



Whitepaper:

cNGN, Naira Money Market Funds
backed Stablecoin

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Abstract

This whitepaper introduces a hybrid tokenized money market fund (TMMF) designed to function as a stablecoin while maintaining the stability, liquidity, and interest-bearing characteristics of money market funds (MMFs). The tokenized stablecoin is fully backed by low-risk, short-term government securities and cash-equivalent assets, allowing for a 1:1 peg with the naira while providing a yield-generating mechanism.

Designed for integration with Digital Asset Exchanges (DAXs) and capital market participants, this stablecoin is a regulated digital asset, bridging traditional finance and decentralized finance (DeFi). The paper details the structure, regulatory considerations, economic implications, and pilot use cases of this programmable instrument.



1. Introduction

1.1 Problem Statement

Traditional stablecoins, while widely used, face several challenges:

1. No Yield: Most stablecoins do not accrue interest, leading to inefficient capital allocation.
2. Regulatory Concerns: Many stablecoins lack clear legal structures or compliant reserves.
3. Liquidity Risks: Some stablecoins rely on risky collateralization strategies.
4. Limited Capital Market Integration.

1.2 Solution: A Hybrid Tokenized Money Market Fund (TMMF)

A money market fund-backed stablecoin provides a regulated, interest-generating, and liquid alternative to traditional stablecoins. This structure enables:

- I. Stable 1:1 peg with local fiat while allowing holders to earn passive yield.
- II. Institutional-grade transparency, with fully audited and regulated money market holdings.
- III. Seamless integration with digital asset exchanges (DAXs) and capital markets, ensuring broad adoption.
- IV. Programmability, allowing for automated settlements, and DeFi use cases.



2.Tokenized Stablecoin Design & Mechanism

2.1 Structure

This stablecoin is structured as a tokenized share of a money market fund:

- 1 token = 1 fiat unit (₦1), backed by short-term money market instruments.
- Reserves include:
 - »Government Treasury Bills (T-Bills)
 - »Deposits in regulated custodians
- Token transactions occur on-chain while money market and cash reserves remain in regulated institutions.

2.2 Issuance & Redemption

The issuance and redemption process of cNGN is designed with **security, transparency, and global best practices** in mind, ensuring **full regulatory compliance** and **1:1 backing** by money market funds (MMFs) and cash-equivalent assets.

Issuance Process (creating cNGN) - Issuance begins when a user **deposits Nigerian Naira (NGN)** into a **designated custodial bank account**. Upon verification, an equivalent amount of **cNGN tokens is minted** and credited to the user's **on-chain wallet**. The issuance process follows **global stablecoin standards**, ensuring all tokens are backed by **segregated, highly liquid reserves**. Security measures include:

- **Independent third-party audits** verifying reserves.
- **Multi-signature smart contracts** to prevent unauthorized minting.
- **Automated compliance checks (KYC/AML)** before token distribution.

Redemption Process (Burning cNGN) - users can redeem cNGN for NGN by initiating a **burn request** on the platform. The system **removes the requested cNGN from circulation**, and the equivalent NGN is **transferred to the user's verified bank account**. This process ensures a **stable token supply**, preventing



systemic risks. Compliance and security features include:

- I. **Whitelisted bank accounts** to prevent illicit financial activity.
- II. **Reporting** to regulatory authorities for transparency.
- III. **Liquidity stress testing** to ensure reserves always match circulating supply.

FUNCTION	ACTION	TRIGGER	CONDITIONS	OUTCOME
Minting	Convert NGN to cNGN	Bank deposit	Reserve-backed, 100M NGN minimum	cNGN Issued
Burning	Convert cNGN to NGN	Redemption request	User balance check, AML approval	cNGN removed, NGN credited
Depositing	Add NGN to cNGN account	User-initiated transfer	KYC-compliant, verified funds	NGN balance updated, cNGN minted
Withdrawal	Transfer cNGN to external wallet	User request	Whitelisted address, blockchain selection	cNGN sent to external wallet

2.3 Smart Contract & Enforced Compliance

- On-chain compliance: KYC/AML is embedded within our smart contracts, ensuring regulatory adherence.
- Instant settlements: Used for capital markets and exchange-based trading



3.Key Features & Benefits

3.1 cNGN's regulator dashboard: Enhancing Visibility and Compliance

Global financial reports indicate that **60% of all digital asset transactions** involve **stablecoins**, which serve as the backbone of digital payments, trading, and decentralized finance (DeFi). However, these transactions are **primarily dominated by foreign stablecoin issuers**, such as **USDT (Tether)**, **USDC (Circle)**, and **BUSD (Binance USD)**—entities that operate **entirely outside Nigeria's regulatory oversight**.

This **lack of domestic control** means Nigerian regulators have **limited visibility** over **on-chain transactions**, **cross-border digital asset flows**, and **potential financial risks**, making **Anti-Money Laundering (AML)**, **Know Your Customer (KYC)**, and **capital flow management** challenging.

To address this, **cNGN is integrating a real-time regulator dashboard**, aligned with **global best practices**, including the **Bank of International Settlements' (BIS) Project Pyxtrial**, which aims to enhance stablecoin transparency, liquidity monitoring, and systemic risk management.

3.1.2. How the cNGN Regulator Dashboard Works

The **cNGN Regulator Dashboard** provides **end-to-end visibility** over all **cNGN transactions**, mapping the entire **local flow of digital assets** within Nigeria's economy. Unlike traditional stablecoins that obscure transaction tracking, **cNGN ensures real-time regulatory insights** through:

- **Full Transaction Traceability:** Every cNGN transaction is recorded on a **regulator-accessible blockchain ledger**, allowing **real-time tracking** of inflows and outflows.
- **Address Mapping & Whitelist Controls:** Regulators can monitor or flag suspicious wallets, ensuring **AML and counter-terrorism financing (CTF) compliance**.
- **Liquidity Risk Oversight:** The dashboard includes **stress testing tools**, ensuring that **cNGN reserves** always match token circulation **on a 1:1 basis**.
- **Cross-Border Flow Monitoring:** Nigerian authorities can track how **cNGN interacts with foreign digital assets**, preventing **excessive capital flight**.

3.1.3. Regulatory & Compliance Advantages

By adopting **BIS Project Pyxtrial principles**, the **cNGN Regulator Dashboard** empowers authorities with:

Feature	Current Foreign Stablecoins	cNGN with Regulator Dashboard
Visibility on Transactions	Limited (Data stored offshore)	Full, real-time local tracking
AML & KYC Controls	Non-compliant or selective	Embedded in blockchain rules
Stablecoin Reserve Monitoring	Opaque & unaudited	Audited, 1:1 fully backed
Systemic Risk Management	No oversight	Liquidity stress testing
Capital Flow Controls	No restrictions	Prevents excessive FX flight

3.1.4. De-Dollarizing Nigeria's Digital Asset Economy

Currently, the Nigerian digital asset ecosystem is **heavily reliant on USD-denominated stablecoins**, reinforcing **capital flight**, and **dollar dominance**. This over-dependence on foreign stablecoins has several effects:

- **Limited monetary policy influence** as most transactions bypass Nigerian systems and frameworks.
- **Regulatory blind spots** in tracking Nigeria-based digital asset transactions.

cNGN reverses this trend by introducing a Naira-backed, yield-generating stablecoin that disincentivizes USD stablecoin usage in Nigeria.

»How cNGN Reduces USD Stablecoin Reliance

1. Incentivized Liquidity in Naira

- **cNGN earns yield from money market funds**, making it **more attractive** than non-yielding USDT/USDC for Nigerian users.

2. Compliance-Driven Exchange Integrations

- Digital asset exchanges (DAXs) can **preferentially list cNGN** over USDT for **local liquidity pools**.

3. Regulatory Support & Institutional Adoption

- **Will gradually shift Nigeria's digital economy away from USD-based stablecoins.**

3.1.5. Conclusion: Nigeria's Path to Digital Sovereignty

By launching cNGN alongside a real-time regulator dashboard, Nigeria can **redefine its role in the global digital asset economy.** This strategy ensures:

- I. **Real-time oversight of all stablecoin transactions** within Nigeria.
- II. **Reduced exposure to foreign-dominated stablecoins** and their regulatory risks.
- III. **A stronger, Naira-based digital asset infrastructure**, aligned with **global best practices** from BIS, IMF, and financial watchdogs.

3.2 Yield-Bearing Stablecoin

- Holders earn passive interest as the stablecoin reflects the underlying MMF returns.
- Enhances capital efficiency, making it more attractive than non-yielding stablecoins

3.3 Institutional-Grade Transparency & Security

- Fully audited and regulated reserves.
- Segregated custody models to prevent mismanagement.
- Programmable governance structures via smart contracts.

3.4 Market Stability & Financial Inclusion

- Ensures low volatility via government debt backed reserves.
- Provides retail and institutional access to money market yields, enhancing local savings and driving digital adoption.
- Acts as a risk-free cash equivalent in digital finance.

3.5 Instant Settlements & Capital Market Integration

- Reduces counterparty risks in digital asset trading.
- Provides T+0 settlement cycles, **improving capital efficiency.**

4. Economic & Financial Implications

4.1 Impact on Monetary Policy Transmission

Since the tokenized MMF earns real interest, it allows for near-direct retail participation in central bank policy shifts.

- a. **Reduced Incentive to Save Outside local assets:** By offering globally competitive returns and stability through government debt, cNGN incentivizes Nigerians to save within the local assets, reducing the tendency to convert savings to foreign currencies.
- b. **Near-Direct Access to Policy Transmission:** Through cNGN, individuals gain access to the benefits from government debt instruments traditionally reserved for institutional investors. This ensures that retail participants can benefit from monetary policy adjustments, particularly in the form of improved interest on their naira savings.
- c. **Real Positive Interest Rates:** Retail investors no longer need to rely solely on bank savings accounts, which often provide suboptimal returns that fail to outpace inflation. The cNGN offers a direct pathway to inflation-adjusted returns.

Yield on Token = Money Market Rate – Liquidity Premium

This ensures savers benefit directly from interest rate adjustments without relying on traditional banks.

4.2 Money Supply & Liquidity Effects

The total money supply equation can be adjusted to include tokenized deposits:

$$M_{eff} = C + D_{free} + TMMF$$

where:

- C = Physical cash
- D_{free} = Freely available bank deposits
- $TMMF$ = Tokenized money market fund reserves

$$V_{eff} = V + \Delta V_{TMMF}$$

where:



- V_{eff} = Effective velocity of money
- ΔV_{TMMF} = Increase in velocity due to on-chain transactions

4.3. Embedding Compliance Mechanisms Directly Into Transaction Infrastructure

The cNGN employs smart contracts with embedded compliance protocols to enforce regulatory requirements automatically. This approach represents a significant advancement in financial transparency and risk mitigation.

- Automated Compliance and Monitoring:** Transactions are governed by built-in rules that ensure adherence to Anti-Money Laundering (AML), Counter-Terrorist Financing (CFT), and Know-Your-Customer (KYC) standards.
- Cost Efficiency in Oversight:** By embedding compliance directly into the code, the cNGN significantly reduces the operational and financial burdens of post-transaction audits for regulators and financial institutions. Regulators and stakeholders can access real-time, tamper-proof records.
- Regulatory Visibility:** The cNGN system enhances oversight by providing real-time transaction data to regulators, supporting financial stability and integrity.

4.4. Making Global Transactions reliant on the Naira

The cNGN integrates seamlessly into pan-African systems, allowing Nigerians to transact seamlessly, within the global digital assets ecosystem:

- Direct Naira-Based Transactions:** As a tokenized representation of the Naira, cNGN enables its use in cross-border payments through blockchain networks, bypassing the need for intermediary currencies like the US Dollar and USD Stablecoins.
- Cost-Efficient and Transparent Payments:** By leveraging blockchain, cross-border transactions become faster and significantly cheaper than traditional correspondent banking systems.

- iii. Naira Adoption in International Trade: With cNGN, individuals and businesses can confidently hold and transact in Naira for international use.

5. Audits and Attestation

The **cNGN stablecoin** is designed to be a fully transparent, auditable, and regulated digital asset backed by money market funds (MMFs) and cash-equivalent reserves. To ensure the integrity, stability, and security of the system, cNGN follows a rigorous audit and attestation framework, aligning with global best practices for stablecoin reserves, financial reporting, and smart contract security.

Our audit and attestation framework consists of four primary components:

1. **Reserve Audits & Financial Attestations** (Ensuring 1:1 backing of cNGN tokens)
2. **Regulatory Compliance & Governance Audits** (Aligning with securities laws & financial reporting standards)
3. **Smart Contract & Blockchain Security Audits** (Protecting against protocol vulnerabilities)
4. **Transaction Monitoring & AML/KYC Controls** (Ensuring financial crime prevention)

Each component ensures compliance, transparency, and security while aligning with global financial and digital asset regulations.

Component	Audit Frequency	Conducted By	Transparency Level
Reserve Attestations	Monthly	Independent Auditors	Public
Liquidity Stress Tests	Quarterly	Internal & External Firms	Private
Smart Contract Security	Annually	Security Firms & Open Source Community	Public
Regulatory Filings	Annually	Financial Regulators	Government
AML/KYC Compliance Audits	Ongoing	Compliance Teams & AI Monitoring	Private



6. Regulatory & Risk Considerations

6.1 Compliance & Governance

- Full regulatory oversight under capital market laws.
- Smart contract-based AML/KYC ensures transaction transparency.
- Reserves audited quarterly to maintain peg stability.

6.2 Risk Management

RISK FACTOR	MITIGATION STRATEGY
Peg Stability	100% backing by MMFs + redemption mechanisms
Liquidity Risks	Segregated accounts with licensed custodians
Regulatory Uncertainty	Compliance with Government policies and frameworks
Smart Contract Risks	Consistent, reputable third-party security audits & bug bounties

7. Technology & Architecture

7.1 Blockchain Infrastructure

- The cNGN is built on open, public blockchains for low-cost and scalable transactions.
- We have developed cross-chain interoperability to integrate with multiple DeFi protocols.

7.2 Smart Contract Mechanism

- Yield accumulation via rebasing tokens.
- Automated governance, compliance & risk management



8.Security Framework for the Tokenized MMF Stablecoin

To ensure the stability, security, and regulatory compliance of cNGN, the protocol adopts a multi-layered security framework that incorporates blockchain security, smart contract risk mitigation, and institutional-grade custody controls.

SECURITY LAYER	DESCRIPTION
On-Chain Asset Backing	All issued stablecoins are backed 1:1 with short-term money market instruments, ensuring full collateralization.
Regulated Custodians	Assets are held in licensed financial institutions with regular audits.
Smart Contract Security	Uses multi-signature wallets, time-locked transactions, and circuit breakers to prevent exploits.
Transaction Monitoring	Automated on-chain compliance tools for AML/KYC enforcement.
Decentralized Governance	Token holders vote on policy changes via Quadratic Voting to prevent centralization risks.

8.2 Smart Contract Risk Mitigation

8.2.1 Circuit Breaker for Market Instability

A circuit breaker function is embedded in smart contracts to pause redemptions in case of market anomalies.

If price deviation exceeds the threshold (e.g., 3%), the system automatically halts large redemptions until stability is restored.

9. Use Case-Specific Modeling

The tokenized MMF stablecoin can be applied across multiple capital market scenarios. Below, we analyze some core use cases using financial models.

9.1 Digital Asset Exchange (DAX) Liquidity & Settlement Optimization

Problem Statement

Digital Asset Exchanges (DAXs) lack a stable, local, yield-generating transaction asset. Traditional stablecoins such as USDT and USDC do not offer interest, creating capital inefficiencies and capital flight.

Proposed Solution

The MMF-backed stablecoin serves as a liquid on-chain settlement asset that also provides yield to retail and institutional players backed by local money markets.

This ensures that liquidity in local asset pools grow over time, reducing foreign dependency, slippage and improving market efficiency.

9.2 Tokenized MMF Stablecoin for Securities Settlement

Problem Statement

Capital markets rely on T+2 settlement, causing delays, counterparty risks, and capital inefficiencies.

Proposed Solution

The MMF-backed stablecoin enables instant T+0 settlements by acting as a risk-free cash equivalent.

Settlement Time Model

The probability of settlement failure (F) in traditional markets follows:

$$F = 1 - e^{-\lambda t}$$

Where:

- λ = Settlement risk factor.
- t = Time delay in settlement.

For **T+0 settlement**, $t \approx 0$, leading to:

$$F_{stablecoin} \approx 0$$

This shows that using the MMF-backed stablecoin diminishes settlement risk.

10. Summary of Use Case Models

USE CASE	MATHEMATICAL MODEL	KEY BENEFIT
DAX Liquidity & Settlement	Liquidity accumulation formula	Improves exchange depth
Securities Settlement	Exponential settlement failure model	Enables instant T+0 settlement

10.2 Adoption Roadmap

- Phase 1: Pilot with exchanges & regulated institutions.
- Phase 2: Integration with DeFi platforms & traditional markets.
- Phase 3: Expansion to market driven, compliant use cases

Conclusion

The tokenized stablecoin backed by money market funds represents a new financial paradigm, merging capital markets with blockchain innovation. It offers a yield-generating, fully regulated, and programmable alternative to traditional cash holdings, ensuring stability, security, and seamless transactions.



References

To ensure the cNGN framework aligns with global best practices in monetary policy, stablecoin regulations, and DeFi governance, this section provides references to key monetary policy papers, regulatory guidelines, and academic research reports that influence the design and implementation of cNGN.

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1.1 Central Bank Reports on Stablecoins & Digital Currencies

1. Bank for International Settlements (BIS) – Project Pyxtrial

- A regulatory framework for monitoring stablecoin reserves and liquidity risks.
- BIS Innovation Hub, 2023.
- [Source](#)

2. International Monetary Fund (IMF) – The Impact of Digital Money on Monetary Policy & Financial Stability

- Explores how stablecoins affect central bank control over liquidity and financial flows.
- IMF Staff Discussion Note, 2022.
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3. Central Bank of Nigeria (CBN) – Monetary Policy Review on Digital Assets & CBDCs

- Examines digital currency adoption and its impact on FX reserves and monetary control.
- CBN Annual Report, 2023.
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4. Federal Reserve Bank of New York – Stablecoins & the U.S. Dollar Peg: Implications for Emerging Markets



- Analyzes stablecoin adoption in emerging markets and the risks of dollarization.
- FRBNY Working Paper, 2021.
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2. Stablecoin Regulatory Frameworks

2.1 Global Stablecoin Policy & Compliance Standards

5. Financial Stability Board (FSB) – Global Stablecoin Arrangements: Regulatory Recommendations

- Defines risk management, audit requirements, and transparency rules for stablecoins.
- FSB Report, 2022.
- [Source](#)

6. European Central Bank (ECB) – MiCA (Markets in Crypto Assets) Regulation

- Comprehensive regulatory framework for stablecoins and digital assets in the EU.
- European Union, 2023.
- [Source](#)

7. U.S. Financial Action Task Force (FATF) – Guidance on Digital Assets & AML/KYC Standards

- Establishes anti-money laundering requirements for stablecoin issuers and crypto platforms.
- FATF Report, 2023.
- [Source](#)

8. Monetary Authority of Singapore (MAS) – Stablecoin Issuance & Compliance Guidelines

- Outlines licensing requirements for stablecoins and digital payment tokens.
- MAS Policy Paper, 2023.
- [Source](#)

3. DeFi Research Reports & Stablecoin Market Impact

3.1 Academic Research & Industry Studies

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- [Source](#)

10. World Bank – The Role of Digital Currencies in Emerging Economies

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- World Bank Research Paper, 2023.
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11. Harvard Business Review – The Future of Digital Payments & Stablecoin Risk Management

- Discusses financial stability risks associated with algorithmic and collateralized stablecoins.
- HBR Analysis, 2023.
- [Source](#)

12. Chainalysis – The Evolution of Stablecoin Transactions & On-Chain Compliance

- Provides real-time analytics on stablecoin transactions and illicit activity detection.
- Chainalysis Annual Crypto Report, 2023.
- [Source](#)

4. cNGN-Specific Policy Considerations

5. CBN Guidelines on eNaira & Digital Payment Ecosystem

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- Central Bank of Nigeria, 2022.

• [Source](#)

14. Nigeria Securities and Exchange Commission (SEC) – Proposed Regulatory Framework for Digital Assets

- Draft proposal outlining stablecoin compliance for virtual asset service providers (VASPs).
- SEC Nigeria, 2023.

• [Source](#)

15. Africa Fintech Summit – Stablecoins in African Markets: Opportunities & Risks

- Explores how stablecoins can drive financial inclusion in Nigeria and broader Africa.
- AFT Research, 2023.

• [Source](#)

