


The Impact Of Blockchain Technology On Capital Market Transparency And Security

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Article Info	ABSTRACT
Keywords: technology, blockchain, transparency, security, capital market.	The capital market is one of the important instruments in a country's economy that plays a key role in allocating financial resources. Transparency and security in the capital market are crucial factors in maintaining investor confidence and market stability. In recent years, blockchain technology has emerged as an important innovation that has the potential to change the paradigm of financial transactions, including in the capital market. This study aims to investigate the influence of blockchain technology on the transparency and security of the capital market, with a focus on the Indonesian capital market. The research method used is secondary data analysis from several leading companies listed on the Indonesia Stock Exchange. The data used include the level of transparency of financial information, transaction security, and investor confidence. This research provides an important contribution to understanding the influence of blockchain technology on the capital market, especially in Indonesia. This study also provides a strong basis for regulators and capital market participants to consider adopting blockchain technology to enhance transparency, security, and investor confidence in the Indonesian capital market.
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INTRODUCTION

In the context of an increasingly complex and globalized capital market, *blockchain* technology promises to revolutionize the transparency and security of financial transactions. *Blockchain*, as a distributed ledger, enables the recording of transactions that are immutable and verifiable by all parties, thus potentially reducing the risk of fraud and increasing trust among market participants.(Ghosh, 2019; Verma, 2019). However, the application of this technology in capital markets still faces various challenges, including regulatory, privacy, and integration issues with existing systems (Fulmer, 2019).(Fulmer, 2019).

Past research has identified *blockchain's* potential to improve efficiency and security in a variety of sectors, including finance, manufacturing, and healthcare.(Ghosh, 2019). However, there is still a need for further research that focuses on *blockchain* applications in capital markets, particularly in relation to compliance with regulations such as MiFID II and the protection of customers' personal information.(Fulmer, 2019; Liang, 2019).. In addition, research has also shown

that *blockchain* can play an important role in dealing with crises, such as the COVID-19 pandemic, by strengthening the principles of transparency and accountability (Lopez & Alcaide, 2019). (Lopez & Alcaide, 2020)..

This research offers scientific novelty by providing a detailed analysis of how blockchain can be integrated into capital market infrastructure to address security and transparency challenges. The research will also explore how blockchain can help meet the product governance requirements introduced by MiFID II, as well as its impact on crisis management and operational sustainability during unexpected events such as a pandemic.

This research aims to answer the question: "How can blockchain improve transparency and security in capital markets, and what are the challenges faced in its implementation?" It is hypothesized that the integration of blockchain in capital markets will result in significant improvements in transparency and security, but will require appropriate strategies to overcome regulatory and technical barriers.

This research is important in the field of Financial Technology Management as it can provide guidance to capital market stakeholders on how to utilize blockchain to achieve regulatory compliance, increase investor confidence, and strengthen the resilience of the financial system to crises. As such, the results of this research are expected to contribute to the development of a more efficient, transparent, and secure capital market.

Literatur Review

Previous Literature Review

Past research has identified *blockchain's* potential to improve efficiency and security in a variety of sectors, including finance, manufacturing, and healthcare. However, there is still a need for further research that focuses on *blockchain* applications in capital markets, particularly in relation to compliance with regulations such as MiFID II and the protection of customers' personal information. In addition, research also shows that *blockchain* can play an important role in dealing with crises, such as the COVID-19 pandemic, by strengthening the principles of transparency and accountability.

Scientific Novelty Statement

This research offers scientific novelty by providing a detailed analysis of how *blockchain* can be integrated into capital market infrastructure to address security and transparency challenges. The research will also explore how *blockchain* can help meet the product governance requirements introduced by MiFID II, as well as its impact on crisis management and operational sustainability during unexpected events such as a pandemic.

Research Problem or Hypothesis

This research aims to answer the question: "How can *blockchain* improve transparency and security in capital markets, and what are the challenges faced in its implementation?" It is hypothesized that the integration of *blockchain* in capital markets will result in significant improvements in transparency and security, but will require appropriate strategies to overcome regulatory and technical barriers.

METHODS

This research aims to analyze the effect of *blockchain* technology on capital market transparency and security. In achieving this goal, the research will use a document analysis research design, with data collection techniques in the form of literature studies, and data analysis methods using *thematic analysis*. This approach was chosen for its relevance in understanding the theoretical concepts and practical applications of *blockchain* in the context of capital markets, as well as its ability to identify, analyze, and report patterns (themes) in data.

Research Design

The research design used is document analysis. Document analysis is a qualitative research method that involves collecting and interpreting data about documents to gain understanding and *insight*. In the context of this research, the documents analyzed will include academic journal articles, industry reports, *white papers*, and related regulations published between 2019 and 2024. This approach allows researchers to understand the recent developments in *blockchain* technology and its applications in capital markets, as well as the challenges and opportunities that arise.

Data Collection Technique

The data collection technique used was literature study. Literature study is used as the main data collection technique in this research. Data sources will include:

- a. Journal articles from leading academic databases such as *Scopus*, *Web of Science*, and *Google Scholar* relating to *blockchain* and capital markets.
- b. Industry reports and analysis from financial and technology institutions, including the *Bank for International Settlements* (BIS) and the *World Economic Forum* (WEF).
- c. *White papers* and technical documentation from relevant *blockchain* projects.
- d. Capital market-related regulations and policies issued by global and national financial authorities.

Literature selection will be based on the relevance, novelty, and credibility of the sources, with a focus on publications between 2019 and 2024 to ensure that the data analyzed reflects recent developments.

Data Analysis Method

The data analysis method that will be used is *thematic analysis*. *Thematic analysis* is used to analyze the data collected from the literature study. This process involves identifying, analyzing and reporting patterns (themes) in the data. The steps in *thematic analysis* include:

- a. Familiarization with Data: Reread documents and record initial ideas.
- b. Coding: Marking relevant parts of the text with codes that reflect the content or themes.
- c. Theme Search: Clustering similar codes to form potential themes.
- d. Theme *Review*: Examined themes to ensure consistency and relevance to the data and research objectives.
- e. Theme Definition and Naming: Develop clear definitions for each theme and determine appropriate names.
- f. Report Preparation: Combining thematic analysis into a coherent narrative, presenting findings in the context of existing literature.

This method allows the research to uncover how *blockchain* technology can affect capital market transparency and security, as well as identify the challenges and opportunities associated with its implementation. Using this research design, data collection techniques, and data analysis methods, the research is expected to provide deep insights into the influence of *blockchain* technology on capital market transparency and security, as well as a contribution to the literature in the field of Financial Technology Management.

RESULTS AND DISCUSSION

This research attempts to explain the effect of *blockchain* technology on capital market transparency and security. It will also explore how *blockchain* can be integrated into the capital market infrastructure to address security and transparency challenges. Based on document analysis, this study found several scientific findings relevant to the research hypothesis.

Scientific Findings

Some of the scientific findings related to blockchain on capital market transparency and security that the author found based on document analysis are as follows:

- a. Financial infrastructure
Blockchain can build a more transparent and secure financial infrastructure. For example, tokenization systems that use *blockchain* can increase transparency and security in financial transactions. (Tian et al., 2020).
- b. Accounting information system reconstruction
Blockchain can be used to reconstruct the accounting information system in the capital market. With this technology, accounting can become more relevant, detailed, and efficient in accounting information (Chen & Hu, 2021).
- c. Risk management
Blockchain can help in risk management in capital markets. For example, *smart contract* systems can help reduce the risk of fraud and market manipulation. (Umarov, 2023).
- d. Life management
Blockchain can be used in life management to improve transparency and information deficiencies in the life management system. (Feng, 2022).
- e. Blockchain integration
Blockchain can be integrated into capital market infrastructure to address security and transparency challenges (Apriani et al., 2023).
- f. MiFID II
Blockchain can help in meeting the product governance requirements introduced by MiFID II.
- g. Crisis management
Blockchain can be used in crisis management and operational continuity during unexpected events such as a pandemic.

Scientific Discussion

Based on the analysis of the documents that have been carried out, blockchain technology is able to have an important effect on the world of finance in relation to the following matters, namely:

- a. Financial transparency
A financial information tokenization system that is an implementation of blockchain technology will increase transparency by providing more details related to finances (El Bouanani et al., n.d.).
- b. Transaction security
The immutable verification system with blockchain technology will be the door to a higher level of security for financial transactions to take place.
- c. Life management
Blockchain technology can increase the level of transparency and provide more information in the life management system. *Blockchain* can build a more transparent financial infrastructure. With a tokenization system, financial transaction information can be explained in more detail and increase transparency.
- d. Risk Control: *Blockchain* can be used to help in the management of risk in the capital markets. A *smart contract* system can help reduce the risk of fraud and market manipulation. (Kumar Mohanta & Jena, n.d.).

Comparison with the Results of Other Researchers

Based on a comparison of other researchers' results, blockchain technology shows the following benefits:

- a. *Blockchain* and Capital Markets
Based on a study entitled "Block Chain Tehcnology Progress and Challenges in Capital Markets" written by U. Padmavathi, it is stated that *blockchain* technology has a great effect on the effectiveness of activities that occur in the capital market and can be the answer to concerns about the security of activities in the capital market. Blockchain technology is considered to be able to help increase the transparency of activities that occur in the capital market. ("Block Chain Technology Progress and Challenges in Capital Markets," 2019; Chen & Hu, 2021; Tian et al., 2020; Umarov, 2023)..
- b. *Blockchain* Technology and Accounting
Based on a study entitled "Reconstruction of Capital Market Ecology Based on Blockchain Technology" written by Yuxue Chen and Die Hu, it shows that *blockchain* technology can be used for the reconstruction of accounting information systems in the capital market so as to increase the confidence of transaction participants in the capital market in stock bidding companies that apply blockchain technology. (Chen & Hu, 2021).
- c. *Blockchain* and Energy Use Minimization
Based on a study entitled "The impact of Blockchain technology on the transformation of the nature of financial services" written by Husan S. Umarov, it shows that *blockchain* technology can minimize the use of energy in technology development.(Umarov, 2023).
- d. *Blockchain* and Life Management

Based on a study entitled "Exploration of "One Yard to the End" Material Life Cycle Management" written by TuiXian Feng, *blockchain* technology can shape the management cycle system in a company to be more effective and help companies carry out risk management. (Feng, 2022).

e. *Blockchain* and Supply Chain Management

Based on research entitled "Optimizing Data Transparency in the Supply Chain through Blockchain Technology Integration" written by Desy Apriani, Nadia Nur Azizah, Nova Ramadhona, and Dhiyah Ayu Rini Kusumawardhani, it shows that *blockchain* technology can assist a company in increasing the transparency of activities that occur in the supply chain so that crisis prevention can be carried out based on mitigation from the crisis prevention analysis. (Apriani et al., 2023)..

f. *Blockchain* and Crisis Management

Based on a study titled "The Impact of Blockchain Technology on Crisis Management: The Case of Covid-19" written by Muhammad Turki Alshurideh, Barween Al Kurdi, and Hevron Alshurideh shows that *blockchain* technology can help in crisis prevention such as the Covid-19 pandemic through a decentralized architecture that allows efficient information management with high data security and transparency. (Alshurideh et al., 2022)..

Implications for Financial Technology Management

This research has important implications for Financial Technology Management. With the use of blockchain technology, capital markets can be more transparent, secure, and efficient. This can help in strengthening investor confidence, reinforcing market integrity, and encouraging wider participation. However, to increase the effectiveness of using blockchain technology, appropriate and innovative strategies are needed. The research will also explore how blockchain can help meet the product governance requirements introduced by MiFID II, as well as its impact on crisis management and operational sustainability during unexpected events such as a pandemic.

MiFID II is a product governance requirement introduced in 2018. Blockchain can help fulfill these requirements by enabling transparency and security in financial transactions. Blockchain can be an immutable system of record, which allows financial transaction information to be described in more detail and increases transparency. With an immutable verification system, transactions can be more secure and irreversible.

Blockchain can be used in crisis management and operational continuity during unexpected events such as a pandemic. For example, smart contract systems can help reduce the risk of fraud and market manipulation, and facilitate risk management in capital markets. With this system, information can be explained in more detail and increase transparency, which allows for more effective crisis management.

CONCLUSION

This research shows that *blockchain* can help in improving transparency and security in the capital market, as well as help in meeting the product governance requirements introduced by MiFID II. With its tokenization system, reconstruction of accounting information system, risk management, and life management, *blockchain* can help in improving transparency and

information deficiency in the capital market. However, to increase the effective use of *blockchain* technology, appropriate and innovative strategies are needed.

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