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Cryptocurrency and central bank digital currency: an insight from the regulatory perspective

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Abstract. The scope of direct transactions globally with almost zero transaction cost and keeping transactions anonymous without facing any centralized control has caused a huge demand for cryptocurrency worldwide whereas its excess volatility, no underlying backings, no centralized control, and anonymity behind transactions have contributed significant risk for the entire financial system. Unlike cryptocurrency, Central Bank Digital Currency, being a virtual currency backed by the central bank or the monetary authority of a country serves all the functions of money, such as a store of value, a unit of account, and a medium of exchange, facilitates the attainment of macroeconomic goals and financial stability. To ensure the safeguarding of the interest of the people, business enterprises, and the financial system of a country from a broader perspective, adequate regulatory measures regarding cryptocurrency are a must. There should be proper harmonization and coordination among the countries regarding the regulatory approach as the markets of cryptocurrency are integrated globally.
Keywords: *Cryptocurrency, Blockchain, Risk, Regulation, Central Bank Digital Currency, Macro-economic goal, Financial stability.*

1. Introduction

Cryptocurrency is a digital currency based on a decentralized online platform called blockchain through which anonymous, direct transactions between individuals or businesses can be made worldwide. It is tamper-proof and does not require a third-party recordkeeper, cutting out intermediaries (Law, 2021). On a blockchain, the information related to cryptocurrency value and its transaction records is stored in blocks. Unlike fiat or government-backed currency, cryptocurrency is not backed by any regulated or legal body.

Due to its availability, liquidity, and no centralized control, money transfers can be easily made anywhere globally, with almost zero transaction cost. The initiation of cryptocurrency has the potential to entirely change the way businesses operate and transact. It offers the biggest advantage of anonymity behind transactions and the removal of centralized control from any government agencies which are the main reasons behind the huge demand for it. The high acceptance and growth of cryptocurrency bring risks and challenges, which must be dealt with in an entirely different fashion; its regulatory approach should differ from that of other existing assets.

Cryptocurrency possesses currency in its name, but it does not perform all the inherent functions of a currency as opposed to any fiat currency of any country. Unlike usual securities or assets, it has no underlying intrinsic value as its value is not based on fundamentals. On the contrary, Central Bank Digital Currency (CBDC) is issued and regulated by a nation's monetary authority, usually the central bank. The introduction of CBDC promotes financial inclusion and simplifies the implementation of monetary policy to a great extent (Tan, 2023). As CBDC is a centralized form of currency, there is no scope for anonymizing transactions, unlike cryptocurrencies.

This paper is an approach of bringing the pros and cons, risks and challenges of cryptocurrency and Central Bank Digital Currency in a comprehensive way to get an insight

from the regulatory perspective. The need for regulation originates from the challenges they pose to the financial system and the new risks they carry. These risks have a bearing on overall financial stability and market integrity. In this context, this paper will be useful for policymakers, regulatory authorities, central bankers, and consumers as a whole.

Section 2 of this article contains a literature review. Section 3 deals with the risks and challenges of introducing cryptocurrency into a financial system. Section 4 focuses on Central Bank Digital Currency. Section 5 highlights the considerable regulatory issues in the context of virtual currency. Section 6 presents the conclusion.

2. Literature review

Evaluating five cryptocurrencies (Bitcoin, Ether, Ripple, Litecoin, and Steem) with fiat money in terms of their monetary features to determine whether traditional functions of money can be performed by cryptos or not, Ammous (2018) found that all of these cryptos can serve as a medium of exchange but not as a unit of account due to instability in nature and only Bitcoin was found to possess characteristics related to the 'store of value' function of money. Claeys *et al.* (2018) argued that it might be implausible for cryptocurrency to perform all the functions of money fully and cannot be considered a serious challenger to substitute fiat currency. The fiat currency, controlled by inflation-targeting independent central banks, appears to be superior to cryptocurrency in respect of the functions of money (Claeys *et al.*, 2018). The advantages of cryptocurrency include the open code for mining, no inflation, unlimited possibilities of transactions, no boundaries, low cost of transactions, decentralization, anonymity, no chances to use some personal data for fraud, and speed of transaction whereas the disadvantages include strong volatility, money laundering, terrorist and illegal activity financing, lack of a central issuer, hacking risks, and lack of institutional backup (Bunjaku *et al.*, 2017). Kim (2017) empirically verified that crypto's transaction cost is lower than foreign exchange transactions and simpler infrastructure and lack of intermediary lead to cost advantage. Similarly, benefits like the protection of personal data were also reiterated by Dumitrescu (2017) along with discussing the cryptocurrencies being inflation immune. Dabrowski & Janikowski (2018) pointed out that the advantages like speed, convenience, and safety provided by blockchain technology in financial transactions, do not come free of drawbacks like frauds, bubbles & bursts, taxes, compliance issues, etc. Investigating the volatility of two major cryptocurrencies (Bitcoin and Litecoin) and comparing them with volatilities of main stock indices, commodities and money pair of euro to US dollar, Vejačka (2014) found extremely high volatility of cryptocurrencies in comparison to basic investment instruments and the possibility of price manipulation in the case of cryptos. Talking about the dark sides of cryptos, Spaeth & Peráček (2022) point out that investors' protection is important as they are not backed by the government and tax-related issues as well. The excessive use of cryptos may induce monetary and fiscal risk to the central bank in pursuing its objective of price stability and risks associated with financial intermediaries' resilience (Claeys *et al.*, 2018). Since virtual currency poses severe challenges to the central bank's monetary system (Dabrowski & Janikowski, 2018); if not tackling the same, may damage the economy. Crypto may become a nightmare for regulators (De Filippi, 2014), and regulating crypto is a paramount challenge for central banks and governments (Kirilenko, 2019).

Global Future Council on Cryptocurrencies & World Economic Forum (2021) raises concerns regarding consumer protection and tax issues associated with cryptos but also praises the leverage it provides for entrepreneurial finance highlighting the need for prudent

and tailored regulation based on the usage and characteristics of crypto assets, which can promote e-commerce based on cryptos and ensure the financial system's soundness.

The government should legitimize Bitcoin by making required laws and regulating transactions, including markets and businesses (Alcorn *et al.*, 2013) to create an opportunity for bringing competition, efficiency, and new growth to several industries, including banks, credit card companies, money transmitters, and exchangers. One effective way to regulate crypto is to regulate principled activities like issuance, custody, or brokerage, not to regulate a specific asset, crypto or otherwise (Kirilenko, 2019) but legal regulation is much needed. To regulate the cryptos, the preparation for a legal framework and collaboration among different government bodies and crypto developers are a must for managing, regulating, and promoting crypto assets (Cumming *et al.*, 2019) which can address the uncertainty of regulatory aspects. Mentioning the co-existence of fiat and crypto-currency, Mandeng (2019) desires crypto-asset regulation to endow the sector with greater certainty and predictability to facilitate its orderly integration with the existing financial system ensuring customer confidence. Dabrowski & Janikowski (2018) recommend that regulators treat and regulate crypto just like other financial assets and formulate policies accordingly and they proposed harmonized regulations across jurisdictions for its global and trans-border characteristics. In addition, Leopold & Vollmann (2019) highlight the need for a proper accounting system or modification of existing IA & IFRS accounting principles for issuance, investment, valuation, and disclosure of transactions of crypto. However, Nabilou (2019) argues that instead of regulating the cryptocurrencies at the protocol layer, the regulation should target their use cases by implementing a regulatory strategy directing the middlemen which can be enforced by the financial market participants and gatekeepers. Legitimizing the crypto might also not be as easy as it is difficult to find out the target institutions to be regulated or even found, then those might shift to unregulated sectors to take advantage of regulatory arbitrage. Further, tight regulations might even push for crypto to be used only for illicit and fraud-related activities; one of the ways to handle it can be the implementation of a licensing system for intermediaries (Trautman, 2016).

The emergence of distributed ledger technology has also raised opportunities for central banks to issue their digital currency (Stevens, 2017), which may help to achieve monetary policy goals fast. Perkins (2020) points out the pros and cons of CBDC while discussing the rapid increase in virtual currencies' transaction volume and the number of currencies that cannot and should not be unchecked by regulators. Studying the central bank-issued money and a cryptocurrency through quantitative analysis, Kang & Lee (2019) found that Bitcoin can compete meaningfully with money only when the inflation rate is sufficiently high and economic welfare in the money-only economy is higher than that in the coexistence economy. When inflation rises, the welfare gap between the coexistence economy and the money-only economy expands. Specifically, as the inflation rate increases, money is substituted for Bitcoin, which increases Bitcoin transactions. In the context of improving economic welfare, Kang & Lee (2019) feels the necessity of devising an optimal structure for the CBDC. This also pushes for the need for CBDC which can compete with or even be better off than cryptocurrency. In the Indian context, Ray *et al.* (2022) have pointed out possible technological and legal implications of the CBDC in light of other countries' experiences. They think CBDC can be a 'game changer' for its contribution to financial inclusion in India.

The review of the literature demonstrates a gap in existing literature regarding a comprehensive and holistic analysis of the pros & cons, risks & challenges, and strengths &

limitations of both cryptocurrency and CBDC simultaneously from the regulatory point of view.

3. Risks and challenges of introducing cryptocurrency into A financial system

From the perspective of regulation, the major risks of cryptocurrency are liquidity risk, credit risk, market risk, operational risk, legal risk, reputation risks, money laundering, and terrorist financing risk due to its high degree of volatility, decentralized mechanism, immutability, having no underlying asset or backing.

There are several challenges related to integrating existing financial infrastructure into distributed ledger technology (DLT). Permissionless DLTs have challenges concerning blockchain scalability regarding validation speed, transaction volume, and transaction speed. In a permissionless setup, comparatively more time is required for nodes to validate transactions and propagate across the network. On the other hand, permissioned blockchains have greater capacity and can process larger transaction volumes faster due to the operation of fewer nodes having to validate the transactions. Without having a centralized infrastructure, it is not possible to ensure effective governance of the overall distributed ledger infrastructure which is a major area of concern (Natarajan, H., *et al.*, 2017). There are also legal concerns about the cross-border distributed ledger systems in terms of the jurisdiction of the transaction. Regulating permissionless distributed ledger systems is more complicated. Even a permissioned distributed ledger system has no legal entity to control or monitor.

Because of its highly volatile nature, cryptocurrency falls more on the speculative asset side than acting as a viable medium of exchange. The factors affecting volatility are due to having no intrinsic value of its own, lack of regulatory oversight, lack of institutional capital, thin order books, investors' choice for short-term, low liquidity, sensitivity to market sentiments, inequality of wealth (Kishore Jain, 2020). The crypto market is socially constructed, based entirely on people's optimism/perspective of the market, rather than any fundamental base; so it is highly volatile. Also, the market is decentralized where no one has autonomous power or central authority. Legal backing of each transaction helps a currency to be known as safe and reliable by the public. As cryptocurrency is not issued by a central authority/central bank, it has no legal backing. Based on speculation, its value may rise tremendously and fall drastically within seconds.

A central bank manages its money supply or stabilizes its currency in commensurate with the goal of the financial stability of a country. The monetary instruments that a central bank uses to achieve its target in accordance with its monetary policy coordinating with the fiscal policy over the course of time, are not possible to administer in the case of cryptocurrency as the supply mechanism of crypto cannot be controlled by a central bank. Because of its highly volatile nature, cryptocurrency falls more on the speculative asset side than acting as a viable medium of exchange. Moreover, from the perspectives of fiscal policy, monetary policy, the openness of an economy, determination of exchange rate, import policy, and export policy of a country, it is vital to influence the demand and supply of its currency which is not feasible for a cryptocurrency in today's scenario.

Currently, there are no widely accepted rules and regulations in the crypto market. With the lack of proper legislation and the absence of taxation laws, this market may highly be exploited for making illegal transactions aimed at terrorism, weapon trafficking, etc. Permissionless distributed ledger systems hide the network members' identity by using public key encryptions. Such encryption mechanisms make it very difficult for permissionless distributed ledger systems to comply with AML/CFT regulations of different jurisdictions. Permissioned distributed ledger systems do not pose this problem as network access is

controlled and identity verification of the participant is required for the vetting process. If the transactions remain anonymous, they may create avenues for criminals and terrorists to launder the proceeds of their crimes or illicit activities due to not having the scope for properly complying with customer due diligence (CDD), reporting suspicious transactions, finding out illicit transactions, and illegally moving funds (Podder, 2020). Ensuring compliance in respect of anti-money laundering (AML)/combating the financing of terrorism (CFT)/combating proliferation financing (CPF) requirements requires DLT systems to comply with CDD requirements for facilitating large-scale adoptions in the financial system.

Without robust tax regulation on cryptocurrency-related profits/losses, a country will be deprived of potential revenues. Even if the cryptocurrency is legalized, there may still be scope for concealing or misleading financial statements on behalf of individuals, and firms to avoid adequate taxation as it is not possible on the part of the tax authority to verify the occurred transactions due to lack of access to the decentralized platform.

Cyber-attack is a big area of concern with respect to DLT systems. The technology does not ensure account or wallet security unless encrypted strongly. Moreover, there is a possibility of the network being compromised if 51% of the nodes on the network are taken over by a malicious agent (Cawrey, 2014). Its online presence makes it extremely prone to hackers and cyberattacks. In case of hard drive corruption/malware attack/virus attack, all information can be lost, which is nearly impossible to retrieve. There is also a high risk of losing all the investments made if one's either private or public key is lost. Any organization that holds crypto assets would be exposed to additional operational and cyber risks which could lead to issues like cryptographic key theft; compromise of login credentials; and distributed denial-of-service attacks. These cyber-threats could lead to unauthorized transfers of cryptocurrency and personal data breaches (Basel Committee on Banking Supervision, 2021).

Due to these risks and challenges, legalizing cryptocurrency is a highly cumbersome task for a nation. From a regulatory viewpoint, at an initial level, trust needs to be built among people by setting policies and procedures related to the dealings and further, a technological network or base is required to record and document all the trade happening over the network. This means keeping meticulous records that are legally defensible by technology is required. The formation of a complaint redressal mechanism will also be required.

4. Central Bank Digital Currency (CBDC)

CBDC is the virtual form of a country's legal currency that is "a central bank liability, denominated in an existing unit of account, which serves both as a medium of exchange and a store of value" (Bank for International Settlement, 2018). Unlike the traditional mechanism of printing physical paper money, CBDC is issued by the central bank as electronic coins or accounts backed by sovereignty.

The idea for Central Bank Digital Currencies owes its origins to the introduction of cryptography, making it hard to duplicate or counterfeit. The invention of a secure and undisputable ledger allows transactions to be tracked. It also enables seamless and direct transfers, without intermediaries and between recipients simplifies the implementation of monetary policy in an economy.

Among different categories of CBDC, wholesale CBDC is like traditional reserves of the central bank. For conducting interbank payments or receipts by wholesale CBDC, the existing tier of banking is used. Fulfilling prevailing conditions, the transferring of money among different banks is facilitated. The transfer will not be possible if the ledger-based system does not comply with the set conditions. The CBDC with its advanced technology can

accelerate the process of cross-border transfers very promptly and smoothly. Again, retail CBDC facilitates straight transfer to the beneficiaries. Unlike the traditional system, there is no intermediary financial institution in between and no intermediary risk in the case of this type of CBDC. Wholesale CBDC automates the interbank transaction process whereas retail one ensures an intermediary-less connection mechanism. The introduction of CBDC minimizes processes of government tasks of distributing benefits to target people or calculating and collecting taxes.

A country can explore virtual currencies depending on its economic situation. According to the International Monetary Fund, CBDC is more cost-efficient than physical cash as they have lower transaction costs; they can promote financial inclusion in the sense that those who are unbanked can get easier and safer access to money on their phone; they can compete with private companies that need incentives to meet transparency standards and limit illicit activity; and they can help monetary policy flow more quickly and target oriented. CBDC reduces risk originating from the third party as the system does not require intermediaries, thus minimizing transaction costs. The main function that CBDC can ensure is financial inclusion as promoting digital currency will help avoid expensive physical infrastructure built in remote areas for ensuring financial services. The initiatives across the world to develop and introduce CBDC can act as a measure to reduce any unwanted eventuality like any type of adverse disruption caused by the existing permissionless virtual currencies.

Many countries have taken initiatives to introduce CBDC in their financial setting and have been successful in the same. Worldwide,114 countries, representing over 95 percent of global GDP, are exploring CBDC (Atlantic Council website, 2023). Among these countries, more than half of the countries have so far reached the advanced phase. The Bahamas became the first country in the world to officially launch its digital currency named ‘Sand Dollar’ in October 2020. After the Bahamas, Nigeria launched CBDC named ‘eNaira’ in October 2022 (Smith, 2022). The Eastern Caribbean Central Bank, the monetary authority for a group of eight independent island economies of the East Caribbean, namely, Anguilla, Antigua and Barbuda, the Commonwealth of Dominica, Grenada, Montserrat, St. Kitts and Nevis, Saint Lucia, St. Vincent, and the Grenadines, launched ‘Dcash’ on March 31, 2021 (Eastern Caribbean Central Bank, 2021). The Bank of Jamaica launched digital currency ‘JAM-DEX’ in May 2022. China, USA, UAE, Ghana, Malaysia, Singapore, South Africa, Thailand, and India already rolled out digital currency following successful pilot projects.

As CBDC has sovereign backing or underlying assets, unlike cryptocurrency, it should not likely to pose volatility at an extreme level. As the competent authority of a country controls CBDC, unlike cryptocurrency, they will be the scope of mechanism to handle money laundering and terrorist financing risks. So CBDC can act as a stable medium of online transactions for customers at the institutional level as well as the individual level. Complying with all the mandatory regulations, transferring funds globally in the case of CBDC will also be smooth and less costly than fiat currencies.

CBDC is issued, managed, and controlled by the monetary authority of a country, whereas any decentralized currency is not possible to be controlled by any central authority. The objectives of CBDC are to ensure the acceleration of financial services at an expected level to all people, ensure adequate accessibility at ease, provide the utmost convenience, ensure transferability of funds without time lag, and safeguard overall financial security. CBDC can appear as a means of decreasing the conservation burden of a complicated financial process, reducing cross-border transaction costs.

It is a common expectation that CBDC as a legal tender will appear as a vital alternative for highly volatile cryptocurrency. But CBDC cannot be a proper alternative for cryptocurrency as the latter is decentralized in its nature, facilitating any type of transaction including cross-border transactions keeping all transactions anonymous in its decentralized platforms. These features of cryptocurrency may be preferable to a large number of crypto users who will not get the privilege of keeping their transactions anonymous from CBDC. So CBDC and decentralized virtual currency (cryptocurrency) are different in nature and their applicability is supposed to be different.

The cryptocurrency ecosystem, unlike fiat currencies, provides an alternate currency system free from any sort of regulation for its transaction. No physical coins are actually traded but transactions are traded and recorded on a public, encrypted ledger, and through the process of mining, all transactions are verified.

In many countries, including developed economies, a good number of people do not have access to financial services. The introduction of CBDC may help in bringing unbanked people into the formal financial system. It may also provide businesses enterprises and individual consumers with privacy, convenient accessibility, easy transferability, and financial security as a whole. The use of CBDC has the potential to decrease alternative money transfer methods at a lower cost and reduce cross-border transaction costs. CBDC may facilitate a country's central bank in implementing monetary policies to achieve stability, controlling desired growth, and maintaining inflation at an expected level.

5. Considerable regulatory issues regarding virtual currencies

In respect of cryptocurrency, the standard of regulation varies among different countries. Some countries have recognized the potential of cryptocurrency and chosen to regulate them; some have banned or prohibited their trade; some have turned indifferent eyes to the same. It is only possible to get the full benefit of decentralized technology if most countries accept cryptocurrency on a common legal footing and ensure homogeneous regulation in transacting cryptocurrency.

In the case of CBDC being a virtual currency, they have the status of ‘legal tender’ meaning all citizens of that country are obliged to accept the currency as it is a digital form of the fiat currency of that jurisdiction. On the other hand, cryptocurrency is a virtual currency not issued or backed by any monetary authority. So, it is impossible to assign an obligation to any country to accept the decentralized private virtual currency; thus, they lack the status of ‘legal tender’.

It is difficult to determine under which category cryptocurrency can be considered - a commodity, a stock, a derivative instrument, or a brand new asset class. To protect investors' confidence, in the capital markets of sound economies worldwide, there is a systematic approach to monitoring the volatility and manipulation of stock prices. Unlike conventional stocks traded in traditional stock exchanges, the excessive fluctuations of prices of cryptocurrency traded at a crypto exchange cannot be controlled by putting circuit breakers due to its decentralized trading pattern as the trading of crypto assets is not confined within the periphery of a particular stock exchange of a particular jurisdiction.

Different countries have adopted different regulatory standards for cryptocurrency. Some countries have recognized the potential of cryptocurrency and chosen to regulate, rather than ban or prohibit their trade. The countries which have already accepted cryptocurrency are El Salvador, Slovenia, Germany, Canada, Malta, Netherlands, Singapore, Estonia, Switzerland, Portugal, etc. Several countries, including China, Nepal, Afghanistan, Bangladesh, Morocco, Algeria, Egypt, Bolivia, Saudi Arabia, etc. have made it illegal to use.

These regulatory uncertainties create a roadblock to the smooth global flow of cryptocurrencies (Law, 2021).

The cryptocurrency market is a decentralized free market where no one has autonomous power or central authority. It has no underlying asset or legal backing like a fiat currency. Only legal backing helps a currency to be known as safe and reliable by the public. Cryptocurrency is highly volatile. Its value can rise tremendously and fall drastically within a second. As it is not a currency issued by a central authority or any central bank, it is not possible for any central bank to manage its money supply or stabilize its currency at home and abroad with other fiat currencies across the world in commensuration with the goal of financial stability of a country. The monetary instruments that a central bank uses to achieve its target according to its monetary policy over time, are not possible to administer in the case of cryptocurrency as its supply mechanism cannot be controlled by a central bank as it uses decentralized technology.

A country makes its own economic decisions for its development as per the desire of the decision-makers of the country, complying with the expectations of the people of that country. So, these decisions are totally country-specific. Based on the size of the economy, its trade patterns, and its vision, the fiscal and monetary policies are formulated by the government and the central bank of that country. A large economy's macroeconomic goals may not be the same as those of a small economy. The openness of an economy depends on the size of the economy and other macroeconomic parameters. The exchange rate of the home currency with other major currencies is determined by the policies of respective countries, considering the macroeconomic potentialities and market mechanisms of that country. So fiscal policy, monetary policy, the openness of an economy, determination of exchange rate, import policy, export policy, etc. are exclusively country-specific. A country's currency is a measure of its medium of exchange at home and abroad. So, the controlling mechanism of a currency is vitally related to achieving the targets of a country’s macroeconomic goals.

The government of a country, especially specific regulators, is entrusted with the obligation of consumer and investor protection, ensuring a seamless safeguard of consumers’ money, and regulation of any currency including cryptocurrency. A country’s financial system should be potential enough to guard against any unexpected disruption. Therefore, regulation is a must to protect consumer interests.

Until and unless cryptocurrency is accepted by all economies uniformly, it is not feasible to determine its exchange rate in respect of other currencies. A vast range of cryptocurrencies exists in the market, with new ones being introduced very frequently, which makes determining the exchange rate of one currency in terms of all others too complex and an impossible task to do. Moreover, it is not wise to determine an exchange rate with such a currency that has no underlying asset or backing, along with the fact that it is not regulated by any central authority. Also, a big issue the global economy faces would be setting a uniform exchange rate regime among all digital currencies internationally. In the current scenario, it is not feasible for central banks to regulate multiple currencies online unitedly, and further, the problem of arbitrage may only complicate the whole mechanism.

For facilitating international trade through CBDC, a mutual agreement will be required among the trading partner countries; involving trade partner countries will require their own CBDC. This will aid the transfer of values across countries instantly and with a negligible fee due to the absence of intermediaries.

6. Conclusion

Technological innovation has been obvious in the financial landscape facilitating financial inclusion and speedy hassle-free payment mechanisms. It may also create risks and vulnerabilities due to misuse. Any country cannot be oblivion towards this shift, and it is not wise to deny the enormous possibilities of innovation. Proper safeguard mechanisms should be ensured to resist any type of misuse and ensure the availability of the utmost benefit of boarding to the new technology. This is the responsibility of policymakers and regulators across the world.

For more than one decade, the advancement of cryptocurrency has been found to be prominent worldwide. Some countries have legalized it. Some consider these as private currencies. Some countries have banned it. As it is sustaining and due to its increasing popularity over the period, it is impossible to neglect its existence. So, it is obvious to promulgate regulations regarding cryptocurrency in every country, otherwise, it may cause a disaster for a particular economy or the global economy as a whole in the near future. Regulatory vetting and developing industry standards are required to adopt any new technology massively. Adequate regulation is obvious for a financial system's transparency, reliability, and soundness.

If an adequate regulatory and legalized environment can be ensured worldwide, general awareness will rise, and people will place confidence in the system. It can be expected that cryptocurrency in the future will go beyond just speculative investments, unlike the present scenario. The regulation of both CBDC and cryptocurrency should be treated from different angles. The necessity of both types of virtual currencies cannot be ignored.

As the markets of Cryptocurrency are internationally integrated, the effect of regulations cannot be expected to remain limited within any national borders. So, a harmonized and coordinated approach to regulation is suitable.

Cryptocurrency can be considered a commodity or a stock, but it is not feasible to be treated as legal tender or a medium of exchange for a country because it may appear as a cause to disrupt the financial stability of a country either today or tomorrow.

The demand for digital currency may be enormous in the coming days. CBDC may appear as a vital alternative for highly volatile cryptocurrency. CBDC backed and controlled on behalf of the government would provide individual consumers and business enterprises with a stable means of transaction at home and abroad by digital currency avoiding the necessity of expensive infrastructure.

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