Introduction

Traditional financial (TradFi) assets used as collateral is as old as man himself with the use of livestock, crops and real estate (Krungsi, 2021). Consequently in the modern age, a new form of secured lending and investment using digital collateral has been built, most prominently in low- and middle-income countries (Gertler et al., 2024). Notably, the Decentralized Finance (DeFi) system has emerged as a promising alternative for a completely new financial system (Harz, 2022). DeFi is simply a relativelyquick, transparent and permission-less financial structure within the greater world of cryptocurrency and block chain technology. As such, DeFi and its principles are in clear contrast to traditional financial institutions that value centralized control. Cryptocurrency and block chain technology are gradually emerging as the future of finance and as more people in the public normalize its usage, there is an increased need for these users to store their money in a safer and reliable keepsake, one that ensures security, transparency, trust and reliability. For most users, stablecoins is the go-to. However, countries are not benefitting from the financial activities of their citizens due to the USD-pegged stablecoins these users store because they are denominated un the US financial currency. Thus, Etherfuse's novel cryptocurrency technology, stable bonds present a real-world asset that does not only offer a DeFi wallet system built on the trust and security that users need, but also enables the same community that creates the value to capture it (Etherfuse, 2024). It is also a public bond that is government backed in a way that the financial activities of the citizens can profit the nation, hence strengthen their digital value. This inherently improves citizen's access to multiply wealth through investment and also benefit the nation they represent.

Within existing financial systems, significant limitations in access and opportunity persist, leading to two key outcomes: erosion of trust in centralized financial institutions and the rise of

dynamic collectives exploring alternative monetary systems. These groups have sought decentralized financial solutions to enable transactions, trade, and commerce without intermediaries whose priorities often conflict with users' interests (Perez, 2002). This experimentation has given rise to novel financial tools, including Stable bonds, which combine traditional financial mechanisms with block chain technology to address inefficiencies and expand accessibility.

Historical precedents reveal that financial revolutions often accompany technological advancements. For instance, early U.S. colonists experimented with paper money in the 17th century, while Alexander the Great leveraged mass currency issuance to finance his empire's expansion. Each financial innovation triggered wealth creation and periodic economic turmoil, as regulators sought to stabilize monetary environments (Carlota Perez, 2002). Similarly, today's cryptocurrency landscape reflects these cycles, with communities embracing decentralized technologies to foster trust and utility within financial systems.

However, despite the potential of cryptocurrencies to revolutionize finance, the sector faces challenges related to trust, accessibility, and equitable value distribution. Current systems like fiat-backed stablecoins (e.g., USDC) provide some stability but disproportionately benefit centralized entities like Circle and the U.S. government. Circle’s USDC, for example, maintains its peg through extensive reserves and investments in U.S. Treasury securities, generating significant returns. Yet, the value created by global users of USDC flows predominantly to the United States, raising concerns about equitable value capture in other regions (Circle, 2022).

This study addresses these research gaps by exploring Stablebonds as a transformative collateral alternative, emphasizing their potential to enhance financial inclusion and optimize loan pricing mechanisms for smaller and privately held firms.

Statement of problem

Cryptocurrency's ambition to redefine global finance is hindered by uneven value distribution. Stablecoins like USDC are pegged to foreign fiat currencies, exposing users to external banking systems and economic structures that fail to support their local economies. As John Connally famously remarked, "The dollar is our currency, but your problem," a statement that remains relevant in the context of USD-backed stablecoins. This dynamic underscores the need for alternative financial tools that better serve local communities while minimizing risks inherent in traditional banking systems. Collateral plays a critical role in securing loans, affecting loan pricing, firm financing, and investment decisions. However, the valuation and effectiveness of collateral remain subject to significant variability based on collateral type, firm size, and borrower characteristics. Existing research highlights that collateralized loans generally reduce borrowing costs compared to unsecured loans, with an average reduction in loan spreads by 23 basis points (Berger &Udell, 1990; Santos, 2011). Yet, there is substantial heterogeneity in the value of different collateral types. Marketable securities and real estate are among the most valuable, while blanket liens often hold the least value (Benmelech& Bergman, 2009; Cerqueiro et al., 2016).

Proposed solution with Stable bonds

Stablebonds address these challenges by merging the benefits of blockchain tokenization with the stability of traditional government-issued bonds. A stablebond is a tokenized representation of a physical sovereign bond, enabling fractional ownership, increased liquidity, and global market access. Unlike fiat-backed stable coins, stablebonds reduce reliance on banking systems by decoupling their value from localized fiat reserves. Instead, they are backed directly by sovereign bonds, offering a more stable and decentralized store of value (Etherfuse, 2024).

Pros and Cons of Traditional Collateral Options

The endogeneity of the collateral pledging decision limits the ability to precisely quantify collateral's impact on loan pricing. Moreover, the dynamics of collateral valuation for smaller and private firms—where collateral is most valuable—are underexplored. Evidence suggests that smaller firms rely more heavily on collateral, but shocks to pledge-able asset values and their effect on firms' investment behaviors remain insufficiently studied (Chaney et al., 2012; Lian& Ma, 2021).

Further, the reliance on traditional collateral types exposes inefficiencies in securing loans for small and medium-sized enterprises (SMEs), particularly during periods of economic uncertainty. Banks' valuation of collateral is influenced by external factors, such as real estate price fluctuations, yet the extent to which bank-specific expertise or relationship length affects collateral valuation remains unclear (Gan, 2007). These gaps are particularly significant for smaller firms, which face constrained access to capital compared to larger, publicly listed firms.

The introduction of stablebonds collateralized financial instruments leveraging blockchain technology offers an innovative pathway to address these challenges. Stablebonds can provide a

transparent, immutable, and liquid form of collateral, potentially mitigating inefficiencies associated with traditional collateral. However, research is needed to evaluate whether stablebonds can reduce pricing disparities, enhance collateral valuation for smaller firms, and improve loan accessibility by addressing endogeneity and market inefficiencies.

By tokenizing sovereign bonds, stablebonds provide several advantages which includes:

- Increased Liquidity: Fractional ownership makes bonds accessible to a broader demographic.

- Market Accessibility: Tokenized bonds can be traded on decentralized finance (DeFi) platforms.

- Wealth Generation: Interest-bearing instruments create safe financial opportunities for users.

- Global Reach: A worldwide market for sovereign assets enhances demand and participation.

Features of Stable Bonds

1. Decentralized Access: Stablebonds eliminate the need for intermediaries, allowing users to participate via decentralized wallets.

2. Enhanced Inclusion: Barriers to bond ownership are removed, enabling broader participation in financial markets, particularly in underserved regions.

3. Trust and Stability: Backed by sovereign bonds, stablebonds mitigate risks associated with traditional banking systems.

In emerging markets, where traditional financial tools are scarce, Stablebonds offer a transformative opportunity. By leveraging blockchain technology, they provide a secure, interest-bearing alternative to fiat-backed stablecoins while enabling equitable value capture for local communities.

Analyzing Stable Bonds as Collateral

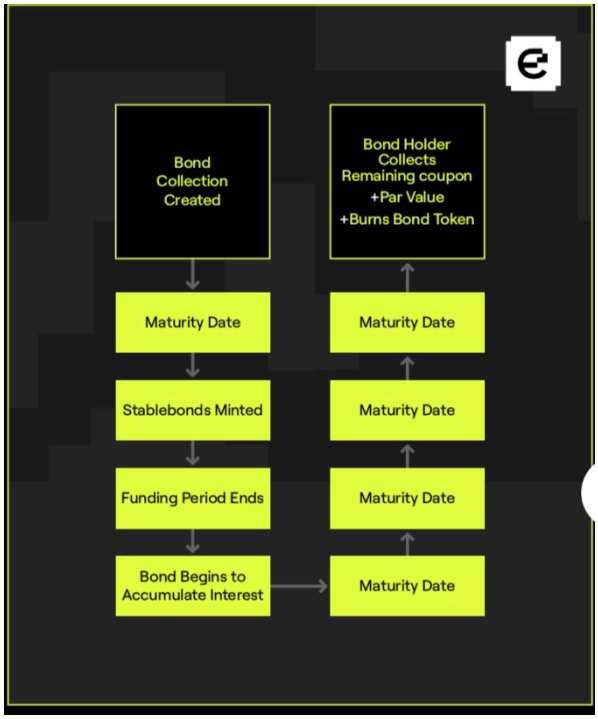
In the evolving landscape of cryptocurrency and blockchain technologies, one of the key challenges remains finding stable, reliable financial instruments to foster trust, liquidity, and long-term value. A novel approach to addressing this challenge is the concept of stablebonds, a type of tokenized bond that combines the stability of traditional bonds with the advantages of blockchain technology. The idea builds upon the lessons learned from financial instruments such as U.S. Treasuries, which have proven effective in raising capital and providing a store of value, especially in times of economic uncertainty. Here, stablebonds serve as a potential collateral in the decentralized finance (DeFi) ecosystem, offering unique advantages over traditional fiat-backed stablecoins.

Stablebonds and their Structure

The structure of Stablebonds involve the issuance of tokens backed by sovereign bonds. As these bonds mature, interest payments are distributed to token holders as tokenized equivalents. This structure decouples financial instruments from the risks inherent in traditional banking systems, offering enhanced stability while maintaining liquidity, fungibility, and accessibility. Moreover, the decentralized nature of Stablebonds eliminates the need for intermediaries, allowing users to engage with sophisticated financial products through decentralized wallets (Etherfuse, 2024). The payment structure for Stablebonds, as proposed by Etherfuse, is centered around tokenizing

traditional sovereign bonds while ensuring liquidity, fractional ownership, and seamless interest payments. Here's a breakdown of the payment structure:

The lifecycle of Stablebonds proposed as tokenized versions of sovereign-issued bonds follows a structured sequence, from bond issuance to redemption upon maturity. This innovative financial tool, as developed by Etherfuse, addresses the limitations of fiat-pegged cryptocurrencies by enabling communities to capture and retain value from sovereign investments. Below is a comprehensive explanation of the Stablebond lifecycle;



Source; Etherfuse’s white paper.

1. Creation and Initial Offering

A bond collection is created, specifying the bond's features (e.g., coupon or zero-coupon), maturity date, and interest payment schedule. These features are implemented using on-chain

smart contracts. Then, stablebond tokens (denoted as Etherfuse Bond Tokens, or EBTs) are minted during the funding period, representing fractional ownership of the underlying bond. Each token's value is linked to the par value of the bond and its interest payments. The initial funding period allows users to purchase Stablebond tokens. Funds raised during this period are allocated to a Solana Program-Derived Address (PDA) and then transferred to the sovereign entity to purchase the bond (Etherfuse, 2024).

2. Accumulation of Interest

Once the bond is purchased, it begins accumulating interest. Periodic interest payments (for coupon bonds) are disbursed to token holders as tokenized equivalents (e.g., $MXNT). Etherfuse maintains a decentralized ledger for tracking ownership, decoupling Stablebond operations from the risk associated with sovereign banking systems. This ensures security and transparency, mitigating exposure to systemic risks like banking crises or currency devaluation.

3. Token Management and Liquidity

Stablebond tokens enable fractional ownership, allowing users to participate at low entry costs. This feature democratizes access, particularly for individuals in emerging markets, by lowering the minimum investment threshold (Etherfuse, 2024). These tokens can be traded on Decentralized Finance (DeFi) platforms, providing liquidity and marketability. This flexibility supports diverse financial needs, such as early liquidation or yield generation through trading pairs. Token holders can request interest payments before bond maturity. In such cases, EBTs are burned, and a non-fungible token (NFT) is issued, recording the interest collected and the remaining bond value.

4. Maturity and Redemption

Upon maturity of the bond, holders can redeem the par value and accrued interest. This is achieved through the Etherfuse platform, where burned tokens are replaced with fiat-pegged stablecoins equivalent to the bond's value. After redemption, the associated Stablebond tokens are destroyed, ensuring that the total supply aligns with the underlying bond's lifecycle (Etherfuse, 2024).

The lifecycle of Stablebonds revolutionizes the traditional bond market by integrating blockchain technology, decentralization, and financial inclusivity. These innovations not only increase liquidity and access but also align financial incentives with community well-being. By reducing risks and improving accessibility, Stablebonds represent a significant advancement in decentralized finance and global economic equity.

Advantages of Stablebonds as Collateral

1. Increased Liquidity and Fungibility

Stablebonds offer increased liquidity through fractional ownership, meaning that smaller investors can access previously inaccessible markets. Moreover, by being listed as trading pairs on decentralized exchanges (DeFi), Stablebonds gain fungibility, enabling holders to trade or exchange them easily without relying on centralized intermediaries (Etherfuse,2024). This liquidity is a crucial feature for collateral in financial markets, as it allows assets to be quickly liquidated or utilized in lending and borrowing platforms.

2. Global Market Access

One of the core benefits of Stablebonds is the ability to access a global financial market. Traditionally, access to sovereign bonds has been limited, with only a small percentage of households participating (e.g., 1.3% of U.S. households own bonds). In emerging markets, the numbers are even lower due to limited access to traditional financial tools. By tokenizing bonds, Stablebonds open up these markets to a broader, more diverse set of participants globally, including those who previously could not afford to invest in such instruments.

3. Interest-bearing Opportunities

As collateral, Stablebonds provide a unique advantage in that they offer interest-bearing opportunities. Sovereign bonds typically pay periodic interest, which is a crucial factor in increasing the utility of Stablebonds. Investors or holders of Stablebonds not only have the potential for capital appreciation due to the underlying bonds' value but also benefit from regular interest payments. This makes Stablebonds more attractive than fiat-backed stablecoins, which do not yield any returns for holding them.

4. Financial Inclusion and Access to Sophisticated Financial Products:

Stablebonds remove many of the barriers that traditionally limited access to bonds, especially in emerging markets. Accessing bonds typically requires dealing with intermediaries like brokers or banks, but Stablebonds simplify this by requiring only a mobile device or a crypto wallet. This drastically reduces the entry barriers for individuals who might not have access to traditional banking services, thereby promoting financial inclusion. In this sense, Stablebonds not only serve as a valuable financial instrument but also as a tool for democratizing access to sophisticated financial products.

5. Decentralization and Security:

The blockchain technology underlying Stablebonds ensures that these assets are secure, transparent, and decentralized. By eliminating intermediaries, Stablebonds reduce the risks associated with traditional banking systems, such as credit risk, systemic risk, and the potential for market manipulation by central banks. This makes Stablebonds a more reliable form of collateral, especially in environments where trust in centralized financial systems is low.

6. Capturing Value Locally:

Unlike fiat-backed stablecoins that are often pegged to a foreign currency (e.g., USD), which benefits the economy of the issuing country (e.g., the United States), Stablebonds are designed to ensure that the value generated by their use benefits the local community or nation that issues them. By using Stablebonds, nations can retain more of the value generated within their borders, as opposed to stablecoins that export value to the countries whose currencies they are pegged to.

Stablebonds represent a significant step forward in integrating traditional financial instruments with blockchain technology. As collateral, they offer unique advantages, including increased liquidity, global market access, interest-bearing opportunities, and greater financial inclusion. However, their success will depend on overcoming regulatory challenges, ensuring market adoption, and maintaining trust in the issuing sovereign entities. As the world of decentralized finance continues to evolve, Stablebonds could play a pivotal role in creating more stable, secure, and inclusive financial systems.

Within traditional financial systems, significant limitations exist in accessibility and inclusivity. These shortcomings have cultivated widespread distrust in centralized financial institutions and catalyzed a movement led by innovative, ambitious collectives aiming to develop alternative financial systems. These groups envision decentralized money systems that eliminate

intermediaries whose incentives often conflict with the public's interest such as prioritizing profits over equitable access to financial services (Perez, 2002).

Despite the promise of cryptocurrencies as transformative financial instruments, they have often led to cycles of wealth creation, loss, and volatility. These dynamics resemble historical patterns, such as the U.S. colonists' experimentation with paper money (1690–1720) or the "Mississippi Bubble" in early financial history. Each technological and financial revolution has introduced novel instruments to facilitate trust, adoption, and network expansion, though these transitions have also caused turmoil and regulatory challenges (Perez, 2002).

The advent of blockchain technology has introduced unprecedented possibilities, including the tokenization of assets. Tokenization represents physical or digital assets on a blockchain, blending traditional financial tools with decentralized finance (DeFi) mechanisms. One such innovation is Stablebonds, a novel financial instrument built on blockchain infrastructure that applies historical lessons to drive adoption and utility within the cryptocurrency ecosystem. Stablebonds aim to address the inherent inefficiencies in existing stablecoin systems, democratize access to bonds, and ensure equitable value distribution.

Stablecoins: Strengths and Limitations

Among stablecoins, fiat-backed variants, such as Circle's USDC, provide the highest stability and utility due to their direct pegging to reserve assets like the U.S. dollar. USDC's business model ensures stability through robust reserves: for every issued token, Circle maintains equivalent fiat reserves in cash or U.S. Treasury Securities. These assets provide safety and yield through risk-free mechanisms, generating substantial revenue—estimated at $620 million

annually from U.S. Treasuries alone (Circle, 2022). However, this model disproportionately benefits the U.S. economy, even when stablecoin users are located in other nations. As Connally (1971) aptly noted, “The dollar is our currency, but your problem,” highlighting the inequities in global monetary systems dominated by foreign currencies.

Stablebonds exemplify how blockchain technology can advance financial innovation by integrating lessons from centuries of economic history. By addressing the inequities of fiat-backed stablecoins and leveraging tokenization, Stablebonds present a transformative opportunity for nations and communities to capture and retain value. These instruments not only enhance financial inclusion but also pave the way for equitable and sustainable economic development in the era of decentralized finance.

Case Study For Stablebond as a Collateral in Nigeria

Nigeria offers a compelling case for the use of Stablebonds as a financial instrument to address its ongoing challenges related to financial inclusion, monetary instability, and sovereign debt management. In the face of a complex financial environment, Nigeria struggles with access to traditional financial tools, which is particularly evident in the low rates of bond ownership among its population. As in many emerging markets, a significant proportion of Nigerians lacks access to investment products such as bonds. In fact, only a small percentage of Nigerians have access to formal financial systems, let alone the ability to engage in traditional bond markets (World Bank, 2020).

Stablebonds, as tokenized versions of physical sovereign bonds, present an opportunity to bridge this gap by providing a decentralized financial instrument that is easily accessible through mobile devices or simple crypto wallets. By utilizing blockchain technology, Stablebonds allow

for fractional bond ownership and the ability to trade on decentralized finance (DeFi) platforms, thus reducing the barriers to entry that currently exist in traditional bond markets (Perez, 2022). This is crucial for Nigeria, where the vast majority of the population remains unbanked or underbanked, and the digital infrastructure to support blockchain-based solutions is improving, albeit unevenly across regions.

Moreover, Nigeria's financial system has been severely impacted by high inflation rates, a fluctuating exchange rate, and fiscal deficits. Stablebonds offer an opportunity to mitigate these issues by offering a stable, interest-bearing investment option that is less susceptible to the vagaries of local financial institutions (Etherfuse, 2024). By linking Stablebonds to the bonds issued by the Nigerian government or other sovereign entities, these tokenized instruments could provide a more stable store of value for Nigerian citizens, especially as stablecoins, which are pegged to foreign currencies like the US dollar, continue to dominate (Connally, 2024). This would allow Nigerians to invest in bonds denominated in their local currency, creating a more direct path for the country's wealth to circulate within the domestic economy rather than being funneled to foreign financial markets.

Furthermore, the decentralized nature of Stablebonds means that the Nigerian government can issue bonds without relying on centralized banking systems, which have often been seen as inefficient or corrupt. The blockchain infrastructure underlying Stablebonds eliminates the need for intermediaries, thus reducing the risks associated with traditional banking systems (Etherfuse, 2024). This could have significant implications for Nigeria, where there have been repeated instances of mismanagement and corruption within state-controlled financial institutions.

In Nigeria, the concept of Stablebonds tokenized versions of government bonds designed to offer stability in volatile economies—has the potential to transform the financial landscape. However, while promising, their implementation faces several challenges in the Nigerian context. Stablebonds, which leverage blockchain technology to make bond markets more accessible, are especially attractive in economies plagued by inflation and currency fluctuations. Nevertheless, their integration into Nigeria's financial ecosystem may face substantial limitations, including regulatory hurdles, technological infrastructure gaps, and economic instability.

Conclusion

Stablebonds represent a critical evolution in cryptocurrency, addressing systemic challenges and advancing financial inclusion. By tokenizing sovereign bonds, this novel instrument bridges the gap between traditional finance and blockchain technology, fostering trust, utility, and equitable economic participation. As the cryptocurrency ecosystem matures, tools like Stablebonds will play a pivotal role in driving adoption and redefining global financial systems.

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