



BLOCK CHAIN TECHNOLOGY, CRYPTOCURRENCY AND REVENUE GENERATION: A SYSTEMATIC REVIEW

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ABSTRACT: *The huge debt profile of Nigerian government dictates the need to look for alternative means of financing. This paper explored how the Nigerian government can increase its revenue through block chain technology and crypto currency. The study adopted a qualitative research approach by reviewing related literatures. The study concluded that even though crypto currency was not recognized as legal tender in Nigeria, the government can take advantage of the emerging and growing market of crypto currency by taxing it, this study recognized the fact that Nigeria government just enacted an act imposing 10% capital gain tax on digital assets including crypto currency, the government can still do better. It therefore recommended that Nigeria government should adopt the USA model of taxing crypto currency whereby not only capital gain tax would be charged, but also income tax and value added tax; thereby increasing the total revenue generated from this avenue.*

KEYWORDS: Crypto currency, Block chain technology, revenue generation, digital asset, virtual currency



INTRODUCTION

The 2024 deficit budget of ₦9.18 trillion indicated that the government does not have adequate funds to finance its projects, making the government resulting into borrowing to raise adequate funds needed, leading to an incessant increase in debt, the Punch revealed that Nigeria's debt increased from ₦19.47 trillion to ₦107.38 trillion in 2024 i.e. 22.15% increment in debt rate. This calls for concern, although the value-added tax rate was increased from 5% to 7.5% recently, it did not provide an adequate solution to the problem of inadequate financing. Another grey area that might be utilized to increase government revenue in Nigeria is the taxation of crypto currency.

Crypto currency, according to Mordecai (2019), is a type of digital money that can be generated, exchanged, and transferred without a bank or other government agency's authentication through the use of encryption technology. The transactions (coin) are recorded in a digitized public ledger called a “block chain” which is a perpetual, continuous list that records each transaction between users of a crypto currency. Individual units of this currency are called coins while the individual segments of the continuous block chain records are called “blocks” and commonly refer to a completed list of transactions. Each time a user transfers or sells a coin, the transaction is recorded and logged by the block chain. Thus, the block chain contains the payment and transaction history of every single coin in circulation and every user who once possessed a coin.

According to Christian and Markus (2017), the market capitalization of crypt currency exceeded \$200 billion. PricewaterhouseCoopers (PwC) estimates that by 2030, block chain technology might contribute US\$1.76 trillion to the world economy. Globally, the use of crypto currency has been steadily rising. Hileman and Rauchs (2017) conducted a study to measure the growth in usage by compiling information from more than 150 crypto currency companies and individuals, spanning more than 38 nations across five continents. They found that between 2.9 million and 5.9 million people had active crypto currency wallets. Crypto currency is quickly emerging as a substitute for traditional investment methods for portfolio diversification.

In Nigeria, people's understanding of the advantages and application of crypto currency is constantly growing. According to reports, in Q2, 2020, Nigeria became one of the world's fastest-growing crypto currency markets, with \$34.4 million, South Africa making up \$15.22 million, Kenya \$7.8 million, Ghana \$640,000, and Tanzania \$600,000 (Nairametrics, 2020). The highest per capita adoption rate of crypto currency worldwide, following the Chainalysis 2022 Global Crypto Adoption Index, is found in Nigeria, where the figure is 32%. In addition, a lot of Nigerian youth have embraced crypto currency as a way to engage with the global digital economy and obtain financial services (National Block chain Policy for Nigeria, 2023). There were an estimated 12.86 million crypto currency owners in Nigeria, representing approximately 5.75% of the country's population, and Nigeria was rated 48.25 out of 100 On Umoja Lab's BRAF (Block chain Regulatory Assessment Framework).

Peer-to-peer trading is common and exchanges are popular place to trade crypto currencies in Nigeria. While the Central Bank of Nigeria (CBN) does not recognise crypto currency as legal tender, they are also not prohibited. This was proved by the CBN's 2021 ban on commercial banks using crypto currency for transactions, even though crypto currency use is not prohibited



by any laws or regulations. In Nigeria, the devaluation of the national currency, high rates of inflation, youth unemployment, and insufficient financial services have all contributed to the quick growth in the use and interest in crypto currency.

The Nigerian government sought to capitalize on the potential of digital assets for income collection, acknowledging their increasing usage and economic relevance. Nigeria thereby becomes one of the several countries that presently impose taxes on digital assets. A 10% tax on income from the sale of digital assets, including crypto currency, was established by the Finance Act of 2023. This suggests that the Nigerian government is aware of the potential and economic worth of digital assets and is working to appropriate a piece of them for the nation's advancement. Nigeria is now in line with several other nations that have enacted comparable tax laws on digital assets as a result of the tax provision. Digital assets are considered chargeable assets under the Finance Act 2023. Consequently, the tax rule is enforceable against anyone who disposes of digital assets in Nigeria or derives income from such transactions.

Research Objective

To investigate how block chain technology and crypto currency can increase revenue generation.

Research question

To what extent can block chain technology and crypto currency increase revenue generation in Nigeria?

Literature Review

Block chain technology and Crypto currency

Virtual currency, digital currency, private currency, crypto-tokens, and digital assets are considered as various forms of crypto currency (Aladetoyinbo, 2017). Virtual currency functions as a store of value, an accounting unit, and an exchange medium. Unlike fiat money like the Nigerian naira, it is not legal tender. It is electronic money with faster payments for products and services and lower transaction fees that are not supported by the government or a central bank. Virtual currency functions similarly to actual currency in some environments, but it lacks legal tender status in other jurisdictions (Financial Crimes Enforcement Network FinCEN, 2013). The constituents of crypto currency are exchanges, wallets, payments, and mining. Exchange sets the price at which one crypto currency can be used to purchase, sell, or trade crypto currency or a national currency and as such, offers liquidity to the system; wallet provides the means to securely store crypto currency, “send and receive crypto currency through the use of private and public cryptographic keys”; payment refers to all the companies that provide services that enhance crypto currency payments and mining is the ‘block chain’ that confirms transactions and secures the global record of all transactions. There are two types of virtual currencies namely convertibles and non-convertible. Non-convertible has no equivalent value in fiat currency while convertibles can be bought with and sold back for legal tender. One of the most popular types of convertible virtual currencies is a crypto currency

The origin of crypto currency can be traced to the publication of an article in 2008 by Shirky, the idea was to have a digital technology that is ‘anti-institutional’; ‘anti-democratic’; ‘decentralized’ and ‘leaderless’. Satoshi Nacamoto is said to be the inventor of Bit coin, which



is a peer-to-peer electronic cash system. The first step towards owning a Bit coin is to install a Bit coin Wallet on your computer or phone, which generates the first Bit coin address for the user and the user can create more address according to his needs. This address is then made available to friends to enable them pay to the address and conduct other transactions. Block chain being a shared public ledger is the rallying point of all Bit coin network, contains all confirmed transactions and allows Bit coin Wallet to calculate “spendable balance so that new transactions can be verified”. Thus, the block chain contains transactions between Bit coin Wallets and the Wallet contains a secret data called private key which is used to sign transactions. The private key provides evidence that the transaction came from the owner of the Wallet and prevents the transaction from being altered by any person. Mining confirms pending transactions by including them in the block chain.

According to Christensen (1997), a block chain assures that each digital token is only ever used once, enabling crypto currency to live decentralized. Each payment transaction is broadcast to the network and included in the block chain so that the used Bit coins cannot be spent twice. New Bit coins are generated in a distributed fashion at a predictable rate. It relies on two fundamental technologies public-private key cryptography (to store and spend money) and cryptographic validation of transactions.

Diffie and Hellman (1976) affirm that standard public-private key cryptography lets anyone create a public key and an associated private key which are designed to be widely shared. Messages encrypted with a public key can only be descrambled by someone who possesses the corresponding private key, allowing anyone to encrypt a message that only the specified recipient can read. Similarly, messages encrypted with a private key can only be descrambled with the corresponding public key, allowing a specified sender to create a message that can be confirmed to be authentic.

Bai (2015) highlighted the advantages of decentralization as avoidance of power concentrations that could let a single person or organization take control. It also promotes the availability and resiliency of a computer system, avoiding a central point of failure. It offers at least the appearance of greater privacy for users (and perhaps greater genuine privacy) because, in theory, an eavesdropping adversary cannot observe transactions across the system by targeting any single point or any single server. The fact that identity management and verification of parties who operate as payers, payees, and miners are not supported by Bit coin is a noteworthy feature. In transactions, all participants maintain their anonymity (some refer to Bit coin as a "personal offshore bank"). Since fund transfers happen across a peer-to-peer network, another benefit of the Bit coin system is the lack of transaction fees. Bit coin prevents middlemen from "invading" transaction privacy as well as from making money off of transaction fees.

Decentralized currencies have benefits, but there are drawbacks to their broad use. The main one of these is the uncertainty surrounding its operation and expansion. Without knowing how the system operates or the hazards involved, anyone may easily download and use the Bit coin application. A continual worry is also cyber security. A confidence crisis can result from a widespread theft of bit coins from numerous users. Network externalities are another issue that pertains to digital currency. A digital currency's advantages rely on how many other individuals are also using it. The entire system might come crashing down if people try to sell their bit coins but are unable to do so due to its illiquidity because bit coin is not tied to any actual currency and its exchange rate is purely controlled by supply and demand in the market. Given



that Bit coin is prone to irrational bubbles, a drop in confidence might cause the demand to fall below the supply (Bai, 2015).

Crypto currency technologies

Public Key Cryptography (PKC). Two keys are used in cryptography: a public key and a private key. The public key is intended to be shared with others, but the private key needs to be kept confidential by the owner. This technique allows bit coin users to prove ownership of their holdings without revealing their true identities by leveraging the use of digital signatures (Wiyaja & Suwarsono, 2018).

Distributed Ledger Technology (DLT).

This computerized system tracks transactions involving assets that are dispersed over multiple places at the same time. Unlike typical databases, distributed ledgers lack a central data repository and administrative tools. Users of the system can access the data stored in this shared public ledger. Distributed ledger technology allows for the safe and unalterable storage of data. A sequential historical data set is created by gathering and storing new data at predetermined intervals. By connecting it to the prior data, it is saved in the current storage (the hash of the old data is incorporated in the new data).

Distributed Ledger Technology (DLT) uses two different consensus mechanisms—a proof of work system and a proof of stake system—to validate every new operation or transaction that occurs on the network (OECD, 2020). Directed acyclic graphs (DAG) and block chain are the two primary categories of distributed ledger technology. Whereas block chain only allows one main branch per system, directed acyclic graphs (DAG) allow several branches to store information (Nakamoto, 2009).

Hash functions and Merkle Tree. An algorithm known as a hash function converts data of any length into a result with the same constant length of the hash function. Since the hash function represents data without stating the data at all, one of its main purposes is the commitment of the represented data. A form of a binary tree called a Merkle Tree allows anyone to check the accuracy of any data contained inside its leaves without having to be familiar with all of the leaves. The Merkle Tree, which is widely used as an Authenticated Data Structure (ADS), has easily verifiable leaf integrity (Wiyaja & Suwarsono, 2008).

Different Kinds of Crypto currency

Bit coin: it was developed in 2009 by Satoshi Nakamoto. Cryptography is used to manage its formation and transactions instead of a central authority. The decentralized nature of the Bit coin network means that it is owned and governed by all of its users because all users must abide by the same set of rules, which creates a strong incentive for maintaining the network's decentralized structure. Block chain technology, used by Bit coin, maintains a record of every transaction. The user network processes and authenticates transactions.

Ethereum unlike Bitcoin, Ethereum has a smart contract application that automatically executes actions when certain conditions are met and non-fungible tokens (NFTs). Ethereum has also experienced jaw-dropping growth, from a value of about \$11 in April 2016 to over \$2,700 in May 2022 (Olorundare, J. K., Fagboyo, R.J., Onyijen, O.H., Oni,M., & Adebunmi, A. A, 2023).



Tether: As opposed to other crypto currency, Tether is a stable coin, which means that it maintains a value equal to any fiat currency, such as the US dollar or the Euro, because Tether is thought to be more reliable than other crypto currency, investors who are wary of the extreme volatility of other digital coins prefer it.

Binance Coin: This is one of the biggest crypto currency exchanges on the planet which uses the Binance app to trade and pay fees. Since its launch in 2017, Binance Coin has evolved beyond only enabling trade on the exchange platform; it can now be utilized for online shopping, payment processing, and travel booking.

Solana: Solana was launched in 2020 to help power decentralized finance (DeFi) by using decentralized apps (DApps) and smart contracts, Solana runs on a unique hybrid proof-of-history and proof-of-stake mechanisms that help it process transactions quickly and securely.

Terra (Luna): Terra is a block chain payment platform for stable coins that depends on keeping a balance between two types of crypto currency. Terra-backed stable coins, such as Terra USD, are tied to the value of physical currencies. Their counterweight, Luna, powers the Terra platform and is used to mint more Terra-stable coins (Olorundare, J. K., Fagboyo, R.J., Onyijen, O.H., Oni, M., & Adebunmi, A. A, 2023).

Risks associated with crypto currency

Lack of Central Authority: - One of the main feature of crypto currency is that it lacks central government/authority. Although the transaction and account details of each participant is made public for all the members to see and monitor, there is no particular administrator who is in charge of monitoring the fluctuations in crypto currency's activities. This made it difficult to trace or identify or hold anybody liable for any issue that may call for investigative purpose (Meiklejohn et al 2016). The use of such currency is termed illegal in a country where there is lack of a central authority.

Anonymity: - it is an in built feature of any crypto currency. The various participants in the transaction do not know each other, which may give room for shading illegal activities that they may ordinarily would not engage physically.

Lead to cybercrime: - The anonymity and lack of central authority nature of the crypto currency may lead some participants into committing cybercrime such as money laundering, terrorism, trade of illegal goods (drugs weapons, human organs) etc.

Lack of Trust: - Nigerians do not trust each other and with past experience associated with some ponzi scheme (e.g. MMM), it would discourages many investors. Also because it is still relatively new, many Nigerians are relatively reluctant in investing in the crypto currency.

Subject to hacker's activities: - Crypto currency transactions can only be carried out with the aid of internet facilities which makes it vulnerable to hackers. Unlike in the banking sector where activities are being monitored by a central authority it is not easy to have access to another person's account but under crypto-currency the identity of the rightful owner of an account can be secretly hacked by manipulating the crypto private key because the crypto currency technology cannot differentiate the rightful owners and hackers. Lansky (2018) stipulate that even the court cannot reverse any hacked executed transaction.



Different meaning attributed by different countries: - All over the world, various countries attached different meaning to crypto currency based on their evaluation and perception of the features. Some countries refer to it as real assets, intangible assets, convertible virtual money etc. For instance, according to Beck & Garratt (2017), Israel and Norway refer to crypto currency as a taxable asset, United Arab sees it as virtual commodity, European central bank in 2012 referred to it as virtual money.

Revenue generation

Ganyam and Ivungu (2019) opine that revenue generation is the annual or periodical yield of taxes, as well as other sources of income that a nation, state or public sector collect or receives into their treasury for public use; while Enahoro and Olabisi (2012) define revenue generation as ways through which government raise revenue for the purposes of meeting its capital and recurrent expenditure. Revenue collected by federal government in Nigeria can be divided into oil revenue and non-oil revenue. While oil revenue covers all revenue generated from oil and gas activities in the country, non-oil revenue looks at any revenue earned from sources other than oil and gas activities (Ganyam & Ivungu, 2019);

Other countries within and outside Africa divide revenues into tax and non-tax revenue. Despite the numerous sources of revenue available to the various tiers of government in Nigeria as outlined in the Constitution, over 80% of the annual revenue of the of government come from petroleum (Olajide, 2015). However, the serious decline in the price of oil in recent times has negatively affected the revenue base of Nigeria. Both federal, state and local governments now pay close attention to the proceeds from tax especially indirect tax to finance the ever increasing budget so as to steer economic growth and development (Ganyam & Ivungu, 2019) The payment of tax is a civic duty and it is an imposed contribution by government on her subjects and companies to enable her finance public utilities and perform other social responsibilities. Tax imposition and its collection, mostly depends upon a country's economic structure, its developmental phase, growth of its service sector, extent to which the country has been industrialized, and its employment level (Qamruz, Okasha, & Muhammad, 2012).

Taxable income

People who earned taxable income during the applicable tax period are subject to income tax. Depending on how a jurisdiction defines income, it may be possible to classify someone who generates or trades bit coins as having taxable income. Burns and Krever (1998) categorize income tax systems structurally into two namely schedular and global. Income tax is assessed on specific income categories in a schedular tax system, a benefit is not taxed if it does not fall under any of the categories. In contrast, all receipts, regardless of their source, are subject to tax under a global tax system. In reality, the majority of current income tax regimes fall somewhere between schedular and global (mixed systems).

The United States is an illustration of a nation with global tax system, all receipts are taxable under the Internal Revenue Code (IRC), regardless of their source. Thus, the receipt of bit coins results in the creation of gross revenue in the United States. Germany is an illustration of a nation with a schedular income tax system. There is no all-inclusive clause that would tax income regardless of where it was derived; instead, income tax is applied to seven categories of payments. If a taxpayer's income does not fall into any of the categories, it is not subject to income tax. Among benefits that are not covered by the income categories are gifts, bequests, lottery winnings, and prizes granted for personal achievements or successful participation in



an event. Thus, before tax can be imposed on income in the form of bitcoins derived from a particular transaction, it is necessary to examine whether such income meets the criteria of any of the income categories

Bitcoin-based income is typically subject to taxation. However, just because income is taxable does not necessarily indicate that it is also paid in taxes. People who receive "virtual" income do not pay tax on it for two reasons: first, they are unaware that such income is subject to tax, and second, they purposefully do not pay tax because they believe that their noncompliance will not likely be discovered and sanctioned. The lack of clear instructions about the tax treatment of digital currency is the root cause of the first problem (unawareness of tax liability).

In Nigeria, digital assets are considered chargeable assets under the Finance Act 2023 and therefore liable to 10% tax on income from the sale of digital assets, including crypto currency. It is treated as capital gain tax; tax is level only when the digital asset is disposed of.

Methodology

The study adopted a qualitative research approach by reviewing exiting literature to extract information that sharpened the discourse.

Discussions

Crypto currency and revenue generation in other countries

Different nations have different laws governing crypto currency. Its use and trading are prohibited in some nations but permitted in others. Depending on whether a crypto currency is classified as "currency," "capital gains," or "commodities," tax or exclusion rules may apply

Canada

In accordance with the Canada Revenue Agency (CRA), digital currency users who transact with other people's money must pay tax. Different laws apply depending on whether bitcoins are used as money to buy goods and services whereby rules on barter transactions is applicable or whether they are acquired and sold for speculative purposes, in which provisions on the trading of securities is applicable. The usage of crypto currency to pay for products or services is classified as a barter transaction i.e. as a commodity rather than a form of legal tender.

United Kingdom

In Revenue and Customs Brief 09/14 of March 3, 2014, the UK tax authorities (Her Majesty's Revenue and Customs, or HMRC) released a statement outlining their position on the tax treatment of income derived from activities involving bitcoin and other comparable crypto currency. They explained that bitcoin is subject to the general rules of income tax and capital gains tax. The peculiarities of each individual transaction will be taken into consideration while taking the pertinent legislation and case law into account before any profit on bitcoin transactions is liable to tax. Bitcoin buyers in the United Kingdom must pay capital gains tax on their profits. Earnings of less than £11,600 per year are tax-free for Bitcoin transactions. The subsequent £8,500 is subject to a 10% tax, with income on it being taxed at 20%.

According to the HMRC, for VAT reasons, mining is not included in the VAT's purview, exchanges of bitcoins for conventional currencies are exempt, and general supplies of goods



and services for bitcoins are subject to VAT. There will be no VAT applied to the value of your bitcoins when you exchange them for sterling or other currency like the dollar. If someone sends money overseas or purchases games using bitcoin, these are consumer transactions and there is no need to keep records. If you buy a bitcoin to keep it for investment purposes or set up a business to get paid at Bitcoin, appropriate records should be kept, and the administration should notify the earnings. Failure to meet this obligation may result in a penalty of 100% or a penalty of £ 3,000 per year (Yereli & Orkunoglu-Sahin, 2018).

European Union

Depending on the type of crypto currency transaction, taxation of cryptographic transactions and transactions using them is done in accordance with the national laws of the EU Member States. For taxes purposes, digital currency is regarded as an intangible asset or commodity rather than as money or a form of exchange. Due to the EU's explanation that foreign exchange transactions should not be subject to VAT because they are not a supply of goods, crypto currency sales are VAT-free in EU nations as well as Switzerland and Liechtenstein (Yereli & Orkunoglu- Sahin, 2018).

United States

Digital currency should be considered as property (and not as a currency) for US federal tax purposes, according to a notification the IRS published on March 25, 2014. The usual tax laws that apply to the operations involving assets also apply to the transactions using crypto currency. The United States has income tax, capital gains tax, and employment tax that apply to income from bitcoin transactions conducted within the country. The fair market value of any digital currency mined or received as payment for products or services by a taxpayer must be taken into account when calculating gross income. The reporting requirements for third-party settlement organizations may apply to someone who settles digital currency payments on behalf of retailers who take digital currency from their clients.

Taxpayers are considered to have engaged in two different transactions if they use crypto currency to pay for goods or services: selling the crypto currency and utilizing the sale profits to buy new goods or property. The difference between a taxpayer's purchase price and the price at which they sell a crypto currency is typically taxable as capital gain.

All bitcoin operations, no matter how little, must be disclosed to the IRS. However, in the US, taking into account individual income levels, long-term gains from bitcoin exchanges are taxed at a lower rate than short-term earnings (Yereli & Orkunoglu- Sahin, 2018). The issue of sales tax on Bitcoin transactions is now being debated in the US (Boehm & Pesch, 2014).

The Financial Crimes Enforcement Network (FinCEN), a different division of the US Treasury, released interpretive advice in March 2013 that clarified some of the responsibilities of those who create, acquire, distribute, exchange, accept, or transmit digital currencies. According to the laws governing companies that provide money services, these people are required to register with FinCEN as "money transmitters." The tax treatment of transactions involving digital currency is not included in the FinCEN guidance.



Germany

The German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, or BaFin) declared bit coin to be the official method of settlement in a resolution that was published in 2013. It accepts bit coins as instruments that come under the "unit of account" category and are analogous to currency accounting units. Bitcoin is comparable to private or local money even though it lacks the status of legal tender, special permit (licence) is only needed when using it for business purposes.

The Federal Financial Supervision Authority has jurisdiction over businesses that have chosen to employ Bit coins in Germany. They must also meet established requirements, such as regular reporting, availability of a detailed business plan and qualified staff, a minimum authorized capital of at least 750 thousand euros, and the use of counterterrorism financing and legalization of proceeds from crime. (Bai, 2015). The BaFin statement does not say anything about tax consequences of transactions involving digital currencies.

Germany German Income Tax Act defines Bit coins as a privately held movable asset which are subject to capital gains tax only if the asset is sold within a year of purchase. When bit coins as an investment sold for profit before the one-year mark would be subject to a 25% capital gains flat tax. If bit coins are sold more than a year after they are bought, the gains are exempt from tax. But no individuals would pay tax on profits greater than €600 or if they hold it for less than one year (Yereli & Orkunoglu- Sahin, 2018).

Dutch

The absence of central oversight and stability of bit coin has been acknowledged by the Dutch Finance Ministry (Ministerie van Financien) as the reason it is not recognised as a currency (legal money). It also cannot be regarded as a financial instrument or form of electronic money. Bit coin gains are taxable under the general income tax laws, and bit coin transactions are subject to the general VAT laws (Bai, 2015).

Japan

Japan Crypto currency capital gains are regarded as "various income" in Japan. Sales of bit coin are exempt from VAT. However, both income tax and capital gains tax are levied on the money made by selling bit coin. Tax rates for crypt currency investors range from 15 to 55 percent. The Japanese tax code defines "different revenues" as bit coin trading on stock exchanges, purchases made from sales, purchases made from mining, and associated network fees (Bourgi, 2018). But by 2018, the capital gains tax rate in Japan will be lowered to 20%.

Turkey

In Turkey, the use of crypto currency as money, commodities, or financial instruments has not yet been approved. Since the central bank must issue money to give it value, cryptocurrency cannot be used as money.

Finnish

In its notification published on August 28, 2013, the Finnish Tax Authority (Vero Skatt) defined the treatment of Bit coin for income tax reasons. Bit coin is neither considered a traditional form of payment nor a security by Vero Skatt. It states that profits made from the



exchange of bit coins for fiat money may be taxed as capital gains. Income tax is also levied on the value of bit coins obtained from mining. VAT was waived for Bit coin transactions (Carkacioglu, 2016). Taxes on crypto-dollars were reduced from 45% to 19% (Yereli & Orkunoglu- Sahin, 2018)

Singapore

The Singapore Inland Revenue Authority (IRAS) clarified its stance on how bit coin transactions should be handled for GST purposes. It holds that digital currencies are services rather than money, currency, or goods and are therefore not excluded from GST. Sales of bit coins by GST-registered companies must be subject to a GST surcharge, with the exception of sales to customers outside of Singapore. It will be deemed a barter trade if digital currencies are used to pay for products or services. As an exception, taxpayers who use digital currencies to purchase virtual products and services in the gaming industry are not required to collect GST until those items are converted into tangible assets like commodities or services.

Switzerland

The Swiss government, the Swiss Federal Council, released a report on virtual currencies in 2014 that described their risks, legal status, and economic importance. According to the research, a virtual currency serves as money but is not recognized as legal tender and should be categorized as an asset because it is a "digital representation of a value which may be sold on the Internet" (property). Switzerland requires its citizens to pay income tax, profit tax, and wealth tax on their bit coin holdings.

Slovenian

The official position of the Slovenian Ministry of Finance (Davčna uprava Republike Slovenije) regarding the legality of bit coin and other digital currencies was released on December 13, 2013. According to the ruling, bit coin is neither a financial instrument nor a money as defined by Slovenian law. bit coin sales and mining profits both have tax implications. The current legal system does not, according to the Ministry of Finance, have any regulations that apply to companies that deal in bit coin.

Argentina

Crypto currency tax judgments were introduced by the Federal Administration of Public Revenue and went into effect on November 1, 2019. The government announced that crypto currency exchanges in the nation must publish account holder wallet balances in Argentine pesos rather than crypto currency on a monthly basis. Because the government's monetary authority did not issue bit coins, they are not considered legal money. Profits from the sale of digital currency were treated as income and subject to taxation as such; income from the sale of digital currency is subject to a 15% tax regardless of whether it comes from domestic or overseas sources. The tax status of crypto currency is similar to how gains from stocks and bonds are handled, which results in a liability for the government (Bai, 2015).

Austria

Crypto currency mining is seen as an operating business by tax authorities, who treat it as an intangible asset. As a result, revenue derived from the selling of crypto currency is taxable. For people who hold crypto currency as non-business assets, any gains (like when converting Bit



coin into euros) are tax-free if they are realized after the one-year "speculation period" expires but are taxable if they are realized before that point (with a tax-exempt amount of €440 per year applying).

Brazil

The Brazilian tax authorities (Receita Federal) states that it does not regard bit coin to be a form of money and that taxpayers who sell bit coins for more than BRL 35,000 must pay 15% capital gains tax and submit annual account declarations if their holdings are worth more than BRL 1000 (Bai, 2015).

Estonian

Bit coin is a property, not an electronic medium of exchange or a security, according to the Estonian Tax and Customs Board (Maksu- ja Tolliamet), whose alienation and exchange result in capital gains. Bit coin trading income is liable to social security contributions in addition to individual income taxation as it is taxed as business income. The regular VAT rate applies to bit coin transactions. Since the exemption for financial services does not apply to the delivery of services for alternative payment methods, they are unable to take advantage of it.

Israel

The Tax Authority views bit coin not as money but rather as an asset that must be taxed in accordance with the relevant provisions of the Income Tax Ordinance (New Version), 1961, and the Value Added Tax Law, 5736-1975. A rise in a crypto currency's value is viewed by the Israel Tax Authority as a capital gain as opposed to an exchange fluctuation, and is therefore taxed on capital gains. Value-added tax will not apply to individual investors, but anyone involved in crypto currency mining will be regarded as a "dealer" and subject to VAT, per the circular. For tax reasons, everyone operating a business is categorized as a "financial institution," which means they cannot claim VAT on expenses but must pay an additional 17 percent in taxes.

Malta

The government recognizes bit coin "as a unit of account, medium of exchange, or a store of value." Malta does not tax long-held digital currencies, either for capital gains or VAT. However, crypto trades executed within the day are considered similar to day trading in stocks or foreign exchange, attracting tax as business income

Norweign

The Norwegian Directorate of Taxation (Skatteetaten) affirmed that bit coin is an asset (not a currency) and income tax can be charged on gains from its sale. For VAT purposes, supplies of bit coins constitute taxable supplies of electronic services. Since Bit coin does not have the status of a legal tender, the exemption for financial services cannot apply (Bai, 2015).

Danish

The Danish Tax Authorities (SKAT) announced a decision on the tax treatment of Bit coin on March 25, 2014. The SKAT noted that because Bit coin is not controlled by a central bank and cannot be removed from circulation, it cannot be regarded as money (legal cash). As a result,



Bit coin values cannot be used on invoices or the Danish tax return. The SKAT determined that casual bit coin trading earnings are not taxable and that any losses incurred in doing so cannot be written off. The standard regulations apply to taxpayers who transact in bit coins in the normal course of business (profits are taxable and losses are deductible). However, there shouldn't be any taxes applied to changes in the value of accumulated bit coins brought about by exchange rate changes.

South Africa

Crypto currencies are not to be treated as currency for tax purposes and that the normal tax principles should apply to crypto currency as if they are intangible assets

China

On December 3, 2013, the Central Bank of China, together with four other central government ministries and commissions, jointly released a notification designating bit coin as a unique "virtual commodity" and advising against its usage as currency or market circulation. It is against the law in China for banks and other financial institutions to handle bit coins or use them to determine how much goods and services cost. The letter demanded stricter supervision of websites that provide bit coin registration, trading, and other services, and it cautioned against the dangers of using the bit coin system for money laundering.

South Korea

In 2018, new laws were passed that increased government supervision, outlawed anonymous transactions, and announced ongoing surveillance of crypto currency exchanges. Particularly, individuals are only permitted to trade crypto currency using accounts registered in their own identities. Likewise, authorities reminded financial services providers that KYC and AML rules apply to crypto currency transactions.

Summary of countries treatment of crypto currency for tax purposes

Intangible assets other than good will	Financial instrument or asset	Commodity or virtual commodity	Currency	Legal payment method	Not specified
Australia, France, Chile, Czech Republic, Luxembourg, Spain, Sweden Switzerland and the United Kingdom	Argentina, Brazil, Croatia, Denmark, Israel, Japan, Slovak Republic and South Africa	Austria, Canada, China and Indonesia	Belgium, Cote d'Ivoire, Italy and Poland	Japan	United States

Source: OECD, (2020)

Crypto currency and tax challenges

Due to their inherent anonymity, crypto currency are advantageous for tax evaders, since they are based on peer-to-peer exchanges, they do not depend on the existence of any financial middleman, such as financial institutions or banks, thus posing various challenges to tax authorities and the government. There are many ways to conceal the source of funds or the



recipient of a transfer because Bit coin is viewed as a sanctuary for tax evaders and money launderers. Thus, listed are various challenges government may likely face while attempting to increase revenue through the taxation of crypto currency.

Saving Accounts

Individuals have several wallets that serve as their savings accounts; since the wallets were created, no money has been sent out. With the exception of voluntarily reporting by the wallet owners, such passive wallets significantly lower the possibility of being found by tax authorities (Jafari, et al., 2018).

Transaction Division

Long chains, distribution that resembles a binary tree, and fork and merge are some other techniques that are commonly used for the same purpose. The fork and merge pattern is a well-known technique to create a highly suspicious quantity avoid detection. This technique allows a person to send a transfer to multiple locations over which he may also hold or exercise control, split the transfer into multiple smaller transfers, and then send the entire set of transfers to the intended recipient. This allows a huge amount of crypto currency to travel in small chunks to its destination, avoiding the first methods of detection for suspiciously large sums.

There is another layer of complication that can be added which is many wallets do not have a proper identification of users during registration. Therefore, it is possible to have a wallet with fake names and email addresses (Jafari, et al., 2018).

Tax Exempt Agent

A third party who is tax exempt, such as a buying agent, might make the transactions even more complex. In this case, an investor who is interested in making an investment in a firm stock share signs equity swap contract with a representative using bit coin as payment. So, using the corresponding dollar value of the amount of bit coin he received, the agent purchases the equity share, and then return any dividends the owner obtained from the share owing to stock share appreciation in bit coin. Since the transactions are carried out via a tax-exempt agent, the tax enforcement authorities cannot hold the investor accountable for paying taxes (Jafari, et al., 2018). Another level of complexity that may be introduced is the fact that many wallets do not properly identify users when they register. Consequently, it is feasible to have a wallet with fictitious names and email addresses. (Jafari et al., 2018),

Inter-Crypto currency Conversion

The exchange of crypto currencies for a different kind of coin has been another strategy used to hide the trail of money. Therefore, there is no need to convert crypto currency to local currencies since they can be used to purchase goods and services or utilized as payment for them. Due to the fact that the transaction is only taxed when the digital currency is converted to real currency or vice versa, rather than for each individual transaction, this loophole exists (Jafari, et al., 2018).

Illegal Activities and Money Laundering

Many private entities and enterprises utilize this method to transfer payments for private purposes outside the reach of standard banking systems due to the anonymity of crypto



currency. Thus, crypto currency have evolved into a sanctuary for individuals and organizations to hide their criminal operations, such as gambling, the sale of fake goods, the sale or purchase of child pornographic content (Jafari, et al., 2018).

CONCLUSION

Nigeria as a country does not recognize bit coin and other crypto currencies as legal tender and had severally warned people dealing in them. Despite the cold attitude of the government towards encouraging usage of crypto currency, it is obvious that the crypto market is constantly increasing every day with Nigeria leading in Africa. To this end, there is a need for the Nigerian government to take advantage of the emerging market, regulate it and generate more revenue through it.

Despite the fact that crypto currencies became popular as digital cash that facilitates illegal transactions, block chain technology can still be used positively to change the future outlook of our financial system in the country. Instead of imposing strict regulations or banning crypto currency, the Nigerian government should embrace the shift toward a digital currency. By implementing preferential tax treatment, adopting standardized rules governing block chain transactions, and implementing rules to protect user privacy, the amount of illegal transactions and tax fraud that occurs on crypto currency exchanges would reduce.

RECOMMENDATIONS

Tax evasion is the largest legal issue to arise out of the growth of crypto currencies. The government should pursue a crypto currency tax policy that creates tax incentives for investors to report crypto currency transactions. This can be done by specifically amending the tax law to ensure crypto currency transactions receive preferential capital gain taxes. By ensuring preferential tax treatment for more crypto currency transactions, regulatory agencies might encourage users to report their transactions.

Although Nigeria government has started treating crypto currency as chargeable assets by imposing 10% capital gain tax on it, more revenue could still be derived on day to day transactions on crypto currency. The Nigeria government can adopt the USA model of taxing crypto currency whereby not only capital gain tax would be charged, but also income tax and value added tax; thereby increasing the total revenue generated from this avenue.

Government should come up with regulations streamlining the activities of the participant in the crypto market by ensuring that anti-money laundering laws are followed. The government should work to develop a tax mechanism that eliminates the ability for users to engage in fraudulent transactions.

Governments could also create government endorsed or sponsored exchanges or crypto currency to replace or supplement traditional fiat currencies. A standardized block chain could enable the government to gain more oversight of crypto currency transactions while also protecting user privacy. For example, a unique wallet address owned by each user could protect against identity theft or other crime. If larger financial institutions embrace block chain technology, then crypto currency use could become more widespread and embraced.



Government can regulate it by creating a platform for compulsory registration of all crypto currencies dealers thereby creating a database for all those trading in crypto currency and consequently drawing them into tax net. Nigeria government can request trading in digital currencies and owners to voluntarily file annual reports with the tax authority.

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