

How gold and the blockchain can work together

By Dr. Thorsten Polleit (*)

A look into monetary history shows that people, when given freedom of choice, opted for precious metals as money. This doesn't come as a surprise. Precious metals have the physical properties a medium must have to serve as legal tender: They are scarce, homogenous, durable, divisible, mintable, and transportable. They are held in high esteem and represent considerable value per unit of weight. Gold fulfills these requirements *par excellence*, and this is why it has always been peoples' first choice in terms of money.

Gold has proven its merits as money for millennia; it is the ultimate means of payment. The former chairman of the Federal Reserve (Fed), Alan Greenspan, put it succinctly in 2014: "Gold is currency; no fiat currency, including the dollar, can match it." More recently, however, gold has been replaced by the state's unredeemable *fiat* money – for reasons rather more political than economic.

Austrian economist Ludwig von Mises had something interesting to say about this in 1940: "The gold standard makes the determination of money's purchasing power independent of the changing ambitions and doctrines of political parties and pressure groups. This is not a defect of the gold standard; it is its main excellence." Why did this happen?

Well, the state prefers money whose value can be altered at will – say, to influence overall demand, redistribute income, and to benefit some at the expense of the many. Gold money stands in the way of such machinations. Fiat money doesn't. On the contrary, fiat money can simply be printed up; can be created out of thin air.

Fiat money has serious economic and ethical drawbacks, though. It is chronically inflationary, widens the gap between poor and rich, triggers boom-and-bust cycles, and compounds the economy's debt burden. Most important, a fiat money regime allows the state to expand actually without limit, over time potentially transforming even a minimum state into a maximum state at the expense of individual liberty and freedom.

In the wake of the most recent financial and economic crisis of 2007–2008, many people have become concerned that their savings, mostly invested in fiat-denominated bank accounts and bonds, could be devaluated. This has prompted a search for 'good', or sound, money.

The new kids on the block are the digital currencies, most famous of which is the virtual unit 'bitcoin'. It is a digital currency generated by decentralized, internet-based computers rather than a central authority. Transactions through digital currencies such as bitcoin are confirmed, or validated, by a decentralized consensus system that uses a 'blockchain'. The latter is essentially a public digital ledger, an account statement for transactions among computers. The blockchain is saved on many computers so that it is practically impossible to manipulate. In the case of bitcoin specifically, the blockchain ensures that only the bitcoin's owner can make a transaction with his bitcoin, that the same bitcoin cannot be created manifold.

In this article, I will use bitcoin as my main example, although this technology can be applied to any number of similar digital currencies. However, this technology has now been used to provide a new means of transferring assets among people: the 'colored bitcoin'. A colored bitcoin – or something comparable using blockchain technology – represents a certain asset. For instance, physical gold can be made available for day-to-day transactions – for purchases and sales in supermarkets and on the internet – simply by transferring a *gold-backed* colored bitcoin from the bitcoin wallet of the buyer to the bitcoin wallet of the seller.

How could one obtain such a gold-backed bitcoin? You would buy, say, physical gold at a gold shop. The latter then issues a colored bitcoin, which represents the ownership of physical gold. The colored bitcoin is, economically speaking, a *gold substitute* (a *money substitute*, fully backed by physical gold). It can be used for making purchases and, upon the wish of its owner, it can be redeemed into physical gold at the gold shop at any time.

A colored bitcoin represents a physical thing or asset that exists outside the bitcoin network. It therefore carries with it a risk that the issuer will not live up to his promise. However, there are market solutions to this problem. For instance, the gold can be stored with a particularly trustworthy third party. Or, people hold colored bitcoins issued by various issuers. If the latter are seen to be of the same riskiness, they would trade at par to each other (after making allowance for possible storage and handling costs).

That said, the gold-on-the-blockchain technology appears to hold great potential when it comes to making possible a world of digital gold money transactions. So far, governments use regulation and taxation to inhibit and even prevent unencumbered competition among monies. However, the evolution of the blockchain largely circumvents many of the obstacles governments put in the way of a free market in money. Where it will lead is, of course, impossible to predict with certainty.

In any case, when we're comparing to government fiat money, digital currencies can offer attractive alternatives. The same goes for gold lovers, who may see blockchain technology as the means of conveying physical gold; and in the end digitized gold money could become an attractive and highly practical option that could actually replace fiat currencies around the world.



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