TAXATION OF DIGITAL ASSETS IN KENYA: IS IT A CASE OF ONE STEP FORWARD AND TWO STEPS BACKWARDS?

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The world is in the midst of a crisis today, and many of us believe it is related to a deeply flawed monetary system, a deeply flawed understanding of what money should be, a rejection of the notion that money should have real value and that money originated in the marketplace rather than originating from a computer over at the Federal Reserve.[i]

INTRODUCTION

The assimilation of state economies and markets into the digital world has increased in recent years. This has put a discernible strain on the applicable national and international tax rules, which relied on the physical presence test to determine tax liability.[ii] Today's virtual, anonymous and borderless nature of the digital world has made it difficult for tax authorities to identify the residency or location of a buyer or a seller for tax purposes in a commercial transaction.[iii] The result of this is that many governments, including the Kenyan government, are exposed to the risk of base erosion and profit shifting (BEPS) arising from internet-based transactions.[iv]Due to the foregoing, Kenya opted to come up with workable tax law through which the country's tax base can be protected from the threats posed by digitalisation.

THE NATURE OF CRYPTOCURRENCIES AND THEIR TAXABILITY

A cryptocurrency is a form of decentralized virtual currency.[v] Cryptocurrency is a digital and unregulated currency in which encryption techniques are used to regulate the generation of units of currency to secure transactions and control the creation of new and parallel currency units. Digital asset is a term used to describe any asset like cryptocurrency that is in a digital form in essence, therefore, Cryptocurrencies are also known as virtual currencies, digital currencies or digital assets. The most common examples of cryptocurrencies are tether, litecoins, USD coins, XRP and bitcoin which is the most widely accepted cryptocurrency. This study shall use these terms interchangeably to mean the same thing.

A typical Cryptocurrency is protected by a mathematical formula known as cryptography, which requires the user to cryptographically sign into it using some keys to transfer the required value of the virtual currency from one person to another.[vi] It operates within a blockchain technology, which is the primary innovation that is responsible for the mining of the currencies[vii] and updating the record for individual cryptocurrency[viii] transactions. It operates like a bank ledger but differs from it because its transactions are not monitored or verified by a central regulatory authority.[ix] while cryptocurrency transactions are publicly recorded, users are known only by their Virtual Currency "addresses," which cannot be traced back to users' real-world identities. As such, cryptocurrency transactions are more transparent than cash but more anonymous than other forms of online payment.

To illustrate the details of how a cryptocurrency works allow me to take the example of a bitcoin which is the most popular virtual currency that is used to settle claims by users of cryptocurrencies.

A bitcoin is "a digital, decentralised, partially anonymous currency, not backed by any government or other legal entity, and not redeemable for gold or other commodities"[x] They can be obtained from various Bitcoin exchange points situated at different points in Kenya. To trade or transact in bitcoins, a user would need a Bitcoin wallet that can be accessed online from where his accounts are kept.

The user would then mine bitcoins from his wallet to complete his trade or related transactions. When mining, the user's computer would solve complex equations to validate the Bitcoin transaction that he requires. Once the equation is solved successfully, the network would release the transaction value of the bitcoins to the vendor of the products or services that the user wanted to purchase. The vendor would also perform a similar mining exercise on his online platform to validate the uniqueness and authenticity of the transferred bitcoins before they can be credited to his wallet. The point at which the vendor would supply the user with the goods or services required is not certain.

Bitcoins may be exchanged between holders through their wallets. It could also be exchanged through e-mails or third-party exchange points like Mt Gox or Paxful. In the latter case, the parties would be required to rely on third parties who own a Bitcoin mining computer to mine for them the bitcoins for their use or exchange.

A recent survey shows that Bitcoin is the most widely known and used form of cryptocurrency in Kenya.[xi] Over 4.5 million Kenyans currently own cryptocurrencies.[xii]
Despite this growth, the country has not promulgated specific legislation to deal with the taxation of transactions settled with Virtual Currency. This meant that the taxation of cryptocurrencies could not be taxed before the enactment of Section 12F of the ITA.

A bitcoin is usually exchanged directly from the computer of the buyer to the computer of the seller who shall hold it in an anonymous online wallet. The privacy, non-visibility and complexity of such a transaction mean that the government will have very limited visibility of transactions that are settled using bitcoins. This limited visibility would in turn make it difficult for Kenya Revenue Authority to identify and levy tax on commercial transactions that are settled using a cryptocurrency. This could perhaps be the reason why professionals, designs and software support service providers,[xiii]accessory shops,[xiv] bitcoin gift shops[xv] and owners of luxury items like yachts, watches, antique[xvi] and related arts continue to prefer bitcoins as their preferred mode of payment. This shows that the potential of taxation of digital assets as a base protection and revenue-earning stream for Kenya could be significant.

However, the challenge that remains to the intended taxation of cryptocurrencies like bitcoins and similar products is the fact CBK has cautioned the public that virtual currencies like bitcoins are not legal tenders.[xvii]

ARE DIGITAL CURRENCIES OR ASSETS LEGAL IN KENYA?

The Central Bank of Kenya (CBK) does not recognise virtual currencies. However, following the outbreak of Covid-19, several people opted to carry out their transactions using various digital platforms. This prompted it to propose and mull over the possible legalisation of the Central Bank digital currency (CBDC) to help it reap the benefits and also manage the risks that are associated with internet-based trade. The CBK developed a discussion Paper guide to help it consider the possibility of 'tenderising' digital currency in Kenya. [xviii]

Whereas the Discussion Paper appreciates the emergence of various digital currencies like e-money, cryptocurrencies, Stablecoins, Litecoins, Binance coins, Facebook points, Amazon coins, Microsoft coins and Nintendo points.[xix]and CBDC as important financial tools, the CBK postponed the introduction of a digital currency because Kenya has a digital currency (e-money) that is robust, inclusive and highly active.[xx] In the end, the CBK shelved the idea for a CBDC on the premise that whereas it has enormous benefits and opportunities, it also comes with risks like cybersecurity threats and it is also unknown how it would impact the core functions of the CBK of monetary policy, financial stability and payment systems oversight.[xxi] It ignored the fact that virtual currencies have over time increased in value spread, use and acceptance as an alternative means of paying for bills, goods and services in several jurisdictions in the world.[xxii] This is exhibited by the fact that there are about 1,658 known virtual currencies in the world today. This is up from only one virtual currency (the bitcoin[xxiii]) which was in existence in the year 2009.[xxiv]

It subsequently called for public participation and comments on the proposal before it formally announced in 2023 that the idea of a CBDC was not a compelling priority for Kenya.[xxv] It based its decision on the premise that major global central banks have not adopted the CBDC and that current challenges associated with digital currencies can be addressed through innovative solutions around the existing ecosystem. CBK however undertook to continue monitoring developments in CBDCs to inform its future assessments of the need for CBDCs in Kenya.

This means that a digital currency may operate as a medium of exchange, a unit of account and a store of value. It does not however have a central monitoring or oversight system to help in the control of its issuance, distribution or regulation. Due to their unregulated nature, digital currencies are not legal tender.[xxvi] Any merchant can decline to accept their use in trade without being in breach of law.

Considering that all cryptocurrencies are digital currencies, the fact that they exist digitally or virtually and uses cryptography to secure transactions. Kenya may have to make up its mind on the legality of digital currencies more so now that it has amended the ITA to allow for the taxation of tax digital assets.

TAXATION OF DIGITAL ASSETS

The financial squeeze and spiraling inflation in Kenya have recently pushed the government to look for alternative revenue model streams. It has thus settled on the taxation of digital assets as a low-hanging fruit. Section 12F(1) of the Income Tax Act (ITA) provides as follows:

Kenya was not taxing digital assets before the enactment of Section 12F into the ITA. This enactment introduced a new tax called the "digital asset tax" effective from the 1st September 2023 into the Kenyan taxation regime.[xxvii] This tax applies to income derived from the transfer or exchange of digital assets. It is payable by a person, and the owner of a platform or the person who facilitates the exchange or transfer of a digital asset.[xxviii] A non-resident like Google or Facebook who owns a platform on which this digital asset is exchanged or transferred is required to register for this tax.[xxix] A digital asset has been defined to include anything of value that is not tangible, cryptocurrencies, tokens codes, and numbers held in digital form and generated through cryptography or otherwise, by whatever name called. Non-fungible tokens or tokens of similar nature.[xxx]

A person required to deduct digital tax shall is required to remit it to the Commissioner within 24 hours of making the deduction.[xxxi] Even non-residents who may be operating from a different time zone and under different accounting systems or financial requirements have not been exempt from this strict time-sensitive payment compliance edict. The value of the income derived from the transfer of a digital asset shall be the gross fair market value received or receivable for the asset at the point of exchange or transfer of the digital asset.[xxxii] The tax rate shall be at 3% on the income derived from the transfer or exchange of digital assets.[xxxiii] Digital asset tax (DAT) is therefore, aimed at taxing gains made by individuals engaged in transactions of anything that is deemed to constitute a digital asset including cryptocurrencies, tokens or any digital form of value. The government is hoping to rake in substantive revenue from the DAT considering that Kenya is currently ranked third in Africa after South Africa and Nigeria, and 19th globally in terms of crypto adoption.[xxxiv]

The amendment of the ITA to provide for the taxation of digital assets provides a potential conflict with the government's refusal to recognise digital assets as legal tender. It is, therefore, necessary for this study to determine whether it is possible to raise the tax on digital assets that are unregulated and unrecognised as legal tenders by the CBK.

TAXABILITY OF UNREGULATED OR ILLEGAL DIGITAL ASSETS

Section 3 of the ITA states that a tax known as income tax shall be charged for each year of income upon all income of a person whether resident or non-resident, which accrued in or was derived from Kenya. The Act provides for the charging of tax on specific types of income which include the following:[xxxv] gains and profits from business and employment; service rendered; rent; dividend; interests; pension charge or annuity and capital gains.

As it is, and on the face of it, the ITA recognises all income as taxable irrespective of the legality of the source of the said income. This means that income from businesses like drug trafficking, child trafficking, prostitution or digital assets which have been specifically proscribed and declared illegal by the CBK can be taxed.[xxxvi]

The closest that the taxability of illegal activities has been dealt with in Kenya was in the case of the ***Republic v Kenya Revenue Authority (KRA) ex-parte Yaya Towers Limited***.[xxxvii] In this case, the Kenya Revenue Authority (KRA) demanded that the Ex-parte Applicant remits Pay and As Your Earn tax that it ought to have deducted from the salary of an illegal immigrant it had employed as a consultant. Yaya Towers objected to the tax assessment of Kshs

17,775,190.10 because the employment of the said immigrant was based on illegality and that courts should never lend their hands to KRA whose cause of action is premised upon an illegal act.

The High Court agreed with the ex-parte applicant that tax cannot be levied from an illegal transaction when it stated as follows:

> *"In the view of the court, the Respondent has not acted outside its jurisdiction. However, as I have earlier stated, an illegal contract cannot form a basis for the assessment of income tax as that would be against public policy. Collection of taxes arising from unlawful transactions should be discouraged particularly by the courts by refusing to aid any party regardless of any apparent bona fides. In reality, the Respondent has no jurisdiction to assess and levy tax from transactions which have been done in breach of any written law or furtherance of an illegality under common law."*

The KRA appealed this judgment and decree to the Court of Appeal, the main ground of its appeal was whether income obtained from unlawful activity or business enterprise is taxable.[xxxviii] The Court concluded that income from illegal trade is indeed taxable.

The Court of Appeal was persuaded by cross-border decisions in the following cases where the courts were also in agreement that income arising from illegal activity is taxable:

a) ***F. A. Lindsay, E.A Woodward & W. Hiscox v Commissioner of Inland Revenue***[xxxix] where Lord Morison had stated as follows:

> *"It is quite immaterial that the particular method of carrying on the trade involved the making of a false declaration to the Customs authorities or giving bribes to persons in America. In my opinion, these are entirely irrelevant considerations. When it is established that a trade has existed for a year, the question is whether it realised a profit as ascertained under the rules of the statute. It is quite in vain for the person who has realized the profit to prove that he made it by cheating or fraudulent trading, or to attempt to contend that the profit he has earned ought to*

escape 'chargeability' because he might have been convicted of a breach of the law. During the discussion, a question was raised as to whether the profits or gains of a burglar were subject to tax. Obviously not, because burglary is not a trade or business; but if a trader committed a housebreaking and stole his rival's order book and, from its information, was able to increase the profits of his own business, I have no doubt that these profits are subject to tax. It is, in my opinion, absurd to suppose that honest gains are charged to tax and dishonest gains escape. To hold otherwise would involve a plain breach of the rules of the statute, which require the full amount of the profits to be taxed and merely put a premium on dishonest trading. The burglar and the swindler, who carry on a trade or business for profit, are as liable to tax as an honest businessman, and, in addition, they get their deserts elsewhere."

b) ***Rutkin v United States***[xl] where the court stated thus:
"*An unlawful gain, as well as a lawful one, constitutes taxable income when its recipient has such control over it that, as a practical matter, he derives readily realizable economic value from it"*

The above decision affirms that Kenya has aligned itself with the United States of America and the United Kingdom's position that income arising from illegal activities ought to be taxed. In essence, therefore, despite the fact digital assets are illegal and unregulated in Kenya, the KRA can tax any transaction that relates to the sale or transfer of these assets.

CHALLENGES IN THE TAXATION OF DIGITAL ASSETS

The following are some of the main challenges in the taxation of digital assets:

i. Determining the point of transfer

To trade or transact in digital assets like cryptocurrencies a user would need mine them from his wallet to complete his trade or related transactions. The point at which the supply could be said to have taken place in the entire mining process remains uncertain. The fact that the mining process is secretive, exclusive to the two dealers and protected by layers of passwords also means that a third party like KRA may not know if or when the transfer has taken place.

ii. Requirement for heavy infrastructural investment

The structure of digital assets involves multi-layered protection that is done through blockchain technology which is a non-changing, distributed, anonymous and validated database which has several nodes. Their genuineness would only be guaranteed if it is approved by 51% of the nodes.[xli] Blockchain technology can only allow access to one miner after every ten minutes to append his set of records into the system. Once a miner has added the next 'block' to the 'chain' of mathematical equations that will result in the mining or transfer of a digital asset, the entire network of users would have access every ten minutes to evaluate this addition. It shall thereafter be approved within the blockchain if it is not a double spend or if there are no objections to it.

This complex and multi-layered protection of the operations of digital assets means that KRA would be required to purchase the human and capital infrastructure that would help it solve these algorithms and have access to the deep world of digital asset dealers. This type of investment could be substantial and the revenue authority may consider balancing the anticipated revenue income from this tax stream against the investment required to raise the revenue under consideration.

iii. Anonymous nature of the transaction

Whereas block-chain technology records and verifies transactions, these records do not control any identifying information. The public address of the owner and other relevant identifying information that are visible in the block-chain is often pseudo addresses. In other words, the transactions that take place between buyers and sellers within the block-chain can be made anonymous at the option of the users.[xlii] This is because block-chain technology allows users to adopt any convenient name and address to mine or transact in digital assets.

The result is that the users of this technology can stay anonymous when settling their obligations.[xliii] In simpler terms, a digital asset is like cash, because the transactions shall be concluded without knowing the location of either party or the amount that was paid for the transaction. Any person who gets benefits from a digital asset transaction and fails to declare it in his tax return will escape tax liability.

The anonymous nature of the digital asset has today attracted people who are seeking to use it as a super tax haven[xliv] This is brought into perspective by the fact that a person can use the available online vendors to carry out his digital asset-based transactions without setting up his own website address or personal trading wallet. With no money trail or a website that is connected to such a taxpayer, it would be difficult for any tax authority to connect the taxpayer with such transactions unless he discloses his identity voluntarily.

Taxation is premised on knowing the taxpayer and the transaction that he has been involved in to raise an income. The fact that block-chain technology can allow a taxpayer to make all its transactions anonymously means that even if the government was to identify a miner of digital assets, it would not be able to establish a nexus between that taxpayer and a taxable transaction, residency or permanent establishment in Kenya. Unless The outcome of this is that Section 12F of the ITA may not help the government to raise the additional tax that it craves from digital assets unless the ITA is generally updated to deal with the challenges posed in the taxation of digital assets that rely on the internet and block-chain technology to limit their taxability.

iv. Fluctuating Value of Crypto Currencies

Digital assets can be classified as intangible property because, although it lacks tangible physical property, it, however, contains value in the rights that are transferred to other parties.[xlv] In theory, therefore, the taxable value of digital assets like cryptocurrencies is determined based on the transaction value at the time when the coins were acquired. However, the prices of digital assets fluctuate frequently.[xlvi] A trader can acquire it at a low point in the morning, and its value could rise significantly by the end of the day. This unstable nature of digital assets would afford any trader the option of limiting his tax liability by using the lower value of the coin in the course of the day as fair market value for tax purposes.

The taxpayer would also not be penalised or stopped from adopting this tax avoidance tactic because there is no regulation or legislation directing taxpayers to use the higher value, or an average of the lowest and the highest traded daily value of a VC. On the contrary, his action would be consistent and compliant with Section 12F(5)(b) of the ITA. The absence of an agreed valuation method in some cases like the one discussed above could thus allow for tax arbitrage.[xlvii] This contrasts with transactions that involve fiat currencies whose value and the attendant tax consequences cannot be manipulated similarly.

The volatility of digital assets can have significant tax benefits for traders engaged in long-term trade using this currency. They could over or under-report the cost basis or fair market value of their cryptocurrency holding to maximise the amount of loss realised or to minimise the value of loss realised. This formula would help taxpayers shield their tax gains from any tax authority.

V. Double Taxation

Digital taxation could lead to cases of double taxation because a trade in a digital asset involves the transfer of a fiat currency to a stablecoin before the stablecoin is exchanged into a digital asset like a cryptocurrency, the cryptocurrency could then be eventually exchanged into cash. A plain reading of Section 12F of the ITA implies that DAT would be levied in each of these four steps of the transfer. all these four steps of transfer or conversion. The multiple taxation of digital assets at every step of conversion is not only unfair and prejudicial but it is also unconstitutional. This position was affirmed in the case of ***Stanley Waweru & 6 others v National Assembly & 2 others; Institute of Certified Public Accountants of Kenya (ICPAK) & 2 others (Interested Parties) [2021] eKLR, where the court held that***:

> *"It was not only unconstitutional and unlawful to subject one to double taxation but the same was also economically punitive."*

vi. Charging Tax on Turnover Sales

Section 3(2) of the ITA provides that tax shall be levied on profit and gains. Section 12F of the ITA proposes to levy tax on the turnover sales this proposal contravenes the charging provision in section 3 of the ITA. It is therefore an illegality. This position has been previously affirmed in the case of ***Stanley Waweru & 6 others v National Assembly & 2 others; Institute of Certified Public Accountants of Kenya (ICPAK) & 2 others (Interested Parties) [2021] eKLR,*** where the court held that:

> *"Taxation could not be fair when a system of taxation was introduced with the potential effect of diminishing the capital for those making losses while for those making profits, their capital base was unaffected. Taxation ought not to be applied so that those who had more added to it while those who had little, had even that little taken away from them. Such a system could not be said to be fair and that system failed the test of fairness prescribed under Article 201(b)(i) of the Constitution. The 2nd respondent had to devise a way in which the tax evaders could be identified and lawfully dealt with rather than adopting a system under which even the innocent were ensnared. A statute, particularly one that dealt with taxation had to be certain."*

The aforementioned decision makes it clear that taxation of turnover sales under the ITA that levies a tax on sales without ascertaining and allowing all expenditure wholly and exclusively incurred by a person in the production of income in a year of income as is provided in section 15 of the ITA was unlawful.

Secondly, the taxation of turnover sales also poses a serious disadvantage to people who deal in digital assets because they are taxed on their sales irrespective of whether they have made losses. The reality that digital assets are volatile makes this tax model even more prejudicial and disadvantageous because the market trends and speculations can easily move digital traders into loss-making territories but the tax man shall continue to tax these dealers who are in a loss-making position based on their turnover sales.
Kenya should therefore find ways of overcoming these challenges by adopting some of the best practices that the countries have adopted in taxing digital assets.

A COMPARATIVE STUDY IN TAXATION OF DIGITAL ASSETS

The following countries have been chosen for this comparative study.

a) South Africa because it has the most advanced digital economy in Africa.[xlviii]
b) Nigeria is classified as a high-performing digital economy of the future due to high digital engagement driven by active social media use and mobile-payment adoption.[xlix]
c) Mauritius was chosen because of its preferred destination as a tax haven.

d) Australia and the United States of America (USA) were chosen because their residents are avid users of digital technology and their status as advanced and highly developed nations presents them as appropriate countries from where Kenya can learn useful lessons on how to tax digital assets.

Digital assets like cryptocurrencies are not generally accepted as a means of payment in Sweden. They have instead been classified as fungible property like gold. [l] The disposal of crypto is taxed as capital gains.[li] Tax is thus levied in cases where a gain has occurred upon disposal and losses can be deducted only up to 70 per cent.

United States of America

The Internal Revenue Service defines crypto as a "type of virtual currency that uses cryptography to secure transactions that are digitally recorded on a distributed ledger such as blockchain."[lii] The country has classified digital assets as securities under the Internal revenue code section 2 (1) of the Securities Act. This therefore means that digital assets are classified as assets and gains are taxed under the property tax. Losses would be offset against other taxable income. A taxpayer who is paid using digital assets must include the fair market value of that digital asset measured in USA dollars as of the date when the payment is received.

The rate of tax is determined by how long the asset has been held before disposal. If the holding period before the disposal is shorter than one year, it is taxed as short-term capital income at the rate of 10 to 37 per cent depending on the taxpayer's tax bracket for that year. [liii] if the holding period exceeds one year, the gain would be taxed at between 0 to 20 per cent. [liv] The rate for long-term capital is lower because it caters for inflation.

A taxpayer who is paid using digital assets must include the fair market value of that digital asset measured in USA dollars as of the date when the payment is received. However, possessing digital assets would not trigger taxation as long as the said assets are stored in the taxpayer's wallet.

Australia

Australia has classified digital assets as any other asset that falls under the capital gains tax (CGT) provisions. Such that where digital assets are held as an investment, a CGT event can occur upon the disposal of the asset. Such disposals include:[lv]

a) selling or gifting crypto assets;
b) trading or exchanging crypto assets (including the disposal of one crypto asset for another crypto asset);
c) converting crypto assets to fiat currency such as Australian dollars; or
d) use of crypto assets to obtain goods or services or to remunerate employees

Digital assets held by entities that are involved in mining, trade or exchange of these assets will generally be treated as trading stock for tax purposes.[lvi] Any digital asset that these entities receive in the ordinary course of business will also be treated as trading stock if the assets are held for sale or exchange. Consequently, the proceeds from the sale of digital assets held as trading stock are deemed to be ordinary income for the entity and would thus be taxed as ordinary income rather than under CGT rules.[lvii]

An employer would be subject to Pay As You Go withholding tax obligation if it pays an employee using digital assets.[lviii] Generally, the amount would be subject to income tax in the hands of the employee.

Digital assets used to carry out business like initial coin offering or to pay salary will be deemed to be a 'personal use asset' that will be subject to income tax.

Mauritius

In an attempt to be a pioneer African country in Fintech, the approach of Mauritius towards the use of digital assets like bitcoin commenced in 2013, when the Bank of Mauritius (BoM) issued a warning against the use of these assets.[lix] However, the Board of Investment in Mauritius has recently adopted a liberal approach by allowing transactions that are settled using digital assets to operate even though they are not regulated by any specific legislation.

The Mauritian tax system is similar to the Kenyan system where tax is levied on income derived in Mauritius, whether the person is resident in Mauritius or elsewhere. The only difference is that it charges a tax rate of either 10% or 15% on chargeable income depending on the amount of taxable income that a person derives during an income year. The country has not created a specific legal provision to help it tax digital assets. This tax is instead charged using the charging provision of Section 10(1) of the Income Tax Act, 1995.

South Africa

The South African Reserve Bank (SARB) has expressly stated that virtual currencies are not legal tenders in South Africa and cannot be used in the discharge of any obligations.[lx] However, the view taken by the South African Revenue Service (SARS) is that digital assets are not illegal because the country's Penal law has not classified them as such. SARS has thus asserted that normal tax shall apply to all digital assets and the absence of Regulation does not mean that they are illegal in South Africa.[lxi]

Moreover, the 2018 amendment of the definition of financial instruments in the Country's Income Tax Act to include cryptocurrencies means that any transaction that is settled using cryptocurrencies is taxable in South Africa.[lxii]

Section 20A (2) (b) (ix) of the Income Tax Act was also amended in 2018 to list both the acquisition and disposal of any cryptocurrencies by a natural person as legitimate just like gambling and farming.[lxiii] It also ring-fenced cryptocurrency trade from any assessed losses. This amendment resulted in the recognition of any income realised from a legitimate transaction involving the disposal of cryptocurrencies as a taxable income within section 5(1) of the Act.

South Africa's income tax defines Gross income as:

> *"The total amount, in cash or otherwise, received by or accrued to or in favour of such resident' in case of a resident..."*[lxiv]

This definition confirms that the amount taxable under this bracket could be in the form of cash or otherwise. In essence, the law allows for taxation of income which is paid for and or received in an otherwise form that is not cash. SARS has taken this broad definition of what constitutes gross income to tax digital assets and the transactions that are settled using digital assets.

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Anything that is acquired by a taxpayer for purposes of a possible future exchange is considered a trading stock.[lxv] Most digital assets are held for purpose or in anticipation of future exchange with fiat currency or goods and services. These characters qualify them for classification as trading stock. SARS has taken the position that the proceeds from the disposal of these digital assets are trading stock which ought to be included in the gross income of the taxpayer in terms of the general definition of gross income.[lxvi] The expenses and costs incurred in mining or acquiring the trading stock would be deductible for normal tax purposes.[lxvii]

These amendments to South Africa's Income Tax Act to include cryptocurrencies, its broad definition of 'gross income' and the inventiveness of SARS in the treatment of digital assets as the trading stock has made it possible for SARS to tax digital assets and transactions that are settled using digital assets. Taxpayers are, therefore, required to declare any income received or accrued from any trade that is done using formal currency or digital assets. It is however not lost on the author that South Africa has not made efforts to recognise digital assets as legal tenders nor has it taken an intentional step to recognise and provide for taxation of other digital assets that fall outside the bracket of cryptocurrencies.

Nigeria

Nigeria companies are taxed on their worldwide income and foreign companies are taxed on the portion of profit which is attributable to business operations carried on in Nigeria.[lxviii] Capital gains tax is applicable on the disposal of assets at a rate 10 per cent for every year of assessment after the adjustment of all allowable deductions or expenses that were incurred in the course of trade or the process of the disposal of the asset.[lxix] The CGT tax requirement will be triggered on all forms of property whether situated in Nigeria or not, including:[lxx]

(a) Options, debts and incorporeal property generally;

(b) Any currency other than Nigerian currency; and

(c) Any form of property created by the person disposing of it, or otherwise coming to be owned without being acquired.

Digital assets are considered property or assets and therefore taxable under the CGT regime. Under this, cryptocurrencies are deemed taxable

Whereas the Central Bank of Nigeria has prohibited banks from dealing in digital assets or facilitating payments for cryptocurrency exchanges[lxxi] the Rules of the Securities and Exchange Commission have offered a platform and custody of digital assets. This implies that Nigerians may engage and trade using digital assets but they cannot visibly pass their transactions through Nigerian banks. However, the buyers and sellers of digital assets will be under obligation to include the profits earned from their digital asset transaction and disposal in their annual tax returns.

RECOMMENDATION AND WAY FORWARD

Various means can be undertaken towards ensuring efficient taxation of digital assets. They include:

Development of Digital Assets Taxation Regulations

The inclusion of cryptocurrencies into the Act has confirmed that the government intends that all transactions that are settled using VCs are taxable. However, the Regulations and Rules that will govern the taxation of this tax have not been published. The following are some of the tax models that could be considered for adoption by the government when the DAT tax Regulations or rules are finally published:

a) Treatment of Cryptocurrency based Transactions as a Normal Taxable Transaction

All transactions that are settled using cryptocurrencies should be treated like any other transaction that is taxable under the ITA, albeit at a different rate. The expenses incurred on mining the currency and other related expenses incurred in the course of business should also be deductible if they meet the conditions laid down in the Act.[lxxii]

The exchange of digital assets for goods or services would also constitute barter trade. In such a case, the edict in Section 12F (5) (b) of the ITA would apply whereby the open market value of the goods exchanged for the digital asset would be the amount to be included in the taxpayer's gross income.[lxxiii] The income earned from this trade would be taxable as normal tax income within the realm of the ITA. This view was affirmed in a South African case of ***South Atlantic Jazz Festival (Pty) Ltd v CSARS***[lxxiv] where it was held that, in an ordinary arm's length barter transaction, the value that the parties attributed to the goods or services exchanged would be a reliable indicator of their equivalent market value.

b) Treatment of Digital Assets as Trading Stock

The mining of digital assets often results in receipt or accrual of the units of the mined. It is proposed that the units of digital assets held could be deemed to be trading stock until such time that they are disposed of. This way the government could earn an income from the fluctuations of these currencies and people who may opt to hoard it.

Secondly, anything that is acquired by a taxpayer for purposes of a possible future exchange ought to be considered a trading stock. Most digital assets qualify as trading stock because they are held in anticipation of future exchange with fiat currency or goods and services. The proceeds that arise from the disposal of these digital assets would then be included as part of the gross income of the taxpayer from where costs incurred in mining or acquiring the trading stock would be deductible for normal tax purposes.[lxxv]

The value of a digital asset held but not disposed of at the end of a financial year can be included in the determination of the taxpayer's taxable income as part of his trading stock to ensure that a taxpayer does not limit his tax liability by diminishing the cost price of a VC in the subsequent financial years.[lxxvi]

The adoption of this proposal would ensure that a taxpayer does not limit his tax liability by diminishing the cost price of a digital asset in the subsequent financial years. The losses incurred in the trade of digital assets should also not be offset against income earned from any other trade. This ensures that the losses are ring-fenced for the exclusive use of future profits earned by digital assets and thereby protecting the country's tax base by ensuring that losses incurred in digital asset trade transactions are not applied by a taxpayer to reduce his tax liability.

c) Treatment of Virtual Currency Based Income as Revenue

The prices of digital assets are often volatile and hence the reasons why they are attractive as speculative assets.[lxxvii] It is submitted that the volatility of these assets and their general use as a speculative profit-oriented investment means that the income earned from such speculation ought to be taxed as revenue.[lxxviii] The volatile nature was aptly described in the South African case of ***CSARS v Capstone 556 (Pty) Ltd*** [lxxix] where the court stated:

> [*V*]irtually every capital asset is purchased in the hope and anticipation that it will increase in value and in contemplation of the possibility that it may in future be sold at a profit.

Flowing from this assertion by court it is clear that most digital assets are purchased with the intention of speculation and profit-making. They thus ought to be classified and taxed as revenue income. Speculation is a profit-making scheme. Consequently, an acquisition that is made for speculative purposes is a profit-making scheme and the proceeds realised from there would be classified as revenue.[lxxx]

The foregoing general proposal should however not apply to all digital asset transactions. Each transaction should be considered on merit to determine whether a receipt relating to each transaction is in the form of capital or revenue in nature.[lxxxi] A digital asset that was, for example, acquired as a means of payment, without any speculative intention to dispose of it at a profit would constitute a capital asset. Any revenue earned therefrom should thus not be taxed as revenue.

Taxation of Digital Assets

Kenya has tried to protect its tax base under Section 12F of the ITA. It is however recommended that the current provision be amended to provide that tax shall be levied in tandem with the charging principles under Section 3 of the ITA. Such that income received or accrued from digital asset transactions can be taxed on the revenue account after the deduction of all allowable deductions. The taxation model could be retained as it is or it could be taxed under the CGT system like it happens in the USA, Nigeria and Australia.

It is further recommended that KRA should continue taxing digital assets within the current provisions of the Act. Creating legislation to tax digital assets on their own or treating them as fiat currencies or securities for tax purposes is not appropriate at this point because their taxation has been appropriately and adequately provided for as subject to normal tax in the ITA. Moreover, introducing new legislation to tax each type of existing digital transaction would result in the existence of several income tax statutes which would be difficult to monitor and implement.

Taxation of Digital Transactions Paid Using Central Bank Digital Currency

Digital currencies are legal tenders in a digital format. Its growing popularity is attributed to the changing nature of today's commercial ecosystem where the use of cash has declined in favour of digital payments.

The world is changing fast. Most governments are moving away from metallic and paper money to digital currencies. This portends a revolution that may be much more consequential than the invention of Automated Teller Machines or payment cards.[lxxxii] Kenya should, therefore, not be left behind in this technological revolution that is upending the financial world, the global banking system and the models of payment preferred by taxpayers in settling claims. The advent of 5G and the digitalisation of all aspects of life from smart homes to smart cities to smart cars means that almost everything would be digitised in the future. The digital currency has the potential of helping the world to keep up with this transformative digital revolution that is likely to result in the death of physical cash.

It is, therefore, proposed that Kenya should consider adopting the use of digital currency as part of its fiat currency. Its use would provide a safe and stable model for settling claims in today's digital world. The government and taxpayers would also collect maximum tax from such transactions because it shall not incur any expenses and losses in currency conversion and related transaction costs. It shall not also incur any expense or consume precious time in trying to determine the arm's length or market value of a digital asset-based transaction for tax purposes. Successful legalisation and implementation of digital currencies would also help KRA to tax cross-border transactions that involve digital assets efficiently and effectively.

CONCLUSION

Unlike the third industrial revolution, which used electronics and information- technology to spur industrial growth,[lxxxiii] the world is today standing on the brink of a technological revolution that is fast changing the way we live, relate, work, and interact with each other. The internet of things (IoT)[lxxxiv] has revolutionised the way we relate to each other by making it possible for any object to be connected to the internet to receive or send data.[lxxxv] This transition of the world from an industry based economy to an internet-based digital economy presents several opportunities

and far-reaching challenges to Kenya, its income tax regime and its ability to tax transactions that take place within and or are supported by the IoT.

It is for this reason that Kenya has opted to tax digital assets to ensure that its tax base is not eroded by commercial business transactions that are supported by the IoT. The reality is that the current provisions of the Act, though useful, are of limited value in realising the huge potential of tax income that exists in the digital realm. Adopting the recommendations proposed in this Article would, therefore, help the Kenyan government to transform its proposals to tax digital assets into a feasible venture which can help it protect and expand its base.

ENDNOTES

[i] The Davis Tax Committee "Second Interim Report on Base Erosion and Profit Shifting in South Africa" at.103-105. Available at www.taxcom.org.za [accessed on the 23rd May 2020].
[ii] OECD "Addressing the Tax Challenges of the Digital Economy" (2015) OECD Publishing, Paris. Available at http://dx.doi.org/10.1787/9789264241046-en [accessed on the 8th March 2020].
[iii] Peter M. M. "Taxation of Electronic Commerce- A Commentary" 2019 *Journal for Financing for Development* Vol. 1 Issue 1.
[iv]Basu S "International Taxation of e-commerce: Persistent Problems and Possible Development" 2008 *Journal of Information Law and Technology* Vol. 1.
[v] Cryptocurrency is a digital and unregulated currency in which encryption techniques are used to regulate the generation of units of currency to secure transactions and control the creation of new and parallel currency units. It usually operates independently of the Central Bank and is accepted among members of the virtual community. Cryptocurrencies are also known as virtual or digital currencies. This study shall use the terms digital currency, digital asset and virtual currency interchangeably throughout this study
[vi] Financial Action Task Force Report "Virtual Currencies Key Definitions and Potential AML/CFT Risks" (2014) at 5. Available at https://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf [accessed on the 2nd April 2020]

[vii]Mining of currencies is a process where the transactions for various forms of currencies are verified, added to the blockchain digital ledger and also facilitates the release of new currency into the market.
[viii] Cryptocurrency is both a digital currency and a virtual currency. Information obtained from https://blog.idex.io/all-posts/whats-the-difference-between-digital-currency-virtual-currency-and-cryptocurrency [accessed on the 2nd April 2020].
[ix] The Trust Machine, "The Economist Technology Behind Bitcoin Could Transform How Economy Works "(31st October 2015) Edition https://www.economist.com/leaders/2015/10/31/the-trust-machine -technology-behind-bitcoin-could-transform-how-economy-works-trust-machine [accessed on the 28th of June 2020].
[x]Grinberg R "Bitcoin: An Innovative Alternative Digital Currency"2012 *Hastings Science and Technology Law Journal* at. 160.
[xi] Kamau G. C " The Cryptocurrency Market In Kenya: A Review Of Awareness and Participation by The Youth" Journal of Asian Business Strategy (2022) Vol. 12, No. 1, 49-56.at 52.
[xii] Available at https://triple-a.io/crypto-ownership/
[xiii] Bitcoinzar "Business that Accepts Bitcoin in South Africa." Available at www.bitcoinzar.co.za [accessed on the 23rd August 2016].
[xiv] Bitcoinzar" Business that Accepts Bitcoin in South Africa." Available at www.bitcoinzar.co.za [accessed on 23rd August 2016].
[xv] eGIFTER "Bitcoin to Gift Cards" (2015). Available at www.wgifter.com [accessed on the 23rd August 2016].
[xvi] Bitpremier "How it Works." Available at www.bitpremier.com [accessed on 23rd August 2016]
[xvii] CBK " CAUTION TO THE PUBLIC ON VIRTUAL CURRENCIES SUCH AS BITCOIN" December 2015. Available at file:///C:/Users/user/Downloads/Public_Notice_on_virtual_currencies_such_as_Bitcoin%20(1).pdf [accessed on 10th June 2023]
[xviii] CBK "Discussion Paper on Central Bank Digital Currency" February 2022. Available at file:///C:/Users/user/Desktop/CentralBankDigitalCurrency%20(2).pdf [accessed on 8th June 2023] at 5
[xix] Grinberg R "Bitcoin: An Innovative Alternative Digital Currency." Available at https://www.researchgate.net/publication/228199328_Bitcoin_An_Innovative_Alternative_Digital_Currency [accessed on the 23rd May 2020]
[xx] CBK "Discussion Paper on Central Bank Digital Currency" February 2022. Available at file:///C:/Users/user/Desktop/CentralBankDigitalCurrency%20(2).pdf [accessed on 8th June 2023] at 19.
[xxi] Comes with risks particularly related to cybersecurity and unknowns on how it would impact central banks' core functions of monetary policy, financial stability and payment systems oversight
[xxii] Mathew K.M "Coining Bitcoin's "Legal Bits": Examining the Regulatory Framework for Bitcoin and Virtual Currencies" 2014 *Harvard J of Law & Technology* Vol. 27 No.2 at.*587.*
[xxiii] A bitcoin is "a digital, decentralized, partially anonymous currency, not backed by any government or other legal entity, and not redeemable for gold or other commodity.
[xxiv] Data obtained from www.investing.com [accessed on the 28th October 2020].
[xxv] CBK' Issuance of Discussion Paper on Central Bank Digital Currency: Comments from The Public" Press release of 2nd June 2023. Available at file:///C:/Users/user/Downloads/103592893_Press%20Release%20-%20Issuance%20of%20Discussion%20Paper%20on%20Central%20Bank%20Digital%20Currency%20-%20Comments%20from%20the%20Public.pdf [accessed on 8th June 2023.
[xxvi] CBK "Caution To The Public on Virtual Currencies Such as Bitcoin" December 2015 Public notice[available at file:///C:/Users/user/Desktop/Public_Notice_on_virtual_currencies_such_as_Bitcoin.pdf} accessed on the 8th June 2023.
[xxvii] Section 1(a) of the Finance Act, 2023.
[xxviii] Section 12F(2) of the ITA.
[xxix] Section 12F(3) of the ITA.
[xxx] Section 12F(5) (a) (i) and (ii) of the ITA.
[xxxi] Section 12F(4) of the ITA.
[xxxii] Section 12F(5)(b) of the ITA.
[xxxiii] Paragraph 13 of the Third Schedule to the Income Tax Act
[xxxiv] Chainalysis " The 2022 Geography of Cryptocurrency Report" at 73 [available at file:///C:/Users/user/Downloads/2022-Geography-of-Cryptocurrency.pdf] accessed on 9th June 2023.
[xxxv] Section 3(2) of the Income Tax Act, Cap 70 of the Laws of Kenya (the Act)
[xxxvi] See also Section 3(2) of the ITA.
[xxxvii] [2008] eKLR
[xxxviii] Civil Appeal No. 55 of 2009 (reported [2016] eKLR
[xxxix] Tax Cases Volume 18 Page 43.

[xl] 343 U.S 130 (1952)
[xli] Joseph J. Bambara and Paul R. Allen *Blockchain: A Practical Guide to Developing Business, Law and Technology Solutions* (McGraw-Hill Education.,2018) at. 580.
[xlii] Molloy B "Taxing the Blockchain: How Cryptocurrencies Thwart International Tax Policy" 2019 *Oregon Review of International Law* Vol. 20 Issue No. 623 at. 631 to 632.
[xliii]M.Ober, Katzenbeisser M, and Hamacher, K. "Structure and Anonymity of the Bitcoin Transaction Graph" 2013 *Future Internet* Vol. No. 5 Issue No,.2 at. 237-250.
[xliv] Molloy B "Taxing the Blockchain: How Cryptocurrencies Thwart International Tax Policy" 2019 *Oregon Review of International Law* Vol. 20 Issue No. 623 at. 633.
[xlv] Molloy B "Taxing the Blockchain: How Cryptocurrencies Thwart International Tax Policy" 2019 *Oregon Review of International Law* Vol. 20 Issue No. 623 at. 635.
[xlvi]Igwebuike E.A and Nwadialor E.O "Cryptocurrency and The African" 2020 *Economy Economics and Social Sciences Academic Journal* Vol. No. 2 Issue No. 6 at 87. See also Eveshnie R and Lawack V "An Overview of The Regulatory Developments in South Africa" 2019 *South African Mercantile Journal* Vol. No. 31 Issue No. 1 at 26.
[xlvii]Eveshnie R and Lawack V "An Overview of The Regulatory Developments in South Africa" 2019 *South African Mercantile Journal* Vol. No. 31 Issue No. 1 at 26.
[xlviii] Bhaskar Chakravorti, Ravi Shankar Chaturvedi, Christina Filipovic, and Griffin Brewer " DIGITAL IN THE TIME OF COVID Trust in the Digital Economy and Its Evolution Across 90 Economies as the Planet Paused for a Pandemic. December 2020. Available at file:///C:/Users/user/Downloads/digital-intelligence-index.pdf accessed on 12th June 2023 at 23
[xlix] Bhaskar Chakravorti, Ravi Shankar Chaturvedi, Christina Filipovic, and Griffin Brewer " DIGITAL IN THE TIME OF COVID Trust in the Digital Economy and Its Evolution Across 90 Economies as the Planet Paused for a Pandemic. December 2020. Available at file:///C:/Users/user/Downloads/digital-intelligence-index.pdf accessed on 12th June 2023 at 23
[l] Anderson Erik "A Comparative Analysis of the Taxation of Crypto Currencies " Masters Thesis, Uppsala University, Spring 2022. Available at file:///C:/Users/user/Downloads/FULLTEXT01.pdf]accessed on 10th June 2023 at 16
[li] Chapter 52 of the Swedish Income Tax Act
[lii] Anderson Erik "A Comparative Analysis of the Taxation of Crypto Currencies " Masters Thesis, Uppsala University, Spring 2022. Available at file:///C:/Users/user/Downloads/FULLTEXT01.pdf]accessed on 10th June 2023 at 25
[liii] 5 I.R.C. 1222(1).
[liv] 5 I.R.C. 1222(3).
[lv] Australian Government, the Board of Taxation " REVIEW OF THE TAX TREATMENT OF DIGITAL ASSETS AND TRANSACTIONS" August 2022. Available at file:///C:/Users/user/Downloads/Review%20of%20the%20Tax%20Treatment%20of%20Digital%20Assets%20and%20Transactions%20in%20Australia%20(1).pdf accessed on 12th June 2023 At 9
[lvi] Taxation Determination TD 2014/27: Income tax: is bitcoin trading stock for the purposes of subsection 70-10(1) of the Income Tax Assessment Act 1997?; ATO (2022) Crypto assets used in business, ATO website, accessed 12 August 2022
[lvii] Taxation Determination TD 2014/27: Income tax: is bitcoin trading stock for the purposes of subsection 70-10(1) of the Income Tax Assessment Act 1997?; ATO (2022) Crypto assets used in business, accessed https://www.ato.gov.au/ accessed on 12th June 2023.
[lviii] ATO (2022) Crypto assets used in business, accessed https://www.ato.gov.au/ accessed on 12th June 2023.
[lix] Virahsawmy, M., 2018. Mauritius: Cryptocurrency- Developments in Mauritius. Mondaq Connecting knowledge & people [online], March 26. Available from: http://www.mondaq.com/x/686384/fin+tech/Cryptocurrency+Developments+In+Mauri tius [Accessed 20 October 2019].
[lx] SARB, "Position Paper on Virtual Currencies" (2014) at 4–5 as read with section 14 of the South African Reserve Bank Act 90 of 1989.
[lxi] SARS "SAR'S Stance on the Tax Treatment of Cryptocurrencies".(6th April 2018). Media Release. Available at http://www.sars.gov.za/Media/MediaReleases/Pages/6-April-2018---SARS-stance-on-the-taxtreatment-of-cryptocurrencies-.aspx [accessed on the 1st November 2020].
[lxii] Section 1 of Act No. 58 of 1962 as read with clause 1 of the Taxation Laws Amendment Bill of 2018.
[lxiii]Section 1(1) of the Act.
[lxiv] Section 1 of the Act.

[lxv] Definition of trading stock in section 1(1) of the Act.
[lxvi] Section 1(1) of the Act. See also Berger L.L. *Bitcoin Exchange Transactions: Income Tax Implications to Consider Within the South African Environment",* (Master's Thesis, School of Accounting Sciences, North-West University, Potchefstroom, 2016 at 50). Available at https://repository.nwu.ac.za/bitstream/handle/10394/17630/Berger_LL_2016.pdf?sequence=1&isAllowed=y [accessed on the 10th November 2020].
[lxvii] Section 11(a) of the Act.
[lxviii] Section 2(1), Personal Income Tax Act,
[lxix] Section 2 of the Capital Gains Tax Act.
[lxx] Section 3(a) of the Capital Gains Tax Act
[lxxi] Central Bank of Nigeria Update, ISSN No. 2695-2394 Vol. 3 No.21 February 2021 Untitled-1. Available at file:///C:/Users/user/Downloads/cbn%20press%20release%20crypto%2007022021.pdf accessed on 10th June 2023.
[lxxii] Section 15 of the ITA prescribe allowed deductions.
on 1 of the Act. Added by section 1 (1) (c) of the Taxation Laws Amendment Act No. 23 of 2018.
[lxxiii]Wicht, M.S. *The Tax Implications of Bitcoin in South Africa* (Master's Thesis, Faculty of Law, University of Pretoria, Pretoria at 62).
[lxxiv] (2015) 77 SATC 254, at 257.
[lxxv] Berger L.L. *Bitcoin Exchange Transactions: Income Tax Implications to Consider Within the South African Environment",* (Master's Thesis, School of Accounting Sciences, North-West University, Potchefstroom, 2016 at 50). Available at https://repository.nwu.ac.za/bitstream/handle/10394/17630/Berger_LL_2016.pdf?sequence=1&isAllowed=y [accessed on the 10th November 2020].
[lxxvi] Section 22(1)(a) of the Act. See also Berger, L.L., *Bitcoin Exchange Transactions: Income Tax Implications to Consider Within the South African Environment",* (Master's Thesis, School of Accounting Sciences, North-West University, Potchefstroom, 2016 at 73).
[lxxvii] SARS "Comprehensive guide to capital gains tax" 2018 (issue 7), Legal Counsel, SARS, Pretoria at 50. Available at https://www.sars.gov.za/AllDocs/OpsDocs/Guides/LAPD-CGT-G01%20-%20Comprehensive%20Guide%20to%20Capital%20Gains%20Tax.pdf [accessed on the 15th November 2020].
[lxxviii] Baek C. & Elbeck M. "Bitcoins as an Investment or Speculative Vehicle? A First Look", 2015 *Applied Economics Letters* Vol. 22 Issue No.1 at 30–34. Available at https://www.tandfonline.com/doi/abs/10.1080/13504851.2014.916379 [accessed on the 15th November 2020].
[lxxix] (2016) 78 SATC 231, at 238.
[lxxx] Coelho A.S *The Tax and Exchange Control Consequences of Virtual Currency Transactions in South Africa"* (Master's thesis, Department of Commercial Law, name University of Cape Town, Cape Town, 2017)
[lxxxi] SARS SARS's Stance on The Tax Treatment of Cryptocurrencies" 2018a, media release 06 April 2018, SARS, Pretoria. Available at https://www.sars.gov.za/Media/MediaReleases/Pages/6-April-2018---SARS-stance-on-the-tax-treatment-of-cryptocurrencies-.aspx [accessed on the 17th November 2020].
[lxxxii] Wladawsky-Berger "The Emergence of Central Bank Digital Currencies" (5th June 2021). Available at https://blog.irvingwb.com/blog/2021/06/central-bank-digital-currencies.html [accessed on the 10th February 2022].
[lxxxiii] Klaus S 'The Fourth Industrial Revolution: What It Means, How to Respond' (2015) Council of

Foreign Affairs <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it

means-and-how-to-respond/> accessed 23 August 2023.

and other related devices that can be connected to the internet which enable these objects to collect,

send, and exchange data. The definition of IoT is available at <www.internetof thingsagenda.techtarget.com.> accessed 8th June 2023.

[lxxxv] Feinschreiber and Kent (2001) 3 *Corporate Business Taxation Monthly*.3-13.