

The Tokenisation of Assets: Jurisdictional Experiences and the Lessons for Nigeria's Financial System

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I. Introduction

Recently the financial markets and global economy have experienced rapid changes due to technological advancements in commerce and investments. Hence the emergence of different payment solutions and virtual assets such as digital assets and currencies (cryptocurrencies). The evolution of cryptocurrencies like bitcoin revolutionised how investments and assets are issued, managed, and transacted.

For bitcoin as well as other kinds of cryptocurrencies, this new world of opportunities is powered by blockchain technology a type of distributed ledger technology that holds the floodgates to multiple means of investment. Blockchain enables an asset to be easily broken down into smaller units, representing ownership, encouraging the democratisation of investment in historically illiquid assets and bring about fairer markets. Whether it be paintings, digital media platforms, real-estate property, company shares, or collectibles, everything can be tokenised on a distributed ledger. Blockchain guarantees that once you buy tokens representing an asset, no single authority can erase or change your ownership — your ownership of that asset remains entirely immutable. There are however concerns about digital assets - illegal activities such as: money laundering, terrorism financing and purchase of illicit products among others.

Considering the benefits of a digital economy, financial sector regulators are adopting flexible and innovative regulatory frameworks that attract and promote investments using asset tokenisation. For instance, Switzerland recently amended its securities laws to allow for the issuance and trading of uncertificated securities. These securities are represented on the blockchain, also known as ledger-based securities.

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Similarly, the United States Securities and Exchange Commission, in December 2020, commenced a five-year trial to allow broker-dealers to hold digital asset securities for clients without violating the Customer Protection Rule. This is to, among others, allow the agency to gather more information on the evolution of digital assets and enable the industry to develop the necessary framework and infrastructure required for safe custody. Those enactments of enabling regulations have spurred financial product innovation to meet investors' demands. The United States recently saw the first registered close-ended fund – Arca US Treasury Fund – issue shares as digital asset securities through blockchain technology. Other countries where tokenised assets have been created to attract new investors include Slovenia, Spain, Iran, Germany, and Uruguay.

Notwithstanding, asset tokenisation is still a relatively nascent concept, compared to other traditional means of raising funds in the financial markets. According to data from Forkast and CoinMarketCap, as at Q4 2020, of the total global digital asset market size of approximately US\$350.00 billion, tokenised assets accounted for US\$18.10 billion (5.2 per cent). Of the US\$18.10 billion, currency and real estate accounted for approximately 97.0 per cent and 1.0 per cent respectively.

Asset tokenisation is gradually changing how capital is raised (especially through novel fundraising vehicles such as Security Token Offerings (STOs)), as well as how investment products are developed and distributed. It also has the potential to accelerate financial inclusion and inclusive growth through the capital market.

Nigeria, through the Central Bank of Nigeria (CBN) has embraced the global digital revolution with the eNaira. Similarly, the Securities and Exchange Commission (SEC) has classified offerings such as Digital Assets Token Offering (DATOs), Initial Coin Offerings (ICOs) and Security Token ICOs under its regulatory supervision.

II. Tokenisation of Assets

Tokenisation is the transformation of sensitive information, with a unique symbol that preserves the critical data without compromising its security, into another simple form. In other words, tokenisation converts the value stored in tangible or intangible objects into a token that usually can be manipulated along a blockchain system. Simply put, tokenisation can transform almost any asset, either real or virtual, into a digital token and enables digital

management, transfer, ownership, and storage without the necessary need of a central third party/ intermediary through blockchain technology.

A digital token can thereby be described as a piece of software with a unique asset reference, properties and/or legal rights attached. Even though, similar pieces of software can be created, the fact that a token runs on Distributed Ledger Technology/Blockchain differentiates it from other digitalisation methods. Using a blockchain to create a digital token enables the collaboration of different companies, which in turn allows the aggregation of otherwise fragmented information into one digital token. Moreover, all parties can update information seamlessly and verify their correctness. The process of tokenisation creates a bridge between real-world assets and their trading, storage, and transfer in a digital world. The corresponding basis is built by using the Blockchain technology. Like derivatives or mutual funds, tokenised assets derive their value from another asset that generates cash flow or an economic value when sold or transferred.

Asset tokenisation helps to break complex assets into a simple form or unit that can be easily exchanged for cash or assets. This means that individuals can acquire smaller units of these large and complex assets (real or virtual) in a cost-efficient manner, for example, in real estate, asset tokenisation structure can be used to raise funds from a group of investors who are interested in buying luxury properties. These properties are then tokenised in a digital form for individual investors to hold as a unit of the luxury properties.

Likewise, traditional assets like publicly traded equities and debts as well as other illiquid assets like private equity, commodities and venture capital can be tokenised with blockchain technology. This encourages fractional ownership – whereby investors can own small units of the overall underlying asset, all at low-costs (traditional fund-raising options such as IPOs involve significant costs – the relatively low costs with issuing tokens are manifested in potentially lower transaction costs for investors).

II.1 Types of Tokenised Assets

Tokenised assets can be grouped into two classes vis:

1. Fungible Asset Tokenisation:

The most common application of tokens that exist today on blockchains are tokens that are fungible in nature, like Central Bank Digital Currencies, or ingots of gold. Fungible means that each unit of a good or commodity

is interchangeable with another, much in the same way currency is fungible (although currency is still identified with a unique ID number). So, for example one kilo of pure gold is interchangeable with any other kilo of pure gold.

Implementations of fungible tokens are frequently called account-based models where each account holds a balance of fungible tokens. Generally speaking, fungible tokens have two main characteristics:

- i. Interchangeability: Each unit of the tokenised asset has the same market value and validity — for example, Bitcoin: All units of 1 US\$BTC are exactly the same. They hold the same market value, and are interchangeable. It does not matter from whom a US\$BTC was purchased, since all BTC units have the same functionality and are part of the same network. You can swap one-fourth of a US\$BTC for anyone else's one-fourth of a US\$BTC, with confidence that your US\$BTC's one-fourth holds the same value, despite being one-fourth of different coins.
- ii. Divisibility: A fungible cryptocurrency can be divided into as many decimal places which were configured during its issuance. Each unit will have the same value and validity.

2. Non-fungible Asset Tokenisation

Non-fungible tokens (NFTs) are a group of new application concept of blockchain technology like a digital collectible or real-estate asset which are distinguishable from one another. Each token can have a unique name or serial number and/or more dynamic information like location, size, or consistency of the product itself which allows it to be distinguished from another token. Each token is most commonly connected to some digital or real-world item. Real estate is a particularly good example of real-world asset that can be represented using NFTs as there are no two parcels which are the same or have the same address.

Non-fungible tokens are often implemented using what is referred to as a token-based model where each token is uniquely identified and is associated with a specified owner. The use cases are typically associated with lower throughput but potentially higher-value off-chain or digital assets. Generally speaking, non-fungible tokens are:

- i. Non-interchangeable: NFTs cannot be replaced with tokens of the same type because each token represents a unique value.
- ii. Non-divisible: NFTs are not typically divisible, although F-NFTs do offer fractional ownership of NFTs, such as in the case of expensive fine art or commercial real-estate.

- iii. Unique: Each token differs from another token of the same type and has unique information and attributes.

II.2. What Can Be Tokenised?

The possibilities are endless as tokenisation allows for both fractional ownership and proof-of-ownership. From traditional assets like venture capital funds, bonds, commodities, and real-estate properties to exotic assets like sports teams, racehorses, artwork, and celebrities, companies worldwide use blockchain technology to tokenise almost anything. However, we have grouped them into four main categories:

- i. Asset: An asset is any item of value that someone can transform into cash. It is further divided into two classes: personal and business. Personal assets can include cash and property. Business assets include assets that are present on the balance sheet.
- ii. Equity: Equity (shares) can be tokenised; however, the assets remain in the digital form of security tokens stored online in a wallet. Investors can typically buy shares on a stock exchange.
- iii. Funds: An investment fund is a type of asset that investors can tokenise — **these tokens represent an investor's share of the fund.** Each investor is provided tokens which represent their share of the fund.
- iv. Services: A business can offer goods or services to raise funds or conduct business. Investors can use tokens to purchase goods or services provided by the supplier.

II.3 Asset Tokens vs Cryptocurrencies

In the age of digitisation, asset tokenisation could be misinterpreted as cryptocurrencies. Though they are both in digital forms which can be created, transferred (traded) or stored, there are some important differences as follows:

Cryptocurrencies are digital currency or payment options from a blockchain such as Bitcoin or Dogecoin which are created in a decentralised way. On the flip side, asset tokens are exclusively digital assets from an existing blockchain that derive their value from the underlying virtual or real assets. In essence, asset tokens are digital assets that are backed by the economic value of the underlying assets. Cryptocurrencies are also virtual like tokenised assets but do not necessarily derive value from underlying assets.

III. Benefits of Asset Tokenisation

Generally, asset tokenisation has the potential to revolutionise the dynamics of the securities market, with impact on asset valuation and transaction settlement.

i. Product Innovation

Asset tokenisation can aid the development of new hybrid financial products combining the characteristics of both traditional and digital assets.

ii. Market Liquidity

The ease of transferring tokenised assets will improve market liquidity. Traditional instruments that are difficult to sell are easily converted to cash and this can enhance the volume and value of trading activities.

iii. Risk Diversification and Management

It can be used to manage the risk of uncertainty in the financial market. Spreading risks among investors and to create new investment vehicles that combine risky assets with less risky ones to manage volatility.

iv. Market Penetration

New financial products created by asset tokenisation will boost the flow of capital into the capital market particularly from increased retail investor participation. Increased retail participation means lower income investor groups also benefit greatly as they can participate in investment options that would ordinarily not appeal to them due to the size of capital required, market lot size, minimum order quantity, etc.

v. Lower Costs and Transaction Efficiency

Relatively lower cost implications compared to other traditional means of raising funds from investors such as IPOs. Cost implications, as used here, not only refer to sunk costs of mobilising the funds, but include other costs such as trade settlement and clearing, registration, documentation and filing requirements etc.

vi. Foreign Capital Inflow

Investors across the globe will have access to tokenised assets issued through blockchain technology thereby improving foreign portfolio investments especially in frontier and emerging economies where there is a capital deficit.

vii. Transparency

With blockchain technology, transactions on tokenised assets can easily be monitored by participants in real-time. Similarly, the tokenisation of the items allows for a real-time tracking of the products and enables the producer to identify possible fraudulent use.

viii. Trade Settlement

Blockchain technology reduces the time and cost of settling trade of tokenised assets based on the decentralised nature and its efficient automation system. Assets tokenised with the use of blockchain technology will settle faster, reducing the turnaround time in trading activities.

IV. Steps to Tokenising an Assets

Tokenised assets are blockchain-based tokens that represent the ownership over particular tangible and intangible assets. Tokenised assets allow for secure and transparent transfer of asset ownership, fractionalised ownership of assets to increase their liquidity and reduce investment barriers, fast and cost-effective asset trading with no intermediary services. The following are simple steps to tokenise assets:

- I. Select an asset to tokenise;
- II. Create a tokenomics model;
- III. Choose a blockchain platform for asset tokenisation;
- IV. Develop smart contracts;
- V. Crypto wallet integration; and
- VI. Launch token for trading on primary and secondary markets.

Generally, the cost of asset tokenisation is currently valued at between US\$30,000 to US\$100,000+ and the average timeframes for asset tokenisation is three (3) to six (6) months.

V. Analysis of Global Tokenised Assets Market

The result of several studies conducted shows that the total share of tokenised assets compared to the total assets of select commodities globally is currently negligible and represents an insignificant percentage of the world's total assets. However, that is because the market itself is far from mature and is only in its first stages of development. We believe that as investor education improves and the current regulatory, institutional, and educational barriers are lifted, the market has the potential for significant growth.

Table 1: Tokenised Assets within the Whole Digital Asset Market

Asset	Total Digital Asset Global Value	Total Tokenised Value
Gold	\$9.6 trillion	159,267,392.30
Real Estate	\$10 trillion	128,056,795.90
Commodities	\$20 trillion	831,887.85
Currency	\$6.6 trillion	17,724,673,331.00
Total	\$46.2 trillion	\$18.1 billion

Source: Forkast (2020).

Tokenised assets are expected to increase to US\$16.00 trillion by 2030 — making up 10.0 per cent of global GDP by the end of the decade, from US\$310.00 billion in 2022 (global consulting firm BCG and the digital exchange for private markets ADDX).

VI. Country Experiences with Asset Tokenisation

Given that asset tokenisation is still at an early stage of development, its size among the global financial assets is immaterially small. However, as regulation and investor education improve, the size of tokenised assets is expected to increase significantly in the long run. Overall, many countries are working on developing an appropriate regulatory framework for the digital economy. Therefore, the adoption of asset tokenisation is expected to increase alongside blockchain technology.

1. Germany

In Germany, "Brick Blocks" were used to restructure real estate assets. Holders of these Brick Blocks receive dividends from the underlying real estate assets.

2. The United States of America

In the U.S., the adoption of blockchain technology has also supported asset tokenisation projects. For example, real estate assets have been tokenised with the use of blockchain technology. Recent Arca U.S. treasury fund also springs to mind. There are various platforms that may support the development of more tokenised assets in the U.S. such as CoinList, Coinbase and others.

3. Canada

In Canada, asset tokenisation is expected to grow on the back of the Canadian Securities Exchange's launch of a blockchain clearing house. That should encourage the development of tokenisation of traditional assets in the country.

4. Switzerland

Switzerland embarked upon various asset tokenisation projects. One of which is the SwissRealCoin (SRC), a real estate backed non-interest-bearing bond that is managed with the use of tokens. Similarly, the Schuldschein bond and Mt Pelerin shares are forms of tokenised assets. Furthermore, SIX Swiss Exchange is also working on tokenising traditional assets with the use of blockchain.

The major driver of the adoption of asset tokenisation in Switzerland is the enactment of liberal laws which has set the pace for technological advancement in the country's financial market.

5. La Tahona in Uruguay

La Tahona in Uruguay has also issued an asset-backed token to attract investors into real estate projects. The country is also working on legislation that will regulate digital assets.

6. Slovenia

In 2018, Blocksquare Company in Slovenia launched a tokenised garage parking in Tech Park Ljubljana. This project allowed investors from different continents to invest in real estate-backed tokenised assets.

7. Malta

Malta is another country that has opened its economy and financial market to asset tokenisation with the regulation of blockchain and asset tokens.

Malta already has an official regulation for cryptocurrencies trading which helps digital securities to develop.

VII. How Should Nigeria Embrace Asset Tokenisation

The use of banknotes is declining in advanced economies, questioning the Central Banks' role in payment intermediation. At the same time, in developing countries, alternatives are emerging with the development of technology, such as mobile payment, accessible even for previously unbanked. Furthermore, progress is pushing for exploration of Distributed Ledger Technology/Blockchain implementation by Central Banks. Thus, the

recent launch of the nation's digital currency – eNaira is commendable. The creation of a digital currency via blockchain should provide a solid platform for asset tokenisation in Nigeria, coupled with the SEC pronouncement, in September 2020, on the regulation of digital assets.

A major concern for most investors about digital assets or currencies is the safety or security of their investment. Nigeria, through regulators of capital (SEC) and money markets (CBN), can respond to this concern by deploying appropriate security structures and frameworks that have been adopted in countries where the digital economy is well regulated.

The asset tokenisation process can be used to dispose of some idle government assets to retail investors, it can also be used to commercialise some public organisations thereby helping government to raise funds that can be channeled to other growth-enhancing projects.

Furthermore, given the huge capital deficit for infrastructural projects and limited investment instruments, appropriate technologies that will enable the use of asset tokenisation to channel funds from the surplus unit (local and foreign investors) to the deficit unit of the nation's economy are required. Hence, boosting capital formation and driving sustainable growth in the long-run.

The adoption of asset tokenisation is supported by the growing number of smartphones users in Nigeria. According to a report by the GSMA Intelligence, *Spotlight on Nigeria; Delivering a digital future*, Nigeria's smartphone adoption rate was 36.0 per cent in 2018, implying 53 million users, and projected to grow to 144 million users by 2025. The growth potential of the mobile technology space can be leveraged to stimulate development in asset tokenisation. The recent approval of the Fifth Generation Network, otherwise known as 5G, for the nation should enhance the speed and ease of use of digital technology.

Overall, managers of the economy should begin to explore the opportunities that asset tokenisation presents to Nigeria's capital market and the economy at large. It is important that Nigeria relies on jurisdictions that have successfully integrated their capital market into the digital economy. There is a need to also collaborate with experienced partners to help navigate the complexities of integrating the capital markets into the evolving global digital financial market.

VIII. Conclusion

The tokenisation of assets is not the future - it is the present. It is deeply transformative and is offering exciting possibilities for, in particular, financial markets. The tokenisation of assets offers promising possibilities for how capital is raised. Novel fundraising vehicles, such as Security Token Offerings (STOs), provide a higher degree of regulation and transparency for investors. Further, STOs are an efficient method to raise capital from a broader investment pool than it has been possible with traditional fundraising methods. It is, however, still in infancy stage and market adoption will still need time. Despite an exponentially increasing interest in tokenised assets, "traditional" financial institutions and national authorities still approach asset tokenisation with caution. However, countries like Switzerland, well-known for its innovation-friendly stance, will help to drive and foster the remarkable potential of tokenised assets.

Although international frameworks could take a few more years to come to fruition, asset tokenisation is likely to play a crucial role in the management and trade of illiquid assets in the long term. An international cooperation is required for cross-border transactions of tokenised assets to limit regulatory arbitrage. Central banks are likely to collaborate with each other to carry out proof-of-concept work and pilot projects on cross-border payment and securities settlement arrangements.

Key to the future of tokenisation will be creating interoperability with existing systems to enable a more widespread adoption. All participants in the value chain should get closer to each other and look for ways to bridge the traditional financial sector with new Distributed Ledger Technology-related businesses.

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