



Expert Insights

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Charting the evolution of programmable money

IBM Institute for
Business Value



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Talking points

Growing interest

Despite resistance from many commercial banks, central banks' interest in programmable money is growing.

Stable coins

A new digital currency, the stable coin, has better price stability and is gaining interest among central banks.

Lower fees

Stable coins may reduce fees for foreign exchange and cross-border transfers and payments.

Free market money?

In 1976, Friedrich Hayek, a Nobel Prize winning economist, postulated that great economic benefit, including the elimination of inflation, would result if governments were to relax controls over the issuance of currency.¹ In Hayek's view, when a central currency issuer uses the money supply to achieve a particular end—such as the regulation of interest rates—it actually hurts the price mechanism equilibrium in the long term. This, in turn, can provoke significant currency fluctuations, the opposite of what good monetary policy seeks to achieve. His stated belief was that the application of “free-market” principles to the issuance of currencies would help reduce or eliminate these fluctuations.

Now, more than 40 years later, we see his assertion playing out in cryptocurrencies, initial coin offerings (ICOs) and stable coins. While some banks and regulators still have some reservations, there is no contesting that these new financial instruments show great promise, even in their infancy.

Bitcoin and banks

Programmable money is real money represented in digital form, also known as tokens.² This digital currency is tracked with corresponding electronic ledgers, most popularly blockchains, enabling a transactional record that is publicly and securely shared. This ledger should preferably be based on open source software to promote sound governance, and to keep the programming interfaces equally available to banks and other participants.

The most famous digital currency—Bitcoin—thrilled its backers as it soared to near USD 20,000 in December of 2017. And just as quickly, its volatile nature had it crumble to USD 3,000 just a year later.³

The advent of Bitcoin was met with extreme skepticism by banks. And for many of them, the volatility and steep slide validated that skepticism. Most banks see cryptocurrencies as a risk to their clients, and a potential threat to their business model. As much as 40 percent of banking revenue in aggregate is derived from payments and other fees, which is already being eroded by non-bank financial services firms and Fintechs.⁴ So, banks' reaction to digital currency isn't unexpected. Nonetheless, the idea behind cryptocurrencies remains a hot topic.

Central banks' growing interest in programmable money

Despite the intense opposition from some commercial banks, central banks' interest in digital currencies hasn't waned; in fact, it is still emerging.⁵ Understanding that they may need to regulate some cryptocurrencies, central banks have been quietly but actively evaluating their merits and experimenting with their own version, called central bank digital currencies (CBDCs). In 2019, the Bank for International Settlements published a survey on central banks and CBDCs showing that while 85 percent of central banks say they are unlikely to issue a CBDC within the next three years, about a quarter of the central banks said they already have the authority to issue a CBDC or will soon have it.⁶ And a full 70 percent acknowledged they are studying the issue.⁷

Around the world, central banks remain vested in both sides of the discussion. Moreover, there is significant interest in establishing a middle ground to create marketplace equilibrium and stability. JP Morgan Chase's February 2019 announcement of JPM Coin, a digital token that will be used to instantly settle payments between the bank's clients, only confirms that interest.⁸

In the meantime, feeding the continued public interest in digital currencies is a new type of digital asset that can be used for electronic payments, promising better price stability than pure cryptocurrencies. Appropriately, these new assets have been dubbed stable coins. Stable coins are cryptocurrencies that are pegged to, and collateralized by, a fiat currency—the US dollar, for example—that is held in deposit at a financial institution. This backing allows for significantly less volatility and greater stability than their unpegged and uncollateralized crypto cousins. Stable coins are somewhere in-between cryptocurrencies, cash and, e-money. Stable coins are units of value issued by private entities to be used as fungible forms of payment, ideally within open networks, filling the void where proprietary e-money schemes leave off.

There are merits to stable coins when issued directly by central banks. For example, CBDCs may be effective monetary policy instruments to add liquidity quickly to the financial markets, which some people believe may have helped avert much of the fallout of the 2008 financial crisis.⁹ Commercial banks have indicated some concern about CBDCs because of the downside of allowing the public to hold deposits directly with central banks. If too many customers had a preference for central bank deposits, it could inadvertently create a “virtual run” on the commercial banking sector.

Stable coins may represent a happy medium providing commercial banks with an important role to play in the digital currency space as issuers of collateralized tokens that represent real money. Stable coins offer banks a new and easier path to participate in the digital economy. These coins may offer an alternative lending channel and attract “sticky deposits,” since it would typically be the tokens being exchanged and not the actual currency. Stable coins may create new market opportunities in the banking and lending industries that have otherwise become a low margin and highly impacted business.

The promise of CBDCs and stable coins represent the “re-nationalization” of new programmable money.

Economic theory

The very idea of blending digital value storage and value transmission is giving rise to a new generation of financial networks for businesses, entrepreneurs and application developers of all sizes and industries. Even the prospect of the ability to redesign supply chains, redefine business relationships, and transact in real time—anytime, anywhere in the world—is reason for commercial banks and central banks to stay engaged. Whether it’s a defensive measure or exploitation of an emerging banking paradigm, only time will tell.

If the advent of cryptocurrencies represented the “de-nationalization” of money, then the promise of CBDCs and stable coins represent the “re-nationalization” of new programmable money.

Stable coin use cases

Where are these new currencies likely to be used? While the possibilities are many, a few stand out. Real-time settlement of cross-border transactions is perhaps the most obvious. Consider the plight of migrant workers and expatriates who transfer money to their families back home. Currently, they are paying about seven percent per transaction and sometimes much more in emerging economies.¹⁰ The usage of stable coins might be able to cut those fees substantially and allow banks to extend services digitally where they cannot yet go physically. Similarly, it might add efficiencies to sources of financial aid in impoverished areas, bringing economic stability and growth to emerging markets. Stable coins could also be issued directly to individuals—eschewing potentially corrupted distribution channels. Those stable coins could then be redeemed at a local institution that recognizes the same collateral currency. Stable coins also hold potential in cross-border payments and microloans. The goal is to make these types of transactions frictionless, or at least reduce friction for the benefit of 1.7 billion adults who remain unbanked.¹¹

A brief history of US money

In the United States, between 1837 - 1863, it’s estimated that thousands of different types of money were printed and circulated by private banks, railroads, construction companies, restaurants, and churches.¹² The notion of paper money versus coinage minted in precious metals was a raging debate for decades prior, that went all the way to the top of the US executive branch. Andrew Jackson (who ironically adorns the US \$20 bill) was a vocal opponent of paper money and fought to have it abolished, along with the predecessor to the modern-day federal reserve system. The National Bank Act of 1863 reformed and centralized the issuance of paper money in the US.¹³

Greater choice in what form of currencies to use may ultimately be a good thing, and it's most likely inevitable in any case. Debate remains on the need for additional regulation of programmable money, such as governance on managing supply to maintain value. And asset classes require tighter definition and classification. But digital assets that can be exchanged in real time independent of currencies and asset classes present a new model of efficiency and transformation for global financial services that may someday change the world. It's more than just a passing fad and may indeed be the crest of a paradigm shift for the banking industry. At the very least, it's worth watching closely.

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Things to keep in mind

- » Technology is important, but it's not the main point. Blockchain is the journey, not the destination. Programmable money demonstrates the value of blockchain and other emerging technologies, not vice versa.
- » Monetary digital assets and the interconnected networks where they live are becoming the heart of the new global financial infrastructure.
- » CBDCs and other stable coin ecosystems are rapidly emerging. Those that use open source APIs and operate on publicly accessible networks may have a long-term advantage, as they provide monetary fungibility across currencies, geographies and financial institutions.

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