

PLATINUM ESSENTIALS

Are cryptocurrencies relevant to platinum’s investment case?

For most of 2017, platinum and cryptocurrencies seemed to be at opposite ends of the “most fashionable investments” spectrum; however, they share some similarities – finite supply, an almost one-directional price movement over the past three years and significant uncertainty on the price outlook.

As the broader market gets to grips with cryptocurrencies as a new asset class, investor interest suggests many investors are drawing parallels between precious metal investing and cryptocurrency investing. We explore what relevance cryptocurrencies may have for the investment case for platinum through the following three questions:

- 1) **What are cryptocurrencies and why are they interesting?.....page 1**
- 2) **Is it possible or likely to have a cryptocurrency backed by platinum?.....page 6**
- 3) **Are there common reasons for investing in cryptocurrencies and precious metals?.....page 7**

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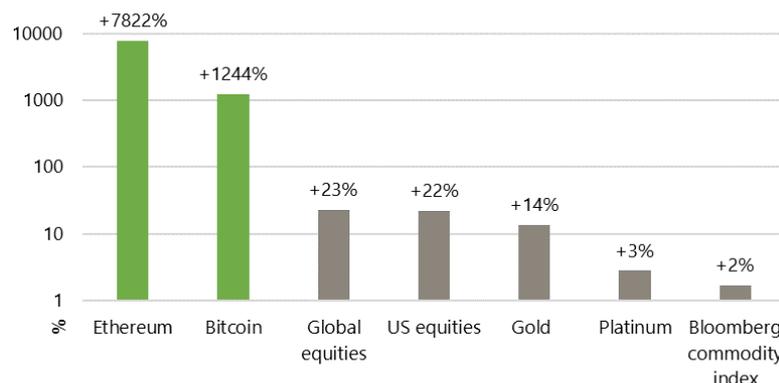
January 2018

What are cryptocurrencies and why are they interesting?

A currency’s primary purposes are to be used as 1) a medium of exchange, 2) a store of value and 3) a unit of account. Many materials have been used as currencies historically, such as gold, copper and shells. Modern currencies are **fiat money** which the issuing government has determined to be legal tender, and is not backed by any commodity. The supply and value of modern currencies is directly impacted by government actions (i.e. changing bank rates, monetary easing). Government backed currencies have the advantage that they are used to pay taxes, and as such there will likely always be some demand for government backed currencies.

A **cryptocurrency** is a type of digital currency not issued by any central bank or government. Instead, encryption techniques are used to regulate the generation of the currency, verify transactions, and transfer funds. As such, it offers the characteristics of a currency, but theoretically immune to the interferences of government or any other central agencies. Its proponents suggest that over time cryptocurrencies could at least partially replace fiat money. Apart from being an interesting technological development; the driver for the surge in interest in cryptocurrencies seems to be due to the surge in prices during 2017; a year in which risky assets continued to perform well.

2017 performance - cryptocurrencies and other assets (log scale, %)



Source: Coinbase, Bloomberg

Bitcoin representation



Source: Royalty free image

Supply

For 'minable' cryptocurrencies, supply is created by computers solving complex problems, and being issued a certain amount of cryptocurrency in exchange. We outline the largest cryptocurrencies below.

Bitcoin – the first cryptocurrency, invented in 2008 under the pseudonym Satoshi Nakamoto¹, and currently the largest cryptocurrency by market cap. Bitcoin (with a capital “B”) is a decentralised peer to peer payments network, which allows transfer of digital currency or **bitcoin** (with a small “b”) that operates as online cash. The dollar value of a bitcoin is determined on an open market, in a similar way to the exchange rate between different global currencies.

As alternative cryptocurrencies (**altcoins**) are released and gain traction, they are a growing % of the market cap of digital currencies (i.e. 63% in January 2018 vs 15% in January 2017). As of January 2018, there are close to 1,400 digital currencies (according to coinbase).

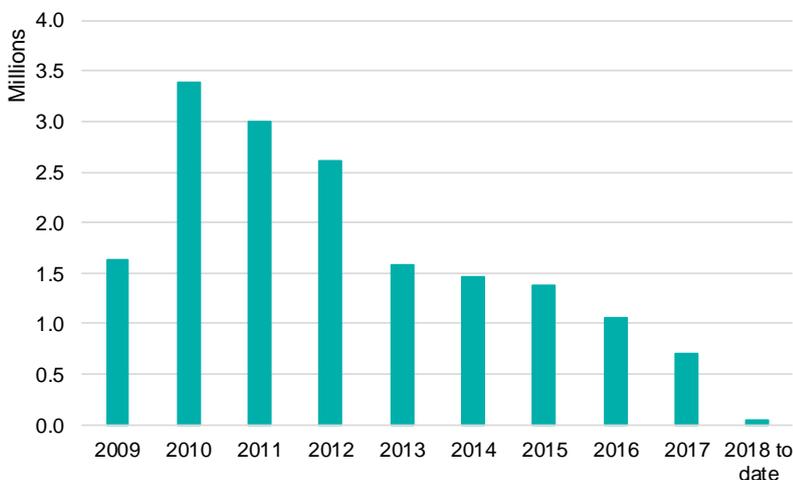
Ether – **Ethereum** is the name of a blockchain company that created a cryptocurrency called ether. Ether is the largest of the altcoins at 12% of digital currencies in January 2018. The technology is slightly different to Bitcoin and the use case is directed at smart contracts (e.g. as applicable in trade finance).

Bitcoin “mining” is the process of adding transaction records to Bitcoin’s public ledger of past transactions (the blockchain), and creating new bitcoins in each block. The blockchain confirms to the rest of the network that a transaction has taken place, distinguishing real bitcoin transactions from fake ones. The Bitcoin generation algorithm defines how bitcoins will be created and at what rate.

Bitcoin mining is designed to be resource-intensive as it requires significant electricity (estimated to be 90-95% of bitcoin mining cost²) and specialised hardware. It is designed to be difficult so that the number of bitcoins found each day remains steady.

As a result, the total supply and pace of incremental supply of cryptocurrencies is completely known unlike commodities or indeed fiat currencies. 17 million bitcoins have been created so far, with the total bitcoins ever ‘mined’ expected to be limited to 21 million. As shown below, the rate of incremental supply has already started to decrease, and will continue to do so until the last bitcoin is created (expected to be 2140).

New bitcoins created by year



Source: blockchain.info. Data to 21st January 2018

¹ Bitcoin: A Peer-to-Peer Electronic Cash System – Satoshi Makamoto

² [Bitcoin 'miners' face fight for survival as new supply halves \(Reuters\)](#) – 8th July 2016

Demand

The unregulated and anonymous nature of cryptocurrencies makes analysis of its owners difficult. However, press coverage assumes that the majority of buyers during the 2017 increase in value are financial speculators, with a significant proportion of these being retail investors. It is likely that some current investors in cryptocurrencies have done so on the basis of cryptocurrencies' potentially transformative nature on the financial system long term; but a significant portion are also likely investing on the assumption that the increasing popularity within the financial community is likely to lead to higher valuations (though the late 2017 / early 2018 price movements in many cryptocurrencies belie this assumption).

Given the unusual mix of buyers and holders, and the significant uncertainty on the potential for future use of cryptocurrencies within the broader financial system long term, the future demand of cryptocurrencies is extraordinarily difficult to predict. However, the regulatory landscape and available investment products could have an impact on future cryptocurrency demand. We outline some drivers below that may affect future demand for cryptocurrencies.

Regulatory approach – as yet uncertain

The use of cryptocurrencies as legal tender is still limited; though this seems broadly as a result of its infancy as a technology. Bitcoin seems the most widely accepted cryptocurrency given it is the first one to come to market.

The role of a financial regulator is to control the financial market; the very decentralised nature of cryptocurrencies (one of their key attractions to some proponents) has the potential to undermine regulators' objectives to maintain fair, efficient, orderly and transparent markets. This has led many governments and regulators to express concern on their increasing popularity. National financial regulators seem to be taking various approaches to allowing trading in cryptocurrencies and to their use as legal tender; however with the exception of Japan, governments seem cautious about the former, with the latter seemingly not an immediate concern.

Japan – passed a law in April 2017 allowing bitcoin to be legal tender, with several retailers backing the law. In September 2017 Japan's Financial Services Agency recognised 11 companies as registered cryptocurrency exchanges, placing requirements on them to build strong computing systems and check identities of users to prevent money laundering.

China – in September 2017, regulators banned [Initial Coin Offerings \(ICOs\)](#) where companies raise capital by selling new digital currencies and there are reports of the regulator's intention to shut down bitcoin exchanges³.

Brazil – in January 2018 the financial regulator CVM said cryptocurrencies could not be considered as financial assets, and clarified that cryptocurrencies are not permitted to be traded by domestic investment funds⁴.

South Korea - considering banning all trading in cryptocurrencies⁵ sparking negative price moves in early 2018.

Several governments (including the U.S., China, Japan, U.K. and Sweden) are also exploring issuing government-backed digital currencies⁶, with Venezuela planning to issue a government cryptocurrency backed by its oil reserves in an attempt to deal with its deep financial crisis⁷.

³ [China's bitcoin clampdown is likely here to stay, analysts say \(CNBC\)](#) – 19th September 2017

⁴ [Brazil stops funds from investing in cryptocurrencies \(FT\)](#) – 12th January 2018

⁵ [Bitcoin tumbles as South Korea plans trading ban \(FT\)](#) – 11th January 2018

⁶ [Next stop in the cryptocurrency craze: A government-backed coin \(CNBC\)](#) – 30th November 2017

⁷ [Venezuela oil-backed cryptocurrency to launch in days, government says \(CNBC\)](#) – 29th December 2017

CME and CBOE launched bitcoin futures in December 2017

CME launched bitcoin futures in December 2017, with CBOE launching bitcoin futures a week later. With the premise that the prices of bitcoin futures should reflect the expected future price of bitcoin; this is a potential way for institutional investors to gain exposure to the price performance of bitcoin whilst trading on a regulated exchange. It also enables investors to take a short position in bitcoin, which was difficult beforehand.

Increasing number of bitcoin ETFs planned

At time of publishing, five entities have active filings with the SEC to launch bitcoin ETFs with regulated bitcoin futures as the main underlying assets.

It is worth noting that the SEC previously requested that a potential issuer withdraw a filing for an ETF with bitcoin the planned underlying asset; citing the concern that significant markets for bitcoin are unregulated. The fact that there are now bitcoin futures trading on regulated exchanges is expected by some market participants to increase the likelihood that futures-based bitcoin ETFs may be approved⁸; although the outlook remains uncertain. Recently, the SEC outlined⁹ some concerns with proposed bitcoin ETFs, given the extreme volatility and question about any funds' liquidity with the products. The daily valuations and redeemability required by ETFs could be tested by digital currency assets.

A listed bitcoin ETF could potentially attract more investors who are currently unable or unwilling to buy bitcoin directly on an unregulated exchange, or to take a futures position directly, which could in turn make bitcoin more applicable to a wider institutional investment audience.

Bitcoin ETF filings

Issuer	ETF name(s)	Exchange	Timeline	Investment strategy
REX ETFs	REX Bitcoin Strategy ETF	CBOE BZX Exchange	Filed 23/08/17, pending SEC approval	Seeks to provide exposure to the price movements of bitcoin through exposure to actively managed portfolios of financial instruments. Up to 25% of the funds' total assets will be invested in a subsidiary that will invest directly in bitcoin futures. The most of the balance will be held in cash and cash equivalents (in order to collateralise bitcoin futures contracts) and other bitcoin derivatives
	REX Short Bitcoin Strategy ETF			
ProShare Capital Management	ProShares Bitcoin ETF	NYSE Arca	Filed 27/09/17, pending SEC approval	Seeks to replicate the price performance (before fees and expenses) that correspond to the performance of lead month bitcoin futures contracts; though investing substantially all of its assets in benchmark futures contracts (or short positions as applicable). Funds can also invest in non benchmark futures contracts, OTC swaps, and other financial instruments as deemed necessary
	ProShares Short Bitcoin ETF			
First Trust	First Trust Bitcoin Strategy ETF	CBOE BZX Exchange	Filed 11/12/17, pending SEC approval	Seeks to provide exposure to the price movements of bitcoin through exposure to actively managed portfolios of financial instruments. Intends to invest primarily in Bitcoin Futures Contracts, but may also invest in Bitcoin Instruments, cash and cash equivalents (in order to collateralise bitcoin futures contracts), and GSE Securities
	First Trust Inverse Bitcoin Strategy ETF			
Direxion	Direxion Bitcoin ETF	NYSE Arca	Filed 15/12/17, pending SEC approval	Seeks to outperform the total return of bitcoin futures contracts by investing in CME and CBOE listed bitcoin futures and related swaps contracts, and by actively managing a portfolio of short-term high-quality government and corporate fixed-income and cashlike vehicles
GraniteShares	GraniteShares Bitcoin ETF	CBOE	Filed 15/12/17, pending SEC approval	Seeks to provide exposure to the price movements of bitcoin through, investing in front-month bitcoin futures, structured as commodity pools, passively managed, will hold long or short positions in bitcoin futures
	GraniteShares Short Bitcoin ETF			

Source: SEC filings as accessed on 4th January 2018; FT, CNBC

⁸ [Bitcoin ETF providers see new hope for approval \(FT\)](#) – 17th December 2017

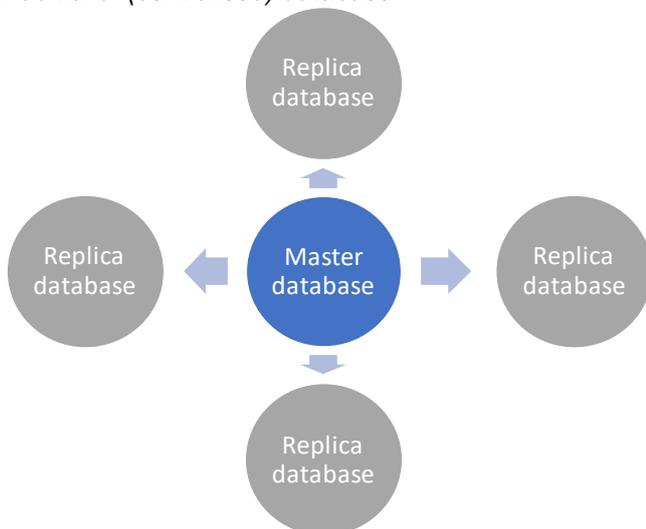
⁹ [SEC says it's worried about 'significant' issues with cryptocurrency ETF plans \(CNBC\)](#) – 18th January 2018

Attraction of blockchain vs cryptocurrencies

The traditional financial community has shown widespread scepticism that cryptocurrencies will become mainstream, amid concern that they represent a speculative bubble about to burst; although this view has existed throughout the positive price performance. JPMorgan's CEO famously described bitcoin as a "fraud"¹⁰ (though he later said he regretted that statement), UBS' chairman described bitcoin as "not an investment we would advise"¹¹, and Warren Buffet commented "almost with certainty that [cryptocurrencies] will come to a bad end"¹². However there seems to be an emerging consensus that even if cryptocurrencies are not ultimately successful, the underlying infrastructure of blockchain could have identifiable intrinsic value.

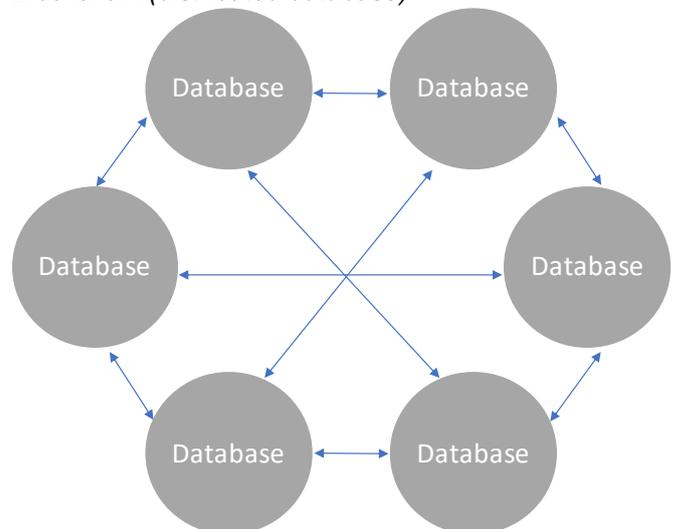
Blockchain is essentially a database software. A traditional database is controlled by a central counterparty where only a trusted party can alter the database, and requires significant back end infrastructure to reconcile and verify transactions. Blockchain is a distributed database, where every user has a copy of the database, and all users are required to approve all transactions using cryptography. This has key advantages vs a traditional database; namely disintermediation, security, resilience and lower costs.

Traditional (centralised) database



Source: WPIC Research

Blockchain (distributed database)



Source: WPIC Research

It is expected that blockchain could lead to significant disruptive technologies in the coming decade with potential applications in manufacturing, healthcare, finance and utilities. In mining for example, diamond producer De Beers announced an initiative to launch an industry-wide blockchain for diamonds¹³. This aims to track diamonds to ensure consumers that they are conflict free, whilst still protecting industry sensitive information.

However, even if blockchain does garner widespread industry applications and success, there are limited ways for investors to gain exposure to the blockchain theme now, outside of some specialised semiconductor producers. Therefore, it seems that it would be cryptocurrencies and not the underlying blockchain technology, that could represent a risk to the investment case for platinum (i.e. as a better investment alternative).

¹⁰ [JPMorgan CEO Jamie Dimon says bitcoin is a 'fraud' that will eventually blow up \(CNBC\)](#) – 12th September 2017

¹¹ [UBS chairman warns against bitcoin investment as cryptocurrency falls 12% \(Guardian\)](#) – 23rd January 2018

¹² [Buffett on cryptocurrencies: 'I can say almost with certainty that they will come to a bad ending' \(CNBC\)](#) – 10th January 2018

¹³ [De Beers turns to blockchain to guarantee diamond purity \(Reuters\)](#) – 16th January 2018

Is it possible or likely to have a cryptocurrency backed by platinum?

Two negative aspects of many cryptocurrencies are that they have no intrinsic value (although they are not much different to fiat money in this respect); and that significant price volatility undermines the ability to be used as a currency. A potential solution would be to have an asset backed cryptocurrency. This could address both the negatives, providing an intrinsic value (i.e. the value of the underlying asset) and potentially reducing the volatility (to the volatility of the underlying asset).

Given the financial market has started to think about cryptocurrencies and precious metals in a similar way; it is perhaps unsurprising that there have been several gold-backed cryptocurrencies posited. For example, BullionCoin uses blockchain to trade BullionCoins which cryptocurrencies are 100% backed by unallocated gold and silver. The principle of a cryptocurrency backed by a commodity is not limited to gold; with Tiberius group planning to launch cryptocurrencies backed by baskets of precious and industrial commodities (including one backed by gold, platinum and palladium).

Therefore, it would seem possible for a digital currency to be backed in whole or in part by platinum. It could be argued that given platinum's significant scarcity (with platinum around 30x rarer than gold) a digital currency backed by platinum should be more valuable than one backed by gold. Significant success of a platinum-backed cryptocurrency would have the effects of consuming additional platinum, which would be a positive for the investment case for platinum.

What can cryptocurrencies / blockchain bring to commodity ownership?

Although the proponents of asset-backed cryptocurrencies are targeting widespread use (i.e. as a currency); it could be argued that at worst, commodity-backed digital currencies represent an additional way to gain financial exposure to (and in some cases physical delivery of) the underlying commodities. If this is the case, it could still be argued that there is an incremental benefit vs outright ownership of the underlying commodities.

Blockchain technology could make transfer of physical commodities more efficient (i.e. almost instantaneous vs t+2 settlement), lower counterparty risk (given no need for a central counterparty), lower administrative costs, and improved transparency on the vertical supply chain (i.e. as per the De Beers example on page 5), and on the underlying metal (vaulting location etc).

Reducing market inefficiencies, especially in a smaller commodity market such as platinum, should be a long term positive. However, it is worth noting that such applications are still currently theoretical, and it would likely take some years for the full applications to become apparent.

Are there common reasons for investing in cryptocurrencies and precious metals?

On the surface there are some similarities between precious metals and cryptocurrencies. However, cryptocurrencies are likely only a risk to the investment case for platinum if there are similar reasons for investing in both. We outline below potential positive and negative investment cases for bitcoin, gold and platinum; and evaluate whether there are common reasons for investing in these different assets.

Potential reasons for a positive investment case - heatmap

Potential reasons for a positive investment case			
	Bitcoin	Gold	Platinum
Market dynamics*			
Positive price performance			
Macro*			
Use as a currency			
Store of value			
Downside protection			
Fundamentals			
Downside risk to supply vs consensus			
Upside risk to demand vs consensus			
Spot price trading below incentive price			
Spot price trading below marginal cost	?		

Source: WPIC Research. Evaluated since launch of bitcoin in 2009 *based on historical performance

Why invest in Bitcoin? Example investment cases

Positive – Bitcoin’s characteristics will lead to its mass global adoption as a global legal tender. Volatility will decrease allowing bitcoin to perform the traditional functions of a currency, increasing real world demand. An increasing number of regulated investment products will increase financial provide support in the near to medium term, by allowing institutional financial investors to invest in financial products where bitcoin is the underlying asset. 2018 price performance notwithstanding, the rising price of bitcoin is evidence of widespread belief in its future utility.

Negative – Bitcoin’s price action is demonstrative of a bubble that could burst. Bitcoin’s price volatility undermines its ability to be used as a currency; as purchases of goods and services using bitcoin effectively become gambles. Bitcoin’s anonymous nature leave it prone to illegal use and market manipulation, where the wealth of the majority of investors can be transferred to the few in control. The proliferation of new cryptocurrencies (which have no theoretical supply limit) increases the possibility that a better cryptocurrency is launched that would overtake bitcoin. Regulators may take increasingly stringent approaches to bitcoin (investment and use as legal tender), further restricting its use as a currency.

Why invest in Gold? Example investment cases

Positive – Gold is a hedge against poor performance elsewhere in a diversified portfolio, as it tends to outperform during equity bear markets. Gold is an inflation hedge and therefore preferable to cash in a low rate environment. Gold has maintained its value over centuries and is socially

accepted as a way to pass wealth from one generation to another. Gold mine supply is in structural decline, which should be a positive for the fundamental supply / demand balance.

Negative – All the gold ever mined is still available as it is never “used up”. Even if gold mine supply were to stop, significant investment holdings (if liquidated) could meet gold demand for many years to come. Gold has no intrinsic value and therefore predicting gold prices is more difficult than other commodities, as gold is more responsive to a combination of macro factors than its own fundamental supply / demand.

Why invest in Platinum? Example investment cases

Positive – Supply is constrained, with mine supply falling given cost pressures and reduced investment, and mines starting to announce proactive cuts to supply. Demand is likely to positively surprise, with the potentially negative impact from European diesel declines and electric vehicles significantly over-estimated and more than reflected in the price, whilst jewellery is a now a source of demand upside. Gasoline vehicles could start to use (more) platinum, given palladium is now more expensive. Platinum is undervalued vs 1) its history; 2) its cost of production, 3) gold and 4) palladium (at a discount for the first time since 2001).

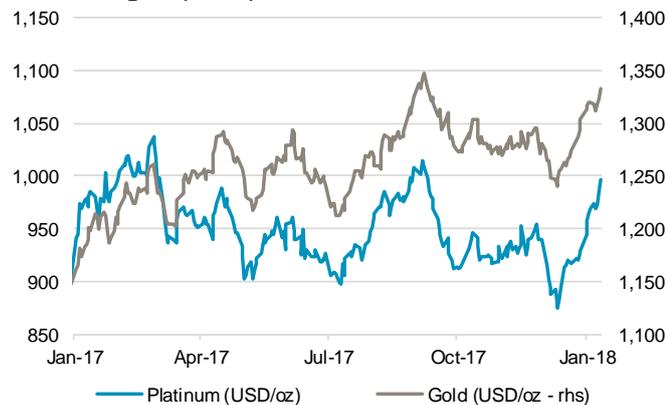
Negative – Secondary supply will positively surprise vs expectations, and mine supply declines will not materialise. Demand will continue to be hampered by declining European diesel share and electric vehicles will be adopted more quickly than expected. Platinum could underperform during equity bear markets (given its strong industrial demand component); and in a “risk off” environment it is better to buy gold than platinum (given lower correlation to equity performance).

Bitcoin vs platinum – limited crossover

The overlap between the investment cases for bitcoin and for platinum seem relative small (i.e. investors are likely to buy bitcoin for very different reasons to buying platinum), so the risk to platinum’s investment case from bitcoin seems limited.

The price drivers of bitcoin and platinum also seem very different; platinum’s recent trading history seems to have been explained by concerns on its industrial characteristics, i.e. concern that supply will outstrip demand. It is difficult to evaluate bitcoin in the same way; as, even though some market participants have attempted to value bitcoin based on the cost of the electricity used to “mine” it; the demand side of the equation is still in its infancy and incremental buying seems to be dominated by financial speculators.

Platinum, gold price performance – 2017 to date



Source: Bloomberg

Bitcoin, Ether price performance – 2017 to date



Source: coinbase.com

Bitcoin a bigger risk to gold demand than platinum demand?

There seems to be a greater crossover between the investment cases for gold and bitcoin. Investors hold gold for many reasons, but a subset of gold investors are protecting against recession, another financial crisis or more dramatically, the complete collapse of the financial system as we know it. Gold prices would be expected to increase significantly in these scenarios (and in the latter, gold could revert to being used as a currency as it has been in centuries past). Given bitcoin's decentralised nature, in a financial crisis it may be easier to obtain than fiat currencies and its peer to peer nature would allow it to be used without government intervention.

This theme is supported by reports that the popularity of bitcoin during 2017 negatively impacted retail mint sales of gold coins in the same period¹⁴. Now given bitcoin's fall over recent months, there is similarly commentary that investors are moving from bitcoin into gold. However, we note that given platinum's strong correlation with gold, if bitcoin dampens gold's investment case and price significantly, there is the potential for this effect to flow through to platinum.

Bitcoin is really a special case, analogies inevitably fall short

Investors buy gold for many reasons and "apocalypse protection" is only one of many. An allocation to gold should reduce risk in a diversified portfolio; whilst an allocation to bitcoin (i.e. in the form of futures) would increase portfolio risk given the volatility of bitcoin currently outstrips that of most traditional financial assets.

Bitcoin has a limited trading history (since 2009); and its regulation continues to evolve. Given that its potential for widespread use (i.e. as a mainstream currency) is a key tenet of a positive investment case; future regulation could have a meaningful impact on bitcoin's future value. Additionally, institutional investment demand for bitcoin is still untapped and remains a significant unknown. In this respect bitcoin's investment case is materially different to platinum, gold, and most other assets (except for other cryptocurrencies of course).

Source: WPIC Research, Bloomberg unless otherwise stated

¹⁴ [Gold Bugs Embrace Bitcoin, Upending Retail Sellers \(Wall Street Journal\)](#) – 1st November 2017

Platinum Essentials – Glossary

altcoin – any form of cryptocurrency that isn't bitcoin (e.g. ether, bitcoin cash etc)

bitcoin – the oldest, and currently largest form of cryptocurrency where the underlying blockchain is the Bitcoin protocol

Bitcoin – a decentralised peer to peer payments network, which allows transfer of cryptocurrencies (bitcoin) that operates as online cash

bitcoin mining – the process of adding transaction records to Bitcoin's public ledger of past transactions (the blockchain), and creating new bitcoins in each block

blockchain – a software platform where transactions in cryptocurrencies are recorded (e.g. Bitcoin, Ethereum are

cryptocurrency – a type of digital currency where its creation and transfer are underpinned by cryptography. S

cryptography – in this context, a method of storing and transmitting data in a particular form so that only its intended recipients can read and process it.

digital currency – money that exists only in digital form but has the characteristics of traditional money, without geographical or political borders. Digital currencies that are not cryptocurrencies are

ether – is a cryptocurrency created on the ethereum blockchain platform

ethereum – a blockchain company that created a cryptocurrency called ether. The technology is slightly different to Bitcoin and the use case is directed at smart contracts (e.g. as applicable in trade finance)

fiat money – a currency that a government has declared to be legal tender but is not backed by a physical commodity

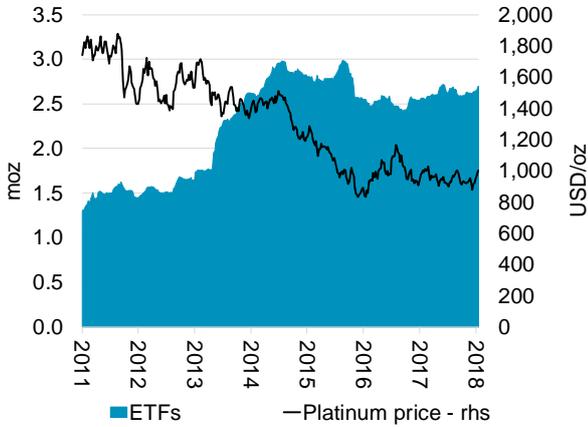
Initial Coin Offering (ICO) – is an unregulated means by which funds are raised for a new cryptocurrency venture

wallet – an address associated with cryptocurrencies owned by an entity. The wallet can be on a website, app, USB drive, or can be physically printed

Platinum Essentials – Charts – January 2018

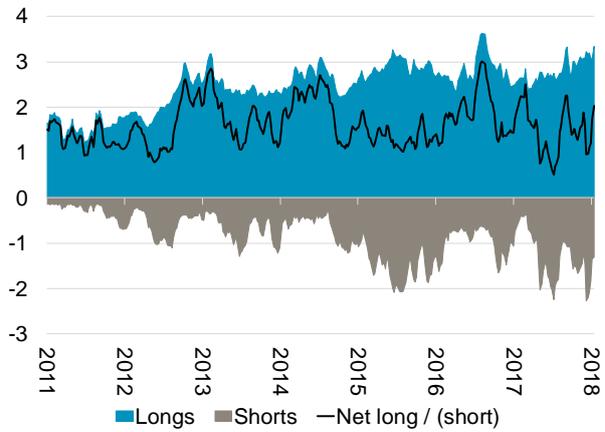
We show a summary of platinum investment holdings and price comparisons with other precious metals below

ETF holdings (moz) robust, platinum price USD/oz) resurgent



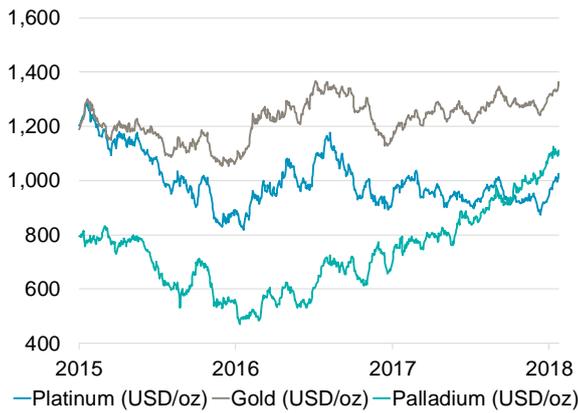
Source: Bloomberg, WPIC Research

Nymex positioning (moz); short positions falling



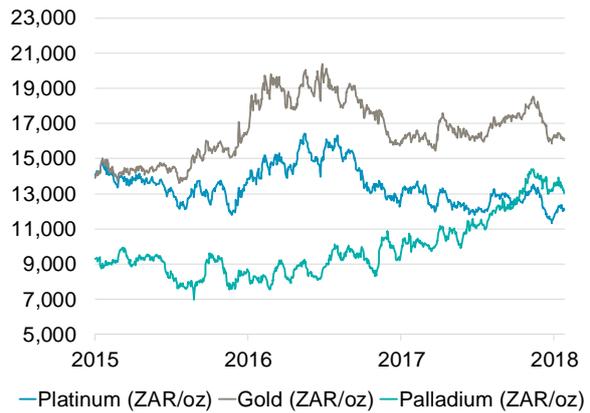
Source: Bloomberg, WPIC research

Platinum, palladium, gold prices (USD/oz)



Source: Bloomberg

Platinum, palladium, gold prices (ZAR/oz)



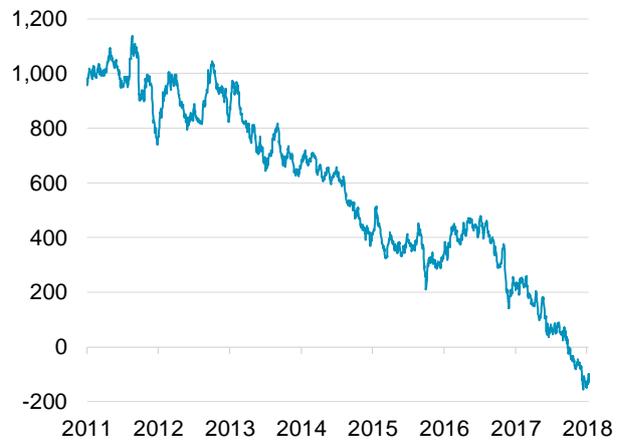
Source: Bloomberg, WPIC research

Platinum premium / (discount) to gold (USD/oz) - discount to gold stubbornly high



Source: Bloomberg, WPIC research

Platinum premium / (discount) to palladium (USD/oz) - premium to palladium at all time low



Source: Bloomberg, WPIC research

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