

Introduction

Changes in the finance sector are deep-rooted and rather conspicuous. Fulfilling the motives of society, the form of money has evolved and greatly changed from the very first stages of trade, to up till now. We have reached a stage where the emergence of innovative currencies like cryptocurrencies, may possibly overshadow the conventional role of key central banks. It is one of the biggest changes in currency frameworks and perhaps the most pivotal since the advent of free-floating currencies.

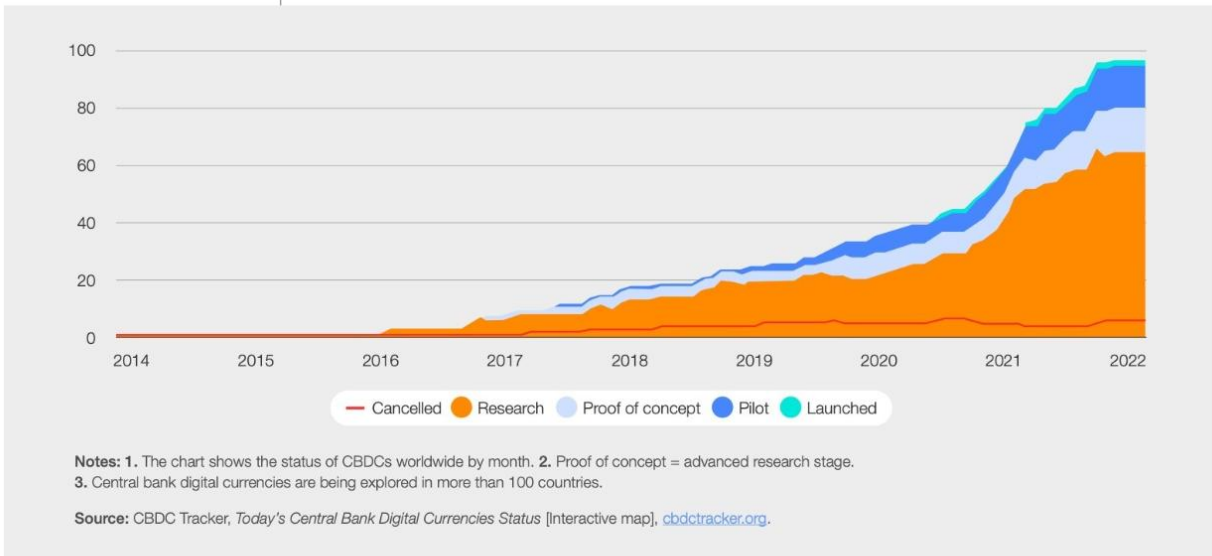
The rise of cryptocurrencies and the introduction of Central Bank Digital Currencies (CBDCs) offer more than just a simple technical advancement. It is a real shift in how society comprehends and interprets money, value, or economic power, where the view is implied: these currencies have something to do with a central bank. "A central bank digital currency (CBDC) is a type of digital currency issued by a country's central bank, resembling cryptocurrencies. However, its value is set by the central bank and is equivalent to the country's fiat currency" (Seth 2024). This transition challenges some deeply held beliefs regarding national boundaries and the dual structure of the banking system in the economy, where "transaction banking" plays a crucial role.

The Current Monetary Landscape

The traditional banking model is undergoing radical transformation as a result of shifting consumer demand as well as external influences within the global context. Recently, digital platforms have intercepted over 90 percent of global monetary activities, which means that central banks which were seen as guardians of stability are now at a crossroads. Such a shift has been most stark in advanced economies where the network of infrastructure necessary for digital payments has matured over time.

There are three trends that characterize the current monetary environment. First, during the past years the proportion of cash in circulation in Nordic countries has been reported to be on a considerable decline and in Denmark, for instance, there is a 30% dip while Norway reports a mere 3% of cash usage in transactions. This trend is developing more across the globe with some apparently cash intensive economies now addressing cashless payments. Secondly, the spread of private digital currencies is also significant, in that between 10% and 20% of people in important economies possess cryptocurrencies, indicating that people are beginning to accept buried modes of internal remittances. Third, the developments of financial technology are also rendering some banking services irrelevant as it offers alternative means of delivery. Mobile money and other payment application systems are expanding in both developed and developing nations.

FIGURE 1 Exponential growth in CBDC exploration



Rising numbers of countries are considering using CBDCs.

Image: World Economic Forum

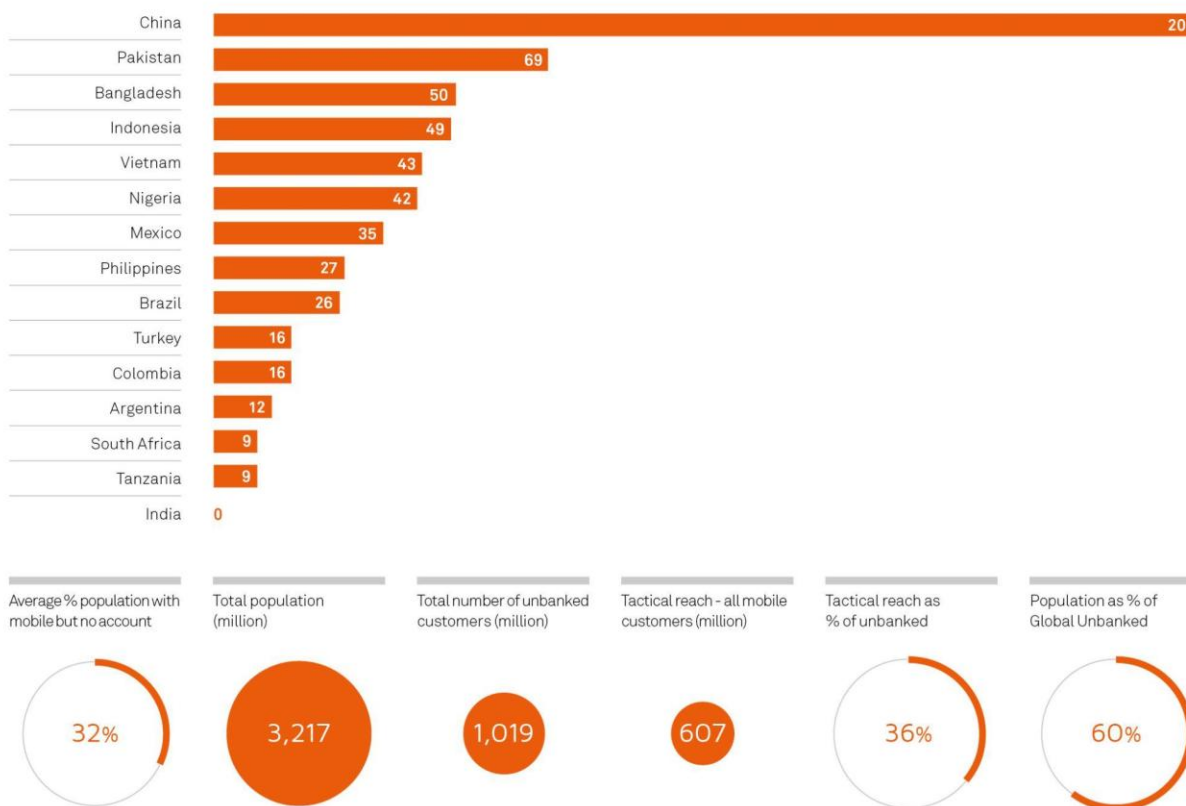
The reaction from conventional financial institutions has been overwhelming as nearly 90% of the world's central banks are conducting enquiries into digital currency initiatives. With the private digital currencies succeeding and there being more demand for speedy digital payments, understanding the potential CBDCs hold has become a priority.

Impact on Financial Inclusion and Monetary Policy

CBDCs can help increase financial inclusion by facilitating access to digital payments without the need for a bank account. A digital wallet issued by the central bank can be used for this purpose, as seen in countries like Nigeria (first African country to introduce a CBDC, 2021). Evidence of India also shows how a transition towards a digital economy has the potential to alleviate poverty, create jobs and ensure gender equality. Rural areas have benefited tremendously, as the use of the digital payment systems facilitated direct benefit transfers and curbed the misuse of government aid.

Tactical Reach Index: Unbanked Populations v Mobile Ownership

Number of people with a phone who outnumber those with a bank account



Source: Mastercard analysis based on figures from the World Bank's Global Findex Database, GSMA Intelligence, and Pew Research Center

Three hurdles now face the monetary policy. One-this involves a situation where the changes in interest rates may not be as effective where large domestic transactions are handled in foreign digital currencies, possibly attenuating the chance for central banks to influence domestic credit conditions. A second-liquidity is related to exogenous shocks that adhere to money supply changes because alterations in central bank monetary policy become less predictable with multiple digital currencies with circulation, which complicates conventional monetary instruments. Third-it becomes increasingly complex for monetary authorities to manage exchange rates as a transition to a digital economy accelerates, more specifically in emerging economies with weak monetary frameworks.

On the other hand, the cross-border implications of these digital currencies present their own sets of opportunities and challenges. They would speed up and cheapen international transactions while raising other concerns regarding capital flow management and monetary sovereignty. Furthermore, rapid currency substitution could constrain monetary authorities in the sense that they cannot maintain tight monetary policy to keep the exchange rate under control.

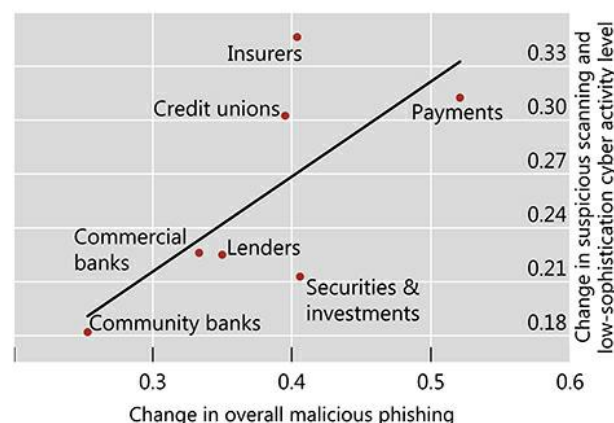
Financial Stability and Considerations on Regulation

A primary concern is bank disintermediation, whereby deposits traditionally with banks could move quickly to CBDCs, thus affecting the bank's funding costs and lending capacity and jeopardizing the credit availability in an economy. Thereby, banks might have to restructure their funding strategies and business models.

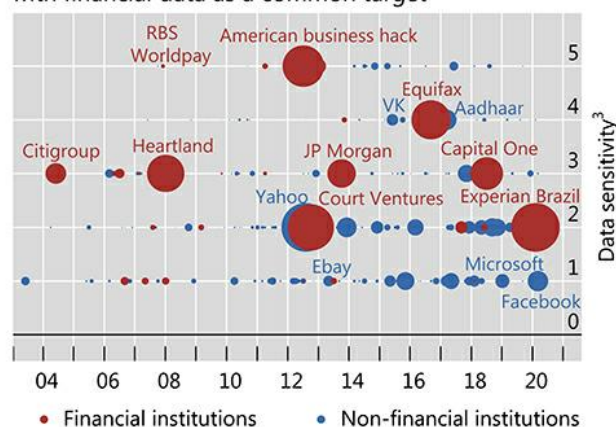
Addressing cyber risks and data breaches is key for CBDC design

Graph III.10

Payment services are a frequent target of cyber attacks¹



Large-scale data breaches have proliferated over time – with financial data as a common target²



¹ A positive value indicates an increase in cyber attacks. ² The size of each bubble corresponds to the number of records compromised in the breach. Publicly available information on the largest reported data breaches globally. ³ Data sensitivity is based on the type of information compromised in the breach: 1 = only email addresses and/or online information; 2 = social security number and/or personal details; 3 = credit card information; 4 = health and other personal records; 5 = full details.

Sources: I Aldasoro, J Frost, L Gambacorta and D Whyte, "Covid-19 and cyber risk in the financial sector", *BIS Bulletins*, no 37, January 2021; Financial Services Information Sharing and Analysis Center (FS-ISAC), *COVID-19 effects on cybersecurity survey*, July 2020; D McCandless and T Evans, "World's Biggest Data Breaches & Hacks", April 2021; US Federal Trade Commission; UK Information Commissioner's Office.

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The chart highlights that payment services are the most targeted by phishing and low-sophistication cyberattacks. Large-scale data breaches have increased over time, affecting both financial and non-financial institutions, often exposing highly sensitive data. This underscores the need for strong cybersecurity in CBDC design.

The regulatory response must adapt to meet new challenges, especially those occurring in cross-border transactions. Stance on international coordination becomes most important if CBDC interoperability with a common standard for regulation is to be achieved. The interplay of such challenges is compromised with the conflicting requests to ensure innovation over stability, privacy over transparency, and national sovereignty over international cooperation.

Stakeholder analysis

The central banks are forced to balance their monetary sovereignty and innovation. They should measure the benefits of improved policy implementation against risks to financial stability and organizational independence. Their success in the digital currency ventures will depend mainly upon their capacity to maintain public trust and stimulate innovation.

The central banks will expose the commercial banks to disintermediation risk because of direct access by customers. This'll compel drastic changes in business models, especially designating lending and deposit activities. These institutions may morph into providers of value-added financial services based on transaction processing, rather than plain transaction processing. Some banks have already repositioned themselves as digital financial services providers, realizing that they cannot be left behind as a result of a shift in consumer preferences toward online banking.

This'll result in improved payment efficiency and more financial inclusion but will also make them anxious over privacy and security. Programmable money will allow targeted services aimed at specific consumer groups, while governments may need to address their intentions as payments technology permits complete control over customers' finances. Particularly small and medium enterprises will greatly benefit from lower transaction costs and greater access to markets. They also face new risks, actually a shift in information technology compliance and oversight.

Case Study: Thailand Digital Wallet Programme

Thailand, through its recently launched digital wallets, induces important characteristics in future implementation of CBDC. The programme is characterized by targeted distribution, through associations such as half a month's payment-a cycle covering almost 50 million Thais, along with programmed restrictions for example, six-month expiration dates, limiting certain types of purchases.

The Thai experience outlines potential full advantages of excellent policy implements together with attendant excessive control challenges. Their implementation is an improvement on the existing digital payment infrastructures; hence demonstrating how CBDC can be merged into existing financial systems. The success of the program in reaching the underserved while maintaining the stability of money signals a success; thus, providing important lessons to other countries that might consider similar initiatives.

Future Evolution of Monetary Systems

In a hybrid framework, both the traditional and digital forms of money are likely to cohere, serving different purposes. Without doubt, the complexity of this transition process is manifest in the capacity of the new set of reserve currencies, which create the possibility of very rapid changes through network effect.

This gives rise to two scenarios: firstly, the niche adoption model whereby CBDCs act as payment conduits; and secondly, more sweeping transformational scenarios where greater currency substitution occurs. This transition could bring in an internationally competitive monetary framework, assuring balance yet allowing for volatility, where quick large shifts into and out of reserve assets would become possible through digital channels. The role of traditional reserve currencies may shift away in favor of digital alternatives, a transition possibly leading to a multipolar currency system.

Conclusion

The modernization of digital currencies is indeed a new chapter in monetary history that truly tries to shift what has always been accepted and believed about money, about central banking.

The successful transition needs close cooperation between the central banks, the financial industry, and their technology providers, along with careful consideration of the social and ethical implications. As the monetary systems evolve continually, the maintenance of balance between innovation and stability will be of critical importance in securing the continuous effectiveness of monetary policy and promoting financial inclusion and economic growth in an increasingly digital world. Moving forward, it is necessary to respectfully balance technological capacities with human needs so that digital currencies serve as arms of economic empowerment rather than those of chaos.

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