

CONCEPTUAL RESEARCH BASED ON ANALYTICAL APPROACH FOR DIGITAL CURRENCY FOR RECENT PERSEPECTIVE

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Abstract - In every sphere, the age of information and communication technologies has brought about numerous opportunities. The financial and business sector is the sector that has benefited the most from these recent developments. Financial institutions will face both opportunities and challenges as a result of the scale and speed of technological advancement, as well as the perception of customers and widespread acceptance of these technologies and disruptions. Given the scale and adaptability required for the digital age, systems that have traditionally been used for savings and investments are insufficient. Financial institutions are responding to this array with new initiatives for digitization and innovation, utilizing analytics, cloud technologies, and other novel options to meet customer expectations. Despite having a complicated system of arbitrary rules and regulations, India, a nation with a large economy and a despotic regime, experiences decent economic growth.

Keywords: India, Blockchain, digital currency, and cryptography

1. INTRODUCTION

The digital currency was made available to the public in the form of Bitcoin in 2009. The peer-to-peer electronic cash system was then used to introduce it as an alternative currency so that online payments could be sent directly from one financial party to another. One of the most important characteristics of paper currency, namely that it does not serve as a medium of exchange for a nation, is what set Bitcoin apart from paper currency [1].

The ability of the parties involved in the transaction to remain anonymous is one of the benefits of using cryptocurrencies (digital currencies). Some of the most widely used digital currencies are Ripple, Bitcoin, and Ethereum. Demand for digital currency, specifically Bitcoin, began to rise gradually and then suddenly after a year of its introduction. Up until February 2011, the price of bitcoin was around \$1, and after four months, it was around \$30. In the middle of 2015, the price reached somewhere around \$290. It was no secret that bitcoin gained popularity, and when it started trading in January 2016, its trading skyrocketed. It was trading at \$429 per coin when it reached its highest point, which was \$4269 [2].

Despite the fact that these crypt currencies were gaining widespread acceptance as an investment option and in a variety of businesses around the world, opinions regarding them have always been divided. Certain individuals imagine that paperless monetary forms will be the following enormous critical player in the space of the monetary framework. Certain individuals likewise contend that we as a worldwide world need something that doesn't go under the domain of the public authority and can be exchanged freely and significantly. However, there are some individuals who believe it will take some time for them to gain confidence in the new currency

system. Additionally, some analysts argued that moving toward the regime might result in information issues. There may be some economic value in resolving that issue [3].

Some governments decided to use digital or cryptic currencies despite these arguments. Some people chose not to make a choice at all. The remaining individuals came to the conclusion that outlawing these currencies would be beneficial to the economy in question. The governments that pushed for the digitalization of currencies did so because they thought it could help solve long-term problems like money laundering and tax evasion and boost competition.

The government, in its decision to reject digital currencies, argued that crypt currencies should only be used with extreme caution. They were of the opinion that using these currencies offered no security because they were not governed by any authority or government. Thus, assuming there is any specialized error or stage glitch, there will be no support to the financial backers.

The Reserve Bank of India (RBI), India's central bank, announced a ban on the sale and purchase of crypt currency for RBI-regulated entities at the beginning of 2018. Therefore, cryptocurrencies are prohibited in India. The belief that these digital currencies could pose a risk, both financially and legally, prompted the ban. The Reserve Bank of India (RBI) issued a warning to the public regarding the likely security risks associated with digital currency and customer safety. According to the central bank, these currencies are used for peer-to-peer payments. There is no established procedure for dealing with customer issues. Digital currency was not given legal status in relation to these concerns about protecting customers.

2 REVIEW OF LITERATURE

2.1 Scope of Central Bank Digital Currency

The Central Bank Digital Currency is an electronic currency that will be accepted as payment by the Indian government. It should have store value and exchange value, and the government should be responsible for guaranteeing its unit of account, just like with fiat currency. There is currently no fiduciary reserve system, but any government can implement one by keeping reserves in metals, foreign currencies, or SDRs, which will ensure the currency's stability. Under the block chain technology with distributed ledger, CBDC produces very fast transaction processes with millions of transactions per second at minimal cost, producing legal tender with one-to-one exchangeable between notes and CBDC, which will be more robust, efficient, trusted, and regulated (Sankar, 2021). The introduction of CBDC has the potential to provide significant benefits, such as reducing cash dependence, lowering transaction costs, which will produce higher seigniorage, lowering settlement risks, and being legal tender. With a control mechanism in the hands of a government or agency, the centralized block chain technology carries less risk. It will speed up the course of improvement of Fintech and Bigtech houses in working the installment system both locally as well as globally under the multi-plan CBDC models of exchanges. On the other hand, if an economy's monetary base is redistributed decentralizedly, the wealthier individuals will benefit more quickly than the less fortunate. If the effective monetary policies of the central bank and the legal framework of the government can control the system of risk factors, the process of money

laundering, the closure of banks, and quick regulations of non-banks and financial institutions, including foreign banks, then the CBDC must be a revolutionary process for changing the concept of the history of money. The cross-border payment system will be quick, safe, reliable, and cost-effective. It will also make it easier to use, perfect, scientific, and stable for the exchange rate mechanism between countries. Controlling cryptocurrencies, private money, fair competition with private financial institutions and non-banks around the world, and the possibility of integrating upcoming financial reform with technological innovation to achieve faster growth are the most significant socioeconomic and geopolitical benefits of CBDC. According to Prasad (2021), a central bank can successfully implement monetary policy in retail CBDC even when interest rates are zero or negative. Since a central bank can increase or decrease the supply of outside money to escape the liquidity trap, it has the ability to significantly reduce deflationary risk by injecting outside money into weak economic activity or a looming crisis when banks slow down. By creating a budget deficit, even the government can force the central bank to use CBDC in its place.

3 ISSUES OF MONETARY POLICY

The core of CBDC lies on its definition of plan by which the financial arrangement relies on. Since CBDC's experiments and results have only just begun, its impact on monetary policy raises a plethora of issues for expert-economist-developed analyses. The central bank is the sovereign and supreme institutional power to increase or decrease the stock of money because it is only the source of supply, according to Bjerg (2017). As a result, the monetary policy in the central bank digital currency system is understood to be simple. As a result, the central bank's monetary policy will not be affected by changes to interest rates, the creation of money by commercial banks, or the reserve of the central bank.

However, CBDC's overall monetary policy was linked to its design and features. CBDC can support monetary policy, perform financial stability, protect the national payment system, and provide universal access to electronic payments because it is electronic, a central bank's fiat liability, used for payment settlement, and treated as a store of value. CBDC can be interest-bearing, short- and long-term liabilities to the central bank that can stabilize output and inflation. It can pay interest at two different rates to both banks and nonbanks. The former controls monetary policy, while the latter controls demand for CBDC. CBDC's zero interest rate could not implement monetary policy. To ensure monetary stability, CBDC can be freely converted into reserves and cash in central bank and commercial bank deposits. To achieve the macroeconomic goal of stability, CBDC should play an interest-bearing role in monetary policy when it is freely convertible into bank money and commercial bank deposits. There will be no impact on monetary policy if the central bank uses CBDC to replace bank notes; however, when it begins servicing, monetary policy has many effects. The central bank must increase the money supply in the interest-bearing CBDC floor system, but demand is lower than supply under the quantitative easing program because no other sector holds reserves. Depending on the role banks play in the monetary transmission mechanism, the central bank can offer different interest rates to bank and non-bank

holders of CBDC. As a result, the monetary policy stance would be enhanced by the spread between the nonbank CBDC rate and the banking sector CBDC rate.

According to Pfister (2017), the widespread use of CBDC could lead to a deflationary situation in a growing economy, which would disrupt the potential of monetary policy and business cycles. If sovereign currencies suffer a significant credibility loss, these risks arise. Additionally, the transmission mechanism's limitation on monetary policy may prevail. Throughout its existence, the central bank will be able to set negative interest rates. However, due to the increased substitutability of central and commercial bank liabilities, the lender of last resort function of the central bank may be expanded. On the issue of refinancing, both will compete, and the public will accept it. By withdrawing liquidity rather than providing it, the central bank can form monetary policy and reduce its demand for reserves. According to Kumhof and Noone (2018), depositors' fundamental ability to exchange commercial bank money for central bank money on demand is essential for maintaining confidence in bank deposits. It was made possible by the central bank's deposit insurance, liquidity regulations, and lender of last resort functions.

The implementation of monetary policy, the transmission mechanism, and, in extreme cases, the monetary policy strategy would probably all be affected by CBDC. However, the magnitude of these effects would be determined by design in addition to demand for this new currency. Many explanations acknowledged that the introduction of CBDC could have an effect on the transmission mechanism for monetary policy only if it was interest-bearing. In contrast, only when interest rates are close to zero is the transmission mechanism impacted (Beniak, 2019).

By exceeding the zero lower bound, Brokke and Engen (2019) ensured that an entirely digital CBDC could theoretically effectively introduce more flexibility for the central bank's monetary policy. Consumers would be encouraged to move their funds there if the central bank issued a CBDC with deposit accounts that pay interest. That is except if the business bank can offer a higher financing cost on their stores. As the economy's risk-free rate, this interest-bearing CBDC would perform similarly to short-term government bonds, but its transfer friction would be significantly lower. As a result, an interest-bearing CBDC would establish a ceiling for the interest rate on short-term government bonds. Banks would still be able to effectively compete with a CBDC as long as interest rates were not excessively high; however, there might be a slight reduction in intermediation, an increase in volatility, and a decrease in the amount of funding available to commercial banks. Williamson acknowledged in this context that cash withdrawal is the only option when the interest rate is zero. Because holding cash has a high opportunity cost and households are aware that banks do not hold much of it, there is an incentive for it to spread to a high level when the nominal interest rate is safe and the liquid asset level is high. Banks do not anticipate having a lot of cash in the sub-optimum strategy. As a result, Williamson comes to the conclusion that the issuance of CBDCs may foster banking panics, which may coincide with panics in a world with physical currency.

4 CBDC: CHARACTERISTICS, SAFETY AND SUSTAINABILITY

As previously mentioned, the rise of cryptocurrencies in recent years, led by Bitcoin, has sparked a debate regarding whether or not central banks should issue digital cash (Náez Alonso, 2019). According to Gomez-Fernández and Albert (2019), a number of nations' central banks have looked into the possibility of developing their own CBDC, which would replace physical cash with digital currency. Even Uruguay, which is looked at later in the study, has finished its pilot tests and is now looking at the results. As we will also see later, pilot tests are about to begin in other countries, like the Bahamas.

Cash, as defined by Fernández de Lis and Gouveia (2019), is a type of asset that possesses the following four characteristics: 1) it is traded among pairs without the issuer's knowledge, 2) it is universal, meaning that anyone can have it, 3) it is anonymous, and 4) it does not generate interest. CBDC is a peer-to-peer alternative to cash that also meets the first characteristic. However, due to its digital nature, it may not meet the other three characteristics.

It is interesting to note that virtual currency also implies a series of challenges for sustainability, despite the fact that this is not the goal of this study. "Mining is profitable as long as the cost of electricity is carefully considered," given that equipment used to generate virtual currency requires a significant amount of electrical energy. "The mining of Bitcoin used as much electricity as Ireland" in 2014. The reason for this is that the computers need air conditioning to keep them cool so that they don't overheat because they work 24 hours a day, 365 days a year. As a result, despite the benefit of reducing physical costs (paper and metal money) associated with the implementation of a CBDC, it is also possible that an environmental cost will be incurred due to an increase in the amount of electricity required to generate and maintain it.

There appears to be a correlation between the use of virtual currency and a possible rise in criminal activity, according to some studies. When a person is infected with "ransomware," most of the time, they are required to release the electronic device in exchange for Bitcoin or another digital currency. The reason is that it is largely unregulated and relatively anonymous. CBDC could completely avoid this because it is backed, controlled, and regulated by a central bank. It would also increase citizens' sense of security and allow for the following of the money trail. "concern about the tax evasion of those who use Bitcoin instead of more traditional online payment methods" is another issue brought on by virtual currency. Since the central bank or monetary authority would oversee its control and supervision, CBDC is an easy solution to this problem. Additionally, multilateral fiscal agreements can be used to sign cooperative information exchange agreements. Virtual currency's potential use for "money laundering" is another issue. According to Campbell-Verduyn, there are two reasons why criminals are more likely to use virtual currency: It can be used in a way that is "quasi-anonymous," and the speed of the transaction makes it possible for the proceeds of crime to be transferred to another country. Because the transaction takes place in real time, it is difficult for the authorities to monitor and stop it in time. Again, CBDC and the banking authority's control over it could resolve these two issues.

5 CONCLUSIONS

All of the arguments presented in this study are theoretical, and they do not test the actual effects that this monetary innovation would have on monetary policy or the operation of the real economy (with the exception of a small amount of evidence), despite the numerous potential benefits that the study suggests could encourage a nation to establish its own central bank-backed digital currency (CBDC). In addition, it is difficult to predict whether citizens would actually accept CBDCs and how effective this new money would be in preventing money laundering and the financing of illegal activities. As a result, we are able to draw the conclusion that, in order to test these scenarios, additional pilot tests, such as those that have been conducted in Uruguay or are planned to be conducted in the Bahamas, are required before deciding to establish a CBDC.

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