

## Crypto-Currency and the Nigerian Economy: Problems and Prospects

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### ABSTRACT

Crypto-currency is a peer-to-peer electronic currency whose prove of ownership is dependent on digital signatures and characterized by public history of all transactions to prevent double spending. Many countries around the world are already taking advantage of the benefits presented by this digital finance such as low transactions cost, high speed and efficiency in payments especially in international transactions for individuals and corporate bodies. However, despite numerous promises offered by this innovation, there are risks inherent in them which include but not limited to money laundry, terrorists financing, and tax evasion. Grounded theory research design was adopted to achieve the objectives of this study. The main argument advanced in this paper is for the federal government of Nigeria (FGN) and its monetary authority to change its perception of crypto-currency as only investment assets and not as a currency that facilitate payments or transfer of funds which is vulnerable to criminal activities.

**Keywords:** Crypto-Currency, Nigerian Economy, Problems and Prospects

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### INTRODUCTION

Since the advent of internet and mobile telephone technologies, the world has become a global village as communication from one part of the world to the other has become simple and efficient [1,2,3,4]. The ease of interaction across national boundaries facilitated by these innovation in technologies has greatly enhanced international trade [5,6,7]. Business deals can be consummated between parties living world apart without any form of physical contact. Consequently, the speed of online transactions over the time appear to have outpaced the traditional payment system and as such made it less efficient [8,9,10]. Crypto-Currency, an innovation in digital finance powered by Blockchain technology is changing the payment systems and the role of money in this current financial regime [11,12,13,14]. The impact of this technological innovation runs deep as they are affecting all the financial services market and changing the landscape for intermediation [15,16,17]. The economy in general and how economic activities can be censored have been altered by these innovations. Individuals, corporate organisations, and the economy in general stand to enjoy

some benefits from these developments such as cheaper and faster payments, however, new regulatory risks, especially jurisdictional, such as the fight against money laundry (ML), terrorist financing (TF), and tax evasion amongst many are created. There have been a mixed reaction to this development across the globe [18,19,20]. Whereas there is outright ban of virtual currency in some countries, others are making regulations to mitigate the risks and enhance the benefits it presents [21,22,23]. Nigerian government through its regulatory authorities has issued several warnings against the investment in (use of) crypto-currency especially with regards to the risk of loss of investment, however, there is no regulatory framework for the operation of crypto (virtual) currency currently. To achieve the objectives of this study, we have adopted grounded theory research design. These paper is elaborated over the next five parts. Part two reviews the concept of virtual currency and the technology that drives it. The challenges that crypto-currency presently poses for the regulatory authorities are outlined in part three while part four assesses the benefits derivable from its use. Part five

### THE CONCEPT OF VIRTUAL CURRENCY

According to European Central Bank (ECB), virtual currency (VC) is defined “as a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community” [24, 25,26]. However, ECB recognised on p.13 of its report that because the fundamental characteristics of virtual currency may change, its definition may need to be adapted in future. Its definition now appears too limited since math-based decentralised virtual currencies like Bitcoin are not issued and controlled by a central developer, and some jurisdictions (e.g., China, the United States, Sweden, and Thailand) now the regulate virtual currencies. Due to the inadequacies of ECB definition of VC in the face of current developments, [27] defined VC as “a digital representation of value that can be digitally traded and functions as (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction.” The above functions of VC are only guaranteed by the agreement within the community of its users, however, it is not issued by the government of any country [28,29]. Fiat currency is different from Virtual currency in that the former, which is the coin and paper money of a country, is designated as its legal tender; circulates; and is customarily used and accepted as a medium of exchange in the country of issue. VC is also different from e-money, which is a digital representation of fiat currency used to electronically transfer value denominated in fiat currency [30]. Virtual currency can be classified into different categories. ECB report (2012) classified virtual currencies into three categories: (a) closed virtual currency schemes used in an online game;(b) unidirectional flow schemes used mainly for inflows in the purchase virtual goods and services and occasionally for real

goods and services; and (c) bi-directional flows schemes where virtual currency can be used like any other convertible fiat currency with buy and sell exchange rates which can be used in purchasing real goods and services as well as the virtual ones. On the other hand, FATF (2014) report categorized virtual currencies into convertible and non-convertible although convertibility was used in the sense of the availability of market and not in an ex officio convertibility sense as in the case of gold standard. Therefore, a virtual currency is convertible only as long as some private participants make offers and others accept them, since the convertibility is not backed by any law. Convertible (or open) virtual currency, thus, can be exchanged back-and-forth for real currency and has a comparable value to fiat currency. Examples include: Bitcoin; e-Gold (defunct); Liberty Reserve (defunct); Second Life Linden Dollars; and WebMoney. Non-convertible (or closed) virtual currency is intended to be specific to a particular virtual domain or world, such as a Massively Multiplayer Online Role-Playing Game (MMORPG) or Amazon.com, and under the rules governing its use, cannot be exchanged for fiat currency. Examples include: Project Entropia Dollars; Q Coins; and World of Warcraft Gold [10].

Worthy of note is that non-convertible currency is officially transferrable only within a specific virtual environment but not convertible under the administrator's terms, however, a secondary black market may exist that provides a platform for the exchange of the “non-convertible” virtual currency for fiat currency or even another virtual currency. The administrator will, in most cases, sanctions erring member(s) by terminating their membership and/or forfeiting the remaining virtual currency of those seeking to create or use a secondary market, in violation of the rules of the currency. Development of a robust secondary black market, in a particular non-convertible virtual currency may, as a practical matter,

effectively transform it into a convertible virtual currency. To that extent, a non-convertible status is thus not necessarily static. This paper adopts the later classification of virtual currency because presently, the risks posed to anti-money laundry (AML) and counter financing terrorist (CFT) war only relates to the full convertibility of virtual currencies that can be used to move value in and out of the formal financial sector.

Another level of classification of virtual currency relates to its centrality. By definition, all non-convertible virtual currencies are centralized and as such are issued by a central authority that establishes rules making them non-convertible. Conversely, convertible virtual currencies may be either centralized or decentralized. Centralized Virtual Currencies have a third party that controls the system, that is the administrator which issues the currency; establishes the rules for its use; maintains a central payment ledger; and has authority to redeem the currency or not. The exchange rate for a convertible virtual currency may be either determined by the forces of market supply and demand (floating) or by the administrator (pegged or fixed) at a set value measured in fiat currency or another real-world store of value, such as gold or a basket of currencies. Examples: E-gold (defunct); Liberty Reservedollars/euros (defunct); Second Life "Linden dollars"; PerfectMoney; WebMoney "WM units"; and World of Warcraft gold. Decentralized Virtual Currencies or crypto-currencies are distributed, open-source, math-based peer-to-peer virtual currencies that have no central administering authority, and

### **Blockchain Technology**

Bitcoin (crypto-currency) is powered by blockchain technology which enables secure electronic transactions without a centralized ledger and without double spending [10]. Instead of a centralized ledger, it makes a collective accounting by distributing a shared (i.e. decentralized) public ledger, a complete record of all past transactions on the network [11]. This ledger is the blockchain. When two parties wish to

engage in a transaction, they must broadcast it to the entire network, effectively asking network participants to determine its authenticity. The following example illustrates this process. Party A begins by broadcasting a message to the network signaling the terms of the agreement. For example, "I, Party A, am giving Party B one bitcoin." Next, Party B accepts the transaction by broadcasting its acceptance to the entire network and

no central monitoring or oversight. Examples: Bitcoin; Litecoin; and Ripple. It relies on public and private keys to transfer value from one party (individual or entity) to another, and must be cryptographically signed each time it is transferred. The safety, integrity and balance of crypto-currency ledgers is ensured by a network of mutually distrustful parties (referred to as miners in Bitcoin) who protect the network in exchange for the opportunity to obtain a randomly distributed fee referred to as "block reward" (in Bitcoin) although, transaction fees may also be paid by users as incentive for miners to include their transactions in the next block in some instances. Hundreds of crypto-currency specifications have been defined, mostly derived from Bitcoin, which uses a proof-of-work system to validate transactions and maintain the block chain. This first fully implemented crypto-currency protocol was provided by Bitcoin, however, there is growing interest in developing alternative, potentially more efficient proof methods, such as systems are based on proof-of-stake. Other math-based decentralized convertible virtual currency other than bitcoins, the original such currency, is referred to as "altcoin". Examples include Ripple; PeerCoin, Lite-coin; zerocoin; anoncoin and dodgecoin. The market capitalization for Bitcoin and Altcoin as at 31<sup>st</sup> August, 2019 were \$172.7 billion and \$73 billion respectively. Because bitcoin controls more than 70% of the crypto-currency market share, we have decided to approximate the activities of Bitcoin for crypto-currency in this paper.

asking network participants to determine the authenticity of the transaction. The network automatically validates the transaction or guards against the threat of double spending through a “proof-of-work” validation system [13]. If the transaction is validated, the ledger is updated and network users’ blockchain records are collectively updated. In other words, once a transaction has been recorded in this transparent public ledger, that transaction cannot be changed after the fact (unless it is matched with a second offsetting transaction). The proof-of-work validation system is essentially a competition among network participants to validate transactions. Network users participate in this competition by exercising computational power. Under this system, a user’s ability to improperly influence validation (i.e. to double spend) is limited by the total proportional computation power he can harness. Users are incentivized to bear the computational costs of validation because successful participants are rewarded with new bitcoin. Accordingly, new bitcoins are

said to have been “mined,” with the “(computational) time and electricity that is expended” as “analogous to gold miners expending resources to add gold to circulation.” Eventually there will be nothing left to mine because the total outstanding supply is limited. When that happens, the incentive to validate transactions will likely be transaction fees. Importantly, this is an open-source protocol, meaning open innovation can occur around the technology’s various parameters. In sum, the blockchain establishes trust between two parties to a transaction through both a decentralized public ledger and a cryptographic mechanism that ensures transactions cannot be changed after the fact. One can easily see why the creator of this technology called it purely peer-to-peer electronic cash. Leaving aside counterfeiting, physical transactions have never quite suffered from these acute problems of trust and assurance [11]. Prior to the blockchain innovation, simple two-party exchanges of value over electronic networks could not occur.

### CRYPTO-CURRENCY CHALLENGES

The challenges posed by crypto-currency system are two-fold: first to the regulatory authorities (of which FATF is mainly concerned with) and then to the community of its users (or investors). The risks to the users (or investors) are beyond the scope of this paper but should be kept in mind. They include but not limited to price wide volatility, theft, and unguaranteed by any central government. Some of the major problems to the regulators (which this paper is concerned with) include financing terrorism (FT), money laundry (ML), and tax evasion.

**Terrorism Financing:** Conventionally, one of the most challenging aspects of organizing international terrorist activities is rooted in financial transactions. This is because terrorism is highly dependent on cash flows ranging from the acquisition of ammunition to domains and pamphlets (Brantly, 2014). Traditionally, terrorist organizations use a variety of methods to launder and

finance terror activities. Two of the most popular methods they employ includes Hawala networks and conventional international banking. Hawala network is an alternative remittance channel that exists outside of traditional banking systems. Transactions between hawala brokers (i.e. hawaladars) are made without promissory notes because the system is mainly based on trust. The network is also referred to as underground banking because money launderers and terrorists take advantage of this system to transfer funds from one location to another. Although Hawala networks are efficient in moving money from one point to another anonymously, they are at the same time inefficient for the decentralized collection of funds from multiple donors and the disbursement of those funds to single or multiple geographically dispersed end points. The process of funding, planning, and implementing attacks is, therefore, constrained by the limits imposed by a

trust-based network (such as Hawala) in the dynamic collection and disbursement of funds [10].

Conversely, conventional banking systems which use Society for Worldwide Interbank Financial Telecommunication, Business Identifier Codes (SWIFT-BIC) or other modern commercial banking protocols/standards are efficient modes for conducting international financial transactions. Terrorists' challenge with these systems is the strict adherence by banks to strong regulatory frameworks within codified national and international agreements such as those developed by the Financial Action Task Force (FATF). Terrorist organizations' operational security is, therefore, exposed to the oversight by banks, law enforcement, and intelligence agencies when they make use of conventional banking systems.

Due to the inadequacies of these old systems in collection and disbursement of funds for terrorist organisations' activities, crypto-currency (Bitcoin) appears to provide better alternatives or potentially so. This is because by its design, Bitcoin addresses, which function as accounts, have no names or other customer identification attached, and the system has no central server or service provider. Again, Bitcoin protocol does not require or provide identification and verification of participants or generate historical records of transactions that are necessarily associated with real world identity. A case in point is Silk Road. Silk Road operated a hidden website designed to enable its users to buy and sell weapons amongst other illicit transactions. It achieved anonymity by operating on the hidden Tor network and accepting only Bitcoins for payment. Using Bitcoins as the exclusive currency on Silk Road allowed purchasers and sellers to further conceal their identity, since senders and recipients of peer-to-peer (P2P) Bitcoin transactions are identified only by the anonymous Bitcoin address/account [25].

**Money Laundry:** Money laundering is a constantly changing criminal phenomenon, with updated modus operandi and evolving business models

[20]. A decent cash-out strategy is one of the biggest challenges facing a criminal enterprise, which is not easy to achieve. Crime proceeds without laundry channels would make the criminal business an unprofitable one, unless it is carried out purely for lifestyle expenditure. Traditionally, the laundering of crime money is facilitated by money mules, offshore accounts, or luxurious products such as art, houses, boats, or a combination of those [12,14,18]. Alternative payment methods, such as Western Union or Perfect Money, allegedly have a prominent place in money laundering schemes. Prepaid credit cards, gift vouchers or other easily exchangeable non-traditional value items are also often associated with the laundering of crime money. Today, so called new-payment methods are becoming a more important factor in actual money laundering schemes [25,26,27,28,29,30]. Within the category of new-payments methods, crypto-currencies stand out. A shift is apparent, in which criminals more frequently make use of crypto-currencies in the cash-out of crime proceeds [23]. Europol even reports that "bitcoin is accounting for over 40 per cent of all identified criminal-to-criminal payments" in cybercrime investigations.

Some of the main features of Bitcoin, which make it attractive to money launderers and at the same time frustrate the efforts of anti-money laundry regulators, are the protocol's anonymity and resilience through flexibility [10]. Tracking the injection, layering, and reentry of laundered funds without being able to link an identifiable user to a single Bitcoin address would be extremely difficult for AML enforcement. Moreover, as each mining node of the Bitcoin network receives and processes all transactions, and the Bitcoin network automatically scales the difficulty for completing blocks based on the total processing power of all miners, stopping the Bitcoin network from functioning requires disabling every miner on the network. Therefore, AML efforts face a target that is both difficult to identify and essentially impermeable to interruption.

Bitcoin potentially allows any user, including money launderers, to transfer money at near instantaneous speed at little or no cost, with very low barriers to entry, while remaining virtually anonymous without what could otherwise require a public paper trail. Users' abilities to exchange bitcoins directly for other currencies, to transfer through an endless number of different Bitcoin addresses for obfuscation, and to trade with other users for physical goods further frustrates AML efforts. Essentially, Bitcoin and analogous virtual currencies could enable money launderers to move illicit funds faster, cheaper, and more discretely than ever before.

**Tax Evasion:** Bitcoin (and other cryptocurrencies) offer a new advantage to tax-evaders that conventional tax havens do not. This is because the operation of Bitcoin is not dependent on the existence of financial intermediaries such as banks. Because it is exchangeable peer-to-peer, Bitcoin seems immune to the developing international anti-evasion regime. Thus, crypto-currencies have the potential to become the ultimate offshore bank account (tax havens) [12]. For example, a service provider could theoretically accept payments for real services in Bitcoin. Given that the service provider is not required to identify herself when establishing her online Bitcoin wallet, it would be very difficult to trace the earnings accumulated in this wallet back to the service provider. Such income is clearly taxable in most jurisdictions (if

not all) across the world, however, it is unlikely that tax authority will know about the income unless the service provider voluntarily reports it. Another dimension of (even more sophisticated) approaches to tax evasion through Bitcoin could involve third parties. For example, it is possible to use tax-exempt buying agents to invest in traded securities and commodities using a Bitcoin-equity swap contract. Under such schemes, a Bitcoin user (the "investor") who is interested in investing in the stock of a particular company could pay the Bitcoin amount he/she wishes to invest to a buying agent (the "agent"). The agent would then use the dollar value of the amount paid to buy the stock. The agent would transfer to the investor the Bitcoin value of any dividends paid by the company to the agent. Once the contract was terminated, the agent would either pay to the investor the Bitcoin-value appreciation of the stock, or the user would pay the agent the Bitcoin-value depreciation. Because of its tax-exempt status, the agent would have no tax liability at all times. The agent is indifferent because it has no economic exposure to the performance of the stock. The investor, on the other hand, is fully exposed to the performance of the stock as though he/she had invested directly in the stock. The return on investment of the Bitcoin investor is neither reported nor taxed because tax authorities are completely unaware of his/her involvement [14].

### PROSPECTS OF CRYPTO-CURRENCIES

Despite the regulatory risks posed by the crypto-currency technology, it has legitimate uses. It is cheaper and faster in international remittances, it aids international trade, especially at micro level, and it also has the potential to improve financial inclusion.

**Remittances:** International remittances are under stress in various ways. For example, in Somalia the Hawala systems have been under threat of being shut down due to concerns on the part of banks and states that they are financing terrorists. Remittances are a vital element

of the Somalian economy, but companies like Dahabshiil that provide this crucial service have been targeted for exclusion by banks in places like the United Kingdom which has a large Somalian population. Bitcoin theoretically could be used to bypass such banks to form an alternative remittance channel (Many workers in Australia regularly send money back to their families overseas. Remittances are low-value payments individually. Nonetheless, they constitute up to about 10% of GDP in some developing countries (27% in Tonga and

20% in Samoa, World Bank, 2016). Thus, high remittance costs have important implications on socio-economic development of these countries. However, remittance costs in Pacific Island countries are among the highest in the world. For example, it costs \$33.20 to send \$200 (16.6% fee charge) from Australia to Vanuatu, and \$28.60 (14.3% fee charge) to Samoa [17]. There can be many parties involved in the chain of transactions made for these payments and there is sometimes little transparency on the total cost of exchange rates and fees. Remittance payments can also be complicated and made more expensive by the difficulties of satisfying AML/CTF (Anti-Money Laundering/Counter Terrorism Financing) regulation, especially where the receiving party may not have a bank account. With Bitcoin, it cost less than or equals 2%. Remittances into Nigeria in 2018 totaled \$24.3 billion (6.1% of GDP) [18]. Therefore, Nigeria would be saving up to 14.6% and 12.3% in cost of remittance if the rate of transfers to Vanuatu and Samoa from Australia is applied respectively. Whereas transfers through Western Union takes from 1 hour to 5 days, Bitcoin transfers is real time [19].

**International Commerce:** Bitcoin also has potential to facilitate small-scale international commerce. Local merchants in poorer countries may struggle to access international payments systems to sell their goods abroad. For example, a rural crafts cooperative from Nigeria might struggle to set up a website with an integrated credit card payments system, but getting a Bitcoin address might enable them to sell products in exchange for Bitcoin tokens, thereby avoiding traditional e-commerce systems (which often involve having to set up a merchant account with a formal bank). Provided that a market exists to exchange such bitcoins received in trade back into a usable local currency, this could prove useful. For example, imagine a scenario where a small-scale independent producer of sustainable cocoa butter products sold them to US clients in exchange for Bitcoin tokens that were then redeemed for local

or foreign currency on a Bitcoin exchange. Likewise, a small-scale non-governmental organization can easily set up to receive Bitcoin tokens as donations. As of yet, however, there appears to be little robust empirical evidence on the extent to which such use of Bitcoin is occurring. There are many anecdotal examples (found on online forums, media sites and social media feeds) of people using it to make international transfers, or using it to buy goods internationally from small merchants, but no systematic studies beyond proxy studies of Bitcoin users.

**Financial Inclusion:** In the aforementioned examples, Bitcoin was used as an intermediary currency to facilitate transfers between other currencies. This may assume the user has access to a bank account, but struggles with the cost and difficulty of international transfers or ecommerce systems. It is possible, however, to focus on the Bitcoin system as a type of decentralized bank in itself. If a person has a personal computer or a mobile phone that can be used to download a Bitcoin wallet, they can obtain a public key that represents their account on the global system. This in turn comes to resemble a quasi-bank account in which you can build up savings. In the context of a country with poor banking infrastructure and reliance on cash, such a technology could hypothetically be a safer way to hold money, and a convenient way to transfer money in everyday transactions. Rather than merely be useful for remittance systems, Bitcoin could be an infrastructure for everyday local payments in precarious, informal settings. In this sense, Bitcoin has potential to complement, or compete with, mobile banking applications. M-PESA has already established itself as a leading mobile banking service in Kenya, enabling up to a quarter of the working population to use mobile phones as a type of digital wallet to transfer currency by using text messages. The politics of mobile banking are tricky, though, involving struggles between regulators, banks and telecoms companies. In Nigeria, mobile money has developed more slowly, partly due to

Nigerian banks lobbying regulators to only allow banks to operate mobile money services, rather than telecoms companies. Bitcoin, by bypassing the incumbent

#### REGULATORY FRAMEWORK FOR CRYPTOCURRENCY IN NIGERIA

There is ambiguity regarding the legal status of virtual (or crypto) currency in Nigeria. This is because of the proclamations of Nigerian Regulatory agencies - Central Bank of Nigeria (CBN) and Securities and Exchange Commission (SEC) - regarding the legality of the operations of these crypto-currencies in Nigeria when compared to the reality on ground. In January, 2017, CBN in its circular to Banks and other Financial Institutions advised them against their involvement with the activities of VCs in Nigeria. According to the circular:

*"Transactions in VCs are largely untraceable and anonymous making them susceptible to abuse by criminals, especially in money laundry and financing terrorism. VCs are traded in exchange platforms that are unregulated, all over the world. Consumers may therefore lose their money without any legal redress in the event these exchangers collapse or close business."* (CBN Circular, 2017 p.1 para. 2).

Although VCs risks to the anti-money laundry (AML) and Counter Financing Terrorism (CFT) war were mentioned in the above statement, the emphasis was on protecting investors from loss of investment as highlighted in bold letters. Again, in February, 2018, CBN, in its press statement, reiterated, with emphasis, on the need for the investors to be cautious of investing in VCs thus:

*"...dealers and investors in any kind of crypto currency in Nigeria are not protected by law. Virtual currencies are traded in exchange platforms that are unregulated, all over the world. Consumers may therefore lose their money without any legal redress in the event these exchangers collapse or close business."* (CBN Press release, 2018 p.1, para. 2).

The public notice issued by the Nigerian Securities and Exchange Commission (SEC) in January, 2017 regarding

institutions with their internal politics, might offer informal solutions that operate beyond the formal channels used by incumbents.

investments in Crypto-currencies is not any different. SEC cautioned that:

*"...none of the persons, companies or entities promoting crypto-currencies has been recognized or authorized by it or by other regulatory agencies in Nigeria to receive deposits from the public or to provide any investment or other financial services in or from Nigeria. The public should also be aware that any investment opportunities promoted by these persons, companies or entities are likely to be of a risky nature with a high risk of loss of money, whilst others may be outright fraudulent pyramid schemes."* [14].

From the forgoing, it is obvious that all the regulatory institutions in Nigeria including Nigeria Deposit Insurance Corporation [15] are more concerned with the asset feature of the crypto-currency and not the currency aspect which can facilitate international trade, remittances and financial inclusion on the positive side and susceptible to abuses such as ML, FT, and tax evasion on the other hand. Incidentally, despite the repeated warnings from CBN and other regulatory agencies, crypto-currencies usage or investment seems to be thriving in Nigeria. There are thirteen (13) crypto-currency exchanges operational in Nigeria with a daily turnover of over \$10 million in trading volume [18]. Crypto-currency exchanges are the gateway of entry and exit of fiat currency into the crypto-currency ecosystem. Although trading in Bitcoin cannot be regulated by a particular jurisdiction (just like the internet) the exchanges can be compelled to AML and CFT regulations to curtail the use of crypto-currencies for illicit activities.

#### How Nigeria compared to other African countries in the use and regulation of crypto-currency

Crypto-currency adoption in Africa is fast increasing but it is yet to reach the heights of developed countries like Russia and the US. Trading volumes in South



Africa, for example, now hit an average of \$10 million against an average of \$5 million in early 2017. Crypto-currency adoption in Zimbabwe had also been rising at an incredible rate until recently when the country's Reserve Bank announced a ban on all forms of crypto-currency trading in the country. In May, 2018, the Reserve Bank of Zimbabwe banned crypto-currency and initial coin offering (ICO) listing in the country, sending confusion among thousands of traders [20].

In Morocco, any form of crypto-currency trading is banned. Like Egypt, one of the first African countries to ban Bitcoin for religious reasons, trading cryptos in Morocco is a serious crime that attracts jail term or fines.

In Kenya, East Africa's largest economy, crypto-currency trading is generally supported by government authorities. In fact, popular peer-to-peer lending site, LocaBitcoins.com recently announced that

they had experienced unprecedented growth rates in Bitcoin trading in the country. Kenya's Central Bank (CBK), however, does not endorse Bitcoin trading. The CBK has regularly cautioned traders against crypto or ICO trading. Nonetheless, just like Nigeria, there are over a dozen of crypto startups in the country, some of which have already established themselves in different African countries. Like in Kenya and Nigeria, crypto traders in Uganda have been trading despite a lack of support from their government. Of late, however, Uganda has been warming up to the idea of working with crypto startups. Recently, Binance's CEO, Zhao Changpeng, proposed establishing Africa's crypto-currency exchange in Kampala. Noting that Zhao's Binance is the largest exchange in the world, working with Uganda may change a lot in the country's economy [21].

### CONCLUSION AND RECOMMENDATIONS

The emergence of crypto-currency has created a new regime in the financial payment system globally. This innovation has anonymity feature which makes it almost impossible to tie transactions to identifiable persons. Again, just like the internet, it is difficult to regulate as its usage is not jurisdictionally limited. These and its other features poses new regulatory challenges to the Anti-Money Laundry (AML) and Counter Financing Terrorism (CFT) fights as well as create tax heavens for tax evaders. Notwithstanding these regulatory problems, crypto-currency has the potential to improve payment efficiency and reduce transaction costs for payments and fund transfers.

Although there have been several warnings from Nigerian government through its regulatory agencies against the use (or investment) of the digital currency to avoid loss of investment with

less emphasis in the vulnerability of the currency to criminal activities, regulatory framework for crypto-currency in Nigeria is still nonexistent. This paper, therefore, recommends that the Federal Government of Nigeria should, assiduously, make laws especially as it relates to the licensing and supervision of crypto exchanges - the platform of interface between the virtual currency and fiat currency (naira). Adoption of the Risk-Based Approach recommendations of Financial Action Task Force (FATF) will assist in formulating the regulations. Secondly, the Nigerian tax authorities should consider the tax evasion potentials of crypto-currencies and proactively make regulations to block all the loop holes it can present. Finally, it is recommended that the regulatory bodies in Nigerian financial sector recognize opportunities the currency potentially holds for its payment system.

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