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## CENTRAL BANK DIGITAL CURRENCIES AND THE FRAGILE BALANCE OF DISINTERMEDIATION

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Central Bank Digital Currencies (CBDCs) represent one of the most important monetary innovations in recent decades, with the potential to transform not only payment systems but also the entire financial framework. Their appeal arises from their promise of greater efficiency, lower transaction costs, enhanced monetary supervision, and, in theory, broader financial inclusion. Nevertheless, like all major innovations, CBDCs carry the risk of "systemic disruption". At the heart of the CBDC debate lies a delicate and sensitive balance between fostering technological progress and ensuring the fundamental stability of the financial system. A central bank that issues digital currency directly to the public risks undermining commercial banks as essential intermediaries. This disintermediation, while seemingly innocuous in stable conditions, could trigger significant credit contractions during crises, thereby hindering the effectiveness of monetary policy transmission and increasing the central bank's role as a lender of last resort. This paper explores the central dilemma: how can monetary authorities harness the benefits of digital innovation without unintentionally destabilizing the financial system they are tasked with safeguarding? The findings suggest that the answer does not lie in rejecting CBDCs, but rather in designing them with humility, foresight, and a deep awareness of the vulnerabilities they expose. The upcoming policy choices are not merely technical – they are deeply political, with far-reaching implications for the future of currency, banking, and governmental power in the digital age.

**Keywords:** Central Bank Digital Currencies (CBDCs), money, credit, monetary policy.

### Centrālās bankas digitālās valūtas un starpniecības trauslais līdzsvars

Centrālās bankas digitālās valūtas (CBDC) ir viena no nozīmīgākajām monetārajām inovācijām pēdējo desmitgažu laikā, kas spēj pārveidot ne tikai maksājumu sistēmas, bet arī visu finanšu sistēmu. To pievilcība balstās uz solījumiem paaugstināt efektivitāti, samazināt darījumu izmaksas, stiprināt monetāro uzraudzību un, teorētiski, paplašināt piekļuvi finanšu pakalpojumiem. Tomēr, tāpat kā visas lielās inovācijas, centrālo banku digitālajām valūtām piemīt "sistēmiskas kļūmes" risks. Diskusijas par centrālo banku digitālajām valūtām pamatā ir smalks un delikāts līdzsvara jautājums – starp tehnoloģiskā progresa veicināšanu un finanšu sistēmas pamatstabilitātes nodrošināšanu. Centrālā banka, kas emitē digitālo valūtu tieši iedzīvotājiem, riskē vājināt komercbanku kā svarīgu starpnieku lomu. Šāda starpniecības samazināšana, kas šķiet nekaitīga stabilos apstākļos, var izraisīt būtisku kredītesāšanas kritumu krīzes laikā, tādējādi mazinot monetārās politikas transmisijas efektivitāti un pastiprinot centrālās bankas lomu kā pēdējās instances kredītētājai. Šajā rakstā tiek analizēta centrālā dilemma – kā monetārās politikas institūcijas var izmantot digitālo inovāciju priekšrocības, nejausi nedestabilizējot finanšu sistēmu, kuru tām uzticēts aizsargāt? Pētījuma rezultāti rāda, ka risinājums neslēpjas atteikumā no centrālo banku digitālajām valūtām (CBDC), bet gan to izstrādē ar pazemību, tālredzību un dziļu izpratni par ievainojamībām, ko tās rada. Gaidāmie politiskie lēmumi nav tikai tehniski, bet gan dziļi politiski, un tiem būs tālejošas sekas nākotnes naudas aprītē, banku darbībā un valsts varas īstenošanā digitālajā laikmetā.

**Atslēgvārdi:** Centrālās bankas digitālās valūtas (CBDC), nauda, kredīts, monetārā politika.

### Introduction

Central Bank Digital Currencies (CBDCs) have surfaced as one of the most prominent topics of discussion and research within the field of monetary economics in the aftermath of the crisis and pandemic. Fundamentally, CBDCs represent a digital form of sovereign currency, issued by central banks, designed to exist alongside or, in certain instances, supplant traditional physical cash. Whereas initial conversations surrounding digital currencies were largely limited to academic outliers or the realm of cryptocurrency advocates, they now occupy a central position on the agendas of central banks in both developed and emerging markets.

The development of CBDCs has been propelled by a variety of often interrelated goals: enhancing payment efficiency, bolstering monetary sovereignty in response to private stablecoins, promoting

financial inclusion, and ensuring ongoing access to central bank money in an increasingly digital landscape. In principle, a well-structured CBDC could facilitate seamless, cost-effective, and secure transactions across various borders and demographics, bridging gaps in access to financial services and modernizing payment systems that have fallen behind technological advancements.

However, despite their potential, CBDCs pose a dilemma with potentially significant systemic implications. Should central banks provide digital accounts or wallets directly to the public, this could lead to a migration of deposits away from commercial banks particularly during periods of uncertainty resulting in what economists' term disintermediation. In such a scenario, central banks may risk becoming the primary entities in financial intermediation, jeopardizing the credit creation process, exacerbating crisis dynamics, and obscuring the distinctions between monetary and fiscal authority.

This study explores the delicate equilibrium between innovation and stability in the creation and execution of Central Bank Digital Currencies (CBDCs). It poses the question: Is it possible to launch CBDCs in a manner that promotes efficiency and inclusivity while avoiding destabilizing capital movements or diminishing the banks' function in credit intermediation? What policy instruments such as remuneration limits, tiered access, or structural barriers could protect against systemic risks? Furthermore, what insights can be gleaned from past instances of financial turmoil as monetary authorities embrace new technologies?

### **Research methodology**

This paper employs a qualitative, exploratory, and theoretical approach to investigate the complex interplay between Central Bank Digital Currencies (CBDCs), financial stability, and monetary architecture. The research is not based on primary data collection or quantitative empirical analysis; rather, it synthesizes and critically analyzes a wide range of existing academic literature, institutional reports, and real-world case studies to build a coherent conceptual framework.

The methodology can be broken down into three key stages:

1. **Systemic literature review:** The initial phase involved a comprehensive review of foundational and contemporary literature on CBDCs. This included white papers from central banks and international financial institutions (e.g., BIS, IMF, ECB), working papers from major economic research bodies, and peer-reviewed articles from academic journals. The purpose of this review was to establish a solid understanding of the current state of the debate, identify key policy proposals and design choices, and pinpoint significant research gaps. The focus was on identifying common themes and arguments related to disintermediation, financial stability, and the role of commercial banks.
2. **Comparative and analytical framework:** Following the literature review, the paper developed an analytical framework to compare and contrast different CBDC models and their potential impacts. This involved:
  - conceptual analysis: deconstructing the fundamental economic theories that underpin the risks of CBDC adoption, such as the Diamond-Dybvig model of bank runs and theories of endogenous money creation;
  - comparative case study analysis: examining real-world CBDC pilot projects and proposals (e.g., e-CNY, the digital euro, Sand Dollar) to ground the theoretical discussion in practical examples. This stage allowed for an assessment of how design choices and regulatory frameworks shape outcomes in different economic and political contexts.
3. **Conceptual model development:** The final stage involved the synthesis of the findings to propose a novel conceptual model: the “Hybrid Monetary Order”. This model serves as the primary contribution of the paper. It is a theoretical construct designed to address the systemic

vulnerabilities identified in the earlier stages of the research. The model is presented as a practical roadmap for a gradual and controlled transition to a CBDC-based system, offering a solution that balances the benefits of digital innovation with the imperative of financial stability. The tables presented in the paper are visual aids constructed to illustrate these theoretical comparisons and the proposed transitional phases.

In essence, this research methodology is designed to provide a theoretical solution to a pressing real-world policy problem. It leverages a robust qualitative analysis to move beyond a simple description of the problem and proposes a new, integrated framework for its resolution.

### **Literature review**

A growing body of academic and institutional research has sought to define the role of Central Bank Digital Currencies (CBDCs) within the broader financial ecosystem, particularly in relation to financial intermediation and systemic stability. Leading institutions such as the Bank for International Settlements (BIS), the International Monetary Fund (IMF), the European Central Bank (ECB), and the Federal Reserve have all contributed foundational insights into the motivations, design features, and potential macro-financial consequences of CBDCs.

The BIS has emphasized the delicate balance policymakers must strike between innovation and stability. Its policy briefs outline how different design choices, such as whether CBDCs are interest-bearing, whether access is restricted, and how they interact with commercial bank money, can significantly alter financial market dynamics (Bank for International Settlements 2023). In a similar vein, the IMF has provided detailed theoretical modeling and empirical assessments. Bouis for instance, evaluate CBDC impacts from a central bank balance sheet perspective, raising concerns about deposit migration and emphasizing the importance of complementary tools such as tiered remuneration and lending facilities (Bouis et al. 2024). Tan approaches the issue through a two-sided adoption model, showing that while CBDCs can improve financial inclusion and payment efficiency, they can also induce bank disintermediation unless carefully calibrated (Tan 2023). The earlier work by Kiff offers a comprehensive survey of global CBDC research, providing a foundational framework for understanding the evolution of CBDC policy across jurisdictions (Kiff et al. 2020).

The Federal Reserve has also played a significant role in framing the academic debate. Infante reviews the macroeconomic implications of CBDCs, outlining how they affect credit supply, financial frictions, and monetary transmission channels. The Fed's 2022 discussion paper highlights key policy trade-offs, emphasizing privacy concerns, potential systemic impacts, and the importance of stakeholder input (Infante et al. 2022). Carapella and Flemming provide a literature review rooted in classical monetary theory, revisiting earlier debates by Gurley, Shaw, and Tobin regarding the coexistence of public and private monies, and exploring the implications for modern central banking (Carapella, Flemming 2020).

In addition to institutional analyses, recent academic literature has also addressed the technological and governance aspects of CBDCs. Durigan Junior investigate the IT governance structures necessary for CBDC implementation, particularly in the context of distributed ledger technologies (DLT). Their work illustrates the challenges central banks face in adapting their organizational and regulatory frameworks to manage this transformation effectively (Durigan Junior et al. 2024).

Despite the rapidly growing body of literature, significant gaps persist. The empirical validation of Central Bank Digital Currency (CBDC) models remains limited due to the nascent stage of their real-world implementation. There is relatively scant research that investigates the geopolitical ramifications of cross-border CBDC interoperability, especially regarding how such advancements may alter the global monetary power dynamics. Another area that warrants further exploration is the legal and political viability of the proposed policy instruments. Although design options such as

holding limits, remuneration structures, and usage thresholds are frequently discussed, there are few studies that assess whether these tools can be credibly executed in light of current institutional mandates and constraints related to public trust.

Furthermore, a considerable portion of the literature tends to treat financial inclusion and stability as distinct design objectives, rather than integrating their interaction within a comprehensive framework. Future research will need to address these complexities more directly, particularly as pilot programs evolve and start to produce real-world data.

### **The role of banks in financial stability**

Commercial banks are central to modern financial systems, performing essential functions such as deposit-taking, credit creation, and liquidity transformation. These functions support both macroeconomic stability and the transmission of monetary policy. Banks do not merely channel existing savings but actively create money through lending, as shown by endogenous money theorists (Jakab, Kumhof 2015; Werner 2014). This credit creation process allows banks to extend loans while simultaneously generating deposits, making them unique among financial institutions in their capacity to support productive investment and economic growth (McLeay et al. 2014).

The reliance on deposits is fundamental to bank intermediation. Deposits provide a stable, low-cost funding base that enables maturity transformation, funding long-term loans with short-term liabilities, which is both a strength and a source of systemic vulnerability. As (Diamond, Dybvig 1983) demonstrated, this maturity mismatch can render banks susceptible to self-fulfilling bank runs, where the fear of insolvency triggers liquidity crises even in solvent institutions. These dynamics highlight the fragility of the banking system in the face of rapid shifts in depositor confidence.

Fractional reserve banking and the money multiplier are closely related to traditional banking systems where physical currency is used. In a token-based CBDC monetary system, fractional reserve banking may not apply in the same way as traditional banking. However, in some token-based CBDC systems, banks may have a role in providing services such as custody, payment processing, and lending. In these cases, fractional reserve banking may still apply, but the money multiplier would be determined by the central bank's issuance of tokens rather than by banks' reserves (Khidasheli, Grigolashvili 2023).

Prominent empirical studies have linked excessive liquidity creation to heightened risks of financial instability. Berger and Bouwman find that banks' on- and off-balance-sheet liquidity creation plays a crucial role in the build-up to financial crises (Berger, Bouwman 2009). Similarly, Diamond and Rajan emphasize the inherent fragility of bank structures due to the tension between liquidity provision and long-term lending. These findings underline that while banks are essential to economic resilience, they are also vulnerable under stress conditions (Diamond, Rajan 2001).

In this context, the advent of Central Bank Digital Currencies (CBDCs) raises critical concerns. By offering a safer and more liquid alternative to commercial bank deposits, CBDCs may accelerate deposit flight during periods of uncertainty, potentially amplifying the fragility inherent in traditional banking.

### **CBDC as a disruptive force**

Central Bank Digital Currencies (CBDCs) present a potentially disruptive challenge to conventional banking through the mechanism of disintermediation. The most direct channel lies in depositors shifting their funds from commercial banks to central bank-issued digital liabilities. This reallocation threatens the core funding model of banks, undermining their liquidity and pressuring profitability (Agur et al. 2018; Bindseil 2020). As deposit volumes decline, banks often turn to

wholesale funding to fill the gap, a strategy that raises funding costs due to default and interest-rate risks associated with such channels (IMF 2023). The shift toward higher-cost funding, coupled with increased competition for deposits, erodes net interest margins, prompting banks to restructure their asset portfolios and rethink risk-taking frameworks (Adalid et al. 2025).

Empirical evidence from pilot programs underscores these theoretical concerns. In the Bahamas, where the Sand Dollar was introduced, commercial banks experienced a noticeable decline in outstanding loans, suggesting that deposit migration may indeed curtail bank lending capacity (Wenker 2022). In Nigeria, the rollout of the eNaira has been hampered by minimal uptake only 0.5% of the population has adopted it, reflecting tepid public response and potential resistance from commercial banks concerned about disintermediation (Finanacial Consultancy 2024; Reuters 2024). Sweden's e-krona project remains in a pilot phase with no full implementation yet, keeping empirical disruptions at bay for now, but highlighting the cautious, gradual path being taken in jurisdictions with advanced banking systems (IMF 2023).

Altogether, these developments suggest that while CBDCs may unlock gains in efficiency and inclusion, they pose nontrivial risks to traditional banking models, particularly in terms of funding stability, liquidity, and profitability.

### **Digital bank runs and crisis amplification**

Central Bank Digital Currencies (CBDCs) could significantly accelerate withdrawal behavior during financial panics, posing new risks to financial stability. Unlike traditional bank runs, which are constrained by physical infrastructure and withdrawal friction, CBDCs offer instant and secure access to central bank liabilities. This ease of transfer could lead to sudden and large-scale deposit flight from commercial banks, particularly in times of stress (Bank for International Settlements 2023).

Economists such as Fernández-Villaverde have extended the classic Diamond-Dybvig framework to include CBDCs, demonstrating how their availability reduces the cost of withdrawal and increases the likelihood of self-fulfilling runs (Fernández-Villaverde et al. 2021). Their model shows that even well-capitalized banks can face destabilizing outflows if depositors have the option to convert holdings instantly into central bank money. Similarly, we distinguish between “slow” and “fast” disintermediation, showing that CBDCs, without caps or frictions, could amplify systemic risk through the “fast” channel, especially in crisis scenarios (Table 1).

Historical analogs, while imperfect, provide supporting evidence. Episodes of digital panic, such as cyber runs or false rumors triggering app-based bank withdrawals, have illustrated the dangers of frictionless exit options. In the context of CBDCs, the same digital convenience that enhances payment efficiency may act as an accelerant to capital flight.

Important concerns regarding the financial system's resiliency and future identity are also brought up by this new rivalry. Although FinTech encourages efficiency and inclusivity, it may create new systemic risks if it continues to engulf traditional banking operations, particularly in the absence of comparable regulatory oversight or capital requirements. Therefore, striking a balance between encouraging innovation and maintaining macro-financial stability is a problem for regulators, policymakers, and financial institutions. Open banking, sandboxes, and publicprivate partnerships are examples of collaborative frameworks that can provide a compromise, enabling FinTech to thrive while maintaining the fundamental protections of the financial system (Khidasheli 2025).

Table 1

### Bank run comparison

	Traditional Bank Run	CBDC-Enabled Digital Run
Speed of Withdrawal	Slower, physical cash constraints	Near-instantaneous via digital conversion
Depositor Behavior	Line queues, branch limitations	One-click shift into CBDC
Run Magnitude	Constrained by liquidity	Potentially much larger, limited only by CBDC limits
Policy Response	Lender-of-last-resort, suspension	CBDC design limits, holding caps, monetary filters

**Source:** elaborated by the author.

Empirical modeling by the BIS and SUERF also supports this concern. For instance, simulations of a digital euro in stressed economies suggest that unregulated CBDC access could dramatically increase the speed and volume of outflows, undermining bank funding models and potentially requiring central banks to intervene as lenders of last resort more frequently (Kumhof, Noone 2018).

While central banks may mitigate these risks through design features such as holding limits, non-interest-bearing CBDCs, or delayed settlement mechanisms, the fundamental issue remains: CBDCs introduce a low-friction, high-trust asset that competes with bank deposits during times of stress. This disruptive potential, while manageable, necessitates a deeper rethinking of financial architecture and crisis management frameworks (Table 1).

### The risks mitigating patterns

The potential disruptive effects of central bank digital currencies (CBDCs) on retail banking and financial stability have prompted considerable academic debate on mitigation mechanisms. The literature generally converges on three principal design approaches: tiered remuneration, quantitative holding limits, and intermediated distribution models. Each has been discussed extensively by prominent economists and central bankers as a means to balance the policy objectives of innovation, efficiency, and stability.

Tiered remuneration is perhaps the most widely cited solution. Panetta and Bindseil argue that applying differentiated interest rates based on the size of a CBDC holding can discourage the migration of large-scale deposits from commercial banks to the central bank. Under such schemes, small balances intended for transactional purposes earn a rate similar to cash or reserves, while larger balances face significantly lower, or even negative, rates (Panetta 2018; Bindseil 2020). This structure mirrors reserve tiering practices already in use and, according to Bindseil could substantially reduce the risk of structural disintermediation while preserving CBDCs' role in fostering payment system efficiency (Bindseil 2020).

Quantitative holding limits offer a more direct safeguard by capping the maximum CBDC balance a user can hold. As highlighted by Brunnermeier and Niepelt, this approach directly constrains the magnitude of potential deposit flight, especially under stress scenarios, thereby limiting systemic risk transmission channels. However, the political economy of setting such limits, particularly in cross-border contexts, remains a challenge (Brunnermeier, Niepelt 2019).

Intermediated CBDC models have been advanced by Kumhof and Noone as a way to preserve the role of commercial banks in deposit-taking, credit allocation, and customer intermediation. In such models, the central bank issues CBDC but outsources distribution and account management to private financial institutions. This framework aligns with the "synthetic CBDC" concept and aims to retain

banks' role in financial intermediation, thereby mitigating credit contraction risks while still enabling the benefits of digital currency adoption (Kumhof, Noone 2018) (Table 2).

Table 2

### Models' comparison

	Advantages	Limitations
Tiered Remuneration	Discourages large-scale CBDC hoarding; aligns with existing central bank liquidity management	Requires continuous rate calibration; potential public resistance to negative rates
Holding Limits	Simple and transparent; directly limits deposit flight magnitude	Politically sensitive limit-setting; potential circumvention via multiple accounts
Intermediated Model	Preserves bank intermediation; leverages existing KYC/AML frameworks	Dependent on intermediary resilience; may reduce CBDC's competitive pressure on payment services

**Source:** elaborated by the author.

While each design option presents merits, the literature underscores that no single measure is sufficient in isolation. A hybrid framework, integrating tiered remuneration, moderate holding limits, and an intermediated distribution model, may provide the optimal trade-off between innovation and systemic stability. Such a composite approach could also improve political feasibility, as it leverages existing institutional trust and operational capacities.

### Case studies

Recent case studies offer a window into how CBDCs are being debated, designed, and tested in different political and economic settings, revealing both converging principles and context-specific divergences. In the Eurozone, the European Central Bank (ECB) has moved into the preparation phase of the digital euro project, presenting it as a safeguard against the dominance of private digital payment solutions and potential encroachment from foreign CBDCs (Panetta 2023). While proponents frame it as a tool for payment efficiency, resilience, and strategic autonomy, critics highlight the risk of disintermediation if households and firms shift significant deposit balances away from commercial banks. These concerns have spurred ECB proposals for holding caps and tiered remuneration structures to prevent destabilizing liquidity drains (ECB 2023). This tension reflects a broader policy dilemma: balancing the public's demand for secure, state-backed digital money with the need to preserve the funding base of private banks, which remains central to credit creation and macroeconomic stability. China's approach with the e-CNY offers an instructive contrast, rooted in a centrally managed, phased rollout that emphasizes operational control and risk management. The People's Bank of China (PBOC) has embedded safeguards such as tiered wallet systems, transaction caps, and programmable features aimed at limiting large-scale deposit displacement (PBoC 2021). While these measures are often framed as technical adjustments, they reveal a deeper strategic posture: the PBOC is pursuing digital currency adoption without fundamentally altering the structure of bank-based intermediation. This demonstrates that the disruptive potential of CBDCs can be significantly shaped, if not contained by design choices and regulatory constraints.

On the global stage, the Bank for International Settlements' *mBridge* project illustrates the transformative promise of multi-CBDC platforms for cross-border trade and settlement. By linking the CBDCs of Hong Kong, Thailand, China, and the United Arab Emirates, *mBridge* has shown that near-instant settlement across jurisdictions is technically feasible, potentially lowering transaction costs and mitigating foreign exchange risks (BIS 2022). However, while the operational gains are clear, these experiments also surface thorny questions: How will such systems manage differing monetary policies, legal regimes, and privacy standards? And to what extent might they shift the geopolitical balance in payment infrastructure dominance? These open questions suggest that the success of CBDCs, whether domestic or cross-border, will depend as much on institutional coordination and political trust as on technological capability.

### **The solution – the gradual path of CBDC**

The dawn of Central Bank Digital Currency (CBDC) marks a profound turning point in the evolution of money, one that central banks cannot indefinitely postpone. The momentum behind CBDC adoption is driven by technological innovation, changing consumer preferences, and the growing demand for safer, more efficient payment systems. Yet, despite its inevitability, the pathway to CBDC must be navigated with great care. The central challenge is straightforward but formidable: how to introduce CBDC without triggering the very financial instability, bank runs and systemic crises, that the new form of money aims to prevent.

To understand this challenge, consider the nature of monetary evolution itself. Historically, monetary systems have never supported an infinite coexistence of two fundamentally competing forms of money. Each monetary innovation, from commodity coins to fiat currency to electronic payments, eventually displaces its predecessor. CBDC is no exception. Once made available, it will rapidly gain traction, especially as it promises unparalleled safety as a direct claim on the central bank, unlike commercial bank deposits, which carry implicit credit risk.

The crux of the problem is this: if CBDC is rolled out too quickly, the public will naturally gravitate away from commercial bank deposits to hold CBDC tokens, perceived as risk-free and instantly accessible. This “flight to safety” would precipitate large-scale withdrawals from banks, undermining their liquidity and triggering classic bank runs. Unlike the traditional model, where deposit insurance and lender-of-last-resort facilities temper panic, a swift migration to CBDC could overwhelm these safeguards, given the instantaneous nature of digital transfers. This scenario would amplify rather than reduce systemic risk.

This fundamental tension presents policymakers with a dilemma: CBDC is inevitable, yet its introduction poses existential risks if mishandled. The solution lies in designing a hybrid monetary framework that preserves stability in the short run while enabling long-term modernization (Table 3).

**The Hybrid Monetary Order:** A viable strategy involves two sequential substitution phases. First, all central bank-issued fiat money, physical cash, and electronic reserves should be replaced by CBDC tokens. This step is relatively straightforward, as it involves direct central bank liabilities with minimal disruption to commercial banks' credit creation functions. Second, and more critically, credit money, money created endogenously by banks through the money multiplier, should be phased out gradually, with CBDC progressively substituting for bank deposits.

Table 3

**Financial stability impact**

	Likely Outcome	Financial Stability Impact
<b>Rapid</b>	Rapid public shift from deposits to CBDC	High risk of bank runs; financial instability
<b>Gradual</b>	Phased substitution of fiat and credit money	Controlled transition; financial system resilience

Source: elaborated by the author.

This gradual substitution is essential. It allows banks to maintain their role as financial intermediaries without facing immediate liquidity crises. More importantly, it ensures that depositors and investors adjust their behavior in an orderly fashion rather than reacting abruptly, which could cascade into systemic shocks (Table 4).

Table 4

**The transition from traditional to CBDC-based monetary system**

	Fiat Money (Cash & Reserve)s	Credit Money (Created via Money Multiplier)
Phase One	CBDC	Fiat Money
Phase Two	CBDC	CBDC

Source: elaborated by the author.

**Economic and fiscal benefits of the hybrid model.** This two-stage substitution yields several crucial advantages. First, it effectively eliminates the risk of sudden bank runs by managing depositor migration toward CBDC. Second, by replacing credit money with CBDC, it removes the unstable element of endogenous money creation, historically a source of financial fragility and credit cycles. Central banks gain greater control over the money supply, leading to more predictable fiscal outcomes and enhanced monetary policy transmission.

In the final equilibrium, banks return to a more traditional role, reminiscent of their function before the widespread creation of credit money. Their purpose becomes the secure custody of money, facilitating payments and clearing, and serving as intermediaries channeling savings into productive investments. Crucially, banks lose the ability to generate credit money, curbing systemic risks linked to excessive credit expansion (Table 5).

**A more robust financial sector with CBDC.** The fractional reserve banking, with multiplication effect, can create more credit than gross amount of savings is available. Therefore, the credit mechanism can make excessive pressure on economic and cause financial crisis (Khidasheli, Chikhladze 2019). Beyond stability, CBDC opens opportunities for more sophisticated monetary policy tools. Programmable money, real-time monitoring, and direct transmission mechanisms could make central banks more agile in responding to economic shocks. Combined with the safer banking architecture, this promises a more robust, resilient financial sector less vulnerable to crises.

Table 5

### Bank functions pre and post CBDC era

functions	Pre-CBDC (Money Multiplier Era)	Post-CBDC (CBDC Era)
Money Creation	Create credit money via lending (money multiplier)	No credit money creation; custodians of CBDC deposits
Payment and Clearing	Facilitate transactions and clear payments	Same, focused on custody and clearing
Lending and Investment	Provide loans funded by deposits	Continue lending using deposited savings
Systemic Risk Contribution	High due to credit creation and runs risk	Significantly reduced

**Source:** elaborated by the author.

In conclusion, the transition to CBDC is not a simple technical upgrade but a fundamental transformation of the monetary system. The challenge is to embrace this future while preserving financial stability. The hybrid monetary order, gradual substitution of fiat and credit money by CBDC, offers a practical, risk-conscious path forward. It balances the inevitability of CBDC adoption with the imperative of safeguarding our financial infrastructure, ensuring a smooth transition to a more stable and modern monetary system.

### Conclusions

The emergence of Central Bank Digital Currencies (CBDCs) signifies a significant and unavoidable milestone in the progression of money, necessitating a thorough reassessment of the structure of the global financial system. This paper has explored the central dilemma at the core of this transition: how can monetary authorities leverage the considerable benefits of digital innovation, including improved payment efficiency, lower transaction costs, and greater financial inclusion, without unintentionally undermining the very financial framework they are tasked with safeguarding. The analysis provided in this document illustrates that this issue is not simply a technical challenge to be addressed through software, but rather a profoundly structural and political issue with far-reaching consequences for the future of currency, banking, and governmental authority in the digital age.

Throughout this research, the delicate balance between innovation and stability has been a persistent theme. A rapid and direct implementation of a CBDC, offering a risk-free, immediately accessible claim on the central bank, would create a fundamental structural competitor to commercial bank deposits. This shift would modify the incentive structures for depositors, particularly during times of financial instability, and reveal the inherent weaknesses of the current banking model. The very convenience and security of a CBDC, which are its main advantages, could ironically serve as a catalyst for financial instability, leading to a "flight to safety" that might initiate significant deposit withdrawals from commercial banks. Therefore, the primary contribution of this research is the assertion that the issue is so intricately woven into the existing monetary framework that it requires a systemic solution, a comprehensive reconfiguration of the monetary order, rather than a simple technical adjustment.

The possibility of systemic disruption due to disintermediation and the intensification of crisis dynamics represents a significant risk that is examined in this paper. As outlined, a broad transition of funds from commercial banks to central bank digital liabilities would jeopardize the fundamental funding structure of banks, diminishing their liquidity and exerting pressure on their profitability.

Empirical data from pilot initiatives, such as the one conducted in the Bahamas, has already indicated this trend, with commercial banks witnessing a reduction in outstanding loans following the launch of the Sand Dollar, implying a limitation on their lending capabilities. The most pressing risk, however, lies in the potential for CBDCs to greatly expedite withdrawal behavior during financial crises. In contrast to traditional bank runs, which are limited by physical infrastructure and friction, CBDCs facilitate immediate, large-scale digital transfers, potentially heightening systemic risk and necessitating more frequent interventions by central banks as lenders of last resort.

While an increasing amount of literature has suggested various mitigation strategies, including tiered remuneration, quantitative holding limits, and intermediated distribution models, this paper argues that these methods, when applied in isolation, are inadequate to tackle the fundamental issue at hand. A tiered remuneration system may deter significant deposit migration but does not fundamentally change the vulnerability of endogenous credit money. Likewise, holding limits can mitigate the scale of a run but do not eliminate its likelihood. The analysis indicates that these measures represent a collection of solutions that address the symptoms of instability rather than rectifying the underlying structural weakness of a banking system dependent on inherently fragile credit money. The comparison of traditional and digital bank runs in Table 1, along with the assessment of various models in Table 2, highlights the need for a more comprehensive and foundational framework to ensure financial stability.

The primary contribution of this paper is the introduction of a novel paradigm for monetary modernization known as the "Hybrid Monetary Order". This framework offers a practical and risk-aware roadmap for a gradual transition to a CBDC-based system. The suggested strategy consists of two sequential substitution phases to maintain stability throughout the transition. The initial phase involves the relatively simple replacement of all central bank-issued fiat currency, both physical cash and electronic reserves, with CBDC tokens. This action modernizes the liabilities of the central bank without fundamentally disrupting the credit creation function of the commercial banking sector.

The second and more crucial phase entails the gradual replacement of "credit money", the money that banks create endogenously, with CBDC. The focus on gradualism represents the central insight of this solution. By managing this transition in a systematic manner, the framework enables depositors and investors to modify their behavior over time, thus averting the sudden and cascading systemic shocks that a rapid shift would entail. This phased approach constitutes a sophisticated strategy that reconciles economic necessities with political viability, addressing not only the economic risks of liquidity crises but also the institutional resistance from commercial banks and the public. As demonstrated in Table 3, this controlled pathway is intended to alleviate the risks linked to an uncontrolled or abrupt transition, ensuring a smooth and stable evolution of the monetary system.

The long-term equilibrium achieved through this hybrid model results in a more robust and resilient financial system. Commercial banks would evolve from their existing role as creators of credit money to a more stable and traditional function: secure custodians of money, facilitators of payments, and intermediaries that direct savings into productive investments. This structural transformation eliminates the "unstable element of endogenous money creation" that has historically contributed to financial fragility and credit cycles. In this new framework, central banks would acquire greater control over the money supply, resulting in more predictable fiscal outcomes and improved monetary policy transmission, as the mechanism is no longer affected by a complex and frequently unstable credit creation process. Table 4 illustrates this significant shift in bank functions, emphasizing the trade-off of a profitable role for a more stable and manageable system.

In conclusion, the shift to CBDCs is not merely a technical enhancement but a fundamental transformation that requires careful foresight and a deep understanding of the vulnerabilities it exposes. The paper's proposed "Hybrid Monetary Order", through the gradual replacement of fiat and credit money with a CBDC, provides a practical and essential roadmap for this significant transition. It offers a comprehensive framework for navigating the delicate balance between innovation and stability,

ensuring that central banks can adopt the digital future without jeopardizing the stability of the global financial system. The success of this transition, whether on a domestic or cross-border scale, will ultimately rely as much on institutional coordination and political trust as on technological capability. The meticulously designed, phased approach presented here is not merely an option but a necessity for a more resilient and contemporary monetary future.

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