Money: The *Evolution* to Digital

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In a world hurtling toward a relentlessly connected digital economy, the expectations for how money functions are evolving. Whether domestic or cross-border, we now demand that payments operate seamlessly: instant, available around the clock, intuitive and transparent.

But the traditional banking system sometimes falls short of this standard, especially when it comes to international transactions. This raises a fundamental question: can conventional forms of money adapt to the demands of the digital age, or are we on the cusp of a new era where digital currencies will power our financial future?

Money is the beating heart of modern life. It rewards our work, quantifies value and enables the exchange of goods and services that fuels our economy. Across the globe, this essential function is managed by a system regulated by the state, composed of two tiers.

The first tier is occupied by central banks, responsible for controlling the supply of money, including the physical cash in circulation, and facilitating settlements between banks. At the second tier is commercial banks, where retail and corporate customers deposit their funds. While maintaining only a fraction of these deposits as reserves, commercial banks then make loans that in turn may drive economic growth. Most of the money circulating in the economy today is commercial bank money, held in bank accounts by individuals and companies. This system is, at its core, built on trust.

The trust in this system is fortified by deposit insurance, such as the Federal Deposit Insurance Corporation (FDIC) in the United States, which guarantees deposits up to $250,000. Furthermore, regulatory bodies oversee commercial banks to ensure sound risk management, e.g. through capital requirements and stress tests. These regulators strive to ensure the financial system's stability while ensuring banks operate safely to support economic growth.

In addition to regulating traditional lenders, these authorities oversee newer players in the financial landscape, including some financial technology (fintech) companies. These fintech firms issue e-money, which is a means of payment backed by money, which offers greater speed and convenience than might otherwise be available.

The Common Thread: Singleness of Value

Underpinning all these different forms of money and payment systems is the concept of singleness of value, where a unit of currency, whether it's a dollar or a euro, is universally accepted as a standard and consistent store of value. This inherent consistency provides confidence and predictability in transactions, making it easier for individuals and businesses to exchange money.

The majority of money in circulation today is nation-authorized currency, whether the physical money in your wallet, or the balance held at your bank. For centuries this sovereign currency has been the bedrock of economic systems. It draws its value from the authority of governments and central banks, serving as a medium of exchange for everyday transactions. In contrast, cryptocurrencies like Bitcoin are not conventional forms of "money" as they are not issued by a central bank. Cryptocurrencies are entirely digital and typically operate on decentralized networks using blockchain technology, distinct from traditional financial institutions. So how do cryptocurrencies work?

Take Bitcoin, for example. Transactions are grouped into blocks, which are secured and verified by a network of nodes (computers) through a process called mining. Miners use powerful computers to solve complex mathematical problems, with the first one to succeed earning the right to add the next block to the blockchain. The blockchain is a public ledger that records all Bitcoin transactions – a chain of blocks – each containing a set of transactions. To maintain the integrity of the blockchain, a consensus among its participants is required to validate transactions. If a majority of nodes agree that a transaction is valid, it is added to the blockchain. This consensus mechanism generally ensures trust and security.

While Bitcoin has witnessed significant growth since its inception in 2009, to be considered as money it faces challenges on multiple fronts. First, we are in somewhat uncharted territory, given that only regulated forms of money backed or issued by the central bank, have effectively fulfilled this role to date. Indeed, for a public cryptocurrency to serve effectively as a currency, it must meet several essential criteria (among others):

A Medium of Exchange:

Despite being more than a decade old, Bitcoin faces challenges as a practical medium of exchange. It's not universally accepted by merchants, and notably, buying and selling Bitcoin often requires the use of cryptocurrency exchanges, reintroducing the need for trusted third parties in what is intended to be a trustless system.

A Store of Value:

Throughout much of its history, Bitcoin's value has been marked by significant volatility. While it is known as a speculative investment, its lack of price stability poses challenges when considering it as a reliable form of currency.

A Unit of Account:

Bitcoin's design sets a cap of 21 million coins. This limited supply means that conventional monetary policy tools, such as printing more money, cannot be applied to Bitcoin. Furthermore, there is no central authority with the power to implement such policies. Strong Cryptocurrency advocates see this as an advantage.

Aside from the above challenges, this trustless system presents some new challenges to contemplate. For instance, a Bitcoin user that loses their private key (the unique access to the record of the Bitcoin) effectively loses their money. By design there is no competent authority to appeal or complain to.

Further, different countries have adopted varying approaches to cryptocurrency policy and regulation, creating compliance challenges and uncertainty for businesses and users.

The Cryptocurrency Landscape Expands

Bitcoin has blazed the trail, but has been followed by a plethora of cryptocurrencies, with more than 20,000 launched to date.[1] The burgeoning interest in digital currencies can be attributed, in part, to the rise of Ethereum. Ethereum operates on a global network of computers, running self-executing agreements called smart contracts, written in code. These smart contracts can automate financial transactions and have spurred the development of a wide range of decentralized applications and services, fueling the growing interest in the crypto space.

Nonetheless, cryptocurrencies have faced challenges, including regulatory uncertainty and price volatility, which hinder their role as everyday currencies. In response, stablecoins have emerged. Stablecoins aim to minimize price volatility, which may make them more suitable for daily transactions. Unlike cryptocurrencies such as Bitcoin, stablecoins aim to maintain a stable value. They are designed to have a relatively constant value, typically fixed to a benchmark, such as the US dollar. Some stablecoins are also backed by real-world assets, including commodities like oil or gold.

However, stablecoins are not without their challenges. Some issuers do not provide sufficient transparency regarding the assets backing the stablecoin, creating trust issues. Moreover, when stablecoins are backed by non-risk-free assets, their value may not remain stable, leading to the loss of a one-to-one peg with the US dollar during times of significant financial stress.

Prominent technology companies have long had their sights on financial intermediation. Some big tech firms are utilizing their technological expertise and extensive user bases to innovate in the payment space. These tech giants often serve as payment processors, facilitating online and mobile payments for businesses and consumers.

Some tech companies go even further, engaging in the development and promotion of cryptocurrencies for payments. Facebook, now known as Meta, announced the Libra (later renamed Diem) project in 2019. It aimed to create a global stablecoin for secure and low-cost cross-border payments, along with financial services for unbanked populations. It proposed a stablecoin called Libra, backed by a reserve of real-world assets to enhance stability.

However, its journey was marked by regulatory and political challenges. The project aimed to handle a significant amount of financial data, including transactions, balances and payment histories. The handling of such sensitive financial information by a social media company caused unease among users and regulators. The Diem project was shelved in 2022.

[1] See report at bankrate.com for details.

Central Bank Digital Currencies (CBDCs)

The rise of projects like Libra has coincided with increased activity among central banks in exploring financial technologies, particularly Central Bank Digital Currencies (CBDCs). A CBDC is a new form of money, issued directly by central banks only in digital form. Unlike cryptocurrencies, CBDC is a direct liability of the central bank, and the central bank would maintain public confidence in the value of the CBDC.

CBDCs have sparked interest among central banks, with 130 economies representing more than 98% of global GDP[2] actively exploring the concept, whether retail CBDC or wholesale CBDC. Motivations for issuing CBDCs vary, from enhancing payment systems and financial inclusion to addressing the decline in cash usage. They also aim to ensure the continued relevance of national currencies in an increasingly digital world. But they face challenges.

Currently, only a handful of CBDCs are in operation, and their adoption has been generally lukewarm.[3] For retail CBDCs to succeed, they must (among other things) gain the public's trust, be accessible to a broad range of users, including those without digital devices and internet access, and address privacy concerns while meeting regulatory requirements, e.g. anti-money laundering (AML) and know your customer (KYC). Moreover, coordinating CBDCs for cross-border transactions and achieving international interoperability is a complex process that requires international agreements and standards.

Another major concern is the potential competition with traditional bank deposits. Individuals and businesses may prefer holding CBDCs directly with the central bank, reducing the funds available to commercial banks to drive lending and investment, potentially stalling an engine of economic growth.

Innovation in Traditional Banking

Faced with the challenge from CBDCs, commercial banks are not standing still. In recent years, they have significantly enhanced their domestic payment capabilities through various channels. The adoption of domestic instant payment schemes in more than 60 countries[4] has improved the efficiency of domestic fund transfers. The introduction of payment tracking via Swift GPI has enhanced the transparency and effectiveness of cross-border transactions. And the adoption of standardized messaging formats, like ISO20022, enhances the integrity and uniformity of data in payment transactions.

Banks are also exploring the advantages of Distributed ledger technology (DLT) within their networks. DLT refers to technology that enables the operation and use of distributed ledgers as an information store that keeps records of transactions that are intended to be final, definitive and immutable.

DLT can be deployed on a private and a permissioned basis, generally making it compatible with a regulated environment. Many banks have engaged in experimentation and are actively developing DLT solutions, with a specific focus on fostering interoperability.

One such initiative is the Regulated Liability Network (RLN), a collaborative effort spanning the industry. RLN aims to provide continuous, programmable and guaranteed settlement using DLT in regulated currencies. This concept is being explored by institutions in the public and the private sectors, in particular by central and commercial banks. This could potentially speed up cross-border payments significantly. Initial experiments in the US and the UK[5] have shown promise, with technically viable and potentially legally sound processes offering potential benefits to businesses, such as improved customer journeys, cost-effectiveness and improved cash flow. The potential for tokenized sovereign currency is being further explored within the recently announced Project Agora. This Bank for International Settlements (BIS) sponsored initiative was announced earlier this year and brings together seven central banks and more than 40 commercial institutions to explore how tokenization can enhance wholesale cross-border payments.

Conclusion

The evolution of money is at a crossroads, with a multitude of potential paths, being explored across a range of industry experiments:

- The advent of new technology is opening up new possibilities for the form and function of money.
- Risk-focused and technology-neutral regulation remains critical for all forms of money; progress necessitates collaboration between the public and private sectors.
- Standardization and interoperability are essential, as value must flow seamlessly across jurisdictions and commercial platforms in the digital economy.

[2] See CBDC Tracker maintained by the Atlantic Council
[3] An overview of CBDC progress can be found at: Central Bank Digital Currency Tracker - Atlantic Council
[4] Real-Time Payments Spread Around The World (pymnts.com)
[5] See the UK RLN working group's recently published reports from its Experimentation Phase at https://www.ukfinance.org.uk

The future of money will take more than one path. And while the precise trajectory remains uncertain, the journey to seamless, instant, intuitive payments will undoubtedly be driven by innovation, technology, and the collaborative efforts of a diversity of stakeholders across both the private and public sectors.

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