



# The role of CBDC's in bringing Transparency in the Economy

*Roopesh J.*

*Student, Department of Business Studies and Research Center  
Bangalore Institute of Technology*

*Jayanth H S*

*Student, Department of Computer Science  
and Engineering  
Bangalore Institute of Technology*

## ABSTRACT

This paper tries to elucidate the impact that CBDC's is going to on the economy by means of bringing Transparency to it. It details how CBDC's are more effective than any other incumbent money transfer mechanisms starting from fiat money to the other digital payment systems. According to the Global Corruption Index India stands at the 92<sup>nd</sup> Rank. Transparency in an Economy translates to accountability and reliability of financial institutions in distributing and transferring money. The Block-chain technology is one of the most disruptive technologies that will affect the public as Cryptocurrencies which are pioneers in this arena are volatile and private money. Countries all over the world are releasing their own CBDC's to be ahead of cryptocurrencies due to the inherent dangers it poses. The paper goes in detail how will CBDC's channelise government funds to beneficiaries directly by mitigating the role of Intermediaries, increasing transparency in by reducing friction in cross-border transactions and domestic payments, AML/CFT checks and many more. Lastly, the paper also explains how the Central Bank must maintain a balance between transparency and maintaining confidentiality of information to protect the privacy of individuals as well as strategic use of data by adopting Anonymous, pseudonymous or Confidential Data Privacy mechanisms<sup>1</sup>.

Keywords: CBDC: Central Bank Digital Currency

AML: Anti-Money Laundering

CFT: Combating Financing of Terrorism

## 1. Understanding Transparency in the Economical Context

Transparency is a word attributed to openness and credibility, fiscal transparency is the "Openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities – whether undertaken inside or outside the government sector – so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implication."<sup>2</sup>

But, when we consider the economy transparency has a more nuanced, complex and holistic view, as here not only the transactions Government but also the retail and wholesale transactions are also considered.

## 1.1 How the transparency of an Economy is determined

An Economy's transparency is determined by how much is known about the wealth that is generated, and is available for use. Here the term "Wealth" has been used to include monetary transactions both domestic and retail, and also transactions denominated in money or money's worth.

Hence data has to be disseminated by the Central Bank by identifying these four dimensions:<sup>3</sup>

- i. The data: coverage, periodicity, and timeliness
- ii. Access by the public;
- iii. Integrity of the disseminated data; and
- iv. Quality of the disseminated data.

## 1.2 How transparency in an Economy translates to Efficiency and Credibility<sup>4</sup>

Greater transparency and openness improve domestic revenue collection and facilitate greater accountability of governments, firms, and institutions to their citizens. Openness, on its own, is rarely sufficient to bring about transformative change, but open and transparent public institutions can help create the conditions for a shift in the balance of power and thus accelerate the emergence of inclusive political and economic institutions. Open and accountable institutions are also more likely to be able to adapt and evolve, thereby generating locally relevant and effective solutions to complex problems.

Transparency will bring the following benefits in an economy:

**1.2.1. Tackle crime and protect tax revenues:** Clamp down on money laundering and corruption by requiring public registries of beneficial ownership, thereby shedding light on the actual parties that own or control private entities' investments and companies.

**1.2.2. Prevent government resource theft and stop the resource curse:** Implement existing legislative directives that require listed companies to report payments to foreign governments for extractive resources.

Resource curse is the phenomenon where countries with fewer natural resources but better transparency outperform countries with more natural resources but less transparency.

Further, transparency in the government ensures that tax-payers money are being used not for individual ends.

**1.2.3. Improve assistance:** Ensure that taxpayers, and developing-country governments and other stakeholders have access to information about assistance programs (e.g., budgets, project spending, locations, and results) in a highly transparent, internationally comparable, and user-friendly format.

**1.2.4. Make government procurement more efficient:** Implement the global principles for open contracting and the open contracting data standard, which will help make the taxpayers spending less susceptible to corrupt practices.

## 2. How CBDC's are bringing transparency with other incumbent Digital currency forms

With the developments in the economy and the evolution of the payments system, the form and functions of money has changed over time, and it will continue to influence the future course of currency. The concept of money has experienced evolution from Commodity to Metallic Currency to Paper Currency to Digital Currency.

Digital payments have a distinct advantage over metallic and paper currency in bringing transparency as transactions can be tracked by the Bank, whereas in cash payments it is completely anonymous leading to Money laundering, money getting absorbed by middlemen and so on up to funding of terrorist activities.

The changing features of money are defining new financial landscape of the economy. Further, with the advent of cutting-edge technologies, digitalization of money is the next milestone in the monetary history. Advancement in technology has made it possible for the development of new form of money viz. Central Bank Digital Currencies (CBDCs).

India has enacted a separate law for Payment and Settlement Systems which has enabled an orderly development of the payment eco-system in the country. The digital payment systems are affordable, accessible, convenient, efficient, safe, secure and available 24x7x365 days a year. This striking shift in payment preference has been due to the creation of robust round the clock electronic payment systems such as RTGS and NEFT, IMPS and UPI for instant payment settlement. The introduction of mobile based payment systems such as BBPS, and NETC to facilitate electronic toll payments have transformed the payments ecosystem. The facilitation of non-bank FinTech firms in the payment ecosystem as PPI issuers, Bharat Bill Payment Operating Units BBPOUs and third-party application providers in the UPI platform have furthered the adoption of digital payments in the country.

The role of CBDC here is that it is the form of fiat money of the central bank in a digital form. The difference between other Digital payments mentioned earlier and CBDC is that the role of Banks as seen in digital payments is not there in CBDC. Hence the higher impact of CBDC in bringing transparency.

Due to their potential for being a form of fiat money which is apparently more transparent, it has the enhanced ability to check AML and CFT.

### 3. CBDC's as Government substitutes of Cryptocurrencies.

Both Digital Currencies (CBDC's) and Digital Assets (Cryptocurrencies) have the same technology which is blockchain. A CBDC is a digital payment instrument, denominated in the national unit of account, that is a direct liability of the central bank.

Practicality and Evolution has fuelled the evolution of legal tender from barter system, metallic coins, Paper notes to digital currencies. Digital Currencies a.k.a. CBDC's and Digital Assets a.k.a. Cryptocurrencies have the same underlying technology which is blockchain. The difference between these can be summarised as below:

#### 3.1. Transaction verification:

In blockchain it is necessary to have a verification mechanism to assess how genuine the transaction is, Cryptocurrencies use Distributed ledger mechanism for verification whereas CBDC's use Centralised ledger mechanism for verification.

#### 3.2. Stability

Cryptocurrencies value are subjected to market trends and behaviour, whereas Digital currencies are stable as they are the digital form of fiat money.

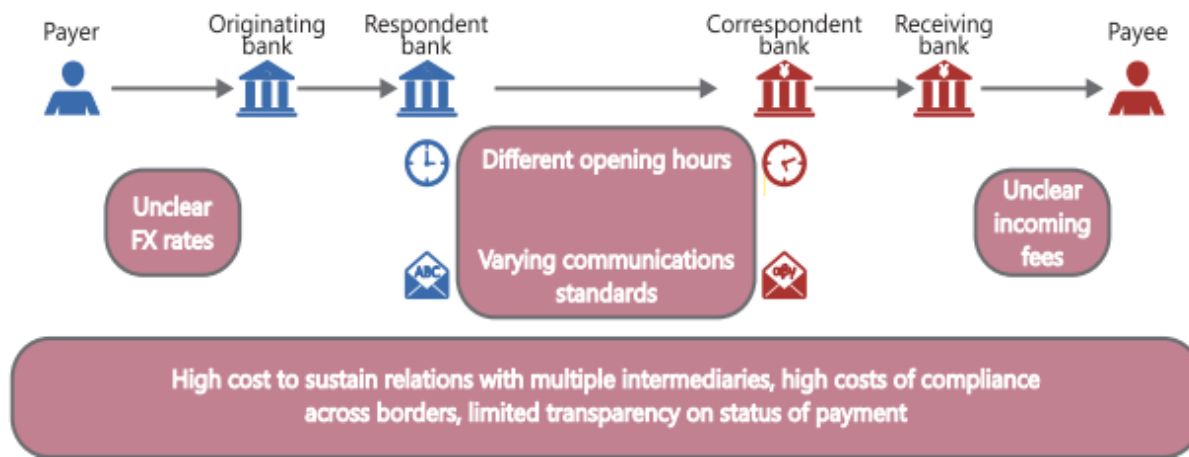
#### 3.3. Privacy

This is the most significant trade-off that is done when Digital Currencies offer transparency. All classified information of Individuals will be available to the reserve bank in the case of CBDC's.

#### 3.4. Government Supervision

While this subject is still nascent, whether allowing Cryptocurrencies to run as a parallel economy would protect the welfare of its users is a dilemma. As Cryptocurrencies runs this huge risk of letting the economy becoming disruptive. There would be no regulatory bodies which has control over them. Hence this might be the main reason Central Banks all over the world are going for Cryptocurrencies.

#### 4. Bringing Transparency in Cross Border Transactions



#### Frictions in current Cross Border Transactions

Cross-border payments are commonly criticised for their high cost, low speed, limited access and insufficient transparency. In the current scenario cross border payments are time-consuming due to Red-tapism, due to excessive compliances that has to be met, and many number of intermediaries.

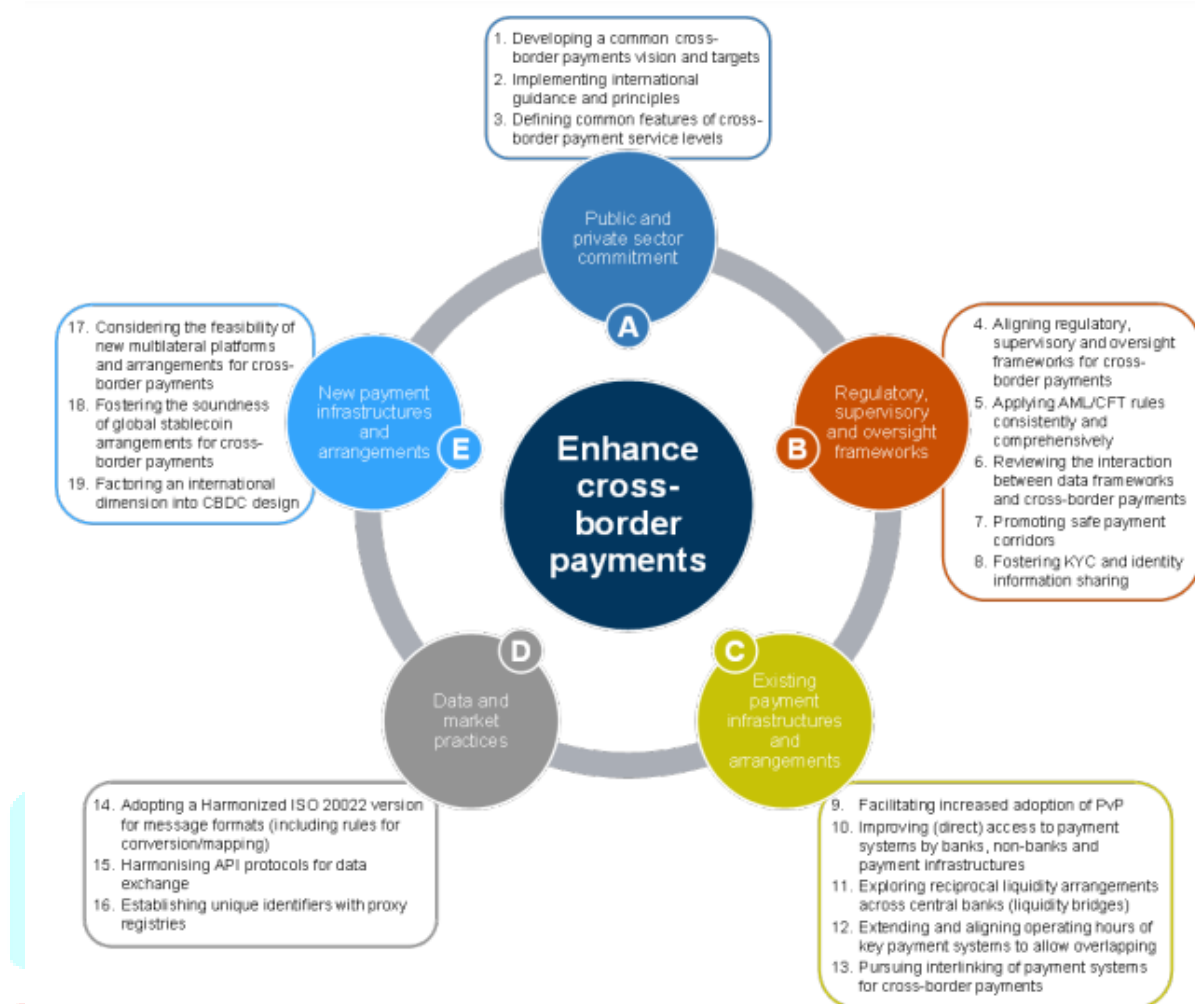
In 2020, the G20 made enhancing cross-border payments a priority. Making cross-border payments, including remittances, faster, cheaper, and more transparent and inclusive, while maintaining their safety and security, would have widespread benefits for citizens, businesses, and economies worldwide, supporting economic growth, international trade, global development, and financial inclusion.

The FSB, in coordination with the Committee on Payments and Market Infrastructures (CPMI) and other relevant international organisations and standard-setting bodies, developed a roadmap to address these challenges. The G20 Leaders endorsed the roadmap at their November 2020 Summit.

Main focus areas of the road-map:

- Focus area A: Committing to a joint public and private sector vision to enhance cross-border payments
- Focus area B: Coordinating on regulatory, supervisory and oversight frameworks
- Focus area C: Improving existing payment infrastructures and arrangements to support the requirements of the cross-border payments market
- Focus area D: Increasing data quality and straight-through processing by enhancing data and market practices

#### 4.1 Building blocks of the Road-Map for enhancing Cross Border Transactions



The roadmap contains 19 building blocks

- 4.2.1. Building block 1: Developing a common cross-border payments vision and targets
- 4.2.2. Building block 2: Implementing international guidance and principles
- 4.2.3. Building block 3: Defining common features of cross-border payment service levels
- 4.2.4. Building block 4: Aligning regulatory, supervisory and oversight frameworks for cross border payments
- 4.2.5. Building block 5: Applying AML/CFT rules consistently and comprehensively
- 4.2.6. Building block 6: Reviewing the interaction between data frameworks and cross-border payments
- 4.2.7. Building block 7: Promoting safe payment corridors
- 4.2.8. Building block 8: Fostering KYC and identity sharing
- 4.2.9. Building block 9 - Facilitating increased adoption of PvP
- 4.2.10. Building block 10 - Improving (direct) access to payment systems by banks, non-banks and payment infrastructures
- 4.2.11. Building block 11 - Exploring reciprocal liquidity arrangements across central banks (liquidity bridges)
- 4.2.12. Building block 12 - Extending and aligning operating hours of key payment systems to allow overlapping.
- 4.2.13. Building block 13 - Pursuing interlinking of payment systems for cross-border payments
- 4.2.14. Building block 14 - Adopting a harmonised ISO 20022 version for message formats (including rules for Conversion/Mapping)
- 4.2.15. Building block 15 - Harmonising API protocols for data exchange
- 4.2.16. Building block 16: Establishing unique identifiers with proxy registries
- 4.2.17. Building block 17 - Considering the feasibility of new multilateral platforms and arrangements for cross-border payments
- 4.2.18. Building block 18 - Fostering the soundness of global Stable-coin arrangements for Cross-Border Payments
- 4.2.19. Building block 19 - Factoring an international dimension into CBDC design

Globally, nine out of 10 central banks are actively exploring digital currencies — often using different technologies and with a primary focus on domestic use. For the potential of CBDCs to be fully realised across borders, these digital currencies need to overcome inherent differences to interact with each other, as well as with traditional fiat currencies.

SWIFT, in collaboration with Capgemini, achieved CBDC-to-CBDC transactions between different DLT networks based on popular Quorum and Corda technologies, as well as fiat-to-CBDC flows between these networks and a real-time gross settlement system. The success showed that the blockchain networks could be interlinked for cross-border payments through a single gateway, and that SWIFT's new transaction management capabilities could orchestrate all inter-network communication.

Inclusivity and Interoperability are the central pillars of the financial ecosystem, and innovation is a major step towards unlocking the potential of the digital future. For CBDCs, SWIFT's solution will enable central banks to connect their own networks simply and directly to all the other payments systems in the world through a single gateway, ensuring the instant and smooth flow of cross-border payments.

Tokenisation has great potential when it comes to strengthening liquidity in markets and increasing access to investment opportunities, and SWIFT's existing infrastructure can ensure these benefits can be realised at the earliest opportunity, by as many people as possible.

The experiments are part of SWIFT's extensive innovation agenda in support of its strategic focus on enabling instant, frictionless and interoperable cross-border transactions. The cooperative, which connects more than 11,500 financial institutions and 4 billion accounts across 200 countries and territories, was created to bridge geographies, technologies and currencies. And it has been transforming the underlying infrastructure of the global economy at pace to meet the rapidly changing requirements of businesses and consumers. This includes a new standard, SWIFT Go, for low value payments, and services like Payment Pre-validation that uses predictive intelligence to pre-check international payments before they begin to prevent common mistakes that cause delays.

SWIFT is a global member owned cooperative and the world's leading provider of secure financial messaging services. They provide the community with a platform for messaging and standards for communicating, and offer products and services to facilitate access and integration, identification, analysis and regulatory compliance.

#### 5. Bringing transparency in Government Public Investment

Although huge amounts of funds are allocated for Social and Public Welfare, due to the role of middlemen there is a lot of scope for government funds not fulfilling its intended purpose, whereas it is used to serve personal ends of middle men.

With CBDC's it can be ensured that Government funds go to the intended Beneficiaries at the right time, without the role of any middlemen.

#### 6. Combating AML/CFT

CBDC provides an advantage of a very resilient system as the central bank has complete knowledge of retail account balances which allows it to honour claims with ease since all the information needed for verification is readily available. The major disadvantage of this model is that it marginalises private sector involvement and hinders innovation in the payment system.

CBDC's are designed for disintermediation where central bank interacts directly with the end customers. This model has the potential to disrupt the current financial system and will put additional burden on the central banks in terms of managing customer on-boarding, KYC and AML/CFT checks, which may prove difficult and costly to the central bank

## Data Privacy concerns associated with CBDC

With the looming privacy concerns surrounding around CBDC's David Chaum who is also called as the Godfather of Cryptocurrency suggested for a pilot with the Swiss National Bank(SNB) on Project Tourbillon, designed for Privacy-Focused Central Bank money.

The project will be developed under the auspices of the Bank of International Settlements' (BIS) Innovation Hub. It will add to the range of CDBC pilots already in the works by the BIS innovation Hub, like the projects Helvetia and Mariana- both involving the SNB too. The underlying technology will combine privacy preserving quantum-resistant cryptography developed by Chaum. The system will be scalable as it will be using an architecture that is compatible with, but not based on distributed ledger technology. According to Chaum, the underlying tech will help design CBDC in a privacy protecting fashion. China is example for omnipresent digital surveillance by the government. The technology can prevent both scenarios:

1. Preventing anyone from tracing how people use their money.
2. Allowing the law enforcement to track criminal funds.

The Data protection bill of 2022 exempts the central government which is the biggest fiduciary of consumer data. With this there are concerns about data of consumers lying with the government.

But Although the government will be having access to classifies information, it is said to not have genuine interest in using data for commercial purposes.

### Bibliography

1. Central Bank Digital Currency – Is This the Future of Money
2. Fiscal Transparency and Economic Outcomes-IMF
3. International monetary fund, <https://dsbb.imf.org/sdds/overview>
4. Center for Global development, <https://www.cgdev.org/publication/ft/promoting-development-power-economic-transparency>

