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The Impact of Cryptocurrency on Traditional Bank Industry: A Literature Review

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Abstract
Nowadays, there has been a noticeable upsurge in the use of cryptocurrencies, which has coincided with important developments in artificial intelligence technology that have advanced blockchain procedures to new heights of maturity. This convergence has strengthened cryptocurrencies' dependability in addition to making them more feasible. But this development seriously jeopardizes the standing of Malaysian financial institutions, especially in the banking sector. With their ever-expanding range of benefits, cryptocurrencies immediately threaten the established roles of banks and even provide further advantages. By analyzing the reactions of the financial industry to the emergence of cryptocurrencies can to uncover potential strategies for banks to mitigate the challenges posed by this disruptive technology. Through an examination of relationship among the bank deposit, capital adequacy ratio, and the market capitalization of cryptocurrency, it helps to explore how the adoption of cryptocurrencies may reshape the banking sector and influence macroeconomic dynamics.

Keywords: Cryptocurrency, Traditional Bank Industry and Bank Deposit

1. Introduction

The emergence of cryptocurrencies in 2008 with Bitcoin marked a pivotal moment in finance, challenging traditional norms with its decentralized nature and autonomy from government control. Over the years, cryptocurrencies have evolved beyond speculation, becoming integral components of investment portfolios due to their numerous advantages like minimal transaction costs, enhanced security, and real-time settlements. This shift in sentiment has led to a growing trust in their potential and an increase in their proportion within investment portfolios.

This trend poses a significant challenge to traditional banks, as customers increasingly transfer their deposits to cryptocurrencies, potentially reducing bank deposits and threatening the stability of the banking sector. The survival of traditional banks in this evolving landscape hinges on factors like the volume of bank deposits and the Capital Adequacy Ratio (CAR). A robust CAR is crucial for banks to withstand the unique risks associated with cryptocurrencies and maintain financial stability.

Cryptocurrencies also present opportunities and risks for macroeconomic stabilization, as their widespread adoption could diminish the influence of central banks and disrupt traditional banking systems. This dynamic interaction between cryptocurrencies and the banking industry raises important questions about the future of finance, emphasizing the need for further research to understand its implications fully.

1.1 Problem Statement

The rapid advancements in artificial intelligence and blockchain technology have propelled cryptocurrencies to the forefront of finance, posing a significant challenge to traditional banking systems. Cryptocurrencies offer revolutionary advantages such as reduced transaction costs, streamlined fund management, and enhanced security, potentially reshaping the global financial landscape.

These advantages directly address key issues faced by traditional banks, including high transaction costs, security concerns, and limited fund management flexibility. Blockchain integration with cryptocurrencies enables cost-effective cross-border

transactions, bypassing traditional banking fees. Furthermore, the decentralized nature of cryptocurrencies enhances security by minimizing vulnerabilities to attacks and fraud.

As cryptocurrencies gain momentum, traditional banks face the risk of becoming obsolete. Metrics like the volume of bank deposits and the Capital Adequacy Ratio (CAR) serve as critical indicators of this potential shift. A decline in these metrics could signify a paradigmatic transformation, where traditional banks struggle to compete with more agile and technologically advanced cryptocurrency alternatives.

2. Literature Review

2.1 Financial Intermediation Theory

The Financial Intermediation Theory holds relevance in understanding the impact of cryptocurrencies on traditional banking systems. Traditionally, financial intermediaries like banks have facilitated transactions, managed deposits, and provided loans, leveraging their advantage in transaction costs and asymmetric information. However, with the emergence of cryptocurrencies and blockchain technology, decentralized services challenge the traditional intermediary role. Cryptocurrencies enable peer-to-peer transactions, bypassing the need for traditional intermediaries, potentially reshaping financial intermediation dynamics. This shift prompts examination of how cryptocurrencies redefine the roles of traditional financial intermediaries and their deposit and loan activities. As users embrace cryptocurrency efficiency and lower costs, traditional banks may face challenges in retaining deposits and offering competitive loan terms, urging banks to adapt their strategies and services accordingly.

2.2 Transaction cost innovation theory

The Transaction Costs Innovation theory, as discussed by Othman *et al*. (2020) [9], highlights the importance of reducing transaction costs in financial innovation. In the context of cryptocurrency, the theory suggests that the decrease in transaction costs, particularly through peer-to-peer (P2P) transactions, is a significant competitive advantage. Othman *et al*. (2020) [9] emphasize that the attractiveness of low-cost protocols will determine financial institutions' adoption of cryptocurrencies, considering transaction fees and overhead costs. Cryptocurrencies offer reduced fees and overhead expenses compared to traditional banking, making them appealing to users. However, maintaining low costs is crucial for encouraging widespread adoption. With many cryptocurrencies providing low transaction costs primarily related to infrastructure and data transfer, they present a more appealing alternative to traditional banking systems. Consequently, customers may be inclined to shift their funds to cryptocurrencies for better returns and reduced expenses, potentially impacting the traditional banking industry.

2.3 The Block Chain Technology: Running Core of Cryptocurrency

2.3.1 Blockchain

Blockchain technology, as described by Miraz and Ali (2018) [10], operates on a decentralized and distributed ledger system, ensuring secure and transparent recording of digital transactions. It consists of Transactions and Blocks, with Blocks containing transaction data and Transactions reflecting participant actions. Public blockchains allow universal access, while private ones restrict access to selected users. The public nature of blockchain ensures data integrity through participant consensus, decentralization, and encryption for privacy. This fosters trust among users, as validated transactions are immutable. Blockchain technology also prioritizes user privacy by safeguarding personal information during transaction verification. By eliminating the need for intermediaries, blockchain enhances trust within decentralized networks. Moreover, blockchain's versatility extends beyond transactions to managing healthcare data, authenticating legal documents, and integrating with emerging technologies like IoT and cloud services. Thus, the maturation of blockchain technology presents significant opportunities for cryptocurrency advancement.

2.3.2 Smart contracts

Blockchain technology provides a secure and efficient platform for recording transactions in a decentralized, verifiable, and cost-effective manner. However, the involvement of parties in conducting transactions within a block was addressed with the emergence of "Smart Contracts." These automated agreements run on a blockchain, executing predefined code upon meeting specified conditions. Smart contracts eliminate the need for a reliable third party, enabling parties to facilitate, carry out, and enforce agreements autonomously. They ensure transaction irreversibility and reliability by operating without intermediaries and are duplicated on each blockchain node to maintain contract integrity. Despite initial concerns about peer-to-peer trust, smart contracts have found applications in various online agreements, such as automated repayments and remote vending. The integration of smart contracts with blockchain technology addresses trust issues among strangers, fostering their adoption due to blockchain's decentralized and tamper-resistant nature.

2.4 Cryptocurrency Serves the Function of Money and Eliminates the need of Traditional Bank

Cryptocurrency, as noted by Oh & Nguyen (2018) [7], addresses the need for quick, easy, and cost-effective transactions in today's globalized and digitalized economies. By leveraging blockchain technology, cryptocurrency decentralizes control, putting power directly in users' hands. This innovative approach enables fast transactions, low or no fees, validation, and security without the need for traditional middlemen. Consequently, cryptocurrency drastically reduces transaction costs and overcomes geographical barriers, allowing transactions to occur worldwide with just an internet connection, facilitating seamless transactions across borders.

2.4.1 Cryptocurrency

The rise of cryptocurrency challenges traditional banks as autonomous FinTech instruments offer decentralized functions with advantages like minimal costs, heightened security, and real-time settlement. Cryptocurrency's independence from government control ensures stability and security, making it an attractive alternative to sovereign currencies for exchange in goods and services.

2.4.2 Bank deposit

The replacement of fiat currency with cryptocurrency

outside traditional financial systems lowers liquidity and affects banks' credit markets, potentially impacting their long-term viability. Blockchain technology enables cost-efficient transactions by reducing verification and networking costs through decentralized, secure ledgers. This technology streamlines processes and enhances trust, evident in cross-border real estate transactions where blockchain eliminates intermediaries and automates tasks through smart contracts. Research shows a significant long-term relationship between bank deposits and the global cryptocurrency market's capitalization, indicating a shift of capital from traditional banks to the cryptocurrency sector.

2.4.3 Cryptocurrencies and bank deposit

Othman *et al*. (2020) [9] propose that the Transaction Cost Innovation Theory suggests a reduction in transaction costs as a key driver of financial innovation, impacting the growth of cryptocurrency market capitalization and traditional bank deposits. Cryptocurrencies offer competitive advantages, including peer-to-peer transactions that lower costs and eliminate the need for intermediaries. A study by Baş., Özaydın., & Dura (2023) [5] highlights the potential negative impact of decentralized cryptocurrencies on traditional monetary systems, with a shift from traditional term deposits to cryptocurrency. Additionally, Othman *et al*. (2020) [9] assert a negative relationship between cryptocurrency market capitalization and bank deposits in the GCC states, suggesting a similar trend in Malaysia. Hence, the hypothesis posits:

Othman *et al*. (2020) [9] suggest that the growth of cryptocurrency market capitalization can impact traditional bank loan capability by potentially shifting funds from bank deposits to the cryptocurrency market. This shift, driven by various advantages of cryptocurrencies, may challenge banks' ability to lend due to reduced deposit availability. The Capital Adequacy Ratio (CAR) becomes crucial in evaluating a bank's financial health, especially concerning new challenges like cryptocurrencies (Agbeja *et al*., 2015) [2]. A strong CAR is essential for banks to withstand market shocks and regulatory changes, fostering stakeholder confidence and supporting sustainable growth.

3. Conclusion

The emergence of cryptocurrencies poses a significant obstacle to conventional banking institutions, as independent FinTech tools provide decentralized capabilities along with benefits such as low expenses, enhanced security, and immediate settlement. The lack of government control over cryptocurrency guarantees stability and security, making it an attractive substitute for traditional currencies in the exchange of goods and services. The substitution of fiat money with cryptocurrencies in non-traditional financial systems carries substantial consequences for banks, impacting liquidity and credit markets, which may pose a threat to their long-term sustainability. The change is further accelerated by blockchain technology, which offers cost-efficient transaction capabilities and greater trust through secure ledgers. Research findings indicate a significant correlation between the expansion of cryptocurrency market capitalization and the decrease in conventional bank deposits, implying a consistent flow of funds from financial institutions to the cryptocurrency industry. The rise of cryptocurrencies and their influence on transaction costs may pose a challenge to banks' ability to lend and require a reassessment of financial health indicators such as the Capital Adequacy Ratio (CAR) to ensure resilience in the changing financial environment.

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