A Study of Blockchain Technology in The Digital Economy, Cryptocurrency in India

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***Abstract*—This paper delves into the integration of blockchain technology within the digital economy, its transformative potential to significantly enhance security and transparency in digital transactions. A huge growth in number of online users has activated virtual word concepts and created a new business phenomenon which is cryptocurrency to facilitate the financial activities such as buying, selling and trading. Blockchain technology, initially developed to underpin Bitcoin, presents a promising solution to these challenges. By offering a decentralized, immutable ledger system, blockchain has the inherent capability to enhance the security and transparency of digital transactions across various sectors.**

***Index Terms*—Blockchain technology, Bitcoin, Crypto currency, Government future moves on Cryptocurrency, Uses of Cryptocurrency,**

I. INTRODUCTION

Today's economies are all money economies, because all economies have accepted certain currencies (money) as medium of exchange. The money supply causes inflation as well as deflation in economies by its excess supply and contraction in money supply, hence currencies of different countries regulated by government in order to combat inflation or deflation situations. Blockchain technology has the ability to address the fundamental problems of security and transparency in the digital economy by providing a decentralized,
transparent, and immutable ledger system. Now a day's many countries in the world have focusing towards digital currency and transactions. Even some one doesn't want to regulate their currencies and transactions. this brought greater innovation in new currency that is crypto currency, One of the most advanced, ambiguities, regulation free currency.

II. OBJECTIVES

1. To understand the concept of Bitcoin and it's functioning in regular trading.
2. To know legality and trading of Bitcoin in India.
3. To compare investment risk in between Bitcoin and gold.
4. To study the investment pattern in cryptocurrency after Financial Budget 22-23.

Hypothesis:
H1: There is no significant difference in the volatility of values of gold and bit coins in India.
H2: There is a significant difference in the volatility of values of gold and bit coins in India.

Literature Review
Satoshi Nakamoto's Foundational Work:
The publication of Bitcoin: A Peer-to-Peer Electronic Cash System in 2008, Satoshi Nakamoto revealed the idea of Bitcoin and the blockchain's underlying technology. The goal of Nakamoto's 164 works was to create a decentralized digital currency that could function without the assistance of banks or other reliable third parties. Nakamoto contended, "What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party."
According to Nakamoto, blockchain is a decentralized ledger that keeps track of every transaction made via a network of computers, guaranteeing that no single party has authority over the whole system. Because of its decentralization and cryptographic security, blockchain technology is

transparent and safe for use in online transactions by nature

Nakamoto's contributions are significant. The advent of blockchain technology has opened the door to a new breed of decentralized systems and apps that can function with a high level of transparency and trust. Nakamoto's blockchain architecture included several important elements, such as the use of cryptography to secure data, the establishment of an immutable ledger, and a consensus method for transaction confirmation.

Corporate Governance and Blockchains:

The research conducted by David Yermack on the implications of blockchain technology for corporate governance offers important insights into how blockchain technology might enhance accountability and transparency in business environments. Yermack investigated the possibilities of using blockchain technology to produce unchangeable records of company decisions, shareholder votes, and executive pay. He stated, “Blockchain technology may lead to a vast reduction in the costs of maintaining accurate records and may greatly improve the accuracy of audits, especially in environments where information asymmetry and the risk of fraud are high.”

According to Yermack, blockchain technology has the potential to improve corporate governance by lowering the risk of fraud and boosting shareholder confidence.

Blockchain Technology Overview

A thorough analysis of blockchain technology was presented by Zheng, Xie, Dai, Chen, and Wang, who also covered the technology's architecture, consensus processes, and potential future developments. Consensus procedures are crucial for maintaining the security and integrity of blockchain networks, according to the authors. They stated, "The success of blockchain technology relies heavily on the consensus mechanism used to achieve agreement on the data recorded on the blockchain.”

Blockchain in Supply Chain Management:

Nir Kshetri conducted a study on how blockchain technology may improve supply chain management. According to Kshetri, blockchain technology may greatly enhance supply chain traceability and transparency by supplying an unchangeable, real-time record of the movement of items. He said, “Blockchain offers a reliable and unchangeable record of transactions throughout the supply chain, which enhances traceability, minimizes fraud, and guarantees product authenticity.” This feature is especially useful in sectors like the food and pharmaceutical industries where it is crucial to be able to confirm the origin and validity of items

Blockchain and Sustainable Supply Chain Management:

A 2019 study by Saberi, Kouhizadeh, Sarkis, and Shen examined the connection between blockchain technology and environmentally friendly supply chain management. The authors contended that by offering transparent, traceable, and auditable records of supply chain operations, blockchain technology might aid in the accomplishment of sustainability goals. They said, “Blockchain technology can play a significant role in achieving sustainability goals by providing transparent, traceable, and auditable records of supply chain processes.” The writers talked about how blockchain may assist businesses in cutting waste, increasing resource efficiency, and guaranteeing supplies are sourced ethically.

Blockchain and New Economic Models:

Blockchain: Blueprint for a New Economy, written by Melanie Swan in 2015, offers a futuristic viewpoint on how blockchain technology can lead to the development of new economic models like decentralized autonomous organizations (DAOs) According to Swan, blockchain technology has the potential to create a decentralized, more egalitarian economy in which people have more power over their economic endeavors.

She said, “Blockchain technology has the potential to create new economic models that are decentralized, transparent, and inclusive.” According to Swan, decentralized autonomous organizations (DAOs) are led by smart contracts that autonomously allocate resources and enforce rules.

These organizations are based on the values of inclusion, fairness, and transparency. The members of these groups make all of the decisions together; 167 there is no central authority.

III. RESEARCH METHODOLOGY

Researcher has been selected analytical research methodology for this study.

To satisfy the objectives of the research, researcher used secondary data from various publications by financial websites, government, journals, news papers, books and magazines etc. An analytical research methodology has been selected for this study.

I have taken all this from the research papers published by online finance websites, news and researchers.

Research Findings:

The substantial potential of blockchain technology to improve the security and transparency of digital transactions in the digital economy is highlighted by the literature examined in this study.

Nakamoto introduced the idea of a decentralized ledger that can function without the need for reliable middlemen, laying the foundations for the creation of blockchain technology. The Tapscotts (2016) further on this concept, talking about how blockchain technology could transform a number of industries by offering an unchangeable and transparent record of transactions.

Yermack investigated how blockchain technology might enhance corporate governance by offering unchangeable records of business decisions, including shareholder votes and CEO pay.

According to Casino, Dasaklis, and Patsakis, scalability concerns and the requirement for regulatory frameworks are just two of the obstacles that stand in the way of blockchain's broad implementation. Blockchain technology has the potential to improve supply chain transparency and traceability; Kshetri (2018) explored this possibility, while Zheng et al. underlined the significance of consensus methods in guaranteeing the security and integrity of blockchain networks. While Saberi et al.investigated how blockchain may help sustainable supply chain practices, Xu, Weber, and Staples emphasized the necessity of strong architectural frameworks to support blockchain applications.

Status of Cryptocurrency in India

There is no regulatory structure for cryptocurrencies in India. The government had constituted an interministerial Committee (IMC) on November2, 2017 to study virtual currencies. The groups report, along with a Draft Bill, flagged the positive aspect of distributed ledger technology and suggested various applications, especially in financial services, for its use in India including banks and other financial firms. The center had flagged reservations around its misuse and wanted to put a blanket ban in India.

Virtual asset income would be taxed at 30% according to Union Finance Minister Nirmala Sitharaman, who presented the FY 23 Budget to parliament on February

1. On these investments, 1% TDS(tax deducted at source) will be deducted. The tax regime, however, signifies that the government has legalized cryptocurrencies as an asset. In the speech she said that there has been a phenomenal increase in transactions in virtual digital assets.

A specific tax regime must be established because to the size and frequency of these transactions. The government offered a definition for virtual digital assets in the memorandum to the Finance Bill, 2022, which was "proposed to mean any information, code, number, or token (not being Indian currency or any foreign currency), generated through cryptographic means or otherwise providing a digital representation of value.

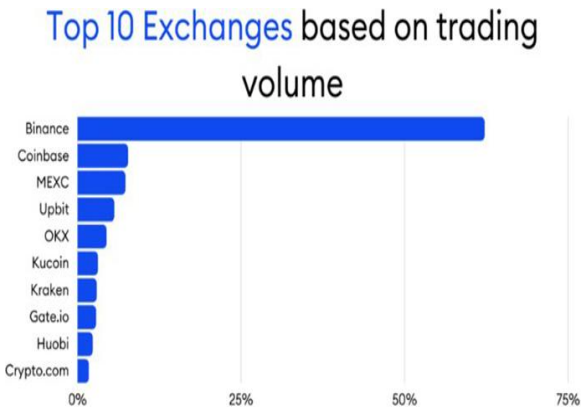
All cryptocurrencies are included in the definition, including popular ones like Bitcoin, so-called altcoins like dogecoin, and private cryptocurrencies whose transactions are kept secret. The definition covers all cryptocurrencies, whether they are mainstream ones like Bitcoin, so-called altcoins like dogecoin and private cryptocurrencies in which transactions are concealed.

The 1 % TDS rule will help the government track each crypto transaction. A limit of Rs. 50000 will be applied if the person paying consideration is an individual or Hindu Undivided Family, and either they are not involved in business or professions, or if they are, their yearly gross receipts or turnover do not exceed Rs. 1 crore for businesses, or Rs. 50 lakhs for professions.

A surcharge of 10–37% will be applied to any short-term capital gains or commercial revenue resulting from the transfer of cryptocurrency. The surcharge rates on long-term capital gains from the transfer of cryptocurrency will not be more than 15%. The

finance minister suggested that recipients might be taxed when giving away virtual digital goods.

Top Bitcoin Exchanges in India
Mudrex,CoinDC
BlackBull Markets



IV. CONCLUSION

The genesis of cryptocurrency is a white paper published by Satoshi Nakamoto proposing "a system for electronic transactions" based on a peer-to-peer network, where transactions would be verified and recorded by nodes, or computing systems, that are part of the network, thereby making such transactions decentralized.
Soon after, in 2009, Satoshi Nakamoto implemented the first cryptocurrency – Bitcoin. A draft bill titled as the 'Banning of Cryptocurrency and Regulation of Official Digital Currency Bill, 2019 (Draft Bill) was prepared by the Inter- Ministerial Committee constituted on 2 November 2017 to propose specific action on crypto currencies.

The Draft Bill has been under consideration and is yet to be introduced in the Parliament. The Draft Bill gives a wide definition to "cryptocurrency" and effectively prohibits the use of and dealing in all forms of digital assets, not just digital currencies. If bill passed by parliament, then investors in digital currencies would be afflicted.
You don’t need to invest in bitcoin to have a well-diversified portfolio. If you want to make a speculative bet on bitcoin, do it with a small, single-digit, portion of your assets. There isn’t sufficient evidence to suggest either will deliver more consistent returns. But investing in gold is better because it will give consistent return as comparing to bitcoin

Overall, the study's conclusions show that blockchain technology has a lot of potential to improve the security and openness of online transactions in the digital economy. However, a number of obstacles 168 must be overcome before blockchain can be widely used, such as scalability problems, unpredictability in regulations, and the requirement for strong architectural frameworks. To fully realize the potential of blockchain technology in the digital economy, these issues must be resolved.
Blockchain technology is a unique instrument in the digital economy that has the potential to significantly increase the security and transparency of digital transactions.
Blockchain technology can address the fundamental problems of trust, fraud, and inefficiencies that beset traditional systems by providing a decentralized, transparent, and immutable ledger system. The literature studied for this research demonstrates the wide range of industries in which blockchain technology is being applied, including corporate governance, supply chain management, banking, and more. To reach its full potential, blockchain technology must overcome a number of obstacles before it can be widely adopted. Because the consensus techniques now used in blockchain networks are sometimes slow and resource-intensive, the scalability problem still exists.

Furthermore, one of the biggest obstacles to blockchain adoption is the absence of clear regulations, especially in highly regulated sectors like healthcare and finance. Furthermore, to guarantee the security, scalability, and interoperability of blockchain applications, strong architectural frameworks must be developed.

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