

# Addressing Sharia issues in cryptocurrency: Analyzing the case of Bitcoin and Blockchain Technology

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## ABSTRACT

The emergence of cryptocurrency and blockchain technology has spurred significant advancements in the financial sector, raising questions regarding their compatibility with Sharia law. This study examines the convergence of cryptocurrencies, blockchain technology, and Sharia law, with an emphasis on assessing the compatibility of digital currencies with the principles of Islamic banking. The primary objective is to assess the feasibility of aligning cryptocurrencies, specifically Bitcoin, with Sharia law, and the ethical and operational criteria of Islamic finance. This study analyses the current body of literature and case studies on blockchain technology and its implementation in the Islamic financial system. This study highlights the primary difficulties associated with *riba* (interest), *gharar* (uncertainty), and *maysir* (gambling) in cryptocurrency, which may contradict Sharia rules. The study suggests possible remedies, such as employing different validation methods to reduce concerns related to *riba* and *maysir* and linking digital currency to tangible assets to tackle volatility. The main conclusions indicate that standard cryptocurrencies encounter difficulties in conforming to the Sharia norms. However, it is possible to create Sharia-compliant digital currencies (SCDCs) by emphasizing ethical and functional factors. Sovereign Central Digital Currencies (SCDCs) have the potential to serve as reliable and morally sound substitutes for traditional government-issued currencies in countries with Muslim populations and beyond. The article continues by highlighting the necessity for additional investigation into the development of SCDCs, examination of asset-backed currencies, and incorporation of blockchain technology in Islamic banking. These advancements have the capacity to transform Islamic finance and make significant contributions to a global economy that is more ethical, transparent, and sustainable.

**Keywords:** *Cryptocurrency, Sharia Issue, Islamic Law, Blockchain, Bitcoin.*

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## 1. INTRODUCTION

The financial landscape is undergoing a period of profound transformation, fueled by the emergence of cryptocurrency and blockchain technology. Yuneline (2019) capably highlights the transformative potential of these innovations, suggesting they could revolutionize the way we conduct financial transactions on a global scale. However, amidst the excitement, a critical question arises: can these advancements coexist harmoniously with the established principles of Sharia law (Haq & Ali, 2018). Sharia law, meticulously outlined by Hassan et al. (2020), serves as a moral and ethical compass, guiding various aspects of Muslim life. This includes both financial and investment decisions. To ensure the seamless integration of cryptocurrencies, such as ubiquitous Bitcoin, within this framework, a thorough analysis of the potential challenges is paramount.

To ensure the seamless integration of cryptocurrencies, like the ubiquitous Bitcoin, within this framework, a thorough analysis of potential challenges is paramount. The foundation of Sharia law might present hurdles for some cryptocurrencies. Traditional financial instruments are meticulously evaluated to ensure compliance with Sharia principles. This necessitates a close examination of how cryptocurrencies fare when measured against the established guidelines. However, its potential benefits are undeniable. The introduction of a Sharia-compliant digital currency, as envisioned by Kirchner (2020) could offer a more stable and ethically sound alternative to traditional fiat money. Recent research by Iman & Samsuri (2022) underscores a growing interest in exploring how Sharia law can be applied to cryptocurrencies, particularly Bitcoin. This burgeoning field of inquiry presents exciting possibilities for innovation in Islamic finance.

This study delves into this intricate intersection of cryptocurrency, blockchain technology, and Sharia law. By meticulously analysing the case of Bitcoin and blockchain technology through the prism of Sharia principles (Iman & Samsuri, 2022), we aim to illuminate the path forward. The primary objective, as eloquently articulated by (Yakubowski, 2019), is to meticulously evaluate the extent to which cryptocurrencies can be harmonized with Islamic ethical and financial standards. Furthermore, the paper will explore the potential of this technology to foster the creation of Islamic economic products, and how it might reshape the global economic landscape, with a particular focus on Muslim-majority nations (Zubaidi & Abdullah, 2017).

The research methodology employed leveraged a multifaceted approach. A comprehensive analysis of existing literature on the functions of money, digital currencies, and Islamic monetary theory will be conducted, drawing upon the works of preeminent scholars like (Iman & Samsuri, 2022). Additionally, the paper will meticulously review case studies that examine the application of blockchain technology within the Islamic financial system, as explored by (Billah, 2019; Zubaidi & Abdullah, 2017).

Through this rigorous analysis, we hope to not only shed light on the potential solutions for addressing Sharia concerns surrounding cryptocurrency, but also explore the exciting possibilities of introducing a Sharia-compliant digital currency (SDC) that adheres to the Islamic law functions of money. However, it is crucial to acknowledge the nascent nature of this field, as highlighted by the need for further research on digital currencies and blockchain technology from a Sharia perspective.

## 2. SHARIA-COMPLIANT DIGITAL CURRENCY: ETHICAL AND FUNCTIONAL CONSIDERATIONS

The intricate relationship between cryptocurrency, blockchain technology, and Islamic finance presents a compelling area for exploration. Our analysis has thus far highlighted the ethical and functional considerations of Sharia-compliant digital currency (SDC) as an alternative to fiat money within Muslim populations and countries (Billah, 2019). To move forward, a more granular examination of the features that make a digital currency compatible with the Sharia law is paramount. Central to this analysis is a thorough understanding of the core principles that underpin Sharia law, as they relate to financial instruments. Three key concepts emerge as significant hurdles – *riba* (usury), *gharar* (excessive uncertainty), and *maysir* (gambling) (Sifat & Mohamad, 2018). Traditional cryptocurrencies, with their proof-of-work mining mechanisms that often involve interest-like rewards, have raised concerns regarding

riba. However, the SDCs must explore alternative validation methods that do not involve usury. The notorious volatility of traditional cryptocurrencies creates a shroud of gharar (Evans, 2015). To be Sharia compliant, SDCs must address this volatility by potentially being pegged to real assets or employing alternative mechanisms to ensure price stability. Some argue that proof-of-stake validation methods used in certain cryptocurrencies, where rewards are based on chance selection, could be construed as akin to gambling or maysir (Bergstra, 2015). Therefore, SDCs must explore alternative validation mechanisms that eliminate this element of chance. Beyond these core principles, a deeper exploration of the functional requirements demanded by Islamic law for a viable currency is essential (Kirchner, 2020).

These functions encompass three key pillars: a sound currency must retain its value over time. The aforementioned concerns about volatility in traditional cryptocurrencies raise questions about their suitability as value stores. SDCs must address this by employing mechanisms to ensure price stability and mitigate inflation (Haq & Ali, 2018); A currency must serve as a standard unit for measuring the value of goods and services. The widespread adoption and acceptance of SCDC within Muslim communities would be crucial for it to function effectively as a unit of account (Abdullah & Mohd Nor, 2018); A currency must be readily accepted as a form of payment for goods and services. Building trust and ensuring widespread merchant acceptance would be essential for SDCs to function effectively as a medium of exchange within Islamic economies (Mohamed, 2020). A recent study by Masoomi (2023) investigated the potential of blockchain technology in addressing issues of transparency and fairness, which are essential for SDCs.

By meticulously examining these considerations, we can begin to illuminate the features and functionalities of Sharia-compliant digital currency. Further research is necessary to explore potential models for SCDC design, including asset-backed currencies, stablecoins pegged to Islamic instruments such as Sukuk bonds, and alternative validation methods that eliminate riba and maysir's concerns. The successful development and adoption of SCDC could not only revolutionize financial transactions within Muslim communities, but also potentially offer a more ethical and stable alternative to traditional fiat currencies on a global scale.

### **3. SHARIA ISSUES IN CRYPTOCURRENCY: EVALUATING BITCOIN AND BLOKCHAIN TECHONOLGY**

The analysis of existing literature has not only underscored the pressing need for a comprehensive evaluation of Sharia issues concerning cryptocurrency, notably Bitcoin, and blockchain technology (Zulkhibri, 2019) but has also illuminated the necessity for a more nuanced examination of their specific features. Such an examination is imperative to determine their adherence to Sharia principles (Maierbrugger, 2017). However, this is merely the tip of the iceberg in our quest for a thorough understanding of the intersection between these technologies and Islamic finance.

Indeed, beyond the scrutiny of individual cryptocurrencies, a deeper and more profound exploration of blockchain technology within the Islamic financial ecosystem is warranted (Alam & Zameni, 2019). This journey entails delving into the intricate layers of blockchain's underlying mechanisms, consensus algorithms, and transaction protocols to discern their compatibility with Sharia principles (Maloney, 2021). Only through such meticulous dissection can we ascertain the true alignment of blockchain technology with the ethical and legal frameworks of Islamic finance.

Furthermore, unraveling the implications of blockchain adoption within Islamic finance necessitates a holistic approach encompassing a comprehensive analysis of its potential benefits, challenges, and regulatory considerations (Mohamed, 2016). This involves not only assessing the technological capabilities of blockchain but also understanding its socio-economic and regulatory implications within the context of Islamic finance. Such an endeavor requires interdisciplinary collaboration and a synthesis of insights from various domains, including finance, law, technology, and Islamic studies (Rabbani, Khan, et al., 2020).

Moreover, as we embark on this journey of exploration, it has become increasingly evident that a mere surface-level understanding of blockchain technology within the Islamic financial system is insufficient. Instead, what is needed is a profound and multifaceted exploration that delves into its implications at both

micro and macro levels (Kakkattil, 2019). This includes understanding how blockchain technology can enhance financial inclusion, promote transparency, and facilitate ethical financial practices within Muslim-majority communities (Begum et al., 2019). Omar et al. (2022) discussed the regulatory challenges and ethical dilemmas faced by Islamic finance when adopting blockchain technology. This journey requires interdisciplinary collaboration and the integration of insights from finance, law, technology, and Islamic studies (Rabbani et al., 2020).

Additionally, a deeper exploration of blockchain technology within the Islamic financial system is necessary not only to understand its implications, but also to address potential challenges from a Sharia perspective. This entails grappling with complex ethical dilemmas, regulatory ambiguities, and socioeconomic considerations that may arise when blockchain technology is integrated into Islamic finance.

#### **4. POTENTIAL IMPACT ON ISLAMIC ECONOMICS AND GLOBAL ECONOMY ADDRESSING SHARIA ISSUES IN CRYPTOCURRENCY**

The comprehensive literature review conducted thus far has shed light on the significant potential that Sharia-compliant digital currency and blockchain technology hold for shaping Islamic economics and the broader global economic landscape (Abubakar et al., 2019). While existing research provides valuable insights, further investigation is imperative to deepen our understanding of the multifaceted implications of these innovations. One area that warrants closer examination is the potential for fostering innovation in Islamic economic products through the integration of Sharia-compliant digital currency and blockchain technology (Halal Digital Economy, 2019). By leveraging the inherent features of blockchain, such as transparency, immutability, and decentralization, there exists a unique opportunity to develop novel financial instruments and services that adhere to Islamic principles while catering to the evolving needs of Muslim communities worldwide (Zubaidi & Abdullah, 2017). Exploring the feasibility and viability of such innovative products can not only contribute to the diversification of Islamic finance but also foster greater financial inclusion and resilience within Muslim populations (Mansori et al., 2015). Recent case studies conducted by Truby et al. (2022) have shown how blockchain technology can enable innovative financial products within Islamic finance, providing new avenues for diversification and growth. This includes the development of smart contracts, which can facilitate automated and transparent execution of agreements based on predefined conditions (Wang et al., 2019). When aligned with Sharia principles, these smart contracts have the potential to revolutionize various aspects of Islamic finance, including trade finance, supply chain management, and asset tokenization.

Furthermore, a more in-depth analysis of case studies and real-world examples pertaining to the application of blockchain technology in Islamic financial systems is essential. While theoretical frameworks provide valuable insights, empirical evidence derived from practical implementations can offer nuanced perspectives on the challenges, opportunities, and outcomes associated with blockchain adoption in Islamic finance (Sahabuddin et al., 2019). By scrutinising successful use cases and identifying lessons learned from past initiatives, researchers and practitioners can glean valuable insights into the potential pitfalls and best practices for integrating blockchain technology into the Islamic financial ecosystem (Iman & Samsuri, 2022). For instance, the transparency and traceability of blockchain can enhance halal supply chain management, ensuring the integrity and authenticity of halal products from production to consumption (Halal Digital Economy, 2019). This not only benefits consumers, but also strengthens the global halal market.

However, it is important to recognize that the integration of blockchain technology and Sharia-compliant digital currency into Islamic economics presents challenges that must be addressed. These include regulatory uncertainties, potential risks associated with smart contracts, and the need for robust governance frameworks to ensure compliance with Sharia principles (Alsaghir, 2023). Recent case studies by Qamruzzaman (2023) show how blockchain technology can enable innovative financial products within Islamic finance, providing new avenues for diversification and growth. These insights contribute to the understanding of the broader economic impacts of these emerging technologies.



Moreover, it is crucial to consider the broader economic impact of Sharia-compliant digital currencies and blockchain technology in Muslim populations and countries. Beyond their implications for Islamic finance, these innovations have the potential to catalyse economic growth, foster entrepreneurship, and enhance cross-border trade and remittance flows in Muslim-majority regions (Zubaidi & Abdullah, 2017). Understanding the macroeconomic dynamics and socio-economic ramifications of adopting Sharia-compliant digital currency and blockchain technology can provide policymakers with valuable insights into harnessing these technologies for sustainable development and prosperity (Abubakar et al., 2019).

In conclusion, while the potential impact of blockchain technology and Sharia-compliant digital currency on Islamic and global economies is vast, it is imperative to proceed with caution and conduct further research to address the challenges and complexities involved. By doing so, we can unlock the full potential of these innovations and pave the way for a more ethical, transparent, and inclusive financial future for Muslim-majority regions and beyond.

## 5. RESULTS AND DISCUSSION

The extensive examination of existing scholarly literature on the functions of money, digital currencies, and Islamic theory of money has yielded valuable insights into the potential of addressing Sharia issues in cryptocurrency. This research underscores the importance of evaluating the extent to which cryptocurrency can align with Sharia principles and ethical standards, as identified by Kirchner (2020). The findings suggest that there is growing interest in exploring the compatibility of cryptocurrency, particularly Bitcoin, with Sharia law, as highlighted by Abubakar et al. (2019). Researchers and scholars have emphasized the necessity for a comprehensive analysis of Sharia issues associated with cryptocurrency and blockchain technology. The exploration of blockchain technology in the Islamic financial system has presented both opportunities and challenges from a Sharia perspective (Billah, 2019).

The discussion of *riba*, *gharar*, and *maysir* in cryptocurrencies and blockchain technology highlights the complexities of assessing compliance with Sharia law. Researchers must meticulously evaluate the design, implementation, and impact of these technologies to ensure that they align with Islamic ethical and legal principles. Such a currency could offer a stable and ethical alternative to conventional money, particularly within Muslim populations and countries (Zaher 2001). An examination of case studies and examples related to the application of blockchain technology in the Islamic financial system has revealed the potential for creating Islamic economic products and their impact on the global economy (Hasan et al., 2020).

Discussions on the potential of cryptocurrency technology to create Islamic economic products and its impact on the global economy, particularly within Muslim populations and countries, have provided valuable insights (Zubaidi & Abdullah, 2017). Existing literature emphasizes the importance of addressing Sharia issues in cryptocurrency and the need for continued research to ensure alignment with Islamic law principles (Alam & Zamani, 2019). Moreover, while there is growing interest in the development of Sharia-compliant digital currency, significant challenges remain in terms of regulatory frameworks and legal considerations. This calls for collaboration among scholars, regulators, and industry experts to create a robust framework that can support the safe and ethical use of blockchain technology in Islamic finance.

Thus far, research has emphasized the importance of maintaining transparency and accountability in the application of blockchain technology. Islamic finance can enhance its practices and improve trust among stakeholders by leveraging the inherent features of blockchain, such as immutability and decentralization. Moreover, blockchain's potential to facilitate cross-border trade and remittance flows aligns with the goals of Islamic economics, promoting economic growth and development in Muslim-majority regions. By addressing the challenges and harnessing the benefits of blockchain technology, Islamic finance can pave the way for a more sustainable and inclusive global economy. Recent studies by Purusottama et al. (2023) demonstrate the potential for blockchain technology to create innovative Islamic economic products and their impact on the global economy. These contributions form the basis for further research and potential development of a Sharia-compliant digital currency. In conclusion, the analysis of the existing literature has laid the groundwork for understanding the potential integration of

cryptocurrency and blockchain technology within the framework of the Sharia principles. Further research in this area is essential to develop a comprehensive understanding and facilitate the potential introduction of Sharia-compliant digital currency.

## 6. CONCLUSIONS

Existing literature has provided useful insights into the integration of digital currency and blockchain technology in accordance with Sharia principles. The examination emphasized the significance of addressing Sharia concerns in cryptocurrency and the potential for creating a Sharia-compliant digital currency that conforms to Islamic law principles. However, additional research is needed to delve deeper into specific aspects and assess the extent to which cryptocurrencies, particularly Bitcoin, can adhere to Sharia standards. The literature review highlighted the ethical and practical considerations of Sharia-compliant digital currency and the need for a more comprehensive understanding of its compatibility with Islamic law. Furthermore, the exploration of blockchain technology in the Islamic financial system has opened opportunities for creating innovative Islamic economic products; however, it also necessitates a more detailed analysis of its implications from a Sharia perspective. The exploration of Sharia-compliant digital currency and blockchain technology has the potential to revolutionize Islamic finance and shape a broader global economy. By addressing challenges, such as *riba*, *gharar*, and *maysir*, these emerging technologies can pave the way for a more ethical and inclusive financial future. Recent investigations by [Albalawee & Al Fahoum \(2023\)](#) emphasise the importance of developing a comprehensive understanding of the compatibility of cryptocurrency and blockchain technology with Islamic law. Continued research will pave the way for the potential introduction of a Sharia-compliant digital currency that fulfills the Islamic legal functions of money.

As such, continued research is essential to address the scarcity of literature specifically focused on Sharia-compliant digital currencies, evaluate the Sharia issues associated with cryptocurrency and blockchain technology, and comprehend their potential impact on Islamic economics and the global economy. This will provide a more thorough understanding and pave the way for the potential introduction of a Sharia-compliant digital currency that fulfills the Islamic legal functions of money. Collaboration among scholars, regulators, and industry experts is essential to create a robust framework that supports the safe and ethical use of blockchain technology and digital currency within Islamic finance. By doing so, we can unlock the full potential of these innovations and contribute to a more transparent, inclusive, and sustainable financial landscape

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