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There has been a lot of noise recently about electronic money, digital (or virtual) currencies, and cryptocurrencies based on blockchain technologies. These terms are often used interchangeably, but they are not the same thing. And one way to make sense of exactly how they are different is to think about them in terms of the power they confer on the Central Bank.

Electronic money has been gaining market share on cash at a steady pace ever since the invention of the credit card. New forms of electronic payments have accelerated this pace, with PayPal, for example, doing over $9 bn in revenue in 2015. Sweden is an oft-cited example of an economy that has become cashless to a significant extent, with over 80% of all transactions made electronically and with many vendors refusing cash payments at all. But, even in an economy where electronic payments are so widespread as to call it "cashless", those electronic payments are still backed by cash that is stored somewhere.

A digital currency system, on the other hand, is not so much the elimination of the widespread use of cash as it is a monetary system without reference to a cash base whatsoever. This offers some additional advantages beyond convenience. First, a digital currency system can significantly reduce the billions of dollars that banks collect from customers in credit card and other fees (and, likewise, such a system would reduce the enormous costs to banks of managing cash). And, while privacy is further undermined in such a system, by the same token it makes tax evasion more difficult. In addition, a virtual currency enables micropayments. Because a digital currency is just digits, the idea of, say, a penny, is a false construct. And as a result, more activities can be monetized through user fees, such as website hits or blog access.

But the notable feature of digital currency system is the power that it confers on the Central Bank. In particular, as Andrew Haldane and others have pointed out, with a digital currency, Central Banks can escape the zero bound on interest rates, thereby markedly enhancing the effectiveness of monetary policy. If savers cannot switch to cash, Central Banks can more easily impose a cost on maintaining bank balances, thereby more effectively influencing the velocity of money. One need only to look to the world of online gaming to see top-down monetary policy in action. Because users can't leave the virtual world, online multi-user gaming platforms can control their money supply to an extent to which Central Banks can only dream.

A blockchain-based cryptocurrency such as Bitcoin is also entirely digital, but it represents a relinquishment of Central Bank power, not an enhancement of it. A blockchain should be thought of as a community-maintained digital ledger of all the monetary transactions of the community. A blockchain system has a number of interesting (and potentially revolutionary) properties, but its critical feature is that this ledger is jointly maintained by members according to a set of pre-determined rules, and without reference to a central authority of any kind. As a monetary policy system, then, the salient feature of the blockchain is that the Central Bank loses complete control over the monetary supply dynamics in the economy. With the blockchain, nobody is in charge of the money supply; if the Central Bank is in charge, it's just digital money.

It is hard to imagine a scenario in which a Central Bank would voluntarily relinquish its most fundamental power. But this is, in fact, the feature of the blockchain system that its proponents most highly prize. Bitcoin has proved to be most popular in countries or during times when citizens fear that monetary policy authorities will inflate away the value of their savings (or, even worse, confiscate them). Venezuela is only the most recent example.

It is worth remembering, then, that monetary policy effectiveness relies fundamentally on Central Bank credibility, and further that such credibility is enhanced most effectively by 'hand tying'. So ironically, if monetary conditions are bad enough, the only way for a Central bank to exercise policy authority might be to relinquish it.