

Research on Impact of Digital Currency Development on Transmission Mechanism of Monetary Policy

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Abstract: Driven by the global wave of financial technology, digital currencies represented by central bank digital currencies are moving from theoretical concepts to practical explorations, indicating a potential paradigm shift in the global monetary system. This shift poses a fundamental challenge to the core of modern macroeconomic regulation. In this context, this study focuses on central bank digital currencies (CBDCs) and systematically deconstructs how they trigger nonlinear changes in the transmission path of monetary policy through five classic channels: interest rates, credit, asset prices, exchange rates, and expectations. This study found that digital currency has profoundly changed the transmission efficiency, boundary of action, and feedback loop of monetary policy through three core mechanisms - reshaping the financial intermediary pattern, creating new policy tool combinations, and constructing high-dimensional real-time data fields. The programmability of CBDC, layered interest rate design, and potential breakthroughs in the lower bound of zero interest rates provide space for monetary policy.

Keywords: Digital Currency; Central Bank Digital Currency; Monetary Policy; Transmission Mechanism

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1. Evolution of Monetary Forms and Policy Instruments

Money, the lifeblood of economic activity, has an evolutionary history that is a condensed chronicle of economic and financial development. Each leap in its form has profoundly altered the ways value is stored, transacted, and measured, and has fundamentally determined the possibility and boundaries of macroeconomic management.

1.1 Phase 1: The Materialization of Value—The Era of Commodity Money

During this long historical period, money and commodity were one and the same. Whether shells, grains, or precious metals, their value was rooted in physical scarcity and social consensus. "Monetary policy" was virtually non-existent; the money supply was constrained by natural endowments and mining technology, leaving economies to passively oscillate between deflation (slow discovery of gold and silver) and inflation (influx of gold and silver from the New World). This was an era where value was imprisoned by its physical form.

1.2 Phase 2: The Symbolization of Credit—The Era of Fiat Paper Money

With the development of a commodity economy, the unwieldiness of metallic money became increasingly apparent. The emergence of paper money, especially fiat money delinked from gold, was a great liberation in monetary history. The value of money no longer depended on its physical carrier but was anchored to sovereign credit. This transformation gave birth to

modern central banks and endowed them with the divine power to manage economic cycles by controlling the money supply. A series of monetary policy tools, such as interest rates, reserve requirements, and open market operations, came into being, thus ushering in an era of active macroeconomic management centered on national credit.

1.3 Phase 3: The Electronification of Transactions—The Era of Bank Account Money

Since the mid-20th century, the revolution in computer and communication technology has brought money into the electronic age. The vast majority of money (the main component of M2) exists as electronic book entries of commercial bank liabilities (i.e., deposits). The efficiency of payments and settlements underwent a qualitative leap, but this also greatly consolidated the two-tier system of "central bank-commercial banks." In this system, commercial banks are not only payment intermediaries but also the core hubs of credit creation. The transmission of monetary policy heavily relied on the health and efficiency of this "intermediary pipeline" of commercial banks. Any blockage in this pipeline (such as a credit crunch or banks' reluctance to lend) would weaken policy effects.

1.4 Phase 4: The Intelligization of Value—The Era of Digital Currency

We are currently at the forefront of the fourth wave. Digital currency, driven by cryptography, distributed ledger technology (DLT), and mobile internet, is redefining the form and function of money. Unlike bank account money, which is merely an electronic representation of traditional money, digital currency (especially CBDC) is a direct digital form of central bank liability. It brings entirely new properties: Programmability, the feasibility of Peer-to-Peer (P2P) transactions, and the potential pressure for Disintermediation^[1]. This heralds a shift in the implementation and transmission of monetary policy, potentially moving from reliance on indirect "pipeline dredging" to more direct and precise "drip irrigation" and "programming" (Stöckel, 2025).

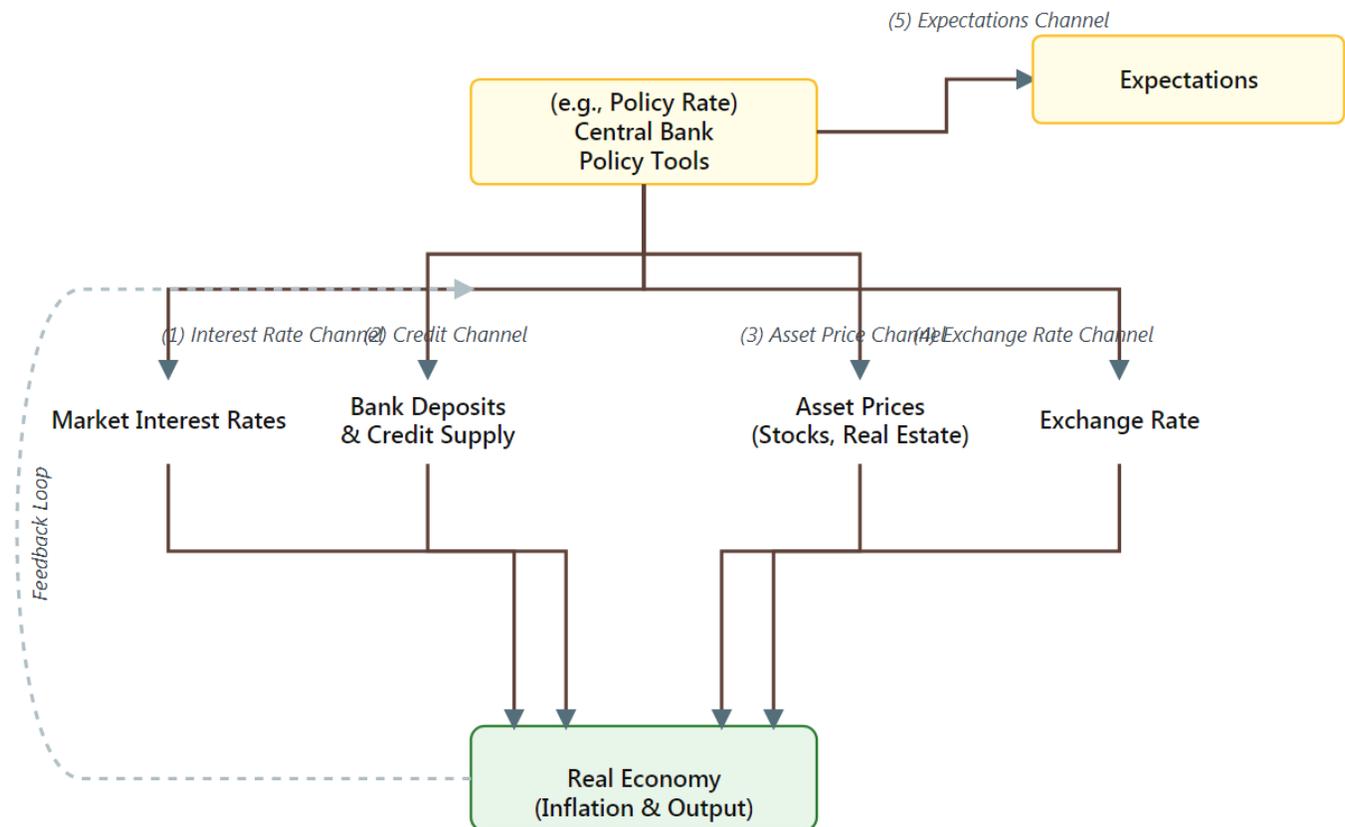
Table 1: Evolution of Monetary Forms and Their Impact on Monetary Policy

Monetary Form	Key Features	Basis of Credit	Impact on Monetary Policy	Core Transmission Bottleneck
Commodity Money	Intrinsic value, e.g., gold, silver.	Intrinsic value of the commodity.	Almost no independent monetary policy; supply limited by physical production.	Supply rigidity.
Fiat Paper Money	Value symbol mandated by national law.	National credit.	Birth of central banks, enabling policy implementation via control of base money and interest rates.	Physical distribution and collection costs.
Bank Account Money	Electronic digits as commercial bank liabilities.	National credit & commercial bank credit.	Consolidated the two-tier banking system; policy transmitted mainly through the bank credit channel.	Frictions and time lags of bank intermediation.
Digital Currency	Digital value form based on cryptography and network technology.	Diverse (algorithms, asset collateral, national credit).	Potentially alters the role of bank intermediaries, introduces new policy tools, challenges traditional mechanisms (Wronka, 2023).	Technical security, privacy, and financial stability risks.

2. Classic Channels of Monetary Policy and Their Limitations

Before delving into the disruptive impact of digital currency, we must first conduct a detailed dissection of the classic monetary policy transmission mechanism and examine the dilemmas it faces in the current complex economic environment.

Figure 1: Schematic Diagram of the Traditional Monetary Policy Transmission Mechanism (with Feedback Loops)



2.1 Interest Rate Channel

This is the cornerstone of monetary economics textbooks. By adjusting the benchmark interest rate (e.g., the federal funds rate), the central bank influences the entire interest rate structure of the financial market, from short-term government bonds to long-term corporate bonds, and finally to commercial bank deposit and lending rates, ultimately affecting household consumption and saving decisions and corporate investment decisions^[7].

Interest rate transmission is subject to "stickiness," as banks may not immediately or fully pass on changes in the policy rate to their customers. More importantly, since the 2008 financial crisis, major global economies have been in a low-interest or even zero-interest environment for a long time, severely compressing the room for traditional rate cuts. This is the well-known Zero Lower Bound (ZLB) problem, which has rendered the interest rate channel nearly ineffective.

2.2 Credit Channel

This channel emphasizes the importance of asymmetric information in financial markets and consists of two sub-channels: 1) Bank Lending Channel: A contractionary monetary policy reduces bank reserves, thus shrinking their loanable funds and leading to a contraction in credit supply. 2) Balance Sheet Channel: A contractionary monetary policy reduces the net worth of borrowers (firms and households), worsening their financial position and thereby increasing the risk for banks to issue loans, leading to a tightening of credit standards^[4].

The development of financial innovation (e.g., shadow banking, capital market financing) has reduced corporate dependence on bank loans, weakening the bank lending channel. Meanwhile, during periods of economic pessimism, even if the central bank "opens the floodgates," firms and banks may be reluctant to invest and lend due to a lack of confidence, resulting in a "liquidity trap."

2.3 Asset Price Channel

Monetary policy works by influencing the prices of assets such as stocks, bonds, and real estate. For instance, an interest rate cut boosts asset valuations (Tobin's q effect) and increases household wealth (wealth effect), thereby stimulating investment and consumption^[14].

The effects of the asset price channel are often accompanied by significant risks. Prolonged loose policies can easily fuel asset

price bubbles, increasing the fragility of the financial system. Once a bubble bursts, it can severely impact the real economy. Moreover, the distribution of the wealth effect is highly uneven, which may exacerbate social inequality.

2.4 Exchange Rate Channel

In an open economy, a decrease in domestic interest rates can trigger capital outflows, leading to a depreciation of the domestic currency. Currency depreciation makes exports cheaper and imports more expensive, thereby improving net exports and stimulating aggregate demand^[9].

In today's globalized world, the effectiveness of the exchange rate channel is constrained by "competitive devaluations." One country's currency depreciation may prompt others to follow suit, leading to a "currency war" that ultimately cancels out the effects. Also, for countries deeply integrated into global supply chains, the boost to exports from currency depreciation may be eroded by the rising cost of imported raw materials.

2.5 Expectations Channel

Modern monetary policy places increasing emphasis on managing public expectations. Through its policy statements, forward guidance, and governors' speeches, the central bank influences market expectations about future inflation and economic growth, thereby guiding current consumption and investment behavior^[3].

Managing expectations is an art, not a science. The central bank's communication can be misinterpreted by the market, and its credibility, which takes a long time to build, is difficult to repair once damaged. In an age of information overload, the formation of public expectations is increasingly complex and more susceptible to various "noises."

These five channels are intertwined in practice, forming the complex network of monetary policy transmission. However, the limitations mentioned above indicate that this traditional network is already struggling to cope with the challenges of the new century. The emergence of digital currency offers new possibilities for breaking these deadlocks.

3. How Digital Currency Reshapes the Transmission Mechanism

Digital currency, especially CBDC issued directly by the central bank, will systematically permeate and reshape the five transmission channels as a brand-new financial asset with the dual attributes of "base money" and a "retail payment tool."

3.1 Impact on and Enhancement of the Interest Rate Channel

The transformation of the interest rate channel will be one of the most profound impacts of digital currency. At its core is the fact that CBDC provides the central bank with a tool that can directly reach the public and possesses entirely new policy dimensions.

First, CBDC offers the technical feasibility to break the Zero Lower Bound (ZLB). Traditionally, physical cash held by the public serves as a "safe haven" with a zero nominal interest rate. If bank deposit rates turn negative, depositors can withdraw cash on a large scale, thereby rendering negative interest rate policy ineffective. However, if a CBDC issued by the central bank can largely replace cash and can itself be set to a negative interest rate, the central bank can directly impose negative rates on the money held by the public. This would guide the entire interest rate system into negative territory, providing an unprecedentedly powerful policy tool to combat deep economic recessions or deflation^[10].

Second, CBDC makes "tiered interest rates" and "dynamic interest rates" possible, greatly enhancing policy precision. The central bank can design a non-linear, tiered CBDC remuneration system. For example, Financial Inclusion Tier: A zero or symbolic positive interest rate could be paid on a certain amount of CBDC in every citizen's account (e.g., ¥5,000) to ensure its basic transaction and store-of-value functions, promoting financial inclusion^[11].

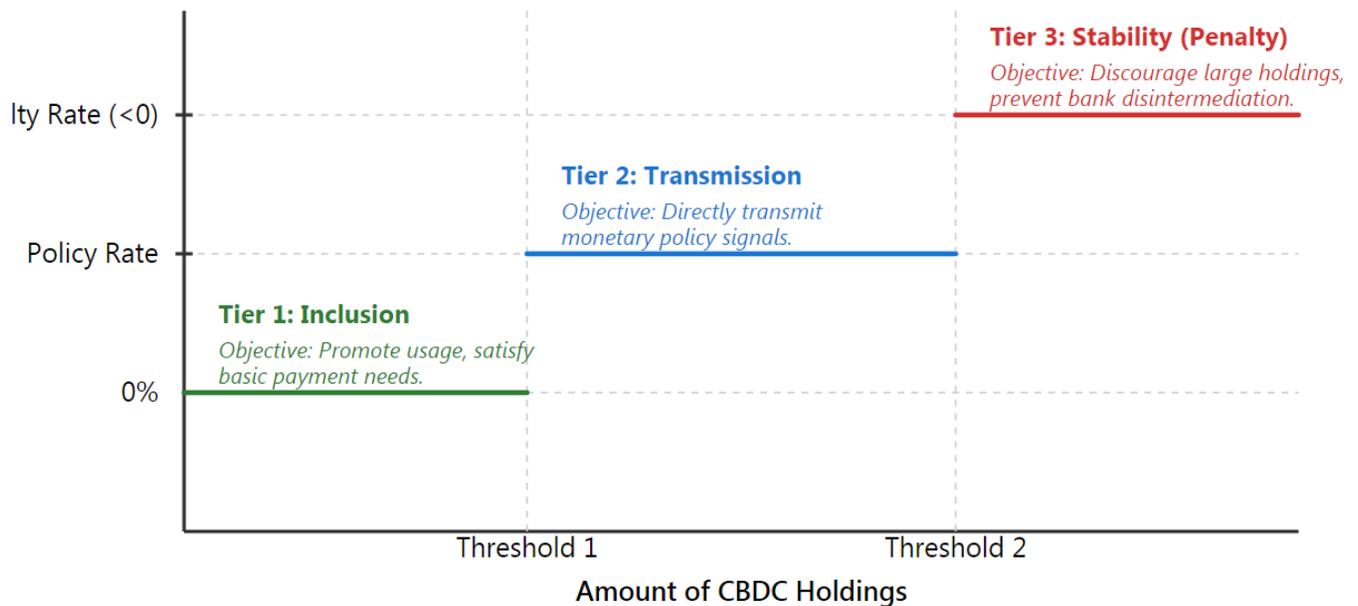
Policy Transmission Tier: For holdings exceeding the inclusion tier, an interest rate linked to the policy rate would be applied, making it a direct vehicle for monetary policy transmission.

Penalty Tier: For very large holdings (e.g., over ¥1,000,000), a rate significantly below the policy rate, or even a negative rate, could be applied to prevent CBDC from becoming a tool for financial disintermediation or a "liquidity drain" on bank deposits during times of panic (Wronka, 2023).

Table 2: CBDC Tiered-Rate Design and Its Policy Intentions

Rate Tier	Target Amount	Rate Setting	Main Policy Objective	Reference
Inclusion Tier	Small (e.g., < ¥5,000)	Zero or slightly positive	Fulfill daily payment needs, promote financial inclusion	Lukonga (2023)
Transmission Tier	Medium	Closely linked to policy rate	Serve as the main channel for interest rate transmission	Kóczyán et al. (2022)
Penalty/Stability Tier	Large/Very Large	Significantly below policy rate/negative	Prevent bank disintermediation, maintain financial stability	Wronka (2023)

Figure 2: Schematic Diagram of a CBDC Tiered Interest Rate System



3.2 Deconstruction and Reorganization of the Credit Channel

The transformation of the credit channel is fraught with contradictions and tensions. On one hand, there is the significant risk of "bank disintermediation"; on the other, there is the vast prospect of data-driven credit efficiency gains.

The core risk is that CBDC, as a risk-free central bank liability, is a natural substitute for commercial bank deposits. If the public, especially corporations, shifts large amounts of deposits from commercial banks to CBDC accounts, it would directly erode the stable funding base of the banking system. This would lead to:

Increased Bank Funding Costs: Banks would be forced to offer higher interest rates to retain deposits or turn to more volatile wholesale funding markets (e.g., issuing interbank certificates of deposit, financial bonds), thereby pushing up their overall funding costs.

Contraction in Credit Supply: Rising funding costs and unstable funding sources would compel banks to raise lending rates, tighten credit standards, or even directly shrink their credit scale. This would directly weaken the effectiveness of the bank lending channel, preventing loose monetary policy from being effectively translated into credit support for the real economy^[5].

$$L^s = f(\rho_L, \rho_D, D, K) \quad \text{where} \quad \frac{\partial L^s}{\partial \rho_D} < 0, \frac{\partial L^s}{\partial D} > 0$$

To mitigate this risk, in addition to the aforementioned tiered rates and holding limits, central banks would need to design new liquidity provision tools to support commercial banks when necessary, playing a dual role as both "lender of last resort" and "provider of wholesale funding."

Table 3: Potential Impacts of CBDC on the Credit Channel and Corresponding Strategies

Impact Area	Mechanism Description	Challenge for Monetary Policy	Coping Strategy
Bank Disintermediation	Public shifts deposits to CBDC, reducing banks' funding sources.	Weakens the bank lending channel, potentially leading to a credit crunch (Wronka, 2023).	Holding limits, tiered rates, non-interest-bearing/low-interest design.
Structural Change in Credit Markets	Banks may shift to wholesale funding, increasing their financing costs.	Increases credit costs, reducing the sensitivity to monetary policy easing.	Central bank to provide new liquidity support facilities (e.g., term funding facilities).
Data-Driven Credit Efficiency	Central bank can analyze credit flows using macro CBDC data.	Requires a strict data privacy protection framework.	Establish a "data sandbox" to provide macro credit risk assessment information to banks while protecting privacy.

On the other hand, CBDC also offers the potential for "efficiency gains" in the credit channel. Through macroscopic, anonymized analysis of CBDC transaction data, the central bank can gain near-real-time, high-granularity insights into economic activity^[15]. For example, it could precisely identify which industries and regions have credit gaps, thereby guiding commercial banks to allocate credit more accurately or designing more targeted structural monetary policy tools (e.g., targeted re-lending). This could potentially solve the long-standing problem of asymmetric information in the traditional credit channel and improve the allocation efficiency of credit resources.

3.3 Amplification and Complication of the Asset Price and Exchange Rate Channels

As an emerging asset class and payment tool, digital currency's influence will transcend national borders, introducing new variables to the asset price and exchange rate channels.

For the asset price channel, the rise of private digital currencies (especially stablecoins) introduces new transmission nodes. Global stablecoins (e.g., USDT, USDC pegged to the US dollar) have already become a massive market. The issuers of these stablecoins hold vast amounts of reserve assets, typically high-quality liquid assets like short-term government debt and commercial paper^[8].

Transmission Amplifier: Changes in monetary policy affect the value and yield of these reserve assets, thereby impacting the operation and confidence in stablecoins. Conversely, a panic in the stablecoin market (e.g., rumors of insufficient reserves) could trigger a sell-off of reserve assets, creating shocks in traditional financial markets (like the commercial paper market) and forming new risk transmission pathways.

New Dimension of Wealth Effect: The violent price fluctuations of crypto assets themselves constitute a new source of the wealth effect. Although their scale is still small relative to total global wealth, their impact on consumption and investment cannot be ignored as their acceptance grows.

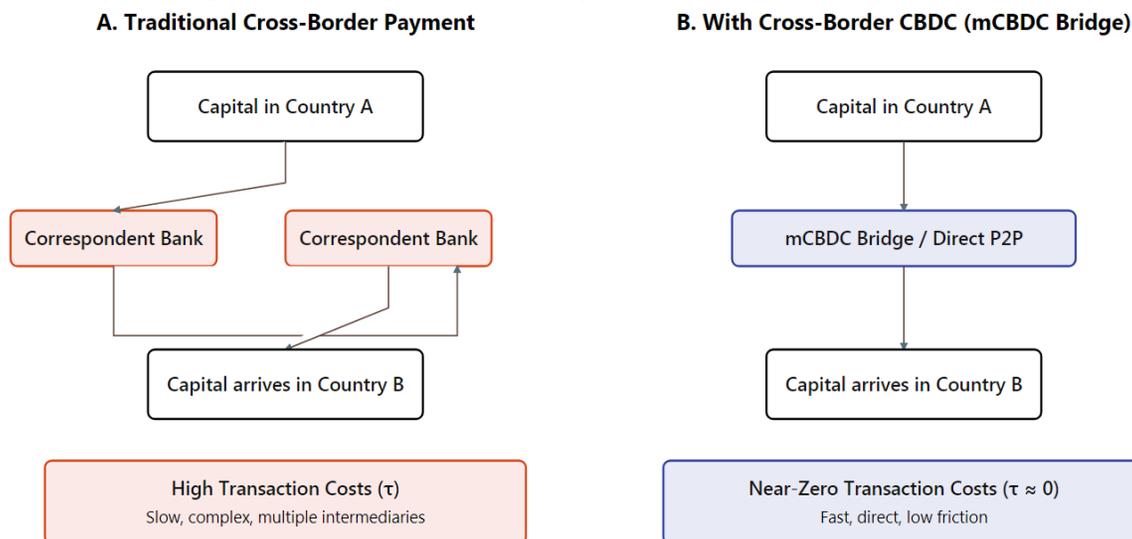
Table 4: Special Impacts of Stablecoins on Monetary Policy Channels

Channel	Mechanism Description	Potential Risk	Reference
Interest Rate Channel	If stablecoins offer interest, they will directly compete with bank deposits, affecting interest rate transmission.	Regulatory arbitrage, weakening the central bank's control over interest rates.	Eichengreen & Viswanath-Natraj (2022)
Credit Channel	The reserve management practices of stablecoin issuers affect the liquidity of markets for assets they hold, such as commercial paper and bonds.	Can trigger volatility in short-term funding markets, creating systemic risk.	Eichengreen & Viswanath-Natraj (2022)
Exchange Rate Channel	Global stablecoins (e.g., pegged to the USD) could induce "digital dollarization" or "digital euro-ization" in other countries, eroding the monetary policy sovereignty of local central banks.	Loss of monetary policy independence, increased financial fragility.	Bagis (2022)
Asset Price Channel	As a "gateway" to the crypto-asset world, changes in stablecoin liquidity can affect prices across the entire crypto market.	Contagion of risk from crypto markets to the traditional financial system.	Broby (2022)

For the exchange rate channel, the cross-border payment potential of CBDC is a "double-edged sword." By establishing multi-CBDC bridges (mCBDC Bridges) or unified cross-border payment platforms, the complex correspondent banking

system can be bypassed, achieving near-real-time, low-cost cross-border transactions (Lukonga, 2023). This will greatly promote international trade and investment. However, it also means that the speed and scale of capital flows will be amplified as never before.

Figure 3: Impact of CBDC on Cross-Border Capital Flows and the Exchange Rate Channel



3.4 Revolutionizing the Expectations Channel

The effectiveness of the expectations channel heavily relies on the central bank's credibility and the clarity of its communication. CBDC, particularly its "programmability," offers a revolutionary tool to innovate this channel.

Achieving "State-Contingent" Automated Monetary Policy: The central bank can pre-set rules that tie the execution of monetary policy to specific economic states (e.g., the unemployment rate hitting a certain threshold, CPI exceeding a certain level). For example, a "smart" CBDC could be designed to automatically distribute a certain amount of digital currency to all citizens' accounts during a recession, with a stipulation that it must be spent within a specific period or face automatic expiration or a negative interest rate. This precise version of "helicopter money" would bypass all intermediaries and directly stimulate aggregate demand^[12].

Advantages: It dramatically shortens policy lags, avoids interference from political maneuvering, and sends a strong signal to the public of the central bank's firm resolve to stabilize the economy, thereby powerfully anchoring expectations.

Challenges: It involves complex ethical and governance issues, as the central bank's power is greatly expanded, requiring a strong legal and democratic oversight framework.

Making Forward Guidance Tangible: Traditional "forward guidance" relies on subtle changes in language, which can easily be ambiguous. With CBDC, the central bank can "codify" its future policy intentions. For example, the central bank could announce how future CBDC tiered interest rates will be adjusted according to the inflation path and make this algorithm public. This would provide the market with an extremely clear and credible policy reaction function, greatly stabilizing long-term expectations^[6].

Table 5: Mechanisms for Revolutionizing the Expectations Channel with CBDC

Mechanism	Description	Significance for Monetary Policy	Potential Risk
Programmable Monetary Policy	Embedding policy rules directly into CBDC code for automatic execution (e.g., targeted, time-limited subsidies).	Enhances policy precision, timeliness, and credibility (Stöckel, 2025).	Ethical challenges, over-expansion of central bank power, technical complexity.
Direct Signaling	Guiding expectations directly by adjusting CBDC parameters (e.g., tiered rates).	Strengthens forward guidance, reduces market misinterpretation (Cheng, 2024).	Could lead to market overreaction, increasing short-term volatility.
Real-Time Data Feedback Loop	Using CBDC data for high-frequency economic monitoring to quickly adjust policy communication.	Shortens policy reaction lags, enabling dynamic, adaptive expectations management (Wu & Zhang, 2024).	Data noise could lead to policy misjudgments, "overfitting" to short-term fluctuations.

4. Perspectives from Evidence and Models

Although the widespread implementation of CBDC is still in its infancy, the global academic community has actively begun to quantify its potential impact by constructing complex theoretical models and utilizing empirical data from related fields.

Table 6: Comparison of Conclusions from Different Models on the Impact of CBDC

Study	Model Type	Core Mechanism	Key Conclusion	Policy Implication
Wu & Zhang (2024)	DSGE Model	CBDC alters household intertemporal substitution.	An interest-bearing CBDC can enhance the effectiveness of monetary policy in stabilizing the economy.	CBDC should be designed as an effective interest rate transmission tool.
Cheng (2024)	Macroeconomic Model	rCBDC bypasses frictions in bank credit.	Retail CBDC is more efficient in transmitting certain specific monetary policies (e.g., QE).	rCBDC can serve as a supplementary tool when the credit channel is impaired.
Chen et al. (2025)	Banking Competition Model	CBDC intensifies competition in the deposit market.	The impact of CBDC depends on the trade-off between bank market power and the disintermediation effect.	CBDC design must consider its impact on the banking competition landscape.
Davlatov & Sági (2025)	Theoretical Review Model	Integrates multiple channels.	CBDC will fundamentally alter the transmission mechanism, potentially leading to a "new monetary order."	Requires a systematic and holistic policy design.

Due to the lack of macro data on CBDC, researchers have cleverly used proxy variables. In his study of Tanzania, Wainyaragania^[13] used the prevalence and transaction volume of mobile money (like M-Pesa) as a proxy for "private sector digital currency." Using a Vector Autoregression (VAR) model, his results show that shocks to mobile money transaction volume have a significant positive impact on both broad money supply (M2) and credit to the private sector. This suggests that even a payment-focused digital currency has already begun to alter the parameters of monetary policy transmission by influencing the money multiplier and financial deepening.

Table 7: Summary of VAR Model Results on the Impact of Digital Currency in Tanzania

Shock Variable	Response Variable	Direction of Impact	Significance Level	Interpretation
Mobile Money Transaction Vol.	M2	Positive	5%	Mobile money accelerates money velocity, potentially affecting the money multiplier.
Mobile Money Transaction Vol.	Private Sector Credit	Positive	10%	Mobile money data may be used for SME credit scoring, promoting financial inclusion.
Cryptocurrency Awareness	M2 / Credit	Not significant	-	Cryptocurrencies have not yet had a significant macroeconomic impact in the region.

These early quantitative studies, despite their limitations, collectively point to one conclusion: digital currency is not neutrally embedded into the existing system but will systematically change the structure and parameters of the transmission mechanism.

5. Challenges and Prospects

The grand vision for digital currency is confronted by a complex web of technological, social, and geopolitical challenges. Central banks are like explorers in the Age of Discovery, sailing into uncharted waters full of opportunities but also fraught with hidden reefs.

Figure 4: Opportunities and Challenges of Digital Currency for Monetary Policy (SWOT Analysis)

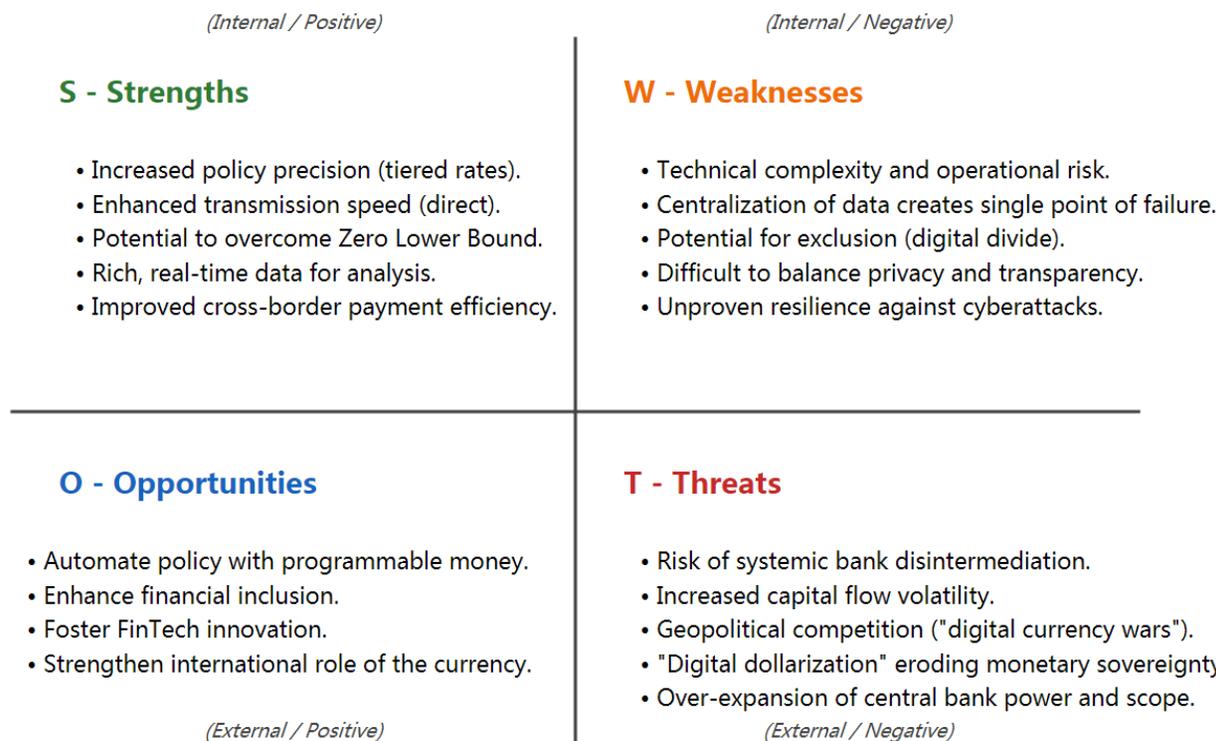


Table 8: Systematic Overview of Key Challenges and Future Research Directions

Challenge Area	Specific Issues	Future Research Directions
1. Financial Stability	How to precisely calibrate CBDC parameters (limits, rates) to avoid systemic bank disintermediation? During a financial crisis, would CBDC accelerate bank runs?	Macroprudential regulatory frameworks for CBDC; design of "circuit breakers" or penalty rates for CBDC during crises; new liquidity swap mechanisms between the central bank and commercial banks.
2. Privacy & Data Governance	How to strike a "Nash equilibrium" between leveraging data advantages for policy effectiveness and protecting citizens' right to privacy? How to define the ownership, usage rights, and supervision of data?	Technical solutions for "controllable anonymity" in CBDC (e.g., privacy protection based on tiered identity authentication); establishing an independent, legally supervised CBDC data governance committee.
3. Cybersecurity & Resilience	As a piece of national financial infrastructure, how can a CBDC system defend against state-level cyberattacks, potential threats from quantum computing, and single points of failure?	Hybrid architectural designs for CBDC systems (combining centralized and distributed elements); research on the application of quantum cryptography; regular, full-system cyber warfare drills and disaster recovery plans.
4. International Monetary System	How will the CBDCs of major economies (China, US, Europe) interact? Will it intensify currency competition, leading to "digital currency blocs" and the fragmentation of the global financial system?	Technical standards and governance rules for cross-border CBDC interoperability (mCBDC Bridge); the new role of the IMF in coordinating global CBDC development and regulation; SDR reform in the digital currency era.
5. Law & Central Bank Governance	What is the legal status of CBDC? With the central bank directly providing liabilities to the public, do its powers and responsibilities need to be redefined? What is the legitimacy and oversight mechanism for programmable monetary policy?	Amending the Central Bank Act to clarify the legal nature of CBDC and the central bank's related powers and duties; establishing judicial review and democratic oversight processes for programmable monetary policy (Banerjee & Sinha, 2025)[2] Banerjee.
6. Digital Divide & Social Equity	How to ensure that groups unfamiliar with digital technology, such as the elderly and residents of remote areas, are not marginalized in the new monetary system? Will CBDC exacerbate data-driven discrimination?	Inclusive financial design for CBDC, including vigorous development of hardware wallets supporting offline payments (e.g., smart cards, wearables); enacting regulations against algorithmic discrimination to ensure fairness in the use of CBDC data.

6. Conclusion

The rise of digital currency is the inevitable result of the information revolution's wave finally crashing against the ancient dam of money. Its impact on the monetary policy transmission mechanism is far from a mere parametric adjustment; it is a profound paradigm revolution. At the core of this revolution is the unprecedented ability of the central bank to penetrate traditional financial intermediaries, directly reach every micro-agent in the economy, and use programmable, intelligent tools for regulation. The interest rate channel is poised to break the "zero lower bound" and become more flexible and precise; the credit channel faces the severe challenge of "disintermediation" but also embraces the dawn of data-driven efficiency gains; the complexity and volatility of the asset price and exchange rate channels will increase significantly; and the expectations channel may transform from a vague "art of communication" into a clear "code-based contract."

However, just as every great technological leap is accompanied by immense social restructuring costs, the challenges brought by digital currency are equally fundamental. Financial stability, data privacy, central bank independence, and even the global monetary order—these cornerstones of the modern economic system will all be severely tested in this revolution. Ultimately, how digital currency shapes the monetary policy transmission mechanism will depend on a grand societal choice—how we strike a delicate balance between efficiency and stability, innovation and security, convenience and privacy.

We are at a historical crossroads. Central bankers are evolving from being "helmsmen" of the macroeconomy to "chief architects" of a complex financial ecosystem. Their toolkits are being completely updated, but the nautical charts must be redrawn. The monetary policy of the future will no longer be just about adjusting interest rates and reserve requirements; it is more likely to be lines of elegant code running on a new financial operating system built upon digital currency. Understanding and navigating this transformation will be the central theme of global macroeconomic management for decades to come.

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Conflict of Interests

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