

Can cryptocurrencies unseat modern money?

The growing utilization of cryptocurrencies has led to fears that they may replace modern money as legal tender

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Modern state money is essentially a unit of account, fiat currency and legal tender. Examples of modern money would include, for example, the US, Canadian and the Australian dollar, the yen, the renminbi, the sterling pound and the Indian rupee. They are inconvertible into precious metals or foreign exchange at a fixed rate, prices of goods and services are generally expressed in these units, it is mandatory that all official books of accounts be maintained in these currency units only in their respective countries and finally as legal tender, all obligations due to/of the state must/will be settled in these units of accounts and the 'money thing' ordained by the state. Enforceable tax payments, fines and penalties are some of key obligations that the private sector must settle with the government.

There is another aspect of modern money which is important to understand: it is a financial liability, a promise to pay or an 'I owe you' (IOU). When paper currency was first issued in India it was a

promise to pay by the issuing authority, the colonial government at that time, a specified physical amount of silver, i.e. approximately 11.4 grams and 96% purity. The circulation of the paper rupee began to grow when the government declared it as legal tender so that tax payments could be settled with the paper rupee or in other words, the promissory note of the government itself. Today, as we know, the promise to pay by the state (which includes the central bank) will no longer be settled with a piece of silver but merely a new promissory note.

Money – an IOU – can be created by anyone. For instance, obligations that arise in the purchase of goods can be settled with an individual's or a firm's promissory note. However, 'final' settlement of these obligations will entail use of the financial liability of the state, which in India is the rupee note. In today's world, however, most obligations that arise in trade are settled using the financial liabilities of commercial banks called deposit accounts, i.e. current or savings accounts. Interbank transactions are then settled using the financial liabilities of the central bank that are commonly called reserves or reserve accounts. Commercial bank money has come to be widely accepted and used as the state agrees to settle obligations due to it with deposit accounts and not just its own currency. The essence of modern money is therefore best understood as financial liabilities rather than assets, in particular, physical assets like gold or silver that are no one's liabilities. This also has implications for traceability: given that deposit accounts appear in the ledger or books of accounts of independent entities, i.e. the bank and an individual or firm, it is difficult to hide transactions that utilize deposit accounts as a means of

settlement. On the other hand, transactions utilizing undeclared physical assets as a means of settlement can remain completely hidden from view of authorities.

Before delving into the essence of cryptocurrency, further elaboration on the use of physical assets for trade and exchange is necessary. Can a painting be sold for a *tola* of gold? Yes, there is nothing illegal about this transaction – essentially barter – *per se*. The problem is that in order to make it 'legal', books of accounts must be maintained and any tax obligations due to the government that arise from profits in the sale of the painting must be settled, not in *tola* of gold, but in rupees only, which could be in the form of currency notes or commercial bank deposit accounts. Further problems would arise in valuing the *tola* of gold in rupees. While its price today may be Rs 50,000 it could well change to Rs 60,000 or Rs 40,000 at the time of filing returns. It would therefore make sense to sell the painting for rupees, settle tax obligations and then store the desired balance as gold.

A physical asset like the old silver rupee did serve as a unit of account wherein prices of goods and services were expressed in terms of a physical quantity and purity (a rupee) of a metal. This is no longer so. The price of silver is today expressed in terms of an abstract unit of account, like the rupee or dollar, and its price just as all other commodities is determined by the forces of demand and supply.

The essence of cryptocurrency is more akin to physical assets like gold or silver than modern money. Since it has no physical form – physical Bitcoins are more like collectibles – they are sometimes

referred to as 'digital assets' but are nonetheless no one's liabilities. Buying a painting in Bitcoin faces the same issues if it were bought for a *tola* of gold. The question, however, is where do cryptocurrencies derive their value from? The answer is in its use as a means of remittances *without intermediaries*. Suppose a payment has to be made from A to B bypassing intermediaries all together. One way would be through the physical transportation of cash. Another could be by the conversion of rupees to gold or silver and its subsequent transportation to the location of B, which the latter can sell for cash. A more efficient way is through cryptocurrencies like Bitcoin.

Consider the case of a bank as an intermediary, with deposit accounts of both, A and B. To make a transfer from A to B, the bank would first verify whether A has an adequate balance in her account and then debit it while crediting that of B. Not only could this be expensive but also lacks confidentiality. Now imagine a situation where the bank is replaced by a set of computer servers and complex programs – blockchain technology – that verify whether A owns adequate Bitcoins and then transfers the necessary amount to B. No single entity exists with full access to the information of the transaction, rather it lies scattered among 'miners' across the world in the form of encrypted code. To commence the process of transfer, A would have to purchase Bitcoins in exchange for dollars or other fiat currencies. The price of the Bitcoin is expressed in terms of a fiat currency just like gold or silver and is determined by market forces. However, once purchased, she leaves no trace of her subsequent

transactions. Compensation to miners for operating the blockchain does not come from A or B but from issue of new Bitcoins to them.

By keeping the supply limited (Bitcoin is limited to 21 million), the demand for transaction secrecy and/or lower costs of remittance, attraction of speculation in cryptocurrencies has ensured an overall increase in value although it has also resulted in volatile prices of cryptocurrency. This brings us to another crucial difference between modern money and cryptocurrency: while the former as a financial liability is created through government spending or bank expansion of credit it can also be destroyed by taxes and loan paybacks respectively. This possible expansion or contraction in supply enables greater stability in its value. On the other hand, cryptocurrencies as digital assets cannot be destroyed once created, which then requires their supply to be capped to support the market price.

While it is presently inconceivable that cryptocurrencies could replace modern money as long as the latter remains legal tender, there are concerns that the growing utilization of the former for trade and exchange may destabilize the monetary system that now exists. People who believe in unfettered free markets and a minimalist state like the Austrian School see this as a positive development but others fear that the state's ability to leverage its monetary sovereignty for the common good of society may be undermined if the use of cryptocurrencies grows unchecked.

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