still don’t have all the answers for banks operating globally, with foreign currency needs that can’t be met directly by the local central bank. And many regulators are worried about their banking system being dominated by branches run from other countries – a particular problem now being highlighted within the EU.

There will be another crisis – most likely when the generation that dealt with the GFC have all retired. The banking system should be more robust to the kinds of shocks we experienced in 2007–2008. But financial crises never repeat themselves exactly. The next crisis could come from a completely different source: cyber hacking perhaps, or maybe disintermediation of the banking system by new technology companies. Or perhaps from climate change, which could wreck the whole of the global economy, not just the financial system. Nevertheless, it is important that we remember and record the root causes of the GFC so that those who deal with the next crisis are better informed and better prepared.
The gold perspective – 10 years after Lehman Brothers failed

The Global Financial Crisis had a profound effect on markets, industries and policymakers worldwide. It also prompted a significant and sustained shift in demand for gold, as World Gold Council Chief Market Strategist John Reade explains.

2018 was an important year for anniversaries: a century since the end of the Great War and the Spanish influenza pandemic; 80 years since Kristallnacht; and 50 years since the assassinations of Martin Luther King and Robert F Kennedy. Financial markets, however, with their usual shorter-term perspective, have focused on the 10th anniversary of the failure of Lehman Brothers, as it appeared to mark the epicentre of the Global Financial Crisis (GFC). There have been acres of news articles – and gigabytes of blogs, tweets and LinkedIn posts – about the cause of the crisis. I don’t intend to rehash these comments but I would highlight two recent contributions.

First, Dr Paul Fisher, a senior figure at the Bank of England for more than 26 years, makes several insightful observations on the subject in this edition of Gold Investor.

Second, Mike Silva, former Chief of Staff to Tim Geithner of the New York Federal Reserve, gave an excellent presentation titled Inside Perspective on the Financial Crisis and the Lessons Learned at the LBMA/LPPM Precious Metals Conference in Boston in October 2018. (The presentation and a video interview are available on the LBMA website.)

Lehman Brothers company sign at Christie’s auction house in London. The sign was sold as part of the 2010 ‘Lehman Brothers: Artwork and Ephemera’ sale.
Focusing on how gold performed during and after the crisis is instructive, however, and it is also worth noting some of the structural changes to the gold market that took place as a consequence of the GFC.

### The collapse of Lehman

Lehman Brothers failed on 15 September 2008. How did gold fare throughout the crisis? Chart 1 shows no sign that gold moved rapidly higher from July 2008 to July 2009. In fact, gold fell in the fourth quarter of 2008, as the dollar strengthened and gold was used as a source of liquidity (and sold). Although disappointing to many observers at the time, we have seen this happen elsewhere: when risk aversion strikes, investors’ first instinct is to sell assets and head to the haven of the US dollar.

This was not just a consequence of the US dollar weakening. Investors and speculators were also expressing their concerns about the consequences of quantitative easing and other radical monetary policy moves of that time. As a result, gold performed well in many currencies, as the chart of gold in euros shows (Chart 2). Interestingly, gold’s high in euros occurred in 2012 rather than in 2011. That was when the currency weakened as the GFC started to worry investors in European assets, especially those with Italian and Spanish exposure.

By March 2009, gold was comfortably above its pre-crisis level and went on to make further strong gains. This was not just a consequence of the US dollar weakening.

A crisis-driven major move into gold usually occurs only when investors and savers start to look for alternatives to the US dollar, fuelled by fears of US dollar weakness, inflation or about the very fabric of the financial system. And that is exactly what happened following the GFC. By March 2009, gold was comfortably above its pre-crisis level and went on to make strong gains throughout the second half of 2009, 2010 and most of 2011.

### Chart 1: Gold price in US dollars from July 2008 to July 2009

A crisis-driven major move into gold usually occurs only when investors and savers start to look for alternatives to the US dollar, fuelled by fears of US dollar weakness, inflation or about the very fabric of the financial system. And that is exactly what happened following the GFC. By March 2009, gold was comfortably above its pre-crisis level and went on to make strong gains throughout the second half of 2009, 2010 and most of 2011.

### Chart 2: Gold price in euros since January 2006

By 2013, however, attitudes were beginning to shift. As the US and other economies continued to recover and there was no sign of an imminent surge in inflation, investors took profits and cut long positions, especially in 2013. The price then fell further in 2014 and 2015, before gold posted positive returns in 2016 and 2017.

### A changed gold market

The GFC had a profound effect worldwide, precipitating economic recession, soaring unemployment, foreclosures and bankruptcies. It also changed some markets dramatically. Banking is not the same industry as it was. Today it is more tightly regulated, with larger capital buffers, tightly limited risk-taking ability and an explosion in the numbers of compliance staff. Lenders are still making GFC-related writedowns and some countries are still struggling with an overly indebted banking system.
The gold industry has changed considerably too. Aside from inflows and outflows into gold-backed exchange-traded funds (ETFs), the bar and coin market in the US and Europe has seen a marked and sustained increase in demand, as shown in Chart 3.

Central banks have changed tack too, reversing a long-standing selling tendency and collectively buying gold as a source of return, liquidity, diversification and credit risk reduction, as shown in Chart 4.

This trend of central banks buying gold has accelerated in recent years. Around 20 central banks have added gold to their reserves since the start of 2017 and today, this is one of the most interesting trends in the gold market. At the World Gold Council, we believe there are five reasons why central banks are showing an increased interest in gold:

1. FX reserves are growing.
2. Gold is re-emerging as a strategically important asset and countries are seeking political independence from the US via dedollarisation.
3. The US dollar is strong now, but asset valuations, current levels and budget deficits are undermining its attraction.
4. Higher global risks and the diminished/deteriorating quality of other reserve assets, such as sterling and the euro, are fuelling demand for diversification.
5. Changes in global trade patterns and the expected future state of the international monetary system, which will see the US dollar become less dominant as China’s financial markets develop and open up.

The geographical breakdown of gold consumption has also changed substantially over the past decade, as gold demand has moved ‘West to East.’ Emerging markets have become much more important consumers of gold, with China and India now making up more than 50% of global consumer demand and other emerging markets increasingly important, even as the US, Western Europe and Japan have become less significant consumers.

Now and next

So where do we stand now, and where to next?

There is no doubt that gold has become a more mainstream asset than it was before Lehman failed – the proportion of demand made up by investment has increased substantially and apparently sustainably.

And, although the gold price has underperformed other assets in the past few years, especially US equities, that’s probably what we should expect after arguably the longest US equity bull market in history. However, with growing indications that the lengthy, cyclical economic recovery from the Great Recession is approaching its end, and with US equity valuations still elevated even after the volatility seen at the end of 2018, it is probably a great time to think about diversifying some portfolio holdings into gold. Gold’s behaviour throughout the GFC demonstrated its strength as a diversifier. There is no reason to believe this would not be the case in a future economic slowdown, even if another financial crisis does not materialise.
As awareness of the impact of climate change becomes increasingly pervasive, investors are calling on business leaders to drive the transition towards a low-carbon economy. **Terry Heymann**, CFO at the World Gold Council, analyses the role of gold and gold producers in addressing climate change concerns.

Under the Paris Agreement of 2015, nearly 200 governments committed to preventing temperatures from rising more than 2°C above pre-industrial levels. Recently, the United Nations Intergovernmental Panel on Climate Change (IPCC) warned that these efforts would need to accelerate, and governments would have to adopt even tougher targets, to avert significantly higher risks of rising sea levels, extreme weather patterns and the catastrophic disruption of ecological systems and food production.

*In nanoparticulate form, gold has considerable potential in a range of applications that can help reduce GHG emissions.*
Yet, there is growing recognition that the world is still failing to take sufficient action to meet its Paris commitments and that greater urgency and ambition are now needed to mitigate the impacts of extreme climate change. Critically, it is not just governments that are calling for action. If anything, the private sector is increasingly at the forefront, with businesses and investors taking the lead. For example, the Alliance of CEO Climate Leaders is formed of 50 leaders of global businesses, all calling for concerted climate action and policies supportive of low-carbon solutions.

The investor community has recognised that it can be a driving force to address climate change. Climate change has been a particular area of focus, among increasing demands for greater transparency and consistency in how companies and financial institutions approach and report on environmental, social and governance (ESG) issues. Investors are interested both in what companies are doing to reduce emissions and how a changing climate is likely to impact businesses’ operations and future performance. The investor community is calling for increased and more consistent disclosure around the reporting of climate-related financial risks, with widespread acceptance of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Gold’s overall carbon footprint is relatively small.

As gold has become increasingly recognised as a mainstream asset, the gold industry has been called upon to demonstrate it understands the risks and opportunities associated with climate change, and is actively engaged in adapting to them. To support and facilitate this, in 2018 the World Gold Council produced its first research paper on these issues, in consultation with a range of academics and environmental policy experts (including the Centre for Environmental Policy at Imperial College London).

Gold is a rare and precious metal so considerable quantities of ore are mined and processed to produce a small amount of pure gold. This requires large amounts of energy. On a per volume basis, therefore, gold has a relatively high greenhouse gas (GHG) intensity. However, a relatively small amount of gold is produced each year – around 3,000 tonnes, compared to, for example, 7.3 billion (bn) tonnes of coal and 1.6bn tonnes of steel. Total annual GHG emissions for gold are therefore significantly lower than for most other major mined products. Simply put, gold’s overall carbon footprint is relatively small.

Investors’ perspectives

Gold is highly valuable too. When analysed on a per dollar basis it has a far lower emissions intensity than other metals and mined products. The volume of GHG emissions associated with a dollar spent on gold is far lower than for a dollar spent on most other metals or minerals.

Early work by business academics suggests that adding gold to a mainstream investment portfolio may reduce its overall carbon footprint over time.

We think these findings are significant, offering gold industry stakeholders, investors and policymakers a useful perspective on the relationship between an asset’s value and its carbon footprint. We are, however, also aware that this is a starting point and considerably more work needs to be done. A more comprehensive picture is needed, requiring an examination of GHG emissions associated with gold’s downstream uses. While we have sound reasons to expect these to be relatively minimal, there has been very little such analysis of the gold market and it is, therefore, certainly an area worthy of closer study.

Interestingly, early work by business academics suggests that adding gold to a mainstream investment portfolio may reduce its overall carbon footprint over time. Unlike many other assets, gold is not associated with ongoing activities and overheads, which continue to generate further emissions. Furthermore, gold should prove relatively robust in the face of the probable physical threats imposed by climate change, which are likely to be far more damaging to other sectors of the economy.

---

Gold miners take action

This should not suggest industry complacency. Mining, processing and refining account for most of the energy used and gases emitted in the gold supply chain, so that is where the most immediate change can be seen. Gold mining is an industry in transition, as companies strive proactively to prepare their operations for the move to a low-carbon economy. The potential for decarbonisation is significant.

Responsible gold mining companies are already taking action to address the challenge of climate change and reduce GHG emissions. Initiatives from World Gold Council members vary in type and scale, but all are focused on greater energy efficiency and moving, wherever possible, to low-carbon energy sources.

Specific projects include: the world’s first all-electric mine in Canada; a large solar plant that will transform a mine’s power consumption in Burkina Faso; mining company ventures sourcing hydro-electric power in Brazil and the Kyrgyz Republic; award-winning air control automation in South Africa; and optimised ventilation systems in Canada. Looking ahead, such ventures are likely to become more prevalent in every major gold-mining region, both as a commitment to reduce GHG emissions, but importantly, because they also present a more sustainable long-term financial rationale.

New technology for a cleaner future

Significantly, but often overlooked, gold – as an industrial material – can play a vital role in technologies that may help facilitate the transition to a low-carbon future. In nanoparticulate form, for instance, gold has considerable potential in a range of applications that can help reduce GHG emissions. These include using gold catalysts to help convert CO₂ into useful fuels; using gold nanoparticles that enhance hydrogen fuel cell performance; and using gold to improve photovoltaics in solar panels, thereby creating more energy.

Much work remains to be done, perhaps starting with clearer, more consistent data and agreed methodologies to help foster wider understanding. But the gold industry is keenly aware of its responsibility to investors and to society at large. Our initial research highlights that overall GHG emissions from gold mining are lower than those of other large extractive industries, and key gold industry players are seeking to drive them lower; that emissions per dollar invested in gold are lower than a dollar invested in most other metals; and that gold’s unique physical properties can play a crucial part in the challenge to better manage global warming.
Gold is priced in US dollars but investors in the asset class are spread across the world. **Francisco Blanch**, Head of Commodities and Derivatives Research at BofA Merrill Lynch Global Research, considers whether non-US dollar investors should hedge their currency risk when purchasing gold and other dollar-based commodities.

Should investors FX hedge their portfolios? The value of most financial assets, such as equities or bonds, is naturally most stable in their home currency, effectively the currency in which they pay fixed coupons (bonds) or derive their dividends (equities). So when the value of USD home-currency assets is converted into a foreign currency, the returns volatility increases due to the added FX volatility. For this reason, non-USD-based bond investors typically hedge a big portion of their FX risk (e.g. the implied long USD position that arises when a US Treasury bond is eventually sold can be hedged by adding long local FX vs. short USD to the portfolio).

Often, the FX hedge ratio that foreign investors apply to US bonds is more than 50%. Looked at from a different angle, US investors buying foreign bonds or equities whose home currency is not USD often hedge at least part of their implied long foreign FX exposure by adding long USD (vs. short foreign FX) to the portfolio, thereby reducing the overall dollar volatility of the portfolio. Similarly, equity investors, regardless of where they are based, tend to engage in some form of FX hedging to reduce the volatility of returns in their home currency.

Having established the portfolio benefits of FX hedging financial assets, a second question is how much exposure should be hedged. Cross-asset correlations between different financial assets are crucial to this important discussion. Broadly speaking, the more negative the correlation between a particular USD-denominated financial asset and the dollar itself, the less need to implement an FX hedge. According to the cross-correlation relationship between commodities and FX, commodities can serve partly as a natural hedge to currency fluctuations. However, there is little evidence of significant cross-correlations in other time lags, which suggests that this dynamic commodity-FX relationship is very short-lived.
Hedging commodities

After all, commodities in broad terms do not have a natural home currency. True, many commodities are priced in USD but that is just a unit of account. The value of a commodity is not necessarily more stable in USD than in other currencies because commodities do not pay dividends or coupons. The market value of a commodity depends on its value in use and cost of production, which means its value is most stable in a mix of all the producer and consumer currencies. In other words, commodities are most stable in a very broad basket of FX whose composition varies depending on the commodity in question. For this reason, the USD is typically strongly negatively correlated with commodity prices in USD, more so than other dollar asset classes. This implies that foreign-based investors may not want to be fully FX hedged as they get somewhat of a natural hedge from the negative USD (vs. local FX) and commodity correlation.

For emerging market (EM) investors, local currency commodity returns, if unhedged, are generally much more volatile than if fully FX hedged (fully FX hedged return variance is about the same as the USD return variance). For developed market (DM) foreign investors, the volatility of fully FX hedged Bloomberg Commodity Index (BCOM) is not much lower than that of unhedged BCOM. Even for gold, which has one of the lowest variances among single commodities, the return volatility isn’t significantly lower in any major local currency than in USD.

But carrying a fully hedged or completely unhedged portfolio are not the only options. There is a continuum of hedge ratios in-between that may lower the overall volatility of local currency commodity returns. We believe a certain degree of FX hedging, based on the correlation of each commodity portfolio to the home currency of the investor, could be beneficial to non-USD-based investors in DMs and EMs alike. Having established the potential benefits of FX hedging in commodity portfolios, we go on to analyse the spectrum of possible hedging ratios.

Optimal ratios

As a starting point, our work suggests that the optimal hedge ratio for a foreign commodity investor has to be based on a thorough study of the joint distributions between commodity prices and FX. In broad terms, the more volatile an investor’s home currency is, the more benefit (in terms of reducing volatility) a commodity portfolio is likely to derive from an FX hedge. Thus, our work suggests the optimal commodity hedge ratio for DM currencies is between 0.1 and 0.5.

Our analysis makes a strong case for non-USD-based commodity investors to hedge some of their FX risk. Even then, we admit that the volatility-reducing benefit of an FX hedged compared to an unhedged position is relatively small for DM currency investors.

While investors benchmarked against a G10 currency could benefit from commodity FX hedge ratios of 0.1 to 0.5, the optimal hedging ratio for EM FX benchmarked investors is much larger, generally between 0.5 and 1.0 and often close to 1. This is because the return volatility in a given EM currency is very high to begin with and can be drastically reduced by FX hedging.

Put differently, optimal hedge ratios for EM-benchmarked investors, based on the joint historical distributions between commodities and EM FX, are very high. The optimal hedge ratio, where the volatility is minimised isn’t, therefore, very different from a fully hedged position in most cases. In contrast, the hedge ratios for less volatile G10-based investors are lower and the optimal hedge tends to be significantly lower than simply being fully hedged, as the hedge ratio vs. volatility curves are rather flat.
Our work also shows that a higher level of commodity volatility does not necessarily change the optimal hedge ratio, if the higher commodity volatility comes in isolation and does not change the covariance with the FX. The fact that the optimal hedging ratio does not depend on the volatility of a specific commodity provides some degree of stability in the optimal hedge ratio over time. This occurs even though the variance of the commodity changes over the course of its own inventory cycle. Moreover, increasing the variance of the commodity – all else being equal – doesn’t change the optimal hedge ratio.

That said, when a USD asset is very stable in value (e.g. short-term US Treasury bonds), it typically also has a low covariance with FX rates. Imagine the extreme case of a constant USD bond value – a constant has zero covariance with any random variable including all FX pairs. As lower commodity variance and less negative covariance with FX tend to go hand in hand, the optimal hedge ratio for commodities that have low variance (in USD terms) tends to be higher. So it is not surprising that low-volatility commodities like gold or the BCOM, which has lower volatility than single commodities due to diversification, tend to have the highest optimal hedging ratios in most currencies. In plain English, there are plenty of benefits of FX hedging gold or commodity portfolios, particularly if you are an EM investor.

There are plenty of benefits of FX hedging gold or commodity portfolios, particularly if you are an EM investor.

As of November 2018. The historical commodity return variance, FX return variance and their covariances are calculated using monthly data since 1991.

Note the euro curve has a higher volatility than the rest for the fully hedged portfolio due to using a shorter sample period (since 2001). For methodology details see ‘When to FX hedge commodities’, March 2017.

Source: Bloomberg; BofA Merrill Lynch Global Research estimates
Goldhub: the definitive source of gold data and insight

Robust, informative and accessible data can act as an invaluable tool for enhancing knowledge, improving understanding and providing context. Yet gold investors have sometimes suffered from a lack of effective data. Goldhub is designed to deliver these benefits, as Krishan Gopaul from the World Gold Council explains.

The world of data has been transformed over the past decade. Described as ‘the new oil’ by pundits and policymakers, data is both more available and more valuable than ever before. However, quantity does not necessarily equate to quality.

Greater volumes can reveal interesting patterns and trends, but they can also sow confusion. Lack of transparency and inconsistent formats can stymie interpretation. Delays in publication can affect accuracy. And data that is hard to locate or not collected at all can create worrying gaps in user knowledge and understanding.

All these issues are prevalent in today’s data-driven world. And they can have serious consequences for users, such as analysts and asset owners.

“
A significant proportion of the investment universe feels unable to invest confidently in gold because they lack the knowledge to do so.
"
Data and gold

Against this background, the World Gold Council commissioned two detailed surveys to assess the impact of data on gold investment decision making. The first covered central banks, asset managers, pension funds, sovereign wealth funds, investment banks and investment advisers across all geographic regions. The second focused on US-based pension funds and investment consultants. In both cases, fewer than half those surveyed – around 40% – felt they had access to sufficient data to make an investment decision on gold.5

In other words, a significant proportion of the investment universe feels unable to invest in gold because they lack the knowledge or confidence to do so. The gold market is complex and certain pockets are relatively opaque, so their wariness is understandable. But efforts are underway to improve the situation and create a better decision-making environment.

As the market development organisation for the gold industry, the World Gold Council is at the forefront of change.

Introducing Goldhub

Building on our existing data series, such as supply and demand trends, gold-backed exchange-traded funds (ETFs) and central bank gold reserves, we have created a comprehensive resource for gold investment, Goldhub.

This newly launched website brings together key gold market data, expert research and interactive tools in one accessible and easy-to-use location. Providing valuable insight and analysis, it is a uniquely centralised resource, expressly designed to support decision making.

Recognising that credible information is a prerequisite for investors, we seek to apply high standards to the data we provide, which is sourced from several well-regarded sources. Detailed methodology notes further aid transparency and promote understanding. Visual analytics and data downloads on Goldhub allow investors to engage with gold market data directly too, enabling them to develop their own insights and conclusions.

Usability, breadth of data and depth of knowledge make Goldhub relevant to both investors with existing positions in gold and those who are new to the asset class.

“Goldhub brings together key gold market data, expert research and interactive tools in one accessible and easy-to-use location. Providing valuable insight and analysis, it is a uniquely centralised resource.”

Evolution

Good data is undoubtedly critical for decision making. But it needs to be structured and contextualised so there is clarity around what it is, why it is valuable and where potential pitfalls lie. And that is the essence of Goldhub.

Goldhub is intended to be a repository for credible and reliable gold data – a centralised resource for effective analysis and confident decision making.

---

5 Two surveys were conducted between May and June 2017. The first surveyed 67 institutional investors. The second surveyed 126 US-based institutions.
Market outlook for 2019 – encouraging signs for gold

Gold experienced a rollercoaster year in 2018. This year, we believe demand is likely to increase, bolstered by structural economic reforms, financial market uncertainty and geopolitical unrest. Juan Carlos Artigas, Director of Investment Research at the World Gold Council, assesses the outlook for gold.

“ This year, we see higher levels of risk and uncertainty across four key metrics: global stock market volatility; potential increases in inflation; political and economic instability in Europe; and increasing concerns about a global recession.”

Juan Carlos Artigas
Director of Investment Research
World Gold Council
Gold is different from almost any other asset because it appeals to both investors and consumers. Investors turn to gold as a diversifier and long-term savings tool. Consumers see gold as an adornment and a sign of wealth.

During 2018, consumer demand rose in many key markets, supported by positive economic growth. But gold faced headwinds from investment. President Trump’s tax cuts fuelled the long bull market in US equities for much of the year, while a strengthening dollar and rising US interest rates acted as further brakes on investment demand for gold.

By the fourth quarter, however, many of these negative factors were easing away, as market uncertainty grew. As a result, demand for gold increased and the price rose comfortably above US$1,250/oz.

In 2019, structural economic reforms should support gold demand for jewellery, technology and long-term savings. Increased market uncertainty and protectionist economic policies should make gold increasingly attractive as a hedge. And suggestions that the US economy will experience weaker growth this year could curtail rising interest rates and limit dollar strength.

**Deteriorating financial market stability**

Gold-backed exchange traded funds (ETFs) experienced significant outflows for most of 2018, particularly in North America. But the pattern started to change in the fourth quarter, as sentiment towards risk began to shift.

This year, we see high levels of risk and uncertainty across four key metrics: global stock market volatility; potential increases in inflation; political and economic instability in Europe; and increasing concerns about a global recession.

First, despite the recent market correction, many stock prices remain elevated, especially in the US, after a decade-long bull run (Chart 1). Yet, bond yields remain stubbornly low. The 10-year Treasury yield, for example, began the year 1.5% below its 2008 pre-Lehman crisis level, providing investors with very little protection against further market volatility. Indeed, volatility metrics have begun to creep up, with the CBOE Volatility (VIX) Index soaring in the last quarter of 2018.

Second, while Europe has largely recovered from the sovereign debt crisis, it remains vulnerable to shocks and faces several major challenges. Brexit has created persistent unease among investors and clarity is unlikely to emerge anytime soon. In addition, France is grappling with social unrest, while populist forces have been gaining momentum in Italy, Spain and Germany. Perhaps in response, Europeans have been steadily adding gold to their portfolios since early 2016.

Third, more and more governments around the world are embracing protectionist policies. While these can have a positive effect in the short term, they are inherently inflationary, driving higher labour and manufacturing costs and/or higher tariffs imposed to promote local producers over foreign ones. To date, investors have taken much of the US/China trade war rhetoric as posturing. However, any restrictions on the flow of capital, goods and labour will create long-term issues.

Volatile markets, European populism and US protectionism have all increased the risk of recession, possibly led by the US. A significant proportion of the growth seen in 2018 was a byproduct of President Trump’s tax cuts. But similar measures may be more difficult to enact in future, particularly with a split Congress.
Credit markets are already indicating that the future will be less benign. Spreads have widened, credit conditions have tightened and the US Treasury curve is very flat, with some economists predicting it will invert over the next few months. While an inverted yield curve does not cause recessions, it has preceded them with uncanny accuracy over recent decades.

The impact of rates and the dollar

Traditionally, higher short-term interest rates and US dollar strength have been cited as limiting demand for gold. But higher US interest rates alone are not enough to deter investors from buying gold, as evidenced by robust demand between 2016 and the early part of 2018. This year too, the US Federal Reserve (Fed) is expected to adopt an increasingly neutral policy stance.

On the currency front, the US Dollar (DXY) Index has already appreciated by more than 10% from its 2018 low and a similar trend in 2016 was followed by significant correction. Additionally, the Trump administration is known to favour a weaker dollar, having often expressed frustration about the competitive disadvantage of a strong currency.

Importantly too, emerging market central banks continue to diversify their exposure to US dollars and gold is a key beneficiary. In 2018 alone, central bank demand hit a record high, in recent history, as a number of countries added gold to their foreign reserves, many after multi-year absences (see page 9, Central banks turn to gold).

“Emerging markets account for around 70% of gold consumer demand, led by China and India. Both countries are implementing economic changes that will promote growth and income levels over many years.”

India has been actively modernising its economy, reducing barriers for commerce and promoting fiscal compliance. The country is expected to grow by 7.5% in 2019.”
Emerging markets account for around 70% of gold consumer demand, led by China and India. Both countries are implementing economic changes that will promote growth and income levels over many years.

India has been actively modernising its economy, reducing barriers for commerce and promoting fiscal compliance. The country is expected to grow by 7.5% in 2019, significantly outpacing most global economies. Gold is well positioned to benefit from this expansion, as there is an unequivocal link between jewellery demand and growing consumer wealth.

Income levels are rising in China too, with the government determined to deliver long-term growth and claim a growing role on the global stage. The ‘Belt and Road’ initiative, for example, is focused on promoting regional economic development, which should, over time, support demand for gold across many emerging markets.

In the West, economic recovery in recent years has resulted in positive consumer demand in the US and parts of Europe.

Overall, therefore, we believe that gold jewellery demand will benefit from positive consumer sentiment in 2019. Even if uncertainty affects confidence in certain jurisdictions, global demand should still increase marginally.

Why gold, why now?

Tactically, gold presents an interesting opportunity. Gold speculative positioning in futures markets remains low by historical standards. While CME-managed money net long positions increased in December 2018, they were at record lows, since data was first broken down by investor type in 2006, earlier in the year. Net combined speculative positions, which go back further, were at their lowest for the first time since December 2001. And in recent years, a large increase in short positions has been followed by a sharp rally in gold as we started to witness towards the end of 2018 (Chart 2).

More strategically, there are four factors that make gold an attractive investment asset. It has been a source of return for investors’ portfolios. Its correlation to major asset classes has been low in both expansionary and recessionary periods. It is a mainstream asset that is as liquid as other financial securities. It has historically improved portfolio risk-adjusted returns. These factors appeal to investors small and large, including central banks as they continue buying gold to diversify their foreign reserves and counterbalance fiat currency risk.

From a global perspective, therefore, gold has a number of key attributes. In the short term, market risk and uncertainty will continue to make gold attractive; in the longer term, gold’s performance will be supported by the development of the middle class in emerging markets, gold’s role as an asset of last resort and its growing use in technological applications.
Gold returns are competitive compared to major financial assets
Performance metrics for major global financial assets in US$*

Gold performance should be measured in more than one currency
Annual gold returns in various currencies*

Financial gold accounts for more than a third of above-ground gold stocks
Market size (in tonnes and US$ value) for various gold sectors*

Gold was correlated to high-quality bonds in 2018
Weekly return correlation on key assets and gold in US$*

Gold trades more than many other major financial assets
Average daily trading volumes in US$*

The size of financial physical gold is larger than many stock and bond markets
Market size of major global financial assets in US$*

---

* 1-year and 10-year returns based on data ending 31 December 2018.
** BarCap US Credit includes both government and high grade corporate bonds.

Source: Bloomberg; World Gold Council

---

* Based on the LBMA Gold Price PM except for the Long US$ Gold Index that is based on the Solactive GLD® Long US$ Gold Index. The Index combines a long position in physical gold with a long position in a basket of currencies that include EUR (57.6%), JPY (13.6%), GBP (11.9%), CAD (9.1%), SEK (4.2%) and CHF (3.6%). For more details see: https://www.solactive.com/complex-indexing/?index=DE000SLA2K90
** Year-to-date as of 31 December 2018.

Source: Bloomberg; ICE Benchmark Administration; Solactive AG; World Gold Council

---

*Estimated tonnage as 31 December 2018. US-dollar values calculated using YTD 2018 average LBMA Gold price of US$1,269/oz. Financial gold is defined as the sum of official sector holdings, bars and coins, and ETFs (74,507 tonnes, US$3tn, 39%).

**ETFs include gold-backed exchange traded funds (ETFs) and similar products.

Source: Bloomberg; Refinitiv GFMS; ICE Benchmark Administration; Respective ETP providers; World Gold Council

---

* Based on estimated 1-year average trading volumes as of 31 December 2018, except for currencies that correspond to 2016 volumes due to data availability.
** Gold liquidity includes estimates on over-the-counter (OTC) transactions, and published statistics on futures exchanges, and gold-backed exchange-traded products.

Source: BIS; Bloomberg. Germany Finance Agency; Japan Securities Dealers Association; LBMA; UK Debt Management Office (DMO); World Gold Council

---

* As of 31 December 2018 where available, otherwise most recent data published.

** Includes bars, coins, gold-backed exchange-traded products and official sector holdings.

Source: BIS; Bloomberg; Refinitiv GFMS; ICE Benchmark Administration; World Gold Council
The World Gold Council does not guarantee the accuracy or completeness of any information. The World Gold Council does not accept responsibility for any losses or damages arising directly or indirectly from the use of this information. This information contains forward-looking statements, such as statements which use the words “believes,” “expects,” “may,” or “suggests,” or similar terminology, which are based on current expectations and are subject to change. Forward-looking statements involve a number of risks and uncertainties. There can be no assurance that any forward-looking statements will be achieved. We assume no responsibility for updating any forward-looking statements.

Photography credits

Front cover: DjelicS/istockphoto.com
Page 4: Top right, allstars/Shutterstock.com
Page 4: Bottom left, inkvartata/Shutterstock.com
Page 5: narvikk/Gettyimages
Page 6: World Gold Council
Page 7: Wit Olszewski/Shutterstock.com
Page 9: AMJonik.pl/Shutterstock.com
Page 11: poszto/Shutterstock.com
Page 12: allstars/Shutterstock.com
Page 14: World Gold Council
Page 15: PaPicasso/Shutterstock.com
Page 16: Norman Chan/Shutterstock.com
Page 17: Steve Broer/Shutterstock.com
Page 19: Ben Stanstall/Stringer/Gettyimages
Page 22: World Gold Council
Page 23: Alf Manciagli/Shutterstock.com
Page 24: Bottom left, Goldcorp Inc
Page 24: Middle right, World Gold Council
Page 25: Maciej Czekajewski/Shutterstock.com
Page 28: World Gold Council
Page 30: funky-data/istockphoto.com
Page 31: corlaffra/Shutterstock.com
Page 32: Yavuz Sariyildiz/Shutterstock.com