

Gold, Bitcoin and Financial Technology

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This article follows up on an earlier piece published in the *Alchemist*, *Gold and the Blockchain*, by Charlie Morris. It gives an anthropologist's view of the ways gold and Bitcoin are compared to each other and the current state of gold and blockchain technology, and includes follow-up interviews with several of the people discussed in Morris's article.

In early 2014, James Grant, writer and editor of the financial journal *Grant's Interest Rate Observer*, observed: "Gold is nature's true bitcoin." This might seem like a very strange analogy at first, since gold is a mined commodity that for thousands of years has been taken as currency, while Bitcoin was introduced in 2009 by a shadowy cryptographer who goes by the pseudonym Satoshi Nakamoto. At first glance, the differences between the two seem most apparent: gold is the quintessential physical form of value; Bitcoin is the invention of computer code. Gold has to be painstakingly removed from the ground, transported over long distances at great expense and stored with heavy security and vault costs; Bitcoins are created through the painstaking process of checking and confirming transactions on a public record and are stored on the hard drives of computers. A large proportion of the gold that has ever been mined is still in use; Bitcoins can be easily destroyed, as James Howells discovered to his cost when he spilled a glass of lemonade over his laptop. Gold seems to represent the past; Bitcoin the future.

But those with experience with either gold or Bitcoin usually see more similarities than differences between the two. In fact, Bitcoin was explicitly developed as a cryptographic version of gold and seeks to replicate it in its structure and mimic its appeal as a physical object.

As a 'crypto-currency' (that is, a currency based on the cryptographic encoding of electronic information), Bitcoin is a code-based currency that differs from most other currencies in that it does not depend on a government, bank or other centralised authority for payments, but on the 'peer-to-peer' generation of mathematical codes. New Bitcoin creation occurs when users (known as miners) check the transactions on the chronologically organised public ledger known as the 'blockchain'. Through this design, the validity of Bitcoin transactions is created collectively by a broadly dispersed network of users and therefore does not depend on a central authority like a federal or private bank.



This is the aspect of Bitcoin's structure that its proponents particularly like; the currency aims to replicate a system of distributed trust that does not depend on either banks or governments in the form of contractual liabilities to ratify its value. In this way, Bitcoin

seeks to emulate the lack of counterparty risk that proponents like about gold. Second, the code that lies behind Bitcoin includes a preset limit to the total number of Bitcoins that can be 'mined': 21 million, which is expected to be reached around 2040. This is intended to imitate gold's scarcity and its independence from economic policies that inflate and contract the money supply – policies that proponents of gold as a form of investment or wealth preservation often criticise.

Not only is the blockchain, the cryptographic structure that underlies Bitcoin, designed to imitate some of gold's features, but the iconography of Bitcoin explicitly draws on gold to shore up its brand. The symbol for Bitcoin is a gold-coloured coin with the B symbol on it, and those who create new Bitcoins through the labour of checking the public register of bitcoin transactions are known as 'miners'. Visual representations of Bitcoin and the Bitcoin economy draw heavily on the association with gold, as can be seen in the figures in this article. These images are intended to draw on the solidity and preciousness of gold, as a culturally important material, and also to make reference to the ways in which Bitcoin is intended to replicate gold's advantages (particularly lack of counterparty risk and scarcity, as I discussed above).

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It is clear that the inventors and users of Bitcoin see some of the advantages of gold and wish to incorporate them into the structure of new peer-to-peer digital currencies. And this has caused some in the bullion market to wonder what the point of these currencies really is. Why bother to invent Bitcoin, whose virtues lie in its similarity to gold, if we already have gold itself?

However, there are barriers to investing in gold, especially for retail investors and those not interested in or able to hold large quantities. Gold is relatively illiquid, expensive to transport and difficult to protect. Furthermore, some of the solutions developed in the past to improve access to gold have undermined its advantages. For instance, storing gold in banks and investing in ETFs raises the counterparty risk.

Even though these risks may be vanishingly small, they undercut the very reason people wanted to invest in gold in the first place, so can be a significant deterrent. In the past several years, a number of people have been trying to find a way for investors to buy and hold gold cheaply and easily without going through these traditional avenues, using software and other digital platforms as alternatives to traditional bank storage for gold. These fintech (financial technology) strategies are seeking to revolutionise the bullion markets. Many of them begin with the gold-Bitcoin analogy, or look to use or adapt the blockchain technology underlying Bitcoin.



In issue 79 of the *Alchemist* in October 2015, Charlie Morris, editor of *Atlas Pulse* and CEO of CCDATA.CC, wrote an article called Gold and the Blockchain, which laid out some of these ongoing efforts. I followed up with several of the people whose companies he described, to get their perspectives on how they see blockchain technology as useful for the gold market, what challenges they have faced and how they are trying to meet these challenges. In the second half of this article, I present these perspectives.

Things are extremely active in this space right now, as a bunch of fintech startups and established companies scramble to figure out ways to use Bitcoin or blockchain technology in the gold bullion market that are most efficient and most appealing to potential users. Several of the people I spoke to compared it to the period before the launching of the iPhone in 2007, when companies raced to bundle the newest technologies into one product that would take off. Jan Skoyles of the Real Asset Company described this period well, saying: "This ecosystem is so fresh and new. We are only just discovering what it can do."

In November 2015, I spoke with Jan Skoyles, Adam Cleary, formerly of Bullion Bitcoin, and Mike Greenacre of Autilla about their efforts to develop products in this space. Each of their companies is taking a different approach to the challenge of bringing the blockchain to the bullion market. The challenges they have faced and the ways of meeting those challenges show different aspects of the comparisons between gold and Bitcoin that I outlined earlier in this piece.

Adam Cleary, a former hedge fund manager, founded Bullion Bitcoin in 2013. He sought to use the blockchain technology to create a digital gold token, known as Bits of Bullion or BoB, that would be publicly recorded on the blockchain. Cleary saw that a successfully and broadly adopted digital gold token would reduce transaction costs in the bullion market, and imagined that Bitcoin might serve as 'the

oil' for a globalised, decentralised network of bullion trading. A system like this would build on the very broadly held trust that gold enjoys, while making it freely accessible and liquid all over the world, instead of the market being concentrated in London, Zurich, Hong Kong and a few other places. Cleary saw Bitcoin as a good candidate for the kind of broadly accepted digital gold token that is needed. However, he recognises that Bitcoin is still a very specialised market without the liquidity needed to make his system work. It may also be true that Bitcoin's somewhat 'wild' reputation and the heavy presence of Bitcoin speculators prevented Bullion Bitcoin from getting the traction it might otherwise have gotten. Cleary still believes that a digital gold token is the way forward for the bullion market and is concentrating on other projects that address the same problem and that may be more widely appealing.

The Real Asset Co. is a bullion dealer with its own digital platform based on the blockchain. The company has created its own marketplace, backed by gold stored in its vaults, with a target market of small and medium scale retail investors. The Real Asset Co.'s solution seeks to chart a middle way between ETFs and derivatives, which bring with them increased counterparty risk, and the London bullion market with its lack of transparency. Because all their transactions are resolved at the point of sale, they can avoid some of the regulatory burden found with other ventures based on Bitcoin.

Jan Skoyles, CEO of the Real Asset Co., also points out that the current moment, with its proliferation of proposed financial technologies for the bullion market, "has been fantastic for modernising the debate for why you would hold gold. With gold, there's an issue of education. Gold is seen as very expensive, and people also associate gold with war. With these technologies, you can see how gold could be sexy, exciting and new, and the gold market as something to jump on." Thus, she suggests that the products being developed to bring blockchain technology to the gold market may have a positive effect on that market beyond what they offer.

Autilla Limited is approaching the puzzle from another angle, through the wholesale bullion market. The company was founded in early 2013 and, according to its website, aims to "provide and develop fintech solutions for the financial commodity markets and other associated markets". Autilla is developing a digitised gold marketplace that would replace voice brokers in the wholesale bullion market. Acknowledging the revolutionary nature of Bitcoin, Autilla's CEO Mike Greenacre believes that the high proportion of investors in Bitcoin in relation to users makes it an inefficient tool for these purposes. For one thing, if the price of Bitcoins goes high enough, investors may just sit on them, thus reducing their use as a medium of exchange. Autilla's solution is a cryptographic currency known as G-bit, which is backed by physical gold. G-bit is expected to function within a distributed ledger, as in the case of Bitcoin, but one that is intended to be essentially valueless in itself and

that will circulate only within a group of members. The latter also allows for greater security for users and regulators. As Greenacre states: "We don't need full chapter and verse, but we do need to know a bit more [than with Bitcoin]." For this reason all Autilla users will be members. Autilla is constructing its own system of validation, which Greenacre acknowledges entails a bit more in terms of upfront costs and takes a bit more time than using Bitcoin miners, but allows it greater control and customisation. He expects peer-to-peer transactions to begin in late 2016.

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In our conversation, Greenacre also noted the broader possibilities for this kind of crypto-gold hybrid to create a gold-backed global payments system that could be open to many, many more people, including the vast numbers of 'unbanked' people in poor parts of the world. With such a system, many people without bank accounts, credit cards and other payment infrastructures could conduct business with minimal transaction costs and maximal reliability. This kind of system is a few years away certainly, but given the enormous amount of activity and investment in financial services for the poor (a major funding priority for the Bill and Melinda Gates Foundation, for instance), it may be coming sooner than we think.

I began this piece with a seeming paradox – the statement that "gold is nature's bitcoin". Readers of the *Alchemist* will immediately appreciate the falseness of that paradox. Nevertheless, general perceptions of the bullion market as outdated, elitist, opaque and illiquid persist. These new technological developments not only have the potential to bring more people into the bullion market, but also do change such perceptions, making gold a dynamic actor in the 21st century financial landscape.



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