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CENTRAL BANK DIGITAL CURRENCIES: PROSPECTS AND CHALLENGES IN UZBEKISTAN

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Abstract
This article explores the prospects and challenges of introducing a Central Bank Digital Currency (MBRV) in Uzbekistan, drawing on global experiences and best practices. As digital payments expand, MBRVs present opportunities to modernize payment systems, improve financial inclusion, and strengthen monetary policy. Based on analysis of World Bank, BIS, and EDPS reports, the study examines design models and evaluates Uzbekistan's legal, institutional, and digital readiness. While benefits include faster transactions and broader access to secure money, risks such as banking disintermediation and weak regulation require careful policy responses. The article argues that a successful MBRV rollout will depend on public trust, legal reform, and strategic alignment with national development goals.

Keywords: Central Bank Digital Currency, MBRV, Uzbekistan, digital so'm, financial inclusion, monetary policy, payment systems, digital transformation, legal framework, BIS, World Bank.

INTRODUCTION

Central Bank Digital Currencies (CBDCs) represent a new phase in the evolution of money. As a form of state-issued digital cash, they are designed to be legally recognized, secure, and accessible to the general public. At a time when economies around the world are transitioning from traditional cash to digital payment systems, CBDCs are being promoted as innovative tools to

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modernize payment systems, enhance financial inclusion, and increase the efficiency of monetary policy. In academic literature, CBDCs are viewed not only as a response to the rapid growth of private digital currencies and contactless payment technologies but also as a means to reinforce monetary sovereignty and public trust in money. This evolution retains the traditional functions of money — store of value, medium of exchange, and unit of account — while leveraging modern digital technologies.

Comprehensive studies conducted by the World Bank, Bank for International Settlements (BIS), and major central banks globally have explored various design models — from account-based systems to token-based approaches — and the political, technical, and operational decisions involved in implementing CBDCs. Research shows that CBDCs can improve payment efficiency, facilitate cross-border payments, and complement cash and private digital currencies. Key considerations include interoperability with existing payment systems, cybersecurity, data protection, and balancing public oversight with private sector cooperation. These issues are central to pilot projects and policy experiments in both developed and emerging economies.

For Uzbekistan, studying CBDCs opens an important platform for policy discussion. As a country actively pursuing digital transformation, introducing a CBDC could enhance financial inclusion, reduce transaction costs, and strengthen the stability of the financial system. However, significant challenges remain, including ensuring robust cybersecurity, achieving integration with existing digital payment solutions, and mitigating the risks of banking disintermediation. While these are global concerns, Uzbekistan's specific digital infrastructure and regulatory environment require tailored attention. Additionally, to maintain public trust and improve the effectiveness of a state-supported digital payment instrument, legal and institutional frameworks must be carefully adapted.

LITERATURE REVIEW

This article employs a qualitative methodology based on secondary analysis of reports from global institutions and academic literature. Content analysis was applied to documents from the World Bank, BIS, and the European Data

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Protection Supervisor (EDPS), focusing on the design, political implications, and implementation models of CBDCs. As the World Bank notes, "substantial research has been conducted on the design, implementation, and implications of CBDCs."[2]

RESEARCH METHODOLOGY

The article uses a comparative approach to assess the applicability of international models to the context of Uzbekistan. The BIS emphasizes that "system designs may vary across jurisdictions," while the EDPS highlights that issuing a CBDC is a technical and political decision that affects trust, privacy, and financial stability. An interpretative analytical approach was also employed to evaluate the suitability of CBDC design and required legal infrastructure in Uzbekistan. This allows for a reasoned assessment of the opportunities and challenges that CBDCs pose to national policy.

FINDINGS AND DISCUSSION

As the global financial system rapidly digitalizes, central banks are increasingly investigating CBDCs as tools to strengthen monetary sovereignty, modernize payment systems, and enhance financial inclusion. For Uzbekistan, a CBDC could support the development of national payment infrastructure and expand access to digital financial services. However, it also raises complex challenges related to legal frameworks, technological readiness, financial stability, and public trust.

A CBDC is defined as a digital form of legal tender issued by the central bank. Unlike cryptocurrencies or commercial bank deposits, CBDCs are risk-free liabilities of the central bank, backed by the state. According to the World Bank, CBDCs can help "countries find a socially optimal mix of payment instruments" and open the path to a more inclusive and efficient financial system.

One of the main arguments in favor of CBDCs in Uzbekistan is their potential for enhancing financial inclusion. Despite the growth of digital banking services in recent years, many citizens — especially in rural areas — still lack adequate access to financial services. If designed to be open and user-friendly, CBDCs could serve as digital cash equivalents available even to unbanked individuals.

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The World Bank highlights that "CBDC implementation requires activating the four catalytic pillars of PAFI (Payment Aspects of Financial Inclusion) — convenience, access points, awareness, and integration with government payments." These pillars are especially relevant in Uzbekistan, where digital literacy remains low.

Another strong case for CBDC implementation is the modernization of the national payment system. Digital currency could reduce the demand for cash, lower transaction costs, and enable 24/7 real-time settlements nationwide. This is particularly beneficial for small businesses and individuals making frequent small payments. As BIS states, CBDCs "can increase diversity in payment options" and serve as reliable alternatives during disruptions to traditional systems.

However, implementing a CBDC is a complex, multi-stage process, and one of the primary challenges is choosing the optimal system architecture — direct (entirely managed by the central bank), indirect (relying on commercial banks), or hybrid (public-private partnership). According to the EDPS, "in a direct CBDC architecture, accounts are managed by the central bank… which differs fundamentally from existing systems." In Uzbekistan, the banking infrastructure is not yet fully developed, and the central bank lacks the capacity to manage retail accounts directly. Therefore, a hybrid model may be the most practical solution.

Privacy and cybersecurity are also critical concerns. While CBDCs can improve financial transparency and reduce illicit transactions, they also raise concerns about state surveillance. The BIS notes, "Access to and processing of payment data plays a crucial role in any ecosystem design," emphasizing the need to balance anti-money laundering (AML) compliance with user privacy. Uzbekistan's data protection legislation is still developing, and robust legal guarantees are needed to secure public trust.

There is also a risk that CBDCs could destabilize the commercial banking sector. If people shift deposits from commercial banks to CBDC wallets, it could reduce banks' lending capacity. The EDPS warns that "declines in bank deposits due to CBDCs may necessitate limits to avoid undermining banking liquidity."

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Solutions such as holding limits or tiered interest rates may help mitigate this risk but must be carefully calibrated.

Table 1. Comparison of CBDC, Online/Mobile Banking, and Cryptocurrencies

Attribute	**Central Bank Digital Currency (CBDC)**	**Online/Mobile Banking**	**Cryptocurrency**
Regulator	Central bank	Commercial banks	Private companies
Stability	✓	✓	✗
Customer Identification (KYC)	Identifiable	Identifiable	Anonymous
Technology	DLT or non-DLT	Non-DLT	DLT
Reliability	Very high	Very high	Depends on provider
Programmability	Available	Available	Not available

This table outlines key differences between CBDCs, online/mobile banking, and cryptocurrencies in the context of Uzbekistan's digital finance landscape. Unlike often unregulated cryptocurrencies, CBDCs are regulated by the central bank, ensuring legal status and state oversight. Internet banking is managed by commercial banks, while cryptocurrencies are typically run by private entities.
Unlike cryptocurrencies, CBDCs and conventional digital banking services are stable and not subject to market volatility. Both CBDCs and internet banking strictly enforce KYC requirements, whereas cryptocurrencies allow for anonymous transactions, raising concerns about transparency and security.
Technologically, CBDCs can function on distributed ledger technologies (DLT) or conventional databases, offering flexibility. Internet banking generally relies on non-DLT systems, while cryptocurrencies are predominantly DLT-based. In terms of reliability, CBDCs and banking services are supported by strong institutions, while cryptocurrencies depend on the security and reputation of private issuers.
In Uzbekistan, the discussion of CBDCs is not merely about technology adoption; it is intertwined with financial reform, digital transformation, and national policy. The country's unique characteristics — a cash-reliant economy, evolving regulatory systems, and inconsistent digital infrastructure — present both opportunities and constraints.

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Despite improvements in urban internet and mobile access, over 40% of the population still lacks full access to formal financial services, especially in rural and informal sectors. If integrated with mobile platforms and designed to be inclusive, a CBDC could provide an alternative for those currently excluded. However, digital and financial literacy gaps, particularly among older populations and those in remote regions, may limit adoption. Therefore, the success of a CBDC in Uzbekistan will depend not only on technical implementation but also on financial inclusion strategies and educational campaigns aligned with the World Bank's PAFI pillars.

At the institutional level, the Central Bank of Uzbekistan (CBU) has made notable progress in developing digital payments, including national systems like Humo and Uzcard. However, these systems remain fragmented and largely dependent on commercial banks. A CBDC could unify the payment ecosystem, reduce reliance on intermediaries, and give the central bank more control over money flows. Achieving this, however, requires modernization of core banking systems and robust cybersecurity measures — a significant challenge for institutions still developing their digital capabilities.

Another major barrier is the underdeveloped legal and regulatory infrastructure. While the 2019 Law "On Payments and Payment Systems" serves as a foundation for digital payments, it does not address sovereign digital currency. The absence of clear legal definitions on issues such as issuance, digital ID integration, and data privacy poses compliance and consumer protection risks. According to BIS recommendations, interoperability and data governance are essential components of any CBDC ecosystem — requirements that Uzbekistan's legal system is only beginning to address.

Moreover, Uzbekistan's banking sector, dominated by state-owned institutions, may undergo significant changes with retail CBDC implementation. If the central bank provides direct access to CBDC accounts, this could increase access to secure state-backed money, but also reduce commercial bank deposits, especially in crisis scenarios. Given the current liquidity constraints in business lending, even modest deposit outflows to CBDCs could limit credit capacity. This disintermediation risk, widely recognized in international studies, could be particularly severe in Uzbekistan's shallow financial system.

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At the same time, CBDCs may serve as tools to enhance government financial efficiency. Uzbekistan has increased the use of digital platforms to distribute state aid. A CBDC, integrated with government systems, could improve budget transparency, reduce financial leakages, and better target social payments. In emergencies such as natural disasters or pandemics, CBDCs could facilitate faster disbursement compared to slower or cash-based mechanisms.

Cybersecurity and privacy remain deeply complex issues. While CBDCs can improve transparency and reduce illicit transactions, they also heighten concerns about state surveillance, particularly in jurisdictions with weak institutional oversight. The EDPS cautions that "the decision to issue a CBDC… can significantly affect citizens' rights and freedoms." For Uzbekistan, it is crucial to adhere to strict data protection standards based on encryption, independent oversight, and user consent.

Finally, international interoperability should not be overlooked. Uzbekistan aims for deeper integration with regional and global financial systems. As neighboring countries like China and Kazakhstan test digital currencies, ensuring cross-border compatibility of Uzbekistan's CBDC will be important for trade, remittances, and regional cooperation. Thus, the digital so'm must be designed with both domestic stability and international alignment in mind.

CONCLUSION AND RECOMMENDATIONS

Studying Central Bank Digital Currencies (CBDCs) represents an important step in Uzbekistan's financial modernization. Amid global changes in digital finance, Uzbekistan must carefully assess the role of a digital so'm in enhancing monetary sovereignty, expanding financial inclusion, and improving payment system efficiency. The potential of CBDCs — faster state payments, reduced cash dependency, and broader access to secure, state-backed money — is considerable. However, realizing these benefits requires a well-designed architecture, robust legal foundations, and a developed digital infrastructure.

At the same time, CBDCs may impact the traditional banking sector, necessitating a balance between innovation and stability. Any CBDC strategy must prioritize regulatory clarity, data privacy, and cybersecurity. Public

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awareness, digital literacy, and institutional trust will also be critical to successful implementation.

Uzbekistan can develop a CBDC model tailored to its economic, social, and technological realities by studying global experiences. If approached strategically, a CBDC can not only improve the domestic financial system but also position Uzbekistan among leading economies moving forward in the digital age.

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