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# ASSESSING THE IMPACT OF DIGITAL CURRENCIES ON TRADITIONAL BANKING: A COMPARATIVE ANALYSIS OF CBDC & CRYPTO CURRENCIES

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**ABSTRACT**

The study contributes to deeper understanding the dynamic interplay between digital currencies and traditional banking and offers insights of challenges and opportunities posed by CBDC and cryptocurrencies. The study focuses on the evolving landscape of digital currencies, specifically CBDC and cryptocurrency and their profound impact on the traditional banking sector and global financial market. It highlights rapid growth and attention garnered by cryptocurrencies like Bitcoin and Etherium and worldwide exploration of development of CBDC in order to modernise the payment system and maintain control over monetary policies. It provides comprehensive analysis of the rise of CBVC project worldwide and present market analysis of cryptocurrency which projected or significant ca GR of 15.81% from 2022 to 2027 driven by the factors like increasing investment in digital asset and there potential for substantial returns and theoretical framework for assessing the impact of CBVC and cryptocurrency on traditional banking while addressing monetary policy implications, concern regarding financial stability and competitive landscape.

**KEY WORDS :** CBDC, cryptocurrency, digital currency, traditional banking.

## INTRODUCTION

In recent years, the financial market has experienced profound Transformation with the emergence and rapid growth of digital currencies. Cryptocurrencies such as Bitcoin, Etherium, and other various altcoins have earned widespread attention and investment, which is posing challenges to the traditional financial system and raising questions about their long term implications. Meanwhile, central banks across the globe have explored the development of central bank digital currencies as a potential means to modernise the payment system in order to enhance financial inclusion and also maintain control over monetary policy.

The study attempts to explore the dynamic and complex interplay between these digital currencies and the traditional banking sector. Digital currencies, which includes CBDCs Which is issued by central banks and decentralised cryptocurrencies such as Bitcoin and Ethereum, have sparked debate, have raised regulatory questions and garnered significant attention from financial institutions, policy makers as well as public. These currencies offer the promise of greater financial inclusion, faster transaction as well as you know it financial services,but also present challenges related to monitoring policy, financial stability regulations.

Coexistence of CBDCs and Cryptocurrencies with the traditional banking system includes several challenges and also opportunities. Potential disruption to monetary policy, changing consumer behaviour, regulatory uncertainties, the need for traditional banks to adapt and innovate in order to remain relevant in the digitised finance ecosystem.

**Central Bank Digital Currency**- It refers to the digital form of a country's national currency which is issued and regulated by the central bank and it is a digital representation of physical cash typically designed to be a legal tender, like physical banknotes and coins. It exists in electronic or digital Ledger form and typically stored in digital wallets which are intended for the use of general public and financial institutions. CBDCs Are Recognised as legal tender which means can be utilised for all types of transaction and settlement just like physical currencies. Individuals or financial institutions holding CBDCs hold a direct claim on the central bank, where depositors hold claims on commercial banks. Transactions of CBDC can be settled in real time and provide potential or faster and more efficient payment systems.

**Cryptocurrency-** It is a type of digital or virtual currency which uses cryptography for security and is operated independently of a central authority, such as the central bank. It exists purely in digital form and is not represented by physical notes as bank notes and r stored in digital wallets. They are operated on a decentralised network, typically based on blockchain technology where these networks are distributed across a network of computers which collectively validate and record transactions without need for central authority. Cryptocurrencies utilise cryptographic techniques in order to secure transactions and control the creation of new units which makes them highly secure against fraud and counterfeiting. Owners of the cryptocurrency have control over there digital asset through private keys where these private keys are used to access and manage cryptocurrencies stored in they are wallet.Cryptocurrencies are known for their price volatility which fluctuate significantly over a short period, Making them attractive to traders and investors but also posing risks.

## LITERATURE REVIEW

The study explores about central bank digital currencies where CBDC highlights their potential in order to address the decline in physical cash usage and support financial inclusion, however it emphasises need for a central bank to manage and mitigate risk associated with design of CBDC,which includes deposit disintermediation and, impacts on monetary policies, in order to ensure that effectiveness and macroeconomic stability. **(Wronka, C. 2023).**

The paper offers comprehensive exploration of CBDC within the context of evolving digital currencies and blockchain technology and addresses the origins of CBDC interest stemming from the 2008 financial crisis, emergence of crypto currency and also decline of physical cash. The study provides insights of CBDC concepts,models and challenges associated with monetary and ecosystem for the benefit of finance and investment readers.**(Ward, O., & Rochemont, S. 2019).**

The study highlights accelerated research and development in CBDC, which emphasises their significance in the digital economy and data centric landscape. The study covers micro economic aspects such as operational structure, technology and privacy concerns and also addresses macroeconomic implications on the financial system, stability and monetary policies. **(Auer, R., Frost, J., Gambacorta 2022)**

Relationships between CBDC and major cryptocurrencies and stable coins, focusing on the period from may 2019 to December 2021 are discussed in the study. Cross Quantilogram, which assesses how CBDC uncertainty and attention impact digital returns and findings reveals complex associations which are practical implications for regulators, investors as well as policy makers in assessing the effect of CBDC adoption news on stable coin and crypto currency volatility. **(Ayadi, A., Ghabri, Y., & Guesmi, K. 2023).**

The study presents a micro-founded general equilibrium model which investigates effects of CBDC on private bank intermediation. CBDC implementation can enhance competition which leads to increased deposit rates, expansion of intermediation and higher economic output. Evaluation of role of non interest bearing CBDC as cash usage declines. **(Chiu, J., Davoodalhosseini. 2023).**

Transformative impact of fin-tech and cryptocurrencies on financial systems Its challenges they pose to central banks. The study explores functional similarity between cryptocurrencies and central bank money which emphasises potential risk to monetary stability, payment system and financial institutions and examines legal aspects of introducing CBDC in the euro area and concludes with addressing legal challenges that may require amendments to the treaty of the functioning of the European Union. **(Nabilou, H. 2019).**

## OBJECTIVE

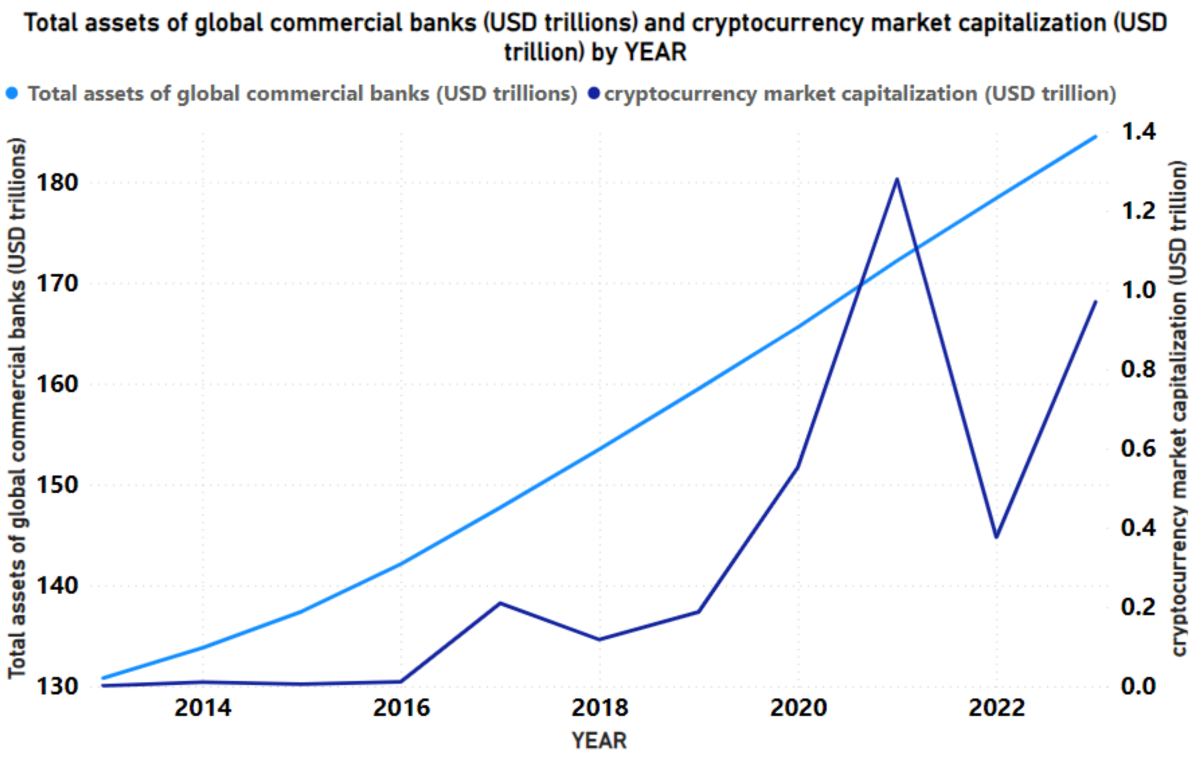
Objective of the study is to investigate the dynamic interplay between digital currency which includes CBDC & cryptocurrency and its impact on the traditional banking sector. The study aims to provide deep understanding about emergence and rapid growth of digital currencies which transform the financial market and to explore the potential challenges and opportunities they present to both the traditional financial system and central banks.

## METHODOLOGY

The study Involves comprehensive and multi-faceted approach in order to investigate the interplay between digital currencies and their impact on the traditional banking sector. The research methodology encompasses several research methods and data sources in order to achieve holistic understanding of the subject matter. The study involves collection of secondary data, from existing reports, academic papers, financial market data and government publication related to CBDC, cryptocurrencies and traditional banking sector is collected and analysed to support the research.

## ANALYSIS

Total assets of global commercial banks ***VS*** cryptocurrency market capitalization (2013-2023)




The graph represents total assets of global commercial banks and the cryptocurrency market capitalization in USD trillions from the year 2013 to 2023. The graph indicates the total assets of global commercial banks have grown steadily over Past 10 years whereas cryptocurrency market capitalization has grown rapidly in recent years. In the year 2013 the total asset of global commercial bank work $130.8 trillion cryptocurrency market capitalisation was $1.3 billion, the estimated total asset of global commercial banks for the year 2023

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is $184.5 trillion where is cryptocurrency market capitalisation is estimated to be $970 billion. Which suggests digital currency is having a growing impact on traditional banking however it is important to note that the cryptocurrency market is still relatively small when compared to the total assets of global commercial banks.

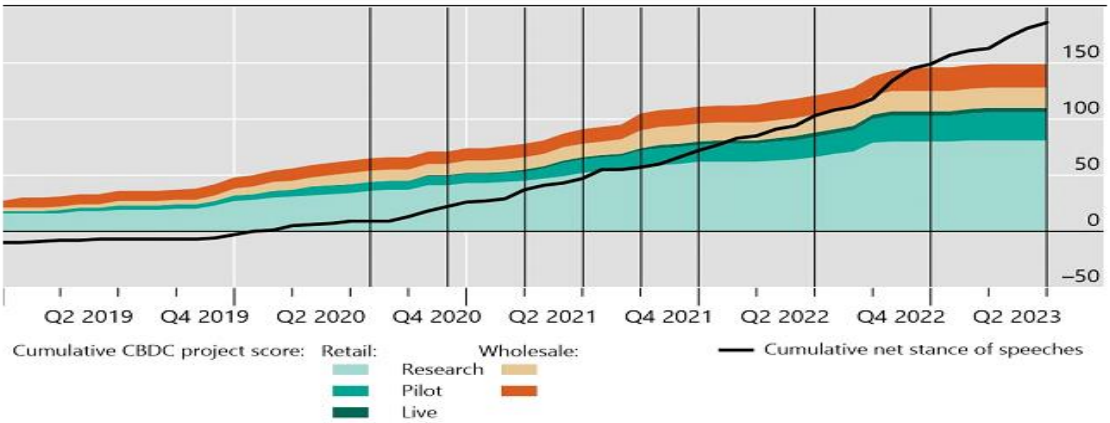
The graph also indicates that cryptocurrency market is volatile where the price of cryptocurrency can be fluctuate widely, which could be difficult for banks to use digital currency in the own operations in addition to this regulatory landscape for digital currency is still evolving which could make it difficult for banks to adopt digital currency on the large scale.

Overall the impact of digital currency on traditional banking is still unfolding, but it is clear that digital currency is having a significant impact on the financial industry whereas traditional banks will need to adapt to the changing landscape in order to remain competitive in the market.

**Rise of CBDC projects worldwide**

The number of central bank CBDC projects continues to rise

Number of instances




Update: July 2023.

Source: Auer, R, G Cornelli and J Frost (2023), "Rise of the Central Bank Digital Currencies", *International Journal of Central Banking*, forthcoming.

By the end of December 2022,approximately 83% of the countries across the world are actively exploring the possibility of issuing their central bank digital currencies. These initiatives encompass a range of stages from implementation and pilot programs to ongoing development and research are official announcement of plans for CBDC insurance. CBDC specific features and specifications vary from country to country which reflects their unique goals and priorities. Many of the CBDC projects are leveraging technologies which are akin to those used in decentralised finance solutions like Distributed Ledger Technology (DTL) and smarter contracts and it is notable that while central banks are considering multiple technological options, current groups of concepts tend to be rooted in DLT instead of relying on conventional technological infrastructure.

This highlights the increase in interest and investment in cutting edge technologies in order to build and support the CBDC ecosystem.

**Cryptocurrency Market Analysis Report 2023-2027**


The report represents a comprehensive overview of global crypto currency markets current status and growth prospects which makes it a valuable resource for investors, business and policy makers interested in the evolving cryptocurrency landscape. The global crypto currency market is experiencing significant growth with an estimated CAGR of 15.81% expected between the years 2022 and 2027. This growth is projected to result in an increase in market size by approximately USD 1815.78 million during this period. Increasing investment in digital assets includes cryptocurrencies such as Bitcoin and etherium and other digital assets contributing to the market growth and investors are drawn to the potential for substantial returns in the cryptocurrency space.

Enhanced availability of cryptocurrency wallets that provide secure storage and management of digital assets is making it easier for individuals and institutions in order to participate in the cryptocurrency market. The report offers insights into market performance across the different regions which includes North America, Europe AP AC, South America and Middle East and Africa.

Enhanced investment in digital assets is a key factor behind the growth of the cryptocurrency market. The traditional security issuance and cross border trading processes are oftenly widening the administrative complexities which results in potential delays and added cost. When it comes to digital assets,it offers the advantage of swift ownership transfer without need for a physical documentation which speed and efficiency exemplified in scenarios like non fungible tokens where ownership can be changed hands rapidly.

Because of these advantages cryptocurrency are gaining prominence in the global digital asset market and fueled by the innovative force of fintech, digital assets are becoming an integral part of the financial market across the world. People across the world increasingly engage in digital assets, whether it is investing in cryptocurrencies or digitalising existing investment assets. Such integration of digital assets into traditional financial networks is expected to further drive the growth of the global cryptocurrency market in the foreseeable future.

**Theoretical framework for assessing impact of CBDC & Cryptocurrency on traditional banking.**

**Monetary policy implication:** Central banks typically control money supply through setting interest rate buying or selling government bonds. Cryptocurrency became widely adopted, it would compete with traditional bank deposits which could make it more difficult for a central bank to control interest rates. Central bank utilises monetary policy in order to influence the economy, however if cryptocurrency became widely used they could disrupt the transmission of monetary policy. For example, if individuals start making payments by using cryptocurrencies they may be less likely to use traditional bank deposits which could be more difficult for a central bank to influence the economy through monetary policy. Cryptocurrency are new to the market and untested asset class, hence they are vulnerable to risks such as volatility and fraud.

Central banks can utilise open market operation in order to control the money supply, where in open market operation the central bank buys or sells government bonds. When the central bank buys bonds it increases the money supply, when the central bank sells bonds it decreases money supply. Demand for traditional bank deposits are impacted by a number of factors which includes, interest rates, availability of financial product and pursued safety of bank deposits.

**Financial stability:** If CBDC or cryptocurrencies are widely adopted they could compete with traditional bank deposits which could lead to decline in the demand for traditional bank deposits and make it more difficult for banks to lend money and could also weaken the transmission of monetary policy. Banks rely on deposits to fund their lending activities, where white spread of CBDC, banks may have less access to deposits which could make it more difficult for them to manage their liquidity. If it is run on a bank, individuals may withdraw their deposits from the banks and convert them into CBDC which could lead to liquidity crisis for banks and could also destabilize the financial system. As CBDC are digital assets which can be vulnerable to cyber attacks, a successful cyber attack could disrupt the CBDC system which could also lead to financial losses for the users.

**Competitive landscape:** Traditional banks could face competition from CBDC and cryptocurrencies if they are offered directly to consumers and business which could lead to declining demand for traditional bank deposits and loans which could impact their profitability. Fintech firms also face competition from CBDC and crypto if they are also able to offer similar services which could make it more difficult for fintech firms to compete with traditional banks. Non bank payment service providers like PayPal and Venmo, could also face competition from CBDC if they are directly offered to the consumer and business.

**Payment system efficiency:** CBDC can be cleared directly between central bank and users without any need for intermediaries such as banks which could reduce the time and cost of settling payments. CBDC can be settled in real time which indicates the funds are available immediately after the transaction is completed which improves efficiency of payment especially for high value or time sensitive transactions. It can reduce transaction cost of payment as there is no need for intermediaries or clearing houses which makes payment more affordable for business and consumers.

## CONCLUSION

The emergence and growth of digital currencies ushered in a new era in the financial market. This transformation presents both opportunities as well as challenges which demand comprehensive understanding of their implication for the traditional banking sector and broader financial ecosystem. The study delved into the intricate dynamic between digital currency and traditional banking system where CBDC as a digital representation of national currencies issued and regulated by the central bank offers the promise of modernising payment systems and enhances financial inclusion and forwards faster and more efficient financial services.

On the other side, decentralised cryptocurrency has disrupted traditional financial systems through operating independently of central authorities which uses blockchain technology and cryptographic techniques in order to provide security against fraud and counterfeiting but comes with price volatility and attracts traders and investors while posing risk.The growth of CBDC projects across the world has showcased global interest in digital currencies with many countries actively exploring their implementation and cryptocurrency market analysis report has projected significant growth which is driven by enhanced investment in digital assets. Theoretical framework offers a lens through which to assess the impact of cdc and cryptocurrency on traditional banking.

The coexistence of CDC and cryptocurrency with the traditional banking system presents a complex and evolving landscape while digital currencies offer promise of innovation, financial inclusion and efficiency. They also introduce a new set of challenges which must be addressed for a financial ecosystem in order to adapt and thrive. Policymakers, central bank financial institutions as well as fintech firms have to navigate these changes thoughtfully and collaboratively in order to ensure a balanced and resilient financial future in the digital age.

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