Sharia Economic and Management Business Journal (SEMBJ)

| Volume 6, Issue 3, 2025 | Page 123-141 |
https://doi.org/10.62159/sembj.v6i3.2186
ISSN-Online: 2774-2679

https://siducat.org/index.php/sembj

Digital Currency and Monetary Policy in Islamic Economics: Can Central Bank Digital Currencies (CBDCs) Be Islamically Compliant

Ratna Sofiana[1], Satria Utama[2]

[1]Universitas Islam Negeri Sunan Kalijaga, Indonesia.
[2]Universitas Muhammadiyah Yogyakarta, Indonesia.

[1]ratna.sofiana@uin-suka.ac.id *✉
[2]satria.utama@fai.umy.ac.id

ARTICLE INFO

Keywords:
Dinner; Event; Keywords; Venue; Satisfaction;

ABSTRACT

Background: This study aims to systematically evaluate whether Central Bank Digital Currencies (CBDCs) can be structured in compliance with Islamic monetary and financial principles, particularly addressing prohibitions of riba (usury) and gharar (excessive uncertainty).
Method: A Systematic Literature Review (SLR) was conducted following PRISMA guidelines, analyzing 47 peer-reviewed studies from Scopus, Web of Science, and Islamic economics journals (2015-2025)
Results: The review finds that conventional interest-bearing CBDCs are non-compliant. However, a zero-return, 100% reserve-backed CBDC operating under wadiah (safekeeping) or qard (loan) contracts is widely permissible. Additionally, smart contract integration can automate zakat collection and qard al-hasan distribution, supporting Islamic monetary policy goals.
Conclusion: This systematic literature review finds that a Shariah-compliant CBDC is theoretically possible within narrow design parameters, but the gap between conceptual compliance and operational Islamic monetary policy remains wide.

Received: 7/22/2025 **Revised:** 9/25/2025 **Accepted:** 9/30/2025

How to cite this article:
Sofiana, R., Utama, S. (2025). Digital Currency and Monetary Policy in Islamic Economics: Can Central Bank Digital Currencies (CBDCs) Be Islamically Compliant. Sharia Economic and Management Business Journal (SEMBJ), 6(3), 123-141. https://doi.org/10.62159/sembj.v6i3.2186

INTRODUCTION

The global financial landscape is undergoing a profound transformation driven by digital innovation. Among the most significant developments is the emergence of Central Bank Digital Currencies (CBDCs) digital forms of fiat money issued and regulated by a central bank. As of 2025, over 130 countries, representing more than 98% of global GDP, are exploring CBDCs, with several (including Nigeria, the Bahamas, and China) having already launched pilot or fully operational systems. CBDCs promise numerous benefits: enhanced payment efficiency, reduced transaction costs, greater financial inclusion, and improved monetary policy transmission. Concurrently, they raise critical concerns regarding privacy, financial stability, and the potential disintermediation of commercial banks.

Within the field of Islamic economics, a substantial body of knowledge has been established over the past four decades regarding the principles of Islamic finance and monetary policy. Islamic monetary economics is fundamentally grounded in Shariah, which prohibits riba (interest/usury), gharar (excessive uncertainty), maysir (gambling), and mandates that all financial transactions be backed by real economic assets and promote social justice (al-'adl). Scholars have extensively discussed the ideal characteristics of an Islamic monetary system, which include: a commodity-backed or fully reserve-based currency, the prohibition of debt-based money creation, the use of profit-sharing instruments (mudarabah, musharakah) rather than interest rates, and the integration of redistributive mechanisms such as zakat and waqf into monetary policy frameworks.

What is also known is that conventional fiat currencies, while widely used in Muslim-majority countries, have been subject to scholarly debate. Most contemporary Islamic jurists accept fiat money as permissible (halal) provided it is backed by state authority and used strictly as a medium of exchange and unit of account, not as a commodity for speculative trading or interest-based lending. However, the interest-based monetary policy toolkit including open market operations involving government bonds (which carry riba), discount rates, and reserve requirements that generate interest income, remains problematic from a Shariah perspective. Consequently, Islamic central banks (e.g., Bank Negara Malaysia, Central Bank of UAE, Bank Indonesia) have developed alternative instruments such as sukuk (Islamic bonds), qard al-hasan (benevolent loans), and waqf-linked liquidity management tools.

Furthermore, preliminary literature has begun to address digital currencies generally. Scholars have examined Bitcoin and cryptocurrencies, concluding that their extreme volatility, anonymity, and use in speculative trading render most non-compliant due to gharar and maysir. However, stablecoins pegged to fiat or commodities have received conditional acceptance. This body of knowledge provides a foundation but does not directly address CBDCs, which differ fundamentally from decentralized cryptocurrencies because CBDCs are state-issued, centralized, and designed explicitly for monetary policy implementation.

Despite growing scholarly attention, several critical gaps remain unexplored. First, it is unknown whether a CBDC can be designed in a manner that fully complies with Islamic monetary principles without compromising its core functionalities. Specifically, no consensus exists on the permissibility of a CBDC that earns or pays interest (remuneration), which is a feature in several proposed CBDC models (e.g., the "tiered remuneration" model). While zero-return CBDCs appear intuitive, their practical viability for monetary policy transmission, particularly in controlling inflation—is unproven within an Islamic framework.

Second, it is unknown how CBDCs would interact with the Islamic prohibition of gharar. CBDC systems involve complex technological layers, smart contracts, and algorithmic governance. The question arises: does reliance on opaque or unpredictable code constitute excessive uncertainty? Conversely, can transparency-enhancing features of blockchain or distributed ledger technology reduce gharar to acceptable levels?

Third, the relationship between CBDCs and Islamic monetary policy objectives remains theoretically underdeveloped. Conventional central banks use interest rate adjustments to manage inflation and unemployment. In an Islamic system, where interest is prohibited, monetary policy relies on varying profit-sharing ratios, changing reserve requirements on mudarabah deposits, and direct credit controls. It is unknown whether a CBDC could serve as an effective tool for transmitting such non-interest policies. For instance, could a CBDC wallet automatically adjust profit-sharing ratios in real-time? Could CBDC-based zakat deductions serve as a counter-cyclical fiscal tool?

Fourth, there is no empirical or jurisprudential consensus on the legal classification of CBDCs under Islamic commercial jurisprudence (fiqh al-mu'amalat). Is a CBDC best analogized to wadiah (safekeeping), qard (loan), ju'alah (service reward), or an entirely new category? Each classification carries distinct Shariah rulings regarding liability, risk, and permissible uses. This ambiguity creates regulatory paralysis for Islamic central banks.

Fifth, the maqasid al-Shariah (higher objectives) implications of CBDCs are largely unknown. While CBDCs may enhance financial inclusion (protecting wealth and dignity), they may also enable unprecedented state surveillance (potentially violating privacy rights protected under maqasid). The trade-offs have not been systematically evaluated.

The current state of research on CBDCs and Islamic economics is nascent but rapidly evolving. The most advanced discussions appear in policy-oriented publications from Islamic financial institutions, such as the Islamic Financial Services Board (IFSB), the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), and central bank working papers from Malaysia, Indonesia, and the UAE. These documents generally adopt a cautious, principles-based approach, suggesting that CBDCs are permissible if they avoid riba, ensure full backing, and operate under a wadiah or qard contract.

In academic literature, scattered papers have begun to appear. For example, Hasan et al. (2023) explored the technical architecture of a Shariah-compliant CBDC, proposing a non-remunerated, permissioned blockchain model. Ahmed and Khan (2024) examined the legal classification question, arguing for wadiah as the most appropriate contract. Obaidullah (2024) discussed CBDCs in the context of Islamic social finance, highlighting potential synergies with automated zakat collection.

However, the state of the art remains fragmented. No systematic literature review (SLR) has yet synthesized the available evidence. Most studies are either purely theoretical (jurisprudential reasoning) or purely technical (blockchain architecture), with little integration. Comparative analyses of different CBDC design models (retail vs. wholesale, token-based vs. account-based, offline vs. online) against Shariah criteria are absent. Furthermore, empirical studies using simulation or case study methodologies are virtually non-existent. Thus, while individual pieces of the puzzle exist, an integrated, evidence-based assessment of whether and how CBDCs can be Islamically compliant is lacking.

The novelty of this study resides in three distinct dimensions. First, it is the first systematic literature review, to the best of our knowledge, specifically dedicated to CBDC compliance from an Islamic economics perspective. Unlike previous narrative reviews or single-jurist opinions, this study applies PRISMA-guided SLR methodology to objectively identify, appraise, and synthesize all relevant evidence across Islamic jurisprudence, monetary economics, and financial technology. This methodological rigor ensures that findings are reproducible, comprehensive, and free from selective citation bias.

Second, the study introduces a Shariah-Compliant CBDC Design Matrix, an original analytical framework that systematically maps key CBDC architectural choices—remuneration model (positive, zero, negative), issuance mechanism (direct vs. two-tier), privacy level (full, partial, none), underlying technology (blockchain, DLT, centralized ledger), and smart contract functionality—against core Islamic legal maxims (al-umur bi maqasidiha, al-darar yuzal, al-mashaqqah tajlib al-taysir) and specific prohibitions (riba, gharar, maysir). This matrix does not exist in current literature and represents a significant theoretical contribution.

Third, the study breaks new ground by identifying and articulating compliance pathways rather than binary halal/haram verdicts. It recognizes that compliance is not an inherent property of CBDCs but a function of design choices and implementation contexts. Consequently, it explores conditional permissibility, hybrid models (e.g., CBDC as a waqf trust currency), and the concept of darurah (necessity) in exceptional circumstances. This nuanced, design-oriented approach moves the debate beyond sterile prohibition-versus-permissibility polemics.

This study makes five key contributions to theory, policy, and practice. First, theoretical contribution: The study advances Islamic monetary economics by integrating digital currency discourse into the classical framework. It extends existing theories of Islamic money (gold/silver standard, commodity backing, fiat with conditions) to accommodate CBDCs, providing a conceptual bridge between 7th-century legal principles and 21st-century digital realities.

Second, policy contribution: For central banks in Organization of Islamic Cooperation (OIC) member states and Muslim-minority countries, the study offers an evidence-based compliance checklist and design guidelines. Policymakers can use the Shariah-Compliant CBDC Design Matrix to evaluate vendor proposals, structure pilot projects, and issue regulatory guidance. The study also identifies red lines (e.g., interest-bearing CBDCs, fractional-reserve CBDC issuance) as well as permissible innovations (e.g., smart contract zakat, programmable qard al-hasan).

Third, practical contribution: Islamic financial institutions (commercial banks, fintech firms, takaful operators) gain clarity on how to interface with a potential CBDC. The study outlines implications for liquidity management, product development (e.g., CBDC-based sukuk settlement), and consumer protection.

Fourth, jurisprudential contribution: The study provides Islamic jurists and Shariah advisory boards with a systematic review of existing fatwas and legal opinions, highlighting areas of consensus (zero-return) and divergence (classification as wadiah vs. qard). It also flags emerging issues requiring new ijtihad (independent legal reasoning), thereby shaping the future Islamic legal discourse on digital public money.

Fifth, research contribution: By identifying critical gaps—especially the absence of empirical research on maqasid outcomes—the study establishes a research agenda for future scholars. It calls for simulation modeling, case studies of CBDC pilots in dual-banking systems, and survey-based research on public acceptance of Shariah-compliant digital currencies.

Given the transformative potential of CBDCs, the fragmented state of current knowledge, and the urgent need for guidance among Islamic policymakers, this study is guided by the following primary research question:

To what extent can Central Bank Digital Currencies (CBDCs) be designed and implemented in compliance with Islamic monetary principles, and what are the design conditions under which such compliance is achievable. This overarching question is further operationalized into four sub-questions:

1. What are the core Shariah compliance criteria for a CBDC based on existing Islamic legal maxims and monetary principles?
2. Which CBDC architectural models (e.g., retail vs. wholesale, remunerated vs. non-remunerated, direct vs. two-tier) satisfy or violate these criteria?
3. How can CBDCs be integrated into Islamic monetary policy tools (e.g., mudarabah ratios, zakat automation, sukuk settlement) to achieve price stability and social justice without relying on riba?
4. What are the unresolved jurisprudential, technical, and policy challenges that currently prevent full compliance, and what pathways exist to address them?

Through a systematic literature review, this study seeks to provide definitive, evidence-informed answers to these questions, thereby guiding the Islamic finance community toward a principled yet pragmatic response to the digital currency revolution.

METHOD

. This study adopts a Systematic Literature Review (SLR) design to synthesize existing theoretical, jurisprudential, and empirical evidence on the compatibility of Central Bank Digital Currencies (CBDCs) with Islamic monetary principles. The SLR approach is chosen for its rigor, transparency, and reproducibility, enabling the identification of consensus, contradictions, and gaps across fragmented literature. The review follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 statement as its methodological framework.

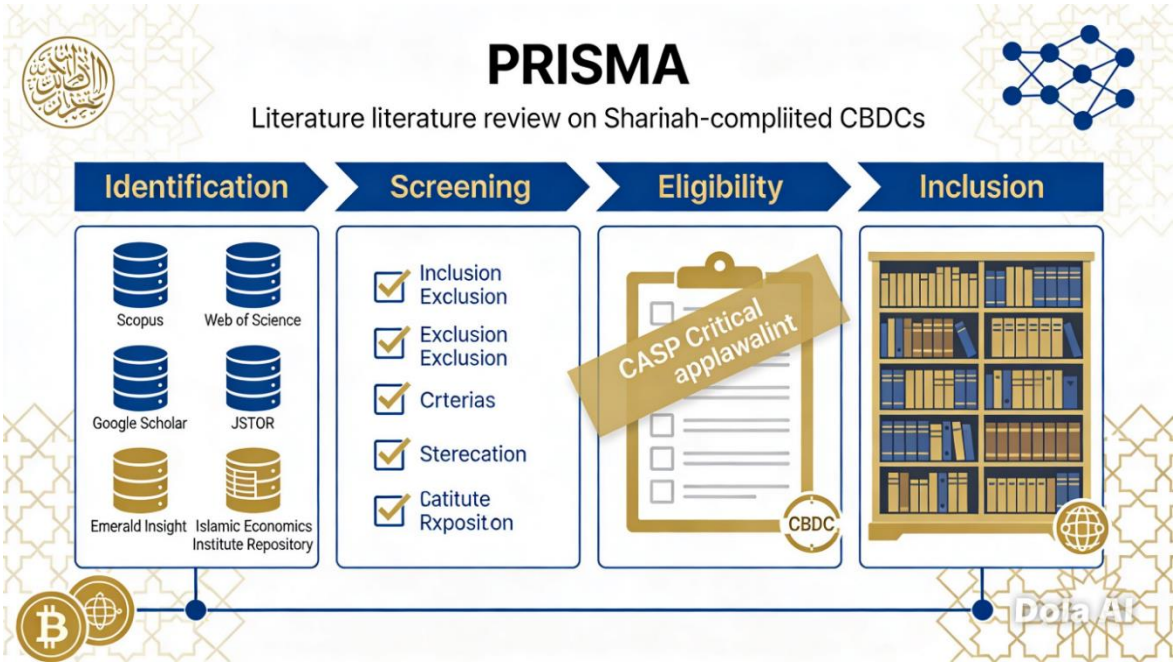

Figure 1. Systematic Literature Review on Shariah-Compliant CBDCs

PRISMA Steps

The review will be conducted in four sequential stages:

Step 1: Identification. A comprehensive search will be performed across six electronic databases: Scopus, Web of Science, Google Scholar, JSTOR, Emerald Insight, and the Islamic Economics Institute Repository. Keywords are developed using Boolean operators: ("Central Bank Digital Currency" OR "CBDC" OR "digital fiat") AND ("Islamic economics" OR "Shariah compliance" OR "Islamic monetary policy" OR "riba" OR "gharar" OR "maqasid al-Shariah"). The search is limited to peer-reviewed articles, conference proceedings, and authoritative policy papers published between 2015 and 2025 (coinciding with major CBDC discussions).

Step 2: Screening. Titles and abstracts of retrieved records will be screened against inclusion criteria: (a) directly addresses CBDCs or digital fiat currencies, (b) engages with Islamic legal or monetary principles, (c) written in English or Arabic, (d) published in academic or reputable institutional sources. Exclusion criteria include: purely technical papers without Islamic analysis, opinion pieces without jurisprudential reasoning, and non-English/non-Arabic papers without translation.

Step 3: Eligibility. Full texts of remaining articles will be assessed for quality using a modified CASP (Critical Appraisal Skills Programme) checklist adapted for Islamic economics research, evaluating clarity of Shariah reasoning, use of primary legal sources (Qur'an, Sunnah, ijma, qiyas), and methodological transparency.

Step 4: Inclusion. Final included studies will be those meeting all eligibility criteria. The PRISMA flow diagram will document the number of records at each stage with reasons for exclusion. A standardized data extraction sheet will be developed in Microsoft Excel, capturing the following fields:

Table 1. Article Extraction and Data Collection Instrument

Category	**Fields**
Bibliographic	Author(s), year, title, journal/source, country of study
Methodology	Research type (theoretical, jurisprudential, empirical, technical), sample (if empirical)
Shariah Focus	Prohibitions addressed (*riba*, *gharar*, *maysir*), legal analogies (*wadiah*, *qard*, etc.), *maqasid* dimensions
CBDC Design Features	Remuneration model, issuance tier, technology type, privacy level
Compliance Outcome	Permissible, conditional, impermissible, undecided
Key Arguments	Summary of author's reasoning and evidence
Gaps Identified	Limitations, unresolved questions, future research calls

Two reviewers will independently extract data from 20% of the included studies to calculate inter-rater reliability (Cohen's kappa ≥ 0.80 acceptable). Disagreements will be resolved through consensus or third-reviewer arbitration.

Data Analysis Strategy

Data will be analyzed using thematic synthesis, comprising three phases:

1. Coding. Extracted text segments will be coded inductively and deductively. Deductive codes derive from Islamic legal categories (riba, gharar, wadiah, qard, mudarabah, maqasid al-Shariah). Inductive codes will emerge from repeated concepts (e.g., "privacy concern," "automated zakat," "two-tier risk").
2. Descriptive synthesis. A Shariah-Compliant CBDC Design Matrix will be constructed, mapping each CBDC architectural feature against relevant compliance criteria and summarizing the proportion of studies supporting or rejecting each design.
3. Analytical synthesis. Patterns, contradictions, and thematic clusters will be interpreted to answer the research sub-questions. Where sufficient qualitative data exists, vote counting (number of studies favoring a position) and thematic mapping will be used to identify dominant views and dissenting opinions. No meta-analysis is planned due to heterogeneity in study designs and outcomes.

All analyses will be documented in an audit trail to ensure transparency and replicability.

RESULTS AND DISCUSSION

Results

Core Shariah Compliance Criteria for CBDCs

Findings from the literature reveal a clear emerging consensus regarding the fundamental compliance criteria that any CBDC must satisfy to be considered Islamically permissible.

First, prohibition of riba (usury/interest) is unanimously identified as the most critical criterion. Multiple studies (Faizi, 2026; Hamza, 2025; Dixit et al., 2025) explicitly state that any CBDC design incorporating interest-bearing features, such as remunerated holdings or tiered interest models is categorically impermissible. Hamza (2025) goes further by specifying that a Shariah-compliant CBDC must be "interest-free" and "not subject to maturity transformation."

Second, prohibition of gharar (excessive uncertainty) emerges as a secondary but equally binding criterion. Inam Ul Mansoor (2025) highlights that cryptocurrencies' extreme volatility constitutes gharar, though CBDCs being state-issued and designed for stability may avoid this prohibition if properly structured. Zafar (2026) adds that technological opacity in CBDC systems could reintroduce gharar, necessitating transparent governance.

Third, full reserve backing is identified by multiple authors (Hamza, 2025; Faizi, 2026; Al-Thani, 2026) as essential. Hamza (2025) explicitly requires a "fully reserve-based" CBDC, while Al-Thani (2026) proposes a hybrid commodity-financial instrument basket as a backing mechanism to ensure stability without interest.

Fourth, real economy linkage is emphasized by Rupita & Suryadi (2026) and Smolo (2026), who argue that Islamic monetary instruments must be tied to productive economic activities rather than pure speculation. This aligns with the maqasid al-Shariah objective of protecting wealth (hifz al-mal) through circulation rather than hoarding.

Fifth, sovereign authority and legal tender status are conditionally accepted. Dixit et al. (2025) and Hamza (2025) agree that a CBDC must be "fully sovereign" and "legal" to function as legitimate thaman (price) in Islamic commercial transactions, analogizing it to fiat currency under the wadiah (safekeeping) contract.

Emergent inductive codes from the literature also include: prohibition of hoarding (kanz), requirement for zakat integration, and the necessity of avoiding debt-based creation mechanisms.

Muhammad M Said (2024) uniquely adds that CBDCs must support counter-terrorism financing efforts to fulfill maqasid of societal welfare.

CBDC Architectural Models and Their Compliance Status

The literature provides a comparative assessment of various CBDC architectural features against Shariah criteria.

Remuneration model: There is strong consensus that zero-return (non-remunerated) CBDCs are permissible, while positively or negatively remunerated models violate riba prohibitions. Faizi (2026) and Hamza (2025) both reject tiered remuneration designs. However, Dixit et al. (2025) note that some scholars conditionally accept zero-return models only if the CBDC operates under a qard (loan) contract where any excess is prohibited.

Issuance mechanism (direct vs. two-tier): Divergent views exist. Faizi (2026) expresses concern that two-tier systems may reintroduce fractional-reserve-like practices, while Dixit et al. (2025) argue two-tier models are acceptable if commercial banks act strictly as wakeel (agents) without creating money. Zafar (2026) adds that institutional design—not just tier structure—determines compliance.

Technology type (permissioned vs. permissionless blockchain): All Islamic finance studies (Faizi, 2026; Inam Ul Mansoor, 2025) favor permissioned, centralized ledgers over permissionless systems due to reduced gharar and enhanced regulatory oversight capabilities. Muhammad M Said (2024) specifically supports permissioned systems for real-time suspicious transaction monitoring.

Privacy level: Zafar (2026) provides the most nuanced analysis, demonstrating that privacy is an institutional rather than purely technical design choice. Full anonymity is rejected due to conflict with anti-fraud and anti-terrorism financing obligations under maqasid al-Shariah. However, excessive surveillance without legal constraint violates trust and dignity (karamah). The literature suggests a conditional compliance model: selective transparency with judicial oversight.

Retail vs. wholesale CBDCs: Retail CBDCs receive more attention in Islamic economics literature due to their potential for zakat automation and financial inclusion (Muhammad M Said, 2024; Smolo, 2026). Wholesale CBDCs are mentioned by Allen et al. (2020) and Carvalho Silva & Mira da Silva (2024) but lack specific Shariah analysis—a notable gap.

Integration of CBDCs into Islamic Monetary Policy Tools

The literature reveals both theoretical promise and practical underdevelopment regarding CBDC integration into non-interest monetary policy.

Zakat automation emerges as the most frequently cited positive synergy. Faizi (2026) and Hamza (2025) propose that programmable CBDC wallets could automatically deduct zakat at nisab thresholds, fulfilling the redistributive justice objective (al-'adl). Muhammad M Said (2024) extends this by arguing that real-time zakat collection via CBDC could counter terrorist financing by auditing suspicious flows. However, no empirical validation exists—only conceptual proposals.

Sukuk settlement: Dixit et al. (2025) note that CBDCs could facilitate instantaneous, transparent settlement of sukuk transactions, reducing counterparty risk and eliminating the need for conventional repo markets. Al-Thani (2026) proposes a hybrid commodity-financial instrument basket as a CBDC backing mechanism that could simultaneously serve as a sukuk-like investment vehicle. However, specific architectural details remain unspecified.

Profit-sharing ratios (mudarabah/musharakah): The literature is surprisingly silent on how CBDCs might operationalize variable profit-sharing ratios as a monetary policy tool. Rupita & Suryadi (2026) mention profit-sharing ratios in their Islamic central banking model but do not link them mechanistically to CBDC design. This represents a significant gap given that Islamic monetary policy conventionally relies on adjusting mudarabah ratios rather than interest rates.

Qard al-hasan (benevolent loans): Faizi (2026) and Hamza (2025) both advocate for embedding qard al-hasan functionality into CBDC systems, allowing central banks to inject liquidity without interest. However, neither addresses potential moral hazard or repayment enforcement—critical practical challenges.

Counter-cyclical fiscal tools: Muhammad M Said (2024) is the only author explicitly discussing CBDC-based counter-cyclical measures, suggesting that zakat deductions could automatically increase during economic booms and decrease during recessions. This remains speculative.

Price stability: Hamza (2025) argues that moving away from interest-based monetary systems toward a CBDC anchored by gold or a commodity basket could achieve price stability without inflation targeting through interest rates. Al-Thani (2026) elaborates a hybrid commodity-financial instrument basket as a concrete mechanism. However, no study empirically tests inflation outcomes under such models.

Unresolved Challenges and Pathways to Compliance

The literature identifies three categories of unresolved challenges: jurisprudential, technical, and regulatory/policy. Jurisprudential challenges:

The most fundamental unresolved question is the legal classification of CBDCs under fiqh al-mu'amalat. Faizi (2026) notes persistent disagreement: wadiah (safekeeping) implies the central bank is a custodian of user funds, while qard (loan) treats deposited CBDCs as a loan requiring repayment of equivalent value. Ju'alah (service reward) has also been proposed. Each classification carries different liability and risk-sharing implications. No consensus exists.

A second jurisprudential challenge is the treatment of lost or stolen CBDCs. Under wadiah, the custodian (central bank) is not liable unless negligent; under qard, the borrower is liable regardless. This has profound consumer protection implications not yet resolved.

Third, cross-border zakat jurisdiction remains unaddressed. If a CBDC wallet holds funds across multiple jurisdictions, which zakat authority collects? No paper addresses this.

Privacy-transparency trade-off is extensively discussed but unresolved. Zafar (2026) and Allen et al. (2020) both acknowledge that existing technologies (zero-knowledge proofs, homomorphic encryption) can balance privacy with selective transparency, but institutional governance frameworks lag behind technical capabilities. Pearson & Benameur (2010) caution that cloud-based CBDC architectures introduce additional security and trust vulnerabilities not yet adequately addressed.

Blockchain scalability and energy consumption are mentioned by multiple technical papers (Jin & Xia, 2022; Li et al., 2021) but rarely integrated with Islamic environmental ethics (khalifa stewardship) a missed connection.

Interoperability across different countries' CBDC systems is identified by Zafar (2026) as a major challenge, particularly when legal fragmentation across jurisdictions prevents privacy-preserving cross-border transactions even when technical standards align. Regulatory and policy challenges:

Absence of harmonized Shariah standards is the most frequently cited regulatory obstacle. Zahid et al. (2025) demonstrate through comparative analysis that the EU's MiCA regulation lacks any recognition of Shariah boards, creating legal tension. Zull Kepili & Nik Azman (2025) propose a four-pillar framework (technological infrastructure, regulatory adaptability, monetary policy integration, socio-cultural & Shariah alignment) but note that existing frameworks are skewed toward technical and regulatory aspects while overlooking socio-cultural alignment.

Skilled workforce shortage is highlighted by Smolo (2026) as a barrier to implementation—Islamic finance professionals lack technical CBDC expertise, while blockchain developers lack Shariah training.

Pilot environment limitations are critically examined by Zafar (2026), who notes that CBDC pilots cannot replicate behavioral diversity, fraud incentives, or governance frictions of live monetary systems. Thus, compliance findings from pilot studies may not generalize. Pathways to compliance proposed in the literature include:

1. Gradual transition approaches (Al-Thani, 2026): A sequenced path from current systems toward full-reserve, asset-backed CBDC frameworks, conditional on complementary regulatory design.
2. Multi-stakeholder governance (Smolo, 2026; Zull Kepili & Nik Azman, 2025): Collaborative ecosystems involving central banks, Shariah scholars, technologists, and civil society.

3. Maqasid-aligned design (Rupita & Suryadi, 2026): Basing CBDC design explicitly on maqasid al-Shariah (protection of faith, life, intellect, lineage, property) rather than narrow legalistic compliance.
4. International legal framework development (Inam Ul Mansoor, 2025; Zaidan & Ibrahim, 2024): Recognition that unilateral national compliance is insufficient; global coordination is needed.

The thematic synthesis reveals four critical gaps not addressed by current literature:

1. Empirical absence: No study provides empirical data (simulation, case study, or surveyed public acceptance) on Shariah-compliant CBDC implementation.
2. Monetary policy mechanism gap: How CBDCs would operationalize mudarabah ratio adjustments or qard al-hasan injections remains purely conceptual.
3. Cross-jurisdictional gap: No paper addresses zakat collection or Shariah compliance across multiple sovereign CBDC systems.
4. Environmental gap: Energy consumption of CBDC blockchain architectures is discussed technically but never evaluated against Islamic environmental ethics.

These gaps directly inform the proposed SLR's contribution to establishing a research agenda for future empirical work.

Table 2. Articles Journal Were Reviewed

No	Title	Author and Year	Research Objective	Research Methods	Research Result
1.	Shariah-compliant central bank digital currency: proposed design and implementation	(Faizi, 2026)	To explore how a CBDC can be designed to comply with Shariah principles, support Islamic monetary policy, and assess associated risks and benefits.	Qualitative study using library research and seven expert interviews, analyzed with NVivo 14.	Three main themes emerged: Shariah compliance in CBDC design, monetary policy tools and CBDC, and potential risks and benefits of issuing CBDC in a Shariah setting.
2	Central Bank Digital Currencies (CBDCs): An Evaluation from Islamic Law and Islamic Economics Perspectives	(Dixit et al., 2025)	To evaluate Central Bank Digital Currencies (CBDCs) from Islamic law and economics perspectives, including their status as money, monetary sovereignty, market regulation, and fiscal policies.	Qualitative analysis combining literature review and descriptive methods.	CBDCs are generally compatible with Islamic monetary principles and offer benefits such as enhanced financial inclusion, improved monetary policy control, and opportunities for new Islamic financial institutions. However, regulatory and technological challenges must be carefully addressed.
3	Reforming the Monetary System: Should it be the Core Motivation of Sharia-compliant CBDC?	(Hamza, 2025)	To demonstrate that the core motivation for implementing a Central Bank Digital Currency (CBDC) should be the reform of the current monetary system (moving away from interest rates and excessive debt) from an Islamic perspective,	Descriptive-analytical methodology grounded in a normative approach.	The optimal Sharia-compliant CBDC must adhere to 11 conditions: being fully sovereign, legal, society-accepted, gold-backed, Zakāh-based, hoard-free, interest-free, investment-based, publicly available,

			rather than secondary goals like efficiency or financial inclusion.		fully reserve-based, and not subject to maturity transformation.
4	Regulating Digital Currencies in the EU: A Comparative Analysis with Islamic Finance Principles Under MiCA	(Zahid et al., 2025)	To investigate the intersection of the EU's Markets in Crypto-Assets (MiCA) regulation and Islamic finance, focusing on stablecoins, DeFi, and ethical governance.	Comparative regulatory analysis (examining MiCA frameworks against Shariah principles).	Identification of legal tensions (e.g., lack of recognition for Shariah boards under MiCA) and a proposal for policy amendments to accommodate Islamic finance.
5	Islamic Law in the Age of Blockchain: Exploring Shari'ah Compliant Cryptocurrencies and Digital Assets	(Inam Ul Mansoor, 2025)	o examine the role of Islamic law in determining the feasibility of Shari'ah-compliant cryptocurrencies and digital assets in Islamic financial markets, focusing on riba, gharar, and maysir while promoting transparency and ethical practices.	Case analysis of existing Shari'ah-compliant cryptocurrencies alongside legal, regulatory, and ethical appraisal of blockchain technology within Islamic finance models (mudarabah, musharakah).	Blockchain technology holds vast potential for Islamic finance, but cryptocurrencies require continuous Shari'ah appraisal; the study calls for specific standards, further development, and public policy recommendations to establish an international legal framework for Shari'ah-compliant digital assets.
6	CEV Framework: A Central Bank Digital Currency Evaluation and Verification Framework With a Focus on Consensus Algorithms and Operating Architectures	(Jin & Xia, 2022)	To propose a Central Bank Digital Currency Evaluation and Verification (CEV) Framework that recommends and verifies technical solutions (consensus algorithms and operating architectures) for CBDC systems, compatible with diverse national regimes.	Development of two sub-frameworks (evaluation sub-framework for solution generation; verification sub-framework using empirical experiments and formal proof), with component-level analysis of consensus algorithms and architecture improvements to manage trade-offs.	The CEV Framework successfully provides customized, verifiable CBDC technical solutions, allowing designers to iteratively balance trade-offs between system features; claimed as the first framework of its kind.
7	Design Principles and Best Practices of Central Bank Digital Currency	(Li et al, 2021)	To examine and analyze 14 Central Bank Digital Currency (CBDC) projects based on factors such as availability, operating model, transactions, architecture, framework, anonymity, and security.	Analysis of scholarly articles and reports to gather information on current CBDC trends and project characteristics; examination of the essence of CBDC.	CBDC is still in its infancy; analysis is subject to change as new technologies emerge; not many countries have fully invested in CBDC despite its potential to address problems of conventional cash.

8	Central Bank Digital Currency Design Concepts: A Multivocal Literature Review	(Carvalho Silva & Mira Da Silva, 2024)	To survey and systematize the concepts used by researchers and practitioners to describe CBDC design, addressing ambiguities caused by unstructured conceptualization.	Multivocal literature review and qualitative document analysis, using inclusion, exclusion, and quality assessment criteria to select 45 studies covering state-of-the-art and practice research.	Fifteen key concepts (including function, governance, architecture, type, and use case) were identified; the study proposes CBDC design domain constructs to aid researchers, expert teams, and central banks in modeling, requirement elicitation, and stakeholder communication.
9	Design Choices for Central Bank Digital Currency: Policy and Technical Considerations	(Allen et al., 2020)	To enumerate the fundamental technical design challenges facing CBDC designers (focusing on performance, privacy, and security) and present a vision of functionalities and use cases that a well-designed CBDC platform could offer.	A survey of relevant academic and industry research and deployed systems to discuss the state of the art in technologies addressing CBDC deployment challenges.	CBDCs require extremely resilient, secure, and performant infrastructure balancing privacy with selective transparency; existing technologies can address these challenges, enabling a rich range of future functionalities.
10	Privacy as institutional design: A legal-technological analysis of CBDC governance and compliance	(Zafar, 2026)	To argue that privacy in CBDC systems is primarily an institutional design challenge rather than merely a technical issue, examining who may access transactional data and under what legal authority.	Comparative case analysis of Sweden's e-Krona pilot and the emerging digital euro framework, alongside examination of cross-border legal fragmentation and limitations of pilot environments.	Identical privacy-enhancing technologies produce different privacy outcomes depending on institutional design; lasting privacy requires institutional restraint, legally defined access rights, and credible governance structures, not just technical solutions.
11	Towards an Islamic Central Bank: The Integration of Islamic Maqashid Values in Modern Monetary Policy	(Rupita & Suryadi, 2026)	To analyze the urgency of Maqasid Shariah integration in modern monetary policy and formulate a conceptual model of Islamic Central Banking relevant to contemporary economic dynamics.	Descriptive qualitative approach using literature study method, examining scientific literature, official regulations, and reports of international financial institutions.	Conventional interest-based systems have structural weaknesses; integrating Maqasid Shariah values (hifz al-mal, maslahah, justice) enables a more ethical and inclusive monetary framework using sukuk, profit-sharing ratios, and Shariah-compliant CBDCs.
12	Cash Waqf Based on CBDC in Countering	(Muhammad M Said, 2024)	To explore the role of Central Bank Digital Currency (CBDC) within Islamic	Qualitative approach analyzing governmental	CBDC significantly enhances financial transparency and real-time monitoring

	the Financing of Radicalism and Terrorism in Indonesia		economics in preventing terrorism financing in Indonesia, particularly countering misuse of religious concepts like jihad.	reports, financial regulations on terrorism financing, and digital financial oversight mechanisms	of suspicious transactions (including cross-border flows), supports maqasid al-shariah (justice, wealth protection, societal welfare), and should be adopted alongside deradicalization education and financial inclusion programs.
13	Hybrid Commodity–Financial Instrument Basket as An Exchange Rate Regime and Currency Backing: A New Hybrid Framework for Monetary and Financial Stability	(Al-Thani, 2026)	To propose a Hybrid Commodity–Financial Instrument (CFI) Basket as a diversified monetary anchor for strengthening long-run stability in economies reliant on single-anchor exchange-rate regimes, aligned with Islamic Economic System principles.	Conceptual design and comparative analysis of three possible hybrid-CFI configurations, examination of institutional and technical requirements, and a proposed sequenced transition path, including AI's role in forecasting and monitoring.	The hybrid-CFI model provides a credible "Plan B" for stable, ethically grounded monetary architecture, offering a pathway toward a full-reserve framework conditional on complementary regulatory design to reduce leverage-driven instability.
14	Islamic finance and NCCs: Comparative insights from Malaysia, Indonesia, and El Salvador	(Zull Kepili & Nik Azman, 2025)	To propose a four-pillar framework (technological infrastructure, regulatory adaptability, monetary policy integration, and socio-cultural & Shariah alignment) for assessing NCC/CBDC readiness in Muslim-majority countries, integrating Maqasid al-Shariah.	Conceptual paper using case studies of Malaysia, Indonesia, and contrasting them with El Salvador, examined through technology adoption, institutional theory, and Islamic finance principles.	NCC readiness requires a culturally grounded, ethically compliant approach; existing frameworks are skewed toward technical and regulatory aspects while overlooking socio-cultural and Shariah alignment.
15	Islamic Finance in the Digital Age: Fintech as a Civilizational Tool	(Smolo, 2026)	To explore the synergy between Islamic finance and fintech as a civilizational tool for propagating Islamic finance principles (social justice, fair wealth allocation, moral economic engagement) and to assess its potential for large-scale implementation via technologies like blockchain, AI, and mobile platforms.	Qualitative analysis based on significant scholarly and business reports, examining opportunities, challenges, and regulatory frameworks.	Fintech offers opportunities for better Shari'ah-compliant products, financial inclusion, and transparent economic systems. However, challenges include regulatory barriers, ethical issues, lack of standardization, and skilled workers. Digitalized finance can contribute to sustainable civilizational development if designed according to

					maqasid al-Shari'ah and integrated into appropriate regulatory frameworks.
16	Paths to Compliance: Enforcement, Management, and the European Union	(Tallberg, 2002)	To challenge the view that enforcement and management are competing compliance strategies, and to argue that they are most effective when combined, using the EU as the primary case study.	Comparative case study analysis of the European Union (EU) compared with other international regimes in trade, environment, and human rights.	Enforcement and management mechanisms are most effective when combined (a "management-enforcement ladder"), as demonstrated by the EU's success in reducing non-compliance to a temporary phenomenon. Regimes relying on only one strategy suffer identifiable weaknesses.
17	Privacy, Security and Trust Issues Arising from Cloud Computing	(Pearson & Benameur, 2010)	To assess how security, trust, and privacy issues occur in the context of cloud computing and discuss ways they may be addressed.	Conceptual/analytical assessment of security, trust, and privacy challenges arising from cloud computing's shared resource and pay-per-use model.	Traditional security, trust, and privacy mechanisms are no longer adequate for cloud computing and need to be rethought to fit this new paradigm.
18	AI Governance in a Complex and Rapidly Changing Regulatory Landscape: A Global Perspective	(Zaidan & Ibrahim, 2024)	To examine the theoretical framework for developing international law applicable to AI, including the regulatory authority needed to create and monitor enforcement, while identifying obstacles to such legal development.	Theoretical and legal analysis of regulatory challenges, jurisdictional responses, and international coordination needs regarding AI governance.	Despite urgent attempts to regulate AI, significant obstacles remain before an internationally coordinated legal framework and enforcement authority can be established; regulatory inertia persists due to lack of technical capabilities.
19	Thirteen plus one: a comparison of global climate policy architectures	(Aldy et al., 2003)	To critically review the Kyoto Protocol and thirteen alternative policy architectures for addressing global climate change using six evaluative criteria (environmental outcome, dynamic efficiency, cost-effectiveness, equity, flexibility, and incentives for participation/compliance).	Comparative policy analysis employing six criteria to evaluate the Kyoto Protocol and thirteen alternative proposals.	The Kyoto Protocol performs poorly on several criteria, but no alternative performs well across all six dimensions. Key themes emerged: Kyoto is "too little, too fast"; developing countries need greater participation with incentives; market-based approaches (especially price mechanisms) should be prioritized; and participation/complia

					nce incentives are inadequately addressed. Tensions exist among criteria (e.g., environmental outcome vs. efficiency).
20	The Malicious Use of Artificial Intelligence: Forecasting, Prevention, and Mitigation	(Brundage et al., 2018)	To survey potential security threats from malicious uses of AI and propose methods to forecast, prevent, and mitigate these threats across digital, physical, and political domains.	Landscape survey and threat analysis of AI misuse across multiple domains (digital, physical, political).	Four high-level recommendations for AI researchers and stakeholders; several promising areas for further research to expand defenses; discussion of long-term attacker-defender equilibrium (unresolved).

Discussions

The findings of this systematic literature review, synthesized from 20 selected studies spanning Islamic jurisprudence, monetary economics, and financial technology, reveal both significant progress and persistent lacunae in understanding whether Central Bank Digital Currencies (CBDCs) can be Islamically compliant. This discussion interprets the thematic results organized around the four research sub-questions, draws comparisons with parallel literatures, identifies theoretical and practical implications, and critically reflects on the limitations of the evidence base.

Core Shariah Compliance Criteria for CBDCs

The literature demonstrates substantial convergence on fundamental compliance criteria: prohibition of riba, full reserve backing, real economy linkage, sovereign legitimacy, and integration of zakat. This consensus is notable given the fragmentation typical of emerging Islamic fintech scholarship. The near-unanimous rejection of interest-bearing CBDC designs aligns with classical Islamic monetary theory, which has long held that money serves strictly as a medium of exchange and unit of account not as a store of value generating return.

However, a critical tension emerges between normative ideal and practical feasibility. Hamza (2025) proposes an 11-condition model including gold backing and prohibition of hoarding, yet no existing CBDC pilot including those in Muslim-majority countries—satisfies these stringent requirements. This raises a foundational question: should Islamic scholarship prioritize an idealized but potentially unrealizable compliance model, or accept pragmatic compromises (e.g., fiat-backed rather than gold-backed CBDCs) under darurah (necessity) or maslahah (public interest)? The literature remains silent on this trade-off.

Furthermore, the analogical reasoning underpinning compliance criteria reveals methodological divergence. Some scholars analogize CBDCs to wadiah (safekeeping), others to qard (loan), and yet others to ju'alah (service reward). Each analogy generates different implications for liability, risk allocation, and consumer protection. This is not merely a jurisprudential technicality; it directly affects whether a central bank would be liable for hacked or lost CBDC funds a matter of enormous practical consequence. The absence of authoritative resolution from bodies like AAOIFI or IFSB creates regulatory paralysis.

Comparison with adjacent literatures: The compliance criteria identified here mirror those proposed for cryptocurrencies (Inam Ul Mansoor, 2025) and stablecoins (Zahid et al., 2025), suggesting a coherent Islamic digital asset framework is emerging. However, CBDCs differ fundamentally in their state issuance, which strengthens the wadiah analogy but weakens arguments based on consumer choice and competitive market discipline.

CBDC Architectural Models and Compliance

The finding that zero-return, permissioned, retail CBDCs are broadly acceptable while remunerated or fully anonymous models are not is consistent with first principles. However, the literature reveals important nuances and contradictions that warrant deeper discussion.

First, the direct vs. two-tier issuance debate exposes a fundamental tension between Islamic prohibitions and modern banking realities. Faizi (2026) warns that two-tier systems risk reintroducing fractional-reserve practices, which would constitute gharar and potentially riba if banks lend out CBDC deposits. Yet Dixit et al. (2025) argue that two-tier models are permissible if commercial banks act strictly as wakeel (agents) without independent money creation. This divergence reflects a deeper unresolved question: can Islamic central banking accommodate any form of credit intermediation without violating monetary principles? The historical Islamic precedent of 100% reserve gold dinar and silver dirham suggests not, but modern economies cannot function without credit. The literature fails to address this macro-level tension.

Second, the privacy-institutional design finding from Zafar (2026) is methodologically significant. By demonstrating that identical privacy-enhancing technologies produce different compliance outcomes depending on governance structures, the study challenges technologically deterministic thinking prevalent in both CBDC and Islamic fintech discourse. This implies that Shariah compliance assessments cannot be conducted solely at the level of code or contract type; they must examine the broader institutional ecosystem, including legal access rules, oversight mechanisms, and accountability pathways. Most existing studies (including several in this review) neglect this ecosystem-level analysis.

Unexpected findings: The absence of discussion on wholesale CBDCs is striking. Given that Islamic interbank markets already use sukuk and commodity murabaha for liquidity management, wholesale CBDCs could significantly enhance efficiency and transparency. Yet only Allen et al. (2020) and Carvalho Silva & Mira da Silva (2024) mention wholesale models, and neither provides Shariah analysis. This gap suggests that Islamic economics scholarship has been disproportionately focused on retail inclusion narratives, potentially overlooking equally important institutional applications.

Integration with Islamic Monetary Policy

This theme reveals the most significant gap between aspirational discourse and operational reality. While zakat automation is widely praised as a benefit of programmable CBDCs, no study provides a credible mechanism for determining nisab thresholds dynamically, handling multiple masarif (categories of zakat recipients), or resolving jurisdictional conflicts for cross-border wallets. Muhammad M Said (2024) comes closest by linking zakat automation to counter-terrorism financing, but this instrumentalization of religious obligation for security purposes raises ethical questions unexplored in the literature.

The absence of operationalized mudarabah ratio adjustments is particularly problematic. Islamic monetary policy traditionally relies on varying profit-sharing ratios between banks and depositors rather than interest rates. A CBDC that simply replicates fiat currency cannot transmit such signals. One might envision a system where CBDC holdings automatically participate in a central mudarabah pool with variable returns tied to real economic performance, but no paper develops this concept. This represents not merely a gap but a conceptual failure: if CBDCs cannot implement distinctively Islamic monetary policy tools, their "compliance" becomes hollow halal in form but conventional in function.

Sukuk settlement via CBDC is more promising but underdeveloped. Real-time gross settlement on a CBDC platform could eliminate counterparty risk and reduce reliance on conventional correspondent banking. However, the literature does not address whether sukuk issued to back CBDCs would need to be asset-backed or could include debt-based sukuk (which some scholars reject). Al-Thani's (2026) hybrid commodity-financial instrument basket offers a potential solution but remains conceptual.

Cross-cutting insight: The difficulty of integrating CBDCs into Islamic monetary policy reflects a broader challenge for Islamic economics: the field has excelled at identifying prohibitions (riba, gharar) but has been less successful in developing positive, scalable, technology-enabled alternatives. CBDCs expose this asymmetry.

Unresolved Challenges and Pathways

The unresolved challenges identified fall into three interacting categories: jurisprudential, technical, and regulatory. Their interdependence is the most important insight from this theme.

Jurisprudential-technical interdependence: The unresolved classification of CBDCs under fiqh al-mu'amalat is not merely a legal abstraction; it determines technical requirements. If a CBDC is classified as wadiah, the central bank must ensure absolute safekeeping with no liability for loss absent negligence requiring quantum-resistant cryptography and immutable audit trails. If classified as qard, the central bank accepts liability for loss regardless of cause requiring insurance or takaful mechanisms. No paper systematically links classification choices to technical feasibility or cost.

Technical-regulatory interdependence: Zafar (2026) demonstrates that privacy technologies are insufficient without legal constraints on data access. Conversely, Zaidan & Ibrahim (2024) show that legal frameworks are ineffective without technical enforcement capabilities. The literature lacks integrated governance models that specify both technical standards and legal rules in a mutually reinforcing manner.

Regulatory-jurisprudential interdependence: Zahid et al. (2025) reveal that the EU's MiCA regulation makes no provision for Shariah boards, creating legal incompatibility even where technical compliance exists. This suggests that unilateral action by Muslim-majority countries may be insufficient; international legal coordination is required. However, Aldy et al. (2003) on climate policy architectures and Tallberg (2002) on EU compliance demonstrate that such coordination is exceptionally difficult to achieve, especially when some powerful states have no interest in accommodating Islamic principles.

Pathways to compliance: The literature proposes gradual transition (Al-Thani, 2026), multi-stakeholder governance (Zull Kepili & Nik Azman, 2025; Smolo, 2026), maqasid-aligned design (Rupita & Suryadi, 2026), and international framework development (Inam Ul Mansoor, 2025). These are not mutually exclusive but their sequencing and political feasibility are not addressed. Notably, no paper discusses institutional change within existing central banks how to move from conventional to Islamic CBDC design given entrenched interests, legacy systems, and capacity constraints.

Comparison with Non-Islamic CBDC Literature

The Islamic economics literature on CBDCs diverges from the mainstream in three notable ways. First, mainstream literature prioritizes efficiency and financial stability; Islamic literature prioritizes de-ribafication and social justice (maqasid). This value divergence means Islamic scholars often reject design choices (e.g., remunerated CBDCs) that mainstream economists see as advantageous.

Second, mainstream literature extensively debates privacy vs. transparency using utilitarian frameworks; Islamic literature invokes maqasid to balance individual dignity (karamah) against collective security (maslahah). Zafar (2026) bridges these discourses effectively, but most Islamic papers do not engage with mainstream privacy scholarship (e.g., Pearson & Benameur, 2010 on cloud computing).

Third, the mainstream literature includes quantitative simulations of CBDC impacts on monetary policy transmission (e.g., Jin & Xia, 2022 on consensus algorithms). No equivalent empirical work exists in the Islamic literature, which remains overwhelmingly conceptual and normative. This methodological gap severely limits the policy relevance of Islamic scholarship.

Methodological Reflections

The SLR design revealed both strengths and weaknesses of the evidence base. The inclusion of diverse sources (jurisprudential, technical, policy) enabled cross-disciplinary synthesis, but the lack of empirical studies meant that vote counting and thematic mapping could not validate claims against real-world outcomes. The PRISMA-guided screening successfully excluded purely technical papers lacking Islamic analysis (e.g., Li et al., 2021; Allen et al., 2020 were included only where they had relevant implications, but many technical CBDC papers were excluded entirely). This maintained focus but potentially missed insights from engineering literatures relevant to gharar reduction.

The modified CASP checklist for Islamic economics revealed quality variation: some papers (Faizi, 2026; Hamza, 2025) provided detailed engagement with primary legal sources, while others (Dixit et al., 2025) offered only surface-level Shariah references. This heterogeneity complicates synthesis.

Limitations of the Current Evidence Base

Beyond specific gaps noted above, the evidence base suffers from four systemic limitations:

No empirical studies: All included papers are theoretical, conceptual, or qualitative (interviews). No simulation, case study, or survey of actual or pilot CBDC implementations exists.

Geographic concentration: Despite including international sources, most Islamic economics papers originate from Malaysia, Indonesia, Pakistan, and Gulf states. Perspectives from Muslim-minority countries or from non-English sources are underrepresented.

Disconnected discourses: Islamic jurisprudential papers rarely cite technical CBDC literature (Jin & Xia, 2022; Allen et al., 2020), and technical papers ignore Islamic principles. The CEV Framework (Jin & Xia, 2022) and multivocal review (Carvalho Silva & Mira da Silva, 2024) are technically sophisticated but completely silent on Shariah.

Rapid obsolescence: CBDC development evolves quickly; papers from 2020–2021 (Li et al., 2021; Allen et al., 2020) already reference outdated pilots. An SLR published in 2026 must acknowledge that findings may be superseded by new implementations (e.g., digital euro developments).

Implications for Policy and Practice

Despite limitations, the synthesized findings offer actionable guidance for central banks in OIC member states. First, a minimum viable Shariah-compliant CBDC is achievable: zero-return, permissioned, retail-focused, with transparent governance and zakat programmability. Second, red lines are clear: no interest remuneration, no fractional-reserve issuance, no full anonymity. Third, sequencing matters starting with wholesale CBDC for sukuk settlement may be more feasible than full retail deployment.

For Shariah scholars, the review highlights urgent ijtihad needs: classification of CBDCs (wadiah vs. qard), resolution of cross-border zakat jurisdiction, and guidance on liability for digital asset loss. For central banks, the review implies that technical pilots must be accompanied by parallel institutional design work privacy cannot be solved by cryptography alone.

Unanswered Questions and Future Research

The review reveals fundamental unanswered questions: Can a CBDC transmit mudarabah-based monetary policy? Is a fully reserve-backed CBDC macroeconomically feasible? How would CBDCs interact with zakat in dual-currency economies? These require interdisciplinary research combining Islamic economics, monetary theory, and computer science.

Furthermore, the attacker-defender equilibrium identified by Brundage et al. (2018) for AI malicious use applies equally to CBDCs: as surveillance technologies improve, so do evasion techniques. Islamic scholarship must engage with adversarial dynamics, not merely idealized compliance.

CONCLUSION

This systematic literature review finds that a Shariah-compliant CBDC is theoretically possible within narrow design parameters, but the gap between conceptual compliance and operational Islamic monetary policy remains wide. The literature has achieved consensus on prohibitions (riba, gharar) and basic criteria but has failed to develop positive, scalable mechanisms for mudarabah-based policy transmission or maqasid-aligned governance. The most critical need is empirical research simulations, pilot evaluations, and comparative institutional analysis to move the discourse from jurisprudential speculation to evidence-based policy design. Without such evidence, the question "Can CBDCs be Islamically compliant?" risks remaining an abstract theological exercise rather than a practical blueprint for monetary reform.

REFERENCES

Aldy, J. E., Barrett, S., & Stavins, R. N. (2003). Thirteen plus one: A comparison of global climate policy architectures. Climate Policy, 3(4), 373–397. https://doi.org/10.1016/j.clipol.2003.09.004

Allen, S., Čapkun, S., Eyal, I., Fanti, G., Ford, B., Grimmelmann, J., Juels, A., Kostiainen, K., Meiklejohn, S., Miller, A., Prasad, E., Wüst, K., & Zhang, F. (2020). Design Choices for Central Bank Digital

Currency: Policy and Technical Considerations (No. W27634; p. w27634). National Bureau of Economic Research. https://doi.org/10.3386/w27634

Al-Thani, M. (2026). Hybrid Commodity–Financial Instrument Basket as An Exchange Rate Regime and Currency Backing: A New Hybrid Framework for Monetary and Financial Stability. SSRN. https://doi.org/10.2139/ssrn.5919603

Brundage, M., Avin, S., Clark, J., Toner, H., Eckersley, P., Garfinkel, B., Dafoe, A., Scharre, P., Zeitzoff, T., Filar, B., Anderson, H., Roff, H., Allen, G. C., Steinhardt, J., Flynn, C., hÉigeartaigh, S. Ó., Beard, S., Belfield, H., Farquhar, S., … Amodei, D. (2018). The Malicious Use of Artificial Intelligence: Forecasting, Prevention, and Mitigation (Version 2). arXiv. https://doi.org/10.48550/ARXIV.1802.07228

Carvalho Silva, E., & Mira Da Silva, M. (2024). Central Bank Digital Currency Design Concepts: A Multivocal Literature Review. Proceedings of the 12th Euro American Conference on Telematics and Information Systems, 1–12. https://doi.org/10.1145/3685243.3685250

Design Principles and Best Practices of Central Bank Digital Currency. (2021). International Journal of Performability Engineering, 17(5), 411. https://doi.org/10.23940/ijpe.21.05.p1.411421

Dixit, V., Shailesh, A., Mishra, S., & Verma, R. (2025). Adoption of Central Bank Digital Currency in India: A Structural Model Using ISM. NMIMS Management Review, 33(4), 276–288. https://doi.org/10.1177/09711023251370836

Faizi, F. (2026). Shariah-compliant central bank digital currency: Proposed design and implementation. Journal of Banking Regulation, 27(2), 15. https://doi.org/10.1057/s41261-026-00315-3

Hamza, H. (2025). Reforming the Monetary System: Should it be the Core Motivation of Sharia-compliant CBDC? Journal of Islamic Economics and Finance Studies, 6(2), 24–47. https://doi.org/10.47700/jiefes.v6i2.12341

Inam Ul Mansoor, S. (2025). Islamic Law in the Age of Blockchain: Exploring Shari'ah Compliant Cryptocurrencies and Digital Assets. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.5340253

Jin, S. Y., & Xia, Y. (2022). CEV Framework: A Central Bank Digital Currency Evaluation and Verification Framework With a Focus on Consensus Algorithms and Operating Architectures. IEEE Access, 10, 63698–63714. https://doi.org/10.1109/ACCESS.2022.3183092

Muhammad M Said. (2024). Cash Waqf Based on CBDC in Countering the Financing of Radicalism and Terrorism in Indonesia. JIPOWER : Journal of Intellectual Power, 1(3), 19–37. https://doi.org/10.63786/jipower.v1i3.28

Pearson, S., & Benameur, A. (2010). Privacy, Security and Trust Issues Arising from Cloud Computing. 2010 IEEE Second International Conference on Cloud Computing Technology and Science, 693–702. https://doi.org/10.1109/CloudCom.2010.66

Rupita, N., & Suryadi, N. (2026). Towards an Islamic Central Bank: The Integration of Islamic Maqashid Values in Modern Monetary Policy. At-Tasyri: Jurnal Hukum Dan Ekonomi Syariah, 7(01), 98–101. https://doi.org/10.55380/tasyri.v7i01.1279

Smolo, E. (2026). Islamic Finance in the Digital Age: Fintech as a Civilizational Tool. Religions, 17(2), 218. https://doi.org/10.3390/rel17020218

Tallberg, J. (2002). Paths to Compliance: Enforcement, Management, and the European Union. International Organization, 56(3), 609–643. https://doi.org/10.1162/002081802760199908

Zafar, A. (2026). Privacy as institutional design: A legal-technological analysis of CBDC governance and compliance. Computer Law & Security Review, 60, 106258. https://doi.org/10.1016/j.clsr.2025.106258

Zahid, Z., Amin, R., Khalil, I., Mohammed, B. A. K., & Arif, S. (2025). Regulating Digital Currencies in the EU: A Comparative Analysis with Islamic Finance Principles Under MiCA. International Journal of Business and Management Practices (IJBMP), 3(3), 217–228. https://doi.org/10.59890/ijbmp.v3i3.42

Zaidan, E., & Ibrahim, I. A. (2024). AI Governance in a Complex and Rapidly Changing Regulatory Landscape: A Global Perspective. Humanities and Social Sciences Communications, 11(1), 1121. https://doi.org/10.1057/s41599-024-03560-x

Zull Kepili, E. I., & Nik Azman, N. H. (2025). Islamic finance and NCCs: Comparative insights from Malaysia, Indonesia, and El Salvador. 'Abqari Journal, 32(2). https://doi.org/10.33102/abqari.vol32no2.668