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9. Cryptocurrency and Banking: Challenges, Considerations, and Disruptions - A Study

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Abstract:

In the banking and finance industries, interest in cryptocurrencies is growing. We examine cryptocurrencies' place in modern financial markets in this study. We use a narrative literature review approach to compile previous studies and derive conclusions about the advantages and disadvantages of using cryptocurrency.

The findings show that cryptocurrencies provide significant benefits for diversification, financial inclusion, improved security and privacy, reduced transaction costs, and increased efficiency for both individuals and enterprises.

There is no question that cryptocurrency will have a long-term impact. Cryptocurrencies could reduce or do away with the requirement for regulated middlemen. Without having to pay extra transaction costs, it can let customers transmit money more quickly. This paper will talk about. The effects of cryptocurrency on the banking sector.

Keywords:

Cryptocurrency, Banking Industry, Virtual Currency, Central Bank, Market Capitalization, Bitcoin, Transactions, Financial Inclusion, Blockchain, Prices, Cost

9.1 Introduction:

9.1.1 Cryptocurrency:

A digital currency is a form of money with no physical form. Rather, it is digitally preserved within the blockchain. The transmission of funds is regulated and verified by encryption techniques, and unlike other currencies, the supply isn't set by a bank. The most well-known example is perhaps Bitcoin, the first cryptocurrency.

Cryptocurrencies are a safe form of digital money that are made via cryptography. 2009 saw the release of Bitcoin, the first of its kind, to the general public. Cryptocurrency operations are decentralized and not reliant on central banks or governments.

The blockchain is a digital record that tracks transactions and is used by cryptocurrencies. Since each transaction creates a block that is added to the chain, it is difficult to modify previous transactions.

An electronic payment method known as cryptocurrency verifies transactions independently of banks. With this peer-to-peer payment system, anyone can send and receive money from anywhere at any time. Digital records of Bitcoin payments can be found in an online database that details specific transactions. Cryptocurrency is stored in digital wallets, and a public ledger records all transactions. Cryptocurrency data is stored and transferred using advanced coding between a wallet and a public ledger; transactions are verified by encryption. To guarantee security and safety, the transactions are encrypted.

Traditional banks are reluctant to embrace the usage of digital assets, even if the world of cryptocurrency is growing and becoming more and more popular. They think that the risks associated with these assets exceed any possible advantages. Regulating bodies, like the Office of the Comptroller of the Currency (OCC), are attempting to alter banks' views about digital currencies, nevertheless, as they think these resources have the potential to propel financial institutions into a new phase of efficiency and creativity.

A number of interpretive letters describing how conventional financial institutions can engage in transactions (or offer services) involving digital currencies were released by the OCC. This endeavor aligns with the OCC's hope that stronger regulatory guidelines will facilitate banks' increased comfort level with these digital assets. The OCC said at the beginning of January that national banks and federal savings associations are now able to conduct payment operations using public blockchains and stablecoins.

9.1.2 Crypto in Banking:

The financial sector is still only now beginning to incorporate cryptocurrency. The limited legal framework and volatile nature of cryptocurrencies make most banks hesitant to make significant investments in them. While certain banks in emerging economies have been more willing to investigate the technology, this reluctance is especially noticeable in developed markets.

The news of bank collapses in recent times has also worried banking authorities, who have not yet created a suitable regulatory framework. Financial institutions as a whole felt the impact of Silvergate Bank's failure. Silvergate was a crypto-friendly bank. The troubles at Silicon Valley Bank, which lost money on investments in quickly depreciating low-interest securities, and Signature Bank, which had previously been the subject of numerous investigations, have some people concerned and forecasting an unfavorable future. People's anxieties were only heightened by the fact that these banks entered the bitcoin sector and came under much greater scrutiny.

9.1.3 Challenges and Considerations

Although there are many obstacles to be addressed, cryptocurrency offers an intriguing picture for the future of finance:

- **Volatility:** Due to their extreme volatility, cryptocurrency markets might be dangerous for certain traders.
- **Regulation:** This is still the early phase of the regulatory landscape for cryptocurrency. Regulations must be uniform and clear in order to safeguard consumers and stop unlawful activity.
- **Scalability:** High transaction volumes may be too much for current blockchain systems to handle. Although scaling solutions are being developed, it is yet unclear how effective they will be.
- **Energy Consumption:** Some blockchains employ proof-of-work as their consensus method, which uses a lot of energy. For broader adoption, sustainable alternatives are required.

Cryptocurrency has gained popularity as a substitute for traditional financial services in recent years. To be clear, cryptocurrency is a form of digital or virtual money that runs without the help of a central bank and is secured by encryption. As opposed to the centuries-old practice of traditional banking, Bitcoin is a relatively new idea that has gained popularity in the past decade.

As of May 15th, 2023:

- All cryptocurrencies together have a market capitalization of almost $2.3 trillion USD.
- With a market valuation of almost $1.1 trillion USD, Bitcoin (BTC) is the biggest cryptocurrency.
- As of right now, there are thousands of distinct cryptocurrencies in use, and more are constantly being developed.

9.1.4 Disrupting Traditional Banking:

The upheaval that cryptocurrency have brought about is among their largest effects on traditional banking. By providing a substitute for traditional banking methods, cryptocurrency has put the banking establishment under pressure. This has caused bitcoin exchanges to gain leverage over traditional banks. Users can purchase and sell digital currencies without using banks thanks to cryptocurrency exchanges. This implies that customers can transfer money more quickly and affordably by not going via a bank. Additionally, because every transaction is visible to the public, bitcoin exchanges provide increased transparency.

The use of cryptocurrencies as a form of payment is expanding globally, with many companies and people already using them as payment.

A. The Positive Effects of Cryptocurrency on Banking Practices:

Traditional banking procedures can be significantly improved by cryptocurrency, becoming more rapid, secure, and effective. The decentralized structure of cryptocurrencies eliminates the need for middlemen like banks, which makes transactions much easier and less expensive. This is one of its biggest advantages.

Because they are no longer need to pay fees for processing or transferring funds, both banks and customers will experience cost savings.

Furthermore, because they are unaffected by laws or central bank policies, cryptocurrencies are an attractive choice for cross-border transactions.

In addition, transaction cycles for digital currencies are quicker than those for traditional payment methods. Users can send money quickly and securely using blockchain technology and cryptocurrencies without having to wait days for confirmation of their transactions. For speed-sensitive transactions, such as online shopping and international transfers, they are therefore ideal. Blockchain technology increases transparency by boosting user confidence and system security and allowing users to view every transaction in real-time.

Lastly, new investment prospects in developing nations are brought about by cryptocurrencies. It gives the people of those nations access to financial services like trading and investing that were previously out of reach because of political or economic limitations since it functions outside of official supervision.

These new investment options can support entrepreneurship and innovation in these areas, which can assist boost economic growth and create jobs.

B. Cryptocurrency's Negative Impact on Traditional Banking Practices:

Cryptocurrency has certain disadvantages in addition to its many potential advantages. The primary drawback of digital currencies is their volatility, which can render them unreliable as a store of value. Investors may find it difficult to precisely forecast their investment returns due to the swift and unanticipated changes in prices.

Furthermore, because cryptocurrencies are decentralized, they are prone to criminality and hacking, unlike centralized banking networks that are more safe. Furthermore, if someone's money is lost or stolen through fraud, there is no legal redress because they are not subject to government oversight.

9.2 Cryptocurrency in Banking Sector:

Cryptocurrencies have significantly changed the financial sector.

The capability to transfer money without utilizing any conventional banking services is one of its key features.

As a result, since these transactions are carried out directly between people, no one is required to assist in the money transfer. They also work quickly and effectively.

A couple of cryptocurrencies that are incorporated into the present banking systems are Ethereum and Bitcoin. In these situations, people make use of "digital wallets."

With the help of these wallets, users can keep their digital currencies safe and retrieve them as needed.

Users of cryptocurrency banking can also utilize their digital assets to make investments, transfers, and payments.

The use of blockchain technology must be understood in order to comprehend how cryptocurrency works.

It is a distributed ledger that is decentralized and securely logs transactions across several computers or network nodes.

The blockchain ensures that any data stored there is unchangeable and safe from financial threats.

Numerous Indian banks have recently adopted cryptocurrencies as a trend.

For instance, consumers can buy bitcoins and other cryptocurrencies with HDFC Bank, ICICI Bank, Federal Bank, and Deutsche Bank.

9.3 Review of Literature:

The emergence of cryptocurrencies and blockchain technology has dramatically changed the landscape of the financial industry, brought about a paradigm shift, and put traditional banking methods in jeopardy.

Because of the dynamic interplay between these two disruptive forces, cryptocurrencies and blockchain have given rise to a surge of new opportunities and risks that require careful examination.

The goal of this study is to examine the intricate relationships that exist between cryptocurrencies, blockchain technology, financial markets, and traditional banking institutions, with a focus on the United States of America (USA) and Western Europe (UK). Technologists, financiers, and lawmakers are all very interested in Bitcoin, the first cryptocurrency. Cryptocurrencies have significantly changed traditional financial practices due to their decentralized structure, cross-border transactions, and potential for financial inclusion (Hasan et al. 2023a).

Right now, Bitcoin is the most widely used and valuable virtual currency. 2009 saw the creation of the first cryptocurrency (Gailey & Haar, 2022). Bitcoin is a replacement for monetary systems like the US dollar that are controlled by governments and central banks. To validate transactions, a proof-of-work collaboration mechanism is employed.

Bitcoin miners use powerful computers to solve complex mathematical calculations in an effort to validate transactions (Gailey & Haar, 2022). Some believe Bitcoin has the potential to become the global currency, while others view it as a recreational asset for trading and speculation. Without a doubt, Bitcoin's notoriety has grown tremendously since its inception, but this period has also exposed serious flaws in the most widely used digital good worldwide.

Blockchain, a decentralized ledger updated and maintained by currency owners, is the foundation upon which cryptocurrencies are built. In comparison to banks, blockchain technology guarantees speedier payments and cheaper fees because to a decentralized ledger.

Since Bitcoin will no longer be under control of the banking systems, I believe it will destroy them. While the digital asset sector is growing in popularity, traditional institutions are reluctant to adopt these digital assets because they feel there are more risks than benefits (Duggan, 2022).

Objectives:

- History of cryptocurrencies
- To Study of Cryptocurrency and Its Impact on the Banking Industry
- Positive Effects of Cryptocurrency on Banking Practices
- Negative Effects of Cryptocurrency on Traditional Banking Practices

A. Research Methodology:

The overall design of this study was exploratory. The research paper is an effort that is based on secondary data that was gathered from credible publications, the internet, articles, textbooks, and newspapers. The study's research design is primarily descriptive in nature.

9.4 Result and Discussion:

9.4.1 History of Cryptocurrencies:

A brief history of cryptocurrencies is necessary for understanding completely the potential impact they may have on the banking industry. This helps illustrate the rate at which their popularity is rising.

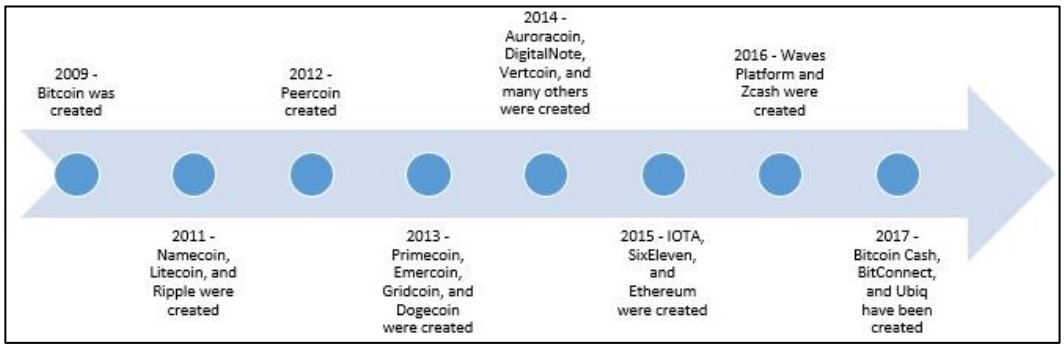

Figure 9.1: Shown by how quickly they're growing in popularity.

The UK Treasury declared in 2014 that it will conduct research on cryptocurrencies due to the rapid rise in their number. The purpose of this inquiry would therefore be to ascertain their place in the economy.

While there are many different cryptocurrencies in the globe, the most well-known and well-liked ones are Ethereum and Bitcoin. Relying on blockchain technology, Ethereum and Bitcoin are valuable cryptocurrencies that support a peer-to-peer trust mechanism through majority node consensus.

Libra is a noteworthy cryptocurrency that was created by Facebook with the goal of streamlining the financial infrastructure and monetary system. The non-profit organization in charge of Libra's growth is the Libra Association, which has its headquarters in Geneva, Switzerland.

It controls the laws of the blockchain and guarantees Libra's value through a reserve fund of real assets. Other well-known cryptocurrencies are Litecoin and XRP, which were created by Ripple.

There were 4,476 different cryptocurrency kinds as of March 3, 2021, with a $1,552 billion market valuation. Table 9.1 displays the market values of ten well-known cryptocurrencies.

Table 9.1. Market value of 10 popular cryptocurrencies (Updated at 16:00 on 3 March 2021).

No.	Cryptocurrencies	Signal	Current price (USD)	Total market cap (billion USD)
1	Bitcoin	BTC	50,876	949.41
2	Ethereum	ETH	1,591.8	183.10
3	Cardano	ADA	1.25272	40.17
4	Binance coin	BNB	249.63	38.89
5	Tether	USDT	1.001	35.90
6	Polkadot	DOT	38.43	35.20
7	XRP	XRP	0.45113	20.48
8	Litecoin	LTC	193.67	12.95
9	Chainlink	LINK	30.8	12.70
10	Bitcoin cash	BCH	539.27	10.10

(Source: https://vn.investing.com/.)

9.4.2 Banks' Diverse and Shifting Perspectives on Cryptocurrencies:

Unlike fiat currencies, which are governed by a nation's central banking system, cryptocurrencies are a digital medium of exchange that is worldwide, non-physical, and usually uses decentralized governance. As cryptocurrencies gain popularity, many banks and other financial organizations have changed their previously unfavorable views about them. JP Morgan Chase (JPMC), Goldman Sachs, and BlackRock are notable examples of these. Jamie Dimon, the CEO of JPMC, called Bitcoin a scam that would not work out in 2017 and even threatened to terminate any trader at JPMC who was caught dealing in it. It was noted, however, that insurance and pension funds would spend up to USD 600 billion in Bitcoin, according to JPMC analysts who predicted that the price of a coin would reach USD 146,000 in January 2021. In contrast to his remarks in 2017 when he called Bitcoin a "index of money laundering," BlackRock CEO Larry Fink stated in December 2020 that he was "fascinated" by the cryptocurrency and that it may soon develop into a fantastic asset class and a "global market." Before abandoning the initiative in 2018, Goldman Sachs had considered opening a bitcoin trading desk. It then denounced Bitcoin, declaring that it is not an asset class and is not suitable for hedge funds to trade. But by mid-2020, it posted a job opening for a vice president of digital assets, and it started trading Bitcoin futures through cryptocurrency merchant bank Galaxy Digital. These illustrations demonstrate how bank views on Bitcoin and other cryptocurrencies are not constant and have evolved over time.

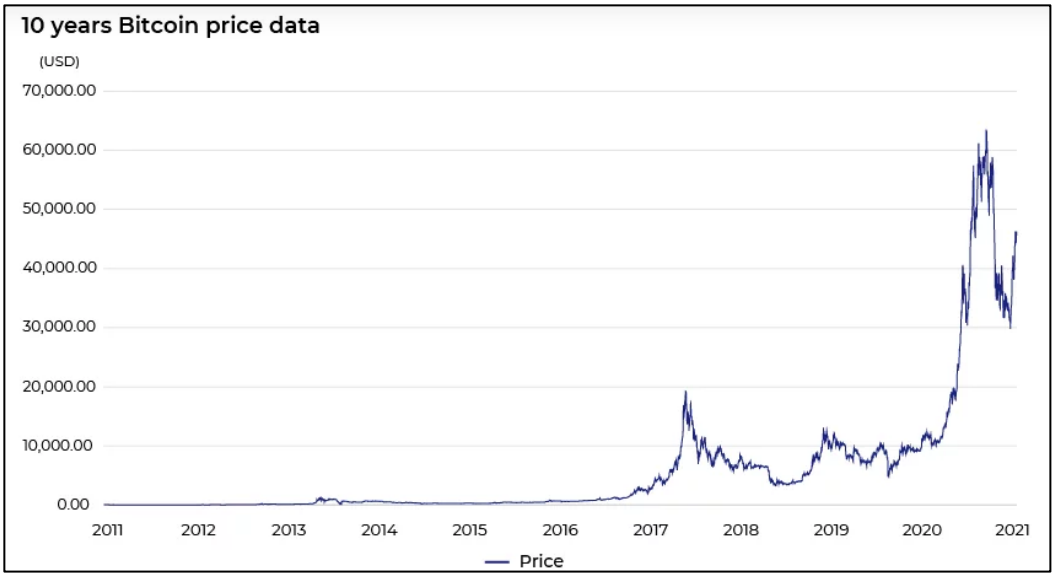

Figure 9.2: Bitcoin Price Data for 10 Years

Table 9.2: Bitcoin Value history (Comparison to US$)

Bitcoin value history (comparison to US$)

Date	USD : 1 BTC Price	Notes
Jan 2009 – May 2010	less than $0.01	Two pizzas bought for 10,000 Bitcoins in first real-world cryptocurrency transaction
Feb 2011 – April 2011	$1.00	Bitcoin takes parity with US dollar
Dec-13	$1,238	On 4 December 2013, Ex Fed Chairman,Alan Greenspan referred to it as a "bubble"
12-Sep-17	$4,159.00	J.P. Morgan Chase's CEO, Jamie Dimon, calls Bitcoin a fraud
7-Dec-17	$16,850.00	Alan Greenspan - "It (Bitcoin) is not a rational currency"
9-Jan-18	$14,778.00	Jamie Dimon regrets calling bitcoin a fraud, and said the blockchain is real
8-Feb-21	$46,396.00	Elon Musk and Tesla announcements of investments in to the Bitcoin, include acceptance of payment
13-Apr-21	$63,540.00	Bitcoin reaches its all time high price
19-May-21	$36,720.00	Chinese government's cryptocurrency crackdown intensifies
21-May-21	$37,297.00	Fed Chairman, Jerome Powell said cryptocurrencies "may also carry potential risks to users and to the broader financial system"
1-Jun-21	$33,543.00	Regulation of cryptocurrencies looking more likely as they become more mainstream - Governor of Sweden's central bank.
8-Jun-21	$33,383.00	Legislative Assembly of El Salvador voted to make Bitcoin legal tender in the country
10-Jun-21	$33,649.00	Basel Committee on Banking Supervision proposes crypto rules for banks

Bitcoin prices fell below USD 30,000 in June 2021, and by the end of the month, they had dropped nearly 50% from their peak of USD 65,000 in April 2021. Banks' perspectives and methods may shift once more in light of the recent collapse in the price of Bitcoin and other "altcoins" in May and June of 2021. Opponents voice concerns about possible price bubbles, capital efficiency, safety, asset insurance and custody, regulatory action, particularly in China and India, and the environmental impact of cryptocurrencies.

But in the coming ten years, the world's banking and monetary systems are all expected to see a significant digital shift. Although many central banks, including those in China, the US, the UK, and Europe, are about to launch their own virtual currencies, El Salvador has already made Bitcoin its official currency. Services for investing in cryptocurrencies are now offered by reputable financial institutions like Fidelity. Thus, it is doubtful that banks would stay completely separate from the digitalization of money.

9.4.3 Current Impact of Cryptocurrency on Banking:

As of right now, cryptocurrency have very little impact on banking. This is a result of most banks' reluctance to make cryptocurrency investments. Many institutions are unable to deal with cryptocurrencies due to limited restrictions and volatility. Dealing with cryptocurrencies is out of reach for many institutions due to regulatory and compliance complexity. This is because many jurisdictions and nations have varied legal frameworks and legislation pertaining to numerous cryptocurrencies. Owing to jurisdictional variations, it can occasionally cause uncertainty for banks as well.

Due to its incorrect procedures on investments in cryptocurrency, silver gate Bank failed. Some banks, nonetheless, do not see cryptocurrencies negatively. On the other hand, other banks are more enthusiastic about working with cryptocurrencies.

These days, a few non-banking financial organizations provide services linked to cryptocurrency. Blockchain technology is used by many to collaborate during cryptocurrency transactions. This is a result of banks becoming more and more aware that they cannot ignore cryptocurrencies. In industrialized nations like the US and Europe, these activities are increasingly typical.

Users of cryptocurrencies may be able to move money across accounts from other jurisdictions. Many banks may feel less of a burden as a result. With cryptocurrencies, establishing multiple bank accounts might not be necessary.

Additionally, it can reduce the requirement for remittance services, payment cards, and wire transfers. Furthermore, cryptocurrencies might do away with the necessity for credit checks and conventional middlemen. It could quickly emerge as a major provider of financing and loans. Banks may therefore be forced to reduce their lending interest rates.

9.5 Conclusion:

Due to their disruptive nature and ability to challenge existing systems, cryptocurrencies have had a significant impact on traditional banking. Both individuals and financial institutions are impacted by their decentralized structure, cost benefits, and enhanced accessibility.

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