



DIGITAL MONEY

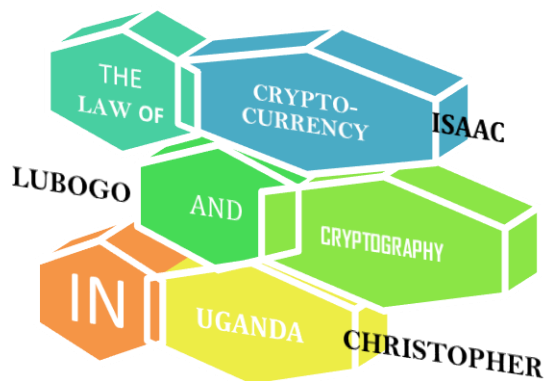


**The Law of Crypto Currency and
Cryptography in Uganda**

ISAAC CHRISTOPHER LUBOGO

DIGITAL MONEY

THE LAW OF CRYPTO CURRENCY AND CRYPTOGRAPHY IN UGANDA



ISAAC LUBOGO CHRISTOPHER

FIRST EDITION



**DIGITAL MONEY: The Law of Crypto Currency and Cryptography
in Uganda**

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First Edition 2022

ISBN:

First published in Uganda by:

Jescho Publishing House

A member of Jescho Group Ltd

Maria's Galleria, Level 3 Room 17,

Luwum Street,

Kampala (U), East Africa.

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Printed in the Uganda

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DEDICATION



To The Lord Who Breathes Life And Spirit On Me ... Be My Guide
Oh Lord Of
The Entire Universe.



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One

HISTORICAL BACKGROUND OF CRYPTOCURRENCIES

Introduction

Ordinarily, a cryptocurrency is a digital currency. Crypto currencies are digital assets that are designed to effect electronic payments without the participation of a central authority or intermediary such as a Central Bank or licensed financial institution. It is a medium of exchange that is in the form of digital asset and is designed to use strong cryptography in securing financial transactions; the control of creating additional units; and verifying asset transfer. Put more simply, it is a digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority. Cryptocurrencies' may have an effect of bypassing the traditional established centralized systems of money transaction control and this factor has to some minor extent contributed to the skepticism that some economies have towards adopting this trend. In the making of Bit coins, the framers envisioned a world here people would use this digital currency for almost all transactions. No wonder still, that the traditional banking system wants to control or eliminate bitcoin. Despite the skepticism surrounding Bitcoins, some countries have endorsed it. El Salvador was



the first country to use bitcoin as legal tender, alongside the US dollar.¹ Japan and the U.K have also gone miles in promoting the using of bitcoins. Bitcoins being virtual and secured by cryptography, gives another important bypass to common day challenges in the money market like counterfeiting and double spending. They fall under a decentralized system based on block chain technology.

For the fact that bit coin technology is safe, does not guarantee that one should invest without caution rather, there are some risks to consider before you make an investment. Bit coin isn't anonymous as often the developing stereotype is; instead the price of crypto currencies can be extremely volatile. Bit coins simply rely on passwords and in spite of this, cryptocurrency wallets are not 100% safe or immune to theft. In other jurisdictions where the adjustment to cryptocurrency technology has long developed ahead of Uganda's, even traditional taxing systems have engulfed this wave to ensure taxation of bit coins. However, this is not the same for Uganda as I write now. Placing crypto currencies within the Ugandan legal Framework, they are electronic transactions. Bit coin in the US, has been classified as an asset similar to property by the IRS and is taxed as such. The tax payers in the U.S. must report Bit coin transactions for tax purpose. Retail transactions using bit coin, such as purchase or sale of goods, are charged with the capital gains tax. It is worth noting that even cash is capable of being converted to bitcoin using a bit coin automated transaction machine (ATM). Bit coins' value is basd purely on speculation. This is different to company sticks where the share price will move depending on how the common market forces of demand and supply.

Crypto-currencies may therefore be used to effect anonymous electronic payments or bought and held for speculative purposes in the expectation that their value will rise at a future time, whereupon they could be sold for a profit. Hundreds of crypto-

¹ <https://www.livemint.com/news/world/el-salvador-becomes-first-coubntry> accessed on January 3, 2022



currencies have been designed and launched around the world, and the most well-known examples include Bitcoin and Ethereum. Such crypto-currencies are not issued or regulated by any government or central bank.

Bitcoin originated with the white paper that was published in 2008 under the pseudonym “*Satoshi Nakamoto*.” It was published via a mailing list for cryptography and has a similar appearance to an academic paper. The creators’ original motivation behind Bitcoin was to develop a cash-like payment system that permitted electronic transactions but that also included many of the advantageous characteristics of physical cash. To understand the specific features of physical monetary units and the desire to develop digital cash, we will begin our analysis by considering a simple cash transaction.

Background

Since 2007 when Kenya launched its M-Pesa mobile money/online exchanges in the years before the launch of Satoshi Nakamoto’s cryptocurrency and Blockchain in 2009, technological developments had merged crypto assets with the phone, the use of the internet, and increasingly with the Blockchain. In 2014, Bitpesa in Kenya 14 launched its international remittance service and bitcoin exchange platform. The following year, in 2015, one of the first documented uses of cryptocurrencies in Uganda, was for the payment of airport taxi fares. In fact, according to research from the GSMA, in 2015, mobile technologies and services generated 6.7% of GDP in Africa, amounting to around \$150 billion of economic value. Mobile technologies were predicted to generate 7.6% of GDP by 2020. For example, the expansion in the use of the mobile technologies was seen in 2017 when Kenya launched its M-Akiba bond which can be purchased via a mobile phone using



Blockchain technology.² Similarly, the World Bank’s 2017 Global Findex data showed that 44.4% of Ugandans had an account, more than double that in 2011. This increase was driven by mobile money with 38% of Ugandans having a mobile money account.¹⁷

May 2018 saw the launch of Africa-specific cryptocurrency like the ethereum based Humaniq that included a chat feature for users.¹⁸ M-Coin launched by ONEm, works on any phone with or without internet, allows “pseudo-mining” that lets users earn mCoins on any ordinary mobile phone, and lets the owners of mCoin virtual wallet send and receive mCoins. ¹⁹ May also saw the launch of the first cryptocurrency Automatic Teller Machine (ATM) in South Africa,²⁰ while in June 2018, Binance one of the world’s largest crypto exchanges launched their cryptocurrency exchange in Uganda.³

These positive developments pose some risks to users, businesses, and regulators. From a criminal law perspective, was the risk of fraud, theft, and hacking, and the risk of cryptocurrencies being used in money laundering, and for terrorism financing. Then there was the business-related risk of unethical behaviour, practices, and the lack of a charge bank facility. For the start-ups and businesses, was the challenge of securing data and maintaining data privacy. For regulators, the challenge posed by cross border businesses was just the tip of the iceberg.

² The findings are in the Report of the Commonwealth Working Group on Virtual Currencies”, Commonwealth Law Bulletin (2016) 42 (2) 263-324, 276. The survey on Uganda was conducted by Maureen Mapp under the auspices of the Rule of Law Division of the Commonwealth Secretariat

³ Official Launch of Binance Uganda Fiat-Crypto Exchange, June 2018, <https://support.binance.com/hc/enus/articles/360006584151-Official-Launch-of-Binance-Uganda-Fiat-Crypto-Exchange>



As already noted, the development of bitcoin is greatly linked with the ideas of Satoshi Nakamoto most of whose profile remains unknown to the world but whose work has gained recognition across the globe. It all started with the white paper that was published in 2008 under the name “Satoshi Nakamoto.” This was made public via a mailing list for cryptography and has a similar appearance to an academic paper. The creators had a view to develop a cash-like payment system that permitted electronic transactions but that also included many of the advantageous characteristics of physical cash. As of long, advancements in technology have been decided by people who have, in many ways, identified with the hippy culture, which was originally a youth movement that began in the United States during the mid-1960s and spread to other countries around the world.

At the heart of the Hippies culture, was a desire by its members to free themselves from societal restrictions, by choosing their own way, and find new meaning in life. One expression of the hippie independence from societal norms was found in their standard of dress and grooming, which made hippies instantly recognizable to one another, and served as a visual symbol of their respect for individual rights. Through their appearance, hippies declared their willingness to question authority, and distanced themselves from the "straight" and "square" (i.e., conformist) segments of society and generally developed the counterculture movement⁴.

As Steven Levy recorded in his book, Hackers: Heroes of the Computer Revolution⁵, there were three generations of youthful computer programmers who deliberately led the rest of civilization away from centralized mainframe computers

⁴ https://en.wikipedia.org/wiki/Hippie#Ethos_and_characteristics

⁵ Hackers: Heroes of the Computer Revolution. O'Reilly Media; 1st edition (May 30, 2010)



and their predominant sponsor, IBM. “The Hacker Ethic,” articulated by Levy, offered a distinctly countercultural set of tenets. Among them:

“Access to computers should be unlimited and total.”

“All information should be free.”

“Mistrust authority – promote decentralization.”

“You can create art and beauty on a computer.”

“Computers can change your life for the better.”

It is imperative to note though, that none of the above tenets were reduced in writing but were only a culture, informed by many idealistic visions and aspirations. It is little wonder therefore, that the counterculture’s scorn for centralized authority provided the philosophical foundations of not only the leaderless Internet but also the entire personal-computer revolution. While the hippie culture as then known has generally waned, some of its tenets have continued to be generally upheld and practiced.

In 1983, the American cryptographer David Chaum conceived an anonymous cryptographic electronic money called eCash, later in 1995, he implemented it through Digi Cash, an early form of cryptographic electronic payments which required user software in order to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient. This allowed the digital currency to be untraceable by the issuing bank, the government or any other third party .In the 1996, the NSA published a paper entitled How to make a Mint; the cryptography of Anonymous Electronic Cash, describing a a crypto currency system, first publishing it in a MIT mailing list and later in 1997, in the American Law Review.⁶

⁶ (vol .46, issue 4)



In 1998, Wei Dai published a description of b-money' characterized as an anonymous distributed electronic cash system, shortly thereafter, Nick Szabo described bit gold like bitcoin and other cryptocurrencies that would follow it, bit gold(not to be confused with later gold based exchanged bitcoin).The first centralized cryptocurrency, bitcoin, was created in 2009 by presumably pseudonymous developer Satoshi Nakamoto, it used SHA-256, a cryptographic hash function, as its proof of work scheme, in April 2011, Namecoin was created as an attempt at forming a decentralized DNS which would make internet censorship very obscure. Soon after in October 2011, litecoin was released. It was the first successful cryptocurrency to use scrypt as its hash function instead of SHA-256. Another notable cryptocurrency, peer coin was the first to use a proof of work/proof of stake hybrid.

On the 6th August 2014, the UK announced its treasury had been commissioned to do a study of cryptocurrencies and that role if any they can play in the UK economy, the study was also to report on whether regulation should be considered. On the 14th day of February, 2017, BOU issued a warning claiming that the, 'One coin digital money is not licensed by BOU under the Financial Institutions Act 2014 and is therefore conducting business outside the regulatory purview of the BOU.' While, the warning was in respect of particular cryptocurrencies, the effect cuts across the entire spectrum of cryptocurrencies.

On 6th July 2017, the participants at the 2nd Round Table on the Regulation of Cryptocurrency, held at the United Nations African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFRI), Kampala, adopted the Declaration on Fundamental Principles on the regulation of cryptocurrencies and the Blockchain (Digital Ledger Technologies) in Uganda and its Follow Up.



A while back, the Uganda Police Force formally established a Cyber Crimes Unit charged with the responsibility of mitigating cybercrime in the country. This move was rather more criticized than welcomed as many believed that the establishment of this unit is intended to scare off online expression given the shifting trends from the use of traditional media to online. The police seeks to legitimize the illegal surveillance it has for a long time been undertaking through profiling citizens' social media accounts like Facebook, Twitter, blogs among others. This will enable the police to commence investigations and prefer charges among which of terrorism and involving in subversive acts that threaten the state.

The cybercrime landscape evolves year over year as criminals alter their operating strategies, develop new tools and techniques, and take advantage of changes in consumer and business behavior. Mobile continues to remain vulnerable to cybercriminals as its popularity as a banking and e-commerce channel grows and more services become available via mobile apps. Cybercriminals are also jumping on the internet of things (IoT) bandwagon by exploiting poor password practices to take over IoT devices for their own purposes.

Way back in 2013, the Annual Police Report 2013 stated that cybercrime cost Uganda about UGX.18 billion. Another figure released by the Kaspersky Labs put the figure at UGX. 25 billion both figures were within the range that was released by the auditing firm, Deloitte.

The reports in 2016 indicated that the country's monetary loss to cybercrime was UGX. 122 billion. Fast forward to 2017, cyber security researchers revealed that Uganda lost close to UGX. 15 billion (\$42m) to cyber criminals in 2017 alone. In the period under review, 95.6% of cyber security incidents went unreported or unresolved and only 4.4% of the reported cases were followed through to a successful prosecution.



The Uganda Cyber Security Report also revealed that 90% of Ugandan organizations operate below the cyber security ‘poverty line’. For an organization to have in place a semblance of cyber defense they will have to incur costs of UGX. 5,550,000 (\$1500) to invest in monitoring, detection and prevention tools.

In Uganda, the Financial Institutions Act is primarily enacted to regulate financial institutions as defined under the Act that defines a financial institution to mean “a company licensed to carry on or conduct financial institutions business in Uganda and includes a commercial bank, merchant bank, mortgage bank, post office savings bank, credit institution, a building society, an acceptance house, a discount house, a finance house or any institution which by regulations is classified as a financial institution by the Central Bank”. The Act also defines “financial institution business” as the business of about fifteen expressly defined activities. From the general definition of a crypto currency, it is clear that it would be nearly impossible for any of the crypto currencies to fit within the general examples or restrictive framework of ‘financial institutions business” so as to bring them within the general ambit and regulatory purview of Bank of Uganda. As will be noted, the traditional models of banking/ financial institutions business (which the majority of laws seek to regulate) are not available in the world of crypto currencies. It would therefore be next to impossible, in the current prevailing legislative environment, to bring crypto currencies under the control of Bank of Uganda or any other regulator for that matter, in the absence of a legislative change.

In January 2020, Parliament received petitions from over 5000 Ugandans who sought the intervention of the house to get their refund of money invested in Dunamiscoins Resource Ltd, a private firm that accepted deposits before suddenly closing shop in December. Dunamiscoins Resource Ltd was a privately owned



company, which claimed it was committed to providing complementary roles to banks, bridging gaps for the informal sector by providing income for the poor.⁷

The Speaker of Parliament, Rebecca Kadaga, (*as she was then*) asked MPs to be cautious about the rampant crypto pyramid schemes in the country which have conned Ugandans of their hard-earned money. In her communication to the House this afternoon, Kadaga told Parliament that she had received a number of petitions from Ugandans whose money had been taken by different pyramid schemes. “They come to you saying put your money for one week and you will get double that money. Please be careful and please inform your electorate about these schemes,” Kadaga warned. Citing examples of different people that had petitioned her office, Kadaga informed the MPs of how a group of people had lost about Sh20b in one of the schemes. She also cited a young man, who had collected money for his wedding, but because he wanted to get interest on the money, he lost it to the scheme which had promised to double it. “Another group came and said they had lost Sh500m, it was too much I said I didn’t want to hear anymore so please honorable members be cautious,” she said.

Under the *financial institutions Act*, financial institutions business is deemed to mean the business of fifteen expressly defined activities, from the general definition of a cryptocurrency, it is clear that it would be next to impossible for any of the cryptocurrencies to catered for under the definitions set out under the financial institution Act or to mean financial institutions business so as to bring them under the general ambit and regulatory preview by the central bank of Uganda.

It is so much challenging that despite the predominance of crypto currencies in the world today, and the large number of investors thereunder, there is not a single

⁷www.newvision.co.ug



institution placed to regulate the block chain. Just the same way no one is going to be able to fully regulate the Internet, the central bank cannot control or regulate cryptocurrencies. This demonstrates that, perhaps there is need to re-think the financial regulatory models in the midst of innovation, especially within the financial services sector. As will be appreciated, the majority of the FinTechs, innovations and now, cryptocurrencies, have been modeled around the desire to avoid or circumvent the existing regulatory authorities and controls of most countries, in line with the counterculture modus operandi. Admittedly, most regulators have been unprepared to deal with the innovations that are operating within the financial services sector. The biggest tragedy, in my view though, is their seemingly unwavering negative attitude towards cryptocurrencies generally, with the exception of a few jurisdictions.

Kenga Michael (2020)⁸; Crypto currencies continue to operate unregulated in the Ugandan economy thus exposing the citizens to economic and cyber fraud. The inspector General of Police, launched the annual crime report of 2019 on 28th April 2020.⁹ 13,264 cases of cyber fraud were reported to the Uganda Police Force compared to 15,099 cases reported in 2018, giving a 12.1% decrease. Dunamis coins Resources Limited and Global Crypto currencies pyramid scheme obtained a total of Ugx 30,625,000,000 from 2,925 victims. A total of Ugx. 709,000,000 was blocked by FIA for purposes of saving the fraudulently obtained funds.

The two companies were closed and three suspects arraigned to court and remanded. .While crypto currencies are based on digital currencies that are managed through advanced encrypted techniques, most governments have taken a

⁸ Kenya Michael (LLB- UCU) - A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda.

⁹www.upf.go.ug



cautious approach towards them, fearing their lack of a central control and the effects they could have on the financial security.¹⁰The legal regime in Uganda does not cater for crypto currencies specifically in the statutory legislation, even though the legal Framework regulates electronic transactions generally.¹¹ Dunamiscoins Resources Limited opened in Masaka last month and started inviting individuals to invest and become part of its “digital currency network”. The company with three Directors had its headquarters in New Taxi Park, Kampala with branches in other parts of the country is alleged to have defrauded about Ugx. 20,000,000,000 from 2500 people. It is alleged the company promised each depositor a 40% interest on their deposits after 21 working days. Initially each depositor would receive the promised 40% interest on their deposits. By November 2019, the company increased interest to 50% on each deposit. By 2nd December, 2019, the company closed shop and the Directors disappeared with the depositor’s money. Ugx. 47,000,000 was recovered from Dunamis Coin Resources Ltd while Ugx. 709,000,000 was frozen on their accounts after investigations were instituted into their activities. Two suspects; Nabunya Mary and Lwanga Simon were arrested and arraigned at LDC Court vide Old Kampala CRB 1577/2019, and remanded to prison. 25 other cases against the suspects are still under inquiry.

MAJOR TERMS USED IN THE CRYPTO MARKET

Cryptography is the process of regulating and constructing protocols that prevent the general public from reading private messages. About 16,000 different

¹⁰ Uganda Police Annual Crime Report 2019; Pg.xxi

¹¹ Electronic transactions Act 2011



cryptocurrencies are traded publicly today¹² and cryptocurrencies continue to proliferate. The

Bitcoin is one of the best known cryptocurrency technology, the one for which blockchain technology was invented. Other example of crypto currencies currently in Uganda include; One-coin, Namecoin Bitcoin, Peercoin, Dogecoin, Ripple, Litecoin, Bytecoin, Blackcoin, Primecoin.

A blockchain is a decentralized ledger of all transactions across a peer to peer network. Using this technology, participants can confirm transactions without a need for a central clearing authority. Potential applications can include fund transfers, settling trades, bring and many other issues. Blockchain technology is not only limited in usage, to bit coin and cryptocurrency. It is an important big innovation for the next generation to use in business process improvement. It give collaborative technology important for improving the quality of business processes between companies, producing higher returns for each investment dollar.

The popularity of crypto currencies today happens for several reasons which include;

- Supporters see cryptocurrencies such as Bitcoin as the currency of the future and are racing to buy them now, presumably before they become more valuable.
- Some supporters like the fact that cryptocurrency removes central banks from managing the money supply, since over time these banks tend to reduce the value of money via inflation.
- Other supporters like the technology behind cryptocurrencies, called blockchain, because it's a decentralized processing and recording system and can be more secure than traditional payment systems.

¹² According to <https://www.coinmarketcap.com> accessed on January 3, 2022



- Some speculators like cryptocurrencies because they're going up in value and have no interest in the currencies' long-term acceptance as a way to move money.

Operatively, Crypto-currencies are used to effect anonymous electronic payments or bought and held for speculative purposes in the expectation that their value will rise at a future time, whereupon they could be sold for a profit. Such crypto-currencies are not issued or regulated by any government or central bank.

Cash

Cash is represented by a physical object, usually a coin or a note. When this object is handed to another individual, its unit of value is also transferred, without the need for a third party to be involved. No credit relationship arises between the buyer and the seller. This is why it is possible for the parties involved to remain anonymous. The great advantage of physical cash is that whoever is in possession of the physical object is by default the owner of the unit of value. This ensures that the property rights to the units of value circulating in the economy are always clearly established, without a central authority needing to keep accounts. Furthermore, any agent can participate in a cash payment system; nobody can be excluded. There is a permissionless access to it. Cash, however, also has disadvantages. Buyers and sellers have to be physically present at the same location in order to trade, which in many situations makes its use impracticable.

Mining of Bitcoins.

Generally, it takes about minutes to mine one bitcoin. However, this assumes an ideal hardware and software set up which few users can afford. Bitcoin mining can be done using a mobile phone through a mobile crypto miner which is not so sophisticated as many are made to see it. A mining app once obtained plus an internet connection, all is made easy and one can go about their daily activities while



mining in the background. In practice, however, there are a few large miners that produce most of the new generally accepted blocks. The reason is that competition has become fierce and only large mining farms with highly specialized hardware and access to cheap electricity can still make a profit from mining. Bitcoin is not the only currency that can be mined. Many of the most prominent cryptocurrencies such as *Ethereum* and *Litecoin* are capable of being mined.

The role of a miner is to collect pending Bitcoin transactions, verify their legitimacy, and assemble them into what is known as a “block candidate.” The goal is to earn newly created Bitcoin units through this activity. The miner can succeed in doing this if he or she can convince all other network participants to add his or her block candidate to their copies of the Bitcoin Blockchain. Bitcoin mining is permissionless. Anyone can become a miner by downloading the respective software and the most recent copy of the Bitcoin Blockchain. For a block candidate to be generally accepted, it must fulfill a specific set of predefined criteria. For instance, all included transactions must be legitimate. Another important criterion is the so-called “fingerprint” of the block candidate. A miner obtains this fingerprint by computing the block candidate’s hash value using the hash function dSHA256. For example, we will look at the hash value for the text, “Federal Reserve Bank of Saint Louis.” The fingerprint of this text, which was calculated using the hash function dSHA256, is 72641707ba7c9be334f111ef5238f4a0b355481796fdddffdaac4c5f2320eea68. Now notice the small change in the original text to “federal Reserve Bank of Saint Louis.” It will cause an unpredictable change of the fingerprint, which can be seen from the corresponding new hash value: 423f5dd7246de6faf8b839c41bf46d303014cffa65724ab008431514e36c4dba. As suggested by this example, a data file’s hash value cannot be predicted. This



characteristic is employed in the mining process as follows. For a block candidate to be accepted by all miners, its fingerprint must possess an extremely rare feature: The hash value must be below a certain threshold value—that is, it must display several zeroes at the beginning of the fingerprint. An example of a fingerprint of a block that was added to the Bitcoin Blockchain in 2010 is given in the following example:

```
Block #69785 (July 23rd, 2010, 12:09:36 CET) 0000000000
Needtobezero
14243293b78a2833b45d78e97625f6484ddd1accbe0067c2b8f98b57995
```

Miners are continuously trying to find block candidates that have a hash value satisfying the above mentioned criterion. For this purpose, a block includes a data field (called the nonce) that contains arbitrary data. Miners modify this arbitrary data in order to gain a new fingerprint. These modifications do not affect the set of included transactions. Just as with our example, every modification results in a new hash value. Most of the time, the hash value lies above the threshold value, and the miner discards the block candidate. If, however, a miner succeeds in creating a block candidate with a hash value below the current threshold value, he or she broadcasts the block candidate as quickly as possible to the network. All the other network participants can then easily verify that the fingerprint satisfies the threshold criterion by computing it themselves.

Digital Cash

An ideal payment system would be one in which monetary value could be transferred electronically via cash data files (Figure 2). Such cash data files retain the advantages of physical cash but would be able to circulate freely on electronic networks.¹ A data file of this type could be sent via email or social media channels. A specific feature of electronic data is that it can be copied any number of times at



negligible cost. This feature is highly undesirable for money. If cash data files can be copied and the duplicates used as currency, they cannot serve as a payment instrument. This problem is termed the “double spending problem.”

Electronic Payment Systems

To counteract the problem of double spending, classical electronic payment systems are based on a central authority that verifies the legitimacy of the payments and keeps track of the current state of ownership. In such systems, a central authority (usually a bank) manages the accounts of buyers and sellers. The buyer initiates a payment by submitting an order. The central authority then ensures that the buyer has the necessary funds and adjusts the accounts accordingly. Centralized payment systems solve the double spending problem, but they require trust. Agents must trust that the central authority does not misuse the delegated power and that it maintains the books correctly in any state of the world—that is, that the banker is not running away with the money. Furthermore, centralized systems are vulnerable to hacker attacks, technical failures, and malicious governments that can easily interfere and confiscate funds.

Stone Money of Yap

The island of Yap is one which most economists often tour along to learn and discover the history of money and it also helps them answer the question, what is money? The island does not contain gold or silver but milestone deposits were discovered miles away along it and such were carved into huge stone disc which they brought back across the sea on their small bamboo boats. A piece of stone was really valuable; you wouldn't use it for some everyday purchase but instead for something big, take for instance a daughter's dowry.¹³ The purpose of this

¹³ <https://www.npr.org/sections/money/2011/02/15/131934618/the-island-of-stone-money>



discussion is to understand the working of the bitcoin system which has no centrally managed ledger. On this Yap Island, large millstone-like stones were used as a medium of exchange. The stones were quarried almost 280 miles away on the island of Palau and brought to Yap by small boats. Every inhabitant could bring new stone money units into the system. The money creation costs, in the form of labor effort and equipment such as boats, protected the economy from inflation. Instead of having to laboriously move the stones, which are up to 13 feet in diameter, with every transaction from a buyer's front yard to a seller's front yard, the ownership rights were transferred virtually. A stone remained at its original location, and the unit of value could be detached from it and circulated irrespective of the stone's whereabouts. It was sufficient that all the inhabitants knew who the owner of every stone was. The separation between the unit of value and the stone went so far that even the unit of value for stones that were lost at sea remained in circulation. The stone money of Yap can therefore be described as a quasi- virtual currency, as each unit of value was only loosely linked to a physical object.

Unlike the cryptocurrency system, The Yap system was based on a distributed ledger, in which every inhabitant would keep track of a stone's ownership. When a buyer made a purchase, this person told his or her neighbors that the stone now belonged to the seller and the neighbors too would inform others. Through this communication, every islander had a precise idea of which unit of value belonged to which person at any point in time. In its essential features, the Yap payment system is very similar to the Bitcoin system. It is important to note that as a major challenge, the Yap system false reports could not be immediately identified, so conflicts regarding the current state of the implicit ledger would have to be argued and settled by the group. The Yap system therefore was restricted to a group of manageable size with close relationships, in which misconduct could be punished by the group. In contrast, the Bitcoin system is designed to function in a network



where no participant can trust any other participant and this is made possible by it being the permissionless payment system in which participants can remain anonymous through the use of pseudonyms.

Bitcoin and the Bitcoin Blockchain

Bitcoin is a virtual monetary unit and therefore has no physical representation. A Bitcoin unit is divisible and can be divided into 100 million “Satoshis,” the smallest fraction of a Bitcoin. The Bitcoin Blockchain is a data file that carries the records of all past Bitcoin transactions, including the creation of new Bitcoin units. It is often referred to as the ledger of the Bitcoin system. The Bitcoin Blockchain consists of a sequence of blocks where each block builds on its predecessors and contains information about new Bitcoin transactions. The average time between Bitcoin blocks is 10 minutes. The first block, block #0, was created in 2009; and, at the time of this writing, block #494600 was appended as the most recent block to the chain. Because everyone can download and read the Bitcoin Blockchain, it is a public record, a ledger that contains Bitcoin ownership information for any point in time. The word “ledger” has to be qualified here. There is no single instance of the Bitcoin Blockchain. Instead, every participant is free to manage his or her own copy of the ledger. As it was with the stone money, there is no central authority with an exclusive right to keep accounts. Instead, there is a predefined set of rules and the opportunity for individuals to monitor that other participants adhere to the rules. The notion of “public record of ownership” also has to be qualified because the owners of Bitcoin units usually remain anonymous through the use of pseudonyms. To use the Bitcoin system, an agent downloads a Bitcoin wallet. A Bitcoin wallet is software that allows the receiving, storing, and sending of (fractions of) Bitcoin units. The next step is to exchange fiat currencies, such as the U.S. dollar, for Bitcoin units. The most common way is to open an account at



one of the many Bitcoin exchanges and to transfer fiat currency to it. The account holder can then use these funds to buy Bitcoin units or one of the many other cryptoassets on the exchange.

Due to the widespread adoption of Bitcoin, the pricing on large exchanges is very competitive with relatively small bid-ask spreads. Most exchanges provide order books and many other financial tools that make the trading process transparent. A Bitcoin transaction works in a way that is similar to a transaction in the Yap payment system. A buyer broadcasts to the network that a seller's Bitcoin address is the new owner of a specific Bitcoin unit. This information is distributed on the network until all nodes are informed about the ownership transfer. For a virtual currency to function, it is crucial to establish at every point in time how many monetary units exist, as well as how many new units have been created. There must also be a consensus mechanism that ensures that all participants agree about the ownership rights to the virtual currency units. In small communities, as with the Yap islanders, everyone knows everyone else. The participants care about their reputation, and conflicts can be disputed directly. In contrast, within the Bitcoin system the number of participants is substantially larger, and network participants can remain anonymous. Consequently, reputation effects cannot be expected to have a significant positive impact, and coordination becomes very difficult. Instead, there is a consensus mechanism that allows the Bitcoin system to reach an agreement. This consensus mechanism is the core innovation of the Bitcoin system and allows consensus to be reached on a larger scale and in the absence of any personal relations.

Consensus Mechanism

The consensus among miners is that every miner who receives a block candidate with a valid fingerprint adds it to his or her own copy of the Bitcoin Blockchain. From a game theoretical perspective, a strategy profile where all miners add valid



blocks to their own copies of the Bitcoin Blockchain is a Nash equilibrium. If a miner believes that all other miners are acting accordingly, then it is a best response for that miner to add a valid block candidate to his or her own copy of the Bitcoin Blockchain. A deviation is not worthwhile, because it is not profitable to work on a version of the Bitcoin Blockchain that is not generally accepted. Any reward for finding blocks on a version of the chain that is not accepted by anyone else is worthless. Thus, although there is no authority enforcing this rule and miners are free to modify their copy of the Blockchain as they wish, there is a strong incentive to follow this rule. This self-enforcing rule allows the network to maintain consensus about the ownership of all Bitcoin units.⁴ Mining is expensive, as the computations use large amounts of electricity and are increasingly dependent on highly specialized hardware. Moreover, valid block candidates can be found only through a trial-and-error procedure. The consensus mechanism is therefore called “proof of work.” If a miner finds a valid fingerprint for a block candidate, then this is proof that he or she has, on average, performed a large number of costly computations. Adding false information (e.g., illegitimate transactions) to a block candidate would render the block candidate invalid and essentially waste all the computations. Finding a valid fingerprint is therefore proof that the miner helped to maintain the Bitcoin system.

Monetary Policy

Every payment system needs rules that regulate how new monetary units are produced (or destroyed). The Bitcoin network is calibrated in such a way that, on average, a block candidate with a valid hash value is found every 10 minutes. The winner of the mining contest receives a predefined number of newly created Bitcoin units. The number currently is 12.5. In the Bitcoin system, money creation is scheduled so that the number of Bitcoin units will converge to 21 million units



(Figure 5). This limit exists because the reward for the miners is halved every 210,000 blocks (approximately every four years). Correspondingly, miners will be increasingly rewarded through transaction fees. But even today, the quick processing of a transaction can be guaranteed only if an adequate fee is paid to incentivize the miners to include the transaction in their block candidates. Most Bitcoin users believe that Bitcoin's limited supply will result in deflation. That is, they are convinced that its value will forever increase. Indeed, up to this point we have witnessed a spectacular price increase from essentially a value of \$0 for one Bitcoin unit in 2009 to a value of \$7,000 at the time of this writing (Figure 6). Nonetheless, these beliefs need to be challenged. Bitcoin units have no intrinsic value. Because of this, the present price of the currency is determined solely by expectations about its future price. A buyer is willing to buy a Bitcoin unit only if he or she assumes that the unit will sell for at least the same price later on. The price of Bitcoin, therefore, reacts highly elastically to changes in the expectations of market participants and is reflected in extreme price volatility. From monetary theory, we know that currencies with no intrinsic value have many equilibrium prices.⁵ One of them is always zero. If all market participants expect that Bitcoin will have no value in the future, then no one is willing to pay anything for it today. However, Bitcoin is not the only currency that has no intrinsic value. State monopoly currencies, such as the U.S. dollar, the euro, and the Swiss franc, have no intrinsic value either. They are fiat currencies created by government decree. The history of state monopoly currencies is a history of wild price swings and failures. This is why decentralized cryptocurrencies are a welcome addition to the existing currency system. In the Bitcoin system, the path for the money supply is predetermined by the Bitcoin protocol written in 2008 and early 2009. Since then, many changes have been applied to the Bitcoin protocol. Most of these changes are not controversial and have improved the functioning of the Bitcoin system. However, in principle all aspects of the Bitcoin protocol can be amended, including



the money supply. Many Bitcoin critics see this as a major shortcoming. Theoretically speaking, this is correct. Any network participant can decide to follow a new set of rules and, for example, double the amount of newly created “Bitcoin” units in his or her version of the ledger. Such a modification, however, is of no value because convincing all the other network participants to follow this new set of rules will be almost impossible. If the change of the protocol is not supported unanimously, there will be a so-called fork, a split in the network, which results in two co-existing blockchains and essentially creates a new crypto- asset. In this case, there would be Bitcoin (the original) and Bitcoin42 (a possible name for an alternative implementation with an upper bound of 42 million Bitcoin42 units). The market would price the original and the newly created Bitcoin42 assets according to the community’s expectations and support. Therefore, even though in theory it is possible to increase the Bitcoin supply, in practice, such a change is very unlikely because a large part of the Bitcoin community would strongly oppose such an attempt. Moreover, the same critique can be raised against any current government-operated fiat currency system. For example, since the Second World War, many central banks have become independent in order to shield them from political interference that yielded some undesirable outcomes. This independence has been given to them by the respective parliaments or related institutions and can be taken away if politicians decide accordingly. Political interference in the fiat currency system can be interpreted as a change in the “fiat currency protocol.” Undesirable changes in fiat currency protocols are very common and many times have led to the complete destruction of the value of the fiat currency at hand. It could be argued that, in some ways, the Bitcoin protocol is more robust than many of the existing fiat currency protocols. Only time will tell.



Bit coin Transactions

The complexity of the present material is due to inter disciplinary. To understand the Bitcoin system, it is necessary to combine elements from the three disciplines of economics, cryptography, and computer science. Having presented a broad overview of the Bitcoin system, we will explain a few technical elements of the system in greater detail. Blockchain uses proven technologies and links these in an innovative way. This combination has made the decentralized management of a ledger possible for the first time. Berentsen and Schär (2017) argue that transaction processing demands that three requirements are satisfied: (1) transaction capability, (2) transaction legitimacy, and (3) transaction consensus. These three requirements will now be considered. In particular, we will explain how these conditions can be satisfied in the absence of a central authority.

Transaction Capability

What has to be resolved is how transactions can be initiated if there is no central authority. In a classical banking system, a client talks to his or her advisor or submits his or her payment instructions via the bank's online banking service. The infrastructure provided by the commercial bank and other central service providers ensures that the transaction will be communicated for execution. In the absence of a central authority, communicating a payment order in this traditional sense is not possible. In the Bitcoin system, a payment order can be communicated to any number of network nodes. The network nodes are linked together in a loose network and forward the message until all nodes have been informed about the transaction. The decentralization of the system has many advantages. In particular, it makes the system extremely robust. There is neither a central point of failure that can be attacked nor any system- relevant nodes that could cause the system to collapse. Therefore, the system functions even when some network nodes are



unreachable, and it can always establish new connections and communication channels.

Transaction Legitimacy

Every participant can generate new payment orders and spread them across the network. This feature carries the risk of fraudulent messages. In this respect, there are two important questions that arise:

- 1. How do the nodes know that the initiator of the transaction is the rightful owner and that he or she is thereby entitled to transfer the Bitcoin units?*
- 2. How can one ensure that the transaction message will not be tampered with before it is passed from one node to the next?*

In the Bitcoin system, transaction legitimacy is guaranteed using asymmetric cryptography.⁶ The idea is based on using pairs of keys consisting of a private and a public key. A private key should not be shared. It corresponds to a random value from an incredibly large set of numbers. A public key, on the other hand, is derived from that number and can be shared freely. It serves as a pseudonym in the Bitcoin network.⁷ A private key is used to encrypt a message that can be decrypted only by using its corresponding public key. This type of encryption is also known as a “signature.” The signature clarifies that this approach is not used to hide any of the information in the encrypted message. Anyone can simply decrypt a message using its public key, but the signature serves as proof that the message has been previously encrypted using its corresponding private key; it’s like a handwritten signature but much more secure. For example, consider Edith, who wants to send a Bitcoin payment to Daniel over the Bitcoin network. She uses her private key to encrypt the message. The other network participants can only decrypt this message using Edith’s public key. If an attempt is successful, it ensures that the message



was encrypted using the corresponding private key. Because no one else has access to Edith's private key, this approach can be used to validate the transaction's origin. When the transaction circulates in the network, any network participant can decrypt this message and is in the position to subsequently change the payment instructions. However, because the participant does not possess Edith's private key, he or she cannot re-encrypt the manipulated message. The tampered transaction will therefore be identified and rejected by the rest of the network.

Transaction Consensus

We have now discussed how a transaction message is communicated and how its legitimacy and origin can be verified. We have also explained how consensus regarding ownership of the Bitcoin units is achieved in the Bitcoin network by using the proof-of-work consensus protocol. However, Edith would be able to generate two transactions that both reference the same Bitcoin units. Both transactions could be propagated simultaneously over the network (transaction capability), and both would display a valid origin (transaction legitimacy). Because of differences in the propagation of these two messages in the Bitcoin network, some of the nodes would first receive a message for transaction A while others would first receive a message for transaction B (Figure 10). In order to avoid double spending, it is important that only one of the two transactions finds its way into the Bitcoin Blockchain. A mechanism that decides which of the two transactions gets included in the Blockchain is therefore necessary. The Bitcoin system solves this double spending problem in a clever way. The transaction that is first added to a valid block candidate, and therefore added to the Blockchain, is considered confirmed. The system ceases to process the other one—that is, miners will stop adding the conflicting transaction to their block candidates. Moreover, it is not possible for a miner to add conflicting transactions to the same block



candidate. Such a block would be illegitimate and thus be rejected by all the other network participants.

Cryptoassets

The most apparent application is Bitcoin as an asset. It is likely that cryptoassets such as Bitcoin will emerge as their own asset class and thus have the potential to develop into an interesting investment and diversification instrument. Bitcoin itself could over time assume a similar role as gold. Moreover, the potential for trading securities on a public blockchain is large. So-called colored coins can be traded on the Bitcoin (or similar) Blockchain and used in smart contracts, as described below.

Colored Coins

A colored coin is a promise of payment that is linked to a Bitcoin transaction. This promise is possible because the communication protocol of the Bitcoin network allows additional information to be tied to a transaction. For example, promises for the delivery of an ounce of gold or a dividend payment can be added to a Bitcoin transaction and represented on the Bitcoin Blockchain. Any of these promises are of course subject to issuer risks and require some extent of trust. This is in sharp contrast to native cryptoassets such as Bitcoin units.

Smart Contracts

Smart contracts are self-executing contracts.⁸ They can be used to stipulate that a Bitcoin payment will be executed only when a certain condition is met. The Ethereum network is currently the leader in the field of smart contracts. Similar to Bitcoin, it is based on blockchain technology and provides a native cryptoasset, called Ether. In contrast to Bitcoin, Ethereum provides a more flexible scripting language and is able to track contractual states. Potential applications include but



are not limited to e-voting systems, identity management and decentralized organization, and various forms of fundraising (e.g., initial coin offerings).

Data Integrity

Another application for public blockchains is the potential to monitor data files. We have already shown how fingerprints of block candidates play an important role in the Bitcoin network. The same technology can be used to produce fingerprints for all kinds of data files and then store them in a blockchain. The entry of a fingerprint into a blockchain ensures that any manipulation attempt will become apparent because any change to the data file will lead to a completely different hash value. Because it is very difficult to change a blockchain retroactively, a fingerprint can serve as proof that a specific data file existed at a specific point in time and ensures the integrity of the data.

Forks

As discussed in Section 1.8, the Bitcoin protocol can be altered if the network participants, or at least a sufficient number of them, agree on the suggested modification. It can happen (and in fact has happened) that a blockchain splits because various groups cannot agree about a modification. A split that persists is referred to as a “fork.” The two best-known examples of persistent splits are the Bitcoin Cash fork and Ethereum’s ideological dissent, which resulted in the split to Ethereum and Ethereum Classic.

Energy Wastage

Proof-of-work mining is expensive, as it uses a great deal of energy. There are those that criticize Bitcoin and assert that a centralized accounting system is more efficient because consensus can be attained without the allocation of massive amounts of computational power. From our perspective, however, the situation is not so clear-cut. Centralized payment systems are also expensive. Besides infrastructure and operating costs, one would have to calculate the explicit and



implicit costs of a central bank. Salary costs should be counted among the explicit costs and the possibility of fraud in the currency monopoly among the implicit costs. Moreover, many cryptoassets use alternative consensus protocols, which do not (solely) rely on computational resources.

Bitcoin Price Volatility

The price of Bitcoin is highly volatile. This leads us to the question of whether the rigid predetermined supply of Bitcoin is a desirable monetary policy in the sense that it leads to a stable currency. The answer is no because the price of Bitcoin also depends on aggregate demand. If a constant supply of money meets a fluctuating aggregate demand, the result is fluctuating prices. In government-run fiat currency systems, the central bank aims to adjust the money supply in response to changes in aggregate demand for money in order to stabilize the price level. In particular, the Federal Reserve System has been explicitly founded “to provide an elastic currency” to mitigate the price fluctuations that arise from changes in the aggregate demand for the U.S. dollar. Since such a mechanism is absent in the current Bitcoin protocol, it is very likely that the Bitcoin unit will display much higher short-term price fluctuations than many government-run fiat currency units.

Conclusion.

The Bitcoin creators’ intention was to develop a decentralized cash-like electronic payment system. In this process, they faced the fundamental challenge of how to establish and transfer digital property rights of a monetary unit without a central authority. They solved this challenge by inventing the Bitcoin Blockchain. This novel technology allows us to store and transfer a monetary unit without the need for a central authority, similar to cash. Price volatility and scaling issues frequently raise concerns about the suitability of Bitcoin as a payment instrument. As an asset, however, Bitcoin and alternative blockchain-based tokens should not be neglected.



The innovation makes it possible to represent digital property without the need for a central authority. This can lead to the creation of a new asset class that can mature into a valuable portfolio diversification instrument. Moreover, blockchain technology provides an infrastructure that enables numerous applications. Promising applications include using colored coins, smart contracts, and the possibility of using fingerprints to secure the integrity of data files in a block chain, which may bring change to the world of finance and to many other sectors.

The concept of crypto currencies is more complex than that of money, and therefore difficult for some to understand. The concept of money is easier to appreciate because it is based on the need for a medium of exchange. Historically, people engaged in barter trade, for example exchanging potatoes for salt. The system was imperfect so a medium of exchange that was acceptable to everybody was developed, leading to the creation of money. For example, in the 19th Century, the dollar was created and was backed by gold, but later on the United States Federal Reserve Bank decided to move away from backing the dollar with gold. The dollar today was not worth its equivalent at that time. The growing use of the digital currency for trade now posed challenges for the traditional concept of money. Crypto currencies were now manifest among those youth who were digital natives, and arguably their use appeared to be prevalent in trade between individuals and among various organizations in the country



Two

UNDERSTANDING CRYPTOCURRENCIES AND THEIR CLASSIFICATIONS

Scoping the Crypto-Market

After having known a steady growth over the last couple of years, the market for cryptocurrencies has skyrocketed in 2017, appreciating more than 1,200%.¹⁴ As of 2018, there were several hundreds of coins in circulation (with a total market capitalisation of well over EUR 300 billion)¹⁵, and more continue to pop up on a regular basis. In the world today, there are over 6,000 coins in existence each with a different use case and back story¹⁶. In order to fully grasp this emerging market and carry out a meaningful study, we have opted to first analyze the key properties of the best-known cryptocurrency Bitcoin and then tackle the main features of a selected number of alternative cryptocurrencies, better known as “**Altcoins**”.

Altcoins are all coins that are an alternative to Bitcoin.¹⁷ They are cryptocurrencies other than Bitcoin and they share characteristics with Bitcoin but are also different

¹⁴ See: C. BOVAIRD, “Why the crypto market has appreciated more than 1,200% this year”, November 2017, <https://www.forbes.com/sites/cbovaird/2017/11/17/why-the-crypto-market-has-appreciated-more-than-1200-thisyear/#3906c8d6eed3>. See for some interesting charts on the growth of the market: <https://coinmarketcap.com/charts/>.

¹⁵ According to data available on <https://coinmarketcap.com/coins/views/all/> (data derived on 27 May 2018) the number of Coins in circulation nears 900. If we count both Coins and Tokens, the crypto-market already exceeds a total of 1600 different crypto-assets.

¹⁶ <https://www.currency.com/how-many-cryptocurrencies-are-there>

¹⁷ FATF, “Virtual Currencies – Key Definitions and Potential AML/CFT Risks”, June 2021, <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf>, 6. See also: D. HELLER, “The implications of digital currencies for monetary policy”, in-depth analysis commissioned by the Directorate General for Internal Policies,



in other ways. For example, some altcoins use a different consensus mechanism to produce blocks or validate transactions.

Simply put, there are two types of Altcoins:

- *Altcoins that are built using Bitcoin’s original open-source protocol, with a number of changes to its underlying codes¹¹⁶, conceiving a new coin with a different set of features.¹⁸ An example of such an Altcoin is Litecoin.¹⁹*
- *Altcoins that are not based on Bitcoin’s open-source protocol, but that have their own protocol and distributed ledger. Well-known examples of such Altcoins are Ethereum and Ripple.²⁰*

For matters of emphasis, I will lay focus on the ten Altcoins that currently have the highest market capitalisation in Uganda and the world at large. We have made this selection, not only on the basis of the current popularity of these Altcoins within the “crypto-community”, but also because they exhibit a wide range of different features. Some of them are based on Bitcoin’s original open-source protocol, whilst others constitute an entirely new platform and/or eco-system. Some utilise a PoW mechanism, others employ another form of consensus mechanism. Most are characterised as pseudo-anonymous, yet some are said to even be fully anonymous (meaning that the amount of coins their users own, send and receive is not observable, traceable or linkable through the blockchain’s transaction history²¹).

Policy Department A: Economic and Scientific Policy, May 2017, 7 (electronically available via [http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/602048/IPOL_IDA\(2017\)602048_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/602048/IPOL_IDA(2017)602048_EN.pdf)). ¹¹⁶ Bitcoin’s original protocol is available via <https://bitcoin.org/bitcoin.pdf>.

¹⁸ ECB, “Virtual Currency Schemes – a further analysis”, February 2015, <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf>, 9. See also: A. ZAINUDDIN, “Coins, Tokens & Altcoins: What’s the Difference?”, 2017, <https://masterthecrypto.com/differences-between-cryptocurrency-coins-and-tokens/>.

¹⁹ See *inter alia*: J. MARTINDALE, “What is Litecoin? Here’s everything you need to know”, January 2018, <https://www.digitaltrends.com/computing/what-is-litecoin/>. See also: T. MANDJEE, “Bitcoin, its Legal Classification and its Regulatory Framework”, 15 J. Bus. & Sec. L. 157, 2016, <http://digitalcommons.law.msu.edu/jbsl>, 163.

²⁰ See: A. ZAINUDDIN, “Coins, Tokens & Altcoins: What’s the Difference?”, 2017, <https://masterthecrypto.com/differences-between-cryptocurrency-coins-and-tokens/>.

²¹ See *inter alia*: A. ZAINUDDIN, “Guide on Privacy Coins: Comparison of Anonymous Cryptocurrencies”, 2017, <https://masterthecrypto.com/privacy-coins-anonymous-cryptocurrencies/>; P. GLAZER, “An Overview of Privacy Coins”, February 2018, <https://hackernoon.com/an-overview-of-privacy-tokens-19f6af8077b7>; L. NEL, “Privacy Coins: Beginner’s Guide to Anonymous Cryptocurrencies”, April 2018, <https://blockonomi.com/privacy-cryptocurrency/>. Also see below under 3.2.10. Monero (XMR) and 3.2.11. Dash (DASH).



NB: Take note that the analysis below of the selected cryptocurrencies is based solely on the information available to the public via the internet and not fully originated by the author.

A. Bitcoin

Bitcoin (BTC) is usually described as a virtual, decentralized and (at first glance) anonymous currency that is not government-backed or backed by any other legal entity, and that can not be exchanged into gold or any other commodity.¹²⁶

At the heart of the creation of Bitcoin stands the text "*Bitcoin: a Peer-to-Peer Electronic Cash System*" of Satoshi Nakamoto¹²⁷, published on the internet in 2008. It was on the basis of this text and the ideas conveyed in it that the development of Bitcoin accelerated. Contributory to the mystic nature of Bitcoin is that until now it remains unclear whether Satoshi Nakamoto is a real person, a pseudonym, or perhaps even a group of hackers.¹²⁸

The virtual character of Bitcoin implies that Bitcoins normally do not take a physical form. Therefore, a good representation of a Bitcoin probably is that of a computer file saved on a personal computer or, via an online service, in a digital wallet.¹²⁹ The mere virtual character of Bitcoins should, however, be qualified. Reputedly, it is possible to print out the combination of characters that constitute the Bitcoin and, subsequently, to transfer such print as a bearer instrument²². However, this is supposed to be a marginal phenomenon and, hence, will not further elaborated here.

Bitcoin is based on a PoW consensus mechanism. The issue of Bitcoins takes place via a process called "*mining*" (see also above). To reiterate, such process the entire elements of which are publicly available via open-source software – entails that persons voluntarily make their own computers available to the Bitcoin network to solve complex mathematical problems.²³ Computers that are able to solve such

²² EBA, "EBA Opinion on 'virtual currencies'", 4 July 2014, <https://www.eba.europa.eu/documents/10180/657547/EBA-Op-201408+Opinion+on+Virtual+Currencies.pdf>, 12.

²³ N.M. KAPLANOV, "Nerdy Money: Bitcoin, the private digital currency, and the case against its regulation", Temple Law Review 2012, 7 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2115203); ECB, "Virtual Currency Schemes", October 2012, <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>, 21 and 24.



problems (and, as a consequence, are able to create so-called transaction "*blocks*") are rewarded with Bitcoins.²⁴

The aggregate number of Bitcoins that can be created through mining is limited: the Bitcoin system is programmed so that the development of blocks in time will be rewarded with increasingly less Bitcoins and that at no point in time will more than 21 million Bitcoins exist.²⁵ The fact that the creation and the increase of Bitcoins is automated and limited by the system itself implies that there is no need for the intervention of a central entity / authority to issue Bitcoins.²⁶

The limited number of Bitcoins, together with the fact that conversion rates for Bitcoins are determined by supply and demand, without a government body being able to intervene (e.g. by printing additional money), results in a high volatility in Bitcoins prices.²⁷

²⁴ N.M. KAPLANOV, "Nerdy Money: Bitcoin, the private digital currency, and the case against its regulation", Temple Law Review 2012, 7 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2115203).

²⁵ N.M. KAPLANOV, "Nerdy Money: Bitcoin, the private digital currency, and the case against its regulation", Temple Law Review 2012, 8 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2115203); R. BOLLEN, "The Legal Status of Online Currencies: Are Bitcoins the Future?", Journal of Banking and Finance Law and Practice 2013, 6 (electronically available via <http://ssrn.com:80/abstract=2285247>), R. GRINBERG, "Bitcoin: An Innovative Alternative Digital Currency", Hastings Science & Technology Law Journal, 2011, Vol. 4, 163 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1817857); ECB, "Virtual Currency Schemes", October 2012, <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>, 25; D. BRYANS, "Bitcoin and Money Laundering: Mining for and Effective Solution" Indiana Law Journal, 2014, Vol. 89: Iss. 1, Article 13, 446-447 (electronically available via <https://www.repository.law.indiana.edu/ilj/vol89/iss1/13>); N.A. PLASSARAS, "Regulating Digital Currencies: Bringing Bitcoin Within the Reach of the IMF", Chicago Journal of International Law, 2013, 8 (electronically available <http://ssrn.com:80/abstract=2248419>).

²⁶ N.M. KAPLANOV, "Nerdy Money: Bitcoin, the private digital currency, and the case against its regulation", Temple Law Review 2012, 8 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2115203).

²⁷ Also see the press release of the NBB and the FSMA of 14 January 2014 (http://www.fsma.be/nl-in-the-picture/Article/press/div/2014/2014-01-14_virtueel.aspx) and in BANQUE DE FRANCE, "Les dangers liés au développement des monnaies virtuelles: l'exemple de bitcoin", in Focus, no. 10, 5 December 2013, https://www.banque-france.fr/uploads/tx_bdfgrandesdates/Focus10-stabilite-financiere.pdf, 4; R. BOLLEN, "The Legal Status of Online Currencies: Are Bitcoins the Future?", Journal of Banking and Finance Law and Practice 2013, 4 (electronically available via



Basic features of bitcoins

The Bitcoin blockchain is a typical example of an open, permissionless blockchain.²⁸ Any person can join or leave the public Bitcoin network at will, without having to be (pre-)approved by any (central) entity. All that is needed to join the Bitcoin network and add transactions to the ledger is a computer on which the relevant software has been installed. Bitcoin can be bought with and directly converted into fiat currency on a wide array of cryptocurrency exchanges (e.g. Coinbase, Kraken, Anycoin Direct²⁹, Lunco³⁰). Out of all cryptocurrencies currently in circulation, Bitcoin is one of the easiest coins to convert into fiat currency. Bitcoin (BTC) is being accepted as a legitimate source of funds by a relatively large number of (online) merchants, among which various large companies (e.g. Microsoft³¹, Expedia³², Playboy³³, Virgin Galactic³⁴, LOT Polish Airlines³⁵,)³⁶. As a result it can be qualified as a medium of exchange.

Bitcoin is often characterized as an *anonymous* currency: although everyone can verify the chain of transactions on the basis of the public ledger, at first glance nothing in the system connects Bitcoins to individuals.³⁷ However, this anonymous

<http://ssrn.com:80/abstract=2285247>); B.E GUP, "What Is Money? From Commodities to Virtual Currencies/Bitcoin" (14 March 2014), 7 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2409172); J. BRITO, H. SHADAB and A. CASTILLO, "Bitcoin financial regulation: securities, derivatives, prediction markets & gambling", 24 July 2014, 11-14 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2423461).

²⁸ See for example: R. LEWIS, J. MCPARTLAND and R. RANJAN, "Blockchain and financial market innovation", Economic Perspectives, Issue 7, 2017, Federal Reserve Bank of Chicago (electronically available via <https://www.chicagofed.org/publications/economicperspectives/2017/7>).

²⁹ See: <https://anycoindirect.eu/>.

³⁰ See: <https://www.luno.com>.

³¹ Microsoft accepts payments with Bitcoin in its Xbox online store for games and movies. See: <https://support.microsoft.com/nlbe/help/13942/microsoft-account-add-money-with-bitcoin>.

³² See: <https://www.expedia.com/Checkout/BitcoinTermsAndConditions>.

³³ See: <http://fortune.com/2018/03/14/playboy-cryptocurrency-vice-vit-crypto/>.

³⁴ See: <https://www.virgin.com/richard-branson/bitcoins-space>.

³⁵ See: <https://www.coindesk.com/lot-polish-airlines-accept-bitcoin/>.

³⁶ See for more examples: <https://99bitcoins.com/who-accepts-bitcoins-payment-companies-stores-take-bitcoins/>.

³⁷ R. GRINBERG, "Bitcoin: An Innovative Alternative Digital Currency", Hastings Science & Technology Law Journal, 2011, Vol. 4, 164 (electronically available via



character is far from absolute. It is technically feasible – though very complex and costly – to identify the parties behind a Bitcoin transaction by bringing together factors that accompany such transaction.³⁸ In other words, Bitcoin is not a fully anonymous currency, but rather a pseudo-anonymous coin.³⁹

B. Ethereum (ETH)

Ethereum, launched in July 2015⁴⁰, is a decentralized platform that runs so-called “smart contracts”. Smart contracts are “self-executing” contracts or applications that run exactly as programmed without any possibility of downtime (i.e. the blockchain is never down, it is always running), censorship, fraud or third-party interference.¹⁴⁹ Ethereum has a capability that goes far beyond that of a pure P2P digital cash equivalent like Bitcoin. In simple terms, it is much like a smartphone operating system on top of which software applications can be built.⁴¹

Technically speaking, the Ethereum platform itself is not a cryptocurrency. However, like other open, permissionless blockchains, Ethereum requires a form of on-chain value to incentivise transaction validation within the network (i.e. a form of payment for the network nodes that execute the operations).⁴² This is where Ethereum’s native cryptocurrency “ether” (ETH) comes into play. Ether does not

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1817857); ECB, "Virtual Currency Schemes", October, 2021.

<https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>, 23.

³⁸ M. FLEDER, M.S. KESTER and S. PILAI, "Bitcoin Transaction Graph Analysis", January 2014 (electronically available via <http://people.csail.mit.edu/spillai/data/papers/bitcoin-transaction-graph-analysis.pdf>): "In conclusion, we showed that by leveraging several sources of publicly available information via web-scraped forums and Bitcoin’s transaction ledger, the Bitcoin transaction network is shown to be not entirely anonymous." Also see LAM PAK NIAN, "Bitcoin in Singapore: A Light-Touch Approach to Regulation", 11 April 2014, 14-15 (electronically available via https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2427626).

³⁹ See: A. VAN WIRDUM, “Is Bitcoin Anonymous? A Complete Beginner’s Guide”, November 2015, <https://bitcoinmagazine.com/articles/is-bitcoin-anonymous-a-complete-beginner-s-guide-1447875283/>. See also: Q. SHENTU and J. YU, “Research on Anonymization and De-anonymization in the Bitcoin System”, October 2015 (electronically available via <https://arxiv.org/pdf/1510.07782.pdf>).

⁴⁰ See: <http://ethdocs.org/en/latest/introduction/history-of-ethereum.html>.

¹⁴⁹ See: <https://www.ethereum.org>.

⁴¹ See: EY, “IFRS – Accounting for crypto-assets”, March 2018, <http://eyfinancialservicesthoughtgallery.ie/wpcontent/uploads/2018/03/EY-IFRS-Accounting-for-crypto-assets.pdf>, 4.

⁴² *Ibid.*



only allow smart contracts to be built on the Ethereum platform (i.e. it fuels them⁴³), but it also functions as a medium of exchange (specifically in the context of ITOs, as many tokens are bought with ether).

Like Bitcoin, Ethereum currently utilises a PoW consensus mechanism, but it is slowly moving towards the adoption of a PoS consensus mechanism⁴⁴, better known as the Casper Protocol.⁴⁵ Ethereum’s development is promoted and supported by the “Ethereum Foundation”⁴⁶, a Swiss nonprofit organization, founded by Ethereum’s inventors. A large bulk of ether was “pre-mined” (i.e. mined / created before the coin was officially launched to the public⁴⁷) by its inventors and sold in a crowdsale to pay for development costs and fund the Ethereum Foundation.⁴⁸

Basic features of Ethereum

Just like Bitcoin, Ethereum is a prominent example of an open, permissionless blockchain. Anyone can join or leave the Ethereum network at will, without having to be pre-approved by any entity. Ether (ETH) can be bought with and converted into fiat currency on various cryptocurrency exchanges (e.g. Coinbase, Kraken, ...). Like Bitcoin, ether (ETH) is being accepted as a means of payment by a growing number of merchants (e.g. TapJets⁴⁹, Overstock⁵⁰, ...). It is therefore also

⁴³ Cf. G. HILEMAN and M. RAUCHS, “Global Cryptocurrency Benchmarking Study”, Cambridge Centre for Alternative Finance, 2017, https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternative-finance/downloads/2017-global-cryptocurrencybenchmarking-study.pdf, 17.

⁴⁴ That is, if the nodes in the network reach a consensus regarding this change. If they do not, a hard fork of the Ethereum blockchain could arise. See for more information on this concept further below. See also: <https://www.ethereum.org/ether>.

⁴⁵ See for example: A. ROSIC, “What is Ethereum Casper Protocol? Crash Course”, November 2017, <https://blockgeeks.com/guides/ethereum-casper/>.

⁴⁶ See: <https://www.ethereum.org/foundation>.

⁴⁷ See: <https://www.investopedia.com/terms/p/premining.asp>.

⁴⁸ See: <https://www.ethereum.org/ether>.

⁴⁹ See: <https://www.tapjets.com>. See also: A. KAPLAN, “Who accepts Ethereum as payment 2018 (List of companies that accept Ethereum)”, May 2018, <https://smartereum.com/2072/accepts-ethereum-payment-2018-list-companies-accept-ethereum-mon-may-28/>.

⁵⁰ See: P. RIZZO, “Ether, Litecoin and More: Overstock Now Accepts Cryptocurrencies as Payment”, August 2017,



a medium of exchange. Just like Bitcoin, ether (ETH) can be categorised as a pseudo-anonymous or pseudonymous coin.¹⁶⁰

C. Ripple (XRP)

Ripple is an open-source, P2P decentralized digital payment platform that allows for near instantaneous transfers of currency regardless of their form (e.g. US Dollar, Yen, Bitcoin, ...).⁵¹ It was launched in 2012 by the private company Ripple (Labs), Inc.⁵² Ripple (Labs), Inc., responsible for the further development of the Ripple protocol, is the first ever company to have received a “BitLicense” for an institutional use case of digital assets from New York’s Department of Financial Services.⁵³ It is also getting support from a number of big players in the financial services industry, such as Bank of America Merrill Lynch, Santander, etc.⁵⁴

Following Ripple’s establishment, Ripple’s inventors launched the cryptocurrency XRP. XRP was built to become a bridge currency to allow financial institutions to settle cross-border payments a lot faster and cheaper than they can using the global payment networks that are in place today, which can be slow and involve multiple middlemen (i.e. banks).⁵⁵ However, in practice, Ripple’s payment platform does not need a bridge currency to actually work.⁵⁶

According to Ripple, XRP can handle more than 1,500 transactions per second.⁵⁷ While it was initially developed and intended for enterprise use⁵⁸, it has meanwhile been adopted by a large number of cryptocurrency users. Ripple (XRP) is not based

<https://www.coindesk.com/ether-litecoin-overstock-now-accepts-cryptocurrencies-payment/>.

⁵¹ See: <https://ripple.com/xrp/>.

⁵² See: Company Overview of Ripple Labs, Inc., <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=235707311>.

⁵³ See: <https://ripple.com/insights/ripple-receives-new-yorks-first-bitlicense-institutional-use-case-digital-assets/>.

⁵⁴ See: <https://ripple.com/use-cases/banks/>.

⁵⁵ See: M. ORCUTT, “No, Ripple Isn’t the Next Bitcoin”, January 2018, <https://www.technologyreview.com/s/609958/no-ripple-isnt-the-nextbitcoin/>.

⁵⁶ *Ibid.*

⁵⁷ See: <https://ripple.com/xrp/>.

⁵⁸ *Ibid.*



on a PoW or a PoS mechanism to validate transactions, but it makes use of its own specific consensus protocol.⁵⁹

The total supply of XRP has been fully “pre-mined” (or better: created upon the coin’s inception) by its inventors. At present, it is held as follows⁶⁰:

- 8,102,265,714 XRP is held by Ripple (Labs), Inc.;

- 39,189,968,239 XRP has been distributed⁶¹; and
- 52,700,000,024 XRP has been placed in escrow to create certainty of XRP supply at any given time⁶².

Unlike Ethereum’s inventors, Ripple’s inventors did not sell a portion of XRP via a crowdsale upon XRP’s creation to fund Ripple (Labs), Inc. The company was privately funded.⁶³ At present, it is not fully transparent how XRP (which is mainly held by Ripple (Labs), Inc.) is or will be further distributed in the future.

⁵⁹ See: <https://ripple.com/build/xrp-ledger-consensus-process/>.

⁶⁰ See: <https://ripple.com/xrp/market-performance/>.

⁶¹ It is said that Ripple’s founders still hold 20 billions XRP. See for example: M. ORCUTT, “No, Ripple Isn’t the Next Bitcoin”, January 2018, <https://www.technologyreview.com/s/609958/no-ripple-isnt-the-next-bitcoin/>.

⁶² It should be noted that the XRP in this escrow account is indirectly owned by Ripple (Labs), Inc. See: <https://ripple.com/insights/ripplesescrows-55-billion-xrp-for-supply-predictability/>. On its website, Ripple states: “We use Escrow to establish 55 contracts of 1 billion XRP each that will expire on the first day of every month from months 0 to 54. As each contract expires, the XRP will become available for Ripple’s use. You can expect us to continue to use XRP for incentives to market makers who offer tighter spreads for payments and selling XRP to institutional investors. We’ll then return whatever is unused at the end of each month to the back of the escrow rotation. For example, if 500M XRP remain unspent at the end of the first month, those 500M XRP will be placed into a new escrow account set to expire in month 55. For comparison, Ripple has sold on average 300M XRP per month for the past 18 months.”

⁶³ See for example: E. SPAVEN, “Online payment network Ripple Labs receives \$3.5 Million in new funding”, September 2014, <https://www.coindesk.com/online-payment-network-ripple-labs-receives-3-5m-new-funding/>.



Features

Unlike Bitcoin and Ethereum, Ripple runs on a permissioned blockchain.⁶⁴ This is because Ripple (Labs) Inc., the company behind Ripple (XRP), determines who may act as a transaction validator on its network. The blockchain itself is considered public, as it can be accessed and viewed by anyone.

Like Bitcoin, XRP can be directly converted into fiat currency on various cryptocurrency exchanges (e.g. Kraken, LiteBit⁶⁵, Anycoin Direct, Bitsane⁶⁶, ...).

Ripple (XRP) is being accepted as a means of payment by a growing number of (online) merchants for various goods and services (e.g. e-cigarettes⁶⁷, honey⁶⁸, coffee⁶⁹...)⁷⁰. There is recently even buzz and speculation on the internet that Amazon might be looking to adopt Ripple in the near future.⁷¹ Mores so, Ripple (XRP) is a pseudo-anonymous coin Like Bitcoin, Ripple (XRP) can be qualified as a pseudo- anonymous coin.⁷²

⁶⁴ See: World Bank Group (H. NATARAJAN, S. KRAUSE and H. GRADSTEIN), “Distributed Ledger Technology (DLT) and blockchain”, 2017, FinTech note, no. 1. Washington, D.C., <http://documents.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-DistributedLedger-Technology-and-Blockchain-Fintech-Notes.pdf>, 12. See also: N. Bauerle, “What is the Difference Between Public and Permissioned Blockchains?”, 2017, <https://www.coindesk.com/information/what-is-the-difference-between-open-and-permissionedblockchains/>.

⁶⁵ See: <https://www.litebit.eu/>.

⁶⁶ See: <https://bitsane.com/exchange/xrp-eur>.

⁶⁷ See for example: <https://vapourdepot.com/>.

⁶⁸ See for example: <http://drapis.com>.

⁶⁹ See for example: <https://www.cryptomercado.com>.

⁷⁰ See for an overview: <https://www.xrpchat.com/topic/5679-ripple-xrp-merchants-directory/>.

⁷¹ See: J. P. NJUI, “Amazon Partnership Speculation High For Ripple (XRP) As Markets Go Crazy”, May 2018, <https://ethereumworldnews.com/amazon-partnership-speculation-high-for-ripple-xrp-as-markets-go-crazy/>.

⁷² See: T. SAMEEH, “What If Ripple’s Transactions Can Be Fully Anonymous?”, May 2017, <http://www.livebitcoinnews.com/rippletransactions-can-fully-anonymous/>.



D. Bitcoin Cash (BCH)

Bitcoin Cash (BCH) is decentralized P2P digital cash.⁷³ It was created on the 1st of August 2017 and is based on Bitcoin’s original SHA-256 PoW algorithm, yet with some changes to its underlying code. Bitcoin Cash is what is known in the crypto-community as a “hard fork” of the Bitcoin blockchain.⁷⁴ It is the result of two very different visions on the future of Bitcoin and the Bitcoin blockchain, whereby the Bitcoin blockchain diverged into two potential paths forward.⁷⁵ In short, some Bitcoin **developers** wanted to raise the block size limit from 1MB to 8MB⁷⁶, to reduce transaction fees and improve confirmation times, whilst others had different plans.⁷⁷ Because the community could not reach a consensus, the new cryptocurrency Bitcoin Cash was created.⁷⁸

Like Bitcoin, Bitcoin Cash makes use of the PoW mechanism, which means that it can be mined. What is particular about Bitcoin Cash however, and is a direct result of the hard fork, is that anyone who held Bitcoin at the time Bitcoin Cash was created (*i.e.* 1st of August 2017 – 13:16 UTC) also became owner of the same amount of Bitcoin Cash.⁷⁹ Any Bitcoin acquired after that specific time follows the original path and does not include Bitcoin Cash.

⁷³ See: <https://www.bitcoincash.org/en/>.

⁷⁴ See: World Bank Group (H. NATARAJAN, S. KRAUSE, and H. GRADSTEIN), “Distributed Ledger Technology (DLT) and blockchain”, 2017, FinTech note, no. 1. Washington, D.C., <http://documents.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-DistributedLedger-Technology-and-Blockchain-Fintech-Notes.pdf>, 19; EY, “IFRS – Accounting for crypto-assets”, March 2018, <http://eyfinancialservicesthoughtgallery.ie/wp-content/uploads/2018/03/EY-IFRS-Accounting-for-crypto-assets.pdf>, 13.

⁷⁵ *Ibid.*

⁷⁶ A larger block size is capable of holding more transactions per block. See: S. BUCHKO, “How Long do Bitcoin Transactions Take?”, December 2017, <https://coincentral.com/how-long-do-bitcoin-transfers-take/>.

⁷⁷ *Ibid.*

⁷⁸ It is important to note that Bitcoin’s code is open source. It is managed and updated by volunteers who must achieve consensus among nodes for a change to be adopted. If no consensus can be reached the risk of a hard fork exists. See: EY, “IFRS – Accounting for cryptoassets”, March 2018, <http://eyfinancialservicesthoughtgallery.ie/wp-content/uploads/2018/03/EY-IFRS-Accounting-for-cryptoassets.pdf>, 4.

⁷⁹ *Ibid.* See also: <https://support.coinbase.com/customer/portal/articles/2911542>.



Features

In principle, a “hard fork” does not change the nature of a coin’s blockchain.⁸⁰ In other words, Bitcoin Cash also runs on an open permissionless blockchain, just like Bitcoin. Like Bitcoin, Bitcoin Cash can be easily converted into fiat currency and vice versa through a number of cryptocurrency exchanges (e.g. Coinbase, Kraken, LiteBit).

Bitcoin Cash can be used to pay for a growing array of goods and services (e.g. jewelry, food, gaming, telecom, ...) on a number of online market places and platforms (e.g. OpenBazaar⁸¹, the accept Bitcoin Cash initiative⁸²). As a result, Bitcoin Cash can be qualified as a medium of exchange. Although Bitcoin Cash is a hard fork of Bitcoin, it does not differ that much from its original form. It is thus also a pseudo-anonymous coin.⁸³

C. Litecoin (LTC)

Like Bitcoin, Litecoin (LTC) is an open-source decentralized P2P cryptocurrency.¹⁹⁴ It was launched in October 2011 and is based on what is known as the Scrypt PoW algorithm, which utilises Bitcoin’s original SHA-256 PoW algorithm.⁸⁴ Litecoin is often described as the ‘silver’ to Bitcoin’s gold.⁸⁵ Apart from the fact that it uses a different algorithm, it is different from Bitcoin in two ways.

Firstly, and this results from the use of the Scrypt PoW algorithm, Litecoin offers a much faster transaction speed than Bitcoin. The time needed to generate a block

⁸⁰ World Bank Group (H. NATARAJAN, S. KRAUSE, and H. GRADSTEIN), “Distributed Ledger Technology (DLT) and blockchain”, 2017, FinTech note, no. 1. Washington, D.C., <http://documents.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-DistributedLedger-Technology-and-Blockchain-Fintech-Notes.pdf>, 19.

⁸¹ See: <https://www.openbazaar.org>.

⁸² See: <https://acceptbitcoin.cash/>.

⁸³ See *inter alia*: https://exmo.com/en/news_view?id=1912.

¹⁹⁴ <https://litecoin.com>.

⁸⁴ A. ROSIC, “What is Litecoin? A Basic Beginners Guide”, December 2017, <https://blockgeeks.com/guides/litecoin/>.

⁸⁵ B. PETERSON, “The founder of litecoin, a cryptocurrency that has gained 650% in 7 months, told us he's worried about all the scams in the nascent market”, January 2018, <http://www.businessinsider.com/litecoin-founder-charlie-lee-on-bitcoin-and-the-cryptocurrencybubble-2018-1?international=true&r=US&IR=T>; G. HILEMAN and M. RAUCHS, “Global Cryptocurrency Benchmarking Study”, Cambridge Centre for Alternative Finance, 2017, https://www.jbs.cam.ac.uk/fileadmin/user_upload/research/centres/alternativefinance/downloads/2017-global-cryptocurrency-benchmarking-study.pdf, 17.



on the Bitcoin BC is about ten minutes⁸⁶, while the average block creation time on the Litecoin blockchain is approximately 2.5 minutes.⁸⁷ Secondly, the total supply limit of Litecoin is with 84 million coins, much higher than the 21 million supply limit of Bitcoin.⁸⁸

Features

Just like Bitcoin, Litecoin runs on an open, permissionless blockchain. All that is needed to join the network is a download of the open-source software code. Litecoin can be bought with fiat currency on a number of cryptocurrency exchanges (e.g. BTCDirect⁸⁹, LiteBit, Coinbase, Anycoin Direct, ...) and can, on those exchanges, just as easily be exchanged for fiat currency. Litecoin is accepted as a means of payment by a gradually growing number of online merchants.⁹⁰ Like Bitcoin, it thus also constitutes a medium of exchange. Just like Bitcoin, Litecoin is a pseudo-anonymous coin. Everyone can verify the chain of LTC transactions on the basis of the public ledger, which would make it technically possible to identify the coins sender and/or receiver.⁹¹

Litecoin and the case of “Atomic Swaps”

It should be noted that the Litecoin community recently introduced a new technology into the crypto-world that is being referred to as the “atomic swap”. Simply put, an atomic swap enables a P2P cross-chain exchange or trade of one

⁸⁶ A transaction generally needs six confirmations or ‘blocks’ before its processed. As a result, the time needed to confirm a transaction on the Bitcoin blockchain normally averages around one hour. However, due to Bitcoin’s rise in popularity, congestions have arisen on the Bitcoin network. In some cases, transaction times have been reported to exceed several hours. See for example: S. BUCHKO, “How Long do Bitcoin Transactions Take?”, December 2017, <https://coincentral.com/how-long-do-bitcoin-transfers-take/>.

⁸⁷ It has been argued that the enabling of faster transactions might pose a security issue, since less thorough checks of the data are required. See: J. MARTINDALE, “What is Litecoin? Here’s everything you need to know”, January 2018, <https://www.digitaltrends.com/computing/what-is-litecoin/>.

⁸⁸ *Ibid.*

⁸⁹ See: <https://btcdirect.eu/>.

⁹⁰ See for an overview of online merchants that accept payments in Litecoins: <https://litecoin.com/services#merchants>.

⁹¹ Cf. F. ETTO, “Know Your Coins: Public vs. Private Cryptocurrencies”, September 2017, <https://www.nasdaq.com/article/know-your-coinspublic-vs-private-cryptocurrencies-cm849588>.



cryptocurrency for another cryptocurrency, without the need of a third-party.⁹² For example, if Anna has one Bitcoin and she wants 100 Litecoins in return, she would normally have to go through an exchange (*i.e.* a third-party) and pay certain fees to get this trade done. Suppose that Jeff owns 100 Litecoins and he instead wants one Bitcoin, then with an atomic swap Anna and Jeff could simply trade their Coins with one another.⁹³ Now, in practice an atomic swap is of course not so easy.

First of all, since it is presently still in its infancy, the implementation of the atomic swap technology requires a lot of IT-knowledge. For example, a link has to be made between the two cryptocurrency blockchains, which requires the implementation of an IT-protocol known in the crypto-community as the “Lightning Protocol”.⁹⁴ In addition, both blockchains have to share the same cryptographic function (for example the SHA-256 function) in order for the atomic swap to be possible.⁹⁵ While we are not there yet in terms of user friendly cross-chain trading, the emergence of the atomic swap technology brings forth a whole new set of challenges.

E. Stellar (XLM)

Like Ripple, Stellar is an open-source, distributed payments infrastructure. Stellar was created in 2014 by one of Ripple’s founding fathers.⁹⁶ Its goal is to connect people to low-cost financial services to fight poverty and develop individual

⁹² See: R. ROSE O’LEARY, “Atomic Action: Will 2018 Be the Year of the Cross-Blockchain Swap?”, January 2020, <https://www.coindesk.com/atomic-action-will-2018-year-cross-blockchain-swap/>.

⁹³ A recent test case completed by the inventor of Litecoin, Mr Charlie Lee, shows that atomic swaps between Litecoin and Bitcoin are indeed possible. See: J. BUCK, “First BTC-LTC Lightning Network Swap Completed, Huge Potential”, November 2017, <https://cointelegraph.com/news/first-btc-ltc-lightning-network-swap-completed-huge-potential>.

⁹⁴ A. ROSIC, “What is Litecoin? A Basic Beginners Guide”, December 2017, <https://blockgeeks.com/guides/litecoin/>.

⁹⁵ See: B. ASOLO, “What are Atomic Swaps?”, May 2018, <https://www.cryptocompare.com/coins/guides/what-are-atomic-swaps/>. This means that theoretically, swaps between a number of Cryptocurrencies could be possible.

⁹⁶ See *inter alia*: C. ADAMS, “Stellar Lumens Vs Ripple”, March 2018, <https://www.investinblockchain.com/stellar-lumens-vs-ripple/>; S. TOWN, “Introduction to Stellar Lumens (XLM) – The Future of Banking”, April 2018, <https://cryptoslate.com/stellar-lumens/>.



potential.⁹⁷ Stellar can also be used to build smart contracts.⁹⁸ It is not based on a PoW or PoS consensus mechanism, but has its own specific consensus protocol.

Stellar is home to the cryptocurrency Lumen (XLM). In short, Lumens are used to pay for transactions on the Stellar network; they contribute to the ability to move money around the world and to conduct transactions between different currencies quickly and securely.⁹⁹

Stellar's development is supported by the non-profit organization Stellar.org (incorporated in 2014 as a non-stock nonprofit corporation in the U.S. State of Delaware), which contributes to the development of tools and social good initiatives around the Stellar network and financial inclusion.¹⁰⁰ Its employees contribute code to the network, but the network itself is said to be completely independent of the organization.¹⁰¹

Similar to Ripple's cryptocurrency XRP, the total supply of Stellar Lumens is "pre-mined". It is held by Stellar.org who has been given the task to distribute Lumens *for free*, in the following manner²¹³:

- 50% is to be given away to individuals (via a direct sign-up program);
- 25% is to be given away to partners (via a specific partnership program);
- 20% is given away to Bitcoin and XRP holders; and
- 5% is reserved for Stellar.org's operational expenses.

The actual distribution is not conducted at once, but over time in a number of rounds.

⁹⁷ See: <https://www.stellar.org/about/>. It should be noted that Stellar's primary target audience (i.e. the individual) is thus totally different from Ripple's (i.e. financial institutions).

⁹⁸ See: <https://www.stellar.org/developers/guides/walkthroughs/stellar-smart-contracts.html>.

⁹⁹ See: <https://www.stellar.org/lumens/>.

¹⁰⁰ See: <https://www.stellar.org/about/mandate/>.

¹⁰¹ See:

<https://www.stellar.org/how-it-works/stellar-basics/>.²¹³

<https://www.stellar.org/about/mandate/>.



Unlike Ripple, Stellar runs on a permissionless blockchain. Anyone can join the network at will and, if certain conditions are met, validate transactions without having to be pre-approved or vetted by any central administrator.¹⁰² Lumens (XLM) can be directly converted into fiat currency through cryptocurrency exchanges such as LiteBit (up to a maximum amount of EUR 500 (per transaction)) or Kraken. At present, so it seems, Lumens (XLM) can only be used to pay for promotional Stellar stickers¹⁰³, breakfast at a local breakfast bar in Arkansas¹⁰⁴ and sprouts¹⁰⁵. While this proves that they are gradually being accepted as a means of payment, they are not a true medium of exchange yet, at least not if you compare them to the coins discussed above. All transactions on the Stellar network are public, but they cannot be linked easily to the identities of their users.¹⁰⁶ As a result, Stellar Lumens (XLM) can be qualified as pseudo-anonymous coins.

D. Cardano (ADA)

Like Ethereum, Cardano is designed and being further developed as a platform on top of which smart contracts and decentralized applications (so-called “Dapps”) can be run.¹⁰⁷ The Cardano project began in 2015¹⁰⁸, and was officially released to the public in September 2017¹⁰⁹. It is based on what is known as the Ouroboros PoS algorithm.¹¹⁰

The Cardano platform is home to the open source decentralized cryptocurrency Ada (ADA).¹¹¹ Ada can be used to send and receive digital funds. It fuels the Cardano platform, just like the currency “ether” fuels the Ethereum platform. In short, Cardano aims to improve scalability, security, governance, and

¹⁰² See: <https://www.stellar.org/how-it-works/stellar-basics/>.

¹⁰³ See: <https://stellar.shop/products>.

¹⁰⁴ See: <https://www.preludebreakfast.com>.

¹⁰⁵ See: <https://www.sproutgrowers.world/product/sprout-grower/>.

¹⁰⁶ See: <https://www.stellar.org/how-it-works/stellar-basics/>.

¹⁰⁷ See: <https://www.cardano.org/en/what-is-cardano/>.

¹⁰⁸ See: <https://www.cardano.org/en/philosophy/>.

¹⁰⁹ E. POSNAK, “On the Origin of Cardano”, December 2017, <https://medium.com/on-the-origin-of-smart-contract-platforms/on-the-originof-cardano-a6ce4033985c>.

¹¹⁰ See: A. KIAYIAS, A. RUSSEL, B. DAVID and R. OLIYNYKOV, “Ouroboros: A Provably Secure Proof-of-Stake Blockchain Protocol”, August 2017, https://iohk.io/research/papers/?_hstc=64163184.47e0ede3cd3368ac41d33e513fea0c1b.1525905532910.1527544936508.1527699072699.9&_hssc=64163184.7.1527699072699&_hsfp=2761973715#9BKRHCSI.

¹¹¹ See: <https://www.cardano.org/en/what-is-cardano/>.



interoperability with traditional financial systems and regulations, by learning from and improving on lessons learned in the Bitcoin and Ethereum communities.¹¹²

What distinguishes Cardano from Ethereum, and from many other cryptocurrencies, is that it is (one of the first) blockchain projects to be developed and designed from a scientific philosophy by a team of leading academics and engineers.¹¹³ Another notable difference is that, at present, the cryptocurrency Ada (ADA) can only be stored in Cardano's own digital wallet Daedalus.¹¹⁴ The Cardano project currently has three main contributors that each have separate roles:

- *the Cardano foundation, based in Switzerland, which aims to standardise, protect and promote the Cardano technology and eco-system;*
- *IOHK, a blockchain engineering company responsible for building the Cardano blockchain; and*
- *Emurgo, an entity responsible for the fostering of commercial applications being built upon the Cardano ecosystem.*

Similar to Ethereum (*cf.* ether), a good number of Ada was “pre-mined” (i.e. mined / created before the coin was launched to the public) by its inventors and sold in a crowdsale to pay for development costs.¹¹⁵ Cardano's Ouroboros PoS algorithm allows the platform to run both permissionless and permissioned blockchains.¹¹⁶ The currency Ada (ADA) can be directly converted into fiat currency. However, we found that, at present, only one cryptocurrency exchange offers the option to directly convert Ada (ADA) into Euro, being LiteBit and only up to a maximum amount of EUR 500 (per transaction). Ada can, on the contrary, easily be exchanged for other cryptocurrencies (for example through an exchange such as Bittrex¹¹⁷ or Binance). These cryptocurrencies can then be converted into fiat currency. Our research shows that, at present, Ada can only be used to pay for

¹¹² E. POSNAK, “On the Origin of Cardano”, December 2017, <https://medium.com/on-the-origin-of-smart-contract-platforms/on-the-originof-cardano-a6ce4033985c>.

¹¹³ See: <https://www.cardano.org/en/what-is-cardano/>.

¹¹⁴ See: <https://www.cardano.org/en/the-daedalus-wallet/>.

¹¹⁵ See: <https://cardanodocs.com/cardano/monetary-policy/>.

¹¹⁶ See: <https://whycardano.com>. See also: A. Ramesh, “Features of various Blockchains: A Comparison”, February 2018, <https://www.xoken.org/blog/features-of-various-blockchains-a-comparison/>.

¹¹⁷ See: <https://bittrex.com/home/markets>.



a very limited number of services (e.g. Hotel Ginebra Barcelona accepts payment in Ada¹¹⁸). While this proves that Ada is gradually being accepted as a means of payment, it is not a true medium of exchange yet, at least not if you compare it to the coins discussed above. This could however change fairly quickly.¹¹⁹ Just like the cryptocurrencies analysed above, Ada can be qualified as a pseudo-anonymous coin.¹²⁰ It is interesting to note however – and as far as we could establish, unparalleled – that know your customer (KYC) standards were applied during the initial offering of Ada.¹²¹

E. Iota (Miota)

IOTA, launched in 2016¹²², is an open-source eco-system where people and machines can transfer value (i.e. money) and/or data without any transaction fees in a trustless, permissionless, and decentralized environment.¹²³

In short, IOTA employs specific technology that is said to be more scalable than the technology behind most other coins, and promises faster transaction speeds.¹²⁴ Like the cryptocurrencies analysed above, IOTA is based on distributed ledger technology. However, unlike those other cryptocurrencies, IOTA's distributed ledger does not consist of transactions grouped into (transaction) "blocks" and stored into sequential chains (i.e. it is not a "blockchain"), but of a stream of individual transactions entangled together.¹²⁵ IOTA is based on what is known as a directed acyclic graph (DAG).¹²⁶ Because transactions are entangled together, this technology is also being referred to as the "Tangle".¹²⁷ Instead of requiring miners to perform computational PoW and validate transaction blocks in exchange for newly "mined" coins, IOTA's network participants create a consensus

¹¹⁸ <https://www.hotelginebra.com/es/welcome/ada/>.

¹¹⁹ Cf. A. ANTONOVICI, "Cardano's Emurgo and SK's Metaps Plus Partner to Accept ADA", May 2018, <https://cryptovest.com/news/cardanosemurgo-and-sks-metaps-plus-partner-to-accept-ada/>.

¹²⁰ See: <https://cardanodocs.com/introduction/#cryptocurrency-basics>.

¹²¹ See: <https://www.cardano.org/en/ada-distribution-audit/>.

¹²² X, "An introduction to IOTA", 2017, <https://iotasupport.com/whatisiota.shtml>.

¹²³ See: <https://www.iota.org/get-started/faqs>.

¹²⁴ *ibid.*

¹²⁵ *ibid.*

¹²⁶ S. LEE, "Explaining Directed Acyclic Graph (DAG), The Real Blockchain 3.0", January 2018, <https://www.forbes.com/sites/shermanlee/2018/01/22/explaining-directed-acyclic-graph-dag-the-real-blockchain-3-0/#68781282180b>.

¹²⁷ See: <https://www.iota.org/get-started/faqs>.



themselves by validating two previous transactions each time they wish to make a new transaction.¹²⁸

At present, IOTA is still very much in its infancy. This is reflected, *inter alia*, by the fact that in order to fully secure the network all transactions have to be digitally signed by a special network node (i.e. the “Coordinator”¹²⁹). Because this affects the network’s true decentralized nature, IOTA’s development team is working hard on an update to remove this special node by the end of 2018.¹³⁰

The IOTA eco-system is being further developed, supported, promoted and maintained by the “IOTA Foundation”¹³¹, a German non-profit foundation, founded by IOTA’s inventors. The total supply of IOTA was created and released to a number of so-called “founder addresses”.¹³² The majority of it was sold by IOTA’s inventors in a crowdsale to pay for development costs and fund the IOTA Foundation.¹³³

IOTA is not based on blockchain technology, but constitutes a different application of distributed ledger technology. It is – to put it in the words of its developers – envisaged to be(come) the *public* and *permissionless* backbone protocol for the internet of things that enables true interoperability between all devices.¹³⁴ The cryptocurrency IOTA (MIOTA) can be directly converted into fiat currency (such as Euro). However, our research shows that, at present, only one cryptocurrency exchange offers the option to directly convert IOTA (MIOTA) into Euro, being CoinFalcon¹³⁵. IOTA can, on the contrary, easily be exchanged for other cryptocurrencies (for example through an exchange such as Binance). These cryptocurrencies can then be converted into fiat currency. It seems that there are

¹²⁸ See: S. POPOV, “The Tangle”, October 2017, http://iotatoken.com/IOTA_Whitepaper.pdf. See also: L. TENNANT, “Improving the Anonymity of the IOTA Cryptocurrency”, October 2017, https://assets.ctfassets.net/r1dr6vzfxhev/6StLLAy9b26eyUG8SGQqeu/e30c20f91e77e54d88b7644658912c7d/Improving_the_Anonymity_of_the_IOTA_Cryptocurrency.pdf, 1.

¹²⁹ See: <https://www.iota.org/get-started/faqs>.

¹³⁰ *Ibid.*

¹³¹ See: <https://www.ethereum.org/foundation>.

¹³² See: X, “IOTA Coin Review”, January 2018, <https://hackernoon.com/iota-coin-review-6a1c73c5cfa3>.

¹³³ X, “An introduction to IOTA”, 2017, <https://iotasupport.com/whatisiota.shtml>.

¹³⁴ See: <https://www.iota.org/get-started/faqs>.

¹³⁵ See: <https://coinfalcon.com>.



currently no (online) merchants that accept IOTA as a means of payment for certain goods or services. IOTA is thus not a medium of exchange. It cannot be ruled out however, that it may become one in the (near) future.¹³⁶ Despite IOTA's unique eco-system, like most cryptocurrencies it has a transparent and publicly available ledger, meaning a IOTA user's counterparty see that user's IOTA balance and parts of IOTA's transaction history.¹³⁷ Just like Bitcoin, IOTA can thus be qualified as a pseudo-anonymous coin.

F. Neo (Neo)

Similar to Ethereum and Cardano, NEO is an open-source blockchain platform on top of which smart contracts and decentralized applications (so-called "Dapps") can be run. NEO, sometimes referred to as the "Chinese Ethereum"¹³⁸, was originally launched under the name "Antshares" in February 2014.¹³⁹ The project was rebranded "NEO" in June 2017.¹⁴⁰ In short, the NEO project is aimed at digitising assets and automating the management of digital assets, in order to create a so-called "smart economy" (i.e. an economy where parties can agree on a contract without the need to trust each other).¹⁴¹

Just like Ethereum (*cf.* "ether"), NEO itself is technically not a cryptocurrency. NEO's native currency is called "GAS". In simple terms, GAS is a fee to be paid to be allowed to utilise NEO's network. One could in fact say that it "fuels" the platform. What is particular about the NEO platform (and distinguishes it from the Ethereum and Cardano platforms) is that holding the digital value "NEO" (which

¹³⁶ Cf. L. TENNANT, "Improving the Anonymity of the IOTA Cryptocurrency", October 2017,

https://assets.ctfassets.net/r1dr6vzfxhev/6StLLAy9b26eyUG8SGQgeu/e30c20f91e77e54d88b7644658912c7d/Improving_the_Anonymity_of_the_IOTA_Cryptocurrency.pdf, 2.

¹³⁷ *Ibid.*

¹³⁸ See for example: J. TUWINER, "Introduction to NEO – An Open Network For Smart Economy", April 2018, <https://cryptoslate.com/introduction-to-neo-an-open-network-for-smart-economy/>.

¹³⁹ See: A. MOSKOV, "Cryptocurrency Industry Spotlight: Who is NEO's Da Hongfei?", January 2018, <https://coincentral.com/cryptocurrencyindustry-spotlight-neos-da-hongfei/>.

¹⁴⁰ See: N. LEVENSON, "NEO versus Ethereum: Why NEO might be 2018's strongest cryptocurrency", December 2017, <https://hackernoon.com/neo-versus-ethereum-why-neo-might-be-2018s-strongest-cryptocurrency-79956138bea3>.

¹⁴¹ See: <https://neo.org>. See also: M. LERIDER, "What is NEO Smart Economy?", August 2017, <https://medium.com/@MalcolmLerider/what-isneo-smart-economy-381a4c6ee286>.



could best be described as some sort of hybrid crypto-asset) automatically generates an amount of GAS over time.¹⁴²

NEO is based on a consensus mechanism known in the crypto-community as the delegated Byzantine Fault Tolerance (dBFT) algorithm, which could potentially support 10.000 transactions per second.¹⁴³ The total supply of NEO was “pre-mined”¹⁴⁴; half of it was sold in a crowdsale and the other half is managed by the NEO Council (i.e. group of the project’s founders) to support development and maintenance of the NEO ecosystem.¹⁴⁵

In order to become a transaction validator (i.e. a node) on the NEO network, a validator candidate has to be (i) selected by NEO’s development team and (ii) voted in by the NEO community (i.e. those who hold NEO).¹⁴⁶ These characteristics are typical for a permissioned blockchain. NEO can be directly converted into fiat currency. However, our research shows that, at present, only one cryptocurrency exchange offers the option to directly convert NEO into Euro, being Anycoin Direct¹⁴⁷.

NEO’s native currency GAS can presently not be directly converted into fiat currency. Both NEO and GAS can, however, easily be exchanged for other cryptocurrencies (for example through an exchange such as Bittrex). These cryptocurrencies can then be converted into fiat currency. While NEO is working

¹⁴² GAS itself can also be individually acquired, for example on the Cryptocurrency Exchange Binance (<https://www.binance.com/>).

¹⁴³ See: <http://docs.neo.org/en-us/index.html>.

¹⁴⁴ See *inter alia*: S. KHATWANI, “NEO Cryptocurrency: Everything You Need to Know about China Ethereum”, December 2017, <https://coinsutra.com/neo-cryptocurrency/>; X, “What is NEO, and what is GAS?”, September 2017, <https://hackernoon.com/what-is-neoand-what-is-gas-5b9828a1aa65>.

¹⁴⁵ X, “What is NEO, and what is GAS?”, September 2017, <https://hackernoon.com/what-is-neo-and-what-is-gas-5b9828a1aa65>.

¹⁴⁶ See *inter alia*: X, “A Definitive Guide To NEO (2nd Edition)”, January 2018, <http://storeofvalueblog.com/posts/a-definitive-guide-to-neo/>; CITY OF ZION, “Coopetition: A New Approach to Decentralization”, December 2017, <https://medium.com/proof-ofworking/decentralization-from-coopetition-b10d7ce3b9d>.

¹⁴⁷ It should be noted that “on paper” the cryptocurrency exchange Bitfinex (<https://www.bitfinex.com>) also offers the option to convert NEO into Euro. However, in practise it proves to be very difficult (to impossible) to actually withdraw such funds from the platform.



very closely with big tech companies like Microsoft¹⁴⁸, its native currency GAS is not a medium of exchange (nor is NEO itself). Contrary to a number of other coins discussed above, our research did not reveal any online merchants willing to accept NEO's coins as a means of payment. Some argue that GAS is in fact not really intended to be a true medium of exchange.¹⁴⁹

However, the same was also said for Ethereum's currency ether (ETH). With that in mind, it cannot be entirely ruled out that GAS (or even NEO itself) may still become a medium of exchange in the future. In essence, NEO's GAS could be qualified as a pseudo-anonymous or pseudonymous coin, just like the coins analysed above. However, NEO's core developers are currently actively working on a concept that would allow coders of smart contracts to tie a so-called "digital identity" to a real world identity.¹⁵⁰ It is not entirely inconceivable – yet at this time still highly unclear – that this technology will also impact GAS's pseudo-anonymous character.¹⁵¹

G. Monero (XMR)

Monero (XMR) is an open-source P2P cryptocurrency "*with a focus on private and censorship-resistant transactions*".¹⁵² It was launched in April 2014¹⁵³ and is based on what is known as the CryptoNote¹⁵⁴ PoW algorithm. Monero has been specifically developed to allow its users to execute transactions in full anonymity.

¹⁴⁸ See for example: H. NASEER, "NEO Launches Dev Competition with \$490,000 Prize Pool, Co-organized by Microsoft", November 2017, <https://cryptovest.com/news/neo-launches-dev-competition-with-490000-prize-pool-co-organized-by-microsoft/>; W. SUBERG, "NEO

¹⁴⁹https://www.reddit.com/r/NEO/comments/6su31n/here_are_some_things_you_should_know_if_you_are/; M. LERIDER, "Clarification on NEO, GAS and Consensus Nodes", August 2017, <https://medium.com/@MalcolmLerider/clarification-on-neo-gas-andconsensus-nodes-aa94d4f4b09>.

¹⁵⁰ See: <https://neo.org>.

¹⁵¹ See for a more elaborate analysis and discussion of this technology: K. SOETEMAN, "Werking dBft via Neo in kaart gebracht", February 2018, <https://www.computable.nl/artikel/achtergrond/technologie/6306817/5182002/werking-dbft-via-neo-in-kaart-gebracht.html>.

¹⁵² <https://getmonero.org/get-started/what-is-monero/>.

¹⁵³ <https://getmonero.org/resources/about/>. See also: C. BOVAIRD, "What to know before trading Monero", May 2017, <https://www.coindesk.com/what-to-know-before-trading-monero/>.

¹⁵⁴ <https://cryptonote.org/whitepaper.pdf>.



It is said to be cryptographically private by default.¹⁵⁵ In particular, it uses cryptography to shield both sending and receiving addresses (*i.e.* so-called ‘keys’¹⁵⁶), as well as transacted amounts.

Monero (XMR) is characterized as being fully fungible. This means that two units of XMR can always be mutually substituted and there can be no blacklisting of certain units of XMR by vendors or exchanges due to their association in previous transactions.¹⁵⁷ Non-fungible cryptocurrencies, like Bitcoin and Litecoin, are theoretically susceptible to blacklisting; if they have been used for an illegal purpose in the past, then such history will be contained in the blockchain forever. Unlike some other Coins, Monero (XMR) has not been pre-mined.

Just like Bitcoin, Monero (XMR) runs on a permissionless blockchain.²⁷⁰ Anyone can join the network at will, without having to be pre-approved or vetted by any central administrator.

Monero (XMR) can be directly converted into fiat currency on a number of cryptocurrency exchanges (e.g. LiteBit, Anycoin Direct, Kraken...) Monero is accepted as a means of payment by a gradually growing number of online merchants.¹⁵⁸ Like Bitcoin, it thus also constitutes a medium of exchange. On a fully transparent blockchain, such as the Bitcoin or Ethereum blockchain, transactions are always openly verifiable and traceable by anyone. In practice – though this will be no easy task – the sending and receiving addresses for such transactions could also be linked to a person's real-life identity.¹⁵⁹ This is where Monero advocates to be different. It positions itself as a secure, private and untraceable cryptocurrency. This high standard of anonymity is achieved using two different techniques:

- *Ring Confidential Transactions (“RingCT”); and*

¹⁵⁵ A. ZAINUDDIN, “Guide on Privacy Coins: Comparison of Anonymous Cryptocurrencies”, 2017, <https://masterthecrypto.com/privacy-coinsanonymous-cryptocurrencies/>.

¹⁵⁶ Also see above under 2.1.2. How a blockchain works: the basics.

¹⁵⁷ <https://getmonero.org/resources/moneropedia/fungibility.html>.

¹⁵⁸ See for an overview of online merchants that accept payments in Monero: <https://getmonero.org/community/merchants/>.

¹⁵⁹ N. VANDEZANDE, *Virtual currencies: a legal framework*, Antwerp, Intersentia, 2018, 57. Also see above under 3.2.1. Bitcoin (BTC).



- *Stealth addresses.*

i. Ring Confidential Transactions

Firstly, Monero makes use of so-called Ring Confidential Transactions. RingCT combine the technique of ring signatures and what is referred to in the crypto-community as the confidential transactions concept:

- Ring signatures combine or 'mix' a user's account keys with public keys obtained from Monero's blockchain to create, what could be called a 'ring' of possible signers¹⁶⁰, meaning outside observers cannot link a signature to a specific user.¹⁶¹ Combined with stealth addresses (see below) they allow to fully obscure the identify of both senders and recipients of XMR;
- Confidential transactions add another layer of privacy to the 'mix' by also concealing the amount of each transaction.¹⁶² Without revealing the actual numbers, they include a cryptographic proof that the sum of the input amounts is the same as the sum of the output amounts.¹⁶³

ii. Stealth Addresses

Secondly, and in addition to RingCT, Monero also makes use of stealth addresses. Stealth addresses are randomly generated, one-time addresses created for each transaction made by the sender on behalf of the recipient. All payments sent to the recipient are routed through these addresses, ensuring there are no links on the blockchain between the sender's and the recipient's address.¹⁶⁴ In other words, stealth addresses prevent linkability on the blockchain. However, without the use of RingCT, the original sender of the coins would still be able to trace the coins if they would be moved by the recipient by identifying outputs on the blockchain. RingCT masks these outputs, making the transaction entirely untraceable.¹⁶⁵

¹⁶⁰ See for more information on this concept:

<https://people.csail.mit.edu/rivest/pubs/RST01.pdf>.

¹⁶¹ C. BOVAIRD, "What to know before trading Monero", May 2017, <https://www.coindesk.com/what-to-know-before-trading-monero/>.

¹⁶² See for more information on this concept:

https://people.xiph.org/~greg/confidential_values.txt.

¹⁶³ A. ZAINUDDIN, "Guide on Privacy Coins: Comparison of Anonymous Cryptocurrencies", 2017, <https://masterthecrypto.com/privacy-coinsanonymous-cryptocurrencies/>.

¹⁶⁴ *Ibid.*

¹⁶⁵ See: C. BOVAIRD, "What to know before trading Monero", May 2017, <https://www.coindesk.com/what-to-know-before-trading-monero/>.



iii. The Kovri-Project

It should be noted that the community of (core) developers and cryptography experts behind Monero is currently working on a project to add yet another layer of privacy to the Monero ecosystem by routing and encrypting XMR transactions via I2P Invisible Internet Project nodes.¹⁶⁶ The use of I2P will obfuscate a transactor's IP address and provide further protection against network monitoring. This project, of which an alpha version is currently in the works, is better known in the cryptocommunity as the Kovri-project.¹⁶⁷

H. Dash (DASH)

Dash (DASH), formerly known as Darkcoin¹⁶⁸, is an open source P2P privacy-centric cryptocurrency.¹⁶⁹ It was first launched in January 2014 and is based on what is known as the X11 PoW algorithm.¹⁷⁰ What is specific to Dash, and makes it different from most other coins, is that it has a two-tier network. Dash's blockchain is secured via so-called "masternodes" in addition to the PoW done by miners.¹⁷¹ In short, a masternode is a server connected to the Dash network which guarantees a certain minimum level of performance and functionality to perform certain tasks related to PrivateSend and InstantSend (Dash's anonymity and instant transaction features).¹⁷²

Transactions with traditional cryptocurrencies can be very time-consuming (i.e. they can take anywhere between a few minutes and more than one hour). This is due to the fact that enough blocks have to pass to ensure that a transaction is irreversible and at the same time not an attempt to double-spend money that has

¹⁶⁶ "I2P is an anonymous overlay network - a network within a network. It is intended to protect communication from dragnet surveillance and monitoring by third parties such as Internet Service Providers" – see: <https://geti2p.net/en/>.

¹⁶⁷ Source: <https://getkovri.org>, accessed on 5th December 2021

¹⁶⁸ S. HIGGINS, "How True Anonymity Made Darkcoin King of the Altcoins", May 2014, <https://www.coindesk.com/true-anonymity-darkcoinking-altcoins/>.

¹⁶⁹ See Dash whitepaper: <https://github.com/dashpay/dash/wiki/Whitepaper>.

¹⁷⁰ See: <https://docs.dash.org/en/latest/introduction/features.html>.

¹⁷¹ See: <https://docs.dash.org/en/latest/masternodes/understanding.html>.

¹⁷² *Ibid.*



already been spent.¹⁷³ Dash tackles this issue utilising its masternode network. Masternodes can be called upon to form voting quorums to check whether or not a submitted transaction is valid and if it is, “*the masternodes ‘lock’ the inputs for the transaction and broadcast this information to the network, effectively promising that the transaction will be included in subsequently mined blocks and not allowing any other spending of these inputs during the confirmation time period*”. As a result Dash is said to be able to compete with nearly instantaneous transaction systems, such as credit cards.²⁸⁷

Like Monero, Dash runs on a permissionless blockchain.¹⁷⁴ Anyone can join the network at will, without having to be pre-approved or vetted by any central administrator. Dash (DASH) can be directly converted into fiat currency through various cryptocurrency exchanges (e.g. Anycoin Direct, Kraken...) Just like Monero, Dash is being accepted as a means of payment by a steadily growing number of online merchants.¹⁷⁵ As a result Dash also constitutes a medium of exchange. Like Bitcoin’s blockchain, Dash’s blockchain is transparent by default, which means that generally speaking transactions are always openly verifiable and traceable on the blockchain. To give its users true financial privacy, Dash offers the option to use a feature called PrivateSend. PrivateSend obscures the origins of a user’s funds through a process known as “mixing”.

In conclusion, Although several sources have developed a regulatory stance on cryptocurrency (Global Legal Research Center 2018; Bitcoin Market Journal 2018; CoinStaker 2018), a systematic investigation of the policy, economic, and institutional factors influencing policy choice has not been conducted. As a first step, we compose an index of *de jure* openness to cryptocurrency in 218 economies, using the current legal and regulatory status of cryptocurrency compiled in 2018. We categorize policy stance into “banned,” “regulated,” and

¹⁷³ See: <https://docs.dash.org/en/latest/introduction/features.html#instantsend>.

¹⁷⁴ See: S. GOLDBERG, “Mythbusting: Blockchain and Cryptocurrencies Edition”, May 2018, <http://paymentsjournal.com/mythbustingblockchain-and-cryptocurrencies-edition/>.

¹⁷⁵ See for an overview of online merchants that accept payments in Dash:

<https://www.dash.org/merchants/>.

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See:

<https://docs.dash.org/en/latest/introduction/features.html#privatesend>.



“permitted” and investigate its determinants using a cross-sectional ordered probit model.



Three

IMPACT OF CRYPTO CURRENCY IN UGANDA

Introduction.

Cryptocurrency is an electronic token, which originates from the need for direct peer-to-peer online payments.¹⁷⁶ The most widely used and known cryptocurrency is bitcoin, introduced by an unknown developer or a group of developers with the pseudonym Satoshi Nakamura. It uses a decentralized public ledger to record ownership and transfers of value. The innovation behind cryptocurrency is that transactions are verified by several “miners,” who solve a complicated cryptographic problem to verify the ownership of the cryptocurrency and the subsequent transfer.¹⁷⁷ The miner who solves the cryptographic problem first and validates the transaction receives cryptocurrency as remuneration. The mining process is an open source program that can be accessed by the public. The peer-to-peer verification system bypasses typical trusted third parties such as a bank or a credit card company. Various innovations in cryptocurrency have emerged since bitcoin rose to popularity, thereby broadening the definition of cryptocurrency. While some central banks are mulling over establishing their own cryptocurrency, the industry is mainly a market-driven phenomenon.¹⁷⁸

The archetypical cryptocurrency was Bitcoin which had a value that fluctuated between USD 20,000 to USD 8,000 in just a matter of hours. Even though it was arguable that the Uganda shilling could equally lose value, a currency like the

¹⁷⁶ Peters et al. 2015.

¹⁷⁷ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁷⁸ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



Uganda shilling only depreciated by a rate of about 5% per year.¹⁷⁹ With Bitcoin, the depreciation could go up to 60% in a very short period of time.⁸⁰ Bitcoin also failed as a medium of exchange. For something to qualify as medium of exchange it needed to be acceptable by both parties (the seller and the purchaser) in a transaction. The United States dollar, for example, was a medium of exchange across the globe because it was acceptable to parties in transactions. Cryptocurrencies are not yet fully acceptable as a medium of exchange. He noted that the Policy Makers' workshop was the start of the discussion about whether this situation could change, and whether cryptocurrencies could be considered as a medium of exchange. Perhaps in a few months' time, everyone could be using Bitcoin as a medium of exchange, but up until that point, it was not appropriate (from a banking perspective) to call it a currency. A third issue is whether cryptocurrencies could function as a unit of account; whether they were recognised as a monetary measurement of the value of goods, assets or services. Although business may trade in cryptocurrencies, very few would price their products using cryptocurrencies as a measure. Most firms would still value their produces in fiat currencies. Moreover, having units of accounts measures in cryptocurrencies would cause confusion among users or investors where multiple cryptocurrencies were in operation simultaneously.

Cryptocurrency in its current state is not considered a substitute for money. One of the largest points of contention regarding its value comes from the fact that it is not issued by any sovereign authority, thus its intrinsic value is questionable. Money has three basic features—a unit of account, a generally accepted medium of exchange, and a stable store of value. Cryptocurrency cannot take the role of a unit of account and a store of value because the market valuation of cryptocurrency is

¹⁷⁹ Martin Luther Oketch, "Uganda Shilling depreciated by 5.5 % in 2016, says BoU," Daily Monitor, January 4 2017, at <http://www.monitor.co.ug/Business/Uganda-Shilling-depreciated-by-5-5---in-2016--says-BoU/688322-3505632-bcgk3j/index.html>



characterized by large volatility in prices. Bitcoin, the largest cryptocurrency in terms of market capitalization¹⁸⁰, saw its value rise in December 2017, before subsequently losing 30% of its value in December 2018¹⁸¹. The unenforceable nature of cryptocurrency transactions in many countries also prevents it from becoming a common means of payment.

In its beginnings, cryptocurrency was used as a payment instrument.¹⁸² Since cryptocurrencies use distributed ledger systems that bypass intermediaries, they can potentially reduce the cost of international transfers, including remittances. Lower transaction costs can ultimately contribute to financial development and increased financial access. Thus, while the large uncertainty over the value of cryptocurrency currently prevents it from being recognized as a currency that functions as a unit of account or a store of value, it is largely used for payment that promises anonymity and the elimination of intermediation costs.

As cryptocurrency gained more recognition in the financial sector, market players began to use it as a speculative investment asset. Similarly to other financial instruments, cryptocurrency began to be traded in cryptocurrency exchanges. Bitcoin, holding the largest share of the cryptocurrency market, is mainly used as a speculative instrument rather than an alternative currency.¹⁸³ Speculative trading is conducted in exchanges where consumers can buy, sell, and exchange cryptocurrencies using dollars, euros, or yen, or other cryptocurrencies. Currently, over 200 exchanges support cryptocurrency trading all over the world.¹⁸⁴ The major exchanges are located in countries such as, the US, the Republic of Korea, and Samoa, among others.¹⁸⁵

Despite the recognition of policy makers of the risks of cryptocurrency, the policy stance on cryptocurrency among countries remains heterogeneous, with some countries being open to its use, silent in terms of regulation, or explicit in its prohibition. The Global Legal Research Center (2018) provides a comprehensive report on the legal and policy landscape surrounding cryptocurrency. While some countries ban cryptocurrency outright¹⁸⁶ most countries neither regulate nor promote it. Italy, Australia, and Japan, among other countries, require the

¹⁸⁰ Coinmarketcap.com as of 2017

¹⁸¹ Kollwe 2018

¹⁸² (Farell 2015).

¹⁸³ Baur, Hong, and Lee (2018)

¹⁸⁴ (Hansen 2018).

¹⁸⁵¹⁸⁵ (Hansen 2018).

¹⁸⁶ E.g Nepal, Pakistan, Viet Nam, etc,



registration and licensing of cryptocurrency operations. Meanwhile, the report shows that the Isle of Man and Mexico allow the use of cryptocurrency as a means of payment.

An evaluation of the impact of bitcoin technology in Uganda

It is noteworthy that this technology was adapted to suit Uganda, the question of the nomenclature is important to making distributed ledger technologies more acceptable. For example, the Luganda word for ‘the Internet’ could be translated as ‘Omutimbagano’. The translation would of course depend on what participants concluded that cryptocurrencies actually were: securities, commodities, or currencies? It is thus suggested that the nomenclature and other legal questions need to be decided basing on questions relating to proof of ownership and contractual rights, in short, new ways of doing old things¹⁸⁷.

Terming crypto currencies as “currencies” poses a major challenge to law makers as this is not representative of their true character. Kirunda opines that it was better to describe them as a “digital assets frameworks” as this might be more representative of the nature in which they were used. Such a term might lead to less hostility from government regulators¹⁸⁸. There was an ongoing debate on this,¹⁸⁹ but it was important to understand how cryptocurrencies worked and the different types of tokens. There three types of crypto-tokens: Assets backed tokens, utility tokens and cash-based tokens were all distinct and functioned differently. The challenges posed by each ought to be addressed uniquely and separately.

¹⁸⁷ F.K Mpanga - Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁸⁸ Robert Kirunda - Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁸⁹ Nathan Rose, “Crypto Assets, Cryptocurrency – What’s In A Name?” Citizens of the World, 5th February 2018, at <http://citizensoftheworld.io/crypto-assets>



It is important that before regulation can be made, a policy should first come in place. The policy has to precede the regulation otherwise we could end up with scenarios like those of the ill- planned tax on social med which had led to protests among the public. When the Internet was in its infancy, the idea of email seemed foreign as there were concerns about how it would impact on the post office and so on. It was viewed as disruptive technology. If email had been banned, he asked how the ban would have been enforced and successfully implemented. Now years down the road, the post office was seeing a revival as it now supported delivery of items through e-commerce done on the Internet. Policy makers should be careful to distinguish between risks and challenges. Some risks are genuine, but other concerns are just about the disruptive nature of the cryptocurrencies.

Central banks, are designed to supervise over and monitor the operation of financial institutions in Uganda. The bitcoin system although lacking a centralized system of governance, has an effect on the economy and financial operations thereunder which puts it under their control. The central bank may be currently skeptical about the rise of crypto currencies as well as new financial innovations but this is important to enable it fulfil its obligation to protect the interest of the depositors.¹⁹⁰

However, it is imminent that for as long as cryptocurrencies continue to be defined as a “currency” then there was bound to be a clash with Bank of Uganda, because the definition of a currency had certain characteristics such as a store of value, a medium of exchange and a unit of account.¹⁹¹ The archetypical cryptocurrency was

¹⁹⁰ Mr Arnold Bagugwagye, Financial Markets Department- central bank of Uganda; Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁹¹ Department of Land Registration, *Guidelines on Deposit of Documents for Registration at the Ministry Zonal Offices*, Ministry of Lands Housing and Urban Development, 2nd July 2018, <http://mlhud.go.ug/wpcontent/uploads/2015/09/PN-4.pdf> ¹¹¹ Electronic Transaction Act No 8 of 2011



Bitcoin which had a value that fluctuated between USD 20,000 to USD 8,000 in just a matter of hours. Even though it was arguable that the Uganda shilling could equally lose value, a currency like the Uganda shilling only depreciated by a rate of about 5% per year. With Bitcoin, the depreciation could go up to 60% in a very short period of time. Bitcoin also failed as a medium of exchange. For something to qualify as medium of exchange it needed to be acceptable by both parties (the seller and the purchaser) in a transaction. The United States dollar, for example, was a medium of exchange across the globe because it was acceptable to parties in transactions. Cryptocurrencies were not yet fully acceptable as a medium of exchange. *Arnold Bagugwagye*¹⁹² notes that the Policy Makers' workshop was the start of the discussion about whether this situation could change, and whether cryptocurrencies could be considered as a medium of exchange. Perhaps in a few months' time, everyone could be using Bitcoin as a medium of exchange, but up until that point, it was not appropriate (from a banking perspective) to call it a currency. A third issue was whether cryptocurrencies could function as a unit of account; whether they were recognised as a monetary measurement of the value of goods, assets or services. Although business may trade in cryptocurrencies, very few would price their products using cryptocurrencies as a measure. Most firms would still value their produces in fiat currencies. Moreover, having units of accounts measures in cryptocurrencies would cause confusion among users or investors where multiple cryptocurrencies were in operation simultaneously.

In other concerns, although some countries have made progress in the adoption rate of cryptocurrencies, with some like Kenya and South Africa even having cryptocurrency Automatic Teller Machines (ATMs), the lack of robust

¹⁹² Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



mechanisms like exchange rates at which cryptocurrencies could be exchanged for fiat currency remained a problem as it was not clear what exchange rates would be used at the time of the transaction. There were also jurisdictional differences in the acceptability of cryptocurrencies, with some countries like Bangladesh declaring them illegal.

Therefore, it is noteworthy that from the regulatory perspective, there is need for further research on these technologies and their socio-economic impact, in order to better and try to understand why some jurisdictions, even those where this whole concept appears to have started, were cautious about giving cryptocurrencies legal recognition as a currency¹⁹³. According to Arnold B¹⁹⁴, The continuous reference to such coins as “currency” causes a dilemma in the area of regulation yet if it was also called a shilling, it would fuse easily into the existing legal framework.

It is therefore recommended that a rebranding be effected to this effect to allow state control over crypto currency transactions plus easy legislative control in line with the market forces of demand and supply.

Uncertainty over security, the legality of its transactions, and the extent of consumer and investor protection has kept policy makers wary about its operations. Because of this, many central banks around the world try to inform the public about the difference between legal tender, which is backed by their central bank, and cryptocurrency, which is neither backed by the domestic nor other foreign monetary authorities. Furthermore, the combination of the speculative nature of cryptocurrency and its lack of supervision poses a threat to both investors and consumers. Although the cryptocurrency market itself is not large enough to pose a global risk at this time¹⁹⁵, it may still pose risks to consumers and investors in smaller countries where cryptocurrencies are being used.

¹⁹³ Mr Arnold Bagugwagye, Financial Markets Department- central bank of Uganda; Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁹⁴ *ibid*

¹⁹⁵ (FSB 2018),



For countries where cryptocurrency transactions take place, policy makers also need to consider other policy or legal issues. In particular, the anonymous nature of cryptocurrency leads to concerns about using it to finance illegal activities such as trade in illegal substances, tax evasion, and financing of terrorism. Thus, particular regulations are put in place on top of existing laws on commercial activities. The Global Legal Research Center (2018) reports that the Republic of Korea, for instance, prohibits the use of anonymous bank accounts in cryptocurrency trading. The government of the Republic of Korea also requires banks to report activities deemed suspicious under the regulations in its thrust to prevent money laundering. In addition, the report shows another example of cryptocurrency regulation with the licensing requirement of Israel's Supervision of Financial Services for financial asset service providers, which includes virtual currency. While cryptocurrency operations have started to face registration and licensing requirements, they have remained outside most supervisory reach, thus they maintain that users of cryptocurrency do so at their own risk.

As opportunities and threats connected with cryptocurrencies become clearer and as news about cryptocurrency operations unfolds, policy makers adopt their attitudes and policy stance toward cryptocurrency. For instance, the Global Legal Research Center (2018) reports that Japan revised its regulations on cryptocurrency to respond to the increasing speculation in the market. In April 2017, Japan revised the Payment Services Act to explicitly define cryptocurrency and to require the registration of dealers who exchange cryptocurrency with legal tender such as yen.¹⁹⁶ In March 2018, Japanese regulators issued business improvement orders to cryptocurrency exchanges as a response to the incident when Coincheck, one of the biggest cryptocurrency exchanges in Japan, lost about \$400 million in cryptocurrency. From this episode, we see that regulators can be quick to respond to the threats that unfold from new financial technology.

In contrast, some policy makers decide not to regulate cryptocurrency specifically and allow existing laws on commodities or financial instruments to govern the use of cryptocurrency. The regulations compiled by the Global Legal Research Center (2018) present several examples. Austria considers cryptocurrency to be a business asset, classified under other intangible commodities. The Czech Republic similarly considers cryptocurrency to be a commodity, which explains their "liberal approach" to cryptocurrency, essentially neither promoting nor hindering its

¹⁹⁶ (Jiji 2018).



development as they would do in other commodity trading. Australia sees cryptocurrency as assets for the purpose of capital gains tax. Anguilla treats cryptocurrency that functions as securities to be regulated under the existing securities framework. Meanwhile, some other countries, such as Bermuda and the Bahamas, currently do not have specific regulations on cryptocurrency and are in the process of exploring their regulatory or legislative options.

The risks of cryptocurrency are undisputed but the policies toward it vary widely. With its increasing presence in financial markets, cryptocurrency cannot be ignored, particularly by policy makers. Policy makers have been vocal about giving warnings but not all have been active in banning or regulating it. Even the policy choice of no regulation is a policy decision in itself in that policy makers are not prohibiting, but essentially allowing people or firms to engage in cryptocurrency transactions at their own risk. In the next section, we discuss how some policy choices or legal frameworks affect the attitudes of policy makers in permitting or regulating cryptocurrency.

That said; the government of Uganda does not recognize any crypto-currency as legal tender in Uganda. The government of Uganda has not licensed any organization in Uganda to sell crypto-currencies or to facilitate the trade in crypto-currencies and so these organizations are not regulated by the Government or any of its agencies. As such, unlike other owners of financial assets who are protected by Government regulation, holders of crypto-currencies in Uganda do not enjoy any consumer protection should they lose the value assigned to their holdings of crypto-currencies, or should organization facilitating the use, holding or trading of crypto-currencies fail for whatever reason to deliver the services or value they have promised.

The second round table event hosted on the 6th of July 2017 at UNAFRI culminated into the Declaration on Fundamental Principles on the Regulation of Cryptocurrencies and the Blockchain (Digital Ledger Technologies) in Uganda² that was adopted by participants in 2017. The Declaration itself is based on principles of a technical, ethical, legal, political and socio-cultural nature, that draw



on existing policies, regulatory mechanisms, and the legal frameworks at the local, regional and global level. The principles are summarised here¹⁹⁷:

1. Automating regulatory compliance underpinned by the principles of interoperability, scalability, cybersecurity, accountability, transparency and trust.
2. Use of the Blockchain given its benefits (among others) of widening financial inclusion through faster, transparent micro-payments.
3. Technological neutrality in the drafting of legislation, and as a tool in the interpretation of legislation by the courts.
4. Ethical principles of ‘do no harm’, of fairness, of transparency, of trust, of non-deception and of non-discrimination that protects consumers and encourages socially desirable business. Ethical consumer behaviour (like meeting tax obligations) is to be encouraged.
5. Data security principles of consumer protection underpinned by legal principles on the processing of personal data and the processing of sensitive data.
6. Data protection principles: data subject’s rights including data privacy protected under sector specific laws.
7. Legality principle: the constitutional principle of legality should be broadened in order to include the oral customary norms and sanctions. The legality principle can also be achieved through the application of existing laws.

¹⁹⁷ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



8. Principles of Clarity and Certainty on the definition of terms like cryptocurrencies and the Blockchain, and the qualifying and non-qualifying technology activities.

9. Proportionality principle: compliance requirements should pass the proportionality test whereby the purpose for regulation is legitimate, the means by which the regulators objectives are pursued are laid down in the law, the regulatory intervention (measure) is correctly directed to its technological target, and the regulatory measure does not exceed what is necessary to attain the legitimate objective.¹⁹⁸

Some members of the elite and academia reviewed the Kampala Declaration on Fundamental Principles on the Regulation of Cryptocurrencies and the Blockchain (Digital Ledger Technologies) against the backdrop of the just concluded African Blockchain Conference¹⁹⁹ that was hosted in Kampala on the 23rd and 24th of May 2018. There, the President of Uganda H.E. Mr. Yoweri K. Museveni who expressed his interest in and support for the use of the Blockchain and cryptocurrencies in Africa, cautioned against the adoption of a “dogmatic” approach to financial sector development that would be counterproductive to economic development. The Governor of the Central Bank of Uganda, Professor Emmanuel Mutebile has highlighted some of the risks that cryptocurrencies pose to the public due to their pseudonymous nature that could facilitate tax evasion and the demand for payments in cryptocurrencies using ransomware. There was also the issue of consumer protection and prevention of the arbitrary use of discretionary power by regulators.²⁰⁰ The two positions illustrated the tensions for

¹⁹⁸ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

¹⁹⁹ <https://africanblockchain.org/>

²⁰⁰ The Observer team, “Museveni, Mutebile disagree on cryptocurrencies” The Observer, 23rd May 2018 at <https://observer.ug/special-editions/57755-museveni-mutebile-disagree-on->



policy makers between promoting innovation and protecting the public from those who misuse the technologies. Engaging the public in this debate was seen as key to developing effective public facing regulation.

Regarding the use of certain platforms for various sorts of services that could either encourage or facilitate criminal activity. The regulatory concern for policy makers was how these platforms could be regulated given that people embraced these new technologies faster than law enforcement officials working in the criminal justice system. Some criminals were even more sophisticated than the law enforcement agencies that were trying to investigate and prosecute them.

There are five major areas where cryptocurrencies posed a risk in terms of criminal activities: tax evasion, money laundering, fraud, covert transactions and extortion. At the time of the workshop (July 2018), the Office of the Director of Public Prosecutions (DPP) had not yet prosecuted any cryptocurrency related criminal cases in Uganda, yet around the globe, criminal activities were committed involving cryptocurrencies. One such incident was in December 2017 in Ukraine where Pavel Lerner a Blockchain expert working with a UK based exchange was kidnapped and the company forced to pay one million US dollars in ransom, but in Bitcoin.²⁰¹ This case was similar to other ransomware attacks in 2017 involving criminals hacking websites of service providers and demanding for payment in

cryptocurrencies.html; and on NTV Uganda, May 23, 2018, https://www.youtube.com/watch?v=fxSP_5MI9MM.

²⁰¹ Russia's bitcoin expert Pavel Lerner freed after kidnapping, *DW*, 30 December 2017,

<https://www.dw.com/en/russias-bitcoin-expert-pavel-lerner-freed-after-kidnapping/a-41975644>



Bitcoin. Another example was the risk of theft of the cryptocurrency itself, even though the proponents of cryptocurrencies would argue that it was very safe and difficult for one to steal. Yet here had been reports of theft of cryptocurrencies, with one report stating that over 1.2 billion US dollars' worth of cryptocurrencies had been stolen since 2017. If such a crime were to happen in Uganda, the challenges faced by prosecutors like gathering of evidence given the attributes of cryptocurrency like anonymity, remained unresolved.

Any policies in this area would have to protect the consumers and investors who may not be familiar with how the technology works. Uganda can borrow a leaf from Japan whose Financial Services Agency now regulated cryptocurrency trading and exchanges through amendments to the Japanese Payment Services Act. All exchanges had to register with the Agency, and virtual currency exchanges were treated as “accountable” to their customers. Being accountable meant having to meet compliance requirements on know-your-customer, and anti-money laundering and terrorism financing regulations.²⁰² He noted that in Japan after the passing of the amendment that required cryptocurrency exchanges to report suspicious transactions, over 170 cases of suspected money laundering had been reported within 6 months.²⁰³ In borrowing a leaf from Japan, Uganda could require the firms, businesses or individuals who traded in or exchanged cryptocurrencies to be named as accountable persons under the Anti-Money Laundering Act. That way, accountable persons had to comply with due diligence requirements like

²⁰² Amy Castor, “How Japan Is Creating a Template for Cryptocurrency Regulation”, Bitcoin Magazine, 11th May 2018 at <https://bitcoinmagazine.com/articles/how-japan-creating-template-cryptocurrency-regulation/>

²⁰³ Jiji Kyodo, “170 money-laundering cases in Japan involved cryptocurrency in six months since April”, *Japan Times*, 30th November 2017 at

<https://www.japantimes.co.jp/news/2017/11/30/national/crime-legal/police-say-170cryptocurrency-laundering-cases-suspected-six-months-april/#.W37qJbhRWUk>⁸⁹
<http://www.ulrc.go.ug/>



establishing a client's source of income and reporting suspicious transactions to the relevant authorities.

A useful starting point is the development of strategies and policies that would protect consumers from criminal behaviour, and also prevent the platforms from being used as tools for the furtherance of criminal enterprise.

There is the need for mass education so that ordinary people to be able to understand what the policy discussions were about. Public facing policy making was important if laws were to be understood from the perspective of law making²⁰⁴, regulation and policy. The National Payments Bill in 2017 that was nearing completion included the principles as agreed by the Cabinet, but what was not clear was whether the Bill addressed all the issues of concern to participants. Pertinent questions included what the law or regulation ought to cover, and whether the law should take the form of an amendment to the principal legislation already in place. Other questions related to whether the existing laws were applicable to cryptocurrencies and the Blockchain, or whether sector specific laws were required.

Very few countries she noted, had specific legislation in this area.²⁰⁵ Most countries which had developed a friendly approach, had welcomed

²⁰⁴ Jeroline Akubu, AG Commissioner of law reform - Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

²⁰⁵ One notable example is Malta. On 26th June 2018, the Maltese Parliament unanimously approved three bills: Bill No 43, *The Innovation Technology Arrangements and Services Bill* which focused on registering exchanges in Malta; Bill No 44, *The Virtual Financial Assets Bill* to regulate Initial Virtual Financial Asset Offerings with new companies required to provide white papers on their technology offerings; and Bill No 45, *The Malta Digital Innovation Authority Bill*, that set up the regulatory body -Malta Digital Innovation Authority. <https://parlament.mt/13th-leg/plenarysession/ps-136-26062018-0600-pm/>. Freeman Lewin and Alexandra Levin Kramer, "Bright Future Ahead for Global Blockchain Legislation", *Blockchain Blog*,



cryptocurrencies and were trying to see how to work with them and how to draft laws to protect investors and other people from risks. The areas ranged from taxation, data protection, and fraud. If legislation as a regulatory tool was the preferred option for policy makers, then the jurisdictional issues that arose in cross border activities were important, as were issues relating to taxonomy, such as whether cryptocurrencies could be categorized as currency. In Germany, for example, cryptocurrencies were not classified a commodity, a stock, or as legal tender, but as private money.

It has been a common concern by some debators on whether digital innovations were for the common good of the people, and if so, how they could be harnessed to foster socio-economic development and build safer community networks. Equally important was the question of how to regulate those firms engaged in the business of developing, marketing and selling these innovative products. Since the previous roundtable discussions, there was enough information about cryptocurrencies to convince all stakeholders about the need for regulation. The critical issue as of now is to acknowledge the potential use of cryptocurrencies as against the reality of its limits. Given that these innovative technologies were here to stay, there is need to set in place a mechanism to regulate its adoption and use in transactions and to provide guidance to avoid unintended offences such as money laundering schemes and illicit activities.²⁰⁶

Challenges faced under the bitcoin technology

The May 2018 BTC Global scam in South Africa that cost investors about a billion Rand, illustrated how companies were able to act fraudulently by convincing people to invest in digital tokens while promising an unachievably high interest

<https://www.ckrlaw.com/blockchain-blog/2018/07/06/bright-future-aheadfor-global-blockchain-legislation/>

²⁰⁶ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



rate, and then steal the depositors' money. In June 2018, Bithumb, a South Korean crypto-exchange and one of the largest in the cryptocurrency world suffered an attack in which over 30 million dollars' worth of cryptocurrency was allegedly stolen.²⁰⁷ In both instances, it was not clear if investors would get all their money back. Theft occurred where a private key was stolen, or where the owner gave the details of their digital wallet to the cybercriminal and their cryptocurrency was stolen. This happened in the Bithumb hack, where the victims handed over their details genuinely thinking that they were dealing with the managers of their account. Unethical behaviour came in a range of shades with some businesses offering unsuspecting customers high rates and falsely claiming this was the customer's opportunity to climb onto the economic ladder. Dr Mapp's discussions with some cryptocurrency start-ups had shown that the lack of a charge back facility where incorrect or disputed transactions could be cancelled, was an area of concern as crypto tokens had sometimes been sent in error to the wrong person and the transaction could not always be reversed in the same way as those for fiat transactions.

For firms and businesses, the risk posed to data security was real. Every hack meant that people's data including their user names, email addresses, physical addresses and telephone numbers had probably ended up on the dark web. Once data was compromised, it was difficult to get compensation. In the Bithumb scenario, the amount being offered in compensation for personal information leakage was little – about 870 dollars per person even where damage or harm has been proven. This problem was worsened by the lack of regulation that recognised these kinds of

²⁰⁷ Woflie Zhao, "Bithumb \$31 Million Crypto Exchange Hack: What We Know (And Don't)" CoinDesk, 20 June 2018 at <https://www.coindesk.com/bithumb-exchanges-31-million-hack-know-dont-know>



currencies in South Korea at the time. Equally, for regulators (and governments), one concern was the use of cryptocurrencies for money laundering and terrorism financing. In fact, India was so concerned about this, that they had started to clamp down on cryptocurrency transactions. The worry of the Central Bank was that digital tokens issued by the private parties could undermine the Anti Money Laundering and FATF framework.²⁰⁸

Cross border jurisdiction also posed problems for governments in particular the fact that crypto assets issued in countries with enabling laws (like Japan) could be transferred to Africa, with no legislation or policies in place, yet their origins were difficult to trace.²⁰⁹ Switzerland was a popular country for opening up crypto asset head offices as it had one of the most permissive regimes in the world. Once a head office was set up under Swiss law, the product was then launched in an African state that often lacked a robust consumer protection regime or regulatory framework and the product was sold or traded usually without an operating licence. Some start-ups working in emerging economies seemed reluctant to seek licensing or to operate through a registered company especially in African states. Setting up a head office in another country but operating without a licence in an African country, indicated a gap in the African regulatory and policy space that left

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Transcript of Reserve Bank of India's (RBI) First Bi-Monthly Policy Press Conference, 5 April 2018 at https://www.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=3465. A ban by the RBI on financial institutions providing services to cryptocurrency firms/businesses was upheld by the Supreme Court of India-Upmanyu Trivedi and Rahul Satija "Cryptocurrency Virtually Outlawed in India as Top Court Backs Ban" Bloomberg, 3rd July 2018 at

<https://www.bloomberg.com/news/articles/2018-07-03/india-s-banking-ban-on-cryptocurrency-survives-courtchallenge>. Similar concerns were raised by Morocco's currency regulator Office des Change on 20th November 2017 when it banned transactions in cryptocurrencies- MB Staff, "Morocco bans all cryptocurrencies including Bitcoin" th Mena Bytes 28 November 2017 at <https://www.menabytes.com/morocco-crypto-ban/>

²⁰⁹ Desné Masi, "Why it would be in everybody's interests to regulate cryptocurrencies" The Conversation, 11 February 2018 at <https://theconversation.com/why-it-would-be-in-everybodys-interests-to-regulate-cryptocurrencies->



ordinary people vulnerable to exploitation, and to lack of data protection and of data privacy among other risks. Looking at the example of the Swiss company and Microsoft that were offering the block chain services to Rwanda Land registry, it was not clear how data security and data privacy would be assured with questions of where personal data of users would be processed - in Switzerland, in Rwanda, the country receiving the Blockchain database, or in a third country? Secondly, what legal regime would apply- the African Convention on Cyber Security and Data Protection, or another regional or national laws? Moreover, the liability of parties in case of a breach by the ‘donor’, ‘recipient’ or third country where none of the countries had ratified or acceded to the African Conventions, was unclear. Such areas needed to be given careful consideration before such multi-state systems were launched in Africa.

The Blockchain also posed some challenges to crypto business due to its immutability (lack of change) like that of information privacy, of choice of procedure across jurisdictions, and liability. Access to information was important, as the immutable nature of Blockchain needed to be protected. Even so, due to concerns about privacy, some businesses may not want their Know Your Customer (KYC) documentation or customers digital identity to be available to other businesses with which they did not have (or had suspended) a business relationship. Similarly, if business operated in different jurisdictions, this created a quandary regarding which regulations to apply. Then there was the issue of liability where the customer had themselves executed a fraudulent transaction, and it is not clear who should be responsible for re-verifying the client’s digital identity and keeping the distributed database updated. A related question was how often the



reverification process should be carried out. Customers themselves posed a problem to the Blockchain due to fraudulent use of the system²¹⁰.

The lack of policy, law and regulations in many African countries on the status of crypto assets like cryptocurrency, and of rights of users, of duties, and obligations of businesses (and individuals), and measures for consumer protection created a grey regulatory zone. As Mr Kisembo had pointed out, Uganda was the first country in Africa to host a round table in 2016 to discuss questions surrounding policy making and the regulatory landscape, and to agree on some form of instructive guidance which was then developed in the 2017 Kampala Declaration on Fundamental Principles of regulation drawn from technology, law, policy and sociology (culture) among others. Interestingly, at the first-round table in 2016, some participants thought that cryptocurrency was akin to some spiritual being- it seemed that incomprehensible at the time. Uganda had now moved from conceptualising digital technologies as 'witchcraft', to working with them to digitise the economy. Since 2016, there had been expanding interest in the area and three years on, the African Blockchain conference²⁷ held in May 2018 in Kampala was but one example of discussions among policy makers, banks and the regulators about the Blockchain. In fact, at the May 2018 conference co-hosted by Kwame Rugunda of Africa Blockchain, Mr Frank Tumwebaze, the Minister of Information, Communications Technology and National Guidance promised to use the Blockchain to leverage information. The chair of the Uganda Bankers Association (UBA)²⁹ also announced that banks would do use the Blockchain to lower operational costs and risks. Elsewhere in East Africa, countries like Rwanda were using the Blockchain to upgrade their land registry.

²¹⁰ Chrysostomos Filippou, "Blockchain: A KYC-AML use case" Gold News, 8th March 2018 at <http://www.goldnews.com.cy/en/opinion/blockchain--kyc/aml-use-case>



Uganda had taken tentative steps towards policy formulation as shown in the announcement in May 2018 by Mr Frank Tumwebaze the Minister for Information, Communication Technology and National Guidance, that a Task Force on the Blockchain would be set up soon. This was welcome news, however, given that the Blockchain was a technology that could either support or even replace the law, there was need for policy makers to engage in wider research on the limits of Blockchain-based systems of regulation and on effective ways of regulating it.²¹¹

One of the main tasks for the workshop was agenda setting to help identify policy questions that needed to be researched and to look at how they could be addressed. Participants were encouraged to explore questions on how to define the public, and whether it could include investors, consumers, businesses, academics, vulnerable and marginalised groups and luddites. The latter group did not believe in technology preferring instead the traditional banking and payment systems, cash and paper-based transactions. The non-engagement of luddites could affect policy learning, yet the breadth of views (both in favour of and rejecting technology) were important for responsible policy making that engaged the public on policy questions. There were related questions on whether to adopt sector specific policy making, or to use a multi- sectoral approach to policy making right from the identification of the problem. Problem identification could run simultaneously or be undertaken separately from policy formulation. The other policy ‘circle’ stages of policy adoption, implementation and evaluation would follow in due course.

²¹¹ Malta for example was the first country in the world to regulate blockchain, cryptocurrency and distributed ledger technologies. Jimmy Aki, “Malta Approves Favorable Cryptocurrency Bills in Next Step as a Blockchain Island” *Bitcoin magazine*, 29th June 2018 at <https://bitcoinmagazine.com/articles/malta-passes-favorable-cryptocurrencylaws-next-step-blockchain-island/>.



Even so, to engender policy development needed ‘looking back’ to learn from the state’s response to disruptive technologies that were ‘leap frogging’ the policy and regulatory frameworks. An evaluation of past responses would help policy makers reconsider the binary approach to regulating technologies: rule by law or rule by code. Rule by law governed the activities and was usually preceded by policy, while rule by code governed the operations of the algorithm encoded by software. Such algorithms run the Blockchain, cryptocurrencies and related crypto products.

The state’s response usually combined both approaches with more emphasis on rule by law. Examples included the Warnings by Central Banks in Africa since 2014, against the use of cryptocurrencies, such as that issued by Uganda in 2017.³² Notably, in 2018, Francois Groepe the Deputy Governor of the South African Reserve Bank issued a clear warning that cryptocurrency was not money as it did not meet the requirements of money in the economic sense: as stable means of exchange, a unit of measure and a stable unit of value.²¹² Directives such as the 2018 Uganda Communications Commission Directive on sim card registration being congruent with national identity card registration,³⁴ was another way in which states tried to address loopholes in the technology and to track illegal use of technology. Other methods included the application of existing laws usually by looking for compliance with financial rules as exemplified in Groepe’s statement above. Uganda had a more ‘creative’ approach to the use of existing laws. At the second-Round table discussion in 2017, the police explained how in the absence of a specific law they used the offence of Unlawful Assembly in the Penal Code to arrest those people operating Crypto Save, a company that was suspected of conning people into investing in cryptocurrencies. The use of unlawful assembly

²¹² The legality of this Directive was challenged by the Uganda Law Society as falling foul of existing regulations which allowed for a wider range of identification documents like passports or voters cards for registration purposes. Stephen



may have helped the police get more information about the company, but it could not be used to prosecute Cryptosave for fraud. Still, where there was no policy or law, or where public interests, rights, duties or obligations were unclear, judicial intervention was a way to offer clarity. Notably, parties sought such judicial intervention in the Kenyan case of *Lipisha & Bitpesa Limited v Safaricom Limited [2015]* where the petitioners unsuccessfully challenged the termination of their licence for dealing in bitcoin without a license from the Central Bank of Kenya contrary to the Money Remittances Regulations and National Payment Service Act.²¹³

Rule by Code was found in various decentralised systems and applications some of which were overseen and used by state bodies. At the 2017 Roundtable for example, the National Information Technology Agency (NITA) explained how public key infrastructure (PKI) that relies on a cryptographic standard (X.509) was used by organizations to provide, share and simplify the secure delivery of services or products.

The state response was not without problems. The narrow focus on binary controls of rule by law or rule by code; and the way in which regulators operated in regulatory silos with lack of joined up policies could lead to potential overlap/collision. There was a corresponding lack of clarity for both investor and customer about which products and activities were covered by the regulator's mandate, compliance requirements and what regulatory protections existed in this area. A third problem was that the regulatory response eschewed the current plurality of norms in terms of notions of autonomy, responsibility and obligation

²¹³ Kafeero, "New UCC SIM Card Registration Directive Illegal - Law Society" 15th April 2017 <https://allafrica.com/stories/201704170351.html>. The Directives were later amended.



in the practices of non-state African customary systems that sometimes differed from legal norms in many African countries.

In her concluding remarks, Dr. Mapp pointed out that although policy makers acknowledge that distributed ledger technologies were a cost-effective method of enabling e-commerce, these technologies created challenges for policy makers regarding whether to promote innovation, or to focus more on consumer protection or on some other policy objective. To resolve this tension, a move to develop progressive policies that harnessed the benefits of the digital technologies, managed their risks, while engaging the public in the discussion, was needed. In this context, a public facing policy needed to cover a range of areas starting with the clarification about the status of cryptocurrency (and its nomenclature) including where cryptocurrencies fit within the theory of money and currency in relation to the sovereign state, and which transactions and uses fell within consumer protection regimes. Proportionality as a basis of policy and legislative reasoning was another area of concern, as was the question of ethics of responsibility in developing progressive policies such as the ethical standards of technology in relation to data security and privacy. Attaining procedural legitimacy through public participation in progressive policy making needed to be underpinned African values like reciprocity, respect, and social harmony that were embedded in pluralistic African customary systems. The list of areas in which further engagement was needed, was not exhaustive.

The 2017 Declaration on Fundamental Principles on the Regulation of Cryptocurrencies and the Blockchain (Digital Ledger Technologies) in Uganda was a useful starting point as it offered a range of principles that could be used to rationalize policy objectives and to address the gaps in the constitutional and legislative mandates of financial and related regulators. Giving full effect to the Declaration would need a multi-sectoral approach to bridge the disconnect between



the public (broadly defined to include businesses and consumers) and policy-maker understanding about the socio-cultural, legal, economic, and political implications of this emergent distributed ledger environment. Plugging this gap would help ensure that policies were not only evidence based but also took into account technical rules (like those on exchange control, unfair competition, and taxation), the principles of legality, technological neutrality, proportionality and the like, and were underpinned by a public participatory approach to policy making cryptocurrencies and the Blockchain were difficult to understand by ordinary Ugandans. Cryptocurrencies were based on the generation of units of digital representations of currency and on the transfer of those units (funds) using encryption techniques to prevent unauthorised access to information and to verify users. There was no doubt that these cryptocurrencies had a considerable impact on the economy, on security, and on the interaction between people and nations. They also posed a quandary for policy makers.²¹⁴

On the one hand, cryptocurrencies were important for development. The Bitcoin for example, provided an outlet for gaining personal wealth, and it was possible for digital transformations to translate into a public good. On the other hand, although cryptocurrencies were making people wealthy, this development had happened outside the oversight function of the state and of its regulatory mechanisms. Cryptocurrencies operating outside of the established banking and trading systems could be used for illicit activities which could become harmful to the state and to individual citizens. Using the breakup of the Soviet Union as an analogy, the Minister explained how the fragmentation led to the creation of new states some of which were awash with illegal weapons. Those trading in and using

²¹⁴ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



illegal weapons were difficult to trace. By comparison, the down side of cryptocurrencies was that they could be used for illegal activities facilitated by the Dark Web. In such a situation, the function of the state was to protect the welfare of its citizens.

In response to these concerns, an initiative to inform policy considerations of the safe utilisation of these digital inventions was set up by UNAFRI and School of Law of the University of Birmingham. The Government of Uganda welcomed this expertise intervention and paid tribute to the University of Birmingham, and UNAFRI for leading the way in researching policy approaches to give clarity to cryptocurrency and block technology-based businesses and users and investors in the products. The Minister urged the participants to exhaustively discuss and propose ways to help the government prepare researched policy proposals. He was happy that the Minister for State for Finance General Duties was present as he would be well placed to bring any policy proposals to the attention of the government at an appropriate time. The Minister emphasised that there had to be a clearer understanding about the benefits and risks of cryptocurrencies and the Blockchain. This level of understanding had not yet been fully achieved, which was why for example in July 2016 when the first Roundtable took place in Kampala, the notion of virtual currencies was a myth covered in mystery; evoking curiosity but also causing a lot of anxiety. Since then, there had been wider exposure on the subject including how it worked and its use as a means for the provision of services and goods. Even so, in February 2017, the Central Bank of Uganda issued a cautionary warning to the general public against the continued use of and dealing in cryptocurrencies. This cautionary note served the purpose of indicating that the Central Bank was yet to indulge in the digital revolution that



produces cryptocurrencies²¹⁵. The Bank that ought to guide the public appeared to be at the fringe of the revolution. That cautionary note also indicated that the policy making processes had not given direction to the adoption of cryptocurrencies in the mainstream operations of trade and commerce. Despite this acknowledgement that cryptocurrencies were not yet mainstream, they were gaining ground in the economy, sometimes with unfortunate consequences to the unsuspecting public like fraud or theft arising from the lack of regulatory mechanisms and policy guidelines on their use. The public were left to face these challenges with no protection whatsoever. The positive and negative aspects of cryptocurrencies therefore pointed to the need for regulation.

When discussing regulation, one needed to be clear on who bore the responsibility for regulation. The primary function of the state is to promote the welfare of its citizens as members of one family. It attains this function primarily by safeguarding those interests that are common to all people living within the state's jurisdiction. In fulfilling this responsibility, the state needs money and it is in this context that the state often evokes its financial function and attendant regulations. The policy question at heart of the debate was what the regulation was meant to do: promote innovation or safeguard the interests of all stakeholders? This question had to be deliberated on at the workshop.

The Minister requested the workshop participants to pay attention to six specific areas: measures for technological security; trust and risk assessment; approaches to regulating cryptocurrencies and block chain technology; the legality of cryptocurrencies including rights and obligations of the state, of the

²¹⁵ Frisco d'Anconia, "Uganda Bitcoin Queen: Bank of Uganda Warning Only Makes Bitcoin Popular" Coin Telegraph, 2nd March 2017, at <https://cointelegraph.com/news/uganda-bitcoin-queen-bank-of-uganda-warning-only-makesbitcoin-popular>.



businesses/providers and of the users, as well as consumer protection and the promotion of ethical behaviour; the applicability of existing legislation frameworks in areas such as taxation, insurance and proceeds of crime; and the investigatory, prosecutorial and judicial approaches to settlement of dispute using forensic models. Finally, the Minister asked for an inquiry into consumer behaviour among the poor, rural and illiterate communities regarding the use of these technologies, and the use of socio-cultural legitimacy to protect these fringe communities from harm and exploitation.

Cryptocurrencies were not being taxed in Uganda even though some people made considerable profits through their usage. Non-taxation arose because the Uganda Revenue Authority (URA) was yet to pronounce itself on the status of cryptocurrencies which meant that users, investors and businesses were not certain about whether they had to pay taxes or not. This was unlike other countries like the United States where in March of 2014, the United States Internal Revenue Service (IRS) announced that it would treat cryptocurrencies as ‘property’ for tax purposes. The IRS treats cryptocurrencies as an asset in the hands of the owner, similar to stocks or bonds. A US taxpayer who held cryptocurrencies for more than one year would be deemed to own a long-term capital asset, which would attract capital gains tax at the disposition of the property.

If cryptocurrencies were performing an economic function, whether as a store of value or a medium of exchange, this had tax implications. Despite the legal uncertainty surrounding cryptocurrencies, they were nonetheless subject to income tax. He cited a Kenyan case which held that regardless of the legality of the source of income, it was still taxable.²¹⁶ A similar approach had been adopted by other

²¹⁶ Republic v Kenya Revenue Authority ex parte Yaya Towers Limited Kenya CACA 55 of 2009 51 CIR v Delagoa Bay Cigarettes Co Ltd [1918] TPD 391; Mann v Nash 16 TC 523, Southern v AB Ltd 18 TC 59



jurisdictions around the world.⁵¹ Under the current legal regime, arguably cryptocurrencies were taxable under Ugandan law. URA could also issue practice notes setting out its interpretation of the tax laws for purposes of clarity.⁵²

One possible tax was Income Tax paid on chargeable income.⁵³ The Tax Procedures Code Act 2014 (TPC) provided for a self-assessment tax regime,⁵⁴ where tax payers were required to file returns monthly or biannually⁵⁵ based on business income, employment income or property income.⁵⁶ Whether the income generated took the form of regular fiat currency or cryptocurrencies, a portion of that income was still owed as taxes to the Government of Uganda. The challenge with taxing these individuals and companies, however, was administrative, not legal. The tax authority simply needed to build its capacity to reach these individuals and companies and to educate them on their tax liabilities. In theory, it was possible to secure compliance with tax law, but one needed to bear in mind that online exchanges and related businesses were difficult to trace online, and yet the law envisaged a physical business presence.²¹⁷

A second possibility was Capital Gains tax (CGT) payable under section 78 of the Income Tax Act. CGT was payable following the disposal of a capital asset such as land or company shares, in which the gain was the excess of the consideration received at disposal over the cost base of the asset; a tax on the profit made upon disposal of an asset which has increased in value. By contrast, a capital loss was the excess of the cost base of the asset over the consideration received at disposal.⁵⁸ As the law stood, cryptocurrency users would be liable for CGT. The cost base of the cryptocurrency would be calculated upon acquisition as determined by the value of the cash, and the Fair Market Value (FMV) of the goods or services

²¹⁷ Section 78 of ITA



exchanged for the cryptocurrency. However, calculating these values required detailed record keeping about the use of currencies. Worse still, the pseudonymous nature of cryptocurrencies posed a challenge to the tax administrators who did not know which individual made a gain unless they declared this in their self-assessment of income.

Cryptocurrencies also appeared to qualify as supply of services under the Value Added Tax Act Cap 349 (VAT Act). Under section 16(2) (d) of the VAT Act, electronic services delivered to a person in Uganda qualified as a taxable supply of services. The supply of virtual goods like computer files was considered by some like Jones and Basu as a supply of services. Using this analogy, services offered by crypto businesses electronically were prima facie subject to payment of VAT, and penalties could arise where a person failed to register for taxes, failed to furnish returns, or failed to keep proper records. In countries like the United Kingdom, for example, in the case of Navee Limited the company engaged in sporadic trade using Bitcoins, but did not pay VAT. Navee lost the challenge against a tax penalty and a refusal of accept input tax. Her Majesty's Revenue and Customs (HMRC) had successfully argued that as Navee had fraudulently evaded VAT, it could not claim a right to deduct input tax.

Another problem was the potential for tax evasion on a large scale given the pseudonymous nature of cryptocurrencies. With users having multiple accounts but without providing significant identifying information, making it difficult to trace these earnings back to the service provider.⁶⁴ For example, despite an elaborate explanation by the IRS regarding how to account for income earned through cryptocurrencies, in February 2018 it was reported that only 7 percent of the estimated cryptocurrency users in the USA were accounting for the massive gains made in 2017.



In conclusion, a tax regime that hindered cryptocurrency use would in Mr Rukundo's view discourage legitimate use while leaving illicit users largely unaffected. Indeed, some legitimate users would end up becoming illicit users. At the policy level, the URA needed to issue a practice note clarifying the tax consequences of dealing in cryptocurrencies. The practice note would consider the various options available and their consequences and give cryptocurrencies an air of legitimacy by offsetting the impact of the Bank of Uganda caution issued in February 2017. However, compliance costs would increase because additional efforts would be needed to uncover the financial information of virtual currency users in order to verify their tax declarations. Partnering with tax agencies from other jurisdictions was one way in which risks of tax non-compliance could be dealt with.

Regulation as a means of promotion and protection for innovation and deepening of financial inclusion is necessary in some industries. According to the Insurance Regulatory Authority, it is evident that cryptocurrencies could be useful in increasing insurance penetration in Uganda beyond its current levels of one percent²¹⁸ through automatic payment systems and smart contracts.²¹⁹ Despite these innovations, at the level of policy, in particular taxation policy, there was need to question the need for new legislation or administrative measures. Policy makers also had to bear in mind the value of the Blockchain as a means of managing and regulating assets. Even in the extensive sector of agriculture which was still the backbone of the country's economy, profits still were largely

²¹⁸ Insurance Regulatory Authority, Annual Insurance Market Report, 2015 at <https://www.ira.go.ug/report2015.pdf>

²¹⁹ Valentina Gatteschi et al, "Blockchain and Smart Contracts for Insurance: Is the Technology Mature Enough?," Future Internet, 2018, at www.mdpi.com/1999-5903/10/2/20/pdf



untaxed.²²⁰ If taxes were not being paid on cattle, then what about on gains made in transactions with cryptocurrencies? Determining a gain would need to be carefully considered because whether in fact there was a gain in the use of cryptocurrencies, may be questionable.

F.K Mpanga opines that Case law would be useful as judges would need to come up with new ways to deal with these developments and innovations; That even if the law is not amended and no new law was passed, people would still go to the courts to settle their disputes. Indeed it is important to remember that judge made law is good law at all times as expounded by the early jurists like Benjamin Cardozo. In the process of adjudication, Judges take a careful examination of the facts to arrive at a decision with adherence to the long-standing legal principles. Judges could find the ingredients of a contract present in the sale or purchase of cryptocurrencies or when they are used to buy items or services. This could mitigate our fears over the cryptocurrency revolution.

While it may be true that the drivers of cryptocurrencies were illegal or illicit activities such as tax evasion, money laundering and so on, participants needed to bear in mind that some time back, the main drivers in the development of the Internet were questionable activities like pornography. This was the main reason for the development of video streaming via the Internet. Many aspects of e-commerce developed to support the pornography industry and were subsequently extended beyond it²²¹. The cause may have been immoral, but people were enjoying the benefits. Similarly, the rise of crypto currencies and bitcoin technology should be welcomed with an open mind for the sake of the possible good.

²²⁰ Alon Mwesigwa, "Agriculture Grows but Tax Contribution Remains Low", *The Observer*, 26 October 2016 at <https://allafrica.com/stories/201610260382.html>

²²¹ F.K Mpanga- address in Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



Chapter Four

LEGAL FRAMEWORK GOVERNING THE CRYPTO MARKET IN UGANDA

A Commentary on The Legal Frameworks On Bitcoin Technology Around The World

To start with, the fast pace of evolution and developments globally could and has already caught Uganda by surprise in most of its sectors which in that regard, require amendment, repeal or modification to match the change in generations. This is in consideration of the truths that law reform is generally slow in our country. It can take between 2 to 5 years to amend laws or pass new ones except for some which specifically political for instance the Age limit amendment and may be others like the OTT tax. In the existence of a knowledge gap where lawmakers and regulators are largely groping in the dark, surely one cannot regulate what they do not understand. Below is a discussion of the legal situation in various countries.

According to Lawrence Trautman (2014)²²²cryptocurrencies take the form of digital currencies, which may either have centralized institutions or are based on a

²²² Lawrence Trautman (2014)



decentralized network. This suggests the nature of Regulation that should be given to the cryptocurrency regime i.e. under digital or electronic currency. He discusses the regulation of virtual currencies; cybercrimes and payment systems; darknets, Tor and the “deep web”; Bitcoin; Liberty Reserve; Silk Road and Mt. Gox in the United States.

Virtual currencies have quickly become a reality, gaining significant traction in a very short period of time, and are evolving rapidly. Virtual currencies present particularly difficult law enforcement challenges because of their: ability to transcend national borders in the fraction of a second; unique jurisdictional issues; and anonymity due to encryption. Due primarily to their anonymous characteristic, virtual currencies have been linked to numerous types of crimes, including facilitating marketplaces for: assassins; attacks on businesses; child exploitation (including pornography); corporate espionage; counterfeit currencies; drugs; fake IDs and passports; high yield investment schemes (Ponzi schemes and other financial frauds); sexual exploitation; stolen credit cards and credit card numbers; and weapons. Innovation in the pace of development of new currencies and technologies continue to create ongoing challenges for responsible users of technology and regulators alike. While technological advances create great opportunities to improve the health, living conditions, and general wellbeing of mankind; new technologies also create great challenges for nation states.

Irina Cvetkova (2018)²²³ evaluates the cryptocurrency legal framework in various countries around the world. The new currency instrument is abstract currencies. They are currencies in the sense that they can be exchanged peer-to-peer. They are representations of numbers, i.e. abstract objects. An abstract currency system is a

²²³ Irina Cvetkova (2018); Cryptocurrencies legal regulation; DOI: 10.21684/2412-2343-2018-5-2-128-153; accessed from https://www.researchgate.net/publication/326195399_Cryptocurrencies_legal_regulation on 1st May 2020



self-enforcing system of property rights over an abstract instrument which gives its owners the freedom to use and the right to exclude others from using the instrument. Cryptocurrency or virtual currency is a cryptographically protected, decentralized digital currency used as a means of exchange. Due to the development of new technologies and innovations, the rate of use of virtual currency is rapidly increasing throughout the globe, replacing not only cash payments and payments by bank transfer, but also electronic cash payments.

Legal scholars have not yet reached a consensus regarding the nature and legal status of virtual currency. Virtual currency possesses the nature of obligations rights as well as property rights, since it may be both a means of payment and a commodity. Depending on the country, the approach to cryptocurrencies may be different. Today there is already an international cryptocurrency community that does not have a single coordinating center. Only progressive jurisdiction and state regulation of cryptocurrency activity will allow the creation of the conditions that will ensure the implementation of legitimate and safe cryptocurrency relations.

However according to Karlstrom (2014)²²⁴, decentralized currency schemes try to avoid central institutions as much as possible and are built on a network of transaction partners as long as the transaction partners can observe each other, they can build up trust based on their behaviors. If observation of the transaction partners is not possible, other mechanisms have to be found to establish reliable transactions. One solution lies in cryptocurrencies, which are decentralized currency schemes based on cryptography.

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According to Murphy (2015)²²⁵ Mises solved this circularity through the regression theorem by building upon works of Bohm-Bawerk and Menger before him with emphasis on the subjectivist approach to valuations. Mises acknowledged that the value of money is the result of the marginal utility of goods for which it can be exchanged; its expected purchasing power. Following this Mises identifies that people expect future purchasing power based upon current and previous observed purchasing powers. In his own words Mises noted that, “Objective exchange value... today is derived from yesterdays under the influence of subjective valuations of individuals frequenting the market”. The mises regression theorem shows that it is possible to regress to a point in time where the objective exchange value of money has no component based upon its function as a medium of exchange, but that its value at this time is only based on its use in some other form that is for consumption or production.

Maureen Mapp, Solomon Rukundo, and Patrick Mwaita (2016)²²⁶ The first policy makers workshop in Uganda on the regulation of crypto currencies and the Blockchain, took place on the 4th and the 5th July 2018 at the Golden Tulip Hotel in Kampala. The aim of the workshop was to consider proposals for public consultations that drew on multisectoral approaches to policy making. A new interdisciplinary Working Group was set up to write a research brief that could form the basis on which the proposed Task Force on the Blockchain could develop a public facing policy consultation document on the regulation of distributed ledger technologies in Uganda.

²²⁵Murphy, Edward, Maureen Murphy, and Michael Seitzinger; *Bitcoin: Questions, Answers, and Analysis of Legal Issues*. CRS Report No. R43339. Washington, DC: Congressional Research Service, 2015. <https://fas.org/sgp/crs/misc/R43339.pdf>.

²²⁶ Maureen Mapp, Solomon Rukundo, and Patrick Mwaita (2016); *Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda* (4th - 5th July 2018); accessed from <https://www.birmingham.ac.uk/Documents/collegeartslaw/law/research/Final-Report-on-Regulation-of-Virtual-Currencies-2016.pdf>



The report documents the proposals on the prospects and challenges of developing any sort of public facing policy on crypto assets and distributed ledger technologies which include the following: Policy guidance and regulation is needed for financial clarity. A tax policy is a good starting point, as cryptocurrencies could be taxed under the existing law on income tax, capital gains tax or value added tax. Individuals should be obliged to meet their tax obligations based on a moral sense of duty to pay tax; Content gap between the concept and nomenclature of the technologies and the scope of the existing laws needed to be addressed; The existing knowledge gap about the technology among the public and private sectors has resulted in misinformation about the emergent technologies and how they are used. This misinformation could be addressed through nationwide public awareness strategies and programmes on areas like information security; The skills gap in the use of emergent technologies was manifest at all levels of the public and private sector. There was need for a coherent cross sectoral training policy to address the skills shortage;

The report also recommends that the technology itself suffers from disruption including outages, which could reverse the social, economic, and cultural, benefits of the technologies. Firms should address the limits of the technologies through self-correcting measures and mitigate the potential harm to consumers; Tracing software and systems should be purchased and/or updated to facilitate investigations; To facilitate investigations and monitoring, policies and regulation should allow for the registration of traders/investors who should be obliged to comply with Know Your Customer requirements as well as those on Money Laundering. To this end, pseudo names should not be used by traders; Given that fintech is a social fact, a collaborative approach to policy making was necessary to ensure that Uganda continues to leverage this opportunity to use digital assets and



the Blockchain technology while mitigating the risks; Harmonise regulation and policies at the regional level. Such harmonisation should consider the issues of extra-territorial jurisdiction and the effect of the European Union General Data Protection Regulation in Africa.

Other recommendations include: that policies should aim to balance innovation with consumer protection. Regulatory sandboxes such as that in use by the Uganda Communications Commission should consider not only the specific technology, but also the integrity of the system or platform and the use of permissioned Blockchains to address data privacy and data protection concerns; Regulation should be future proofed so that it does not lag behind the technological developments; Greater visibility and control for individuals and better protection for privacy is needed. Individuals should know why, when and how their data is being processed The plurality of legal norms in terms of notions of autonomy, responsibility and obligation, and the practices of non-state systems ought to be integrated in policies and regulation.

A core recommendation was for a cross-sector public policy that embodied the seventeen principles in the 2017 Kampala Declaration, that might form the basis of a national consensus on the regulation of distributed ledger technologies in Uganda. A research brief on this policy would be developed by the Working Group and would be availed to the Ministers and those on the proposed National Taskforce on Blockchain.

The Law Library of Congress (2018)²²⁷ summarizes the cryptocurrency policies and regulatory regimes in fourteen jurisdictions around the world. Among the key issues covered in the report are matters relating to the legality of cryptocurrency

²²⁷ The Law Library of Congress (2018); Regulation of Cryptocurrency in Selected Jurisdictions; accessed from <http://www.law.gov>



markets; the tax treatment of cryptocurrencies; and the applicability of anti-money laundering, anti-organized crime, and anti-terrorism-financing laws. In terms of the legal recognition of cryptocurrency markets, the jurisdictions included in this report may be categorized into two groups. In the first category are countries that permit cryptocurrency markets to operate, and within this group some countries (including Belarus, Gibraltar, Jersey, and Mexico) have been proactive in that they have enacted specific laws recognizing and regulating the cryptocurrency markets, while others (such as Brazil, Argentina, and France) allow the markets to exist but have yet to issue industry-specific laws. The second category of countries includes those that have taken steps to restrict the cryptocurrency markets, mainly by barring financial institutions within their borders from participating in them (China and Iran).

Of the countries that permit cryptocurrency markets to operate, many impose taxes. However, the tax treatment of income generated from a cryptocurrency transaction may vary depending on how it is categorized. For instance, in Argentina a transaction of this nature would be taxed in a manner similar to revenue generated from the sale of securities and bonds, whereas in Switzerland cryptocurrency is categorized as a foreign currency for tax purposes. Some of the countries included in the report do not levy taxes on cryptocurrency transactions (Belarus and Jersey). Many of the countries that permit cryptocurrency markets to operate have enacted laws subjecting organizations that participate in these markets to rules designed to prevent money-laundering, terrorism financing, and organized crime. These include Australia, Belarus, Canada, Gibraltar, Japan, Jersey, and Switzerland. While a bill that would have the same effect is working its way through the Brazilian legislative process, countries like Argentina, France, and Mexico have yet to follow suit.



Yasmin Winther De Araujo Consolino Almeida and Jose Antonio Pedrosa-Garcia (2018)²²⁸ review the salient features of cryptocurrencies and their corresponding technology, blockchain. It becomes clear that cryptocurrencies do not fulfill the three functions of money, at least for the moment, but should instead be understood as high-risk, high-profitability securities. While there are great opportunities such as increased remittances, their potential disruption of economic activity, and particularly of monetary policy is mind-blowing. Under this premise, and keeping in mind hackers' heists suffered by cryptocurrency exchanges, it is important to regulate cryptocurrencies. Four core questions countries should decide on are: whether they consider cryptocurrencies' legal tender, whether they allow cryptocurrency exchanges to operate (and if so, how); whether Initial Coin Offerings (ICOs) should be allowed (and if so, how); and whether they allow mining. Several policy options are presented, both from a theoretical perspective, and as they have been implemented by countries in Asia-Pacific. While countries such as China have decided to be restrictive, others such as Japan have chosen to regulate to let the sector thrive. Such diversity may be understandable, given that is such a novel technology that still poorly understood – especially its evolution. This diversity of standards offers great room for regulatory arbitrage, and highlights a great need for global coordination on cryptocurrency regulation and supervision.

A factual situation in Kampala

Kenga Michael (2020)²²⁹; The Uganda Police arrested one of the directors of a cryptocurrency startup in Uganda that closed suddenly and made off with investors' money. A Mr Samson Lwanga, director of Dunamiscoins Resources

²²⁸ Yasmin Winther De Araujo Consolino Almeida and Jose Antonio Pedrosa-Garcia (2018); *Regulation of Cryptocurrencies: Evidence from Asia and the Pacific*; United Nation Economic and Social Commission for Asia and the Pacific

²²⁹ Kenga Michael (LLB) UCU; A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda. (2020)



Limited, was arrested last week and should appear in court later this week, local news reports. It's reported that the scam managed to con 10 billion Ugandan shillings (\$2.7 million) out of victims. The authorities are still on the look out for the other four directors of the company.

Like numerous other cryptocurrency-based scams, Dunamiscoins promised investors and employees large returns in a short space of time. However, after a month, the company shut down its offices, leaving investors in the lurch and employees out of work — many of whom were yet to even start their job. “We have already opened a general inquiry file and investigations are going on. We recorded statements from the complainants and arrested one of the directors called Samson Lwanga who is currently detained at Old Kampala Police Station,” a police spokesperson said in a statement. According to the police spokesperson, Mr Lwanga is willing to refund money to investors, but he can't because their accounts have been frozen. The police are investigating if this is true. At the time of Hard Fork's first report on the scam, it was unclear how many people had been affected by Dunamiscoins.

However, in Daily Monitor's latest update, it seems the scam is bigger than first reported. And the story sounds all too familiar. Investors were encouraged to get their friends and family to participate, only to find out later that they had all been duped. According to the report, at least 1,000 people had registered with the cryptocurrency startup, however, some victims have said the number of people involved is closer to 10,000.

Dunamiscoins reportedly began operating in March, and was paying out to early investors. It came crashing down last week when its offices shut and phone lines were disconnected.



Thousands of Ugandans including senior army officers are counting losses after investing in what turned out to be a fake cryptocurrency initiative. The Internal Security Organisation on Monday night arrested Andrew Kaggwa, the Chief Executive Officer for Global Cryptocurrencies Limited opening a can of complaints from clients who have been fleeced huge sums of money amounting to billions. According to Sheila Nassali, 27, a nurse from Namugongo in 2018, Kaggwa wedded her sister and after the function, he introduced her to a company he was soon setting up that he wanted her to be part of. When the company started in August last year, I was made its secretary and director. I could juggle the company work with my nursing work. When I was not doing the nursing work, I could be at the company offices,”Nassali begins her painful story.

Nassali says Hudson Ntende and Kaggwa were the main directors of the company who were signatories to the company documents. She says that the company started small along Kampala road but business grew in a small time and after two months, they shifted headquarters to Lions Shopping centre along Namirembe road. “People could deposit money between shs. 100,000 and 10million and after 30 working days, they could get an interest of 40%. The business kept on growing big day by day.”

The existing legal regime concerning the digital market

To begin with, I have several times mentioned that Uganda has only cyber regulations specific to governing the cyber space and among these include

The Computer Misuse Act, 2011

This was enacted by the Parliament with the aim to, amongst other things, prevent unlawful access, abuse or misuse of computers. It provides for definitions of



cybercrimes, related penalties and some procedural measures that law enforcement authorities can use in their fight against cybercrimes. The Act specifies cybercrime in the following types which include, crimes that target computer systems, electronic fraud, and the production or distribution of child pornography. In addition to the **Computer Misuse act 2011**, Uganda has a number of legislations in place, which address Internet misuse these include the Electronic Signatures Act, The Electronic Transactions Act, Electronic Misuse Act, the Access to Information Act and the Regulation of Interception of Communications Act .

Data Protection and Privacy Bill 2015

The Ministry of Information and Communications Technology in concurrence with Ministry of Justice and Constitutional Affairs, Uganda Communications Commission and National Information Technology Authority (NITA-U) of Uganda jointly coordinated the drafting of the Data Protection and Privacy Bill 2015, which will therefore buttress data protection in Uganda when it is passed into law.

Uganda has not ratified the *AU Convention on Cyber Security and Personal Data Protection*. With only 16 countries in Africa that have enacted Privacy and Data Protection laws, Uganda remains amongst the majority without safeguards in place to regulate the collection, storage and use of data. The publication of a draft bill three years ago was therefore a milestone. The Parliament of Uganda called for submissions on the Draft Data Protection and Privacy Bill, 2015 and this has given an opportunity for stakeholders to provide input to ensure that the law, when enacted, measures up to internationally acceptable standards of data protection.

Uganda has no official document on Uganda national cybersecurity strategy. Instead, Uganda has a National Information Security Policy and a National



Information Security Strategy. NITA-U brought together different stakeholders for consultation to develop both documents. Furthermost unfortunately, there is no centralized budget for cybersecurity. Every Ministry allocates its budget separately and depends on previous experience and future plans to allocate budget for cybersecurity. Law-enforcement cooperates with NITA-U and Uganda Communications Commission (UCC) the telecommunications regulator in Uganda.

Having mentioned that, we now zero down to specific regulations relating money transactions in Uganda such as the Bank of Uganda Act, the Capital Markets Authority Act, 1996, among others and list down how they concern themselves with todays' digital economy.

Summary on crypto currency regulation in Uganda.

Cryptocurrencies are digital tokens with ascribed value. This value may fluctuate depending on the supply and demand. Cryptocurrencies can be used as a medium of exchange. They are mostly data driven and use blockchain technology. Currently the most popular cryptocurrencies in Uganda are; Bitcoin, One coin and Firstcoin. The most known trading platform is BITPESA which predominantly trades in Bitcoin. This Bitcoin can be paid for using MTN Money and Airtel Money.

Currently cryptocurrencies are not regulated under any law. The Central Bank of Uganda passed a circular warning the public that cryptocurrencies are not recognised as currency in Uganda and whoever deals in them did so at their risk. What this means in real terms is that Cryptocurrencies are neither prohibited nor allowed. They are just not recognised by the Central Bank. But this has not stopped people from dealing in them. The implication is that in case of s dispute, one cannot run to court to enforce such dealings.

Section 20 of the Bank of Uganda Act is to the effect that the Bank of Uganda has the sole right to issue legal tender and no person shall issue any notes, coins or tokens that are likely to be passed as legal tender. In effect, anything else not issued by the Bank of Uganda is not legal tender including cryptocurrencies. The BOU does not presently issue cryptocurrencies. Legal tender is a medium of payment recognized by a legal system to be valid for meeting a financial obligation.



Contracts Act 2010, to form a valid contract, there must be among other things, lawful consideration. This means that contracts premised on cryptos as consideration are invalid under Uganda law and cannot therefore be enforced by Ugandan courts. However, parties to an agreement may subject their disputes to arbitration.

Section 34 of the Uganda Arbitration and Conciliation Act is to the effect that a court may set aside an award if it is contrary to public policy of Uganda. It can be argued that an award based on illegal consideration offends public policy. The better option is to choose arbitration under a law of a different country. The **Capital Markets Authority Act 1996** defines securities to mean; bonds, stock, warrant, option or future and any instrument commonly known as securities. This definition does not expressly exclude cryptocurrencies from being termed as securities on the capital markets.

But we think the CMA would be reluctant to accept ICOs given that they would not constitute lawful consideration under Uganda law. The CMA has not issued any official position on this preferring instead to address it as and when it arises. It should be noted that the CMA is in the process of developing a regulatory sandbox which will help the CMA gain visibility into new innovations as the innovator tests their products and services in live environments. It is hoped ICO's will be part of this sandbox.

Finally, it is worth mentioning that the future of cryptos in Uganda will largely depend on world trends. The more they are accepted in other parts of the world, the more likely they will be accepted in Uganda. We tend to bide our time and see how things turn out before we act.

Summary of Kenya's legal management of digital commerce

The Kenyan fintech space is one of the most vibrant in the region, most innovations have been focused on:

- *mobile money e.g. M-Pesa, T-Kash, Airtel Money, etc.*
- *lending platforms e.g. Branch, Tala, Malaika.*
- *savings e.g. M-Shawari*
- *mobile payments e.g. Mpesa Buy Goods/ Paybill*
- *crowdfunding e.g. M-Changa*
- *Securities e.g. treasury bond purchase through M-Akiba*



- *Cryptocurrencies*

Regulation of Fintech in Kenya.

First of all, “Fintech” is a word that combines the terms “financial” and “technology.” Ordinarily, it has come to refer to any company that seeks to use new technology to disrupt the financial industry. notable examples of fintech companies include *Venmo, GoFundMe and Stripe*. Fintech refers to the integration of technology into offerings by financial services companies in order to improve their use and delivery to consumers.

Regulation is largely dependent on the nature of the fintech innovation. Primarily, fintech is regulated under the following laws:

- 1.The National Payments Systems Act administered by the Central Bank of Kenya (CBK)*
- 2.The Capital Markets Act administered by the Capital Markets Authority (CMA)*
- 3.The Kenya Information and Communication Act administered by the Communications Authority.*

The drafting of Kenyan regulation tends to be broad and inclusive as opposed to narrow and focused which has had the effect of creating licensing and regulatory categories which most fintech innovations can qualify.

The regulators in Kenya, specifically the CBK and the CMA have generally demonstrated an active approach to regulation. They tend to interpret their powers and responsibilities as widely as possible and have demonstrated a willingness to include new innovations under their regulatory purview.

The National Payments Systems Act

The National Payment System Act (NPS Act) makes provision for the regulation and supervision of payment systems and payment service providers and for connected purposes. The NPS Act brings all payment service providers, including mobile phone service providers, into a single regulatory framework, and provides the CBK with direct oversight of these service providers and their products to ensure the safety and efficiency of their platform. Currently the three telecommunications companies which offer mobile payment services i.e. Safaricom Airtel and Telkom are licensed as payment service providers under the NPS Act.



The Banking Act

The Banking Act regulates banking business which is characterized by the taking of deposits from members of the public. Fintech innovations which include an aspect of taking deposits such as savings are rolled in collaboration with banks as bank products e.g. M-Shwari which is a collaboration between Commercial Bank of Africa and Safaricom.

Money remittance business is regulated by the CBK under the Money Remittance Regulations. Fintech companies require licensing where they offer a service for the transmission of money or any representation of monetary value without any payment accounts being created in the name of the payer or the payee, where –

- a) funds are received from a payer for the sole purpose of transferring a corresponding amount to a payee or to another payment service operator acting on behalf of the payee; or*
- b) funds are received on behalf of, and made available to the payee.*

Anti-Money Laundering

The Proceeds of Crime and Anti-Money Laundering Act (AML Act) establishes money laundering and the use of proceeds of crime as criminal offences. The drafting of the AML Act is not restricted to money as it includes “property” which has a broad definition. To the extent that fintech innovations would fall under this broad definition of property in the AML Act, they may reasonably be considered to be subject to the AML Act. The operators of some fintech innovations which include the transfer of money or value may be deemed to be “reporting institutions” under the AML Act and have reporting and compliance obligations.

Cryptocurrencies In Kenya

The CM Act of Kenya defines the term “security” and identifies some types of securities such as:

- *shares*
- *debt instruments*
- *rights options or relating to other securities*
- *futures relating to assets or property*
- *depository receipts*



- *asset backed securities.*

The definition of securities also includes interests, rights or property commonly known as securities. Further the CM Act provides that securities include any other instrument prescribed by the CMA to be a security. This allows the CMA to prescribe cryptocurrencies as securities. The CMA has yet to designate cryptocurrencies as securities.

Central Bank of Kenya's response to Crypto Currencies.

The CBK in December 2015 issued a public warning on the use of cryptocurrencies due to their perceived volatility and the lack of specific regulation. The CBK clarified that it does not regulate virtual currencies and offers no comfort to members of the public. Despite the warning by the CBK there is no law prohibiting their use. However, depending on their nature, various elements of cryptocurrencies may be subject to existing regulations. The CMA has issued a public warning notifying the public that it has not approved any initial coin offerings. The CMA has now set up a regulatory sandbox which will help the CMA gain visibility into new innovations as the innovator tests their products and services in live environments. The boundaries that the regulatory sandbox puts around live testing also reduces risks to consumers from new financial products and services.

Finally, we expect increased financial innovation in the fintech space and an increased willingness by regulators to engage with blockchain ledger technology. The Government through the Ministry of ICT is showing an increased appetite to embrace the use of distributed ledgers for record keeping. These efforts are likely to intensify and may culminate in the use of distributed ledger technology in government registries. The initiative to use fintech to roll out financial services to the mass market is likely to continue and focus on non-bank services such as insurance and investments. □The use of ICOs to raise capital is likely to gain momentum.

A view of law reform in light of the advance of blockchain technology

Speaking on the matter of law reform and technology in light of the new trend of bitcoin technology, Mr Mboizi's emphasized about the Blockchain explaining that the Uganda Communications Commission (UCC) looked at three aspects of the



technology: the integrity of the platform, data privacy and data protection, and the inter-operability of systems. UCC used a service and technology-neutral approach to regulation which meant that they did not look at the specific technology or specific service. Instead, the UCC considered whether that service or technology was offered in a safe, secure and reliable manner. The UCC looked at whether the proposed regulation was obsolete. By applying a principles-based approach to regulation, UCC was able to ‘future proof’ the regulation to ensure that it did not become obsolete or be overtaken by advancements in technology.

Some of the principles to be considered with any regulation were those relating to harmonisation which required some sort of private-public sector collaboration across telecom companies, as well as tax, finance, insurance and legal sectors. That way, the different government agencies could speak to each other. Harmonisation could also occur across borders at the regional and continental level. A second principle was proportionality. Too much regulation too soon, could suffocate innovation. However, regulators could not just leave everything to run in an unregulated manner because the consumers would remain exposed to unscrupulous businesses. Third was the neutrality principle which required a focus on how a service was offered, rather than the type of service being offered.

The UCC was looking to use Sandbox regulation as the best alternative for the Blockchain. The sandbox regulation was a pilot environment or test environment in which compliance requirements were not be as stringent as those requirements that applied to existing traditional technology applications. For example, requirements in terms of costs and the proof of concept were much lower. The idea was that whoever had products which showed some potential could apply and could be permitted to operate in the market, subject to restricted conditions and



modifications. After a given period, the technology regulators would have built enough capacity and knowledge to understand how to deal with the product on offer.

Mr Mboizi concluded by showing how the sandbox regulation approach dealt with potential risks and benefits including the scope and classification of products and services that would be accommodated in that sandbox. The UCC considered the eligibility criteria for players as well as the rules of the scheme in terms of oversight and control obligations, risk management controls, customer protection safeguards and customer redress mechanisms. UCC also looked at reporting requirements both interim and final, expiring and revocation of approval and the duration that a company could be the sandbox environment. At the end of the test period, either the company moved out of the sandbox and was offered a licence, or its application was rejected if the product was deemed too risky to be let out into the market. UCC was looking at possible regulatory exemptions and incentives involving spectrum, numbers and other resources that could be used to incentivise people to join the sandbox. Finally, UCC was also looking at the limitations of operation within the sandbox for example, determining how many customers any regulated business could bring on board when testing the product, and the maximum value of transactions that one would be allowed to engage in.

From the outset, cryptocurrencies were created to avoid regulations. Cyber criminals always sought anonymity such as hiding their Internet Protocol (IP) addresses or using fake IP addresses to commit a crime. Use of fake IP addresses suggested that they were in fact in another country. Whereas anonymity on its own was not wrong, it did make it easier for some crimes to be committed such as terrorism financing, money laundering, drug trafficking, ransom collection, forgery, and the hiring of assassins. Hacking was also easier to facilitate as illustrated by recent Distributed Denial of Service attacks. For those



cryptocurrency users who were not conversant with information security, their private keys could be used to transfer the cryptocurrencies from their wallet accounts²³⁰.

In Uganda, some people have taken advantage of the popularity of cryptocurrencies to create fake companies which purport to deal in them. Within Kampala alone, the police had handled over 100 companies which are involved in that kind of fraud. Criminals had fleeced a lot of money from unsuspecting citizens. The police had also received reports of cases involving popular cryptocurrencies like the Bitcoin, but most of these involved people who had not taken care of their private keys. This was because many users/investors were not conversant with computers and so they opened cryptocurrency accounts with the help of agents to whom they entrusted their private keys. A fraudulent agent could then easily transfer some coins from the customer's wallet. So far, the Ugandan police had not yet successfully investigated to conclusion, any cryptocurrency related case. However, in Denmark, the police had succeeded in getting convictions in cases. 94 Afripol (the African Police Cooperation Organisation), the United States Federal Bureau of Investigations (FBI) and Interpol had all taken an interest in cryptocurrencies, and Uganda had collaborated with Interpol in cases relating to online child exploitation and successfully tracked down the culprits involved.

Mr Munanura concluded his talk by offering some recommendations on policy:

(1) Traders should be registered with regulators to enable the police get information about that accounts involved in fraudulent money transfers.

²³⁰ Kenga Michael (LLB) UCU; A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda. (2020)



(2) Cryptocurrency traders should comply with the Anti-Money Laundering (AML) requirements. However, the requirements should provide for real names and exclude pseudonyms which makes criminals difficult to trace.

(3) Agencies of government involved in prosecuting and investigation should be offered relevant training.

(4) Tracing technology should be purchased to help with investigations.

(5) Mass sensitization on information security should be carried out to enable people learn how to secure their private keys and passwords.

Outlining the distinction between the Bitcoin which runs on the Blockchain technology, and the Blockchain- a distributed ledger technology or file system that kept copies of files of the participants who agree on the changes by mutual consensus. The files consisted of blocks with each block having a cryptographic signature of the last (previous) block, making an immutable record. The Blockchain's secure value transfer features could enable the information technology revolution to penetrate major sectors including finance, economics and law, potentially rendering the existing banking and related systems obsolete. 96 Although information technology had been in use for a while now in these sectors, the sectors had not completely been transformed. Mr Kizito pointed out that some commentators argued that the Blockchain was a solution that could replace many inefficient information systems like patient records, property transfers, legal contracts and payments systems. Many of these systems had one control system and in case of no backup they could fail due to a server failure or an attack from hackers. Blockchain systems could offer a solution as they were highly decentralised and distributed in nature. The records were saved on several servers and computers around the globe, which eliminated or greatly reduced the risk of a central point of failure.



Some financial institutions in the USA and Europe were in the process of implementing private ledgers. These were controlled application of technology, where the user identity was known and confirmed. Conversely, the public ledgers were censorship-resistant pseudonymous ledgers where the user or wallet was not traceable to the individual executing the transaction. In other words, the private ledgers were permissioned, while the public ledgers are permissionless. The private groups could implement business rules such as transactions which take place only where no more than two parties had endorsed them, and where another transaction had been completed before the next one could take place. For example, in the private sector in the USA where the ownership and origins for goods are mapped out by distributed ledgers, there was a consortium-R3 CEV of over 70 large financial institutions dedicated to the development of standards for the industry. The NASDAQ had also adopted the technology to record the trading in securities of private companies. They developed Corda- a platform that uses permissioned Blockchain, built with the financial industry's context in mind, and aimed to avert some of the problems the original Blockchain posed to the finance industry. This consortium started in 2014 but in 2016 a number of financial institutions left the consortium. Despite some players leaving the consortium, it continued to develop Corda and get new players coming on board. These changes showed the fast-moving pace of the sector.

In conclusion, Mr Kizito recommended the need for mass sensitisation of the public to get them to understand permissionless distributed ledgers and to have more confidence in the use of the technologies. Even so, regulation was necessary to protect consumers. Regulatory intervention ought not to be highly restrictive because placing many limitations at this stage would limit innovation and inhibit growth. Conversely, the US case of Liberty Reserve⁹⁸ and the conviction of the



founder of the shadow trading site called Silk Road99 which was used for money laundering and other crimes, showed that the regulatory framework should focus instead on consumer protection in relation to cryptocurrencies and prevention of crimes like money laundering.



Five

RISKS IN THE BITCOIN TECHNOLOGY

Risks in the Crypto market

Risk is defined in financial terms as the chance that an outcome or investment's actual gains will differ from an expected outcome or return. Risks includes the possibility of losing some or all of an original investment²³¹. There are obvious risks that come with trading in cryptocurrencies. The most probable ones include,²³²

- *They are volatile*²³³;
- *They're unregulated*,²³⁴
- *They're susceptible to error*,²³⁵
- *They can be affected by forks of discontinuation*²³⁶;

It is trite that for any business, there is risk attached to it and more like this, the blockchain technology too involves these. These risks have been explained in the next chapters. *To avoid the greater propensity of risk occurrence as a developer*

²³¹ <https://www.investopedia.com>

²³² <https://www.cmcmarktes.com/en/learn-cryptocurrencies/what-are-the-risks>

²³³ Unexpected changes in market sentiment can lead to sharp and sudden moves in price. It is not uncommon for the value of cryptocurrencies' to quickly drop by hundreds, if not thousands of dollars

²³⁴ As the case is in Uganda today, so is it in most countries that cryptocurrencies are currently unregulated by both governments and central banks.

²³⁵ There is no perfect way to prevent technical glitches, human error or hacking

²³⁶ Cryptocurrency trading carries risks such as hard forks or discontinuation. When a hard fork occurs, there may be substantial price volatility around the event and we may suspend trading throughout if we do not have reliable prices form the underlying market.



when developing blockchain-related applications or distributed ledger solutions, these specific areas need to be taken care of.

Key management

Data management

Performance and scalability

Use case applicability

Chain protection

Integration and interoperability

Regulations and compliance

Disaster recovery

Privacy and chain management

Network and consensus management.

Risks associated with block chain technology

The general blockchain risks that can impact any blockchain project include the following.

Difficulty in integrating block chain protocols.

Blockchain is a new technology. This means that it becomes hard to include blockchain protocols into a project. According to Deloitte, it is hard to implement different blockchain projects. For example, if they want to share information from Hyperledger Fabric Protocol to Ethereum Protocol, they would need an integration layer that manages these two different enterprise systems

Lack of Standardization

The wide variety of frameworks means that there is a lack of standardization. This is potentially one of the biggest risks that the current blockchain projects suffer from. These standards apply across the complete blockchain ecosystem including Initial Coin Offerings (ICO), cryptocurrencies, frameworks, and so on. ICOs are suffering the most from the lack of standardization. The investors have no proper protection against the investment, which makes ICOs a big gamble. This article talks about how to launch ICO successfully.



Poor Valuation of Cryptocurrencies

Cryptocurrency prices are also one of the biggest concerns as they utilize blockchain. A reasonable cryptocurrency price also changes the market sentiment towards blockchain. Bitcoin, which utilizes blockchain technology, can see high jumps that are beyond any investors guess. This also means that the prices can drop sharply, leaving a lot of investors empty-handed. Clearly, the prices are not stable, and that's one risks associated with the traders who bank on a project or a cryptocurrency that it is utilizing blockchain project.

Blockchain Development Risks

Now, that we have gotten a glimpse of blockchain risks, let's dive deep into the development aspect. Right now, blockchain is being implemented in almost every sector. Be it the health sector or supply chain or even government. Everyone wants to make the most out of the groundbreaking technology.

Blockchain's idea is now developed into Distributed Ledger Technology (DLT). There are many ways, the problem is trying to be solved, based on the concept of decentralization. For example, we can see the emergence of a Directed Acyclic Graph (DAG). It is been used in IOTA. Another DAG based DLT include Hyperledger. All of these evolved from blockchain and hence carried the same risks associated with blockchain. The risks that are associated with blockchain development risks include the following:

Underdeveloped Standards

Every technology has a necessary standardization behind it. This means that it becomes easy for companies across the world to adopt the technology and enable worldwide usage. Right now, blockchain doesn't have proper standards due to its rapid growth. With different organizations working on their "own" blockchain or DLT version, it is hard to standardize them. Blockchain and distributed ledger are two different concepts — learn more here, blockchain vs distributed ledger technology. Also, the competition is exceptionally fierce, which makes it even harder for these organizations to work together towards the primary goal. In the end, this leads to risks related to security, privacy, and interoperability.

High Energy Demand

Right now, there are many consensus methods. Considering all of them, it is easy to say that Proof-of-Work (PoW) is the most popular. Both Ethereum and Bitcoin



utilize them. Ethereum being more popular when it comes to blockchain implementation.

Each of the consensus methods has its own advantages and disadvantages. PoW is an effective way to reach consensus as it rewards the miners for the work they are doing. However, the downside is the high energy cost. In PoW, each node has to compete with each other by solving a highly complex mathematical problem. To solve the problem, the miners have to invest in high-performance machines that require a lot of electricity to run. With time, the blockchain developers understand its impact, and slowly, they are transforming to a more energy-friendly consensus method such as Proof-of-Stake (PoS).

Data Privacy Legislation

Data Privacy is one of the most significant issues with blockchain or distributed ledger technology. Clearly, DLTs are designed, and that can play an impactful role in the current societal infrastructure. With different countries and regions implementing data privacy regulations such as the European Union General Data Protection Regulation, it is essential to do the same for blockchain. The approach is not to declare your identity to the network, but that's not always the case due to the Know Your Customers (KYC) and Anti-Money Laundering (AML) activities.

Trusting Blockchain Managers and Developers

Blockchain is an excellent concept that is trustless. However, it is a new technology, and many players are coming in, which makes the blockchain ecosystem more complex. It also means that as a consumer or an end user may find it hard to trust these new platforms.

The implementation is what matters, and the developers and managers will be responsible for these projects. This also means that they will be able to take significant decisions, including the type of cryptography algorithm to do, ability to a soft or hard fork, and so on. These decisions can be biased and would pose a risk to the core idea of blockchain itself.

The Users' Role

The user is the core of the decentralized network. As there is no centralized authority, the user has to take all the responsibility when it comes to handling their accounts. This means that they have to take proper care of the private key — which is used to access the wallet or the information stored on the blockchain. If it is lost, the user will also lose access to his/her data. Also, there is no restore or retrieval



option when it comes to blockchain. This brings a lot of user-oriented risks to blockchain technology.

Transaction Speed

One of the touted features of the blockchain networks is the time they take to settle down transactions. However, that might not be the case every time transactions take place. If we take the example of Bitcoin, it can take anywhere between ten minutes to a few hours for a transaction to get completed. Scalability is also a big issue, and whenever there is congestion, the transaction rate can go down even more. So, how come this be a risk? For a user using a blockchain solution, he might not know the status of the network. If the transaction is urgent, he might feel stuck and may get adversely affected with it. The solution to this is a private network, but they also do come with their own disadvantages.

Malicious Users

Malicious users are part of any system or solution. Blockchain is no different. They can impact the blockchain network by controlling a particular aspect of it. The risks are real, and it is up to the developers to ensure that malicious actors in no condition can take control of the network resources or the consensus method.

Legal Related Blockchain Risks

There are also some legal risks associated with blockchain. Blockchain technology legal issues are more severe. To protect the users and also ensure that the blockchain technology is implemented correctly, the laws are enforced. Governments are also keen to govern new technology as they are centralized in nature and autocratic nature. However, most of the time, these rules are put forward to protect the interests of the user, the service provider, and the government as well. If you are developing blockchain-related products or aim to indulge in a blockchain product, you should also know about blockchain legal risks. They are as below.

Data Privacy

Data privacy is the biggest concern when it comes to distributed ledger technology. We all know that it is decentralized and distributed. This means that all the information that is stored in a blockchain stays in blockchain, even if it is personal information. When we say it is distributed, we comply that the data has to be stored across different geographic locations. It also means that it can easily fall under a massive multitude of jurisdictions — making data privacy a very complex subject.



For starters, which data privacy law should the data follow? We can take the EU-US Privacy Shield, but that would only work for transactions that are done from the EU to the US or vice-versa. Even if it works for those regions, it doesn't cover the other areas across the world. The GDPR regulation is aimed explicitly towards EU citizens. All-in-All, the idea of data privacy is far-fetched when it comes to blockchain. One more thing that makes data privacy complex is the fact that the data is immutable on the blockchain. No user, in any case, can remove the information once stored from the blockchain database.

Jurisdiction and Dispute Resolution

The jurisdiction and dispute resolution are big concerns. A distributed ledger is all about a decentralized network, which makes applying jurisdiction an inevitable problem. Modern blockchain cryptocurrencies such as Ethereum or others can help in this regard with the use of smart contracts. They can be coded to include a particular jurisdiction. However, the challenge is to enforce the use of the jurisdiction.

Also, questions like who will resolve a dispute if needed. The process of dispute resolution is also a big challenge that needs to be solved. Lastly, giving rewards to the one that solves is also needed to be decided. Overall, it is tough to resolve the issues considering the nature of the DLT.

Regulatory Risks

The last blockchain legal risk is a regulatory risk. Governments have to pass regulations to the DLT. In some cases, states are also empowered to make their own regulations, which can make things more complicated. The absence of regulations governing the blockchain business operation in a country has created more insecurity for users. Uganda too, among the big number of countries lacking adequate and specific regulation of crypto currencies and this has been detrimental to the trend of the business in Uganda. However, reports have been made and guiding principles framed on how to govern this blockchain business transactions. these are visible in the *Declaration on Fundamental Principles on the regulation of cryptocurrencies and the Blockchain (Digital Ledger Technologies) in Uganda and its Follow Up*²³⁷(find appended)

²³⁷ Adopted by the participants at the 2nd Round Table on the Regulation of Cryptocurrency, held at the United Nations African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFRI), Kampala, 6th July 2017



With the rise of digital currencies, it is common to have federal regulations so that it can protect the interest of the users, and keep the economy in balance.

Security Related Blockchain Risks

There are also security risks associated with blockchain. With more and more companies trying to jump into the blockchain technology, the security risks can be understood. But, how does blockchain even suffer security risks? DLT's are known for their excellent security. However, that doesn't mean that they are entirely secure. They can still be attacked, and data or information can be stolen. As a company, you need to understand that blockchain is also not completely secure and take precautionary steps to make it safe. To get an idea, below are the blockchain security risks.

Human-Related Risks

Even though blockchain is completely decentralized, it still has to interact with humans to work correctly. In that case, new blockchain security risks come in. For example, any business who wants to interact with the blockchain system needs to do it either through a computer or automated systems. When a user interacts through a computer, at that point, there is a chance of credentials to access the systems can be stolen or compromised. It only happens at endpoints, which makes blockchain vulnerable. In fact, this is more of a user-based risk, but as blockchain has to interact with the user, it has to be defined under blockchain security risks.²³⁸

Risks with Private and Public Key

The whole idea of blockchain or distributed ledger technology relies heavily on the public and private keys. These keys are a series of characters that offers unique security properties. One security property is that it is tough to guess.

Blockchain work with these keys. If you do not have the right combination of the public or private key, you simply cannot access the digital content stored within the blockchain. Hackers know that, and they also know that it is a waste of time in guessing those keys. That's why they try to get the keys by attacking the weakest point, i.e., the system that is used by the user. It can be a mobile device or a personal computer.



In any of the case, the hacker can take advantage of the vulnerabilities shown by these devices. If you are using Android, they will simply try to install malware to get access to the information that you share through your device. If you input your private key, they can make a copy of it, and send it to their own computers. With the private key in hand, they can then access the information stored. Most of the time, it's the user's fault for not securing their systems.

Hardware-level vulnerabilities can also be exploited by hackers to gain access to a computer or a system. As a user, one is tasked to make their system as secure as possible. It is important that for purposes of user protection, that one updates their device regularly and that they use good antivirus and firewall. Never store your keys in Word document, a text file or other type of file which the hacker can easily access it.

Vendor Risks

Many ad-hoc platforms and services work with DLTs to improve its functionality. With DLTs growth, it is evident that we will also see growth in 3rd party development. These include solutions such as wallets, payment processors, smart contracts, blockchain payment platforms, and so on. These vendors also pose a risk to users. If the platform or service you are using has any form of vulnerability, then you can expect to have issues when accessing it. The security risks can come due to bad code, weak security, and wrong handling by the persons. Also, as most of these vendors use smart contracts, they have to ensure that their smart contracts are free from all kinds of flaws or security loopholes. If there is one, then it can easily lead to a system-wide effect.

Untested Code

The quality of the code remains a big concern to most of the blockchain solutions. Decentralized organizations need to take extra care when they deploy their solutions. One such example is the Decentralized Autonomous Organization (DAO) — what is DAO. It is an autonomous system that automates a certain or the whole organization. DAO hack is one of the most popular hacks in the history of blockchain. It was created in 2016 and known as “The DAO.” It got hacked, which resulted in the loss of a huge amount of revenue. The split function was executed by the hacker as he attempted to transfer funds from the main account. He stole \$55 million of Ether.



Not Tested at Full Scale

DLTs are mostly run on a small scale before going live. To test the DLT, the developers need to use testnet which simulates the network. They can do a wide range of tests. However, it doesn't cover the issues that can come at full scale.

Finally, As an organization, you need to understand that blockchain is not the solution to every problem out there. It may improve specific processes, but it does cost a lot during the initial stage. Also, some risks need to be taken care of. In this article, we discussed a wide variety of risks, including security, legal, and development.

Benefits of trading Forex with Bitcoin.

Decentralized Valuations: A major advantage of trading forex with the bitcoin is that the bitcoin is not tied to a central bank. Digital currencies are free from central geopolitical influence and from macroeconomic issues like country-specific inflation or interest rates.

High Leverage: Many forex brokers offer leverage for bitcoin trades. Experienced traders can use this to their benefit. However, such high margins should also be approached with great caution as they magnify the potential for losses.

Low Deposit Amount: A trader can start with as little as \$25 with some bitcoin forex trading firms. A few forex trading firms have even offered promotions like a matching deposit amount. Traders should check that the broker is legitimate and appropriately regulated.

Low Cost of Trading: Most forex brokers that accept cryptocurrency are keeping brokerage costs very low to attract new clients.

Security: You don't need to reveal your bank account or credit card details to make a bitcoin transaction. This is a big advantage in terms of cost and financial security.

No Global Boundaries: Bitcoin transactions have no global boundaries. A trader based in South Africa can trade forex through a broker based in the United



Kingdom. Regulatory challenges may remain a concern, but if both traders and brokers are willing to transact, there are no geographical boundaries.²³⁹

Cryptocurrency volatility

Although the cryptocurrency market is relatively new, it has experienced significant volatility due to huge amounts of short-term speculative interest. For example, between October 2017 and October 2018, the price of bitcoin rose as high as \$19,378 and fell to lows of \$5851. Other cryptocurrencies have been comparatively more stable, but new technologies are often likely to attract speculative interest. The volatility of cryptocurrencies is part of what makes this market so exciting. Rapid intraday price movements can provide a range of opportunities to traders to go long and short but also come with increased risk. So, if you decide to explore the cryptocurrency market, make sure that you have done your research and developed a risk management strategy.²⁴⁰

Cryptocurrency market hours

The cryptocurrency market is usually available to trade 24 hours a day, seven days a week because there is no centralised governance of the market. Cryptocurrency transactions take place directly between individuals, on cryptocurrency exchanges all over the world. However, there may be periods of downtime when the market is adjusting to infrastructural updates, or ‘forks’. With IG, you can trade cryptocurrencies against fiat currencies – such as the US dollar – from 4am Saturday to 10pm on Friday (GMT).

Improved liquidity

Liquidity is the measure of how quickly and easily a cryptocurrency can be converted into cash, without impacting the market price. Liquidity is important because it brings about better pricing, faster transaction times and increased accuracy for technical analysis. In general, the cryptocurrency market is considered illiquid because the transactions are dispersed across multiple exchanges, which means that comparatively small trades can have huge impact on market prices. This is part of the reason cryptocurrency markets are so volatile. However, when you trade cryptocurrency CFDs with IG, you can get improved liquidity because we

²³⁹ <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading>

²⁴⁰ <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading>



source prices from multiple venues on your behalf. This means that your trades are more likely to be executed quickly and at a lower cost.²⁴¹

Ability to go long or short

When you buy a cryptocurrency, you are purchasing the asset upfront in that hope that it increases in value. But when you trade on the price of a cryptocurrency, you can take advantage of markets that are falling in price, as well as rising. This is known as going short. For example, let's say that you have decided to open a short CFD position on the price of ether because you believe that the market is going to fall. If you were right, and the value of ether fell against the US dollar, your trade would profit. However, if the value of ether rose against the US dollar, your position would be making a loss. Find out more about cryptocurrency trading and how it works.²⁴²

Leveraged exposure

As CFD trading is a leveraged product, it enables you to open a position on 'margin' – a deposit worth just a fraction of the full value of the trade. In other words, you could gain a large exposure to a cryptocurrency market while only tying up a relatively small amount of your capital.

The profit or loss you make from your cryptocurrency trades will reflect the full value of the position at the point it is closed, so trading on margin offers you the opportunity to make large profits from a relatively small investment. However, it can also amplify any losses, including losses that could exceed your initial deposit for an individual trade. This is why it is crucial to consider the total value of the leveraged position before trading CFDs. It is also important to make sure that you have a suitable risk management strategy in place, which should include the appropriate stops and limits.²⁴³

Faster account opening. When you buy cryptocurrencies, you'll need to buy and sell via an exchange, which requires you to create an exchange account and store the cryptocurrency in your own digital wallet. This process can be restrictive and time consuming. But when cryptocurrency trading with IG, you won't need access

²⁴¹ <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading>

²⁴² <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading> accessed on 7th January 2021

²⁴³ <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading>



to the exchange directly because we're exposed to the underlying market on your behalf. You won't need to set up and manage an exchange account, so you could be set up and ready to trade much more quickly. In fact, you could be trading in less than five minutes, with our simple application form and instant online verification.²⁴⁴

²⁴⁴ <https://www.ig.com/en/cryptocurrency-trading/benefits-of-cryptocurrency-trading> accessed on 7th January 2021



Six

THE INTERNATIONAL PRACTICE OF CRYPTOCURRENCIES

Introduction.

African countries are no strangers to the use of digital solutions for money transfers, nor to the rapid implementation of such technologies. It is often said that the pervasiveness of mobile telecommunication usage in Africa, enabled the continent to leapfrog many first-world countries. Mobile phone usage grew from less than 3% to 80% in under a decade. There is already an abundance of local mobile and e-payment platforms that have seized this as an opportunity to develop innovative ways to reduce the friction associated with transferring money across the continent. An example is Kenya's M-Pesa, which has been around since 2007. The platform, which allows customers to send and receive money via mobile phone, already handles transfers of more than 25% of Kenya's GNP, leading to greater consumer confidence in financial technologies. Sub-Saharan Africa is also reported to have the second highest population of unbanked adults in the world, at about 350 million people, or 17% of the global total. Reportedly, two thirds of Sub-Saharan Africans do not have a bank account. Despite this, a high percentage of migrant work, both within and between African countries, results in a disproportionate need for remittance mechanisms outside of traditional banks.



Foreign remittance remains a primary source of income for many African communities and households, with countries like Lesotho purportedly attributing almost a third of their GDP to remittances from abroad. These, amongst many other factors, create the ideal environment for new ways of moving value, and present many of the challenges that distributed ledger solutions aim to solve. This also presents the potential for greater socio-economic inclusiveness, such as through enhanced financial security. So to what extent has blockchain and cryptocurrency been embraced in Africa? The results are mixed.

Whilst the private sector is blazing ahead in many countries, governments have been apprehensive and reserved, and in some instances unreceptive. Countries such as Zimbabwe and Namibia have reportedly begun with a hard stance, whilst Mauritius is a regional frontrunner. The regulatory sandbox created in Mauritius, for instance, demonstrates a progressive take on the general economic benefits that could follow a friendly, and even incentivised, approach to cryptocurrencies. This creates another dimension for the potential for African countries to develop regulations around blockchain and cryptocurrency, with an intention to incentivise foreign direct investment. This guide summarizes the latest and key developments taking place in selected African jurisdictions in respect of blockchain and cryptocurrency, focusing on current regulatory approaches. This guide also provides a comparative assessment of the stance adopted by such regulators, with a view to providing a better understanding of the opportunities and challenges associated with the use of this technology in Africa.

Botswana

The Bank of Botswana has not released any regulation on cryptocurrencies or the use of blockchain technology and has reportedly stated that it currently has no intention of regulating cryptocurrencies. The XinFin Organisation, a non-profit organization which liaises with different international governments to reduce the



existing gap in global infrastructure, met with Botswana government officials in 2017 to discuss the potential use of blockchain technology in the infrastructure industry. Despite this, Botswanan government officials were quoted as being unsure about the use and benefit of cryptocurrency and blockchain technology in their country.²⁴⁵

Currently, there seems to be no cryptocurrency exchanges in Botswana and as such, bitcoin trading is limited to private Whatsapp and Facebook groups. Bitcoin exchange, Belfrics, has announced plans to launch in Botswana, after its successful launch in Kenya in 2017. Despite the lack of regulation, there have been at least three blockchain based start-ups in Botswana: the Satoshi Centre, founded in 2014, acts as a blockchain hub and aims to educate business and government in Botswana about the disruptive technology Plaas, launched by the Satoshi Centre, aims to develop a mobile application that enables farmers and farming cooperatives to manage daily farming production and stock, on the blockchain

Kgoboko, a financial ecosystem, aims to address the needs of the unbanked in emerging markets In addition, a private medical clinic in Gaborone, the Sharada Clinic, has apparently started accepting bitcoin, along with traditional payment methods, as compensation for treatment. The Sharada Clinic’s aim is to “achieve sustainability through accessible services.” Anglo American’s diamond unit, De Beers, which has a number of mines in Botswana, has launched the first industry-wide blockchain network to monitor the quality and origin of its diamonds. This blockchain based supply chain will monitor the diamonds from the moment they are mined to the point at which they reach the consumer. Bruce Cleaver, CEO of

²⁴⁵Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



De Beers, stated that the purpose of using blockchain technology is because “a consumer should be able to know there is an accurate register of a diamond’s journey that assures its provenance and authenticity.”

Private sector is driving the use of crypto currency and block chain technology in Botswana. The Bank of Botswana’s negative response to crypto currencies seems to indicate that Botswana will be slow to regulate block chain technology.

Ghana

The Bank of Ghana has announced that the trading and use of crypto currency in Ghana is not yet legal because it is not recognized as a legitimate form of currency. This is because all media of exchange in the country must be supported by the Bank of Ghana, which has not yet approved the use of cryptocurrencies. The Governor of the Bank of Ghana stated that the necessary regulations to support the use of cryptocurrencies do not currently exist in Ghana. However, the Bank of Ghana has drafted a Payment Systems and Services Bill (Ghanaian Bill), which it believes will enable the regulation of cryptocurrency in Ghana in the future. After a preliminary review of the Ghanaian Bill, there seems to be no reference to cryptocurrency, blockchain or digital currency, however cryptocurrencies will apparently be regulated through companies registered with the government as “Electronic Money Issuers.” The Bank of Ghana has discouraged the use of cryptocurrency until the promulgation of the Ghanaian Bill.²⁴⁶

In Ghana, more than 80% of landowners lack official title deeds with the Land Commission of Ghana and most land is held customarily through oral agreements. To resolve this, Ghanaian start-up Bitland is using blockchain technology to mirror official title deeds, thereby boosting the integrity of the land records held with the

²⁴⁶ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



Land Commission of Ghana. Bitland believes that after their land is clearly registered on the blockchain, landowners may finally be able to apply for loans and mortgages with their banks. Land Layby Group, a Nairobi based real estate company, allows individuals to securely purchase property in Ghana, by accurately mirroring the Government Land Registry systems on the blockchain network. Potential purchasers can now review the accurate ownership records of the Government Land Registry systems on a tamper proof digital form. Land Layby Group believes that by using blockchain to publish the land records online, the risk of multiple titles for the same piece of land will be eliminated. A similar business model has been launched by Ghanaian based start-up, BenBen.

Kenya

Kenya does not yet have a blockchain regulatory framework in place. However, Kenya's National Land Commission has welcomed the use of the blockchain network in creating transparency of land ownership, as it will alleviate potential fraudulent sales of land, and confusion over title to land. Land Layby Group allows individuals to securely purchase property in Kenya, by accurately mirroring the Government Land Registry systems on a blockchain network. Potential purchasers can now review the accurate ownership records of the Government Land Registry systems on a tamper proof digital form. Land Layby Group believes that by using blockchain to publish the land records online, the risk of multiple titles for the same piece of land will be eliminated²⁴⁷.

Despite warnings from Kenya's central bank about the volatility of cryptocurrencies, some businesses in Nairobi are now accepting Bitcoin payments .The

²⁴⁷ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



total number of Bitcoin transactions in Kenya are estimated to be worth over \$1.5m, according to the Blockchain Association of Kenya.

Crypto-currencies are virtual money that can be used to pay for things in the real world, such as a hotel room, food or even a house. Digital tokens are held in online wallets, and can be sent anonymously between users. Crypto-currencies run on a technology called blockchain - a ledger of blocks of information, such as transactions or agreements, that are stored across a network of computers. The information is stored chronologically and is designed to be de-centralised and tamper-proof. While this provides security, it also means there is no oversight from a central authority such as a bank or a government. Tony Mwongera, the chief executive of Healthland Spa in Nairobi, began accepting Bitcoin payments in 2018.

“I decided to adopt the use of crypto-currencies because there was so much theft in my business,” he told the BBC.

“So I said, let me use a way that can be safe, secure and I can also embrace technology.” Healthland Spa customers told the BBC that they like the convenience of using crypto-currencies to pay for purchases. However, if you look at the total number of people in Kenya using virtual currencies today, it is still relatively small – only about 40,000 people have ever made a transaction using Bitcoin. Part of the reason crypto-currency penetration isn’t growing that much is because Kenya’s central bank has forbidden banks from dealing in virtual currencies.²⁴⁸

In Kenya the national payment system Act makes provision for the regulation of and supervision of payment systems and payment service providers and for connected purposes, The NPS Act brings all payment service providers, including mobile phone service providers, into a single regulatory framework, and provides

²⁴⁸ Kenya Michael (2020) - A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda



the central bank of Kenya with direct oversight of these service providers and their products to ensure the safety and efficiency of their platform.

Money remittance in Kenya is governed by the central Bank of Kenya under the money Remittance regulations and the same requires licensing where they offer a service for the transmission of money or any representation of monetary value without any payment accounts being created in the name of the payer or the payee,

The regulatory framework on the making of financial transactions in Kenya has seen the enactment of the Anti-Money Laundering Act which in its scope encompasses the use of crypto currencies, the scope of the Act is not restricted to money as to includes property with a broad definition to the extent that Fintech innovations would fall under this broad definition of property in the AML Act, they may reasonably be considered to be subject to the AML Act

The operators of some fin tech innovations which include the transfer of money or value may be deemed to be “reporting institutions” under the AML Act and have reporting and compliance obligations.

Crypto currencies are not treated as legal tender, treated as assets nor are they licensed in Kenya,

The capital markets Act of Kenya makes definitions a security and includes some of the aspects set out herein but does not expressly envisage crypto currencies, shares, debt instruments, rights options relating to other securities, futures relating to assets or property, depository receipts and asset based securities The definition of securities also includes interests, rights or property commonly known as securities



Further the Capital markets Act provides that securities include any other instrument prescribed by the CMA to be a security, the fore going allows for the Kenyan Capital Markets Act to designate Crypto currencies as securities.

Just as aforesaid, the central bank of Kenya in December 2015 issued a public warning on the use of cryptocurrencies due to their perceived volatility and the lack of specific regulation. The Central Bank of Kenya clarified that it does not regulate virtual currencies and offers no comfort to members of the public. Despite the warning by the CBK there is no law prohibiting their use. However, depending on their nature, various elements of cryptocurrencies may be subject to existing regulations.

The capital Markets Authority of Kenya has issued a public warning notifying the public that it has not approved any initial coin offerings, The CMA has now set up a regulatory sandbox which will help the CMA gain visibility into new innovations as the innovator tests their products and services in live environments. The boundaries that the regulatory sandbox puts around live testing also reduces risks to consumers from new financial products and services.

However, its predicted that there will be increased financial innovation in the fin tech space and an increased willingness by regulators to engage with block chain ledger technology, the Kenyan Government has through ministry of ICT shown an increased appetite to embrace the use of distributed ledgers for record keeping. These efforts are likely to intensify and may culminate in the use of distributed ledger technology in government registries.

The initiative to use fin tech to roll out financial services to the mass market is likely to continue and focus on non-bank services such as insurance and investments, the use of ICOs to raise capital is likely to gain momentum.



The Law Society of Kenya has reportedly filed a lawsuit in an attempt to stall the implementation of digitising title deeds using blockchain technology on the basis that (1) the Kenyan legislature has not yet passed any laws which would support such an initiative, thus opening up the possibility that any progress could be reversed by a successive executive, and (2) thousands of land ownership cases currently before the courts could be hindered by a digital record purportedly proving ownership prior to the dispute being properly resolved by the judiciary. Another initiative in the private sector is the launch of TMT Global Coin, a blockchain- powered logistics company that hopes to improve cargo logistics globally by using blockchain technology through smart contracts to improve the transparency and authenticity of records in imports and exports. The National Transport and Safety Authority has announced its intention to roll out an electronic motor vehicle identification service in Kenya where all motor vehicles will have an electronic sticker placed on the windshields, detectable only via the use of specialised technology, thereby assisting in the recovery of stolen vehicles. The network will be run on a shared blockchain platform which will alert various government agencies of the theft, including inter alia, the Kenyan Revenue Authority and the Kenyan Police. Kenya’s public health sector is also attempting to install a smart platform in all public hospitals creating a shared blockchain hub where patients’ information and medical history may be shared. This will also enable nurses in rural areas to treat patients based on a doctor’s advice obtained elsewhere.

In addition, the Kenyan government is seeking to link the National Registration of Persons Bureau database to the closed circuit television cameras manned by the Kenyan Police, thereby enabling face recognition via blockchain technology.



In contrast, the Central Bank of Kenya’s governor has purportedly rejected the use of virtual currencies in Kenya due to their unregulated nature. In addition, the Central Bank of Kenya has repeatedly stated that it does not support the use of cryptocurrency within Kenya. On 28 February 2018, the Kenyan government (through its ICT Cabinet Secretary) announced that it would appoint an 11-member task force to explore the use of distributed ledger technology and artificial intelligence. This comes after the President of Kenya announced his intentions for Kenya to explore the opportunities in the new technology found in the fourth industrial revolution. This is a decidedly more positive response from the Government of Kenya who had previously referred to bitcoin as “a pyramid scheme”.

In *Lipisha Consortium Ltd and Bitpesa Ltd v Safaricom Petition [2015] eKLR (the Lipisha Judgment)*, the court ruled that Bitcoin represented monetary value and that Safaricom was justified in suspending the services of Lipisha Consortium Ltd and Bitpesa Ltd, after Bitpesa Ltd dealt in money remittance services using bitcoin without first receiving the approval of the Central Bank of Kenya. The Lipisha Judgment therefore sets a precedent for potential future sanctions by the Central Bank of Kenya against companies dealing in cryptocurrency in Kenya without first seeking its approval. In November 2017, three traders were charged with conspiracy to commit a felony in Nairobi in connection with the theft of 10.2 million Kenyan Shillings. Apparently, the traders had helped an unknown and untraceable individual purchase cryptocurrency using the alleged stolen money. This case brought the importance of strict AML and KYC procedures to the fore.

The Central Bank of Kenya has expressed negative sentiments regarding the use of virtual currencies and this may hamper regulatory developments. The use of the blockchain network to clarify land title ownership may in fact result in an increasing number of disputes regarding the ownership of land. Due to the



precedent set by the Lipisha Judgment, there may be future litigation regarding the use of cryptocurrencies without the Central Bank of Kenya’s approval.

Mauritius

In May 2017, Mauritius issued an open call to innovators to take advantage of its new Regulatory Sandbox Licence. Applicants must demonstrate that their project is innovative, beneficial to the Mauritian economy and cannot be accommodated in the innovator’s home jurisdiction due to legal or regulatory gaps. In particular, the Government of Mauritius is seeking to attract fintech start-ups and strives to be considered to become known as the, “Ethereum Island.” The President of the Republic of Mauritius announced in November 2017 Mauritius’ intention to create the Mauritius Blockchain Center of Excellence (the MBCE) by January 2018. The President described the MBCE’s mission as threefold: provide education on blockchain, build the Mauritian community develop use cases that solve real world problems. In February 2018, the Fintech and Innovation-driven Financial Services Regulatory Committee met for the first time to make recommendations to the Government of Mauritius on the need to introduce new sets of regulations for fintech and innovation. In June 2018, it was announced that a Mauritian state owned entity, State Informatics Limited, concluded a strategic cooperation agreement with a South Korean-owned company called the Locus Chain Foundation to introduce blockchain technology to the public and private sector IT systems of Mauritius and several African countries, by introducing a ‘fourth generation’ blockchain platform which is capable of conducting “end-to-end transactions in less than two seconds”. CEO, founder and chairman of the Locus Chain Foundation, Mr Sangyoon Lee, stated that he believes that introducing the blockchain platform as an infrastructure system and settlement currency in African countries will make a significant change to the way in which transactions are



concluded and possibly “contribute to economic development by enhancing national (economies).²⁴⁹”

The regulatory sandbox has provided Mauritius with an advantage of learning about the risks and benefits associated with crypto currencies, whilst simultaneously learning how best to draft and implement the relevant legal frameworks. The MBCE and the Fintech and Innovation-driven Financial Services Regulatory Committee will soon release its recommendations on the regulation of crypto currencies in Mauritius.

Namibia

The Government of Namibia has reportedly not yet released any statement on the use or regulation of cryptocurrencies in Namibia. The Bank of Namibia has strongly voiced its objections to the use of cryptocurrency in Namibia in its position paper released in September 2014. In this position paper, the Bank of Namibia founded its objections on five bases: it likened cryptocurrency to virtual currency, being a “type of digital currency that is unregulated with no legal tender status or relations to any central bank or public authority of a particular jurisdiction” the Bank of Namibia Act, No. 15 of 1997 provides the Bank of Namibia with the sole mandate to serve as Namibia’s instrument to control the money supply and to create and issue currency.

The Bank of Namibia does not consider the creation of virtual currencies to fall within its mandate it distinguished between virtual currency and e-money, the latter being a digital representation of legal tender currency, also referred to as fiat currency the Currency and Exchanges Act, No. 9 of 1993 and the Exchange Control Regulations, 1961 do not allow the establishment of virtual currency

²⁴⁹ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



exchanges or bureaus in Namibia. As such, the Bank of Namibia does not consider virtual currencies to be a legal tender in Namibia or a foreign currency. Further, no goods or services may be bought with virtual currencies within Namibia it considers virtual currencies to pose a high risk of money laundering and terrorist financing. Although the Bank of Namibia supports the technology behind crypto currency, it does not recognize, nor support the use of crypto currencies within Namibia.

There has been no litigation or court action reported in Namibia concerning crypto currency yet.

Although the Bank of Namibia made no reference to any legal penalties for the use of crypto currencies in its 2014 position paper, it did state that “virtual currencies cannot be used to pay for goods and services in Namibia.”

As such, there may be a declaratory order sought by residents of Namibia to determine the legality of the use of crypto currencies within Namibia, or the Bank of Namibia may institute proceedings to interdict any users of crypto currencies within its jurisdiction.

Nigeria

In early 2017, the Central Bank of Nigeria warned financial institutions not to use, hold or trade virtual currencies pending “substantive regulation or decision by the (Central Bank of Nigeria) as they are not legal tender in Nigeria.” Further, the Central Bank of Nigeria stated that banks who trade in cryptocurrencies do so at their own risk. The Central Bank of Nigeria cited its scepticism of cryptocurrencies on the possible exploitation of Nigerian citizen by criminals and terrorists. Despite these warnings, a bitcoin-related Ponzi scheme reportedly resulted in almost 2 million Nigerian residents losing a combined USD 50 million in early 2017.



Following this, the Nigerian Deposit Insurance Corporation (the NDIC) warned Nigerians that they would not be afforded consumer protection or insurance from the NDIC when trading in cryptocurrencies as virtual currencies have not been issued by the Central Bank of Nigeria. The NDIC stated further that “[n]o central bank will accept digital currency as a substitute for its national currency or part of its monetary system, when it is not able to control it.” In late 2017, the Deputy Director of the Central Bank of Nigeria commented that the “Central bank cannot control or regulate bitcoin. [The] Central bank cannot control or regulate blockchain. Just the same way no one is going to control or regulate the internet. We don’t own it.” Despite this, the Deputy Director announced that the Central Bank of Nigeria has “taken measures to create four departments in the institution that are looking forward to harmonis[ing] the white paper on Crypto currency.” In January 2018, the Governor of the Central Bank of Nigeria stated that “Cryptocurrency or bitcoin is like a gamble... We cannot, as a central bank, give support to situations where people risk their savings to ‘gamble’.” The Governor stated further that the Central Bank of Nigeria may, in future, “make some very concrete pronouncements as to the direction [of the regulation of cryptocurrency].” Despite the above response by the Central Bank of Nigeria and the NDIC, Nigeria reportedly has the world’s third largest bitcoin holdings as a percentage of gross domestic product. In contrast, the Nigerian Senate has launched an investigation into “the viability of bitcoin as a form of investment.”²⁵⁰

A circular has been released by the Central Bank of Nigeria prohibiting the trading of cryptocurrencies by financial institutions in Nigeria. It would seem that a violation by the financial institutions of this circular would result in sanctions by the Central Bank of Nigeria. The slow acceptance of cryptocurrencies by the

²⁵⁰ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



regulators is notable considering that Nigeria is reportedly the third largest holder of bitcoin in the world.

South Africa

Currently in South Africa there is no specific laws or regulations that address the use of virtual currencies, consequently, no legal protection or recourse is afforded to users of virtual currencies. In December 2014, the South African Reserve Bank (SARB) issued its position paper on virtual currencies whereby it confirmed that the SARB has the sole right to issue legal tender and that decentralized convertible virtual currencies do not constitute legal tender in South Africa. The SARB stated “any merchant or beneficiary may refuse [virtual currencies] as a means of payment.” This was confirmed again by the SARB in its statement in 2017 where it confirmed that it does not recognize crypto currency as “currency” or “legal tender” in South Africa. Notwithstanding this, SARB has advised that any payments used to purchase virtual currencies would contribute to an individual’s utilisation of the “single discretionary allowance (R1 million) and/or individual foreign capital allowance (R10 million with a Tax Clearance Certificate), per calendar year.” Subsequently, the Minister of Finance noted in mid-2017 in Parliament that “the National Treasury together with the SARB, [Financial Intelligence Centre], and [Financial Services Board] have also established an Intergovernmental Fintech Working Group in December 2016, to develop an approach and revised policy stance towards fintech, including crypto-currencies, and to deal with fast-emerging fintech matters in the financial sector, like crowdfunding, robo- advice, machine learning and alternative payment platforms.” The Fintech Working Group has recently launched Project Khokha, which experiments with distributed ledger technologies (DLT) in collaboration with



ConsenSys (a New York based blockchain technology company) and the South African banking industry. Project Khokha aims to develop a proof of concept to “replicate the interbank clearing and settlement on a DLT which will allow the SARB and industry to jointly assess the potential benefits and risks of DLTs.²⁵¹”

Crypto assets in south Africa remain largely unregulated, however, this is bound to change with regard to the amendment of the law on the tax regime with the enactment of taxation law amendment bill, the bill would categorize crypto assets as financial instruments under the 1962 Income Tax Act and subject transactions and investments involving them under the Act’s ring fencing of assets Losses clause, it would also categorize the issuance, acquisition, collection, buying or selling, or transfer of ownership of any crypto assets as a financial service under the 1991 Value- Added Tax Act thereby making it exempt from the application of this Act

In addition, a consultation paper by the Crypto Assets Regulatory Working Group has proposed the registration and regulation of entities performing various crypto assets activities including wallet providers and custodial service providers.

Due to their unregulated status, virtual currencies cannot be classified as legal tender as any merchant may refuse them as a payment instrument without being in breach of the law, in addition virtual currencies cannot be regarded as a means of payment as they are not issued on receipt of funds. The use of virtual currencies therefore depends on the other participants’ willingness to accept them, while they can be bought and sold on various platforms, they are not defined as securities in terms of the Financial Markets Act 2012(Act No. 19 of 2012). The regulatory standards that apply to the trading of securities do not apply to virtual currencies.

²⁵¹ Kenya Michael (2020) - A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda



The south African Revenue Bank, and the central bank in December 2014 published a position paper highlighting various risks associated with virtual currencies including issues relating to payment systems and payment service providers, price stability, money laundering and terrorism financing, consumer risk, circumvention of exchange control regulations, and financial stability. The South African Revenue Bank maintains that its 2014 paper remains current and relevant.

In 2016, South Africa introduced an intergovernmental Fintech Working Group consisting of representatives from the National Treasury, the SARB, the Financial Sector Conduct Authority formerly known as the Financial Service Board and the Financial Intelligence Centre, the purpose of the Working group is to develop a common understanding among regulators and policymakers of financial technology development as well as policy and regulatory implications for the financial sector and the economy.

In 2018, a joint working group, the crypto Assets Regulatory Working Group, consisting of the members of the IFWG and the South African Revenue Services was established for the specific purpose of reviewing the country's position on crypto assets, in January 2019, this group published a consultation paper for public discussion while it identified multiple uses of crypto assets, the group focused on the purchasing and selling of crypto assets and paying for goods and services using crypto assets payments. The Group's work included unifying the various terms used to refer to virtual currencies around the term crypto assets.

The fore going has seen the South African Reserve Bank together with other regulators propose 30 rules to regulate the use of cryptocurrencies, the same is intended to make recommendations for the regulation of cryptocurrencies and



related service providers with the sole aim of being in compliance with the cryptocurrency standards set by the Financial Action Task force which is the global Money Laundering and anti-terrorism Task force.

The financial services among other recommendations will be the supervisory authority of all crypto currency service providers, all CASPs will be required to register with it as an accountable institution and comply with AML/CFT requirements, this will include conducting customer identification and verification, conducting customer due diligence, keeping records, monitoring for suspicious and unusual activity on an ongoing basis, reporting to the FIC and unusual transactions, reporting cash transactions of R 25 000 and above.

The South African tax authority, the South African Revenue Service (SARS), has been more vocal, and in a statement this year, it stated that cryptocurrencies are “neither official South African tender nor widely used and accepted in South Africa as a medium of exchange.” However, although cryptocurrencies are not regarded by SARS as a currency for income tax purposes or capital gains tax, cryptocurrencies are regarded by SARS as an asset of an intangible nature. It currently appears that any taxpayer who intentionally omits to declare their gains or profits will be penalized by up to 200 percent of the amount owed plus interest, in accordance with section 223 of the Tax Administration Act, 28 of 2011. SARS argues that cryptocurrencies should be taxed depending on the intention with which it is held. Thus, gains or losses in relation to cryptocurrencies can be broadly categorized as having three potential consequences:

- *A crypto currency can be acquired through mining but until the newly acquired crypto currency is sold or exchanged for cash, it will be held by the miner as “trading stock”*



- *Investors buying and selling crypto currencies on exchanges will be liable for the capital gains earned by the investor*
- *Where goods or services are exchanged for crypto currencies, the normal barter transaction rules will apply*

Interestingly, two mainstream brands (Takealot.com and Pick ‘n Pay) have previously accepted bitcoin as a method of payment, although it is undetermined whether these two retailers still this method of payment. Earlier this year, a cryptocurrency ATM was opened in Randburg, Johannesburg. It is claimed that this is one of only four cryptocurrency ATMs in the whole of Africa. South Africa recently passed new legislation which will regulate the financial sector in what is called a “Twin Peaks Model.” This model provides for two new financial regulators in South Africa. Thus, it is likely that the requirements to register with financial regulators will become more stringent. The Deputy Governor of SARB stated that the “Twin Peaks model of financial sector regulation, which is currently being implemented, aims to put in place a regulatory framework that better responds to the dynamic nature of the financial sector, including fintech.” This year, two initial coin offerings (ICO’s) were launched exclusively in South Africa both of which aim to contribute to the financial wellbeing of the country. The first is ‘Rhino Coin’ which is a cryptocurrency aimed at regulating the legal sale of rhino horn within South Africa. Currently the cryptocurrency is valued at 1 coin: 1 gram of Rhino horn. Thus, holders of the Rhino Coin can either trade the cryptocurrency until it increases in value or subject to compliance with the legal requirements of doing so, purchase the Rhino horn. Any money raised from the ICO will be spent on Rhino conservation efforts.



The second is ‘Safecoin’ which was opened exclusively to South Africans for just ZAR 70 a token, before being made available to the rest of Africa. The purpose of Safecoin is to “become a widely accepted form of payment across the entire African online trading community. We want to boost African trade and simplify the cross-border payment processes between countries by eliminating red tape and bulky transaction processes.” In recent months, the National Treasury’s Taxation Laws Amendment Bill, 2018 which will shortly be presented to Parliament has proposed the following amendments to tax legislation which amongst other things, will change the way cryptocurrencies are classified in South Africa: ‘financial services’ as defined in section 2 of the Value Added Tax Act, 89 of 1991 (VAT Act) will include “the issue, acquisition, collection, buying or selling or transfer of ownership of a cryptocurrency” the inclusion of cryptocurrencies as a ‘financial service’ in the VAT Act will mean that the sale or supply of cryptocurrencies will be exempt from VAT, suppliers of cryptocurrencies will not be entitled to register for VAT purposes, and VAT may not be deducted from expenses incurred in relation to such activities. The definition of ‘financial instrument’ in the Income Tax Act, 58 of 1962 (ITA) will include “any cryptocurrency” and section 20A of the ITA will also be amended to include “the acquisition or disposal of any cryptocurrency” thereby ring-fencing the assessed losses of any natural person acquiring or disposing of cryptocurrencies and setting off such losses against any income accrued from such trade Formal legal action.

There has been no litigation or court action reported in South Africa yet. Notwithstanding this, pressure from the general public as well as regulators means that cryptocurrency exchanges are strongly advised to comply with the Financial Intelligence Centre Act, 38 of 2001 as well as related KYC and AML procedures. Most exchanges operating in South Africa voluntarily comply in any event, as it is likely this will become more stringent in future.



Notwithstanding general warnings by the SARB and SARS of the possibility of fraud in cryptocurrency transactions, numerous South Africans allegedly fell victim to a fraudulent scheme involving BTC Global, Steve Twain. According to statements released by the Hawks, more than 27,500 people are believed to have invested between ZAR 16,000 and ZAR 1.4 million with BTC Global with the promise of up to 50% interest each month. In December 2018, the SARB published its review of the National Payment Systems Act, 78 of 1998 for public comment. This legislation regulates systems used by South Africans for payment settlement, and the SARB reportedly intends to undertake a complete overhaul of the current regulation by 2020. Interestingly, the SARB appears to recognise that there may soon be little difference between domestic and international payments and sees the possibility of similar digital currencies being at the heart of the national payment system in the future. This may pave the way for a reduction in the exclusivity of commercial banks in processing payments and, further down the line, the possibility of a digital South African fiat currency.”

Tanzania

In 2017, the Director of National Payment Systems of the Bank of Tanzania confirmed that crypto currencies are “not recognized in the country and whoever uses it will not get any assistance from (the Bank of Tanzania) should anything happen.” In January 2018, the Bank of Tanzania further claimed that crypto currencies were a threat to East Africa’s plan to launch a single, common currency which would be used across borders between the East African countries. The director stated that the plan to launch a common East African currency was still underway despite the popularity of crypto currencies. In addition, the Assistant Manager of the Safe Custody Centre at the Bank of Tanzania commented that “[i]nvestors in cryptocurrencies should be aware that they run the risk of losing all



their capital.” Despite the Bank of Tanzania’s concerns, Tanzania reportedly has a large cryptocurrency mining sector and is rated 120 out of the 219 countries that are actively involved in bitcoin mining. Tanzania’s electricity consumption in cryptocurrency mining is predicted to amount to more than the entire country’s non-cryptocurrency related electricity consumption per year, and this is expected to increase by about 30%. The Director confirmed that there is no legal framework in Tanzania to regulate cryptocurrencies through the Bank of Tanzania. As such, the Director stated that the Bank of Tanzania “is currently studying internet currencies with a view to finding a permanent regulatory solution.” Further, the Director commented that the Bank of Tanzania is worried as “cryptocurrencies are not issued by traditional institutions such as central banks. This amplifies the risks of financial instability.” There has been no litigation or court action reported in Tanzania yet.

The Bank of Tanzania is currently attempting to study cryptocurrencies but has not, as yet, released any regulatory guidelines. Further, the insistence that cryptocurrency will threaten the launch of the common East African currency may lead regulators to issue stricter legislation in an effort to quash the potential use of virtual currencies.

Uganda

The United Nations African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFRI) together with the University of Birmingham Law School, hosted a round table discussion in 2016 with Ugandan members of Parliament, regulators and academia to discuss the regulation of crypto currencies in Uganda (the UNAFRI Meeting). It was reportedly agreed at the UNAFRI Meeting that Uganda’s legislation, in its current state, does not govern the use of crypto currencies. Further, it was determined that crypto currency does not fall under the definition of fiat currency in terms of the Bank of Uganda Act, 2000 or



the Foreign Exchange Act, 2004. In addition, it was argued that the Bank of Uganda Act, 2000 and the Ugandan Constitution (Article 162) do not empower the Bank of Uganda to regulate virtual currencies. As such, reports are that it was concluded that the policy makers of the Government of Uganda and other regulatory authorities need to determine whether to amend the existing law or promulgate new legislation.²⁵²

Despite the lack of regulation, government bodies such as the National Information Technology Authority (NITA), established under the Ministry of Information Communication Technology, are reportedly actively monitoring crypto currencies in Uganda in an effort to learn more and to consider how it can potentially regulate crypto currencies in the future. The NITA stated that due to the multi-faceted nature of virtual currencies, there would need to be more than one regulator in order to adequately legislate on this matter. In February 2017, the Bank of Uganda issued a warning to the general public about One Coin Digital Money, a Bulgarian company operating in Uganda, who had been advising the public to buy crypto currencies. The Bank of Uganda warned the general public to be careful about investing “their hard earned savings in Crypto currency” and that One Coin Digital Money was not licenced in terms of the Financial Institutions Act, 2004. In February 2018, the Governor of the Bank of Uganda warned the general public that “whoever wishes to invest their hard-earned savings in crypto currency forms...is taking a risk in the financial space where there is neither investor protection nor regulatory purview.” As such, despite the positive response following the UNAFRI Meeting, there has been little progress in the regulation of crypto currencies in

²⁵² Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



Uganda. Formal legal action. There has been no litigation or court action reported in Uganda yet.

The lack of regulation, except where the Bank of Uganda releases public warnings, may create the risk of the general public being the victims of fraudulent schemes.

Zimbabwe

The Reserve Bank of Zimbabwe has issued circulars and press statements banning the use and trade of virtual currencies in Zimbabwe. In recent months, after the Reserve Bank of Zimbabwe instructed the private banks of Zimbabwe's largest virtual currency exchange, Bitfinance (Private) Limited (Golix), to close its accounts, as well as Golix itself to refund its customers, Golix approached the High Court of Harare, Zimbabwe to seek an urgent interdict overturning the Reserve Bank of Zimbabwe's instruction. Golix offered an online market place for willing buyers and willing sellers to trade virtual currencies. They further provided for instant money remittance services whereby individuals could send virtual currencies into the Golix wallets of relatives in another country and the relatives could then convert the virtual currencies into fiat currency. This process was said to remove the middle man which is often located in Europe. Further, Golix recently opened up an ATM whereby its customers could deposit or withdraw fiat currency from their wallets. Golix argued that the actions of the Reserve Bank of Zimbabwe were (1) ultra vires to the parameters of the applicable empowering legislation; (2) contrary to administrative law and unconstitutional; and (3) unsubstantiated and arbitrary. Due to the Reserve Bank of Zimbabwe not appearing before the High Court to make any representation, the urgent interdict was provisionally granted. However, the Reserve Bank of Zimbabwe filed a notice of objection to the High Court's provisional order in June 2018. The Reserve Bank of Zimbabwe's notice of objection is based on the following:



- Golix conducts activities which fall within the ambit of the Reserve Bank of Zimbabwe’s purview, namely financial services like money remittance and ATMs, however Golix has not applied for nor been granted proper licencing for such services
- As the guardian of the financial stability and well being of Zimbabwe’s economy, the Reserve Bank of Zimbabwe felt obligated to intervene and ban the activities of Golix due to the risk that the virtual currencies and foreign currencies being traded on the exchange were contributing to money laundering and the funding of terrorism
- The Reserve Bank of Zimbabwe commented that should Golix strengthen its KYC policies to limit the risk of unlawful activities, and apply for the requisite licences to conduct such financial services, the Reserve Bank of Zimbabwe would be willing to explore the regulation of virtual currencies.²⁵³

The effect of Golix being banned, even though quickly overturned by the High Court, has resulted in Golix not being able to refund its customers for their investments, either by transferring the virtual currencies to alternative wallets or by depositing the fiat currency equivalents into their customers’ Zimbabwean bank accounts. Zimbabwe’s appointed Minister of Finance is ostensibly optimistic about the potential uses of crypto currencies however, suggesting that crypto currencies may assist in eliminating the country’s cash shortages. In contrast to the Reserve Bank of Zimbabwe, the Minister of Finance stated that Zimbabwe has “innovative youngsters so the idea shouldn’t be to stop (virtual currencies) and say don’t do this, but rather the regulators should invest in catching up with them and find ways

²⁵³ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



to understand it, then regulate it.” The High Court of Harare, Zimbabwe has not yet reported any further proceedings between Golix and the Reserve Bank of Zimbabwe.

The comments made by Minister of Finance may push the Reserve Bank of Zimbabwe to hasten their plans to properly regulate virtual currencies in Zimbabwe, however it is not clear whether there will be further litigation against organizations such as Golix.

Tunisia

In 2015, Tunisia launched its national currency, the eDinar, on the blockchain. As a large proportion of Tunisian adults are unbanked, eDinar is operated through the Tunisian Post Office. Jointly owned by Tunisia and Saudi Arabia, the Tunisia Economic City (TEC), which is currently the largest Mediterranean city project, will be reportedly partnering with the Locus Chain Foundation to apply blockchain technology as its settlement currency and service platform. It is understood that the TEC, which covers a total area of 90 square kilometres on the eastern peninsula of Tunisia at a cost of US\$ 50 billion, will be implementing the blockchain platform as the base technology and settlement currency for the entire city’s construction projects, including various industries such as finance, communication, medical, shopping, automatic vehicles and artificial intelligence. Once completed, the TEC is set to act as Africa’s gateway to Europe, the Middle East and Asia.

In early 2018, the Tunisian government apparently concluded an agreement with Devery.io, a blockchain-based start-up focused on supply chain management, to implement a blockchain- based supply chain to track the delivery of lunches to school children in Tunisia. The scheme aims to feed 400,000 underprivileged Tunisian school children in 6,000 schools. Maria Lukyanova, the United Nations World Food Programme Representative for Tunisia, who has been assisting the



Tunisian government with its feeding programme commented that “(t) his project is allowing us to explore how supporting innovation, through the introduction of solutions based on blockchain technology, can contribute to strengthening the effectiveness and efficiency of the Tunisian national school meals programme.”

Senegal

In 2016, Senegal launched a national digital currency, the eCFA, which will have the same value of the CFA franc and can be stored on mobile money and e-money wallets. Although built on the blockchain, the eCFA is actually regulated by the central bank, Banque Regionale de Marches (BRM) and eCurrency Mint. In a joint statement, the BRM and eCurrency Mint stated that the “eCFA is a high-security digital instrument that can be held in all mobile money and e-money wallets. It will secure universal liquidity, enable interoperability, and provide transparency to the entire digital ecosystem in WAEMU (West African Economy and Money Union).”

Sierra Leone

In October 2017, the President of Sierra Leone announced his intentions to establish Sierra Leone as the world’s first ‘Smart Country’. The first step in this programme was to establish a nationwide economic identification service which will provide all Sierra Leonean citizens with digital credentials, thereby increasing their access to services offered by the Sierra Leone Government as well as promoting financial inclusion. Following this announcement, Sierra Leone reportedly became the first country to utilize blockchain technology in its national election, whereby the Agora platform (a blockchain based digital voting solution) was used to record and verify the votes cast during the election.

Although voting didn’t take place using the Agora platform itself, the COO of Agora, Jaron Lukasiewicz commented that a “country like Sierra Leone can



ultimately minimise a lot of the fall-out of a highly contentious election by using software like this.” In September 2018, the President of Sierra Leone announced that his Government will be partnering with the U.N. Capital Development Fund and the U.N. Development Programme to launch the new Kiva Protocol in 2019, which will create and establish a national identification system using digital ledge technologies. Once implemented, the new Kiva Protocol will ensure that every citizen of Sierra Leone has a secure and complete record of their personal data and in doing so, will create “one of the most advanced, secure credit bureaus” so as to allow for access to financial services for the unbanked.

The Democratic Republic of the Congo (DRC)

Dorae Inc. has piloted a blockchain based supply chain tracking system for the cobalt and coltan mined from three mines in the DRC. According to Dorae Inc., the founders met with the President of the DRC who apparently approved of the pilot. If properly managed, the tracking system will mean that end users will have reliable information regarding the source of the raw materials and in doing so, reduce the use of child labour and environmentally damaging mining methods.

Madagascar

The Ixo Foundation, in partnership with the Seneca Park Zoo in New York, will be using blockchain technology in an attempt to raise funding for conservation projects in Madagascar. The Seneca Park Zoo is currently funding a tree-planting scheme in Ranomafana National Park in eastern Madagascar and the Ixo Foundation will monitor and record the tree-planting efforts. Each time a seed or sapling is planted, the Ixo Foundation will record its GPS co-ordinates and satellite imagery. The Seneca Park Zoo believes that this will reassure potential donors of the progress that the tree-planting scheme is making. The founder and president of Ixo Foundation stated that by “utilising the ixo Blockchain for Impact, they will be able to record evidence of change as verified impact data, which



demonstrates what counts for sustainable social, environmental and economic development.”

Ethiopia

The Ministry of Science and Technology hosted a meeting, and subsequently signed a memorandum of understanding, with the crypto currency start-up Cardano to establish a blockchain based supply chain application for coffee shipments. This supply chain will purportedly authenticate and trace the Ethiopian coffee from farmer to end user.

Zambia

In October 2018, the Bank of Zambia released a press statement on the use of crypto currencies in Zambia. The Bank of Zambia confirmed that crypto currencies “are not legal tender in Zambia” and confirmed that in terms of section 30 of the Bank of Zambia Act (Chapter 360 of the Laws of Zambia), the Bank of Zambia is the only body with the right to issue notes and coins and as it “has not issued any form of cryptocurrency...cryptocurrencies are not legal tender in the Republic of Zambia.” The Bank of Zambia warned its citizens against the buying, trading or usage of cryptocurrencies as it was not responsible for overseeing, supervising nor the regulation of the cryptocurrency landscape. Finally, the Bank of Zambia advised that any use of cryptocurrencies would be at the user’s own risk as “in most cases, no legal recourse would be available to customers due to the unregulated nature of cryptocurrency-related transactions.”²⁵⁴

²⁵⁴ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



UNITED KINGDOM

Crypto currencies and the assets therein are not yet considered as currencies in the UK or its equivalent, the central Bank of England has not yet formed a decision on as to whether to introduce a central Bank digital currency, whether or not a crypto currency is subject to regulation in the UK is dependent on whether it falls within the general financial regulatory parameter established under the financial services and Markets Act 2000 or under the money transmission laws and anti-money laundering requirements. Anti-money laundering regime under the payment services and electronic money regime established under the payment service regulations 2017.²⁵⁵

United Kingdom financial regulators have issued warning in relation to the use of cryptocurrencies and the investment in various crypto assets, however, the same doesn't necessarily demonstrate a blanket ban or prohibition within the territory boundaries of the UK. Some of the aspects of the crypto currency regime will be subject to regulation, the UK anti-money laundering regime has been extended to capture activities relating to most crypto assets including cryptocurrencies regardless of whether they are otherwise subject to financial regulation. Despite the publications by the concerned task force, UK policy on cryptocurrency is still under development, the UK financial Conduct Authority has constantly consulted on and published regulatory guidance in relation to crypto assets including cryptocurrencies. The Financial Conduct Authority has recently consulted on a proposed ban on the sale, marketing and distribution of derivatives and exchange traded notes referencing crypto assets including crypto currencies to retail

²⁵⁵ Kenya Michael (2020) - A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda



consumers. The FCA had anticipated implementing rules relating to the retail ban in Quarter 2 of 2020 but due to the Covid 19 pandemic was unable to do so.

The FCA taxonomy splits crypto assets into regulated and unregulated crypto assets, the task force report definitions of exchange tokens and utility tokens are retained and these two sub categories of crypto assets comprise unregulated tokens in the FCA guidance taxonomy.²⁵⁶

The kinds of investments that are regulated under FSMA are set out in an exhaustive fashion in the financial services and Markets Act 2000(Regulated Activities) Order 2001. These are known as specified investments and include investments such as shares, bonds, fund interests and derivative contracts, therefore in order to determine whether a given crypto currency is subject to financial regulation in the UK, it is necessary to analyze whether it matches the definition of any specified investment.

According to the FCA, any tokens that are not security tokens or e-money tokens are unregulated tokens, this is on the premise that an intrinsic assessment of a given crypto currency focused on the rights or entitlements granted to holders, rather than being based on extrinsic factors such as the intended or actual use of the relevant crypto currency or other contextual factors relating to the crypto asset such as whether a platform to which the crypto asset relates is currently operational or whether the network underlying the crypto asset is decentralized.

Although characterization of crypto currencies in this way must be taken on a case by case basis, in order to determine definitively whether they are subject to UK

²⁵⁶ Kenya Michael (2020) - A Comprehensive Study Of Crypto Currencies And The Legal Framework In Uganda



financial regulation, the Financial Control Authority provides useful indicators of the likely outcome of any such analysis, classic crypto currencies such as bitcoin, lite coin and Ether which are not certainly issued and give no right of entitlements to the holders are labelled exchange tokens in the task force guidance as explained in the FCA guidance, exchange tokens typically do not grant the holder any of the rights associated with specific investments.

Eswatini

In August 2017, the Central Bank of Eswatini advised that “there are no restrictions, disclosures or regulatory compliance applicable to transactions executed using Bitcoin.” The Central Bank however noted that a risk is presented to users of cryptocurrencies as “there is no protection or legal recourse available from any institution including the Central Bank in the event that the user suffers financial loss from the use of Bitcoin or any other cryptocurrency.”²⁵⁷

CHINA

The practice of raising funds through initial coin offerings (ICOs) is completely banned in China. On September 4, 2017, seven Chinese central government regulators—the People’s Bank of China (PBOC), the Cyberspace Administration of China (CAC), the Ministry of Industry and Information Technology (MIIT), the State Administration for Industry and Commerce (SAIC), the China Banking Regulatory Commission (CBRC), the China Securities Regulatory Commission (CSRC), and the China Insurance Regulatory Commission (CIRC)—jointly issued the Announcement on Preventing Financial Risks from Initial Coin Offerings (ICO Rules) for purposes of investor protection and financial risk prevention.

²⁵⁷ Baker McKenzie- Blockchain and Cryptocurrency in Africa- A comparative summary of the reception and regulation of Blockchain (2018) Johannesburg and Cryptocurrency in Africa



Under the ICO Rules, ICOs that raise cryptocurrencies such as Bitcoin and Ethereum through the irregular sale and circulation of tokens are essentially engaging in public financing without official authorization, which is illegal. The ICO Rules warn that financial crimes may be involved in ICOs, such as the illegal issuance of tokens or securities, illegal fundraising, financial fraud, or pyramid selling. Cryptocurrencies involved in ICOs are not issued by the country’s monetary authority and therefore are not mandatorily-accepted legal tender. They do not have equal legal status with fiat currencies and “cannot and should not be circulated and used in the market as currencies.

The ICO Rules also impose restrictions on the primary business of cryptocurrency trading platforms. According to the ICO Rules, the platforms are prohibited from converting legal tender into cryptocurrencies, or vice versa. They are also prohibited from purchasing or selling cryptocurrencies, setting prices for cryptocurrencies, or providing other related agent services. Government authorities may shut down the websites and mobile applications of platforms that fail to comply, remove the applications from application stores, or even suspend the platform’s business licenses.

Following the issuance of the ICO Rules on September 4, 2017, senior executives of cryptocurrency trading platforms in China were reportedly summoned for “chats” by regulators. On September 15, 2017, for example, the Beijing Internet Finance Risk Working Group summoned senior executives of cryptocurrency trading platforms in Beijing. The platforms were reportedly ordered to immediately cease new client registration and announce the deadline by which time



the platforms would cease all cryptocurrency trading²⁵⁸. As a result, the cryptocurrency trading platforms essentially shut down their trading business in China²⁵⁹. More recently, in February 2018, the *South China Morning Post* reported that China was planning to block websites related to cryptocurrency trading and ICOs, including foreign platforms, in a bid to completely stamp out cryptocurrency trading²⁶⁰

The ICO Rules prohibited financial institutions and non-bank payment institutions from directly or indirectly providing services for ICOs and cryptocurrencies, including opening bank accounts or providing registration, trading, clearing, or liquidation services. They were also prohibited from providing insurance services relating to ICOs or cryptocurrencies²⁶¹.

In fact, a ban on bank and payment institution dealings in Bitcoin has been in place since 2013. According to the Notice on Precautions Against the Risks of Bitcoins jointly issued by the PBOC, MIIT, CBRC, CSRC, and CIRC on December 3, 2013, banks and payment institutions in China must not deal in Bitcoins; use Bitcoin pricing for products or services; buy or sell Bitcoins; or provide direct or indirect Bitcoin-related services, including registering, trading, settling, clearing, or other services. They are also prohibited from accepting Bitcoins or using

²⁵⁸Wu Yujian, *Bitcoin Exchanges Ordered to Formulate Non-Risk Clearance Plan and Shut Down by End of September (Updated)*, *Caixin* (Sept. 15, 2017), <http://finance.caixin.com/2017-09-15/101145796.html> (in Chinese), archived at <https://perma.cc/NQ4S-MDBL>.

²⁵⁹Xie Xu, *China to Stamp Out Cryptocurrency Trading Completely with Ban on Foreign Platforms*, *South China Morning Post* (Feb. 7, 2018), <http://www.scmp.com/business/banking-finance/article/2132009/china-stamp-out-cryptocurrency-trading-completely-ban>, archived at <https://perma.cc/42H4-F2AW>.

²⁶⁰*Id*

²⁶¹*Id*



Bitcoins as a clearing tool, or trading Bitcoins with Chinese yuan or foreign currencies²⁶²

Morocco

In November 2017, the Office des Changes (Foreign Exchange Authority) of Morocco issued a statement banning the use of crypto currencies in transactions within Morocco as such conduct would reportedly directly violate Morocco's current legislation. This was supported by the Bank Al-Maghrib, the country's central bank in a statement released shortly thereafter, by describing cryptocurrencies as "a hidden payment system that is not backed by an organization, the use of virtual currencies entails significant risks for their users."

Notwithstanding this, Brookstone Partners, a New York based private equity firm, has apparently purchased a 37,000 acres wind farm in Dakhla, Morocco to power a data centre and to mine bitcoin. The wind farm will apparently be developed by Soluna, a 'green' blockchain company, after its ICO where it hopes to raise US\$ 100 million to finance the project.

Algeria

Algeria's Parliament has passed the Finance Act, 2018 (FL2018) which has prohibited the purchase, sale, use and possession of virtual currency. FL2018 provides that any violation of this provision will be punished in accordance with the laws and regulations currently in force in Algeria, including criminal sanctions. The ban follows concerns raised by parliamentarians that cryptocurrencies are used

²⁶²PBOC, MIIT, CBRC, CSRC, and CIRC Notice on Precautions Against the Risks of Bitcoins, *supra* note 3.



primarily to conduct illegal activities such as terrorist financing, drug trafficking, money laundering and tax evasion.

Cameroon

The Government of Cameroon has not legislated on crypto currencies yet and as such, no regulation or framework exists for the use or trade in crypto currencies. However, in 2015, the Government of Cameroon reportedly trialled a bitcoin-like digital currency called Trest. Although the results of the tests were “excellent”, the high cost associated with electricity usage when processing crypto currency transactions acted as a hindrance to further testing of the use of crypto currencies within Cameroon.

Libya

In early 2018, the Central Bank of Libya announced that virtual currencies such as Bitcoin are illegal and that no legal protection will be afforded to anyone using or trading them. The Central Bank of Libya explained that virtual currencies were banned as “these currencies may be used to carry out criminal activities and violations of laws such as money laundering and financing of terrorism.” The Central Bank of Libya advised that anyone planning on using virtual currencies must “obtain a license and a prior authorization to carry out activities, provide banking and/or financial services.”



Seven

TAXATION OF THE DIGITAL ECONOMY IN UGANDA

Introduction.

There has been a tremendous shift of Uganda's economy towards a digital oriented atmosphere, a thing which has caught some sectors by surprise. One of these sectors is the taxation body and the government legislating body. Generally, the whole economy at large needs structural adjustment towards the ongoing trend in economic transformation evidenced in the growing digital economy. The rapid growth of the digital economy in many African countries has led to concerns about whether their tax regimes are equipped to deal with this new phenomenon. The shift from traditional bricks and mortar commercial environment to on that is electronic and information based poses serious and substantial challenges to traditional tax regimes²⁶³.

We are living in such a digitalized era, that almost everything can be accessed at just one click. A person seeking to move from place to place, orders an Uber for a cab or safeboda for a bodaboda. One seeking housing simply searches an Airbnb around the area to find accommodation. One seeking to buy any item is exposed to a global market through Amazon, Jumia, and the like. He or she is able to purchase

²⁶³ Solomon R. - Addressing the challenges of taxation of the digital economy: lessons for



any item of choice and it would be delivered at their door. Another person who seeks education can have it online from their home same with a virtual meeting for any company. To a person who seeks to carry on financial services, they would be able to get in touch with their banker and transact without physically moving to the bank. Another person who seeks to carry out a payment might choose to use a different online currency as an alternative to the paper-like currency. Every day, new digitalized enterprises emerge and these help in making life more flexible and affordable. The biggest question is *‘whether these digitalized enterprises that form the digital economy are effectively taxed in Uganda, if not, what has the government got to do about it?’* since some of these enterprises are not physically in Uganda and use many mechanisms to avoid and or evade tax and yet they make revenues from the citizens of Uganda.

Uganda’s economy survives greatly the financial harvests gathered from various business plants. Through this Uganda has been able to reduce the created by the economic crippling owing to thrilling poverty levels. Uganda has been particularly successful in soliciting support and loan. In 1997, it was selected as one of the few countries to receive debt relief for its successful implementation of stringent economic reform projects and has continued qualify for significant debt relief since then. because of that, Uganda has been able to foster poverty eradication, expanding resource exploitation, industries and tourism. Apparently, Uganda gathers significant revenue through agriculture, forestry and tourism as serious income generating sectors. It is probable and most right that the Uganda Revenue Authority (URA) which is the principle revenue collecting body of Uganda, is adjustable to New trends and business forms for purposes of maximizing the taxation database and revenue base.

Article 152 of the constitution of Uganda 1995, provides that *“No tax shall be imposed except under the authority of an Act of Parliament.* Thus, Uganda



Revenue Authority helps the government of Uganda, to collect these taxes and the Tax Appeals Tribunal is established for any person to seek redress on any tax dispute. I appreciate the fact for sure that there has been emergence of digitalization in all life aspects, contextually in the business sector. However, the existing taxing regime is either too slow or reluctant to adopt these changes.

Digital economy is a term for all of those economic processes, transactions, interactions and activities that are based on digital technologies²⁶⁴. More so, it is defined as a broad range of economic activities that use digitized information and knowledge as key factors of production²⁶⁵. Thus, digital economies too incur taxes and ought to be taxed. **Gabriel Kitega** in his book²⁶⁶ defines a tax as a financial charge or levy imposed on an individual or legal entity by a state or a functional equivalent of a state. Taxation according to The Black's law dictionary 8th edition is defined as "the imposition or assessment of tax; the means by which the state obtains the revenue required for its activities"²⁶⁷

The world has had a shift in economy. This wave is from the traditional ways of business making such as Steel industries in the United States where there existed a physical structure, running physical stock. Today, the world is run by digital economies such as Amazon in the United States, Alibaba in China, Jumia in Uganda which have digitalized ways of running their businesses. There's also an emergence of digitalized money such as bitcoins to replace the traditional paper money and this has also happened in places like the United States as noted by Ben Mezrich in his book, Bitcoin billionaires.

²⁶⁴ www.techopedia.com/definition

²⁶⁵ www.adb.org

²⁶⁶ Gabriel Kitega, Introduction to Tax law, Revised edition 2013, lawAfrica Publishing (K) Ltd

²⁶⁷ Bryan A Garner, Black's law dictionary 8th edition page 1500



Solomon Rukundo in his article²⁶⁸ avers that the first computer in Uganda arrived in 1967, the second in 1968. As of 2012, the computer penetration was estimated to be 2-3 computers for every 100 people in Uganda. In 2014, national census revealed that 3.8% of the households nationwide and 10.4% of urban households were in possession a computer²⁶⁹. In addition, there are 18 million internet subscribers coming in from mobile²⁷⁰ with the use of smart phone. This therefore goes to the root to explain the increase in the use, reliance and acceptance of digital economies in Uganda. In furtherance, digital economies are advantageous to their inventors for purposes of tax avoidance. They are also liked by the customers due to their convenience and flexibility. For example, one would rather order a safe boda since it charges less than stop a regular boda. Tax laws were formulated to apply to businesses with physical presence that deal in physical stock in any given country. This would be done through tax assessment and collection by the government.

However, today there is a rapid increase of businesses whose stock is online such as Jumia, Uber, safe boda among others. More so, some businesses do not have physical addresses within Uganda but still carry on businesses in Uganda such as Facebook. In a Uganda like today's where so many digitally controlled business are rising, there is need for an adjustment of all sectors of the economy towards this information technology novelty. The absence of a precursor to some of these business makes their taxation system equally unprecedented thus needing flexibility towards the same. Tae for instance, the on set of safe boda, jumia, uber among other business creates a demand for the taxing body to adjust accordingly. Put simply, the mushrooming businesses today cannot be fully benefited from

²⁶⁸ Solomon Rukundo, Taxation in the Digital Era: An Analysis of the challenges of Taxation of E-commerce in Uganda.

²⁶⁹ ibid

²⁷⁰ Niinye.avalanch.me



unless there are legal reforms made in that respect. Many critics aver that tax laws were made for businesses with physical places and or physical stock whereas under the digital economy, businesses either do not have physical places where they are stationed or they do not have physical stock. However, these digital economies ought to pay tax, for they carry out trade. Unlike the early years where the internet was used for entertainment, today the internet provides a forum for different reasons among which is trade that is for instance a customer from Uganda is able to purchase goods from United States using Amazon and this would be delivered.

According to tax laws, there are different taxes that are imposed on goods and these include import duties, excise duty, and Value Added Tax. Traditionally, tax laws were designed to assess taxes of different goods however digital economies are able to avoid some of these taxes.



An evaluation of a digital economy viz-a-viz taxation

Introduction:

The ongoing up-rise of crypto trade businesses have awakened vigilant analysts to comment about the practice of such trade within the ongoing state of ignorance of so many people and not just Ugandans alone but in the world at large who are faced with a “*should I or wait a little, or not at all*” risk playing my card (question) in this crypto game. Much of this attraction to comment has been increased by the tax avoidance apparent within crypto currency trade. It is unfortunate that Ugandan literature on crypto currencies

To examine the legal framework on taxation of the digital economy in Uganda;

Definition of digital economy;

Technopedia²⁷¹ defines digital economy as a “*term for all those economic processes, transactions, interactions and activities that are based on digital technologies. The digital economy is different from the internet economy in that the internet economy is based on internet connectivity, whereas the digital economy is more broadly based on any of the many digital tools used in today’s economic world*”

I agree with the above definition, for the digital economy is so broad and it encompasses all enterprises using any sort of technology. This could be through the internet or not.

²⁷¹ <https://www.techopedia.com/definition/32989/digital-economy>



Deloitte²⁷² describes digital economy as the “*economic activity that results from billions of everyday online connections among people, businesses, devices, data, and processes. The backbone of the digital economy is hyper connectivity which means growing interconnectedness of people, organizations, and machines that results from the internet, mobile technology and the internet of things.*”

In my opinion Deloitte’s description is right because the digital economy revolves around online connectivity. Thus, both the seller and buyer use online connectivity. More so I agree with Professor Walter Brenner of the University of St. Gallen in Switzerland who states that “*The aggressive use of data is transforming business models facilitating new products and services, creating new processes, generating greater utility, and ushering in a new culture of management.*”²⁷³

In the Ugandan context, Uganda Law commission in its report²⁷⁴ divided e-commerce into three groups. The first group includes traditional businesses that have no particular internet component. This group is commonly referred to as “bricks and mortar” businesses, highlighting the facts that these businesses have stores, factories, and buildings made out of bricks and mortar. The second category includes the pure e-commerce companies, sometimes known as “the clicks” (from the click of the mouse on a hyperlink), or more commonly, the “dot-coms”, based on their use of top-level domain name “.com” in the address of their websites and names. Examples include Amazon.com and any of the dot-com companies on which people have recently made and lost fortunes speculating on stocks. The third

²⁷² <https://www2.deloitte.com/mt/en/pages/technology/articles/mt-what-is-digital-economy.html>

²⁷³ *ibid*

²⁷⁴ Uganda Law Reform Commission, A study Report on Electronic Transactions Law, Kampala, Uganda 2004



group is commonly referred to as either “clicks and mortar” companies or retail businesses onto the internet and used their expertise, knowledge, branding and customer relationships to translate their businesses into an e-commerce model. Examples include online ticket sales by airlines.

Furthermore, the Uganda Law Reform Report²⁷⁵ discusses the characteristics associated with the digital economy and these include;

- a) Acceptance and enforceability; unlike the traditional way of acceptance of a contract, the digital economy has brought on board a new way of acceptance which is by a mere click or order of an item online.
- b) Trans-border dimension; unlike the traditional way of transacting businesses where cross borders involved different procedures that delayed a process, with the digital economy, one is able to order for a good from most parts of the world and it would be delivered at their door step.
- c) Domain names as new form of property; with the digital economy, a business relies on a domain name such as Amazon.com unlike the traditional way which would not mind on having a domain name.
- d) Information technology as a substitute to human endeavor; with the digital economy, the involvement of human labour is minimized since the options are automated. With a company like Tesla motors, one could predict that in a few years, Uber will do away with drivers, or chauffeurs.
- e) Paperless trading; with the digital economy, everything is digitalized which includes the contracts, and one can easily an online signature.

The impact of digital economy on taxation in Uganda

There is tax avoidance under taxation of the digital economy. Under The Income Tax Act Cap 340, It provides for chargeable income which is the gross income of

²⁷⁵ ibid



the person for the year less total deductions allowed under the Income Tax Act Cap 340. Furthermore, it provides for rental tax, residents and nonresidents, tax identification number. However, under the digital economy, the Income Tax is avoided because the prospective tax payer does not have a tax identification number whether they are resident or not. More so, some of the business are online and definitely rental tax would be avoided.

TechCrunch, a digital economy news site amazingly noted²⁷⁶, *“Uber, the world’s largest taxi company, owns no vehicles. Facebook, the world’s most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. And Airbnb, the World’s largest accommodation provider, owns no real estate... something interesting is happening.”*

Doris Akol, commissioner General URA (then) while addressing tax administrators from African states at Serena Hotel on the 19th day of November 2019 espoused that *“We are cognizant of the fact that there are challenges we need to address - the digital economies. For example, Jumia, Google, Facebook and Kikuu, to mention but a few are around us. We have all used them in a way or another, and yet we are not registering revenue numbers in terms of collections from them. This is because most of our policies had probably overlooked them. For instance, for one to be assessed for tax, they must have a physical address. This is a pre-requisite that doesn’t tally with digital economies because they operate online and barely have a physical footprint, yet they mint lots of money in sales.”*

²⁷⁶ <https://www2.deloitte.com/mt/en/pages/technology/articles/mt-what-is-digital-economy.html>



The Possible recommendations for effective taxation of the digital economy in Uganda

Solomon Rukundo in his article²⁷⁷ relies on the The Organisation for Economic Co-operation and Development here after referred to as OECD “*which has considered a solution whereby an enterprise engaged in fully dematerialized digital activities could be deemed to have a taxable presence in another country if it maintained a “significant digital presence” in the economy of that country*” this solution is rather reasonable for it is to the effect that a business may not have a physical office or address in Uganda however still conducts businesses in Uganda. Therefore, the regulatory body would have to set minimum standards that if a business that is digital in nature has higher or more frequent presence in Uganda, and then they would have to pay tax. For example, if a certain online business has frequent contracts with Ugandans via online platforms, thus upon hitting a certain limit, that business would have to be taxed.

In addition, the OECD suggests “imposition of a final withholding tax on payments made for digital goods or services provided by a foreign provider.” To avoid requiring withholding by individual consumers, withholding by the financial institutions involved with those payments could be made a requirement. OECD suggested that such a withholding tax could be introduced as a standalone provision to address concerns that it may be possible to maintain substantial economic activity in a market without being taxable in that market under current tax rules due to lack of physical presence. Taxpayers providing digital goods and

²⁷⁷ Solomon Rukundo, Taxation in the Digital Era: An Analysis of the challenges of Taxation of E-commerce in Uganda.



services covered by the withholding tax could file returns in their countries in order to ensure that they were ultimately taxed on a net basis.

Solomon Rukundo in his article²⁷⁸ also opines that Abandoning or amending source and Residence Rules is not a good idea. He also discourages the ‘bit tax’ idea. He asserts “*The source and residence approach are well established and well tested rules in taxation, recognized at an international level. Attempting to come up with a whole new approach just for the purposes of electronic transactions may not be feasible. Any new conceptual approach would very likely have double taxation consequences. An example of one such attempt that is quickly being abandoned is the ‘bit tax’ approach. This attempted to impose taxes on individual bits of information that flowed through the internet. This tax would amount to an increase in the cost of access to internet which is already an issue in Uganda and would be problematic in determining which information should be taxed as commercial and which was free.*” However, as he later argues and I agree, there should be a limit set for bit tax to be levied. For example, a law could be passed that if a certain online transaction exceeds a certain amount, then it would be taxed.

Solomon Rukundo²⁷⁹ further suggests that the definition of place could be revised to not only amount to physical place but also virtual place. He asserts “*One possible solution is the reconceptualization of the idea of ‘place’ in source and residence rules to make it applicable in a virtual world. The view of a physical place arose to cater for the typical transactions being dealt with. The place can be rethought to include a virtual place so as to include the new types of transactions found on e-commerce. The traditional concept of a physical place was merely a*

²⁷⁸ Solomon Rukundo, Taxation in the Digital Era: An Analysis of the challenges of Taxation of E-commerce in Uganda.

²⁷⁹ *ibid*



rule of thumb developed to cater for the physical transactions that were commonplace. Therefore, this can easily be expanded to include the new concept of place in cyberspace.”

Furthermore, Solomon Rukundo²⁸⁰ avers that a transaction could be broken down into different steps and components weighted in light of the full transaction to ascertain their relative significance. He asserts “*In the US case of **Piedras Negras Broadcasting Co vs Commissioner** the taxpaying entity earned all its income from the sale of advertising time on a radio station that broadcast from a transmitter in Mexico. In determining the source of income, court noted that the source of income was not a place but rather an activity and therefore for income to be taxed in the US it had to be shown that the property or activities from which it was derived were located in the US. Thus, the focus was not the place but rather the activities. Such an approach would have to distinguish between activities which are merely preparatory or ancillary and those which are integral to and from the heart of the transaction. In the example of online advertising, the web server would merely be the means of displaying the advert and its location would therefore not be definitive in determining the source or residence.*” I think that by breaking down the process of online transacting, it would be possible to ably tax every unit of tax and thus no tax would be evaded or avoided.

More so, the application of *Value Added Tax (VAT)* within the e-commerce’s virtual world does not differ greatly from traditional application. The primary difference appears to pertain to determining the place of supply, but apart from such determination, VAT principles and concepts can be applied with relative ease within the virtual world. The impact of e-commerce on VAT has not been in regard to the application of VAT, but rather to the determination of the place of supply,

²⁸⁰ *ibid*



enforcement, collection and overall administrative aspects of the imposition of VAT.

There is debate as to whether the supply of purely electronic intangible products such as software and electronic books and files should be regarded as supply or goods or services for VAT purposes. The United States advocates that digital products should be characterized on the basis of the ‘rights transferred’ in each particular case because zero-rated goods (such as education books would be subject to VAT if treated as a service. The United States proposes an origin-based consumption tax for intangible goods, which would be collected from the supplier and not from the consumer. This is based on the argument that it is easier to identify the supplier than the customer on the basis of permanent establishment rule and since businesses would be subject to audit they would be less likely to conceal sales. It should be noted that the United States as a net exporter of e-commerce would benefit greatly if an origin-based tax were adopted while it would almost certainly further shrink the tax base in e-commerce-importing countries such as Uganda. It is however, argued that such supply should be interpreted as supply of services to eschew issues of import tax and place of supply rules. This is the approach adopted by both the OECD and the European Union. This would mitigate the shrinking of the tax base due to the digitization of various products.

Therefore, the literature around the digital economy recognizes that it is a new development and so many jurisdictions are looking for ways on how to tax enterprises that are under the digital economy. More writing and publishing need to be done about the digital economy and its impact on taxation so that many more recommendations could help in curbing the situation.



State of the digital economy in Uganda in light of the taxation regime.

The retail practice: this is the common practice everyday of walking into a shop and picking a commodity you're interested in. this is different from under the digital economy where access to the internet is the first step and then an order is placed thereat under specified terms and conditions. Among these terms could be that the goods will be delivered at the buyers' residence. Examples of such online markets in uganda include;

Amazon: This company was founded by Jeff Bezos in Bellevue, Washington, in July 1994. It started as an online market place for books and later expanded to sell electronics, software, video games, apparel, furniture, food, toys, and Jewelry. In 2015, Amazon surpassed Walmart as the most valuable retailer in the United States. Amazon does not only stop in the United States but makes deliveries to all the parts of the world. Many companies have emerged with the same structure and these include Jumia²⁸¹, Kikuu²⁸², Tunda.ug²⁸³, Masikini²⁸⁴, Jiji²⁸⁵ and many others that keep developing regularly.

More so, some Ugandans have online shops on social media platforms and use the same platforms such as facebook, twitter, youtube, whatsapp and online adverts to advertise their businesses.

Under Transport, there have been emergence of business entities that have changed the transport sector. Initially, in Uganda, there were 'special hire' cars and largely

²⁸¹ <https://www.jumia.ug/>

²⁸² <https://www.kikuu.ug/>

²⁸³ <https://tunda.ug/>

²⁸⁴ <https://masikini.com>

²⁸⁵ <https://jiji.ug/>



free-lance boda-bodas. However, the new business entities under the digital economy have changed how the transport business operates. Examples include Uber, Safeboda, Bolt, and many others that emerge regularly.

Uber was started in 2009 by Garrett Camp and Travis Kalanick and has its headquarters in San Francisco, California, United States. As opposed to a traditional way of ordering a cab or special hire vehicle which would be parked at a certain stage in Kampala, Uber's setting is that a customer uses the 'Uber app' to order for a cab, which is not situated at any specific parking stage but only within the customer's location. However, Uber and other online cab services and unregulated in Uganda which has a negative impact on taxation, security and safety. As per Hon Lady Justice Faith Mwendwa in *Uganda Revenue Authority v Uganda Taxi operators & Drivers Association*²⁸⁶ tax drivers, owners and operators are under an association (UTODA) are under management of Kampala Capital City Authority. However, in my opinion, Uber drivers cannot be included since the management does not extend to online transport services. Similar companies have emerged in Uganda such as Bolt, Safe boda, and thus the government continues to lose taxes on online taxi services.

Under Housing, there has been a development of AirBnB. Air Bed and Breakfast (AirBnB) was founded in San Francisco, California by Brian Chesky, Joe Gebbia and Nathan Blecharczyk. It is an online market place for arranging or offering lodging, primary homestays or tourism experiences. The company does not own any of the real estate listings, nor does it host events; the company acts as a broker receiving commissions from each booking. Therefore, the government of Uganda loses a lot of revenue in majorly two ways firstly through the company that is Airbnb which does not have a permanent establishment in Uganda though it has an

²⁸⁶ Civil Appeal No. 13 of 2015



online presence through their application. Secondly, through Ugandans who through this application provide housing services to other people. Therefore, the government of Uganda needs to revise its laws and policies so as to tax online housing services.

In regards to broadcasting and media services, there has been a shift to the digital economy too. Traditionally, there was media houses established and registered such as Uganda Broadcasting services (UBC), Newvision, Dailymonitor and others. However, there has been a shift to the digital economy where there have been newer online news tabloids, bloggers, Youtube televisions, and many more that report news online. The traditionally structured media houses have also adopted technology through online newspapers²⁸⁷, news applications such as next media.

Finally; there has been increased shortfalls of Uganda Revenue Authority. The Ugandan parliament recently passed budget for the financial year 2020/2021 worth Shs. 45.4 Trillion. Uganda Revenue Authority is expected to collect Shs. 21.7 trillion to finance the budget. However, Uganda Revenue Authority's shortfall per the first quarter of 2019/2020 was 603.7 billion. More shortfalls from previous years show that there is an increase as years go by. That is UGX 518 billion, 342 billion, 135 billion and 268 billion per the financial years 2016/19, 2015/16, 2013/14, 2012/13 and 2009/10 respectively. Tax avoidance and evasion are among the top reasons why Uganda Revenue Authority is losing a lot of tax. Thus, failure to effectively tax the digital economy leads URA to miss out on the revenues from these business enterprises.

²⁸⁷ <https://www.newvision.co.ug/> , <https://www.monitor.co.ug/>



NON-LEGAL ASPECTS OF THE DIGITAL ECONOMY AND ITS IMPACT ON TAXATION.

Introduction

Businesses across all sectors are now able to design and build their operating models around technological capabilities, in order to improve flexibility and efficiency and extend their reach into global markets. A look at Uganda's business shift examples include banks which have mobile and internet banking and thus customers need not go to banks to carry out transactions, Under transportation; there has been development of businesses like Uber²⁸⁸, safeboda²⁸⁹, Bolt²⁹⁰, and more, and just by using a mere smart phone, a customer is able to order a cab or boda boda for transportation. There have been developments of Jumia²⁹¹, Amazon²⁹², kikuu²⁹³ and thus a person is able to order an item such as electronics, books, and many more online and it would be delivered in Uganda. There have been developments of Tunda.ug²⁹⁴ and jiji²⁹⁵ and through the platform, people buy and sell items especially used items. There is development of AirBnB²⁹⁶ where someone in Uganda can provide housing to any other person especially tourists. There are social media platforms such as facebook, twitter, Instagram and many more and people either have online shops there and or use them for advertising. There are many more digitalized companies in Uganda, but the question is whether

²⁸⁸ <https://www.uber.com/ug/en/>

²⁸⁹ <https://safeboda.com/ug/>

²⁹⁰ <https://bolt.eu/en-ug/cities/k>

²⁹¹ <https://www.jumia.ug/>

²⁹² <https://www.amazon.com/stores>

²⁹³ <https://www.kikuu.ug/>

²⁹⁴ <https://tunda.ug/>

²⁹⁵ <https://jiji.ug/>

²⁹⁶ <https://www.airbnb.com/s/Uganda>



these kinds of companies pay tax as any other traditional company. If not, then Uganda is losing a lot of monies because as of today, there is increase in transactions using such platforms.

Non-legal aspects of the digital economy.

The **OCED**, in its article **Addressing The Tax Challenges of The Digital economy 2014** discusses the digital economy to have arose in various ways that is through the first major digital players who started from traditional businesses models, adapting them to better end-user equipment (both inside and outside organizations) and more extensive interconnection through the internet. Then Online retailers, these initially adopted the business model of brick and mortar stores by selling traditional physical goods an example is books digitally. More so, online intermediaries, these allowed the discovery, sale and purchase of goods and services such as vehicles, homes and jobs were another early category. Other digital players specialized in the online selling of traditional services for example online insurance. Retailers began selling digital products and services like downloadable and streaming music and movies, executable codes, games and services based on data processing, increasingly blurring the line between goods and services as businesses continued to develop. Then there was Online advertising which started from traditional advertising business models. There have been new online services enabling sharing and service economy; these allow people to rent out their homes, vehicles and skills to third parties.

More sectors or categories include;

1. Retail²⁹⁷; herein, the customers in a certain business model are able to place orders of items and these are delivered to them. Alternatively, they may add them to a “wishlist” and thus purchase them at a later time.

²⁹⁷ OECD, Addressing The Tax Challenges of The Digital Economy 2014 page 72



2. Transport and logistics²⁹⁸; the application of digital economy herein include tracking of vehicles and cargo across continents, the provision of information to customers, delivery to customers. There are businesses that evolved where a customer orders a ‘taxi’ online and pays it online and thus this vehicle picks him or her and drops them at his or hers’ preferred destination.
3. Financial services²⁹⁹; herein banks and other companies have been able to use the digital economy to enable their clients to manage their finances, conduct transactions and access new products on line, pay utilities, pay school fees and other transactions. These do not require the physical presence of a client in the bank. “The digital economy has also made it easier to tack indices and manage investment portfolios and has enabled specialist businesses such as high frequency trading.”
4. Manufacturing and Agriculture³⁰⁰; through digital economy, stake holders are able to monitor production processes in factories and control robots. “In the automobile industry for example, it is estimated that 90% of new features in cars have a significant software component. On farms, systems can monitor crops and animals, and soil/ environmental quality” as of today an example can be drawn from where Elon Musk under the Tesla motor company manufactures cars which are self-driven, and the owner of the vehicle without physically controlling any car component.
5. Education; Herein, universities and other Education service providers are able to provide courses online without physical interactions. These are done through video conferencing, streaming and online collaboration portals.

²⁹⁸ ibid

²⁹⁹ ibid

³⁰⁰ ibid



More international students are able to study online without physically relocating. In addition, students are able to subscribe and access online libraries and books.

6. Healthcare; here under, with the developments in the digital economy, health care is evolving to enhanced system efficiencies and patient experience through electronic health records. It also allows advertising for drugs and other treatments, online purchase of drugs. Just recently, we had Rwanda try out delivering drugs by drones. And the same could be taken on by any company in Uganda.
7. Broadcasting and Media; the digital economy has changed this industry providing more and better ways of service delivery. There has been introduction of mobile Television and Radio stations which are run in moving vehicles, online reporting, online interviews, online newspapers. There have been developments of internet based applications which provide news.
8. I will add housing; herein, under a company such as Airbnb, a person is able to rent out their apartment or home or room to any other person for accommodation using the online application to locate it.

It is therefore quite difficult to draw a line on how far the digital economy affects taxation since most business models consciously and unconsciously end up evolving any of the types businesses under the digital economy.

The types of businesses under the digital economy include “e-commerce, app stores, online advertising, cloud computing, participative networked platforms, high speed trading and online payment services”³⁰¹ and I will discuss them below;

³⁰¹ OECD, Addressing The Tax Challenges of The digital Economy 2014 page 73



Electronic commerce: This is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders. However, the payment and ultimate delivery of the goods or service do not have to be conducted online³⁰². Therefore, e-commerce covers different business such as;

Business-to business models (B2B); Herein a business sells products to another business. This could be a wholesaler who purchases goods in bulk online and then sells to a retailer. It can also include provision of goods to support other businesses such as logistics, application service providers of software from a central facility, outsourcing of support functions for e-commerce, internet auction solutions services, website content management service, web-based commerce enablers that provide automated online purchasing capacities.

Business-to-consumer models (B2C): Herein, a business model sells goods (whether tangible or intangible) or services to individuals acting outside the scope of their profession. For example, online vendors with no physical stores or offline presence, “click and mortar” businesses that supplemented existing consumer-facing business to allow customers to order and customize directly. The effect of B2C is that it may eliminate the need for wholesalers, distributors, retailers and other intermediaries that were previously trading tangible goods. There is increased cost on advertising and customer care and logistics in the B2C model. It however reduces transaction costs since it avails the consumer access to information. An example is that the cost of maintaining a website is generally cheaper than installing a ‘traditional brick-and mortar’ retail shop.

³⁰² Ibid page 74



Consumer-to-consumer models: herein the intermediaries help individual consumers to sell or rent their assets such as residential property, cars, and motorcycles by publishing their information on the website and facilitating transactions. C2Cs may or may not charge the consumer for the services that they offer depending on their revenue model. An example in Uganda is jiji.ug³⁰³ which provides a platform for advertising different properties for sale online. Thus a prospective consumer is able to review a certain property and on appreciation, the transaction is made with or without physical interaction.

It is imperative to note that the number of firms carrying out business transactions over the internet has increased dramatically over the last decade. “e-commerce in the Netherlands has increased as a share of total company revenue from 3.4% in 1999 to 14.1% in 2009. Similarly, between 2004 and 2011 this share increased from 2.7% to 18.5% in Norway and from 2.8% to 11% in Poland... in 2012, B2C e-commerce sales were estimated to exceed USD 1 trillion for the first time³⁰⁴ and these statistics keep growing at a fast speed.

Payment services: This means the ways or modes of purchasing goods online. Thus, Payment service providers act as an intermediary between online purchasers and vendors. They accept payments from purchasers through a variety of payment methods such as credit card payments or bank-based payments and depositing the funds to the seller’s account. These kinds of payment services can be juxtaposed with the traditional ways where online purchasers and vendors would not exchange bank account details for fear of fraudulent dealings. Therefore, with the development of electronic payment services these have curbed fraud since the

³⁰³ <https://jiji.ug/>

³⁰⁴ OECD(2013), OECD Science, Technology and industry Scoreboard 2013: Innovation for Growth, OECD Publishing, Paris, www.oecd.org/sti/scoreboard.htm based on OECD, ICT Database: Eurostat and national sources, June 2013



vendor and purchaser do not exchange sensitive information, it also fastens payment and payment can be made in various currencies. Other online payments include cash payment solutions where the purchaser buys online and pays in cash with a barcode or payment code at participating shops or settlement agencies, offering a way for customers unwilling to use other online payment methods to make online purchases in a secure manner, E-wallet or cyber wallets these work just like credit cards and thus they ease purchase of goods online an example is the apple e-wallet, mobile payment solutions such as mobile money payments and in Uganda these include MTN mobile money and Airtel mobile money thus a buyer would be able to purchase a good using this channel. The digital economy has also led to development of virtual currencies. Thus one can purchase commodities using crypto currencies such as bitcoins if the vendor allows.

App stores: Just like we traditionally have a retail store or shop, the app store is a central retail platform that distributes software often provided as a component of an operating system and thus the consumer takes a tour around the app store and purchases the application on his or her device. These applications could be free or charged for. They are produced by developers in multiple countries. The use of applications is on the rise, “use of application stores is growing rapidly. Gartner Inc., an information technology research and advisory company, estimated that downloads from app stores would reach 102 billion in 2013, up from 64 billion in 2012. Total revenue from app store purchases was expected to exceed USD 26 billion in 2013, an increase of 31% over the total in 2012³⁰⁵.”

Online advertising; just like we traditionally have marketing and advertising on radios and Televisions, online advertising uses internet for vendors to show case

³⁰⁵ OECD, Addressing The Tax Challenges of The digital Economy 2014 page 78



their products to buyers (invitation to treat). This is majorly done through display of ads linked to particular content. Initially there was payment for display of ads for specified period of time, however, online advertising has given rise to a number of new payment calculations methods such as cost per mile (CPM) where in advertisers pay per thousand displays of their message to users, cost per click (CPC) wherein advertisers pay only when users click on their advertisements and cost per action (CPA) wherein advertisers only pay when a specific action (such as a purchase) is performed by a user. There has been rapid growth in total revenue made by advertising markets that is “internet advertising reached USD 100.2 billion in 2012, which represented 17% growth from 2011 and a 20% share of the total global advertising market. The market for internet advertising is projected to grow at a rate of 13% per year during the period from 2012 to 2017 reaching USD 185.4 billion in 2017. This would make it the second largest advertising medium behind television advertising, with a 29% share of the overall global market...”³⁰⁶

Cloud computing; This is another business model under the digital economy. “Cloud computing is the provision of standardized, configurable, on-demand, online computer services which can include computing, storage, software, and data management, using shared physical and virtual resources (including networks, servers, and applications)³⁰⁷” therefore users can access this on the internet using their different devices. Therefore, the information or resources are not in a certain computer but instead they are in a “cloud” and one can easily access them using a device provided they log or sign in. These include Infrastructure as a service wherein providers offer computers physical or virtual machines and other fundamental computing resources such as Internet protocol (IP) addresses and the customer does not manage or control the underlying cloud infrastructure but rather

³⁰⁶ Ibid page 80

³⁰⁷ Ibid



controls over the operating system, storage and deployed applications and may be given limited control of select networking components, Platform-as-a service wherein there is a computing platform and programming tools as a service for software developers. The client does not control or manage the underlying cloud infrastructure, including the network, servers, operating systems or storage but has control over the deployed applications. For Software-as-a-service herein, a provider allows the user to access an application from various devices through a client interface such as a web browser for example web-based email. There are always new version upgrades which make the software more efficient. An example of cloud services is Apple provides icloud storage which can be purchased by an Apple product user and thus is able to store more photos, documents.

High frequency trading: Here under, “large numbers of orders which are typically fairly small in size are sent into the markets at high speed, with round-trip execution times measured in microseconds. The parameters for the traders are set with algorithms run on powerful computers that analyse huge volumes of market data and exploit small price movements or opportunities for market arbitrage that may occur only milliseconds. Typically, a high-frequency trader holds a position open for no more than a few seconds. In other words, high frequency trading firms profit mostly from small price changes exploited though small, but frequently executed trades. Because trades are conducted entirely electronically, high frequency trading generally does not require personnel in the country where the infrastructure used to make trades is located.”³⁰⁸

Participative networked platforms: Herein, this is an intermediary that enables users to collaborate and contribute to developing, extending, rating, commenting

³⁰⁸ OECD, Addressing The Tax Challenges of The digital Economy 2014 page 82



on and distributing user-created content such as written, audio, visual and combined. Examples include blogs, podcasts, fashion design, computer gaming and others. This is created without expectation of profit however the user created content may charge in many ways such as through voluntary contributions, charging viewers for access on a per-item or subscription basis, advertising-based models, licensing of content and technology to third parties, selling goods and services to the community, and selling user data to market research or other firms.

Revenue models in Uganda.

Advertising-based revenues; herein there can be offers of free/discounted digital content to users in exchange for requiring viewing of paid-for advertisements OR there could be providing advertising through mobile devices based on location or other factors OR through social media websites or platforms.

Digital content purchases or rentals; Here in, users pay per item of download for example e-books, videos, apps, games and music would fall into this category. An example is Amazon which has kindle a book application where a user can purchase a book from Amazon and read it from Kindle, also while using Netflix, a user can purchase a movie and watch it from this application³⁰⁹.

Selling of goods (including virtual items); Here under, a user purchases different product and quite often is given a discounted introductory product but are also offered purchasable access to additional content online or virtual items so as to give you a greater experience.

Subscription-based revenues: This amounts to periodical payments in order to access an online product or service or software. Examples include annual payments for “premium delivery” with online retailers, monthly payments for digital content

³⁰⁹ <https://www.netflix.com/ug/>



including news³¹⁰, music³¹¹, and others. Therefore, product or service or software users have to continuously subscribe in order to have access.

Selling of services: Herein traditional services are delivered online and examples include legal services, financial services, consultancy services, travel agency.

Licensing content and technology: This includes access to specialist online content for example publications and journals, algorithms, software, cloud based operating systems or specialized technology such as artificial intelligence systems.

Selling of User data and customized market research; Examples here include internet service providers (ISPs), data brokers, data analytics firms, telemetric and data gained from non- personal sources.

“Hidden” fees and loss leaders; here there may be instances in integrated businesses where profits or losses may be attributable to online operations but because of the nature of the business, cross-subsidy with physical operations occurs and it is difficult to separate and identify what should be designated as “online revenue”. An example might include online banking, which is offered “free” but is subsidised through other banking operations and fees.

The impact of the digital economy on taxation in Uganda

Avoidance of a taxable presence³¹²: Traditionally, a company or business is taxed due to its physical presence and this is usually registered. However, the digital economy business models are run through the internet. Therefore, even if the parent

³¹⁰ <https://www.newvision.co.ug/tag/e-paper/> through this website, one is able to subscribe to Uganda’s Newvision’s Epaper

³¹¹ <https://www.apple.com/ug/apple-music/> through this website, a music fanatic is able to subscribe to apple music. The subscription has different plans such as student, individual and family.

³¹² OECD, Addressing The Tax Challenges of The digital Economy 2014 page 102



company or business has a physical presence in a certain country, the subsidiary or branches may not necessarily have physical presence in other countries. Some business models on the digital economy do not have any physical presence at all. However, these businesses make sales, profits and thus ought to turn over revenue, unfortunately they do not since the taxing entity is unable to assess this tax. This, therefore impacts taxation in Uganda as this revenue is not collected.

More so, there is an aspect of minimizing the income allocable to functions, assets and risks in market jurisdictions³¹³. This could be seen as tax avoidance. Herein a business under the digital economy may establish a local subsidiary with activities that generate less taxable profit. Thus assets in particular intangibles and risks related to the activities carried out at the local level may be allocated via contractual arrangements to other group members of the same company, operating in a low-tax environment in a way that minimises the overall tax burden of the company. An example could be seen where a subsidiary business or company in a certain country can perform marketing or technical support, or maintain mirrored server to enable faster customer access to the digital products sold by the parent business company. Also for a business selling tangible products online, a local subsidiary may maintain a warehouse and assist in the fulfilment of orders. These subsidiaries will be taxable in their jurisdiction on the profits attributable to services they provide, but the amount they earn may be limited. An example is Amazon whose headquarters are in Seattle, United States but the same company makes deliveries to Uganda. Therefore, this has an impact on taxation as all taxes are not realised in Uganda.

More so, with digital economy, there is rise in avoidance of withholding tax: Withholding tax is “a portion of income tax subtracted from salary, wages,

³¹³ OECD, Addressing The Tax Challenges of The digital Economy 2014 page 102



dividends or other income before the earner receives payment”³¹⁴. Traditionally a company may be subject to withholding tax in a country in which it is not a resident if it receives certain payments including interest or royalties from payers in that country, if allowed under a treaty between the jurisdictions of the payer and recipient. However, a company in the digital economy may be entitled to reduced withholding or exemption from withholding on payments of profits to a lower-tax jurisdiction in the form of royalties or interest. This would mean that the profits made in a lower tax jurisdiction affects the revenue turn over in that country.

In addition, there is elimination or reduction of tax in the intermediate country: This is done through the application of preferential domestic tax regimes, the use of hybrid mismatch arrangements, or through excessive deductible payments made to related entities in low or no tax jurisdictions. Herein, companies locate functions, assets, or risks in low-tax jurisdictions or countries with preferential regimes, and thereby allocate income to those locations. This therefore makes it hard for the taxing master to access all the tax. An example in the digital economy the rights to intangibles and their related returns can be assigned and transferred among enterprises and may be transferred sometimes for a cheaper price. Companies or businesses may also reduce tax in an intermediate country by generating excessive deductible payments to related entities that are themselves located in low or no-tax jurisdictions or otherwise entitles to a low rate of taxation on the income from those payments³¹⁵.

More so, there is reduction of taxation in the parent company and thus they would be able to eliminate or reduce tax. This can be done allocating risk and legal

³¹⁴ Brian A Garner, Black’s law dictionary, Thomson West 8th edition page 1500

³¹⁵ OECD, Addressing The Tax Challenges of The digital Economy 2014 page 105



ownership of mobile assets such as intangibles to group entities in low tax jurisdictions, thus group members in the jurisdiction of the headquarters are undercompensated for important functions relating to these risks and intangibles that continue to be performed in the jurisdiction of the headquarters. There are also instances where the country has an exemption or deferral system for foreign source income, through this a company would have its parent company in such jurisdiction and thus would either eliminate or reduce tax.

Conclusion

In a nutshell, there is a rapid spread of digital economy due to various advantages, as businesses are rapidly choosing the digital economy over the traditional methods of doing businesses. However, it is absurd that our laws have not evolved to encompass taxes from digital economies, thus our taxing masters should be able to keep aware of these developments and devise possible solutions, for the development of the economy of Uganda.



THE LEGAL REGIME GOVERNING TAXATION OF CRYPTO CURRENCIES

A view by Richard Agaba (2020)³¹⁶

The digital economy is a new development, which is still evolving and so this has left the entire Universe in shock on which laws they could rely on to be able to tax the emerging business models. According to The Organisation for Economic Co-operation and Development (OECD), *“it is difficult if not impossible to ring-fence the digital economy from the rest of the economy for tax purposes. In other words, countries agreed that there was no such thing as a digital economy, but rather that the economy itself had become digitalized and that this trend was likely to continue.”*³¹⁷ Therefore, the failure to draw a line between what is digital economy and what’s not has led to delayed enactment of laws to these for taxation of business models under the digital economy. Uganda as a nation, still has laws such as Income Tax Act Cap 340 as amended, Value Added Tax Cap 349 as amended, Excise Duty Act 2014 as amended and others which do not resolve the issue of effective taxation of businesses under the digital economy. This is unfortunate for the Ugandan government because there has been increase of business models under the digital economy. It is a trite rule in business to minimise costs and therefore, business persons having realised that through such kind of businesses they would be avoiding and or evading tax, they have proceeded to opt for such business

³¹⁶ Agaba Richard (LLB) – UCU - The Digital Economy And Its Impact On Taxation In Uganda (2020)

³¹⁷ OCED, Tax and digitalisation page 1



models. More so, the market or clients are shifting to those kinds of business models because they are flexible, easily accessible and have cheaper products.

International laws;

In spite of the fact that most of these business models under the digital economy emerge from people living in ‘The G20’ (Group of Twenty) countries, those governments have also struggled to curb Base Erosion and Profit shifting (BEPS) business models. These countries are working hard to develop laws that cater for the taxation of the digital economy.

The Organisation of Economic Cooperation and Development (OCED) has developed laws in response to taxation of the digital economy. The OCED, initially known as the Organisation for European Economic Cooperation (OEEC) was started in 1947 after the Second World War to run the Marshall Plan to reconstruct Europe. After Marshall Plan was complete, Canada and United States joined the OEEC nations and that created the OECD on December 14th 1960. The OECD went into full force on September 30th 1961. The OECD is an association of 35 nations in Europe, the Americas and the pacific whose goal is to promote the economic welfare of its members. It has its headquarters in Paris, France and other offices in Berlin, Mexico City, Tokyo, and Washington, D.C. Its member states are Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Luxembourg, Netherland, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom, Canada, Chile, Mexico, the United States of America, Australia, Japan, Korea, New Zealand, Israel and Turkey. The OECD is working with other emerging market³¹⁸ countries. Countries seeking admission are Brazil, China, India, Indonesia, Russia, and South Africa. The process of

³¹⁸ Kimberly Amadeo, Emerging Market countries and Their Five Defining Characteristics. (<https://www.thebalance.com/what-are-emerging-markets-3305927>)



joining the OECD is long and complicated as the nation must be reviewed by up to 20 OECD committees to make sure it conforms to OECD instruments, standards, and benchmarks. It must be willing to reform its economy to meet standards in corporate governance, anti-corruption and Environmental protection. It might have to amend its legislation to conform to these standards.³¹⁹ Therefore, Uganda must consider borrowing a leaf from The Organisation of Economic Cooperation and Development so as to be able ratify these laws in our legislations.

Model Tax Convention on Income and Capital 2017; This Model convention has a title therein to provide that it is between State A and State B for elimination of double taxation with respect to taxes on income and on capital and the prevention of tax evasion and avoidance. I will proceed to discuss some of the provisions in this convention.

Article 10³²⁰ provides for Dividends,

“1. Dividends paid by a company which is a resident of a Contracting State to a resident of the other Contracting State may be taxed in that other State.

2. However, dividends paid by a company which is a resident of a contracting state may also be taxed in that state according to the laws of that state, but if the beneficial owner of the dividends is a resident of the other contracting state, the tax so charged shall not exceed;

a) 5 per cent of the gross amount of the dividends if the beneficial owner is a company which holds directly at least 25 per cent of the capital of the company

³¹⁹ Kimberly Amadeo, The OECD and How It Can Help You, April 2019

(<https://www.thebalance.com/organization-economic-cooperation-development-3305871>)

³²⁰ Model convention on Income and Capital 2017



paying the dividends throughout a 365 day period that includes the day of the payment of the dividend (for the purpose of computing that period, no account shall be taken of changes of ownership that would directly result from a corporate reorganisation, such as a merger or divisive reorganization, of the company that holds the shares or that pays the dividend);”³²¹

The model convention provides that as a general rule, the dividends or profits of a company in State A may be taxed in State B. however the model convention proceeds to provide for exception where dividends or profits of a company in State A can be taxed in the same state. Therefore, if Uganda entered into a bilateral agreement with say Kenya following this model convention, both Uganda and Kenya can have an opportunity to tax the company.

Article 11³²² provides for **Interest**

1. Interest arising in a contracting state and paid to a resident of the other contracting state may be taxed in that other state.
2. However, interest arising in a contracting state may also be taxed in that state according to the laws of that state, but if the beneficial owner of the interest is a resident of other contracting state, the tax so charged shall not exceed 10 per cent of the gross amount of the interest. The competent authorities of the contracting states shall by mutual agreement settle the mode of application of this limitation.

This resolves a problem of hybrid mismatch arrangements. Here to a country without this model convention, a company A would pay interest to its subsidiary B in another country. Company A gets a tax deductible. If this payment is a dividend, then company B gets a tax exemption. Therefore, the OECD/G20 BEPS

³²¹ ibid

³²² ibid



project under Action 2 tried to neutralise the effects of hybrid mismatch arrangements. Thus under this model convention both contracting state have an opportunity to tax the company on agreement.

More so, **Article 29**³²³ which provides entitlement to benefits. It reflects the intention of the contracting states, incorporated in the preamble of the convention to eliminate double taxation without creating opportunities for no-taxation or reduced taxation through tax evasion or avoidance, including through **treaty shopping arrangements**. This intention and the wording of the Article correspond to the minimum standard that was agreed to as part of the OECD/G20 Base Erosion and Profit Shifting Project and that is described in paragraph 22 of the report preventing the Granting of treaties benefits in inappropriate circumstances, Action 6- 2015 Final Report.

Treaty shopping occurs when companies seek to take advantage of tax treaties between contracting states using a shell company based in a third jurisdiction. For example, Company A resident in say the Cayman Islands licensing its intellectual property to Company C based in for instance South Africa via a letter box company based in European country with a treaty network allowing for treaty shopping. In this example, there is no tax treaty in place between Cayman Islands and South Africa but the European Country does have a tax convention with South Africa under which no withholding tax is applied on royalties since the European countries domestic law doesn't call for withholding tax on outbound payments royalties for the group are not taxable in either companies A, B or C. Therefore Article 29³²⁴ allows countries to adopt minimum rules designed to ensure that only

³²³ Model convention on Income and Capital 2017

³²⁴ ibid



true residents qualify for treaty benefits these include various combinations of limitations on benefits rules which are specific type of anti-treaty abuse rule and more general principal purpose test rules this would allow south Africa in these example to apply its domestic rate of withholding tax treaties which specifically state that their objective is preventing double taxation and not facilitating treaty shopping.

Article 5³²⁵ provides for Permanent Establishment;

Paragraph 1 provides that for the purposes of this convention, the term “permanent establishment” means a fixed place of business through which the business of an enterprise is wholly or partly carried on. This is a general rule since it is from permanent establishment that the taxing master would be able to tax the company or enterprise.

Under Paragraph 2, it provides for what is especially included in permanent establishment that is (a) a place of management; (b) a branch; (c) an office; (d) a factory; (e) a workshop, and (f) mine, an oil or gas well, a quarry or any other place of extraction of natural resources. Under paragraph 3, it provides that a building site or construction or installation project constitutes a permanent establishment only if it lasts more than twelve months.

Under paragraph 4, it provides that Notwithstanding the preceding provisions of this Article, the term “permanent establishment” shall be deemed not to include:

a) the use of facilities solely for the purpose of storage, display or delivery of goods or merchandise belonging to the enterprise;

³²⁵ ibid



b) the maintenance of a stock of goods or merchandise belonging to the enterprise solely for the purpose of storage, display or delivery;

c) the maintenance of a stock of goods or merchandise belonging to the enterprise solely for the purpose of processing by another enterprise.

d) the maintenance of a fixed place of business solely for the purpose of purchasing goods or merchandise or of collecting information, for the enterprise;

e) the maintenance of a fixed place of business solely for the purpose of carrying on, for the enterprise, any other activity;

f) the maintenance of a fixed place of business solely for any combination of activities mentioned in subparagraphs a) to e), provided that such activity or, in the case of subparagraph

(g), the overall activity of the fixed place of business, is of a preparatory or auxiliary character.

A close look at paragraph 4, especially with the current developments of the digital economy would lead many businesses to avoid or evade tax.

However, paragraph 4.1 provides that Paragraph 4 shall not apply to a fixed place of business that is used or maintained by an enterprise if the same enterprise or a closely related enterprise carries on business activities at the same place or at another place in the same contracting state and

a) that place or other place constitutes a permanent establishment for the enterprise or the closely related enterprise under the provisions of this Article, or



b) the overall activity resulting from the combination of the activities carried on by the two enterprises at the same place, or by the same enterprises at the two places, is not of preparatory or auxiliary character, provided that the business carried on by the two enterprises at the same place, or by the same enterprise or closely related enterprises at the two places, constitute **complementary functions** that are part of a cohesive business operation.

Paragraph 4.1 deals with business modes that carry out complementary functions however wish to evade or avoid tax all in the name of the digital economy.

Under paragraph 5, it provides that Notwithstanding the provisions of paragraphs 1 and 2 but subject to the provisions of paragraph 6, where a person is acting in a contracting state on behalf of an enterprise and, in doing so, habitually concludes contracts, or habitually plays the principal role leading to the conclusion of contracts that are routinely concluded without material modification by the enterprise, and these contracts are:

a) in the name of the enterprise, or

b) for the transfer of the ownership of, or for the granting of the right to use, property owned by that enterprise or that the enterprise has the right to use, or

c) for the provision of services by that enterprise,

that enterprise shall be deemed to have a permanent establishment in that state in respect of any activities which that person undertakes for the enterprise, unless the activities of such person are limited to those mentioned in paragraph 4 which, if exercised through a fixed place of business (other than a fixed place of business to which paragraph 4.1 would apply), would not make this fixed place of business a permanent establishment under the provisions of that paragraph. Therefore, under this provision, if a company or enterprise is not situated in Uganda but has contracts



run in its name from Uganda (subject to exceptions), it would be deemed to have permanent establishment in Uganda.

Under Paragraph 6, it provides that Paragraph 5 shall apply where the person acting in a contracting state on behalf of an enterprise of the other contracting state carries on business in the first-mentioned state as an independent agent and acts for the enterprise in the ordinary course of that business. Where, however, a person acts exclusively or almost exclusively on behalf of one or more enterprises to which it is closely related, that person shall not be considered to be an independent agent within the meaning of this paragraph with respect to any such enterprise.

Under Paragraph 7, it provides that the fact that a company which is a resident of a contracting state controls or is controlled by a company which is a resident of the other contracting state, or which carries on business in that other state (whether through a permanent establishment or otherwise), shall not of itself constitute either company a permanent establishment of the other.

Paragraph 8 describes a person or enterprise who is closely related to an enterprise. It provides that for the purpose of this Article, a person or enterprise is closely related to an enterprise if, based on all the relevant facts and circumstances, one has control of the other or both are under the control of the same persons or enterprises. In any case, a person or enterprise shall be considered to be closely related to an enterprise if one possesses directly or indirectly more than 50 per cent of the beneficial interest in the other (or, in the case of a company, more than 50 per cent of the aggregate vote and value of the company's shares or of the beneficial equity interest in the company) or if another person or enterprise possesses directly or indirectly more than 50 per cent of the beneficial interest (or, in the case of a company, more than 50 percent of the aggregate vote and value of



the company's shares or of the beneficial equity interest in the company) in the person and the enterprise or in the two enterprises.

In regards to **Mutual agreements**, the Model Convention recognizes that not every complainant is a resident especially under the digital economy. Article 25³²⁶ provides for Mutual Agreement Procedure, therein paragraph 1 provides that where a person considers that the actions of one or both of the contracting states result for him in taxation not in accordance with the provisions of this convention, he may irrespective of the remedies provided by the domestic law of those states, present his case to the competent authority of either contracting state. The case must be presented within three years from the first notification of the action resulting in taxation not in accordance with the provisions of the convention. This provision allows any person with a dispute to settle it either from the contracting state or the other state. The previous provision under the 1977 model convention emphasised that the person has to be a national whereas 1963 Draft convention emphasised that the complainant has to be a resident of a contracting state. However, both the 1977 model convention and 1963 Draft convention were amended by the Model convention on Income and capital 2017.

United Nations Model Double Taxation Convention between Developed and Developing Countries 2017;

The United Nations Model Double Taxation Convention between Developed and Developing Countries 2017 forms part of the continuing international efforts aimed at eliminating double taxation. The United Nations Model Double Taxation Convention between Developed and Developing Countries 2017 has great similarities with The Model Tax Convention on Income and on Capital 2017 however the “areas of divergence exemplify, and allow a close focus upon, some

³²⁶ Model convention on Income and Capital 2017



key differences in approach or emphasis as exemplified in country practice. Such differences relate, in particular, to the issue of how far one country or the other should forego, under a bilateral tax treaty, taxing rights which would be available to it under domestic law, with a view to avoiding double taxation and encouraging investment”³²⁷

Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”);

This treaty covers 94 jurisdictions and entered into force on 1 July 2018. Uganda is not yet a signatory however; South Africa, Nigeria, Senegal, Egypt, Cote d’Ivoire, Kenya and many European and non-European state are signatories. The MLI offers concrete solutions for governments to close the gaps in existing international tax rules by transposing results from the OECD/G20 BEPS Project into bilateral tax treaties worldwide. The MLI modifies the application of thousands of bilateral tax treaties concluded to eliminate double taxation. It also implements agreed minimum standards to counter treaty abuse and to improve dispute resolution mechanisms while providing flexibility to accommodate specific tax treaty policies. Some of the principles in the MLI are already highlighted in the **Model Convention on Income and Capital 2017**.

Article 1 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”) provides for scope of the convention that is that the convention modifies all **Covered Tax Agreements**. ‘**A Covered Tax agreement**’ means an agreement for the avoidance of double taxation with respect to taxes on income (whether or

³²⁷ Paragraph 2, Origin of the United Nations Model convention between developed and Developing Countries 2017



not other taxes are also covered): that is in force between two or more parties and jurisdictions or territories which are parties to an agreement described above and for whose international relations a Party is responsible; and with respect to which each such party has made a notification to the Depository listing the agreement as well as any amending or accompanying instruments thereto (identified by title, names of the parties, date of signature, and, if applicable at the time of the notification, date of entry into force) as an agreement which it wishes to be covered by this convention³²⁸.

Part 2 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”) provides for **hybrid mismatches**; therein Article 3 provides for **transparent entities**, thus Article 3(1) is to the effect that income derived by or through an entity or arrangement that is treated as wholly or partly fiscally transparent under the tax law of either contracting jurisdiction but only to the extent that the income is treated, for purposes of taxation by that contracting jurisdiction, as the income of a resident of that Contracting jurisdiction. Article 4 provides for **Dual Resident Entities**; Thus where a person is existent in more than one contracting jurisdiction, then the competent authorities have to put this in consideration however, in absence of such agreement then such person is not entitled to any relief or exemption from tax provided by the Covered Tax Agreement except to the extent and in such manner as may be agreed upon by the competent authorities of the contracting jurisdictions. Article 5 provides for the **different options or methods for elimination of double taxation**.

Part 3 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”)

³²⁸ Article 2 paragraph 1(a) of the Multilateral Convention to implement tax treaty related measures to prevent base erosion and profit shifting.



provides for **treaty abuse**; therein Article 6 provides for the purpose of a covered tax agreement, Article 7 provides for Prevention of treaty abuse, that is a benefit under the covered tax agreement only granted in respect of an item of income or capital if it is reasonable to conclude that obtaining that benefit was one of the principal purposes of any arrangement or transaction that resulted directly or indirectly in that benefit, unless it is established that granting that benefit would be in accordance with object and purpose of the relevant provisions of the Covered Tax Agreement. Part 4 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”) provides for **avoidance of permanent establishment status**, Part 5 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”) provides for **improving dispute resolution**, Part 6 of the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (Multilateral Instrument or “MLI”) is on Arbitration. Most of the principles that are provided for in the Multilateral Convention to implement tax treaty related measures, to prevent base erosion and profit shifting are similarly in the Model convention 2017 with the same purpose and intention.

Regional laws:

European Commission proposed new rules on the digital economy; According to the European Union official website, The European Commission proposed new rules to ensure that digital business activities are taxed in a fair and growth-friendly way in the European Union as of 21st March 2018³²⁹;

³²⁹ https://ec.europa.eu/taxation_customs/business/company-tax/fair-taxation-digital-economy_en



The first is to reform the European Union corporate tax rules for digital activities³³⁰. This would enable member states to tax profits that are generated in their territory, even if a company does not have physical presence there. The new rules would ensure that online businesses contribute to public finances at the same level as traditional ‘brick and mortar’ companies. Therefore, per the new rules, company or enterprise acquires a permanent establishment if; it exceeds a threshold of 7 million Euros in annual revenues in a member state, it has more than 100,000 users in a member state in a taxable year, over 3000 business contracts for digital services created between the company and business users in a taxable year. In addition to this, the new rules will also change how profits are allocated to member states in a way which better reflects how companies can create value online for example, depending on where the user is based at the time of consumption. Thus, per the new rules, what will be taxed are profits from user data such as placement of advertising, services connecting users such as online marketplace, and other digital services such as subscription to streaming services.

More so, the European Union made proposals for an interim tax which covers the main digital activities so as to curb avoidance and evading of tax³³¹. The interim tax would apply until the comprehensive reform has been implemented. The target would be to encompass revenues created from; selling online advertising space, digital intermediary activities which allow users to interact with other users and which can facilitate the sale of goods and services between them, the sale of data generated from user-provided information. Tax revenues would be collected by the member states where the users are located and would only apply to companies with total annual worldwide revenues of 750 million Euros and European Union

³³⁰ *ibid*

³³¹ *ibid*



revenues of 50 million Euros. An estimated 5 billion Euros in revenues a year could be generated for member states of the tax is applied at a rate of 3%.

Therefore, The European Commission has noticed the increased emergence of business entities that are under the digital economy. That is why they have rushed to the drafting board, to come up with long term and interim laws to help in resolving the issue of taxation of digital economies.

According to Taxamo, a private company with online platform to provide tax solutions³³², In **South-East Asia**, Singapore and Malaysia, ‘would tax’ cross-border digital service supplies from the start of 2020. Thus Singapore and Malaysia became the first South-East Asia nations to introduce such kind of tax rules on cross border supply of digital services. This follows Japan in October 1 2015, South Korea July 1 2015, Taiwan and India less than two years later (May 1 and July 1 2017 respectively)³³³. Malaysia confirmed the introduction of a tax on imported digital services in 2019 budget. Lim Guan Eng, Malaysian Finance Minister while relaying the changes in the budget speech stated that “for imported online services by consumers, foreign service providers will be required to register and remit related service taxes to the Malaysian customs, effective January 1 2020.”³³⁴

With regard to **Singapore**, from January 1 2020, foreign-supplied digital services would be subject to Singapore Goods and Services Tax (GST). The cross-border Business to Consumer and Business to Business digital service suppliers would be

³³² Taxamo, Digital tax developments in South-East Asia: Malaysia and Singapore March 27 2020. <https://blog.taxamo.com/insights/digital-tax-news-south-east-asia>

³³³ ibid

³³⁴ ibid



subject to Singapore GST at the current rate of 7% subject to popular global changes.³³⁵

Vietnam adopted the “Law on Tax Administration” which will come into effect on July 1 2020. This law contains pans for foreign ecommerce that is the companies to register for Vietnam VAT purposes. A 10% tax is currently withheld at source by the Vietnamese party to the contract. This is known as a ‘Foreign contractor Tax’ of which half is VAT and half is an Income tax.³³⁶

Thailand’s Council of State and Revenue Department have been deliberating over a new e-commerce tax bill for some months with no exact introduction date confirmed. If passed, the move to earn 3 billion and 4 billion baht (approximately USD \$98m to \$131m) per year for the Thailand Revenue Department.³³⁷

Indonesia is in the pipeline of introducing a tax on the digital economy. At the March 2018 G-20 gathering in Argentina, Indonesia’s Finance Minister Sri Mulyani Indrawati urged international cooperation in attempts to tax digital giants such as Google, Facebook, Twitter, Amazon, Uber, Lazada and Grab. He also raised the issue of unfair competition between digital companies, particularly in e-commerce, and conventional ones, particularly in terms of tax treatment³³⁸. Therefore, this shows Indonesia’s awareness of taxation of the digital economies.

Philippines has shown interest in amending their taxation rules but no conclusion has been made as yet. In 2016, Philippines Bureau of Internal Revenue (BIR) was drawing up plans aimed at taxing the digital economy. The services covered in any potential piece of legislation would attract value added tax, the current VAT rate

³³⁵ ibid

³³⁶ ibid

³³⁷ ibid

³³⁸ ibid



in the Philippines is 12%³³⁹. This, shows awareness of taxation of the digital economy and steps towards achieving it.

In **Australia**, there has been awareness of the digital economy and thus taxation to the same. Since 2015, Australia has implemented a number of the Base Erosion and Profit Shifting Project recommendations. I will proceed to discuss the OECD BEPS action and Australian action.

- OECD BEPS Action Item 1; Tax challenges of the digital economy: Addressing the challenges for governments in taxing the digital economy and the capacity of multinational enterprises (MNEs) to have a significant market presence without being liable to taxation

Australian action; Enacted legislation to extend the Good and Service Tax(GST) to: (1) digital products and services imported by Australian consumers from 1 July 2017; and (2) low value goods imported by Australian consumers from 1 July 2018. Legislation to extend the GST to offshore accommodation booking services was introduced into Parliament in September 2018, following an announcement in the 2018-19 Budget³⁴⁰.

- OECD BEPS Action Item 2 Neutralise hybrid mismatches: Designing rules to address MNEs' capacity to exploit differences in the tax treatment of an entity or instrument by two or more countries to achieve double non-taxation.

Australian action: Legislation to commence on 1 January 2019 to implement the OECD's hybrid mismatch rules to prevent MNEs from exploiting differences in

³³⁹ *ibid*

³⁴⁰ The digital economy and Australia's corporate tax system



the tax treatment of an entity or instrument under the laws of two or more tax jurisdictions³⁴¹.

- OECD BEPS ‘Action Item 3 Controlled foreign company rules: Ensuring that MNEs cannot shift profits to controlled subsidiaries in low-tax jurisdictions’

Australian action; ‘Australia has very strong controlled foreign company rules that are consistent with the OECD's best practice recommendations’³⁴²

- OECD BEPS ‘Action Item 4 Limit interest deductions: Preventing MNEs from claiming excessive interest deductions.

Australian action: ‘Enacted legislation to significantly tighten the thin capitalisation rules by lowering the Safe Harbour Debt limit from 75 per cent to 60 per cent (in 2014). Legislation on improvements to the integrity of the thin capitalisation rules was introduced into Parliament in September 2018, following an announcement in the 2018-19 Budget’³⁴³.

- OECD BEPS ‘Action Item 5 Counter harmful tax practices: Identifying and addressing harmful tax practices.

Australian action: Actively engaging in the OECD’s Forum on Harmful Tax Practices, which is seeking to eliminate harmful tax practices. Australia is compliant with the BEPS Action 5 transparency framework requirements, which relate to the exchange of information on tax rulings between national tax authorities’³⁴⁴.

- OECD BEPS ‘Action Item 6 Prevention of treaty shopping: Ensuring that businesses cannot funnel money through different countries to access tax treaty benefits to reduce or eliminate their worldwide tax obligations’.

³⁴¹ *ibid*

³⁴² *ibid*

³⁴³ *ibid*

³⁴⁴ *ibid*



Australian action “The OECD’s recommendations on Action Item 6 will be adopted in the negotiation of new and updated Australian tax treaties (2015-16 Budget). The 2015 Australia-Germany treaty was among the first treaties in the world to adopt these new rules. Implemented these rules across most of Australia’s existing tax treaties by effect of the OECD Multilateral Instrument (MLI)”³⁴⁵.

- OECD BEPS ‘Action Item 7 Prevent artificial avoidance of permanent establishment status: Ensuring that businesses cannot avoid Permanent Establishment status through agency and other artificial arrangements”

Australian action “Signed the MLI, which includes the BEPS Action 7 recommendations. Australia has adopted the majority of the new rules via the MLI and the Government will consider adopting additional rules in the context of future bilateral treaty negotiations. Australia also implemented the Multinational Anti-Avoidance law, which took effect from 1 January 2016, to address certain corporate structures that artificially avoid permanent Establishment status³⁴⁶.

- OECD BEPS “Action Items 8, 9 and 10 Transfer pricing and value creation: Addressing BEPS by better aligning value creation with economic location, with a particular focus on intangibles, risk recognition, and capital allocation”.

Australian action “Enacted the OECD’s recommendations on Action Items 8-10 as part of Australia’s transfer pricing laws, effective from 1 July 2016. Australia also implemented the Diverted Profits Tax from 1 January 2017, to prevent MNEs from implementing schemes designed to artificially shift profits overseas to reduce their Australian tax”³⁴⁷.

³⁴⁵ *ibid*

³⁴⁶ *ibid*

³⁴⁷ *ibid*



- OECD BEPS “Action Item 11 Methodologies to collect and analyse BEPS data: Aiming to develop indicators showing the scale and economic impact of BEPS”

Australian action “Continuing to work with the OECD on how to monitor and evaluate the effectiveness of the BEPS Project over time”³⁴⁸.

- OECD BEPS “Action Item 12 Mandatory disclosure of aggressive tax planning: Focused on developing rules requiring mandatory reporting to tax administrators of aggressive or higher risk transactions”.

Australian action “The Australian Tax Office (ATO) has extensive powers to collect information to enforce Australia’s tax laws. The Government is considering the outcomes of consultation to determine what further powers the ATO may need to detect arrangements designed to avoid tax.”³⁴⁹

- OECD BEPS “Action Item 13 Transfer pricing documentation and Country-by-Country reporting (CbCR): Developing multinational reporting rules to enhance transparency for tax administrations, helping them to assess transfer pricing risks for large businesses”.

Australian action “Implemented full CbCR from 1 January 2016 (requiring significant global entities to lodge a CbC Report, Master file and Local file). Australia also ensured the exchange of CbC Reports by signing the CbC Multilateral Competent Authority Agreement. To date hundreds of files have been received and are being analyzed by the ATO”³⁵⁰.

- OECD BEPS “Action Item 14 Dispute resolution: Developing a new minimum standard and best practices for treaty dispute resolution to address obstacles preventing countries from solving treaty-related taxpayer disputes under Mutual Agreement Procedures (MAP).

³⁴⁸ *ibid*

³⁴⁹ *ibid*

³⁵⁰ *ibid*



Australian action “Ensuring Australian existing treaty approach to dispute resolution and administration is consistent with the OECD recommendations. Australia is one of 28 countries that have signed up to mandatory arbitration in the MLI”³⁵¹.

- OECD BEPS “Action Item 15 Multilateral Instrument: Developing a multilateral instrument to enable countries to amend their bilateral tax treaties via a multilateral treaty, so as to ensure countries can address BEPS in a timely fashion”.

Australian action “Australia signed the MLI on 7 June 2017. To date, at least 84 jurisdictions have signed the MLI. Legislation to give the MLI the force of law in Australia (pending Australia’s ratification of the MLI) was passed by Parliament in August 2018, and Australia ratified the MLI in September 2018”³⁵².

Australia has proceeded to come up with measures beyond those from the BEPS Project; The Multinational Anti-Avoidance Law (MAAL) strengthens the integrity of Australia’s Permanent Establishment rules.³⁵³

From 1 July 2017, the Diverted Profits Tax (DPT) introduced a new 40 per cent penalty tax rate to apply to multinational enterprises that avoid tax by diverting profits offshore. These measures apply to significant global entities (SGEs) with annual global income of \$1 billion or more³⁵⁴;

³⁵¹ *ibid*

³⁵² *ibid*

³⁵³ This is consistent with the recommendations in BEPS Action Item 7. See OECD 2015, Preventing the Artificial Avoidance of Permanent Establishment Status, Action 7: 2015 Final Report, OECD/G20 Base Erosion and Profit Shifting Project, OECD Publishing, Paris

³⁵⁴ The digital economy and Australia’s corporate tax system



The MAAL prevents SGEs from structuring their affairs to avoid Australian tax by adopting an ‘operate here, bill overseas’ business model.³⁵⁵ As at 30 June 2018, 44 multinational entities have changed, or are in the processing of changing, their tax affairs to bring their Australian-sourced sales onshore in compliance with the MAAL. More than \$7 billion in sales annually is expected to be returned to the Australian tax base as a result of the MAAL.

The DPT specifically targets arrangements SGEs enter into with a principal purpose of shifting profits overseas to avoid Australian tax³⁵⁶. The DPT aims to ensure that the tax paid by multinational enterprises reflects the economic substance of their activities in Australia and aims to prevent the diversion of profits offshore through arrangements involving related parties³⁵⁷.

The Government’s Tax Avoidance Taskforce strengthens the ATO’s capacity to identify and address tax avoidance by large corporates, multinationals and high wealth individuals. With the support of the Taskforce, since its inception in July 2016, the ATO has raised over \$10.5 billion in liabilities around \$7 billion against large public groups and multinationals and \$3.5 billion against wealthy individuals and associated groups, including trusts and promoters; and collected over \$6 billion cash around \$4.1 billion in cash from large public groups and multinationals and over \$2 billion in cash from wealthy individuals and associated groups, including trusts and promoters³⁵⁸.

³⁵⁵ S Morrison (Treasurer) 2016, ‘Multinationals paying tax on Australian profits’, media release, 9 December, <http://sjm.ministers.treasury.gov.au/media-release/137-2016/>.

³⁵⁶ S Morrison (Treasurer) 2017, ‘Turnbull Government continues crackdown on multinational tax avoiders’, media release, 9 February, <http://sjm.ministers.treasury.gov.au/media-release/009-2017>; Australian Taxation Office 2018, Diverted profits tax, 19 February, <https://www.ato.gov.au/general/new-legislation/in-detail/direct-taxes/income-tax-for-businesses/diverted-profits-tax>.

³⁵⁷ The digital economy and Australia’s corporate tax system

³⁵⁸ *ibid*



The maximum penalties for tax avoidance schemes have been doubled that is from 1 July 2015, the maximum administrative penalties for SGEs that enter into tax avoidance and profit shifting schemes were doubled³⁵⁹.

Administrative penalties for SGEs have been increased that is from 1 July 2017, the Government increased the maximum penalty for failure to lodge tax documents for SGEs to \$525,000, and doubled the penalties for making false or misleading statements to the ATO³⁶⁰.

Therefore, Australia is update with its laws and policies on taxation of digital economies. It is from this kind of awareness that it has been able to realise taxes of these digitalized companies thus a development to the country.

According to Luchelle Feukeng, a journalist, most **African countries** have laws and regulations in place for taxing digital goods and services. However, many are still very basic and do not cover the whole spectrum of the growing and changing digital economy. She avers that **Cameroon** taxes are levied on digital equipment, calls and data and thus phones and electronic tablets can be imported and are exempt from customs duty and tax provided that duties are paid through a levy attached to phone calls and are declared and sent by telecoms operators on the 15th of every month to the relevant customs service. Downloading of applications developed in another customs zone to phones and electronic tablets attracts a flat rate of FCFA 200 per application. However, if the provider is based outside of Cameroon, there is no way to enforce the collection of this tax. Cameroon's government announced it would apply value-added tax (VAT) to goods and

³⁵⁹ *ibid*

³⁶⁰ *ibid*



services sold on Cameroonian territory through e-commerce platforms”³⁶¹ in my opinion Cameroon has awareness of the digital economies and is therefore setting measures to curb avoidance and evasion of tax at the same time respecting principles against double taxation.

In **Senegal**, along the VAT, mobile consumers have to pay additional tax charged on telecoms services at 5% of revenue, and operators also have to pay additional sector-specific taxes. In **Kenya**, mobile money transactions have been subject to a tax of 10%. **South Africa** was one of the early adopters of the policy, introducing a tax on digital goods. And by February 2019, this digital tax had generated approximately \$208 million in revenue³⁶².

In my opinion, the response rate in Africa towards taxation of digital economies is low compared to the speed at which business entities under the digital economy are mushrooming and spreading to the entire world. I need not emphasize that digital economies affect every jurisdiction due to the nature of operation. Therefore, if one jurisdiction has better laws, it earns better chances of collecting taxes from the digital economy.

Domestic laws:

In Uganda, specific laws on taxation of digital economies have not been enacted as yet. Uganda has accentuated much on cyber laws these include the Electronic Transactions Act 2011, which recognizes that contracts may be in electronic form and provides rules for their formation. Additional rules were provided in the Electronic Transactions Regulations 2013 and the Certification of Providers of

³⁶¹ Luchelle Feukeng, Cashing in on Africa’s digital economy

<http://www.yourcommonwealth.org/editors-pick/cashing-in-on-africas-digital-economy/>

³⁶² *ibid*



Information Technology Products and Services Regulations 2016³⁶³. Uganda Revenue Authority provides digital services through the URA website³⁶⁴. It has also introduced digital tax stamps which are physical paper stamp applied to goods or packaging but contain security features and codes to prevent counterfeiting, Tamperproof features, Track and Trace capabilities to enable; consumers validate the stamp, traders and manufacturers track the product movement and government to monitor compliance of the product and stamp, Quick response code (QR code) that will allow distributors, retailers and consumers to use an app on their smart phones to verify the authenticity of the products and Provision for online ordering and approval for delivery of stamps.

The Ugandan parliament recently amended the Excise Duty Act 2014, with The Excise Duty (Amendment) (No.2) Act, 2018 which introduced a 1% of the value of the transaction on mobile money transaction of receiving, payments and withdrawal of cash, though later suspended which in my opinion was not so calculated. Furthermore, the Ugandan government introduced Over the top tax (OTT) of 200 Ugshs. per day which though has not able to hit the government estimate, has been able to get government some revenue. These kinds of laws are meant to increase on the tax base.

Conclusion

The main issue is still unresolved that is whether the government of Uganda has up to standard laws or policies to effectively provide for taxation of digital economies. In my opinion it has not been resolved, because Uganda still relies on

³⁶³ Barefootlaw, Cyber laws of Uganda 2019 <https://barefootlaw.org/wp-content/uploads/2018/04/BarefootLaw-Cyber-Laws-of-Uganda-201937923844.pdf>

³⁶⁴ www.ura.go.ug



archaic tax laws. This has led the Ugandan government to lose a lot of revenue that would have been collected by Uganda Revenue Authority.

A Commentary on legal, ethical and taxation policy issues

Given the unclear concept of cryptocurrencies and their status in relation to legal tender, their volatility and fraud surrounding its use, it was clear that there was going to be plenty of litigation in this area. As cases came to court for dispute settlement, the main problem was what legal regime would be appropriate for the aggrieved parties. There was the question of territorial jurisdiction- where the offence occurred or where the transaction took place, more so in relation to extra-territorial jurisdiction where the act or its effects fell outside the remit of Ugandan courts. Another pertinent question for the courts would be the applicability of existing laws on electronic transactions like the Computer Misuse Act to digital assets whose ownership was not always easy to ascertain.

Cryptocurrencies are not being taxed in Uganda even though some people make considerable profits through their usage. Non-taxation arose because the Uganda Revenue Authority (URA) was yet to pronounce itself on the status of cryptocurrencies which meant that users, investors and businesses were not certain about whether they had to pay taxes or not. This was unlike other countries like the United States where in March of 2014, the United States Internal Revenue Service (IRS) announced that it would treat cryptocurrencies as ‘property’ for tax



purposes.³⁶⁵ The IRS treats cryptocurrencies as an asset in the hands of the owner, similar to stocks or bonds. A US taxpayer who held cryptocurrencies for more than one year would be deemed to own a long-term capital asset, which would attract capital gains tax at the disposition of the property.

If cryptocurrencies were performing an economic function, whether as a store of value or a medium of exchange, this had tax implications.³⁶⁶ Despite the legal uncertainty surrounding cryptocurrencies, they were nonetheless subject to income tax. He cited a Kenyan case which held that regardless of the legality of the source of income, it was still taxable. A similar approach had been adopted by other jurisdictions around the world. Under the current legal regime, arguably cryptocurrencies were taxable under Ugandan law. URA could also issue practice notes setting out its interpretation of the tax laws for purposes of clarity.

One possible tax was Income Tax paid on chargeable income.³⁶⁷ The *Tax Procedures Code Act 2014 (TPC)* provided for a self-assessment tax regime,³⁶⁸ where tax payers were required to file returns monthly or biannually³⁶⁹ based on business income, employment income or property income³⁷⁰ Whether the income generated took the form of regular fiat currency or cryptocurrencies, a portion of that income was still owed as taxes to the Government of Uganda. The challenge with taxing these individuals and companies, however, was administrative, not

³⁶⁵ IRS, *IRS Virtual Currency Guidance: Virtual Currency Is Treated as Property for U.S. Federal Tax Purposes; General Rules for Property Transactions Apply* (March 25 2014)

<https://www.irs.gov/newsroom/irs-virtual-currencyguidance>

³⁶⁶ Dong He et al, *Virtual Currencies and Beyond: Initial Considerations*, IMF, 30, (January 2016)

<https://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf>

³⁶⁷ Section 4 of the Income Tax Act Cap

³⁶⁸ Section 20 of the Tax Procedures Code Act 2014 [TPC Act]

³⁶⁹ Section 15 of the TPC Act 2014

³⁷⁰ Section 17(1) of the Income Tax Act Cap 340



legal. The tax authority simply needed to build its capacity to reach these individuals and companies and to educate them on their tax liabilities. In theory, it was possible to secure compliance with tax law, but one needed to bear in mind that online exchanges and related businesses were difficult to trace online, and yet the law envisaged a physical business presence.³⁷¹

A second possibility was Capital Gains tax (CGT) payable under section 78 of the Income Tax Act. CGT was payable following the disposal of a capital asset such as land or company shares, in which the gain was the excess of the consideration received at disposal over the cost base of the asset; a tax on the profit made upon disposal of an asset which has increased in value. By contrast, a capital loss was the excess of the cost base of the asset over the consideration received at disposal.³⁷² As the law stood, cryptocurrency users would be liable for CGT. The cost base of the cryptocurrency would be calculated upon acquisition as determined by the value of the cash, and the Fair Market Value (FMV) of the goods or services exchanged for the cryptocurrency. However, calculating these values required detailed record keeping about the use of currencies. Worse still, the pseudonymous nature of cryptocurrencies posed a challenge to the tax administrators who did not know which individual made a gain unless they declared this in their self-assessment of income.

Cryptocurrencies also appeared to qualify as supply of services under the Value Added Tax Act Cap 349 (VAT Act). Under section 16(2) (d) of the VAT Act, electronic services delivered to a person in Uganda qualified as a taxable supply of services. The supply of virtual goods like computer files was considered by some like Jones and Basu as a supply of services.³⁷³ Using this analogy, services offered by crypto businesses electronically were prima facie subject to payment of VAT, and penalties could arise where a person failed to register for taxes,³⁷⁴ failed to furnish returns,³⁷⁵ or failed to keep proper records.³⁷⁶ In countries like the United

³⁷¹ Section 78 of ITA

³⁷² Section 50(2) of the ITA

³⁷³ Richard Jones and Subhajit Basu "Taxation of Electronic Commerce: A Developing Problem" *International Review of Law Computers & Technology* (2002) (16) 1, 35-52.

³⁷⁴ Section 52 of the TPC Act 2014

³⁷⁵ Section 54 of the TPC Act 2014

³⁷⁶ Section 56 of the TPC Act 2014



Kingdom, for example, in the case of *Navee Limited*³⁷⁷ the company engaged in sporadic trade using Bitcoins, but did not pay VAT. Navee lost the challenge against a tax penalty and a refusal of accept input tax. Her Majesty's Revenue and Customs (HMRC) had successfully argued that as Navee had fraudulently evaded VAT, it could not claim a right to deduct input tax.

Another problem was the potential for tax evasion on a large scale given the pseudonymous nature of cryptocurrencies. With users having multiple accounts but without providing significant identifying information, making it difficult to trace these earnings back to the service provider.³⁷⁸ For example, despite an elaborate explanation by the IRS regarding how to account for income earned through cryptocurrencies, in February 2018 it was reported that only 7 percent of the estimated cryptocurrency users in the USA were accounting for the massive gains³⁷⁹ made in 2017.³⁸⁰

In conclusion, a tax regime that hindered cryptocurrency use would in Mr Rukundo's view discourage legitimate use while leaving illicit users largely unaffected. Indeed, some legitimate users would end up becoming illicit users. At the policy level, the URA needed to issue a practice note clarifying the tax consequences of dealing in cryptocurrencies. The practice note would consider the various options available and their consequences and give cryptocurrencies an air of legitimacy by offsetting the impact of the Bank of Uganda caution issued in February 2017. However, compliance costs would increase because additional efforts would be needed to uncover the financial information of virtual currency users in order to verify their tax declarations. Partnering with tax agencies from

³⁷⁷ *Navee Ltd v Revenue and Customs* [2017] UKFTT 602 (TC) (03 August 2017)

³⁷⁸ Omri Marian, "Are Cryptocurrencies Super Tax Havens?" *Michigan Law Review First Impressions* (2013) 112, 38 - 48

³⁷⁹ Robert A Green, "Cryptocurrency Traders Owe Massive Taxes on Fat 2017 Gains," *Forbes*, 9 January 2018 at: <https://www.forbes.com/sites/greatspeculations/2018/01/09/cryptocurrency-traders-owe-massive-taxes-on-fat-gainsin-2017/#1f6ea4e55472> accessed 3 May 2018

³⁸⁰ Jen Wieczner, "Bitcoin Investors Aren't Paying Their Cryptocurrency Taxes" *Fortune*, 13 February, 2018 at <http://fortune.com/2018/02/13/bitcoin-cryptocurrency-tax-taxes/>



other jurisdictions was one way in which risks of tax non-compliance could be dealt with.

The state of crypto currency in Kenya

According to a survey by Citibank 2018 Survey, Kenya was ranked as the 5th highest bitcoin holder per capita in the world at 2.3% of the GDP or USD 1.6 billion. Nigeria was ranked 3rd while South Africa took the 6th place. The Central Bank of Kenya (CBK) says it should not “be held liable for any losses” incurred by consumers using digital currencies to settle transactions, as the digital currency is not legal tender in Kenya. No guidance from the Kenya Revenue Authority (KRA) on the taxation of cryptocurrency in Kenya and so basic tax principles are likely to apply.

Income Tax

Kenyan income tax implications: is cryptocurrency an asset (property) or currency?

Revenue transactions - a person who engages in the business of buying and selling of cryptocurrency will be subject to income tax on the gains thereof if the income thereof is deemed to have been accrued in or derived from Kenya.

Capital transactions – a company who acquires cryptocurrency for speculation purposes will be subject to capital gains tax on the gains made on a sale however if it involves the frequent trading of the cryptocurrencies, capital gains will not be chargeable as it will be classified as trading income:

since the current CGT rules defines property in the case of companies widely to include generally any property but in the case of individuals as only real property (land) and marketable securities (shares). For individuals, it would depend whether crypto-currencies can be classified as marketable securities (shares); however, the property has to be situate in Kenya. The issue would thus be whether cryptocurrency would be deemed situate in Kenya, considering the virtual nature of cryptocurrency and the anonymity of transactions generally.

VAT

VAT is charged on the supply of goods and services other than an exempt supply, made in Kenya by a person in the course or furtherance of a business. Cryptocurrencies would not constitute goods under the current VAT definition.



Goods are defined as tangible moveable and immovable property and includes electrical or thermal energy, gas and water but does not include money. Services means anything that is not goods or money.

Money is defined as (a) any coin or paper currency that is legal tender in Kenya; (b) a bill of exchange, promissory note, bank draft, or postal or money order; (c) any amount provided by way of payment using a debit or credit card or electronic payment system

Supply of services is defined to include (amongst others) the grant, assignment, or surrender of any right and the making available of any facility or advantage. Would not fit within the exemption of financial services.

It is thus possible that dealing in cryptocurrency could be deemed a supply of service. A person trading in cryptocurrency would thus need to be VAT registered if he meets the VAT registration thresholds (KES 5 million over 12 months) and would require to charge VAT. Issues of imported services would need to be considered.

It is also possible that cryptocurrencies are classified as money when used as a way of payment using any crypto-enabled debit or credit cards or electronic payment system and thus not chargeable to VAT

Withholding taxes

Withholding taxes are unlikely to apply with respect to persons dealing in cryptocurrency, either as in the business or as speculators, as cryptocurrency would not attract dividends, interest or royalties.

However, where loans or debt instruments are provided in the form of cryptocurrency, any crypto-interest payable on the loans could be subject to withholding tax.

Moreover, management fees paid for certain cryptocurrency services such as the management of crypto wallets could also be subject to withholding tax.

Excise duty

This is levied on excisable goods manufactured in Kenya or imported into Kenya and on excisable services supplied in Kenya. Excise duty applies to fees charged for money transfer services by cellular phone service providers, banks, money



transfers agencies and other financial service providers shall be 10% of their excisable value. Currently, cryptocurrencies would not be subject to excise duty

Other taxes include;

Stamp duty; Payable on instruments relating to property situated in Kenya. Nominal stamp duty may be chargeable on instruments such as agreements for the sale and purchase of cryptocurrency, debt instruments for crypto-loans, if any. Otherwise not subject to stamp duty.

In a nutshell, it is cognizable indeed that African countries still are reluctant to legislate and implement taxation on crypto currencies which would invariably mean that crypto currency transactions have been formally recognized. This is yet more tricky because the lack of adequate understanding about blockchain technology is partly responsible for the reluctance to authorize the same, which has also led to the continuous escape of taxation by the digital economy.



Eight

CONCLUSION AND RECOMMENDATIONS

A final commentary on the legal and institutional action points

The question of whether new regulation was needed, or whether any regulation was needed at all, and on the question of the current legal position in Uganda. In 2017 he noted; the Central Bank of Uganda issued a notice against the cryptocurrency One Coin¹⁰⁷ warning that it was similar to a Ponzi scheme.¹⁰⁸ The Bank of Uganda notice was to the effect that anyone who was dealt with One Coin was doing so at their own risk. However, perhaps because Uganda is a defiant society, despite that warning, the use of other cryptocurrencies and the talk about the Blockchain had since tripled.

The Blockchain had a number of benefits, some of which had already been mentioned. One important example was the land registry where there was a lot of fraud which was being investigated by the Commission of Inquiry into Land Matters.³⁸¹ The inherited Torrens system was adopted from the common law system, but it required a certificate of title as conclusive proof of ownership. However, the nature of the land registry (paper based) was such that it was easy for people to forge these titles and forgery had been happening over time. The

³⁸¹ Ephraim Kasozi and Jalira Namyalo, "Bamugemereire probe gets 18 months extension" *Daily Monitor*, 10th May



Blockchain offered a unique code for each property and this code was linked to a smart key which was only held by the owner. Transfer of the property would require the surrender of the smart key by the owner and without it, a transfer of property could not be effected. The use of Blockchain to record property transactions could also produce effective property management as information could be reviewed in real time with less management time required. For instance, recently, the Ministry of Lands had issued a notice stating that to do any land transaction, the lawyer must visit the land office with their client.¹¹⁰ This procedure was very impractical in the sense that for most clients a lawyer was meant to assist them effect the transfer of their land without the client having to physically visit the land registry. Such challenges can be dealt with by adopting the Blockchain technology, but also reviewing the law that governed the areas where the Blockchain would operate.

Mr Muhangi explored the question of the need for regulation in Uganda. He looked at several laws like the *Electronic Transaction Act* which governs electronic transactions, the *Computer Misuse Act* and the **Electronic Signatures Act**. All three Acts provided a seemingly comprehensive legal framework for electronic transactions or e-commerce in Uganda. The Electronic Transactions Act (ETA) gave legal effect to electronic transactions and provided for the use and facilitation of electronic transactions. The Electronic Signatures Act gave legality to digital signatures. An expansive reading of the texts suggested that Blockchain was covered under those two acts. Even though none of the Acts mentioned the word “Blockchain” or the word “cryptocurrencies”, they mentioned electronic transactions and went into detail about automated transactions including the definition of a digital signature.

In his view, there was no need for new legislation, but there was a need for a policy or guidelines. The main thing was to see how the Task Force would conceptualise



how the Blockchain could be used in individual's day to day transactions, and in the government's day to day work. Introducing a strict legal and regulatory framework could also help regulators identify and remove criminal elements or illegal schemes.

In relation to cryptocurrencies, Mr Muhangi suggested that it was possible for the Bank of Uganda to include them under Agency Banking, since cryptocurrencies could be lent or exchanged with local currency. This has been done in Germany, when in July 2013, when Bitcoin Deutschland GmbH, the company that manages the exchange platform Bitcoin.de, entered into a partnership with Fidor, a German bank, in order to provide banking services to Bit-coin.de clients. Regulation could also widen Uganda Revenue Authority's capital gains and value added tax collections, if clear taxation policies/guidelines were introduced. Most importantly, Initial Coin Offerings (ICOs) regulation, crypto-exchange oversight and legal scaffolding for integrating or onboarding institutional investors into the crypto markets would be key to promoting the capital markets and innovation eco-systems.

While concluding, Mr Muhangi stated that for cryptocurrencies like the Bitcoin to be fully relevant to e-commerce and to be adopted by Ugandans and Africans at large, clear rules were required, along with governmental acceptance. This might be formal acceptance of Bitcoin as a form of legal tender or as a formally recognised form of currency that could be used in trading.

In a bid to regulate about cryptocurrencies, policy makers need to heed to certain data protection and privacy issues;



The first one is the purpose limitation principle. When data was collected, there had to be a limitation on the data collected. In addition, the data had to be obtained lawfully and using fair means which included explaining to the data subject the purpose for which the data was collected. The second was that the purpose for which the data was required had to be clear and consent of the data subject had to be sought.³⁸² For example, those persons who registered with the *National Identification Registration Authority (NIRA)* to get a national Identity card, ought not to have had their personal data transferred to another public body for a different use- like updating the electoral register or for the use of marketing of data. Explicit consent of the data subject for that data to be used for a different purpose ought to have been sought. Data must be used for only that purpose for which it was given (limitation principle). In fact, under *Section 18 of the Computer Misuse Act*, it was an offence to use data for purposes other than that for which it was originally given. This was why the request by the Uganda Revenue Authority for customer information from the banks led to a clash between Ugandan banks and the Revenue body because the bank's confidentiality rules did not permit this sharing of information for taxation purposes³⁸³.

security of the information. this is subject to both the limitation and the lawful retention rule. Sometimes the information requested was such that it was redundant as was far more than was necessary for the processing of the data. A question may arise that for how long this information should be retained; - it can only be retained for as long as was necessary. In terms of data protection, some of these cryptocurrencies operate anonymously, yet the data related to a living identifiable

³⁸² Ronald Kakungulu Mayambala - Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

³⁸³ Stephen Kafeero, "Banks to sue URA over customer data" Daily Monitor, 8th April 2018 at <https://www.monitor.co.ug/News/National/Banks-sue-URA-customer-data/688334-4376834-uv2s8pz/index.html>



person. Protection of data is inextricably linked to duration for which data could be retained legitimately, and for what purpose. The use of pseudonymous data is more complex because although some details are anonymised, how the data would be protected needed to be clarified.³⁸⁴

Finally, cross border transactions meant that there was need to investigate if each of the countries had an adequate law on data protection, or else personal data could be shared illegally or with counties with weak legal data protection regimes. Attention needed to be paid to the storage of data in the European Union, following the passing of the General Data Protection Regulation (GDPR) effective in 2018. If a person in the EU had their data transferred to Uganda under a cryptocurrency or blockchain mechanism, it could raise legal challenges as Uganda did not have a robust data protection framework that provided adequate safeguards for the transfer of personal data as of July 2018.

One may wonder what laws could be relied upon in the prevailing circumstances where there was no law on data protection. *Mayambala K* suggests that Article 27³⁸⁵ of the Constitution could be stretched to data protection.³⁸⁶ Alternatively, **Section 18** of the *Computer Misuse Act* can be applied. He also cautioned against the duplication of roles between regulators like the UCC and the National Information Technology Agency (NITA) which left the question of data protection

³⁸⁴ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

³⁸⁵ Article 27 of Uganda's constitution protects the right to privacy of a person's home, correspondence, communication, or other property.

³⁸⁶ *Mayambala K - Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)*



unresolved. Thence, in the absence of data protection policy (and laws), one cannot only rely on the good will of data processors to do the right thing.³⁸⁷

Dr. Mapp has addressed the question of cultural transformation of regulation. She points out that the conceptualisation of law as the yard stick by which any regulatory, policy or legal measures were evaluated as legitimate, proportionate, and leading to fair outcomes, was under challenge.³⁸⁸ Policy makers (and law makers) needed to ask themselves whether law could accommodate an alternative approach to justice- one that had its own notion of legitimacy, legality, proportionality and fair outcomes. In so doing, the policy framework would need to embrace a different yardstick – one that acknowledged the private ordering of norms based on the relationship between individuals, and that accommodated a relational context of customary (traditional) conceptualisations of legitimacy, proportionality and fair outcomes.

In localised societies, the legitimacy of any regulation was not always predicated on the command of a higher sovereign, more so in close knit ‘stateless’ or acephalous societies. Local ‘buy-in’ was required under customary normative frameworks which norms were usually subject to public debate and approval. Similarly, the proportionality of the measures was subject to public scrutiny- in short, not dictated by a sovereign. Fair outcomes of disputes resolved under customary laws and procedures had a focus on compensation to the aggrieved parties and on achieving social harmony (reconciliation) within the society. This was quite unlike the formal system where regulation was framed around legal tenets where law was written down, and where culpability and sanctions were

³⁸⁷ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

³⁸⁸ Dr. Maureen Mapp; CUSTOMARY FRAMEWORKS; Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



framed in terms of individualism. An individual if found guilty of committing a crime was always convicted and punished as an autonomous individual. The legal system would not recognise a collective approach to culpability or to sanctions, whereas a close-knit community could accept culpability and, in some situations, punishment on behalf of the offender. It was difficult to see how the legal system could accept any sanction-in particular a ritual, as obligatory, be it reconciliatory or therapeutic and involving spiritual intervention.

Equally important is the public's understanding of money as distinct from the conventional attributes of money, that is to say money as a medium of exchange that could not be owned by a single individual. To some people, particularly those who lived in rural areas, money was perceived in relational terms- as a communal asset that could be owned by members of a family, those related by kin, or the wider community. The question is whether the state could recognise the idea of money based on this private ordering of norms and values based on the relationship between individuals, on a par with that of formal system. This topic was still a moot point and open to debate.³⁸⁹

Another area for consideration is the potential for the Blockchain to help record monetary transactions that aimed to benefit such close-knit societies including clan and lineage based societies³⁹⁰ or to help an individual to meet their social

³⁸⁹ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)

³⁹⁰ Matthew Davies, "The Archaeology of Clan- and Lineage-Based Societies in Africa", in Peter Mitchell and Paul J. Lane (eds) *The Oxford Handbook of African Archaeology* (2013, Oxford University Press), on the nature of and complex stratification among African clan and lineage-based societies, including their relative ideologies and values 122 Don Tapscott and Alex Tapscott, *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money* (2016, Portfolio/Penguin, Random House, New York) define the Blockchain as a digital ledger of economic transactions that could be programmed to record virtually everything of value, not just financial transactions.



obligations, and to provide transparency about the transactions in the case of a dispute. In this scenario, all the money transfers would be recorded on the Blockchain and any dispute would be resolved in a transparent manner as the transactions could be seen and verified on the distributed ledger. To roll out this programme required leveraging mobile phones and technology in order to support community living. The clan could have private permissioned Blockchains (or shared ledgers) probably with some centralisation or de-centralisation to mirror that of clan or lineage control mechanisms. What mattered was that all the members of that close-knit society, would be able to trace the money, follow up those who may have misappropriated the money, and arrange for refunds and for any reconciliatory rituals, where required.

To illustrate the problem, Maureen³⁹¹ drew on her experience at a clan meeting that she attended in June 2018. The meeting established that friends and relatives clubbed together and via a mobile money service, transmitted money for funeral expenses (kika, mabugo) to different members of the bereaved family. However, some members of the bereaved family conspired to steal the money- two million Uganda shillings (about \$ 571). The resulting shortfall meant that some funeral expenses like food, water, and marquee hire, were met by other family and clan members, some of whom had already contributed towards the funeral fund comprising the missing two million shillings. After the burial, the Pido- the equivalent of a Probate hearing was held by the clan during which the deceased's assets, liabilities, and funeral expenses were discussed, and the issue of the missing millions came up. Some members of the bereaved family refuted the claims that they had misappropriated the money and refused to refund it, rejecting in the process the jurisdiction of the clan court. The clan decided that if the money was

³⁹¹ Dr. Maureen Mapp;
<https://www.birmingham.ac.uk/schools/law/staff/profile.aspx?ReferenceId=82776>



not reimbursed to the bereaved family, then a meeting would be held before the end of 2018, at which a decision would be taken. Possible outcomes included a reimbursement of the 2 million shillings to those who ‘loaned’ it and having a reconciliation ritual of Kayo Choko (bite the bone) as the case involves only family members. The worst-case scenario was to ostracise the offenders from the clan. The aggrieved parties could of course appeal the decision to the clan appellate bodies like that of the Ssaza, Gombolola, or the final appeal court.

Therefore, a ‘community tech’ is necessary to help automate the clan’s financial and regulatory processes in a manner that was not dissimilar to the way in which automation was used to aid regulation in Financial Technology (fin tech) and Regulatory Technology (reg tech).³⁹² Community tech could help clan courts and other traditional bodies to automate clan processes involving the transfer and payment of money for clan dues like funerals and to monitor compliance. Mobile money had already led the way by enabling people transfer money, but the transactions were not as transparent as those on the Blockchain. Given that several clan leaders and traditional leaders were literate and coming from diverse walks of life including court clerks, bankers, and teachers, the use of community tech was not a far-fetched idea. A starting point was a policy that identified the benefits and the risks of automating some clan processes. To do this, clans need to open up and work closely with companies like those in the Blockchain Association of Uganda and with cryptocurrency merchants and businesses in order to develop community friendly products that facilitated the work of the clan leadership, and hopefully would suit the needs of the localised and rural based population.

³⁹² Dr. Maureen Mapp at <https://www.birmingham.ac.uk/schools/law/staff/profile.aspx?ReferenceId=82776>



the concept of Blockchain technology, distributed ledger technologies, cryptocurrencies and the like. These technologies were a social fact- something that was in existence; something that affected people including influencing their thoughts and feelings; their experiences and interactions- ultimately the social order in which people existed. Technologies were growing on an industrial scale that benefitted those who used it. However, alongside the beneficiaries were those victims of scams and fraud resulting from the illicit use of the technologies. A criminologist's interest was focused at what caused or brought about crime, the perpetrators, their victims, and how society could deal with the perpetrators in a manner that was not unnecessarily disruptive to the social order.

A case scenario; based on personal experience

Professor Kibuuka narrated a story that transpired in (2016), when two respectable people from a reputable organisation approached him and tried to convince him to invest in a new venture in which he would allegedly reap huge profits. He was asked to invest \$2,000 (two thousand dollars). One of his relatives urged him to invest, but he declined saying he did not have that kind of money to spare. A year later this organisation ran into financial difficulties and all those who invested with the company lost their money. The respectable gentlemen kept assuring the victims that one day they would get their money, but this seemed unlikely to happen. This example showed that although there is greater innovation and wider range of use of the technologies, but as Frederick Engels once said, “...*the sword of enthusiasm is just as good as the sword of genius*”³⁹³. In that sense, a criminal was equally a genius just like those who were enthusiastically inventing these technologies. The

³⁹³ Frederick Engels, Anti-Schelling (1841):

<https://www.marxists.org/archive/marx/works/1841/anti-schelling/index.htm>.



only difference was that instead of using ingenuity for productive purposes, the criminal used ingenuity to defraud the unsuspecting members of the public.

Society needs to protect itself from exploitation and fraud, which is an important matter for regulators and policy makers. Regulation he cautioned, should not only protect the interests of those who were alive, rather it should include the property of deceased persons where the investment was held in some form of cryptocurrency or some other crypto asset. Such protection would enable the family of the deceased to access the asset (not a criminal or fraudster). While encouraging and promoting these crypto assets, policy makers needed a joined-up thinking on how to regulate this financial space, one that included traditional institutions like banks. The latter would in future integrate cryptocurrencies and their technologies, but they too he stressed, were not immune from criminal activity or fraud.

Prof. Kibuuka³⁹⁴ maintains that, regulations are very central to protection of interests of all parties, but equally important was the Declaration that was prepared in 2017 at the second Roundtable. Considering current developments in the field, and in light of the issues that had been raised by all the previous speakers, the Declaration needed to be put into practice. For example, it was imperative to decide which existing laws could be applied or modified to regulate the use of the technologies. The policy announcement by the Minister for ICT on the creation of a Task Force was critical as the Task Force could discuss these issues and see how existing regulations could be applied to these new developments.

In a nutshell, there is need for wider knowledge exchange and networking among all stake holders in order to develop a robust public facing regulation that alerted

³⁹⁴ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



the public and the state to the benefits and risks of the nascent payment technologies. Such policies would help promote the technologies, while protecting society and individuals from exploitation.³⁹⁵

Institutional structures

Private sector covers investors, miners, businesses as well as their representative bodies like the Uganda Manufacturers Association, the Blockchain Association to Uganda, Kampala City Traders Association (KACITA), and Uganda Chamber of Commerce and so on. The press/media was viewed as an important part of dissemination of information. The public sector includes the government departments represented in the Justice Law and Order Sector (JLOS)¹²⁹, and others not directly covered under JLOS including the financial, monitoring and related regulators like the Central Bank of Uganda (BOU), Uganda Revenue Authority (URA), Uganda Microfinance Regulatory Authority (UMRA), Insurance Regulatory Authority (IRA), Capital Markets Authority (CMA), Uganda Retirement Benefits Regulatory Authority (URBRA), National Information Technology Association (NITA), Uganda Communications Commission (UCC), National Identification and Registration Authority (NIRA), Financial Intelligence Authority (FIA), Uganda Investment Authority (UIA), Uganda Registration Services Bureau (URSB) and the Savings and Credit Cooperative Organisations (SACCOs).

Tertiary bodies were conceptualised in terms of educational institutions given their wide-ranging experience in creating public awareness through various forms of teaching and learning. Tertiary bodies included universities, the National Council for Higher Education, the National Curriculum Development Centre, the Judicial Training Institute, the Police Training Schools, and the Law Development Centre.

³⁹⁵ Final Report of the Policy Makers Workshop on Cryptocurrency and Blockchain regulation in Uganda (4th - 5th July 2018)



Professional bodies covered those professions like the one for bankers (Uganda Bankers Association), for lawyers (The Uganda Law Society), for certified accountants (Institute of Certified Public Accountants of Uganda-ICPAU), and ethical oversight bodies like the National Council for Science and Technology.

Members of Parliament, the Cabinet and government ministers were considered a special separate group consisting of the Parliamentary Members Association (to avoid having too many sub groups and in the process inadvertently excluding some Members of Parliament). The Cabinet was one of the key players, as were key ministries in the development of these policies like the Ministries for Finance, Planning and Economic Development; for Information, Communication and Technology and National Guidance; for Gender, Labour and Social Development; for Justice and Constitutional Affairs; for Internal Affairs; for Education; for Local Government; for Trade, Industry and Co-operatives, for Foreign Affairs and the Directorate of Ethics and Integrity (Office of the President).

Civil Society Organisations (CSOs) and community leaders, were broadly defined. Some CSO's were doing public interest litigation and advocacy in this area- like the Cyberlaw Initiative, yet others like Rotary Clubs and the Lions were doing lots of work to empower people at all levels. Several CSO's were working with people with varying forms of impairment (visual, hearing, mobility, learning and the like), with women, with the elderly, youth and so on. Alongside these groups were the community leaders. The Working Group chose this term 'community leaders' carefully so as not to focus narrowly on traditional leaders or on opinion leaders, but rather to capture the nuance in community leadership be it at the level of kingdoms, chiefdoms or acephalous 'stateless' societies.



The last group of faith-based organisations referred to those with a ‘Luddite’ approach to mobile technology, groups like the End Time that do not believe in the use of mobile phones. Given the fact that some of these groups wielded considerable influence over their followers, it was best to engage with them (or groups like them) not only to gain an understanding of their ideology, but also to help them see that the use of technology could enhance the economy and people’s lives.

The Working Group considered what sort of topics that the Task Force might consider as part of their Terms of Reference. The first was the nomenclature. It was necessary to decide on the terms to be used to describe the emergent technologies, and whether there would be one definition or sector specific definitions related to each regulator’s remit. The latter would mean that each regulator could develop their own description of the technology that appeared to disrupt their sector, have their own understanding of how it works and what the technology meant for the sector’s aims and purposes. A second term of reference would be to establish the legal status of cryptocurrency. The group anticipated that such legal status might require an amendment or revision of existing Acts of Parliament like the Constitution or the Bank of Uganda Act, in order to give legitimacy to the regulator to provide oversight of a given sector.

Deciding on the nomenclature and how to give legitimacy to cryptocurrencies and related assets/tokens would be conceptualised differently using diverse approaches depending on the discipline. Economists or sociologists for instance, would have a different understanding of the nomenclature and the meaning of legitimacy from lawyers, insurers, or those in the technology sector. This difference of opinion might well lead to contradictory messages going out to the public during the public consultation process. To avoid any confusion, there was need to contextualise and harmonise the language of the consultation questions in a simplified manner that



targeted the different regions and population demographic. The reason for having targeted messages for each demographic or region was that in one region, cattle could be viewed as a prized monetary asset and yet in another region, the money might be saved in crops like millet or bananas. Developing a set of Frequently Asked Questions in the localised dominant languages could also help avoid misinformation, as would the distribution of leaflets in those languages.

Of utmost importance was that the policy message should be validated and integrated into a policy paper (if deemed suitable) for public consultations. Prior to the consultation, a categorisation of the public would help deliver a targeted message to the right group. The Working Group proposed three categories: high income, middle income and low income, in addition to the use of inclusive language that took into account the fact that some people in the high-end net worth group might not fully understand the terminology or risks of a product. It was imperative that the messages were packaged specifically for each group.

With the support of UNAFRI, it was agreed that the policy proposals would be sent to the Ministers and circulated to other government ministries and departments. However, the group recommended that given the exponential use of cryptocurrencies, and the emergent use of the Blockchain in Uganda, institutions needed to have policy action points to work on. One example was the Central Bank that could declare itself on status of cryptocurrency. The Uganda Revenue Authority could also issue a practice note on the tax implications of dealing in cryptocurrencies.

Other policy makers (and regulators) could follow suit to offer further clarity, but it was important for regulators to state who had the remit over the various technologies to avoid over regulation. Following the pronouncements by various



policy makers, the regulators would then seek guidance from the Uganda Law Reform Commission as to which laws were applicable; and what mode of regulation would suit.



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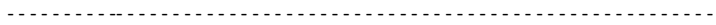


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Appendix one: Public Statement on Crypto Currencies



PUBLIC STATEMENT ON CRYPTO-CURRENCIES

1. The government of Uganda has noted the emergence of the practice of using, holding and trading crypto-currencies in Uganda.
2. Crypto-currencies are digital assets that are designed to effect electronic payments without the participation of a central authority or intermediary such as a Central Bank or licensed financial institution. Crypto-currencies may therefore be used to effect anonymous electronic payments or bought and held for speculative purposes in the expectation that their value will rise at a future time, whereupon they could be sold for a profit.
3. Hundreds of crypto-currencies have been designed and launched around the world, and the most well-known examples include Bitcoin and Ethereum. Such crypto-currencies are not issued or regulated by any government or central bank.

This is to inform the general public that:-

- a. The government of Uganda does not recognize any crypto-currency as legal tender in Uganda.



b. The government of Uganda has not licensed any organization in Uganda to sell crypto-currencies or to facilitate the trade in crypto-currencies and so these organizations are not regulated by the Government or any of its agencies.

4. As such, unlike other owners of financial assets who are protected by Government regulation, holders of crypto-currencies in Uganda do not enjoy any consumer protection should they lose the value assigned to their holdings of crypto-currencies, or should organization facilitating the use, holding or trading of crypto-currencies fail for whatever reason to deliver the services or value they have promised.

Mission “To formulate sound economic policies, maximize revenue mobilization, ensure efficient allocation and accountability for public resources so as to

1

achieve the most rapid and sustainable economic growth and development”

The general public is further advised of the following risks associated with crypto-currencies;

a. Most crypto-currencies such as Bitcoin and Ethereum are not backed by assets or government guarantees, therefore holders of these crypto-currencies are fully exposed to the risk of loss or diminishing value as the issuers are not obliged to exchange them for legal currency or other value.

b. Crypto-currencies tend to change value rapidly over time. While holders of crypto-currencies may make profits when their value rises, they will be exposed to losses when their value falls.

c. The nature of crypto-currencies make them attractive for use in criminal transactions such as money laundering, sale of prohibited goods and services, and fraudulent venture such as Ponzi and pyramid schemes.



In conclusion, the public is advised to appraise themselves of the risks associated with cyber-currencies, and exercise caution before they make transactions involving such products.

Mission *“To formulate sound economic policies, maximize revenue mobilization, ensure efficient allocation and accountability for public 2 resources so as to achieve the most rapid and sustainable economic growth and development”*

Appendix two: Declaration on Fundamental Principles on the regulation of cryptocurrencies



Declaration on Fundamental Principles on the regulation of cryptocurrencies and the Blockchain (Digital Ledger Technologies) in Uganda and its Follow Up

Adopted by the participants at the 2nd Round Table on the Regulation of Cryptocurrency, held at the United Nations African Institute for the Prevention of Crime and the Treatment of Offenders (UNAFRI), Kampala, 6th July 2017

Preamble

Whereas the Roundtable recognises the importance of disruptive payments technology (Fintech) that includes cryptocurrency and its underlying technology- the Blockchain as a possible cost effective method of enabling micropayments in our developing economies;

Whereas the Roundtable recognises that Uganda's economy is agro based, has low levels of digital literacy, has economically disempowered populations particularly in rural communities, and requires a culturally appropriate socio-economic regulatory regime for cryptocurrency and related Blockchain technologies that ought to promote innovation while offering robust consumer protection;

Whereas the increase in the use of cryptocurrency and the Blockchain in the modern networked Africa constitutes a significant challenge to the regulatory capacity to respond to the socio-cultural, legal, economic and political effects of this emergent environment of disruptive payments technology;

Whereas the Central Bank of Uganda, policy makers, financial regulators and legislators should pay special attention to the protection of cryptocurrency users and consumers, while encouraging national efforts aimed at resolving the problems posed by disruptive payments technology including cryptocurrency and the Blockchain;

Whereas innovation of payments technologies is essential but not sufficient to ensure equity, social progress, and the financial inclusion of the unbanked and the economically disempowered; innovation confirms the need for the policy makers, financial regulators and legislators to promote effective and strong culturally appropriate policies, based on a rulesbased but principled approach to regulation;



Whereas it is urgent, in a situation of growing disruptive payments technology, to reaffirm the immutable nature of the fundamental principles and rights embodied in the Constitutional, legislative and policy arrangements of African States and to promote their application within the technical rules based sphere;

THE Second Round Table on Cryptocurrency regulation

1. Recalls that in being part of UNAFRI, of the African Union, and of other regional bodies like the African Development Bank, the Association of African Central Banks, and the Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG), Uganda has endorsed the principles and rights that underpin these regional unions;
2. Recalls that Uganda has undertaken to work towards attaining these principles and enforcing these rights basing on the nation's resources and dependent on its specific circumstances;
3. Recalls that these principles and rights have been expressed and developed in the form of specific rights and obligations in Regional Conventions like the Constitutive Act of the African Union, the African Charter of Human and Peoples' Rights, the Abuja Treaty establishing the African Economic Community, and the African Union Convention on Cybersecurity and Data Protection; regional level policies like the East African Community regional intellectual property policy; national constitutions and legislations; as well as in national sector specific regulation like the Bank of Uganda Consumer Protection Guidelines 2011- all of which are recognised as fundamental in African states;
4. Recalls that Uganda has taken the lead in East Africa in passing legislation on the regulation of e-commerce like the Electronic Transactions Act 2011, the Electronic Signatures Act 2011, and related laws like the Computer Misuse Act 2011- all of which aim to protect important principles and rights in e-commerce;
5. Recalls Uganda's commitment to improve her competitiveness through Information Communication Technology (ICT) development in its Uganda Vision 2040; and the National Development Plan II (NDPII, 2015/16-2019/20).
6. Declares that Uganda, even if she has not ratified some relevant Regional Conventions like the African Union Convention on Cybersecurity



and Data Protection (2014), has an obligation arising from the very fact of membership in the African Union, in the Association of African Central Banks, as well as membership in ESAAMLG, in UNAFRI and in related bodies; to respect, to promote and to realise in good faith and in accordance with the regional Conventions, the Constitution of Uganda, legislation like the Bank of Uganda Act 2000, the Uganda Communications Act 2013, and other instruments; the principles and the fundamental rights which are the subject of those legal and policy frameworks and which include:

- (a) Principles on the collection and processing of personal data and on the processing of sensitive data;
 - (b) Protection of the data subject's rights;
 - (c) Principles of technological neutrality;
 - (d) Principles of social justice;
 - (e) Rights and freedoms including the right to privacy, to property, to freedom of expression, and to economic, social and cultural development;
 - (f) Principles of non-discrimination, of participation, of equity and of gender equality; and
 - (g) Recognition of the individual's duty to family and to society.
7. Recalls the resolutions of the 1st Cryptocurrency Roundtable of 2016, held in Kampala at UNAFRI on 7th July 2016 in which it was agreed that principles were required to underpin:
- i. Technological considerations in the regulation of payments technologies;
 - ii. Policy approaches to the regulation of crypto currencies and the Blockchain;
 - iii. Legal approaches including questions of legality; rights and duties; and consumer protection;
 - iv. Conceptual approaches to defining cryptocurrencies;
 - v. Ethical considerations when engaging with payment technologies;
 - vi. Investigatory, prosecutorial and judicial approaches to digital forensics and analytics, and capacity building; and
 - vii. Socio-cultural issues surrounding consumer behaviour especially among rural and illiterate African communities.
8. Recognises the obligation on UNAFRI to assist its Members, in response to their expressed needs, by making full use of its constitutional



mandate and of its technical resources in accordance with Article II of the UNAFRI Statute by:

- a. Offering technical cooperation and advisory services to promote the ratification and implementation of the Regional Conventions and instruments;
 - b. Assisting those member states that are not yet in a position to ratify some of these Conventions, in their efforts to promote and to realise the principles and fundamental rights which are the subject of these Conventions and instruments;
 - c. Supporting member states in their efforts to create a supportive regulatory sandbox type environment for disruptive payment technologies (Fintech) and for digital ledger technologies in general, and for the specific use of cryptocurrencies and the Blockchain; and
 - d. Working in collaboration with policy makers, legislators, financial regulators, private sector, civil society and academia to achieve the conducive regulatory environment.
9. Recognises the lack of clarity of policy objectives and the lack of rationalisation of policies among financial regulators which gap could undermine any efforts to engender conceptual clarity surrounding cryptocurrency and the Blockchain, and could weaken efforts to promote fair competition, ethical behaviour among Fintech, data security, data protection, social cultural relevance, and legality;
10. Recognises the gaps in the constitutional and legislative mandate of the Central Bank of Uganda and related financial regulators to clarify the place for cryptocurrency and the Blockchain in Uganda’s emergent Fintech economy;
11. Recalls that the Warnings issued by the Central Bank (14th February 2017) on the need for the public to beware the risks of investment in Onecoin, underscores the risks to the public including to their data security and privacy;
12. Observes that the Central Bank Warnings could be strengthened to give clarity on the obligations of cryptocurrency businesses towards investors, consumers and the public;
13. Decides that, to in order to give full effect to this Declaration, a multi-sectoral follow-up ought to be implemented in accordance with the



principles specified in the annex below, which principles shall be considered as an integral part of this Declaration;

14. Underscores the need for a principled approach to the regulation of digital ledger technologies, but stresses that the principles outlined in the Annex below, should not be used to stifle innovation or to replace technical rules, and states that nothing in this Declaration and its follow-up shall be invoked or otherwise used for such purposes.

ANNEX FOLLOW-UP TO THE DECLARATION

Overall Purpose

1. The aim of this follow-up is to consolidate the efforts made by the participants to the first and to the second Round Tables to develop principled guidance that promotes the fundamental principles and rights enshrined in the international, regional and national laws and regulatory frameworks, and integrates the Resolutions of the First Round Table on cryptocurrency regulation (July 2016) that are reaffirmed in this Declaration.
2. In line with this objective and adopting the recommendation of the Central Bank of Uganda at this second Roundtable, this follow up will allow the establishment of a Working Group. The Working Group will identify areas in which collaboration on the development of policies and laws, and on the conduct of research studies may prove useful to the participating institutions and individuals in order to help them develop principled regulation of disruptive payment technologies based on these fundamental principles and rights. The Working Group comprising participants at both Round Tables, is not a substitute for the established legislative and regulatory mechanisms, but will merely offer expertise and guidance in a collaborative manner.
3. The regulation of disruptive payments technology (Fintech) - inclusive of cryptocurrency and the Blockchain, should be directed at trusted financial intermediaries who handle consumers' money via investment, who engage in money transmission services, who offer currency exchanges, and who offer mobile money and related services. A proportionate risk based technologically neutral approach that is both principled and rules based is recommended in order to encourage innovation and to offer consumer protection.
4. The principles set out below are based on existing practices of dealing with cryptocurrencies and the Blockchain; on the current policies, regulatory



mechanisms, and the legal frameworks; and on the fundamental principles and rights that have informed the deliberations of the Round Tables of 2016 and 2017.

PRINCIPLES

1. **Automating regulatory compliance principles:** encourage the automation of regulatory compliance (reg-tech) underpinned by the principles of interoperability between traditional and Fintech payment systems, scalability, cybersecurity, accountability, transparency and trust. The starting point is a sector wide risk assessment similar to that carried out by the Financial Intelligence Authority. Regulators should also consider how encryption and other tech enabled protections could be drawn upon to offer effective consumer protection.
2. **Non-regulation of the Blockchain:** given the benefits of adapting the block chain technology to current payment systems like mobile money and traditional banking systems, such as widening financial inclusion through faster and transparent consumer focused micro-payments, the government should not regulate the Blockchain. However, further research on the benefits and risks of the Blockchain should be undertaken.
3. **Technological neutrality principle:** in the drafting of legislation, technologically neutral language should be used say in the definition of technologies. The courts of law are encouraged to apply technological neutrality as a tool of interpretation- one that ensures that an Act or a Statute is interpreted or applied by the courts in such a manner that it does not favour or discriminate against any particular form of technology.
4. **Ethical principles** of ‘do no harm’, of fairness, of transparency, of trust, of nondeception (accurate description of the product) and of non-discrimination in the supply of products should underpin the obligations of consumer facing cryptocurrency and Blockchain businesses. Ethical principles may be achieved through sector specific liability laws like the Consumer Protection Bill 2014 and the Competition Bill 2014, with the aim to encourage socially desirable business behaviour and to protect consumers. An ethical approach by cryptocurrency users should underpin the regulation, and should strongly encourage cryptocurrency users to meet their tax obligations in order to stem the use of cryptocurrency as an off shore tax evasion scheme.



5. **Data security principles:** consumer protection should be underpinned by legal principles on the processing of personal data and the processing of sensitive data, as well as data acquisition using real time information.

6. **Data protection principles:** the data subject's rights inclusive of data privacy, the right to challenge decisions made on a purely algorithmic basis, the right to erasure, explicit consent and so forth, should be allocated by the draft Data Protection and Privacy Bill 2015. The use of Regulatory Sandboxes as a safe environment should be promoted in order to encourage innovation, but without jeopardising consumer protection.

7. **Legality principle:** the overarching legal principle is one of legality as enshrined in

Uganda's constitution. The legality principle should be broadened in order to include the oral customary norms and sanctions.

a. Legality also can be achieved through the application of existing laws like the Value Added Tax Act Cap 349 to transactions that use cryptocurrencies; through amendments to existing laws like the Bank of Uganda Act 2000 in order to delineate the relationship between fiat currency and cryptocurrencies; by harmonising legislation like the Financial Institutions Act 2004 and its associated Regulations, the Tier 4 Microfinance Institutions and Money Lenders Act 2016, and the Micro Deposit Taking Institutions Act 2003, in order to include cryptocurrency businesses in its scope; through the enactment of new laws like the Consumer Protection Bill 2014, the Competition Bill 2014, the Anti-Counterfeiting Goods Bill 2015, and the National Payments Systems Bill (drafted in 2016 by the Uganda Law Reform Commission)- which set out the obligations of providers, the rights and duties of all parties.

b. Prospective legislation could build on existing guidance like the Bank of Uganda's Consumer Protection Guidelines 2011.

8. **Clarity:** the definition of payment technologies (Fintech) including cryptocurrencies should be based on the principle of clarity and certainty surrounding the qualifying and non-qualifying technology activities including the place for the Blockchain and related digital ledger technologies; when the change of business requires notification to authorities or requires pre-approval; and clarity surrounding the process of listing and the standards for listing for example on the Uganda Stock



Exchange. Clarity and certainty is also required on the rules by which tokens like Initial Coin Offerings will be valued; on exemptions to licencing; on the interaction between cryptocurrency and fiat currency- for example as a medium of exchange or a store of value; on the agencies responsible for enforcement and oversight; on compliance requirements including capitalisation and proof of solvency; on the tests and sanctions for non-compliance; and on the safeguards that are in place for investor protection and consumer protection. Clarity is also required on the public interests to be protected in regulation.

9. **Proportionality principle:** compliance requirements should pass the proportionality test by which the purpose for regulation of cryptocurrency is legitimate, the means by which the regulators objectives are pursued are laid down in the law, the regulatory intervention (measure) is correctly directed to its technological target, and the regulatory measure does not exceed what is necessary to attain the legitimate objective. Regulatory measure would include any proposed security bond. Equally, the sanction should be proportionate to the purported infringement. In this regard, the Know Your Customer and Anti Money Laundering requirements like suspicious activity reporting should not be so onerous as to stifle the innovation of start-ups.

10. **Policies** that aim to regulate cryptocurrencies and related payments technology should be underpinned by the following:

- **Principles of social justice** that aim to ensure a balanced economic development that supports innovation, interaction, and collaboration. This principle is encapsulated in Uganda Vision 2040. Such development could be achieved through a ‘leap frog’ approach to harnessing the benefits of payment technologies, and through incentive-based policies that encourage compliance with regulation for example through tax breaks or government subsidies.
- **Principle of sustainability and functional equivalence in policy goals.** Policy goals should aim for consistency and rationality with existing policies like the Monetary Policy; Fiscal Policy, Taxation policy, Consumer Protection and Competition Policy, National Trade Policy, ICT Policy and the Communications Policy, as well as with East Africa and the African regional monetary policy integration initiatives.



i. Policy goals ought to take into account the difficulty of defining what is functionally the same aspect to be regulated and the need to draw on customary African frameworks for sustainability and for the inclusion and the protection of the economically disempowered. ii. The harmonisation of policies and laws (existing and prospective) should follow sub regional collaborative initiatives like the Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG), and continent wide developments like the work of the Association of African Central Banks on the harmonisation of monetary policy.

c. **Principles of co- regulation** between the public and private sector (fintech), that avoids regulatory arbitrage, and over regulation.

d. **Principles of a risk based approach** that clearly communicates the identification, selection, and prioritisation of risks as well as the rationale for that choice. The policy should be responsive to the principles of proportionality outlined above.

e. **A Rights based approach** that recognises the right to economic, social and cultural development, to freedom of expression (to protect the production and distribution of software), and the right to property including intellectual property rights. Other rights include equal participation, equity, and gender equality.

f. **Principles of social cultural legitimacy** that recognise legitimate cultural differences among the different ethnic groups, like the individual's duty to family and to the society, the recognition of relational principles of ownership and transfer of property in emergency situations, participatory approaches to dispute resolution in close knit kinship communities, and the diverse range of ethnic languages spoken in a given district or region.

11. **Principles of extra territorial jurisdiction:** the legal and regulatory frameworks should be underpinned by principles of jurisdictional non-territoriality, reciprocity and mutual co-operation.

12. **Cross cutting capacity building** in investigation, adjudication, prosecution, cybersecurity and related areas should be based on principles of national, regional and international cooperation; on knowledge exchange of expertise; on ownership by the key stakeholders; on sustainability of the training programmes; and on work based learning.



Dated 6th July 2017, Kampala, UNAFRI
Participants at the Second Round Table (6th July 2017)

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Appendix 3: Income Tax Act

CHAPTER 340 THE INCOME TAX ACT.

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CHAPTER 340

THE INCOME TAX ACT.

Commencement: 1 July, 1997.

An Act to consolidate and amend the law relating to income tax and for other connected purposes.



PART I—PRELIMINARY.

1. Application of the Act.

This Act applies to years of income commencing on or after 1st July, 1997.

2. Interpretation.

In this Act, unless the context otherwise requires—

(a) “amateur sporting association” means an association whose sole or main object is to foster or control any athletic sport or game and whose members consist only of amateur sports persons or affiliated associations, the members of which consist only of amateur sports persons;

(b) “approved” means approved by the Minister under regulations made under section 164;

(c) “assessed loss” has the meaning in section 38;

(d) “assessment” means—

(i) the ascertainment of the chargeable income of, and the amount of tax payable on it by, a taxpayer for a year of income under this Act, including a deemed assessment under section 96;

(ii) the ascertainment of the rental income of, and the amount of tax payable on it by, an individual for a year of income under this Act;

(iii) the ascertainment of the amount of penal tax payable by a person under this Act; or

(iv) any decision of the commissioner which, under this Act, is subject to objection and appeal; (e) “associate” has the meaning in section 3;



- (f) “building society” means a building society registered under the Building Societies Act;
- (g) “business” includes any trade, profession, vocation or adventure in the nature of trade, but does not include employment;
- (h) “business asset” means an asset which is used or held ready for use in a business, and includes any asset held for sale in a business and any asset of a partnership or company;
- (i) “business debt” means—
- (i) in the case of a debtor—
- (A) a debt obligation, the proceeds of which are used to acquire a business asset or to incur an expense of a business;
- (B) a debt obligation arising, as a result of being given time to pay, on the acquisition of a business asset or the incurring of an expense of a business; or
- (C) any debt obligation of a partnership or company; or
- (ii) in the case of a creditor, any debt obligation owed to the creditor that was entered into or arose in the course of the creditor’s business;
- (j) “business income” has the meaning in section 18;
- (k) “chargeable income” has the meaning in section 15;
- (l) “chargeable trust income” has the meaning in section 70;
- (m) “commissioner” means the Commissioner General appointed under the Uganda Revenue Authority Act;
- (n) “company” means a body of persons corporate or unincorporate, whether created or recognised under the law in force in Uganda or elsewhere, and a unit trust, but does not include any other trust or a partnership;
- (o) “cost base”, in relation to an asset, has the meaning in section 52;
- (p) “court” means a court of competent jurisdiction;



- (q) “currency point” represents the amount in Uganda shillings prescribed in the Seventh Schedule;
- (r) “debenture” includes any debenture stock, mortgage, mortgage stock, loan, loan stock or any similar instrument acknowledging indebtedness, whether secured or unsecured;
- (s) “debt obligation” means an obligation to make a repayment of money to another person, including accounts payable and the obligations arising under promissory notes, bills of exchange and bonds;
- (t) “dependent”, in relation to a member of a retirement fund, means a spouse of the member, any child, including an adopted child, of the member who is under the age of eighteen years or any other relative of the member who the commissioner is satisfied relies on the member for support;
- (u) “depreciable asset” means any plant or machinery, or any implement, utensil or similar article, which is wholly or partly used, or held ready for use, by a person in the production of income included in gross income and which is likely to lose value because of wear and tear, or obsolescence;
- (v) “disposal” has the meaning in section 51;
- (w) “dividend” includes—
 - (i) where a company issues debentures or redeemable preference shares to a shareholder—
 - (A) in respect of which the shareholder gave no consideration, an amount equal to the greater of the nominal or redeemable value of the debentures or shares; or
 - (B) in respect of which the shareholder gave consideration which is less than the greater of the nominal or redeemable value, an amount equal to the excess;
 - (ii) any distribution upon redemption or cancellation of a share, or made in the course of liquidation, in excess of the nominal value of the share redeemed, cancelled or subject to liquidation;



(iii) in the case of a partial return of capital, any payment made in excess of the amount by which the nominal value of the shares was reduced;

(iv) in the case of a reconstruction of a company, any payment made in respect of the shares in the company in excess of the nominal value of the shares before the reconstruction; or

(v) the amount of any loan, the amount of any payment for an asset or services, the value of any asset or services provided, or the amount of any debt obligation released, by a company to, or in favour of, a shareholder of the company or an associate of a shareholder to the extent to which the transaction is, in substance, a distribution of profits,

but does not include a distribution made by a building society;

(x) “employee” means an individual engaged in employment;

(y) “employer” means a person who employs or remunerates an employee;

(z) “employment” means—

(i) the position of an individual in the employment of another person;

(ii) a directorship of a company;

(iii) a position entitling the holder to a fixed or ascertainable remuneration; or

(iv) the holding or acting in any public office;

(aa) “employment income” has the meaning in section 19;

(bb) “exempt organisation” means any company, institution or irrevocable trust—

(i) which is—

(A) an amateur sporting association;

(B) a religious, charitable or educational institution of a public character; or

(C) a trade union, an employees association, an association of employers registered under any law of Uganda or an association established for the purpose of promoting farming, mining, tourism, manufacturing or commerce and industry in Uganda; and



(ii) which has been issued with a written ruling by the commissioner currently in force stating that it is an exempt organisation; and

(iii) none of the income or assets of which confers, or may confer, a private benefit on any person;

(cc) “farming” means pastoral, agricultural, plantation, horticultural or other similar operations;

(dd) “financial institution” means any person carrying on the business of receiving funds from the public or from members through the acceptance of money deposits repayable upon demand, after a fixed period, or after notice, or any similar operation through the sale or placement of bonds, certificates, notes or other securities, and the use of such funds either in whole or part for loans, investments or any other operation authorised either by law or by customary banking practices, for the account and at the risk of the person doing such business;

(ee) “foreign-source income” means any income which is not derived from sources in Uganda;

(ff) “gross income” has the meaning in section 17;

(gg) “gross turnover”, in relation to a resident taxpayer, for a year of income, means—

(i) the amount shown in the recognised accounts of the taxpayer as the gross proceeds derived in carrying on a business or businesses during the year of income, including the gross proceeds arising from the disposal of trading stock, without deduction for expenditures or losses incurred in deriving that amount; and

(ii) the amount, if any, shown in the recognised accounts of the taxpayer as the amount by which the sum of the gains derived by the taxpayer during the year of income from the disposal of business assets, other than trading stock, exceeds the losses incurred by the taxpayer during the year in respect of the disposal of such assets;

(hh) “incapacitated person” means a resident individual adjudged under a law in Uganda to be in a state of unsoundness of mind;



- (ii) “incapacitated person’s trust” means a trust established for the benefit of an incapacitated person;
- (jj) “industrial building” means any building which is wholly or partly used, or held ready for use, by a person in—
 - (i) manufacturing operations;
 - (ii) research and development into improved or new methods of manufacture;
 - (iii) mining operations;
 - (iv) an approved hotel business; or
 - (v) an approved hospital;
- (kk) “interest” includes—
 - (i) any payment, including a discount or premium, made under a debt obligation which is not a return of capital;
 - (ii) any swap or other payments functionally equivalent to interest;
 - (iii) any commitment, guarantee, or service fee paid in respect of a debt obligation or swap agreement; or
 - (iv) a distribution by a building society;
- (ll) “life insurance business” has the meaning in section 16(3);
- (mm) “listed institution” means an institution listed in the First Schedule to this Act;
- (nn) “local authority” means any public body established under a law of Uganda and having control over the expenditure of revenue derived from rates or taxes imposed by law upon the residents of the areas for which that body is established;
- (oo) “local council” has the same meaning as in the Local Governments Act;
- (pp) “manufacturing” means the substantial transformation of tangible movable property, including power generation and water supply;
- (qq) “mineral” has the same meaning as in the Mining Act;
- (rr) “mining operations” includes every method or process by which any mineral is won from the soil or from any substance or constituent of the soil;



(ss) “Minister” means the Minister responsible for finance;

(tt) “natural resource payment” means—

(i) a payment, including a premium or like payment, made as consideration for the right to take minerals or a living or nonliving resource from the land; or

(ii) a payment calculated in whole or in part by reference to the quantity or value of minerals or a living or nonliving

resource taken from the land;

(uu) “nominal value”, in relation to a share or debenture, means the paid-up amount of the share or face value of the debenture, including any premium paid in respect of the share or debenture;

(vv) “nonresident person” has the meaning in section 14;

(ww) “partnership” means an association of persons carrying on business for joint profit;

(xx) “payment” includes any amount paid or payable in cash or kind, and any other means of conferring value or benefit on a person;

(yy) “person” includes an individual, a partnership, a trust, a company, a retirement fund, a government, a political subdivision of a government and a listed institution; (zz) “property income” has the meaning in section 20;

(aaa) “provisional taxpayer” means a person liable for provisional tax under section 111;

(bbb) “relative”, in relation to an individual, means—

(i) an ancestor, a descendant of any of the grandparents, or an adopted child, of the individual, or of a spouse of the individual; or

(ii) a spouse of the individual or of any person specified in subparagraph (i) of this paragraph;



(ccc) “rent” means any payment, including a premium or like amount, made as consideration for the use or occupation of, or the right to use or occupy, land or buildings;

(ddd) “rental income”, in relation to an individual for a year of income, means the total amount of rent derived by the individual for the year of income from the lease of immovable property in Uganda by the individual with the deduction of any expenditures and losses incurred by the individual in respect of the property;

(eee) “resident company” has the meaning in section 10;

(fff) “resident individual” has the meaning in section 9;

(ggg) “resident partnership” has the meaning in section 12;

(hhh) “resident person” means a resident individual, resident company, resident partnership, resident trust, resident retirement fund, the Government of Uganda or a political subdivision of the Government of Uganda;

(iii) “resident retirement fund” has the meaning in section 13;

(jjj) “resident taxpayer” means a taxpayer who is a resident person;

(kkk) “resident trust” has the meaning in section 11;

(III) “retirement fund” means a pension or provident fund established as a permanent fund maintained solely for either or both of the following purposes—

(i) the provision of benefits for members of the fund in the event of retirement; or

(ii) the provision of benefits for dependents of members in the event of the death of the member;

(mmm) “royalty” means—

(i) any payment, including a premium or like amount, made as consideration for—

(A) the use of, or right to use, any patent, design, trademark or copyright, or any model, pattern, plan, formula or process, or any property or right of a

similar nature;

(B) the use of, or right to use—



- (I) any motion picture film;
- (II) any video or audio material, whether stored on film, tape, disk or other medium, for use in connection with television or radio broadcasting; or
- (III) any sound recording or advertising matter connected with material referred to in subparagraph (i)(B)(I) or (II) of this paragraph;
- (C) the use of, or the right to use, or the receipt of, or right to receive, any video or audio material transmitted by satellite, cable, optic fibre or similar technology for use in connection with television or radio broadcasting;
- (D) the imparting of, or undertaking to impart, any scientific, technical, industrial or commercial knowledge or information;
- (E) the use of, or right to use, any tangible movable property;
- (F) the rendering of, or the undertaking to render, assistance ancillary to a matter referred to in subparagraph (i)(A) to (E) of this paragraph; or
- (G) a total or partial forbearance with respect to a matter referred to in subparagraphs (A) to (F); or
- (ii) any gain on the disposal of any right or property referred to in subparagraph (i) of this paragraph;
- (nnn) “substituted year of income” has the meaning in section 39;
- (ooo) “swap agreement” means an arrangement between a person who has incurred a debt obligation with a floating interest rate and a person who has incurred a debt obligation with a fixed interest rate under which the persons agree to exchange their interest obligations;
- (ppp) “swap payment” means a payment made under a swap agreement;
- (qqq) “tax” means any tax imposed under this Act;
- (rrr) “tax-exempt employer” means an employer whose income is exempt from tax;



(sss) “taxpayer” means any person who derives an amount subject to tax under this Act and includes—

- (i) any person who incurs an assessed loss for a year of income; or
- (ii) for the purposes of any provision relating to a return, any person required by this Act to furnish such a return;

(ttt) “trading stock” includes anything produced, manufactured, purchased or otherwise acquired for manufacture, sale or exchange, as well as consumable stores;

(uuu) “transitional year of income” has the meaning in section 39;

(vvv) “trust” means any arrangement affecting property in relation to which there is a trustee;

(www) “trustee” includes—

- (i) any person appointed or constituted as such by act of the parties, by will, by order or declaration of any court or by operation of the law;
- (ii) an executor, administrator, tutor or curator;
- (iii) a liquidator or judicial manager;
- (iv) any person having the administration or control of property subject to a trust;
- (v) any person acting in a fiduciary capacity;
- (vi) any person having, either in a private or official capacity, the possession, direction, control or management of any property of a person under a legal disability;
- (vii) any person who manages assets under a private foundation or other similar arrangement;

(xxx) “underlying ownership”, in relation to a person other than an individual, means an interest held in, or over, the person directly or indirectly through interposed companies, partnerships or trusts by an individual or by a person not ultimately owned by individuals;

(yyy) “unit trust” means a unit trust registered or required to be registered as Parliament may by law prescribe; and



(zzz) “year of income” means the period of twelve months ending on the 30th June, and includes a substituted year of income and a transitional year of income.

3. Associate.

(1) For the purposes of this Act, where any person, not being an employee, acts in accordance with the directions, requests, suggestions or wishes of another person whether or not they are in a business relationship and whether those directions, requests, suggestions or wishes are communicated to the first-mentioned person, both persons are treated as associates of each other.

(2) Without limiting the generality of subsection (1), the following are treated as an associate of a person —

(a) a relative of the person, unless the commissioner is satisfied that neither person acts in accordance with the directions, requests, suggestions or wishes of the other person;

(b) a partner of the person, unless the commissioner is satisfied that neither person acts in accordance with the directions, requests, suggestions or wishes of the other person;

(c) a partnership in which the person is a partner where the person, either alone or together with an associate or associates under another application of this section, controls 50 percent or more of the rights to income or capital of the partnership;

(d) the trustee of a trust under which the person, or an associate under another application of this section, benefits or may benefit;

(e) a company in which the person, either alone or together with an associate or associates under another application of this section, controls 50 percent or more of the voting power in the company either directly or through one or more interposed companies, partnerships or trusts;



(f) where the person is a partnership, a partner in the partnership who, either alone or together with an associate or associates under another application of this section, controls 50 percent or more of the rights to income or capital of the partnership;

(g) where the person is the trustee of a trust, any other person who benefits or may benefit under the trust; or

(h) where the person is a company—

(i) a person who, either alone or together with an associate or associates under another application of this section, controls 50 percent or more of the voting power in the company, either directly or through one or more interposed companies, partnerships or trusts; or

(ii) another company in which the person referred to in subparagraph (i) of this paragraph, either alone or together with an associate or associates under another application of this section, controls 50 percent or more of the voting power in that other company, either directly or through one or more interposed companies, partnerships or trusts.

PART II—IMPOSITION OF TAX.

4. Income tax imposed.

(1) Subject to and in accordance with this Act, a tax to be known as income tax shall be charged for each year of income and is imposed on every person who has chargeable income for the year of income.

(2) Subject to subsections (4) and (5), the income tax payable by a taxpayer for a year of income is calculated by applying the relevant rates of tax determined under this Act to the chargeable income of the taxpayer for the year of income and from the



resulting amount are subtracted any tax credits allowed to the taxpayer for the year of income.

(3) Where a taxpayer is allowed more than one tax credit for a year of income, the credits shall be applied in the following order— (a) the foreign tax credit allowed under section 81; then (b) the tax credit allowed under section 128; then (c) the tax credit allowed under section 111(8).

(4) Where the gross income of a taxpayer for a year of income consists exclusively of employment income derived from a single employer from which tax has been withheld as required under section 116, the income tax payable by the taxpayer for the year of income is the amount equal to the sum of the amounts required to be withheld from such income under section 116.

(5) Subject to subsection (7), where the gross turnover of a resident taxpayer for a year of income derived from carrying on a business or businesses is less than fifty million shillings, the income tax payable by the taxpayer for the year of income shall be determined in accordance with the Second Schedule to this Act, unless the taxpayer elects by notice in writing to the commissioner for subsection (2) to apply; and—

(a) the tax shall be a final tax on the business income of the taxpayer;

(b) no deductions shall be allowed under this Act for expenditures or losses incurred in the production of the business income; and

(c) no tax credits allowed under this Act shall be used to reduce the tax payable on the business income of the taxpayer, except as provided in the Second Schedule to this Act.



(6) An election under subsection (5) must be lodged with the commissioner by the due date for the taxpayer's return for the year of income to which it relates.

(7) Subsection (5) does not apply to a resident taxpayer who is in the business of providing medical, dental, architectural, engineering, accounting, legal or other professional services, public entertainment services, public utility services or construction services.

5. Rental tax imposed.

(1) Subject to and in accordance with this Act, a tax shall be charged for each year of income and is imposed on every individual who has rental income for the year of income.

(2) The tax payable by an individual under this section for a year of income is calculated by applying the relevant rates of tax determined under section 6(2) to the rental income derived by the individual for the year.

(3) The tax imposed under this section on an individual is separate from the tax imposed under section 4 and—

(a) the rental income of the individual shall not be included in the gross income of the individual for any year of income;

(b) expenditures and losses incurred by the individual in the production of the rental income shall be allowed as a deduction under this Act for any year of income; and

(c) the tax payable by a resident individual under this section shall not be reduced by any tax credits allowed to the individual under this Act.



(4) In this section, “year of income” means the period of twelve months ending on 30th June.

Rates of tax.

6. Rates of tax for individuals.

(1) The chargeable income of an individual for a year of income is charged to income tax at the rates prescribed in Part I of the Third Schedule to this Act.

(2) The rental income of a resident individual for a year of income is charged to rental tax at the rate prescribed in Part VI of the Third Schedule.

7. Rate of income tax for companies.

The chargeable income of a company for a year of income is charged to income tax at the rate prescribed in Part II of the Third Schedule to this Act.

8. Rate of income tax for trustees and retirement funds.

(1) Subject to subsections (2) and (3), a trustee of a trust is charged to tax at the rate prescribed in Part III of the Third Schedule to this Act on the chargeable trust income of the trust for a year of income.



(2) A trustee of a trust being the estate of a deceased taxpayer who, at the date of death, was a resident individual is charged to tax on the chargeable trust income of the trust at the rates prescribed in Part I of the

Third Schedule to this Act for—

(a) the year of income in which death occurred; and (b) the following year of income.

(3) A trustee of an incapacitated person's trust is charged to tax at the rates prescribed in Part I of the Third Schedule to this Act on the chargeable trust income of the trust for a year of income.

(4) The chargeable income of a retirement fund for a year of income is charged to tax at the rate prescribed in Part III of the Third Schedule to this Act.

PART III—RESIDENTS AND NONRESIDENTS.

9. Resident individual.

(1) Subject to subsections (2) and (3), an individual is a resident individual for a year of income if that individual— (a) has a permanent home in Uganda;

(b) is present in Uganda—

(i) for a period of, or periods amounting in aggregate to, 183 days or more in any twelve-month period that commences or ends during the year of income; or

(ii) during the year of income and in each of the two preceding years of income for periods averaging more than 122 days in each such year of income; or

(c) is an employee or official of the Government of Uganda posted abroad during the year of income.



(2) An individual who is a resident individual under subsection (1) for a year of income, in this section referred to as the “current year of income”, but who was not a resident individual for the preceding year of income is treated as a resident individual in the current year of income only for the period commencing on the day on which the individual was first present in Uganda.

(3) An individual who is a resident individual for the current year of income but who is not a resident individual for the following year of income is treated as a resident individual in the current year of income only for the period ending on the last day on which the individual was present in Uganda.

10. Resident company.

A company is a resident company for a year of income if it—

- (a) is incorporated or formed under the laws of Uganda;
- (b) has its management and control exercised in Uganda at any time during the year of income; or
- (c) undertakes the majority of its operations in Uganda during the year of income.

11. Resident trust.

A trust is a resident trust for a year of income if— (a) the trust was established in Uganda;

(b) at any time during the year of income, a trustee of the trust was a resident person; or



(c) the trust has its management and control exercised in Uganda at any time during the year of income.

12. Resident partnership.

A partnership is a resident partnership for a year of income if, at any time during that year, a partner in the partnership was a resident person.

13. Resident retirement fund.

A retirement fund is a resident retirement fund for a year of income if it—

- (a) is organised under the laws of Uganda;
- (b) is operated for the principal purpose of providing retirement benefits to resident individuals; or
- (c) has its management and control exercised in Uganda at any time during the year of income.

14. Nonresident person.

(1) Subject to subsection (2), a person is a nonresident person for a year of income if the person is not a resident person for that year.

(2) Where section 9(2) or (3) applies, an individual is a nonresident person for that part of the year of income in which the individual is not a resident individual.



PART IV—CHARGEABLE INCOME.

15. Chargeable income.

Subject to section 16, the chargeable income of a person for a year of income is the gross income of the person for the year less total deductions allowed under this Act for the year.

16. Chargeable income arising from insurance business.

(1) The chargeable income of a person for a year of income arising from the carrying on of a short-term insurance business is determined in accordance with the Fourth Schedule to this Act.

(2) Where a person to whom subsection (1) applies derives income charged to tax other than income arising from the carrying on of a short-term insurance business for a year of income, the chargeable income determined under subsection (1) is added to that other income for the purposes of determining the person’s total chargeable income for the year of income.

(3) In this section—

(a) “insurance business” means the business of, or in relation to the issue of, or the undertaking of liability under, life policies, or to make good or indemnify the insured against any loss or damage, including liability to pay damages or compensation contingent upon the happening of a specified event;



(b) “life insurance business” means business of any of the following classes—

(i) effecting, carrying out and issuing policies on human life or contracts to pay annuities on human life;

(ii) effecting, carrying out and issuing contracts of insurance against the risk of the person insured sustaining injury or dying as the result of an accident or of an accident of a specific class, or becoming incapacitated in consequence of disease or of diseases of specified classes, being contracts that are expressed to be in effect for a period of not less than five years or without limit of time and either are not expressed to be terminable by the insurer before the expiry of five years from taking effect or are expressed to be so terminable before the expiry of such period only in special circumstances specified in the contract; or

(iii) effecting, carrying out and issuing of insurance whether effected by the issue of policies, bonds, endowment certificates or otherwise, whereby, in return for one or more premiums paid to the insurer, an amount or series of amounts is to become payable to the insurer in the future,

not being such contracts as fall within subparagraph (i) or

(ii) of this paragraph; and

(c) “short-term insurance business” means any insurance business which is not a life insurance business.

Gross income.

17. Gross income.

(1) Subject to this Act, the gross income of a person for a year of income is the total amount of—

(a) business income;

(b) employment income; and



(c) property income, derived during the year by the person, other than income exempt from tax.

(2) For the purposes of subsection (1)—

(a) the gross income of a resident person includes income derived from all geographical sources; and

(b) the gross income of a nonresident person includes only income derived from sources in Uganda.

(3) Unless this Act provides otherwise, Part V, which deals with tax accounting principles, applies in determining when an amount is derived for the purposes of this Act.

18. Business income.

(1) Business income means any income derived by a person in carrying on a business and includes the following amounts, whether of a revenue or capital nature—

(a) the amount of any gain, as determined under Part VI which deals with gains and losses on disposal of assets, derived by a person on the disposal of a business asset, or on the satisfaction or cancellation of a business debt, whether or not the asset or debt was on revenue or capital account;

(b) any amount derived by a person as consideration for accepting a restriction on the person's capacity to carry on business;

(c) the gross proceeds derived by a person from the disposal of trading stock;

(d) any amount included in the business income of the person under



any other section of this Act;

(e) the value of any gifts derived by a person in the course of, or by virtue of, a past, present or prospective business relationship;

(f) the interest derived by a person in respect of trade receivables or by a person engaged in the business of banking or money lending; and

(g) rent derived by a person whose business is wholly or mainly the holding or letting of property.

(2) An amount included in business income under subsection (1)(f) or (g) retains its character as interest or rent for the purposes of any section of this Act referring to such income.

(3) Where, as a result of any concession granted by, or a compromise made with, a taxpayer's creditors in the course of an insolvency, the taxpayer derives a gain on the cancellation of a business debt, section 38(3) applies in lieu of including the gain in the business income of the taxpayer under subsection (1).

(4) In this section, "business asset" does not include trading stock or a depreciable asset.

19. Employment income.

(1) Subject to this section, employment income means any income derived by an employee from any employment and includes the following amounts, whether of a revenue or capital nature —

(a) any wages, salary, leave pay, payment in lieu of leave, overtime pay, fees, commission, gratuity, bonus or the amount of any travelling, entertainment, utilities, cost of living, housing, medical or other allowance;



- (b) the value of any benefit granted;
- (c) the amount of any discharge or reimbursement by an employer of expenditure incurred by an employee, other than expenditure incurred by an employee on behalf of the employer which serves the proper business purposes of the employer;
- (d) any amount derived as compensation for the termination of any contract of employment, whether or not provision is made in the contract for the payment of such compensation, or any amount derived which is in commutation of amounts due under any contract of employment;
- (e) any amount paid by a tax-exempt employer as a premium for insurance on the life of the employee and which insurance is for the benefit of the employee or any of his or her dependents;
- (f) any amount derived as consideration for the employee's agreement to any conditions of employment or to any changes in his or her conditions of employment;
- (g) the amount by which the value of shares issued to an employee under an employee share acquisition scheme at the date of issue exceeds the consideration, if any, given by the employee for the shares, including any amount given as consideration for the grant of a right or option to acquire the shares;
- (h) the amount of any gain derived by an employee on disposal of a right or option to acquire shares under an employee share acquisition scheme.

(2) Notwithstanding subsection (1), the employment income of an employee does not include—

(a) the cost incurred by the employer of any passage to or from Uganda in respect of the employee's appointment or termination

of employment where the employee—

- (i) was recruited or engaged outside Uganda;
- (ii) is in Uganda solely for the purpose of serving the employer; and



- (iii) is not a citizen of Uganda; or
- (b) any reimbursement or discharge of the employee’s medical expenses;
- (c) except where subsection (1)(e) applies, any amount paid as a premium for insurance on the life of the employee and which insurance is for the benefit of the employee or any of his or her dependents;
- (d) any allowance given for, and which does not exceed the cost actually or likely to be incurred, or a reimbursement or discharge of expenditure incurred by the employee on— (i) accommodation and travel expenses; or (ii) meals and refreshment while undertaking travel, in the course of performing duties of employment;
- (e) the value of any meal or refreshment provided by the employer to the employee in premises operated by or on behalf of the employer solely for the benefit of employees and which is available to all full-time employees on equal terms;
- (f) any benefit granted by the employer to the employee during a month, where the total value of the benefits provided by the employer to the employee for the month is less than ten thousand shillings; or
- (g) any contribution or similar payment made to a retirement fund for the benefit of the employee or any of his or her dependents.

(3) For the purposes of this section, the value of any benefit is determined in accordance with the Fifth Schedule to this Act.

(4) Where the amount to which subsection (1)(d) applies is paid by an employer to an employee who has been in the employment of the employer for ten years or more, the amount included in employment income is calculated according to the following formula—

$$A \times 75\%$$



where A is the total amount derived by the employee to which subsection (1)(d) applies.

(5) For the purposes of subsection (2), a director of a company is only a full-time employee of the company if the director—

(a) is required to devote substantially the whole of his or her time to the service of the company in a managerial or technical capacity; and

(b) does not have an interest of more than 5 percent in the underlying ownership of the company.

(6) For the purposes of this section, an amount or benefit is derived in respect of employment if it—

(a) is provided by an employer or by a third party under an arrangement with the employer or an associate of the employer; (b) is provided to an employee or to an associate of an employee; and (c) is provided in respect of past, present or prospective employment.

(7) An amount excluded from the employment income of an employee under subsection (2) or (4) is exempt income of the employee.

(8) In this section—

(a) “employee share acquisition scheme” means an agreement or arrangement under which—

(i) a company is required to issue shares in the company to



employees of the company or of an associated company; or

(ii) a company is required to issue shares to a trustee of a trust and under the trust deed the trustee is required to transfer

the shares to employees of the company or of an associated company; and

(b) “medical expenses” includes a premium or other amount paid for medical insurance.

20. Property income.

(1) Property income means—

(a) any dividends, interest, annuity, natural resource payments, rents, royalties and any other payment derived by a person from the provision, use or exploitation of property;

(b) the value of any gifts derived by a person in connection with the provision, use or exploitation of property;

(c) the total amount of any contributions made to a retirement fund during a year of income by a tax-exempt employer; and

(d) any other income derived by a person, but does not include any amount which is business, employment or exempt income.

(2) An amount included in property income under subsection (1)(a) retains its character as dividends, interest, annuity, natural resource payment, rent or royalties for the purposes of any section of the Act referring to such income.

Exempt income.



21. Exempt income.

- (1) The following amounts are exempt from tax—
- (a) the income of a listed institution;
 - (b) the income of any organisation or person entitled to privileges under the Diplomatic Privileges Act to the extent provided in the regulations and orders made under that Act;
 - (c) the official employment income derived by a person in the public service of the government of a foreign country if—
 - (i) the person is either a nonresident person or is a resident individual solely by reason of performing such service;
 - (ii) the income is payable from the public funds of that country;
- and
- (iii) the income is subject to tax in that country;
 - (d) any allowance payable outside Uganda to a person working in a Ugandan foreign mission;
 - (e) the income of any local authority;
 - (f) the income of an exempt organisation, other than—
 - (i) property income, except rent received by an exempt organisation in respect of immovable property which is used by the lessee exclusively for the activities of the organisation specified in paragraph (bb)(i) of the definition of “exempt organisation” in section 2; or
 - (ii) business income that is not related to the function constituting the basis for the organisation’s existence;



- (g) any education grant which the commissioner is satisfied has been made bona fide to enable or assist the recipient to study at a recognised educational or research institution;
- (h) any amount derived by way of alimony or allowance under any judicial order or written agreement of separation;
- (i) interest payable on treasury bills or Bank of Uganda bills;
- (j) the value of any property acquired by gift, bequest, devise or inheritance that is not included in business, employment or property income;
- (k) any capital gain that is not included in business income;
- (l) employment income derived by an individual to the extent provided for in a technical assistance agreement where—
 - (i) the individual is a nonresident or a resident solely for the purpose of performing duties under the agreement; and
 - (ii) the Minister has concurred in writing with the tax provisions in the agreement;
- (m) foreign-source income derived by—
 - (i) a short-term resident of Uganda;
 - (ii) a person to whom paragraph (c) or (l) of this subsection applies; or
 - (iii) a member of the immediate family of a person referred to in subparagraph (i) or (ii) of this paragraph;
- (n) a pension;
- (o) a lump sum payment made by a resident retirement fund to a member of the fund or a dependent of a member of the fund;
- (p) the proceeds of a life insurance policy paid by a person carrying on a life insurance business; or
- (q) the official employment income of a person employed in the Uganda Peoples' Defence Forces, the Uganda Police Force, or the Uganda Prisons Service, other than a person employed in a civil capacity.



(2) In this section—

- (a) “short-term resident” means a resident individual, other than a citizen of Uganda, present in Uganda for a period or periods not exceeding two years; and
- (b) “technical assistance agreement” means a grant agreement between the Government of Uganda and a foreign government or a listed institution for the provision of technical assistance to Uganda.

Deductions.

22. Expenses of deriving income.

(1) Subject to this Act, for the purposes of ascertaining the chargeable income of a person for a year of income, there shall be allowed as a deduction—

- (a) all expenditures and losses incurred by the person during the year of income to the extent to which the expenditures or losses were incurred in the production of income included in gross income;
- (b) the amount of any loss as determined under Part VI, which deals with gains and losses on the disposal of assets, incurred by the person on the disposal of a business asset during the year of income, whether or not the asset was on revenue or capital account; and
- (c) in the case of rental income, 20 percent of the rental income as expenditures and losses incurred by the individual in the production of such income.

(2) Except as otherwise provided in this Act, no deduction is allowed for—



- (a) any expenditure or loss incurred by a person to the extent to which it is of a domestic or private nature;
- (b) subject to subsection (1), any expenditure or loss of a capital nature, or any amount included in the cost base of an asset;
- (c) any expenditure or loss which is recoverable under any insurance, contract or indemnity;
- (d) income tax payable in Uganda or a foreign country;
- (e) any income carried to a reserve fund or capitalised in any way;
- (f) the cost of a gift made directly or indirectly to an individual where the gift is not included in the individual's gross income;
- (g) any allowance given to, or a reimbursement or discharge of expenditure incurred by, an employee, in respect of the employee's housing, and any expenditures incurred in respect of housing provided to an employee;
- (h) any fine or similar penalty paid to any government or a political subdivision of a government for breach of any law or subsidiary legislation;
- (i) a contribution or similar payment made to a retirement fund either for the benefit of the person making the payment or for the benefit of any other person;
- (j) a premium or similar payment made to a person carrying on a life insurance business on the life of the person making the premium or on the life of some other person;
- (k) the amount of a pension paid to any person; or
- (l) any alimony or allowance paid under any judicial order or written agreement of separation.

(3) In this section, expenditure of a domestic or private nature incurred by a person includes—

- (a) the cost incurred in the maintenance of the person and the person's family or residence;



- (b) the cost of commuting between the person’s residence and work;
- (c) the cost of clothing worn to work, except clothing which is not suitable for wearing outside of work; and
- (d) the cost of education of the person not directly relevant to the person’s employment or business, and the cost of education leading to a degree, whether or not it is directly relevant to the person’s employment or business.

(4) Unless this Act provides otherwise, Part V, which deals with tax accounting principles, applies for the purposes of determining when an expenditure or loss is incurred for the purposes of this Act.

(5) In this section, “business asset” does not include trading stock or a depreciable asset.

23. Meal, refreshment and entertainment expenditure.

A deduction is allowed for expenditure incurred by a person in providing meals, refreshment or entertainment in the production of income included in gross income, but only where—

- (a) the value of the meals, refreshment or entertainment is included in the employment income of an employee under section 19(1)(b) or is excluded from employment income by section 19(2)(d) or
- (e); or
- (b) the person’s business includes the provision of meals, refreshment or entertainment and the persons to whom the meals, refreshment or entertainment have been provided have paid an arm’s-length consideration for them.



24. Bad debts.

(1) Subject to subsection (2), a person is allowed a deduction for the amount of a bad debt written off in the person's accounts during the year of income.

(2) A deduction for a bad debt is only allowed—

(a) if the amount of the debt claim was included in the person's income in any year of income; or

(b) if the amount of the debt claim was in respect of money lent in the ordinary course of a business carried on by a financial institution in the production of income included in gross income.

(3) In this section—

(a) "bad debt" means—

(i) a debt claim in respect of which the person has taken all reasonable steps to pursue payment and which the person reasonably believes will not be satisfied; and

(ii) in relation to a financial institution, a debt in respect of which a loss reserve held against presently identified losses or potential losses, and which is therefore not available to meet losses which subsequently materialise, has been made; and

(b) "debt claim" means a right to receive a repayment of money from another person, including deposits with financial institutions, accounts receivable, promissory notes, bills of exchange and bonds.

25. Interest.



(1) Subject to this Act, a person is allowed a deduction for interest incurred during the year of income in respect of a debt obligation to the extent that the debt obligation has been incurred by the person in the production of income included in gross income.

(2) In this section, “debt obligation” includes an obligation to make a swap payment arising under a swap agreement and shares in a building society.

26. Repairs and minor capital equipment.

(1) A person is allowed a deduction for expenditure incurred during the year of income for the repair of property occupied or used by the person in the production of income included in gross income.

(2) A person is allowed a deduction for expenditure incurred during the year of income in acquiring a depreciable asset with a cost base of less than five currency points.

(3) Subsection (2) only applies to a depreciable asset if the asset normally functions in its own right and is not an individual item which forms part of a set. 27.

Depreciable assets.

(1) A person is allowed a deduction for the depreciation of the person’s depreciable assets, other than an asset to which section 26(2) applies, during the year of income as calculated in accordance with this section.



(2) Depreciable assets are classified into four classes as set out in Part I of the Sixth Schedule to this Act with depreciation rates applicable for each class as specified in that Part.

(3) A person's depreciable assets shall be placed into separate pools for each class of asset, and the depreciation deduction for each pool is calculated according to the following formula—

$$A \times B$$

where—

A is the written-down value of the pool at the end of the year of income; and B is the depreciation rate applicable to the pool.

(4) The written-down value of a pool at the end of a year of income is the total of—

- (a) the written-down value of the pool at the end of the preceding year of income after allowing for the deduction under subsection (3) for that year; and
- (b) the cost base of assets added to the pool during the year of income,

reduced, but not below zero, by the consideration received from the disposal of assets in the pool during the year of income.

(5) Where the amount of consideration received by a person from the disposal during a year of income of any asset or assets in a pool exceeds the written-down value of the pool at the end of the year of income disregarding that amount, the excess is included in the business income of the person for that year.

(6) If the written-down value of a pool at the end of the year of income, after allowing for the deduction under subsection (3), is less than five currency points, a deduction shall be allowed for the amount of that written-down value.



(7) Where all the assets in a pool are disposed of before the end of a year of income, a deduction is allowed for the amount of the written-down value of the pool as at the end of that year.

(8) Where a person has incurred nondeductible expenditures in more than one year of income in respect of a depreciable asset, this section applies as if the expenditures incurred in different years of income were incurred for the acquisition of separate assets of the same class.

(9) The cost base of a depreciable asset is added to a pool in the year of income in which the asset is placed in service.

(10) Where a depreciable asset is only partly used during a year of income in the production of income included in gross income, the depreciation deduction allowed under this section in relation to the asset shall be proportionately reduced.

(11) For the purposes of subsection (4)(b), the cost base of a road vehicle, other than a commercial vehicle, is not to exceed the amount set out in Part II of the Sixth Schedule.

(12) Where the cost base of a road vehicle for the purposes of subsection (4)(b) is limited under subsection (11), the person is treated as having acquired two assets—

(a) a depreciable asset being a road vehicle with a cost base equal to the amount set out in Part II to the Sixth Schedule to this Act; and

(b) a business asset that is not a depreciable asset with a cost base equal to the difference between the cost base of the asset not taking into account subsection (11),



in this section referred to as the “actual cost base”, and the amount set out in Part II of the Sixth Schedule.

(13) Where a road vehicle to which subsection (12) applies is disposed of, the person is treated as having disposed of each of the assets specified under that subsection, and the consideration received on disposal is apportioned between the two assets based on the ratio of the cost base of each asset as determined under that subsection to the actual cost base of the asset.

(14) In calculating the amount of any gain or loss arising on disposal of an asset specified in subsection (12)(b), the cost base of the asset as determined under that paragraph is reduced by the depreciation deductions which would have been allowed to the person if the asset— (a) was a depreciable asset being a road vehicle; and (b) the asset was the only asset in the pool.

(15) In this section, “commercial vehicle” means—

(a) a road vehicle designed to carry loads of more than half a tonne or more than thirteen passengers; or (b) a vehicle used in a transportation or vehicle rental business.

28. Initial allowance.

(1) A person who places an item of eligible property into service for the first time during the year of income is allowed a deduction for that year of an amount equal to—

(a) where the asset is placed in service outside an area prescribed in Part IV of the Sixth Schedule to this Act, 75 percent of the cost base of the property at the time it is placed in service; or

(b) in any other case, 50 percent of the cost base of the property at the time it is placed in service.



(2) The cost base of an asset to which subsection (1) applies is reduced by the amount of the deduction allowed under that subsection for the purposes of section 27(4)(b).

(3) In this section, “item of eligible property” means plant and machinery wholly used in the production of income included in gross income but does not include—

(a) goods and passenger transport vehicles;

(b) appliances of a kind ordinarily used for household purposes; or (c) office or household furniture, fixtures and fittings.

29. Industrial buildings.

(1) Subject to this section, where a person has incurred capital expenditure in any year of income on the construction of an industrial building and the building is used by the person during the year of income in the production of income included in gross income, the person is allowed a deduction for the depreciation of the building during the year of income as calculated according to the following formula—

$$A \times B \times C/D$$

where—

A is the depreciation rate applicable to the building as determined under Part III of the Sixth Schedule;

B is the capital expenditure incurred in the construction of the building;

C is the number of days in the year of income during which the asset was used or was available for use in the production of income included in



gross income; and D is the number of days in the year of income.

(2) Subject to subsection (3), where an industrial building is only partly used by a person during a year of income for prescribed uses, the amount of the depreciation deduction allowed under subsection (1) shall be proportionately reduced.

(3) Where an industrial building is only partly used by a person during a year of income for prescribed uses and the capital expenditure incurred in the construction of that part of the building used for other uses is not more than 10 percent of the total capital expenditure incurred on the construction of the building, the building is treated as wholly used for prescribed uses.

(4) Where a person has incurred expenditure in making a capital improvement to an industrial building in a year of income, this section applies as if the expenditure was capital expenditure incurred in that year in the construction of a separate industrial building.

(5) Where an industrial building is purchased by a person, the person is deemed to have incurred the capital expenditure incurred by the person who constructed the building.

(6) The amount of the deduction allowed under this section is not to exceed the amount which, apart from making the deduction, would be the residue of expenditure at the end of the year of income.

(7) Where an industrial building has been disposed of by a person during a year of income, the cost base of the building for the purposes of this Act is reduced by any deductions allowed to the person under this section in respect of the building.



(8) Where an industrial building is bought and sold together with land, the value of the land shall be the difference between the total consideration and the value of the industrial building as defined in subsection (7).

(9) Where subsection (4) applies, the consideration received on disposal of an industrial building shall be reasonably apportioned among the separate industrial buildings identified under that subsection.

(10) In this section—

(a) “capital expenditure” does not include—

(i) expenditure incurred in the acquisition of a depreciable asset installed in an industrial building; or

(ii) expenditure incurred in the acquisition of, or of any rights in or over, any land;

(b) “prescribed uses” means the uses specified in the definition of

“industrial building” in section 2; and

(c) “residue of expenditure” means the capital expenditure incurred on the construction of an industrial building less any deductions allowed under this section to any person and any amounts which would have been allowed as deductions if the building was solely used for prescribed uses at all times since construction was completed.

30. Start-up costs.

A person who has incurred expenditure in starting up a business to produce income included in gross income shall be allowed a deduction of an amount equal to 25 percent of the amount of the expenditure in the year of income in which the expenditure was incurred and in the following three years of income in which the business is carried on by the person.



31. Costs of intangible assets.

(1) A person who has incurred expenditure in acquiring an intangible asset having an ascertainable useful life is allowed a deduction in each year of income during the useful life of the asset in which the person wholly uses the asset in the production of income included in gross income of an amount calculated according to the following formula—

$$A/B$$

where—

A is the amount of expenditure incurred; and B is the useful life of the asset in whole years.

(2) Where an intangible asset has been disposed of by a person during the year of income, the cost base of the asset is reduced by any deductions allowed under this section to the person in respect of the asset.

32. Scientific research expenditure.

(1) A person is allowed a deduction for scientific research expenditure incurred during the year of income in the course of carrying on a business, the income from which is included in gross income.

(2) In this section—

(a) “scientific research” means any activities in the fields of natural or applied science for the development of human knowledge;



(b) “scientific research expenditure”, in relation to a person carrying on business, means the cost of scientific research undertaken for the purposes of developing the person’s business, including any contribution to a scientific research institution which is used by the institution in undertaking research for the purposes of developing the person’s business, but does not include—

- (i) expenditure incurred for the acquisition of a depreciable or intangible asset;
- (ii) expenditure incurred for the acquisition of land or buildings; or
- (iii) expenditure incurred for the purpose of ascertaining the existence, location, extent or quality of a natural deposit; and

(c) “scientific research institution” means an association, institute, college or university which undertakes scientific research.

33. Training expenditure.

(1) An employer is allowed a deduction for expenditure incurred during the year of income for the training or tertiary education, not exceeding in the aggregate five years, of a citizen or permanent resident of Uganda, other than an associate of the employer, who is employed by the employer in a business, the income from which is included in gross income.

(2) In this section, “permanent resident” means a resident individual who has been present in Uganda for a period or periods in total of five years or more.

34. Charitable donations.



(1) A person is allowed a deduction for a gift made during a year of income to an organisation within section 2(bb)(i)(A) or (B) of the definition of “exempt organisation”.

(2) For the purposes of subsection (1), the value of a gift of property is the lesser of—

(a) the value of the property at the time of the making of the gift; or (b) the consideration paid by the person for the property.

(3) The amount of a deduction allowed under subsection (1) for a year of income shall not exceed 5 percent of the person’s chargeable income, calculated before taking into account the deduction under this section.

35. Farming.

(1) Expenditure incurred by a person in acquiring farm works is included in the person’s pool for class 4 assets under section 27 in the year of income in which the expenditure is incurred and is depreciated accordingly.

(2) Subject to subsection (3), a person carrying on a business of horticulture in Uganda who has incurred expenditure of a capital nature on— (a) the acquisition or establishment of a horticultural plant; or

(b) the construction of a greenhouse, shall be allowed a deduction of an amount equal to 20 percent of the amount of the expenditure in the year of income in which the expenditure was incurred and in the following four years of income in which the plant or greenhouse is used in the business of horticulture carried on by the person.



(3) Expenditure of a capital nature incurred on the establishment of a horticultural plant shall include expenditure incurred in draining or clearing land.

(4) In this section—

(a) “farm works” means any labour quarters and other immovable buildings necessary for the proper operation of a farm, fences, dips, drains, water and electricity supply works, windbreaks and other works necessary for farming operations, but does not include—

(i) farm houses; or

(ii) depreciable assets; and

(b) “horticulture” includes—

(i) propagation or cultivation of seeds, bulbs, spores or similar things;

(ii) propagation or cultivation of fungi; or

(iii) propagation or cultivation in environments other than soil, whether natural or artificial.

36. Mineral exploration expenditures.

A person carrying on mining operations is allowed a deduction for any expenditure of a capital nature incurred in searching for, discovering and testing, or winning access to deposits of minerals in Uganda.

37. Apportionment of deductions.



(1) A deduction relating to the production of more than one class of income shall be reasonably apportioned among the classes of income to which it relates.

(2) Where a person derives more than one class of income, the deduction allowed under section 34 shall be allocated rateably to each class of income.

38. Carry forward losses.

(1) Subject to this section, where, for any year of income, the total amount of income included in the gross income of a taxpayer is exceeded by the total amount of deductions allowed to the taxpayer, the amount of the excess, in this Act referred to as an “assessed loss”, shall be carried forward and allowed as a deduction in determining the taxpayer’s chargeable income in the following year of income.

(2) Where for any year of income the total farming income derived by a taxpayer who is an individual is exceeded by the total deductions allowed to the taxpayer relating to the production of that income, the amount of the excess, in this Act referred to as an “assessed farming loss”, may not be deducted against any other income of the taxpayer for the year of income, but shall be carried forward and allowed as a deduction in determining the chargeable farming income of the taxpayer in the following year of income.

(3) The amount of an assessed loss carried forward under this section for a taxpayer shall be reduced by the amount or value of any benefit to the taxpayer from a concession granted by, or a compromise made with, the taxpayer’s creditors whereby the taxpayer’s liabilities to those creditors have been extinguished or reduced, provided such liabilities were incurred in the production of income included in gross income.



(4) Where a taxpayer has more than one class of loss, the reduction in subsection (3) shall be applied rateably to each class of loss.

(5) Subsection (1) shall apply separately to income derived from sources in Uganda and to foreign-source income.

(6) In this section—

(a) “chargeable farming income” means the total farming income of a taxpayer for a year of income reduced by any deductions allowed under this Act for that year which relate to the production of such income; and

(b) “farming income” means the business income derived from the carrying on of farming operations.

PART V—TAX ACCOUNTING PRINCIPLES.

39. Substituted year of income.

(1) A taxpayer may apply, in writing, to use as the taxpayer’s year of income a substituted year of income being a twelve-month period other than the normal year of income; and the commissioner may, subject to subsection (3), by notice in writing, approve the application.

(2) A taxpayer granted permission under subsection (1) to use a substituted year of income may apply, in writing, to change the taxpayer’s year of income to the normal



year of income or to another substituted year of income; and the commissioner, subject to subsection (3), may, by notice in writing, approve the application.

(3) The commissioner may only approve an application under subsection (1) or (2) if the taxpayer has shown a compelling need to use a substituted year of income or to change the taxpayer’s year of income, and any approval is subject to such conditions as the commissioner may prescribe.

(4) The commissioner may, by notice in writing to a taxpayer, withdraw the permission to use a substituted year of income granted under subsection (1) or (2).

(5) A notice served by the commissioner under subsection (1) takes effect on the date specified in the notice, and a notice under subsection (2) or (4) takes effect at the end of the substituted year of income of the taxpayer in which the notice was served.

(6) Where the year of income of a taxpayer changes as a result of subsection (1), (2) or (4), the period between the last full year of income prior to the change and the date on which the changed year of income commences is treated as a separate year of income, to be known as the “transitional year of income”.

(7) In this Act, a reference to a particular normal year of income includes a substituted year of income or a transitional year of income commencing during the normal year of income.

(8) A taxpayer dissatisfied with a decision of the commissioner under subsection (1), (2) or (4) may only challenge the decision under the objection and appeal procedure in this Act.



(9) In this section, “normal year of income” means the period of twelve months ending on the 30th June.

40. Method of accounting.

(1) A taxpayer’s method of accounting shall conform to generally accepted accounting principles.

(2) Subject to subsection (1) and unless the commissioner prescribes otherwise in a particular case, a taxpayer may account for tax purposes on a cash or accrual-basis.

(3) A taxpayer may apply, in writing, for a change in the taxpayer’s method of accounting; and the commissioner may, by notice in writing, approve such an application but only if satisfied that the change is necessary to clearly reflect the taxpayer’s income.

(4) A taxpayer dissatisfied with a decision under this section may only challenge the decision under the objection and appeal procedure in this Act.

(5) If the taxpayer’s method of accounting is changed, adjustments to items of income, deduction or credit or to other items shall be made in the year of income following the change, so that no item is omitted and no item is taken into account more than once.

41. Cash-basis taxpayer.



A taxpayer who is accounting for tax purposes on a cash-basis derives income when it is received or made available and incurs expenditure when it is paid.

42. Accrual-basis taxpayer.

(1) A taxpayer who is accounting for tax purposes on an accrual- basis—

(a) derives income when it is receivable by the taxpayer; and (b) incurs expenditure when it is payable by the taxpayer.

(2) Subject to this Act, an amount is receivable by a taxpayer when the taxpayer becomes entitled to receive it, even if the time for discharge of the entitlement is postponed or the entitlement is payable by installments.

(3) Subject to this Act, an amount is treated as payable by the taxpayer when all the events that determine liability have occurred and the amount of the liability can be determined with reasonable accuracy, but not before economic performance with respect to the amount occurs.

(4) For the purposes of subsection (3), economic performance occurs—

(a) with respect to the acquisition of services or property, at the time the services or property are provided;

(b) with respect to the use of property, at the time the property is used; or

(c) in any other case, at the time the taxpayer makes payment in full satisfaction of the liability.

43. Prepayments.



Where a deduction is allowed for expenditure incurred on a service or other benefit which extends beyond thirteen months, the deduction is allowed proportionately over the years of income to which the service or other benefit relates. 44. Claim of right.

(1) A taxpayer who is accounting for tax purposes on a cash-basis

shall include an amount in income when received or claim a deduction for an amount when paid, notwithstanding that the taxpayer is not legally entitled to receive the amount or liable to make the payment, if the taxpayer claims to be legally entitled to receive or legally obliged to pay the amount.

(2) Where subsection (1) applies, the calculation of the chargeable income of the taxpayer shall be adjusted for the year of income in which the taxpayer refunds the amount received or recovers the amount paid.

(3) A taxpayer who is accounting for tax purposes on an accrual-basis shall include an amount in income when receivable or claim a deduction for an amount when payable notwithstanding that the taxpayer is not legally entitled to receive the amount or liable to make the payment, if the taxpayer claims to be legally entitled to receive or legally obliged to pay the amount.

(4) Where subsection (3) applies, the calculation of the chargeable income of the taxpayer shall be adjusted for the year of income in which the taxpayer ceases to claim the right to receive the amount or ceases to claim an obligation to pay the amount.

45. Long-term contracts.



(1) In the case of an accrual-basis taxpayer, income and deductions relating to a long-term contract are taken into account on the basis of the percentage of the contract completed during the year of income.

(2) The percentage of completion is determined by comparing the total costs allocated to the contract and incurred before the end of the year of income with the estimated total contract costs as determined at the time of commencement of the contract.

(3) Where, in the year of income in which a long-term contract is completed, it is determined that the contract has made a final year loss, the commissioner may allow the loss to be carried back to the preceding years of income and applied against the amount included in income over the period of the contract under subsection (1) for those years, starting with the year immediately preceding the year in which the contract was completed.

(4) In this section—

(a) “final year loss”, in relation to a long-term contract, occurs where both the following conditions are satisfied—

(i) the profit estimated to be made under the contract for the purposes of subsection (1) exceeds the actual profit, including a loss, made under the contract; and

(ii) the difference between the estimated profit and the actual profit exceeds the amount included in income under subsection (1) for the year of income in which the contract is completed,

and the amount of the excess referred to in subparagraph (ii) of this paragraph is the amount of the final year loss; and

(b) “long-term contract” means a contract for manufacture, installation or construction or, in relation to each, the performance of related services, which is not completed within the year of income in which work under the contract commenced, other than a contract estimated to be completed within six months of the date on which work under the contract commenced.

46. Trading stock.

(1) A taxpayer is allowed a deduction for the cost of trading stock disposed of during a year of income.



(2) The cost of trading stock disposed of during a year of income is determined by adding to the opening value of trading stock for the year, the cost of trading stock acquired during the year, and subtracting the closing value of trading stock for the year.

(3) The opening value of trading stock for a year of income is—

(a) the closing value of trading stock at the end of the previous year of income; or

(b) where the taxpayer commenced business during the year of income, the value of trading stock acquired prior to the commencement of the business.

(4) The closing value of trading stock is the lower of cost or the market value of trading stock on hand at the end of the year of income.

(5) A taxpayer who is accounting for tax purposes on a cash-basis may calculate the cost of trading stock on the prime-cost method or absorption-cost method; and a taxpayer who is accounting for tax purposes on an accrual-basis shall calculate the cost of trading stock on the absorption-cost method.

(6) Where particular items of trading stock are not readily identifiable, a taxpayer may account for that trading stock on the first-in-first-out method or the average-cost method but, once chosen, a stock valuation method may be changed only with the written permission of the commissioner.

(7) In this section—

(a) “absorption-cost method” means the generally accepted accounting principle under which the cost of trading stock is the sum of direct material costs, direct labour costs and factory overhead costs;

(b) “average-cost method” means the generally accepted accounting principle under which trading stock valuation is based on a weighted average cost of units on hand;

(c) “direct labour costs” means labour costs directly related to the production of trading stock;

(d) “direct material costs” means the cost of materials that become an integral part of the trading stock produced;

(e) “factory overhead costs” means the total costs of manufacturing except direct labour and direct material costs;



(f) “first-in-first-out method” means the generally accepted accounting principle under which trading stock valuation is based on the assumption that trading stock is sold in the order of its receipt;

(g) “prime-cost method” means the generally accepted accounting principle under which the cost of trading stock is the sum of direct material costs, direct labour costs and variable factory overhead costs; and

(h) “variable factory overhead costs” means those factory overhead costs which vary directly with changes in volume.

47. Debt obligations with discount or premium.

(1) Subject to subsection (2), interest in the form of any discount, premium or deferred interest shall be taken into account as it accrues.

(2) Where the interest referred to in subsection (1) is subject to withholding tax, the interest shall be taken to be derived or incurred when paid.

48. Foreign currency debt gains and losses.

(1) Foreign currency debt gains are included in gross income and foreign currency debt losses are deductible only under this section.

(2) A foreign currency debt gain derived by a taxpayer during the year of income is included in the business income of the taxpayer for that year.

(3) Subject to subsections (4) and (6), a foreign currency debt loss incurred by a taxpayer during a year of income is allowed as a deduction to the taxpayer in that year.

(4) A deduction is not allowed to a taxpayer for a foreign currency debt loss incurred by the taxpayer unless the taxpayer has notified the commissioner in writing of the existence of the debt which gave rise to the loss by the due date for furnishing of the taxpayer’s return of income for the year of income in which the debt arose or by such later date as the commissioner may allow.



- (5) Subsection (4) does not apply to a financial institution.
- (6) Where—
 - (a) a taxpayer has incurred a foreign currency debt loss under a transaction;
 - (b) the taxpayer or another person has derived a foreign currency debt gain under another transaction; and
 - (c) either—
 - (i) the transaction giving rise to the loss would not have been entered into, or might reasonably be expected not to have been entered into, if the transaction giving rise to the gain had not been entered into; or
 - (ii) the transaction giving rise to the gain would not have been entered into, or might reasonably be expected not to have been entered into, if the transaction giving rise to the loss had not been entered into,

no deduction is allowed to the taxpayer to the extent that the amount of the loss exceeds that part of the gain included in gross income.

- (7) Subject to subsection (9), a taxpayer derives a foreign currency debt gain if—
 - (a) where the taxpayer is a debtor, the amount in shillings of the foreign currency debt incurred by the taxpayer is greater than the amount in shillings required to settle the debt; or
 - (b) where the taxpayer is a creditor, the amount in shillings of the foreign currency debt owed to the taxpayer is less than the amount in shillings paid to the taxpayer in settlement of the debt.
- (8) Subject to subsection (9), a taxpayer incurs a foreign currency debt loss if—
 - (a) where the taxpayer is a debtor, the amount in shillings of the foreign currency debt incurred by the taxpayer is less than the amount in shillings required to settle the debt; or



(b) where the taxpayer is a creditor, the amount in shillings of the foreign currency debt owed to the taxpayer is greater than the amount in shillings paid to the taxpayer in settlement of the debt.

(9) In determining whether a taxpayer has derived a foreign currency debt gain or incurred a foreign currency debt loss, account shall be taken of the taxpayer's position under any hedging contract entered into by the taxpayer in respect of the debt.

(10) A foreign currency debt gain is derived or a foreign currency debt loss is incurred by a taxpayer in the year of income in which the debt is satisfied.

(11) In this section—

(a) “foreign currency debt” means a business debt denominated in foreign currency; and

(b) “hedging contract” means a contract entered into by the taxpayer for the purpose of eliminating or reducing the risk of adverse financial consequences which might result for the taxpayer under another contract from currency exchange rate fluctuation.

PART VI—GAINS AND LOSSES ON DISPOSAL OF ASSETS.

49. Application of Part VI.

This Part applies for the purposes of determining the amount of any gain or loss arising on the disposal of an asset where the gain is included in gross income or the loss is allowed as a deduction under this Act.

50. Gains and losses on disposal of assets.

(1) The amount of any gain arising from the disposal of an asset is the excess of the consideration received for the disposal over the cost base of the asset at the time of the disposal.



(2) The amount of any loss arising from the disposal of an asset is the excess of the cost base of the asset at the time of the disposal over the consideration received for the disposal.

51. Disposals.

(1) A taxpayer is treated as having disposed of an asset when the asset has been—

(a) sold, exchanged, redeemed or distributed by the taxpayer; (b) transferred by the taxpayer by way of gift; or (c) destroyed or lost.

(2) A disposal of an asset includes a disposal of a part of the asset.

(3) Where the commissioner is satisfied that a taxpayer— (a) has converted an asset from a taxable use to nontaxable use; or

(b) has converted an asset from a nontaxable use to a taxable use, the taxpayer is deemed to have disposed of the asset at the time of the conversion for an amount equal to the market value of the asset at that time and to have immediately reacquired the asset for a cost base equal to that same value.

(4) A nonresident person who becomes a resident person is deemed to have acquired all assets, other than taxable assets, owned by the person at the time of becoming a resident for their market value at that time.

(5) A resident person who becomes a nonresident person is deemed to have disposed of all assets, other than taxable assets, owned by the person at the time of becoming a nonresident for their market value at that time.

(6) Where a person to whom subsection (5) would otherwise apply— (a) intends, in the future, to reacquire status as a resident person; and



(b) provides the commissioner with sufficient security to satisfy any tax liability which would otherwise arise under subsection (5), the commissioner may, by notice in writing, exempt the person from the application of subsection (5).

(7) In this section, “taxable asset” means an asset the disposal of which would give rise to a gain included in the gross income of, or a loss allowed as a deduction to, a resident or nonresident taxpayer.

52. Cost base.

(1) Subject to this Act, this section establishes the cost base of an asset for the purposes of this Act.

(2) The cost base of an asset purchased, produced or constructed by the taxpayer is the amount paid or incurred by the taxpayer in respect of the asset, including incidental expenditures of a capital nature incurred in acquiring the asset, and includes the market value of any consideration in kind given for the asset.

(3) Subject to subsection (4), the cost base of an asset acquired in a non-arm’s-length transaction is the market value of the asset at the date of acquisition.

(4) The cost base of an asset acquired in a transaction described in section 53(2) is the amount of the consideration deemed by that subsection to have been received by the person disposing of the asset.

(5) Where a part of an asset is disposed of, the cost base of the asset shall be apportioned between the part of the asset retained and the part disposed of in accordance with their respective market values at the time of acquisition of the asset.

(6) Unless otherwise provided in this Act, expenditures incurred to alter or improve an asset which have not been allowed as a deduction are added to the cost base of the asset.



(7) Where the acquisition of an asset by a taxpayer represents the derivation of an amount included in gross income, the cost base of the asset is the amount included in gross income plus any amount paid by the taxpayer for the asset.

(8) Where the receipt of an asset represents the derivation of an amount which is exempt from tax, the cost base of the asset is the amount exempt from tax plus any amount paid by the taxpayer for the asset. 53. Special rules for consideration received.

(1) The consideration received on disposal of an asset includes the market value of any consideration received in kind.

(2) Where an asset is disposed of to an associate or in a non-arm's- length transaction other than by way of transmission of the asset to a trustee or beneficiary on the death of a taxpayer, the person disposing of the asset, in this section referred to as the "disposer", is treated as having received consideration equal to the greater of—

(a) the cost base of the asset to the disposer at the time of disposal; or (b) the fair market value of the asset at the date of disposal.

(3) Where two or more assets are disposed of in a single transaction and the consideration paid for each asset is not specified, the total consideration received is apportioned among the assets disposed of in proportion to their respective market values at the time of the transaction.

(4) Where a part of an asset is disposed of, the consideration received is apportioned between the part of the asset retained and the part of the asset disposed of in accordance with their respective market values at the time of acquisition of the asset.



54. Nonrecognition of gain or loss.

(1) No gain or loss is taken into account in determining chargeable income in relation to—

- (a) a transfer of an asset between spouses;
- (b) a transfer of an asset between former spouses as part of a divorce settlement or bona fide separation agreement;
- (c) an involuntary disposal of an asset to the extent to which the proceeds are reinvested in an asset of a like kind within one year of the disposal; or
- (d) the transmission of an asset to a trustee or beneficiary on the death of a taxpayer.

(2) Where no gain or loss is taken into account as a result of subsection (1)(a), (b) or (d), the transferred or transmitted asset is deemed to have been acquired by the transferee, or trustee or beneficiary as an asset of the same character for a consideration equal to the cost base of the asset to the transferor or deceased taxpayer at the time of the disposal.

(3) The cost base of a replacement asset described in subsection (1)(c) is the cost base of the replaced asset plus the amount by which any consideration given by the taxpayer for the replaced asset exceeds the amount of proceeds received on the involuntary disposal.

PART VII—MISCELLANEOUS RULES FOR DETERMINING CHARGEABLE INCOME.

55. Income of joint owners.

(1) Income or deductions relating to jointly owned property are apportioned among the joint owners in proportion to their respective interests in the property.



(2) Where the interest of the joint owners in jointly owned property cannot be ascertained, the interest of such joint owners in the property shall be deemed to be equal.

56. Valuation.

(1) For the purposes of this Act and subject to section 19(1)(b), the value of a benefit in kind is the fair market value of the benefit on the date the benefit is taken into account for tax purposes.

(2) The fair market value of a benefit is determined without regard to any restriction on transfer or to the fact that it is not otherwise convertible to cash.

57. Currency conversion.

(1) Chargeable income under this Act shall be calculated in Uganda shillings.

(2) Where the calculation of chargeable income involves an amount in a currency other than the Uganda shilling, the amount shall be converted to the Uganda shilling at the Bank of Uganda mid-exchange rate applying between the currency and the Uganda shilling on the date that the amount is derived, incurred or otherwise taken into account for tax purposes.

(3) With the prior written permission of the commissioner, a taxpayer may use the average rate of exchange during the year of income, or may keep books of account in a currency other than the Uganda shilling.

58. Indirect payments and benefits.



The income of a person includes—

- (a) a payment that directly benefits the person; and
- (b) a payment dealt with as the person directs, which would have been income of the person if the payment had been made directly to the person.

59. Finance leases.

(1) Where a lessor leases property to a lessee under a finance lease, for the purposes of this Act—

- (a) the lessee is treated as the owner of the property; and
- (b) the lessor is treated as having made a loan to the lessee, in respect of which payments of interest and principal are made to the lessor equal in amount to the rental payable by the lessee.

(2) The interest component of each payment under the loan is treated as interest expense incurred by the lessee and interest income derived by the lessor.

(3) A lease of property is a finance lease if—

- (a) the lease term exceeds 75 percent of the effective life of the leased property;
- (b) the lessee has an option to purchase the property for a fixed or determinable price at the expiration of the lease; or
- (c) the estimated residual value of the property to the lessor at the expiration of the lease term is less than 20 percent of its fair market value at the commencement of the lease.

(4) For the purposes of subsection (3), the lease term includes any additional period of the lease under an option to renew.

60. Exclusion of doctrine of mutuality.



(1) A company which carries on a members club, a trade association

or a mutual insurance company is treated for the purposes of this Act as carrying on a business subject to tax.

(2) The business income of a company to which subsection (1) applies includes entrance fees and subscriptions paid by members.

(3) Where a company referred to in subsection (1) is operated primarily to furnish goods or services to members, deductions attributable to the furnishing of goods or services to members are allowed only to the extent of the total income derived from the members, with any excess carried forward and allowed as a deduction in the following year of income.

(4) In this section, “members club” means a club or similar institution all the assets of which are owned by or are held in trust for the members of the club or institution.

61. Compensation receipts.

A compensation payment derived by a person takes the character of the item that is compensated.

62. Recouped expenditure.

(1) Where a previously deducted expenditure, loss or bad debt is recovered by the taxpayer, the amount recovered is deemed to be income derived by the taxpayer in the year of income in which it is recovered and takes the character of the income to which the deduction related.



(2) For the purposes of subsection (1), a deduction is considered recovered upon the occurrence of an event which is inconsistent with the basis for the deduction.

PART VIII—PERSONS ASSESSABLE.

Taxation of individuals.

63. Taxation of individuals.

The chargeable income of each taxpayer who is an individual is determined separately.

64. Income splitting.

(1) Where a taxpayer attempts to split income with another person, the commissioner may adjust the chargeable income of the taxpayer and the other person to prevent any reduction in tax payable as a result of the splitting of income.

(2) A taxpayer is treated as having attempted to split income where—

(a) the taxpayer transfers income, directly or indirectly, to an associate; or

(b) the taxpayer transfers property, including money, directly or indirectly, to an associate with the result that the associate receives or enjoys the income from that property,

and the reason or one of the reasons for the transfer is to lower the total tax payable upon the income of the transferor and the transferee.

(3) In determining whether the taxpayer is seeking to split income, the commissioner shall consider the value, if any, given by the associate for the transfer.

Taxation of partnerships and partners.



65. Principles of taxation for partnerships.

(1) The income and losses arising from activities conducted by a partnership is taxed in accordance with this Act.

(2) The presence or absence of a written partnership agreement is not decisive in determining whether a partnership relationship exists between persons.

(3) A partnership shall be liable to furnish a partnership return of income in accordance with section 92, but shall not be liable to pay tax on that income.

(4) Any election, notice or statement required to be filed in relation to a partnership's activities shall be filed by the partnership.

66. Calculation of partnership income or loss.

(1) The partnership income for a year of income is—

(a) the gross income of the partnership for that year calculated as if the partnership were a resident taxpayer; less

(b) the total amount of deductions allowed under this Act for expenditures or losses incurred by the partnership in deriving that income, other than the deduction allowed under section 38.

(2) A partnership loss occurs for a year of income where the amount in subsection (1)(b) exceeds the amount in subsection (1)(a) for that year, and the amount of the excess is the amount of the loss.



(3) Where the partnership is a nonresident partnership for a year of income, section 87 applies in calculating partnership income or partnership loss of the partnership for that year.

67. Taxation of partners.

(1) The gross income of a resident partner for a year of income includes the partner's share of partnership income for that year.

(2) The gross income of a nonresident partner for a year of income includes the partner's share of partnership income attributable to sources in Uganda.

(3) A resident partner is allowed a deduction for a year of income for the partner's share of a partnership loss for that year.

(4) A nonresident partner is allowed a deduction for a year of income for the partner's share of a partnership loss, but only to the extent that the activity giving rise to the loss would have given rise to partnership income attributable to sources in Uganda if a loss had not been incurred.

(5) Income derived, or expenditure or losses incurred, by a partnership retain their character as to geographic source and type of income, expenditure or loss in the hands of the partners, and are deemed to have been passed through the partnership on a pro rata basis unless the commissioner permits otherwise.

(6) Subject to subsection (7), a partner's share of partnership income or loss is equal to the partner's percentage interest in the income of the partnership as set out in the partnership agreement.



(7) Where the allocation of income in the partnership agreement does not reflect the contribution of the partners to the partnership's operations, a partner's share of partnership income or loss shall be equal to the partner's percentage interest in the capital of the partnership.

68. Formation, reconstitution or dissolution of a partnership.

(1) A contribution to a partnership by a partner of an asset owned by the partner is treated as a disposal of the asset by the partner to the partnership for a consideration equal to—

(a) the cost base of the asset to the partner at the date on which the contribution was made where all the following conditions are satisfied—

- (i) the asset was a business asset of the partner immediately before its contribution to the partnership;
 - (ii) the partner and partnership are residents at the time of the contribution;
 - (iii) the partner's interest in the capital of the partnership after the contribution is 25 percent or more; and
 - (iv) an election for this paragraph to apply has been made by the partners jointly;
- or

(b) in any other case, the market value of the asset at the date the contribution was made.

(2) Where subsection (1)(a) applies, the asset retains the same character in the hands of the partnership as it did in the hands of the partner.

(3) Where there is a change in the constitution of a partnership or a partnership is dissolved, the former partnership is treated as having disposed of all the assets of the partnership to the reconstituted partnership or to the partners in the case of dissolution for a consideration equal to—



(a) the cost base of the asset to the former partnership at the date of the change in constitution where all the following conditions are satisfied—

- (i) the former partnership and the reconstituted partnership are resident partnerships at the time of the change;
- (ii) 25 percent or more of the interests in the capital of the reconstituted partnership are held for twelve months after the change by persons who were partners in the former partnership immediately before the change; and
- (iii) an election for this paragraph to apply has been made by the partners of the reconstituted partnership jointly; or

(b) in any other case, the market value of the asset at the date of the change in constitution or dissolution, as the case may be.

(4) Where subsection (3)(a) applies, the asset retains the same character in the hands of the reconstituted partnership as it did in the hands of the former partnership.

(5) An election under this section shall be made in the partnership return of income for the year of income in which the contribution was made or the constitution of the partnership changed.

69. Cost base of partner's interest.

(1) A partner's interest in a partnership is treated as a business asset of the partner for all the purposes of this Act.

(2) Subject to subsections (3) and (4), the cost base of a partner's interest in a partnership is the amount the partner has paid for the interest plus—

- (a) the cost base of any asset contributed to the partnership by the partner where section 68(1)(a) applies; and
- (b) the market value of any asset contributed to the partnership by the partnership where section 68(1)(b) applies.



(3) The cost base of a partner's interest in a partnership determined under subsection (2) is increased by the sum of the partner's share for the year of income and prior years of income of—

(a) partnership income; and (b) income of the partnership exempt from tax under this Act.

(4) The cost base of a partner's interest in a partnership determined under subsection (2) is reduced, but not below zero, by distributions by the partnership and by the sum of the partner's share for the year of income and prior years of income of partnership losses and expenditures of the partnership not deductible in computing its chargeable income and not properly chargeable to capital account.

Taxation of trusts and beneficiaries.

70. Interpretation of provisions relating to taxation of trusts and beneficiaries.

In this section and sections 71, 72 and 73—

(a) "chargeable trust income", in relation to a year of income, means—

(i) the gross income of the trust (other than an amount to which section 72(1) or 73(1) applies) for that year calculated as if the trust is a resident taxpayer; less

(ii) the total amount of deductions allowed under this Act for expenditures or losses incurred by the trust in deriving that income;

(b) "nonresident trust", in relation to a year of income, means a trust that is not a resident trust for that year;

(c) "qualified beneficiary" means a person referred to in paragraph

(i) or (ii) of the definition of "qualified beneficiary trust";

(d) "qualified beneficiary trust" means—



(i) a trust in relation to which a person, other than a settlor, has a power solely exercisable by that person to vest the corpus or income of the trust in that person; or

(ii) a trust whose sole beneficiary is an individual or an individual's estate or appointees,

but does not include a trust whose beneficiary is an incapacitated person;

(e) "settlor" means a person who has transferred property to, or conferred a benefit on, a trust for no consideration or for a consideration which is less than the market value of the property transferred or benefit conferred; and

(f) "settlor trust" means a trust in relation to a whole or part of which the settlor has—

(i) the power to revoke or alter the trust so as to acquire a beneficial entitlement in the corpus or income of the trust; or (ii) a reversionary interest in the corpus or income of the trust.

71. Principles of taxation for trusts.

(1) Subject to subsection (5), the income of a trust is taxed either to the trustee or to the beneficiaries of the trust, as provided in this Act.

(2) Separate calculations of chargeable trust income shall be made for separate trusts regardless of whether they have the same trustee.

(3) Income derived or expenditure or losses incurred by a trust retain their character as to geographic source and type of income, expenditure or loss in the hands of the beneficiary.

(4) A trust is required to furnish a trust return of income in accordance with section 92.

(5) A settlor trust or a qualified beneficiary trust—



- (a) is not treated as an entity separate from the settlor or qualified beneficiary, respectively; and
 - (b) the income of such a trust is taxed to the settlor or qualified beneficiary, and the property owned by the trust is deemed to be owned by the settlor or qualified beneficiary, as the case may be.
- (6) The trustee of an incapacitated person’s trust is liable for tax on the chargeable trust income of the trust.
- (7) Trustees are jointly and severally liable for a tax liability arising in respect of chargeable trust income that is not satisfied out of the assets of the trust.
- (8) Where a trustee has paid tax on the chargeable trust income of the trust under section 72 or 73, that income shall not be taxed again in the hands of the beneficiary.

72. Taxation of trustees and beneficiaries.

- (1) Any amount derived by a trustee for the immediate or future benefit of any ascertained beneficiary, other than an incapacitated person, with a vested right to such amount is treated as having been derived by the beneficiary for the purposes of this Act.
- (2) Where a beneficiary has acquired a vested right to any amount referred to in subsection (1) as a result of the exercise by the trustee of a discretion vested in the trustee under a deed of trust, an arrangement or a will of a deceased person, such amount is deemed to have been derived by the trustee for the immediate benefit of the beneficiary.



(3) For subsection (2) to apply to a beneficiary for a year of income, the trustee must have exercised the discretion by the end of the second month after the end of the year of income.

(4) Where subsection (1) or (2) applies, the beneficiary is treated as having derived the amount at the time the amount was derived by the trustee.

(5) Where any amount to which subsection (1) applies is included in the gross income of the beneficiary for a year of income, the beneficiary shall be allowed a deduction in accordance with this Act for any expenditure or losses incurred in that year by the trustee in deriving that income.

(6) A trustee of a trust that is a resident trust for a year of income is liable for tax on the chargeable trust income of the trust for that year.

(7) A trustee of a trust that is a nonresident trust for a year of income is liable for tax on so much of the chargeable trust income of the trust for that year as is attributable to sources in Uganda.

(8) This section is subject to section 73.

73. Taxation of estates of deceased persons.

(1) Any amount derived by a trustee as executor of the estate of a deceased person shall, to the extent that the commissioner is satisfied that such amount has been derived for the immediate or future benefit of any ascertained heir or legatee of the deceased, be treated as having been derived by such heir or legatee for the purposes of this Act.

(2) Where any amount to which subsection (1) applies is included in the gross income of the heir or legatee for a year of income, the heir or legatee shall be allowed a



deduction in accordance with this Act for any expenditure or losses incurred in that year by the trustee in deriving that income.

(3) The trustee of an estate of a deceased person that is a resident trust for a year of income is liable for tax on the chargeable trust income of the estate for that year.

(4) The trustee of an estate of a deceased person that is a nonresident trust for a year of income is liable for tax on so much of the chargeable trust income of that year attributable to sources in Uganda.

(5) The trustee of an estate of a deceased person is responsible for the tax liability of the deceased taxpayer arising for any year of income prior to the year of income in which the taxpayer died.

Taxation of companies and shareholders.

74. Principles of taxation for companies.

(1) A company is liable to tax separately from its shareholders.

(2) Subject to subsection (3), a dividend paid to a resident company, other than an exempt organisation, by another resident company is exempt from tax where the company receiving the dividend controls, directly or indirectly, 25 percent or more of the voting power in the company paying the dividend.

(3) Subsection (2) does not apply to—



(a) a dividend paid to a financial institution by virtue of its ownership of redeemable shares in the company paying the dividend; or (b) a dividend to which section 76 applies.

75. Change in control of companies.

Where, during a year of income, there has been a change of 50 percent or more in the underlying ownership of a company, as compared with its ownership one year previously, the company is not permitted to deduct an assessed loss in the year of income or in subsequent years, unless the company, for a period of two years after the change or until the assessed loss has been exhausted if that occurs within two years after the change—

(a) continues to carry on the same business after the change as it carried on before the change; and

(b) does not engage in any new business or investment after the change where the primary purpose of the company or the beneficial owners of the company is to utilise the assessed loss so as to reduce the tax payable on the income arising from the new business or investment.

76. Dividend stripping.

(1) Where a company takes part in a transaction in the nature of dividend stripping and receives a dividend from a resident company in the transaction, the company receiving the dividend shall include the dividend in its gross income to the extent to which the commissioner considers necessary to offset any decrease in the value of shares in respect of which the dividend is paid or in the value of any other property caused by the payment of the dividend.

(2) In any such transaction, the commissioner may also reduce the amount of any deduction arising to the extent to which it represents the decrease in value of the shares or other property.

(3) In this section, “dividend stripping” includes an arrangement under which—



- (a) a company, referred to as the “target company”, has accumulated or current-year profits, or both, represented by cash or other readily realisable assets;
 - (b) another company, referred to as the “acquiring company”, acquires the shares in the target company for an amount that reflects the profits of the target company;
 - (c) the disposal of the shares in the target company gives rise to a tax-free capital gain to the shareholders in the target company;
 - (d) after the acquiring company has acquired the shares in the target company, the target company pays a dividend to the acquiring company, which in the absence of section 74(3)(b) would be exempt from tax in the hands of the target company; and
 - (e) after the dividend is declared, the acquiring company sells the shares for a loss.
77. Rollover relief.

(1) Where a resident person, in this subsection referred to as the “transferor”, transfers a business asset, with or without any liability not in excess of the cost base of the asset, to a resident company other than an exempt organisation, in this subsection referred to as the “transferee”, in exchange for a share in the transferee and the transferor has a 50 percent or greater interest in the voting power of the transferee immediately after the transfer—

- (a) the transfer is not treated as a disposal of the asset by the transferor but is treated as the acquisition by the transferee of a business asset;
- (b) the transferee’s cost base for the asset is equal to the transferor’s cost base for the asset at the time of transfer; and
- (c) the cost base of a share received by the transferor in exchange for the asset is equal to the cost base of the asset transferred, less any liability assumed by the transferor in respect of the asset.

(2) Where, as part of the liquidation of a resident company, in this subsection referred to as the “liquidated company”, a business asset is transferred to a shareholder being a resident company other than an exempt organisation, in this subsection referred to as the “transferee company”, and, immediately prior to the transfer, the transferee



company held a 50 percent or greater interest in the voting power of the liquidated company—

- (a) the transfer is not treated as a disposal of the asset by the liquidated company, but is treated as the acquisition of a business asset by the transferee company;
- (b) the transferee’s cost base for the asset is equal to the liquidated company’s cost base for the asset at the time of transfer;
- (c) the transfer of the asset is not a dividend; and
- (d) no gain or loss is taken into account on the cancellation of the transferee’s shares in the liquidated company.

(3) Where a resident company or a group of resident companies is reorganised without any significant change in the underlying ownership or control of the company or group, the commissioner may—

- (a) permit any resident company involved in the reorganisation to treat the reorganisation as not giving rise to the disposal of any business asset or the realisation of any business debt, as the case may be; and
- (b) determine the cost base of any business asset held, or business debt undertaken, by the resident company after the reorganisation in order to reflect the fact that no disposal or realisation is treated as having occurred.

PART IX—INTERNATIONAL TAXATION.

78. Interpretation.

In this Part—

- (a) “branch” means a place where a person carries on business, and includes—
 - (i) a place where a person is carrying on business through an agent, other than a general agent of independent status acting in the ordinary course of business as such;



(ii) a place where a person has, is using or is installing substantial equipment or substantial machinery; or

(iii) a place where a person is engaged in a construction, assembly or installation project for ninety days or more, including a place where a person is conducting supervisory activities in relation to such a project; and

(b) “management charge” means any payment made to any person, other than a payment of employment income, as consideration for any managerial services, however calculated.

79. Source of income.

Income is derived from sources in Uganda to the extent to which it is—

(a) derived from the sale of goods—

(i) in the case of goods manufactured, grown or mined by the seller, the goods were manufactured, grown or mined in

Uganda; or

(ii) in the case of goods purchased by the seller, the agreement for sale was made in Uganda, wherever such goods are to be delivered;

(b) derived by a resident person in carrying on a business as owner or charterer of a vehicle, ship or aircraft, wherever such vehicle, ship or aircraft may be operated;

(c) derived from any employment exercised or services rendered in Uganda;

(d) derived in respect of any employment exercised or services rendered under a contract with the Government of Uganda, wherever the employment is exercised or services are rendered;

(e) derived by a resident individual from any employment exercised or services rendered as a driver of a vehicle, or an officer or member of a crew of any vehicle, ship or aircraft, wherever the vehicle, ship or aircraft may be operated;

(f) derived from the rental of immovable property located in Uganda;



(g) derived from the disposal of an interest in immovable property located in Uganda or from the disposal of a share in a company the property of which consists directly or indirectly principally of

an interest or interests in such immovable property, where the interest or share is a business asset;

(h) derived from the disposal of movable property, other than goods, under an agreement made in Uganda for the sale of the property, wherever the property is to be delivered;

(i) an amount—

(i) included in the business income of a taxpayer under section 27(5) in respect of the disposal of a depreciable asset used in Uganda; or

(ii) treated as income under section 62, where the deduction was allowed for an expenditure, loss or bad debt incurred in the production of income sourced in Uganda;

(j) a royalty—

(i) arising from the use of, or right to use, in Uganda—

(A) any patent, design, trademark or copyright, or any model, pattern, plan, formula or process, or any

property or right of a similar nature;

(B) any motion picture film;

(C) any video or audio material, whether stored on film, tape, disc or other medium, for use in connection with television or radio broadcasting;

(D) any sound recording or advertising matter connected with material referred to in subparagraph (i)(B) and

(C) of this paragraph; or

(E) any tangible movable property;

(ii) arising from the importing of, or undertaking to import, any scientific, technical, industrial or commercial knowledge or information for use in Uganda;

(iii) arising from the use of, or the right to use, or the receipt of, or right to receive, in Uganda any video or audio material transmitted by satellite, cable, optic fibre or similar technology for use in connection with television or radio broadcasting;



- (iv) arising from the rendering of, or the undertaking to render assistance ancillary to a matter referred to in subparagraph (i), (ii) or (iii) of this paragraph;
- (v) arising from the total or partial forbearance in Uganda with respect to a matter referred to in subparagraph (i), (ii), (iii) or (iv) of this paragraph; or
- (vi) arising from the disposal of industrial or intellectual property used in Uganda;
- (k) interest where—
 - (i) the debt obligation giving rise to the interest is secured by immovable property located, or movable property used, in Uganda;
 - (ii) the payer is a resident person; or
 - (iii) the borrowing relates to a business carried on in Uganda;
- (l) a dividend or director's fee paid by a resident company;
- (m) a pension or annuity where—
 - (i) the pension or annuity is paid by the Government of Uganda or by a resident person; or
 - (ii) the pension or annuity is paid in respect of an employment exercised or services rendered in Uganda;
- (n) a natural resource payment in respect of a natural resource taken from Uganda;
- (o) a foreign currency debt gain derived in relation to a business debt which has arisen in the course of carrying on a business in Uganda;
- (p) a contribution to a retirement fund made by a tax-exempt employer in respect of an employee whose employment is exercised in Uganda;
- (q) a management charge paid by a resident person;
- (r) taxable in Uganda under an international agreement; or
- (s) attributable to any other activity which occurs in Uganda, including an activity conducted through a branch in Uganda.



80. Foreign employment income.

(1) Foreign-source employment income derived by a resident individual is exempt from tax if the individual has paid foreign income tax in respect of the income.

(2) A resident individual is treated as having paid foreign income tax on foreign-source employment income if tax has been withheld and paid to the revenue authority of the foreign country by the employer of the individual.

81. Foreign tax credit.

(1) A resident taxpayer is entitled to a credit, in this section referred to as a “foreign tax credit”, for any foreign income tax paid by the taxpayer in respect of foreign-source income included in the gross income of the taxpayer.

(2) The amount of the foreign tax credit of a taxpayer for a year of income shall not exceed the Ugandan income tax payable on the taxpayer’s foreign-source income for that year, calculated by applying the average rate of Ugandan income tax of the taxpayer for that year to the taxpayer’s net foreign-source income for that year.

(3) The calculation of the foreign tax credit of a taxpayer for a year of income is made separately for foreign-source business income and other income derived from foreign sources by the taxpayer during the year.

(4) Foreign income tax paid by—

(a) a partnership is treated as paid by the partners;

(b) a trustee is treated as paid by the beneficiary where the income on which foreign income tax has been paid is included in the gross income of the beneficiary under this Act; or

(c) a beneficiary is treated as paid by the trustee where the income on which foreign income tax has been paid is taxed to the trustee under this Act.



(5) For the purposes of this section—

(a) “average rate of Ugandan income tax”, in relation to a taxpayer for a year of income, means the percentage that the Ugandan income tax, before the foreign tax credit, is of the chargeable income of the taxpayer for the year and, in the case of a taxpayer with both foreign -source business income and other income derived from foreign sources, the average rate of tax is to be calculated separately for both classes of income;

(b) “foreign income tax” includes a foreign withholding tax, but does not include a foreign tax designed to raise the level of the tax on the income so that the taxation by the country of residence is reduced; and

(c) “net foreign-source income” means the total foreign-source income included in the gross income of the taxpayer, less any deductions allowed to the taxpayer under this Act that—

(i) relate exclusively to the derivation of the foreign-source income; and

(ii) in the opinion of the commissioner, may appropriately be related to the foreign-source income.

82. Taxation of branch profits.

(1) A tax shall be charged for each year of income and is imposed on every nonresident company carrying on business in Uganda through a branch which has repatriated income for the year of income.

(2) The tax payable by a nonresident company under this section is calculated by applying the rate prescribed in Part IV of the Third Schedule to this Act to the repatriated income of the branch of the nonresident company for the year of income.

(3) The repatriated income of a branch for a year of income is calculated according to the following formula—

$$A + (B - C) - D$$



where—

- A is the total cost base of assets, net of liabilities, of the branch at the commencement of the year of income;
- B is the net profit of the branch for the year of income calculated in accordance with generally accepted accounting principles;
- C is the Ugandan tax payable on the chargeable income of the branch for the year of income; and
- D is the total cost base of assets, net of liabilities, of the branch at the end of the year of income.

(4) In calculating the repatriated income of a branch, the total cost base of assets at the end of a year of income is the total cost base of assets at the commencement of the next year of income.

(5) The tax imposed under this section is in addition to any tax imposed by this Act on the chargeable income of the branch.

83. Tax on international payments.

(1) Subject to this Act, a tax is imposed on every nonresident person who derives any dividend, interest, royalty, natural resource payment or management charge from sources in Uganda.

(2) The tax payable by a nonresident person under this section is calculated by applying the rate prescribed in Part IV of the Third Schedule to this Act to the gross amount of the dividend, interest, royalty, natural resource payment or management charge derived by a nonresident person.

(3) Notwithstanding section 79(l) a dividend derived by a nonresident person is only treated as income derived from sources in Uganda for the purposes of this section to the extent to which the dividend is paid out of profits sourced in Uganda.



(4) For the purposes of subsection (3), where a resident company has profits sourced both within and outside Uganda, the company is treated as having paid a dividend out of the profits sourced in Uganda first.

(5) Interest paid by a resident company in respect of debentures is exempt from tax under this Act where the following conditions are satisfied—

(a) the debentures were issued by the company outside Uganda for the purpose of raising a loan outside Uganda;

(b) the debentures were issued for the purpose of raising funds for use by the company in a business carried on in Uganda; and (c) the interest is paid outside Uganda.

84. Tax on payments to nonresident public entertainers or sports persons.

(1) Subject to this Act, a tax is imposed on every nonresident entertainer, sports person or theatrical, musical or other group of nonresident entertainers or sports persons who derive income from any performance in

Uganda.

(2) The tax payable by a nonresident person under this section is calculated by applying the rate prescribed in Part IV of the Third Schedule to this Act to the gross amount of—

(a) remuneration derived by a nonresident public entertainer or sports person; or

(b) receipts derived by any theatrical, musical or other group of nonresident public entertainers or sports persons.

(3) Tax is imposed under this section on any group regardless of whether or not the performance is conducted for the joint account of all or some members of the group.



(4) Every member of a group shall be jointly and severally liable for payment of the tax imposed under this section and, subject to section 87(1)(c), shall remit the tax due before leaving Uganda.

85. Tax on payments to nonresident contractors or professionals.

(1) Subject to this Act, a tax is imposed on every nonresident person deriving income under a Ugandan-source services contract.

(2) The tax payable by a nonresident person under this section is calculated by applying the rate prescribed in Part IV of the Third Schedule to this Act to the gross amount of any payment to a nonresident under a Ugandan-source services contract.

(3) Subsection (1) does not apply to a royalty or management charge charged to tax under section 83.

(4) In this section, “Ugandan-source services contract” means a contract, other than an employment contract, under which—

(a) the principal purpose of the contract is the performance of services which gives rise to income sourced in Uganda; and (b) any goods supplied are only incidental to that purpose.

86. Taxation of nonresidents providing shipping, air transport or telecommunications services in Uganda.

(1) Subject to this Act, a tax is imposed on every nonresident person carrying on the business of ship operator, charterer or air transport operator who derives income from the carriage of passengers who embark, or cargo or mail which is embarked in Uganda.



(2) The tax payable by a nonresident person under subsection (1) is calculated by applying the rate of tax prescribed in Part VII of the Third Schedule to this Act to the gross amount derived by the person from the carriage.

(3) Subsection (1) does not apply to any income derived from the carriage of passengers who embark, or cargo or mail which is embarked, solely as a result of transshipment.

(4) Where a nonresident person carries on the business of transmitting messages by cable, radio, optical fibre or satellite communication, the chargeable income of the person derived from the transmission of messages by apparatus established in Uganda, whether or not such messages originated in Uganda, shall be 5 percent of the gross amount derived by the person in respect of the transmission.

87. General provisions relating to taxes imposed under sections 83, 84, 85 and 86.

(1) The tax imposed on a nonresident person under sections 83, 84, 85 and 86(1) is a final tax on the income on which the tax has been imposed and—

(a) such income is not included in the gross income of the nonresident person who has derived the income;

(b) no deduction is allowed for any expenditure or losses incurred by the nonresident person in deriving the income; and

(c) the liability of the nonresident person is satisfied if the tax payable has been withheld by a withholding agent under section

120 and paid to the commissioner under section 123.



(2) In this section, “withholding agent” has the meaning in section 115.

88. International agreements.

(1) An international agreement entered into between the Government of Uganda and the government of a foreign country or foreign countries shall have effect as if the agreement was contained in this Act.

(2) To the extent that the terms of an international agreement to which Uganda is a party are inconsistent with the provisions of this Act, apart from subsection (5) of this section and Part X which deals with tax avoidance, the terms of the international agreement prevail over the provisions of this Act.

(3) Where an international agreement provides for reciprocal assistance in the collection of taxes and the commissioner has received a request from the competent authority of another country pursuant to that agreement for the collection from any person in Uganda of an amount due by that person under the income tax laws of that other country, the commissioner may, by notice in writing, require the person to pay the amount to the commissioner by the datespecified in the notice for transmission to the competent authority of that other country.

(4) If a person fails to comply with a notice under subsection (3), the amount in question may be recovered for transmission to the competent authority of that other country as if it were tax payable by the person under this Act.

(5) Where an international agreement provides that income derived from sources in Uganda is exempt from Ugandan tax or is subject to a reduction in the rate of Ugandan tax, the benefit of that exemption or reduction is not available to any person who, for the purposes of the agreement, is a resident of the other contracting State where 50 percent or more of the underlying ownership of that person is held by an individual or individuals who are not residents of that other contracting State for the purposes of the agreement.



(6) In this section, “international agreement” means—

(a) an agreement with a foreign government providing for the relief of international double taxation and the prevention of fiscal evasion; or

(b) an agreement with a foreign government providing for reciprocal administrative assistance in the enforcement of tax liabilities.

89. Thin capitalisation.

(1) Where a foreign-controlled resident company which is not a financial institution has a foreign debt to foreign equity ratio in excess of 2 to 1 at any time during a year of income, a deduction is disallowed for the interest paid by the company during that year on that part of the debt which exceeds the 2 to 1 ratio.

(2) In this section—

(a) “foreign-controlled resident company” means a resident company in which 50 percent or more of the underlying ownership or control of the company is held by a nonresident person, in this section referred to as the “foreign controller”, either alone or together with an associate or associates;

(b) “foreign debt”, in relation to a foreign-controlled resident company, means the greatest amount, at any time during a year of income, of the sum of—

(i) the balance outstanding at that time on any debt obligation

owed by the foreign-controlled resident company to a foreign controller or nonresident associate of the foreign controller on which interest is payable which interest is deductible to the foreign-controlled resident company and is not included in the gross income of the foreign controller or associate; and

(ii) the balance outstanding at that time on any debt obligation owed by the foreign-controlled resident company to a person other than the foreign controller or an associate of the foreign controller where that person has a balance outstanding of a similar amount on a debt obligation owed by the person to the foreign controller or a nonresident associate of the foreign controller; and



(c) “foreign equity”, in relation to a foreign-controlled resident company and for a year of income, means the sum of the following amounts—

(i) the paid-up value of all shares in the company owned by the foreign controller or a nonresident associate of the foreign controller at the beginning of the year of income;

(ii) so much of the amount standing to the credit of the share premium account of the company at the beginning of the year of income as the foreign controller or a nonresident associate would be entitled if the company were wound up at that time; and

(iii) so much of the accumulated profits and asset revaluation reserves of the company at the beginning of the year of income as the foreign controller or a nonresident associate of the foreign controller would be entitled if the company were wound up at that time;

reduced by the sum of—

(iv) the balance outstanding at the beginning of the year of income on any debt obligation owed to the foreign-controlled resident company by the foreign controller or a nonresident associate of the foreign controller; and

(v) where the foreign-controlled resident company has accumulated losses at the beginning of the year of income, the amount by which the return of capital to the foreign controller or nonresident associate of the foreign controller would be reduced by virtue of the losses if the company were wound up at that time.

PART X—ANTI-AVOIDANCE.

90. Transactions between associates.

(1) In any transaction between taxpayers who are associates or who are in an employment relationship, the commissioner may distribute, apportion or allocate income, deductions or credits between the taxpayers as is necessary to reflect the chargeable income the taxpayers would have realised in an arm’s-length transaction.

(2) The commissioner may adjust the income arising in respect of any transfer or licence of intangible property between associates so that it is commensurate with the income attributable to the property.



(3) In making any adjustment under subsection (1) or (2), the commissioner may determine the source of income and the nature of any payment or loss as revenue, capital or otherwise.

91. Recharacterisation of income and deductions.

(1) For the purposes of determining liability to tax under this Act, the commissioner may—

- (a) recharacterise a transaction or an element of a transaction that was entered into as part of a tax avoidance scheme;
- (b) disregard a transaction that does not have substantial economic effect; or
- (c) recharacterise a transaction the form of which does not reflect the substance.

(2) A “tax avoidance scheme” in subsection (1) includes any transaction one of the main purposes of which is the avoidance or reduction of liability to tax.

PART XI—PROCEDURE RELATING TO INCOME TAX.

Returns.

92. Furnishing of return of income.

(1) Subject to section 93, every taxpayer shall furnish a return of income for each year of income of the taxpayer not later than four months after the end of that year.

(2) A return of income shall be in the form prescribed by the commissioner, shall state the information required and shall be furnished in the manner prescribed by the commissioner.



(3) Subject to subsection (4), a return of income shall be signed by the taxpayer and include a declaration that the return is complete and accurate.

(4) Where a taxpayer is legally incapacitated, the taxpayer's return of income shall be signed, and contain a declaration as to completeness and accuracy, by the taxpayer's legal representative.

(5) A taxpayer carrying on business shall furnish with the taxpayer's return of income a statement of income and expenditure and a statement of assets and liabilities.

(6) A person, other than an employee of the taxpayer, who, for remuneration, prepares or assists in the preparation of a return of income, or a balance sheet, statement of income and expenditure or any other document submitted in support of a return, shall sign the return certifying that the person has examined the books of account and other relevant documentation of the taxpayer and that, to the best of the person's knowledge, the return or document correctly reflects the data and transactions to which it relates.

(7) Where a person refuses to sign a certificate referred to in subsection (6), the person shall furnish the taxpayer with a statement in writing of the reasons for such refusal, and the taxpayer shall include that statement with the return of income to which the refusal relates.

(8) Where, during a year of income— (a) a taxpayer has died;

(b) a taxpayer has become bankrupt, wound-up or gone into liquidation;

(c) a taxpayer is about to leave Uganda indefinitely;

(d) a taxpayer is otherwise about to cease activity in Uganda; or

(e) the commissioner otherwise considers it appropriate, the commissioner may, by notice in writing, require the taxpayer or the taxpayer's trustee, as the case may be,



to furnish, by the date specified in the notice, a return of income for the taxpayer for a period of less than 12 months.

(9) Where any person fails to furnish a return of income as required by this section, the commissioner may, by notice in writing, appoint a person to prepare and furnish the return, and the return so furnished is deemed, for all the purposes of this Act, to be the return of the person originally required to furnish the return.

(10) Where the commissioner is not satisfied with a return of income, the commissioner may, by notice in writing, require the person who has furnished the return to provide a fuller or further return of income.

93. Cases where returns of income not required.

Unless requested by the commissioner by notice in writing, no return of income shall be furnished under this Act for a year of income—

(a) by a nonresident person where section 87 applies to all the income derived from sources in Uganda by the person during the year of income; or

(b) by a resident individual—

(i) to whom section 4(4) or (5) applies; or

(ii) whose total chargeable income for the year of income is subject to the zero rate of tax under Part I of the Third Schedule to this Act.

94. Extension of time to furnish a return of income.

(1) A taxpayer required to furnish a return of income under section 92 may apply in writing to the commissioner for an extension of time to furnish the return.



(2) An application under subsection (1) shall be made by the due date for furnishing of the return to which it relates.

(3) Where an application has been made under subsection (1) and the commissioner is satisfied that the taxpayer is unable to furnish the return by the due date because of absence from Uganda, sickness or other reasonable cause, the commissioner may, by notice in writing, grant the taxpayer an extension of time for furnishing the return of a period not exceeding 90 days.

(4) A person dissatisfied with a decision under subsection (3) may only challenge the decision under the objection and appeal procedure in this Act.

(5) The granting of an extension of time under this section does not alter the due date for payment of tax under section 103.

Assessments.

95. Assessments.

(1) Subject to section 96, the commissioner shall, based on the taxpayer's return of income and on any other information available, make an assessment of the chargeable income of a taxpayer and the tax payable thereon for a year of income within seven years from the date the return was furnished.

(2) Where—

(a) a taxpayer defaults in furnishing a return of income for a year of income; or

(b) the commissioner is not satisfied with a return of income for a year of income furnished by a taxpayer, the commissioner may, according to the commissioner's best judgment, make an assessment of the chargeable income of the taxpayer and the tax payable thereon for that year.



(3) Where the commissioner has made an assessment under subsection (2)(b), the commissioner shall include with the assessment a statement of reasons as to why the commissioner was not satisfied with the return.

(4) In the circumstances specified in section 92(8), in lieu of requiring a return of income, the commissioner may, according to the commissioner's best judgment, make an assessment of the chargeable income of the taxpayer and the tax payable thereon for the year of income.

(5) The commissioner shall not assess any person for a year of income who, as a result of the operation of section 93, is not required to furnish a return of income for that year.

(6) Where an assessment has been made under this section, the commissioner shall serve a notice of the assessment on the taxpayer stating— (a) the amount of chargeable income of the taxpayer;

(b) the amount of tax payable;

(c) the amount of tax paid, if any; and (d) the time, place and manner of objecting to the assessment.

96. Self-assessment.

(1) Where a taxpayer has furnished a return of income for a year of income, the commissioner is deemed to have made an assessment of the chargeable income of the taxpayer and the tax payable on that chargeable income for that year, being those respective amounts shown in the return.



(2) Where subsection (1) applies, the taxpayer's return of income is treated as a notice of an assessment served on the taxpayer by the commissioner on the due date for furnishing of the return or on the actual date the return was furnished, whichever is the later.

(3) Notwithstanding subsection (1), the commissioner may make an assessment under section 95 on a taxpayer in any case in which the commissioner considers necessary.

(4) Where the commissioner raises an assessment in accordance with subsection (3), the commissioner shall include with the assessment a statement of reasons as to why the commissioner considered it necessary to make such an assessment.

(5) This section only applies to those taxpayers specified in a notice published by the commissioner in the Gazette as taxpayers to which this section is to apply for a year of income.

97. Additional assessments.

(1) Subject to subsections (2) and (3), the commissioner may, within three years after service of a notice of assessment, make an additional assessment amending an assessment previously made.

(2) Where the need to make an additional assessment arises by reason of fraud or any gross or wilful neglect by, or on behalf of, the taxpayer or the discovery of new information in relation to the tax payable for any year of income, the commissioner may make an additional assessment for that year at any time.

(3) The commissioner shall not make an additional assessment amending an assessment in respect of an amount if any previous assessment for the year of income



in question has, in respect of that amount, been amended or reduced pursuant to an order of the High Court or the Court of Appeal unless such order was obtained by fraud or any gross or wilful neglect.

(4) An additional assessment shall be treated in all respects as an assessment under this Act.

98. General provisions in relation to assessments.

(1) As soon as is reasonably practicable after the expiry of the time allowed under the Act for the furnishing of returns of income for a year of income, the commissioner shall cause to be prepared a list of taxpayers assessed to tax in respect of that year, in this section referred to as an

“assessment list”, and the list shall contain in relation to each taxpayer assessed—

- (a) the taxpayer’s name and address;
- (b) the amount of chargeable income upon which the assessment has been made;
- and (c) the amount of tax payable.

(2) In any proceedings, whether civil or criminal, under this Act, a document purporting to be an extract from an assessment list and certified by the commissioner to be a true copy of the relevant entry in the list shall be prima facie evidence of the matters stated therein.

(3) No notice of assessment, warrant or other document purporting to be made, issued or executed under this Act—

- (a) shall be quashed or deemed to be void or voidable for want of form; or
- (b) shall be affected by reason of mistake, defect or omission therein, if it is, in substance and effect, in conformity with this Act and the person assessed or intended



to be assessed or affected by the document is designated in it according to common intent and understanding.

(4) Where the commissioner is satisfied that an order made or document issued by the commissioner contains a mistake which is apparent from the records and that such mistake does not involve a dispute as to the interpretation of the law or facts of the case, the commissioner may, for the purposes of rectifying the mistake, amend the order or document any time before the expiry of two years from the date of making or issuing the order or document.

Objections and appeals.

99. Objection to assessment.

(1) A taxpayer who is dissatisfied with an assessment may lodge an objection to the assessment with the commissioner within forty-five days after service of the notice of assessment.

(2) An objection to an assessment shall be in writing and state precisely the grounds upon which it is made.

(3) The commissioner may, upon application in writing by the taxpayer, extend the time for lodging an objection where the commissioner is satisfied that the delay in lodging the objection was due to the taxpayer's absence from Uganda, sickness or other reasonable cause.

(4) Where the commissioner refuses to grant an extension of time under subsection (3), the taxpayer may apply to the tribunal for a review of the decision within forty-five days after service of notice of the decision.



(5) After consideration of the objection, the commissioner may allow the objection in whole or in part and amend the assessment accordingly, or disallow the objection; and the commissioner's decision is referred to as an "objection decision".

(6) As soon as is practicable after making an objection decision, the commissioner shall serve the taxpayer with notice of the decision.

(7) Where an objection decision has not been made by the commissioner within ninety days after the taxpayer lodged the objection with the commissioner, the taxpayer may, by notice in writing to the commissioner, elect to treat the commissioner as having made a decision to allow the objection.

(8) Where a taxpayer makes an election under subsection (7), the taxpayer is treated as having been served with a notice of the objection decision on the date the taxpayer's election was lodged with the commissioner.

100. Appeal to the High Court or a tax tribunal.

(1) A taxpayer dissatisfied with an objection decision may, at the election of the taxpayer—

(a) appeal the decision to the High Court; or

(b) apply for review of the decision to a tax tribunal established by Parliament by law for the purpose of settling tax disputes in accordance with article 152(3) of the Constitution.

(2) An appeal under subsection (1) to the High Court shall be made by lodging a notice of appeal with the registrar of the High Court within forty-five days after service of notice of the objection decision.



(3) A person who has lodged a notice of appeal with the registrar of the High Court shall, within five working days of doing so, serve a copy of the notice of appeal on the commissioner.

(4) An appeal to the High Court under subsection (1) may be made on questions of law only, and the notice of appeal shall state the question or questions of law that will be raised on the appeal.

101. Appeal to the Court of Appeal.

A party to a proceeding before the High Court who is dissatisfied with the decision of the High Court may, with leave of the Court of Appeal, appeal the decision to the Court of Appeal.

102. Burden of proof.

In any objection to an assessment, any appeal of an objection decision to the High Court, any review of an objection decision by a tax tribunal or any appeal from the decision of the High Court or a tax tribunal in relation to an objection decision, the onus is on the taxpayer to prove, on the balance of probabilities, the extent to which the assessment made by the commissioner is excessive or erroneous.

Collection and recovery of tax.

103. Due date for payment of tax.

(1) Subject to this Act, tax charged in any assessment shall be payable—

(a) in the case of a taxpayer subject to section 96, on the due date for furnishing of the return of income to which the assessment relates; or



(b) in any other case, within forty-five days from the date of service of the notice of assessment.

(2) Subject to subsection (3), where a taxpayer has lodged a notice of objection to an assessment, the amount of tax payable by the taxpayer pending final resolution of the objection is 30 percent of the tax assessed or that part of the tax not in dispute, whichever is the greater.

(3) The commissioner may waive the amount or accept a lesser amount than is required to be paid under subsection (2) in a case where an objection has reasonably been made to an assessment.

(4) Upon written application by the taxpayer, the commissioner may, where good cause is shown, allow for the payment of tax in installments of equal or varying amounts as the commissioner may determine having regard to the circumstances of the case.

(5) Where tax is permitted to be paid by installments and there is default in payment of any installment, the whole balance of the tax outstanding shall become immediately payable.

(6) Permission under subsection (5) to pay tax due by installments does not preclude a liability for interest arising under section 136 on the unpaid balance of the tax due.

104. Tax as a debt due to the Government of Uganda.

(1) Tax, when it becomes due and payable, is a debt due to the Government of Uganda and is payable to the commissioner in the manner and at the place prescribed.



(2) Tax that has not been paid when it is due and payable may be

sued for and recovered in any court of competent jurisdiction by the commissioner acting in the commissioner's official name, subject to the general directions of the Attorney General.

(3) In any suit under this section, the production of a certificate signed by the commissioner stating the name and address of the person liable and the amount of tax due and payable by the person shall be sufficient evidence of the amount of tax due and payable by such person.

105. Collection of tax from persons leaving Uganda permanently.

(1) Where the commissioner has reasonable grounds to believe that a person may leave Uganda permanently without paying all tax due under this Act, the commissioner may issue a certificate containing particulars of the tax due to the commissioner of immigration and request the commissioner of immigration to prevent that person from leaving Uganda until that person—

(a) makes payment of tax in full; or (b) provides a financial bond guaranteeing payment of the tax due.

(2) A copy of a certificate issued under subsection (1) shall be served on the person named in the certificate if it is practicable to do so.

(3) Payment of the tax specified in the certificate to a customs or immigration officer or the production of a certificate signed by the commissioner stating that the tax has been paid or secured shall be sufficient authority for allowing the person to leave Uganda.

106. Recovery of tax from person owing money to the taxpayer.



(1) Where a taxpayer fails to pay income tax on the date on which it becomes due and payable, and the tax payable is not the subject of a dispute, the commissioner may, by notice in writing, require any person—

- (a) owing or who may owe money to the taxpayer;
- (b) holding or who may subsequently hold money for, or on account of, the taxpayer;
- (c) holding or who may subsequently hold money on account of some other person for payment to the taxpayer; or
- (d) having authority from some other person to pay money to the taxpayer,

to pay the money to the commissioner on the date set out in the notice, up to the amount of tax due.

(2) The date specified in the notice under subsection (1) must not be a date before the money becomes due to the taxpayer or is held on behalf of the taxpayer.

(3) At the same time that notice is served under subsection (1), the commissioner shall also serve a copy of the notice on the taxpayer.

(4) Where a person served with a notice under subsection (1) is unable to comply with the notice by reason of lack of monies owing to or held for the taxpayer, the person shall, as soon as is practicable and in any event before the payment date specified in the notice, notify the commissioner accordingly in writing setting out the reasons for the inability to comply.

(5) Where a notice is served on the commissioner under subsection (4), the commissioner may, by notice in writing—

- (a) accept the notification and cancel or amend the notice issued under subsection (1);
- or (b) reject the notification.



(6) A person dissatisfied with a decision under subsection (5) may only challenge the decision under the objection and appeal procedure in this Part.

(7) A person making a payment pursuant to a notice under subsection (1) is deemed to have been acting under the authority of the taxpayer and of all other persons concerned and is indemnified in respect of the payment against all proceedings, civil or criminal, and all processes, judicial or extrajudicial, notwithstanding any provisions to the contrary in any written law, contract or agreement.

(8) The provisions of this Act relating to the collection and recovery of tax shall apply to any amount due under this section as if it were tax due.

107. Collection of tax by distraint.

(1) The commissioner may recover any unpaid tax by distress proceedings against the movable property of a person liable to pay tax, in this section referred to as the “person liable”, by issuing an order in writing specifying the person against whose property the proceedings are authorised, the location of the property and the tax liability to which the proceedings relate, and may require a police officer to be present while distress is being executed.

(2) For the purposes of executing distress under subsection (1), the commissioner may, at any time, enter any house or premises described in the order authorising the distress proceedings.

(3) The property upon which distress is levied under this section, other than perishable goods, shall be kept for ten days either at the premises where the distress was levied or at any other place that the commissioner may consider appropriate, at the cost of the person liable.



(4) Where the person liable does not pay the tax due, together with the costs of the distress—

(a) in the case of perishable goods, within a period that the commissioner considers reasonable having regard to the condition of the goods; or

(b) in any other case, within ten days after the distress is levied, the property distrained may be sold by public auction or in such other manner as the commissioner may direct.

(5) The proceeds of a disposal under subsection (4) shall be applied by the auctioneer or seller towards the cost of taking, keeping and selling the property distrained upon, then towards the tax due and payable; and the remainder of the proceeds, if any, shall be given to the person liable.

(6) Nothing in this section shall preclude the commissioner from proceeding under section 104 with respect to the balance owed if the proceeds of the distress are not sufficient to meet the costs of the distress and the tax due.

(7) All costs incurred by the commissioner in respect of any distress may be recovered by the commissioner from the person liable, and the provisions of this Act relating to the collection and recovery of tax shall apply as if the costs were tax due under this Act.

(8) The Minister may, with the approval of Parliament by statutory instrument, within three months after the coming into force of this Act, make rules regarding the disposal of properties distrained under this section.

108. Recovery from agent of nonresident.



(1) The commissioner may, by notice in writing, require any person who is in possession of an asset, including money, belonging to a nonresident taxpayer to pay tax on behalf of the nonresident, up to the market value of the asset but not exceeding the amount of tax due.

(2) The captain of any aircraft or ship owned or chartered by a nonresident person is deemed to be in possession of the aircraft or ship for the purposes of this section.

(3) The tax payable in respect of an amount included in the gross income of a nonresident partner under section 67 is assessable in the name of the partnership or of any resident partner of the partnership and may be recovered out of the assets of the partnership or from the resident partner personally.

(4) The tax payable in respect of an amount included in the gross income of a nonresident beneficiary as a result of the operation of section 72 or 73 is assessable in the name of the trustee and may be recovered out of the assets of the trust or from the trustee personally.

(5) A person making a payment pursuant to a notice under subsection (1) is deemed to have been acting under the authority of the taxpayer and of all other persons concerned and is indemnified in respect of the payment against all proceedings, civil or criminal, and all processes, judicial or extrajudicial, notwithstanding any provisions to the contrary in any written law, contract or agreement.

(6) The provisions of this Act relating to the collection and recovery of tax shall apply to any amount due under this section as if it were tax due.

109. Duties of receivers.



(1) A receiver shall, in writing, notify the commissioner within fourteen days of being appointed to the position of receiver or of taking possession of an asset in Uganda, whichever occurs first.

(2) The commissioner may, in writing, notify a receiver of the amount which appears to the commissioner to be sufficient to provide for any tax which is or will become payable by the person whose assets are in the possession of the receiver.

(3) A receiver shall not part with any asset in Uganda which is held by the receiver in the capacity as receiver without the prior written permission of the commissioner.

(4) A receiver—

(a) shall set aside, out of the proceeds of sale of an asset, the amount notified by the commissioner under subsection (2), or such lesser amount as is subsequently agreed on by the commissioner;

(b) is liable to the extent of the amount set aside for the tax of the person who owned the asset; and

(c) may pay any debt that has priority over the tax referred to in this section notwithstanding any provision of this section.

(5) A receiver is personally liable to the extent of any amount required to be set aside under subsection (4) for the tax referred to in subsection (2) if, and to the extent that, the receiver fails to comply with the requirements of this section.

(6) In this section, “receiver” includes any person who, in respect to an asset in Uganda, is—

(a) a liquidator of a company;

(b) a receiver appointed out of court or by any court;



- (c) a trustee for a bankrupt;
- (d) a mortgagee in possession;
- (e) an executor of a deceased's estate; or
- (f) any other person conducting the business of a person legally incapacitated.

110. Security on property for unpaid tax.

(1) Where any person who is the owner of land or buildings situated in Uganda fails to pay tax when due, the commissioner may, by notice in writing, notify the person of the intention to apply to the chief registrar of titles, in this section referred to as the "chief registrar", for such land or buildings to be the subject of security for tax as specified in the notice.

(2) If any person on whom a notice has been served under this section fails to make payment of the whole of the amount of the tax specified in the notice within 30 days of the date of service of the notice under subsection (1), the commissioner may, by notice in writing, in this section referred to as a "notice of direction", direct the chief registrar that the land or buildings of the person, to the extent of the interest of such person therein, be the subject of security for unpaid tax in the amount specified in the notice.

(3) Where a notice of direction is served on the chief registrar under subsection (2), the chief registrar shall, without fee, register the direction as if it were an instrument or mortgage over, or charge on, as the case may be, such land or buildings; and thereupon such registration shall, subject to any prior mortgage or charge, operate in all respects as a legal mortgage over or charge on such land or building to secure the amount of the unpaid tax.

(4) Upon receipt of the whole of the amount of tax secured under subsection (3), the commissioner shall serve notice on the chief registrar cancelling the direction made under subsection (2); and the chief registrar shall, without fee, record the cancellation at which time the direction shall cease to exist.



Provisional tax.

111. Payment of provisional tax.

(1) A person who derives or expects to derive any income during a year of income which is not or will not be subject to withholding of tax at the source under section 116, 117 or 118 or subject to tax under section 5 is liable to pay provisional tax under this section.

(2) A provisional taxpayer, other than an individual, is liable to pay two installments of provisional tax, on or before the last day of the sixth and twelfth months of the year of income, in respect of the taxpayer's liability for income tax for that year.

(3) For the purposes of subsection (2), the amount of each installment of provisional tax for a year of income is calculated according to the following formula—

$$50\% \times (A - B)$$

where—

A is the estimated tax payable by the provisional taxpayer for the year of income; and

B is the amount of any tax withheld under this Act, prior to the due date for payment of the installment, from any amounts derived by the taxpayer during the year of income which will be included in the gross income of the taxpayer for that year.

(4) A provisional taxpayer who is an individual is liable to pay four installments of provisional tax, on or before the last day of the third, sixth, ninth and twelfth months on the year of income, in respect of the taxpayer's liability for income tax for that year.



(5) For the purposes of subsection (4), the amount of each installment of provisional tax for a year of income is calculated according to the following formula—

$$25\% \times (A - B)$$

where—

A is the estimated tax payable by the provisional taxpayer for the year of income; and

B is the amount of any tax withheld under this Act, prior to the due date for payment of the installment, from any amounts derived by the taxpayer during the year of income which will be included in the gross income of the taxpayer for that year.

(6) Upon written application by the taxpayer, the commissioner may, where good cause is shown, extend the due date for payment of an installment of provisional tax or allow for payment of such an installment in equal or varying amounts.

(7) An installment of provisional tax, when it becomes due and payable, is a debt due to the Government, and the provisions of this Act shall apply for the purposes of the collection and recovery of provisional tax by the commissioner.

(8) Each installment of provisional tax shall be credited against the income tax assessed to the provisional taxpayer for the year of income to which the installment relates.

(9) Where the total of the installments credited under subsection (8) exceeds the taxpayer's income tax assessed for that year, the excess shall be dealt with by the commissioner in accordance with section 113(3).

(10) No installment of provisional tax paid by a provisional taxpayer shall be refunded to the taxpayer other than in accordance with subsection (9).



(11) In this section, “estimated tax payable” has the meaning in section 112.

112. Estimated tax payable.

(1) A provisional taxpayer’s estimated tax payable for a year of income is—

(a) in the case of a taxpayer to whom section 4(5) applies, the amount determined under the Second Schedule to this Act for that year as the tax payable on the gross turnover of the taxpayer estimated for that year under subsection (2); or

(b) in any other case, the amount calculated by applying the rates of tax in force for that year against the amount estimated under subsection (3) by the taxpayer as the chargeable income of the taxpayer for the year.

(2) Every provisional taxpayer to whom section 4(5) applies shall furnish an estimate of the gross turnover of the taxpayer for each year of income and shall include with the estimate for a year of income, a statement of the actual gross turnover of the taxpayer for the previous year of income.

(3) Every provisional taxpayer, other than a taxpayer to whom section 4(5) applies, shall furnish an estimate of the chargeable income to be derived by the taxpayer for a year of income in respect of which provisional tax is or may be payable by the taxpayer.

(4) A provisional taxpayer’s estimate under subsection (2) or (3) shall be in the form prescribed by the commissioner and shall be furnished to the commissioner by the due date for payment of the first installment of provisional tax for the year of income.

(5) A provisional taxpayer’s estimate under subsection (2) or (3) shall remain in force for the whole of the year of income unless the taxpayer furnishes a revised



estimate to the commissioner which revised estimate shall only apply to the calculation of the provisional tax payable by the taxpayer after the date the revised estimate was furnished to the commissioner.

(6) Where a provisional taxpayer fails to furnish an estimate of gross turnover or chargeable income as required by subsection (2) or (3), the estimated gross turnover or chargeable income of the taxpayer for the year of income shall be such amount as estimated by the commissioner.

Refund of tax.

113. Refunds.

(1) A taxpayer may apply to the commissioner for a refund, in respect of any year of income, of any tax paid by withholding, installments or otherwise in excess of the tax liability assessed to or due by the taxpayer for that year.

(2) An application for a refund under this section shall be made to the commissioner in writing within five years of the later of—

(a) the date on which the commissioner has served the notice of assessment for the year of income to which the refund application relates; or (b) the date on which the tax was paid.

(3) Where the commissioner is satisfied that tax has been overpaid, the commissioner shall—

(a) apply the excess in reduction of any other tax due from the taxpayer; and

(b) apply the balance of the excess, if any, in reduction of any outstanding liability of the taxpayer to pay other taxes not in dispute or to make provisional tax payments during the year of income in which the refund is to be made.

(4) Where the commissioner is required to refund an amount of tax to a person as a result of—



- (a) an application made to him or her under this Act;
- (b) a decision under section 99;
- (c) a decision of the High Court or a tax tribunal under section 100; or
- (d) a decision of the Court of Appeal under section 101, the commissioner shall pay simple interest at a rate of 2 percent per month for the period commencing on the date the person paid the tax refunded and ending on the last day of the month in which the refund is made.
- (5) The commissioner shall, within thirty days of making a decision on a refund application under subsection (1), serve on the person applying for the refund a notice in writing of the decision.
- (6) A person dissatisfied with a decision referred to in subsection (5) may only challenge the decision under the objection and appeal procedure in this Act.

PART XII—PROCEDURE RELATING TO GROSS RENTAL TAX.

114. Gross rental tax.

- (1) A resident individual charged to tax under section 5 shall furnish a return of gross rental income for each year of income not later than four months after the end of that year.
- (2) Sections 92, 94 to 110 and 113 apply, with the necessary changes made, to the tax imposed under section 5.
- (3) For the avoidance of doubt, the commissioner shall prescribe the form for return of gross rental income under this section.



PART XIII—WITHHOLDING OF TAX AT THE SOURCE.

115. Interpretation of Part XIII.

In this Part—

- (a) “payee” means a person receiving payments from which tax is required to be withheld under this Part; and
- (b) “withholding agent” means a person obliged to withhold tax under this Part.

116. Withholding of tax by employers.

- (1) Every employer shall withhold tax from a payment of employment income to an employee as prescribed by regulations made under section 164.
- (2) The obligation of an employer to withhold tax under subsection (1) is not reduced or extinguished because the employer has a right, or is otherwise under an obligation, to deduct and withhold any other amount from such payments.
- (3) The obligation of an employer to withhold tax under subsection (1) applies notwithstanding any other law which provides that the employment income of an employee shall not be reduced or subject to attachment.

117. Payment of interest to resident persons.

- (1) Subject to subsection (2), a resident person who pays interest to another resident person shall withhold tax on the gross amount of the payment at the rate prescribed in Part V of the Third Schedule to this Act.



- (2) This section does not apply to— (a) interest paid by a natural person;
- (b) interest paid to a financial institution;
- (c) interest paid by a company to an associated company; or
- (d) interest paid which is exempt from tax in the hands of the recipient.

(3) In this section, “associated company”, in relation to a company, in this subsection referred to as the “payer company”, means—

- (a) a company in which the payer company controls 50 percent or more of the voting power in the company either directly or through one or more interposed companies;
- (b) a company which controls 50 percent or more of the voting power in the payer company either directly or through one or more interposed companies; or
- (c) a company, in this subsection referred to as the “payee company”, where another company controls 50 percent of the voting power in the payee and payer companies either directly or through one or more interposed companies.

118. Payment of dividends to resident shareholders.

(1) A resident company which pays a dividend to a resident shareholder shall withhold tax on the gross amount of the payment at the rate prescribed in Part V of the Third Schedule to this Act.

(2) This section does not apply where the dividend income is exempt from tax in the hands of the shareholder.

119. Payment for goods and services.



(1) Where the Government of Uganda, a Government institution, a local authority, any company controlled by the Government of Uganda, or any person designated in a notice issued by the Minister, in this section referred to as the “payer”, pays an amount or amounts in aggregate exceeding one million shillings to any person in Uganda—

(a) for a supply of goods or materials of any kind; or

(b) for a supply of any services, the payer shall withhold tax on the gross amount of the payment at the rate prescribed in Part VIII of the Third Schedule to this Act, and the payer shall issue a receipt to the payee.

(2) Where—

(a) there are separate supplies of goods or materials, or of services and each supply is made for an amount that is one million shillings or less; and

(b) it would reasonably be expected that the goods or materials, or services would ordinarily be supplied in a single supply for an amount exceeding one million shillings,

subsection (1) applies to each supply.

(3) Every person who imports goods into Uganda is liable to pay tax at the time of importation on the value of the goods at the rate prescribed in Part VIII of the Third Schedule to this Act.

(4) The value of goods under subsection (3) shall be the value of the goods ascertained for the purposes of customs duty under the laws relating to customs.

(5) This section does not apply to—

(a) a supply or importation of petroleum or petroleum products, including furnace oil, lubricants, other than cosmetics, and fabrics or yarn manufactured out of petroleum products;

(b) a supply or importation of plant and machinery;

(c) a supply or importation of human or animal drugs;



- (d) a supply or importation of scholastic materials;
 - (e) importations by organisations within the definition of “exempt organisation” in section 2(bb)(i)(B); or
 - (f) a supplier or importer—
 - (i) who is exempt from tax under this Act; or
 - (ii) who the commissioner is satisfied has regularly complied with the obligations imposed on the supplier or importer under this Act.
- (6) The tax paid under subsections (1) and (3) is treated as withholding tax for the purposes of section 128.

120. International payments.

- (1) Any person making a payment of the kind referred to in section 83 or 85 shall withhold from the payment the tax levied under the relevant section.
- (2) Any promoter, agent or similar person—
- (a) paying remuneration to a nonresident entertainer or sports person; or
 - (b) responsible for collecting the gross receipts from a performance in Uganda by a theatrical, musical or other group of nonresident entertainers or sports persons,
- shall withhold from the remuneration or receipts the tax levied under section 84.
- (3) This section does not apply where the payment is exempt from tax.



121. Nonresident services contract.

(1) Every person who enters into an agreement with a nonresident for the provision of services by the nonresident which services give rise to income sourced in Uganda shall, within thirty days of the date of entering into such agreement, notify the commissioner in writing of— (a) the nature of such agreement;

(b) the likely duration of the agreement;

(c) the name and postal address of the nonresident person to whom payments under the agreement are to be made; and

(d) the total amount estimated to be payable under the agreement to the nonresident person.

(2) The commissioner may, by notice in writing served on the person who has notified the commissioner under subsection (1), require that person to withhold tax from any payment made under the agreement at the rate specified by the commissioner in the notice.

(3) This section does not apply to a contract to which section 85 applies.

122. Withholding as a final tax.

Where —

(a) tax has been withheld under section 117 on a payment of interest by a financial institution to a resident individual, other than in the capacity of trustee, resident retirement fund or to an exempt organisation; or

(b) tax has been withheld under section 118 on a payment of dividends to a resident individual; the withholding tax is a final tax, and—

(c) no further tax liability is imposed upon the taxpayer in respect of the income to which the tax relates;



- (d) that income is not aggregated with the other income of the taxpayer for the purposes of ascertaining chargeable income;
- (e) no deduction is allowed for any expenditure or losses actually incurred in deriving the income; and (f) no refund of tax shall be made in respect of the income.

123. Payment of tax withheld.

(1) Subject to subsection (2), a withholding agent shall pay to the commissioner any tax that has been withheld or that should have been withheld under this Part within fifteen days after the end of the month in which the payment subject to withholding tax was made by the withholding agent.

(2) Where a person withholds or should have withheld tax as required under section 120(2), the tax shall be paid to the commissioner within five days of the performance or by the day before the date the nonresident leaves Uganda, whichever is the earlier.

(3) The provisions of this Act relating to the collection and recovery of tax apply to any amount withheld under this Part as if it were tax.

124. Failure to withhold tax.

(1) A withholding agent who fails to withhold tax in accordance with this Act is personally liable to pay to the commissioner the amount of tax which has not been withheld, but the withholding agent is entitled to recover this amount from the payee.

(2) The provisions of this Act relating to the collection and recovery of tax apply to the liability imposed by subsection (1) as if it were tax.



125. Tax credit certificates.

(1) Subject to subsection (3), a withholding agent shall deliver to the payee a tax credit certificate setting out the amount of payments made and tax withheld during a year of income.

(2) A payee who is required to furnish a return of income shall attach to the return the tax credit certificate or certificates supplied to the payee for the year of income for which the return is filed.

(3) A withholding agent shall at the end of each year of income deliver to the employee to which section 4(4) applies a certificate setting out the amount of tax withheld during a year of income.

126. Record of payments and tax withheld.

(1) A withholding agent shall maintain, and keep available for inspection by the commissioner, records showing, in relation to each year of income—

(a) payments made to a payee; and (b) tax withheld from those payments.

(2) The records referred to in subsection (1) shall be kept by the withholding agent for five years of income after the end of the year of income to which the records relate.

(3) The commissioner may call upon a withholding agent to allow an auditor to examine the agent's records to verify their accuracy against the agent's tax credit certificates.

127. Priority of tax withheld.

(1) Tax withheld by a withholding agent under this Act—



- (a) is held by the withholding agent in trust for the Government of Uganda; and
- (b) is not subject to attachment in respect of a debt or liability of the withholding agent,

and in the event of the liquidation or bankruptcy of the withholding agent, an amount withheld under this Act does not form a part of the estate in liquidation, assignment or bankruptcy; and the commissioner shall have a first claim before any distribution of property is made.

(2) Every amount which a withholding agent is required under this Act to withhold from a payment is—

- (a) a first charge on that payment; and
- (b) withheld prior to any other deduction which the withholding agent may be required to make by virtue of an order of any court or any other law.

128. Adjustment on assessment and withholding agent's indemnity.

(1) The amount of tax withheld under this Part is treated as income derived by the payee at the time it was withheld.

(2) A withholding agent who has withheld tax under this Part and remitted the amount withheld to the commissioner is treated as having paid the withheld amount to the payee for the purposes of any claim by that person for payment of the amount withheld.

(3) Tax withheld from a payment under this Part is deemed to have been paid by the payee and, except in the case of a tax that is a final tax under this Act, is credited against the tax assessed on the payee for the year of income in which the payment is made.



(4) Where the tax withheld under this Part for a year of income, together with any provisional tax paid under section 111 for that year, exceeds the liability under an assessment of the taxpayer for that year, the excess shall be dealt with by the commissioner in accordance with section 113(3).

(5) Where a person who pays tax in accordance with section 119(3) is an individual whose only source of income is employment income, the tax shall be refunded on application by that person in accordance with section 113.

PART XIV—RECORDS AND INFORMATION COLLECTION.

129. Accounts and records.

(1) Unless otherwise authorised by the commissioner, a taxpayer shall maintain in Uganda such records as may be necessary to explain the information provided in a return or in any other document furnished in terms of section 92 or to enable an accurate determination of the tax payable by the taxpayer.

(2) The commissioner may disallow a claim for a deduction if the taxpayer is unable without reasonable excuse to produce a receipt or other record of the transaction, or to produce evidence relating to the circumstances giving rise to the claim for the deduction.

(3) The record or evidence referred to in this section shall be retained for five years.

130. Business information returns.



(1) Every person carrying on business in Uganda who makes a payment of income sourced in Uganda, being services income, other than employment income, interest, royalties, management fees or other income specified by the commissioner shall furnish a return of such payments, in this section referred to as a “business information return”, to the commissioner within sixty days after the end of the year of income in which the payment was made.

(2) A business information return shall be in the form specified by the commissioner and shall state the information required.

(3) Subsection (1) does not apply to the payment of any income subject to withholding of tax at the source under Part XIII.

131. Access to books, records and computers.

(1) In order to enforce a provision of this Act, the commissioner, or any officer authorised in writing by the commissioner—

(a) shall have at all times and without any prior notice full and free access to any premises, place, book, record or computer;

(b) may make an extract or copy from any book, record or computer- stored information to which access is obtained under paragraph (a) of this subsection;

(c) may seize any book or record that, in the opinion of the commissioner or the authorised officer, affords evidence which may be material in determining the liability of any person to tax, interest, penal tax or penalty under this Act;

(d) may retain any such book or record for as long as it may be required for determining a person’s tax liability or for any proceeding under this Act; and

(e) may, where a hard copy or computer disk of information stored on a computer is not provided, seize and retain the computer for as long as is necessary to copy the information required.



(2) No officer shall exercise the powers under subsection (1) without authorisation in writing from the commissioner, and the officer shall produce the authorisation to the occupier of the premises or place to which the exercise of powers relates.

(3) The occupier of the premises or place to which an exercise of power under subsection (1) relates shall provide all reasonable facilities and assistance for the effective exercise of the power.

(4) A person whose books, records or computer have been removed and retained under subsection (1) may examine them and make copies or extracts from them during regular office hours under such supervision as the commissioner may determine.

(5) All records, books or computers removed and retained under subsection (1) shall be signed for by the commissioner or an authorised officer, and the commissioner shall return them to the owner.

(6) Where the records, books or computers referred to in subsection (1) are lost or destroyed in the possession of the commissioner, the commissioner shall appropriately compensate the taxpayer for the loss or destruction.

(7) This section has effect notwithstanding any rule of law relating to privilege or the public interest in relation to the production of or access to documents.

(8) In this section, “occupier” in relation to premises or a place means the owner, manager or any other responsible person on the premises or place.

132. Notice to obtain information or evidence.



(1) The commissioner may, by notice in writing, require any person, whether or not liable for tax under this Act—

(a) to furnish, within the time specified in the notice, any information that may be required by the notice; or

(b) to attend at the time and place designated in the notice for the purpose of being examined on oath by the commissioner or by an officer authorised by the commissioner, concerning the tax affairs of that person or any other person and, for that purpose, the commissioner or an authorised officer may require the person examined to produce any book, record or computer- stored information in the control of the person.

(2) Where the notice requires the production of a book, record or computer-stored information, it is sufficient if such book, record or computer-stored information is described with reasonable certainty.

(3) A notice issued under this section shall be served by or at the direction of the commissioner by a signed copy delivered by hand to the person to whom it is directed or left at the person's last and usual place of business or abode, and the certificate of service signed by the person serving the notice shall be evidence of the facts stated therein.

(4) Where the notice is not served personally on the person to whom it is directed, the service shall be witnessed by a member of the executive committee of the local council.

(5) This section has effect notwithstanding any rule of law relating to privilege or the public interest in relation to the production of or access to documents.

133. Books and records not in the English language.



Where any book, record or computer-stored information referred to in

sections 129, 131 or 132 is not in English, the commissioner may, by notice in writing, require the person keeping the book, record or computer-stored information to provide, at the person's expense, a translation into English by a translator approved by the commissioner.

Tax clearance certificate.

134. Tax clearance certificate.

A taxpayer—

- (a) providing a passenger transport service;
- (b) providing a freight transport service where the goods vehicle used has a load capacity of more than two tonnes;
- (c) supplying goods or services to the Government; or
- (d) transferring funds in excess of 2500 currency points from Uganda to a place outside Uganda,

shall obtain a tax clearance certificate from the commissioner as provided for in regulations made under section 164.

Tax identification number.

135. Tax identification number.

(1) For purposes of identification of taxpayers, the commissioner may issue a number, to be known as a tax identification number, to every taxpayer.



(2) The commissioner may require a taxpayer to show the tax identification number in any return, notice or other document used for the purposes of this Act.

PART XV—OFFENCES AND PENALTIES.

Interest.

136. Interest on unpaid tax.

(1) A person who fails—

(a) to pay any tax, including provisional tax;

(b) to pay any penal tax; or

(c) to pay to the commissioner any tax withheld or required to be

withheld by the person from a payment to another person,

on or before the due date for payment is liable for interest at a rate equal to 2 percent per month on the amount unpaid calculated from the date on which the payment was due until the date on which payment is made.

(2) Interest paid by a person under subsection (1) shall be refunded to the person to the extent that the tax to which the interest relates is found not to have been due and payable.

(3) Where good cause is shown, in writing, by the person liable for payment of interest, the Minister may, on the advice of the commissioner, remit, in whole or in part, any interest charged under this section.

(4) Interest charged in respect of a failure to comply with section 123 is borne personally by the withholding agent, and no part of it is recoverable from the person



who received the payment from which tax was or should have been withheld under Part XIII which deals with withholding of tax.

(5) Interest charged under this section shall be simple interest.

(6) The provisions of this Act relating to the collection and recovery of tax apply to any interest charged under this section as if it were tax due.

Offences and penalties.

137. Failure to furnish a return.

(1) A person who fails to furnish a return or any other document within fifteen days of being so required under this Act commits an offence and is liable on conviction to a fine not exceeding fifteen currency points.

(2) If a person convicted of an offence under subsection (1) fails to furnish the return or document to which the offence relates within the period specified by the court, that person commits an offence and is liable on conviction to a fine not exceeding twenty currency points.

138. Failure to comply with recovery provision.

(1) Any person who fails to comply with— (a) any notice issued under section 106; or

(b) the requirements of section 109,

commits an offence and is liable on conviction to a fine not exceeding twenty-five currency points.



(2) Where a person is convicted of an offence under subsection (1)(a), the court shall, in addition to imposing a penalty, order the convicted person to pay to the commissioner the amount to which the failure relates.

(3) A person who notifies the commissioner in writing under section 106(4) is considered to be in compliance with any notice served on the person under section 106(1) until the commissioner serves the person with a notice under section 106(5) amending the notice served under section 106(1) or rejecting the person's notice under section 106(4).

139. Failure to maintain proper records.

A person who fails to maintain proper records under this Act commits an offence and is liable on conviction to—

(a) where the failure was deliberate, a fine of not less than fifteen currency points or to imprisonment for a term not exceeding one year; or

(b) in any other case, a fine not exceeding twenty-five currency points.

140. Failure to comply with a section 132 notice.

A person who, without good cause, fails to comply with a notice issued under section 132 commits an offence and is liable on conviction to a fine not exceeding twenty-five currency points.

141. Improper use of tax identification number.



A person who knowingly or recklessly uses a false taxpayer identification number, including the taxpayer identification number of another person, on a return or document prescribed or used for the purposes of this Act, commits an offence and is liable on conviction to a fine of not less than twenty-five currency points or to imprisonment for a term not exceeding one year or to both.

142. Making false or misleading statements.

(1) A person who—

(a) makes a statement to an officer of the Uganda Revenue Authority that is false or misleading in a material particular; or

(b) omits from a statement made to an officer of the Uganda Revenue Authority any matter or thing without which the statement is

misleading in a material particular, commits an offence and is liable on conviction to—

(c) where the statement or omission was made knowingly or recklessly, a fine of not less than twenty-five currency points or to imprisonment for a term not exceeding one year or to both; or

(d) in any other case, a fine not exceeding twenty-five currency points.

(2) It is a defence for the accused person to prove that he or she did not know and could not reasonably be expected to have known that the statement to which the prosecution relates was false or misleading.

(3) A reference in this section to a statement made to an officer of the Uganda Revenue Authority is a reference to a statement made in writing to that officer acting in the performance of his or her duties under this Act, and includes a statement made—

(a) in an application, certificate, declaration, notification, return, objection or other document made, prepared, given, filed or furnished under this Act;

(b) in information required to be furnished under this Act;

(c) in a document furnished to an officer of the Uganda Revenue Authority otherwise than pursuant to this Act;



(d) in answer to a question asked of a person by an officer of the Uganda Revenue Authority; or

(e) to another person with the knowledge or reasonable expectation that the statement would be conveyed to an officer of the Uganda Revenue Authority.

143. Obstructing an officer of the authority.

A person who obstructs an officer of the Uganda Revenue Authority in the performance of duties under this Act commits an offence and is liable on conviction to a fine not exceeding twenty-five currency points.

144. Aiding and abetting.

Any person who aids and abets another person to commit an offence, referred to as the “original offence”, in this section under this Act, or counsels or induces another person to commit such an offence, commits an offence and is liable on conviction to a fine not exceeding twenty-five currency points or to imprisonment for a term not exceeding one year or to both.

145. Offences by and relating to officers and persons employed to carry out the Act; penalties.

(1) Any officer of the Uganda Revenue Authority or any person employed in carrying out the provisions of this Act who—

(a) directly or indirectly asks for, or takes in connection with any of the officer’s duties, any payment or reward whatsoever, whether pecuniary or otherwise, or promise or security for any such payment or reward, not being a payment or reward which the officer was lawfully entitled to receive; or



(b) enters into or acquiesces in any agreement to do or to abstain from doing, permit, conceal or connive at any act or thing whereby the tax revenue is or may be defrauded or which is contrary to the provisions of this Act or to the proper execution of the officer's duty, commits an offence and is liable on conviction to a fine of not less than twenty-five currency points or to imprisonment for a term of not less than three months.

(2) Any person who—

(a) directly or indirectly offers or gives to any officer payment or reward whatsoever, whether pecuniary or otherwise, or any promise or security for any such payment or reward, not being a payment or reward which the officer was lawfully entitled to receive; or

(b) proposes or enters into any agreement with any officer in order to induce the officer to do or to abstain from doing, permit, conceal or connive at any act or thing whereby tax revenue is or may be defrauded or which is contrary to the provisions of this Act or to the proper execution of the officer's duty, commits an offence and is liable on conviction to a fine of not less than twenty-five currency points or to imprisonment for a term of not less than three months.

(3) Notwithstanding subsection (1), an officer or person employed in carrying out the provisions of this Act who commits an act specified in subsection (1)(a) or (b), and who volunteers information to the commissioner relating to that act shall—

(a) be exonerated from prosecution; and

(b) receive 20 percent of the fine that would be imposed on a person convicted of an offence under subsection (1).

(4) Notwithstanding subsection (2), a person who commits an act specified in subsection (2)(a) or (b), and who volunteers information to the commissioner relating to that act shall— (a) be exonerated from prosecution; and

(b) be liable to tax only to the extent agreed upon with the officer to whom the offence relates.



(5) An officer convicted of an offence under subsection (1) is, in addition to any penalty imposed under that section, liable to pay the difference in tax between the tax due and the tax payable by a person under subsection(4)(b); and the amount due under this section shall be deemed to be tax due from the officer under section 104.

146. Offences by companies.

(1) Where an offence is committed by a company, every person who, at the time the offence was committed—

(a) was a nominated officer, director, general manager, secretary or other similar officer of the company; or

(b) was acting or purporting to act in that capacity, is, without prejudice to the liability of the company, deemed to have committed the offence.

(2) Subsection (1) does not apply where—

(a) the offence was committed without that person’s consent or knowledge; and

(b) the person has exercised all diligence to prevent the commission of the offence as ought to have been exercised having regard to the nature of the person’s functions and all the circumstances.

147. Officer may appear on behalf of the commissioner.

Notwithstanding anything contained in any written law, any officer duly authorised in writing by the commissioner may appear in any court on behalf of the commissioner in any proceedings in which the commissioner is a party and, subject to the directions of the Attorney General, that officer may conduct any prosecution for an offence under this Act and, for that purpose, shall have all the powers of a public prosecutor appointed under the Magistrates Courts Act.



148. Compounding offences.

(1) Where any person commits an offence under this Act other than an offence under section 145, the commissioner may, at any time prior to the commencement of court proceedings, compound the offence and order the person to pay a sum of money specified by the commissioner, not exceeding the amount of the fine prescribed for the offence.

(2) The commissioner shall only compound an offence under this section if the person concerned admits in writing that the person has committed the offence.

(3) Where the commissioner compounds an offence under this section, the order referred to in subsection (1)—

(a) shall be in writing and specify the offence committed, the sum of money to be paid and the due date for payment, and shall have attached to it the written admission referred to in subsection (2);

(b) shall be served on the person who committed the offence;

(c) shall be final and not subject to any appeal; and

(d) may be enforced in the same manner as a decree of any court for the payment of the amount stated in the order.

(4) Where the commissioner compounds an offence under this section, the person concerned shall not be liable for prosecution in respect of that offence or for penal tax.

149. Place of trial.

(1) Any person charged with committing an offence under this Act may be proceeded against, tried and punished in any place in Uganda in which the person may be in custody for the offence as if the offence had been committed in that place; and the offence shall, for all purposes incidental to or consequential upon the prosecution, trial or punishment of the offence, be deemed to have been committed in that place.



(2) Nothing in subsection (1) shall preclude the prosecution, trial and punishment of a person in any place in which, but for this section, the person might have been prosecuted, tried and punished.

150. Tax charged to be paid notwithstanding prosecution.

The amount of any tax or interest due and payable under this Act shall not be abated by reason only of the conviction or punishment of the person liable for payment thereof for an offence under this Act or for the compounding of such offence under section 148.

Penal tax.

151. Penal tax for failure to furnish a return of income.

A person who fails to furnish a return of income for a year of income within the time required under this Act is liable to pay a penal tax equal to 2 percent of the tax payable for that year or one currency point per month, whichever is the greater, for the period the return is outstanding.

152. Penal tax in relation to records.

A person who deliberately fails to maintain proper records for a year in accordance with the requirements of this Act is liable to pay a penal tax equal to double the amount of tax payable by the person for the year.

153. Penal tax in relation to false or misleading statements.



(1) Where a person knowingly or recklessly—

(a) makes a statement to an officer of the Uganda Revenue Authority that is false or misleading in a material particular; or

(b) omits from a statement made to an officer of the Uganda Revenue Authority any matter or thing without which the statement is misleading in a material particular,

and the tax properly payable by the person exceeds the tax that was assessed as payable based on the false or misleading information, that person is liable to pay a penal tax equal to double the amount of the excess.

(2) Section 142(3) applies in determining whether a person has made a statement to an official of the Uganda Revenue Authority.

154. Penal tax for understating provisional tax estimates.

(1) A provisional taxpayer whose estimate or revised estimate of chargeable income for a year of income under section 112 is less than 90 percent of the taxpayer's actual chargeable income assessed for that year is liable for penal tax equal to 20 percent of the difference between the tax calculated in respect of the taxpayer's estimate, as revised, of chargeable income and the tax calculated in respect of 90 percent of the taxpayer's actual chargeable income for the year of income.

(2) A provisional taxpayer whose estimate or revised estimate of gross turnover for a year of income under section 112 is less than 90 percent of the taxpayer's actual gross turnover for that year is liable for penal tax equal to 20 percent of the difference between the tax calculated in respect of the taxpayer's estimate, as revised, of gross turnover and the tax calculated in respect of 90 percent of the taxpayer's actual gross turnover for the year of income.

155. Recovery of penal tax.



- (1) Liability for penal tax is calculated separately with respect to each section dealing with penal tax.
- (2) Subject to subsection (3), the imposition of penal tax is in addition to any interest imposed under section 136 and any penalty imposed as a result of conviction of an offence.
- (3) No penal tax is imposed on a person under section 152 or 153 where the person has been convicted of an offence under section 139 or 142 respectively for the same act or omission.
- (4) If penal tax under section 152 or 153 has been paid and the commissioner institutes a prosecution proceeding under section 139 or 142 respectively in respect of the same act or omission, the commissioner shall refund the amount of penal tax paid; and that penal tax is not payable unless the prosecution is withdrawn.
- (5) Penal tax as assessed by the commissioner under sections 151, 152, 153 and 154 shall be treated for all purposes as an assessment under this Act.
- (6) Where good cause is shown, in writing, by the person liable to pay penal tax, the Minister may, on the advice of the commissioner, remit, in whole or in part, any penal tax payable.

PART XVI—ADMINISTRATION.

156. Delegation.

The commissioner may delegate to any officer of the Uganda Revenue Authority any duty, power or function conferred or imposed on the commissioner under this Act,



other than the power to compound offences under section 148 and the power to delegate conferred by this section.

157. Official secrecy.

(1) Every person appointed under or employed in carrying out the provisions of this Act shall regard and deal with all documents and information which may come to the person's possession or knowledge in connection with the performance of duties under this Act as secret and shall not disclose any information or document except in accordance with the provisions of this Act.

(2) No person appointed under or employed in carrying out the provisions of this Act shall be required to produce any document or communicate any information in the tribunal or any court which has come into the person's possession or knowledge in connection with the performance under this Act except as may be necessary for the purpose of carrying the provisions of this Act into effect.

(3) Nothing in this section shall prevent the disclosure of information or documents to—

(a) the Minister or any other person where the disclosure is necessary for the purposes of this Act or any other fiscal law;

(b) any person in the service of the Government in a revenue or statistical department where such disclosure is necessary for the performance of the person's official duties;

(c) the Auditor General or any person authorised by the Auditor General where such disclosure is necessary for the performance of official duties; or

(d) the competent authority of the Government of another country with which Uganda has entered into an agreement for the avoidance of double taxation or for the exchange of information, to the extent permitted under that agreement.

(4) Any person receiving documents and information under subsection (2) or (3) is required to keep them secret under the provisions of this section, except to the



minimum extent necessary to achieve the purpose for which the disclosure is necessary.

(5) Documents and information obtained by the commissioner in the performance of the commissioner's duties and powers under this Act may be used by the commissioner for the purposes of any other fiscal law administered by the commissioner.

(6) Any person who contravenes this section commits an offence and is liable on conviction to a fine not exceeding twenty-five currency points or to imprisonment for a term not exceeding one year or to both.

Forms and notices.

158. Forms and notices; authentication of documents.

(1) Forms, notices, returns, statements, tables and other documents required under this Act may be in such form as the commissioner may determine for the efficient administration of this Act; and publication of such documents in the Gazette shall not be required.

(2) The commissioner shall make the documents referred to in subsection (1) available to the public at the Uganda Revenue Authority and at such other locations, or by mail, as the commissioner may determine.

(3) A notice or other document issued, served or given by the commissioner under this Act is sufficiently authenticated if the name or title of the commissioner, or authorised officer, is printed, stamped or written on the notice or document.



159. Service of notices and other documents.

Unless otherwise provided in this Act, a notice or other document required or authorised by this Act to be served—

(a) on a person being a resident individual other than in a representative capacity, is considered sufficiently served if—

- (i) personally served on that person;
- (ii) left at the person’s usual or last known place of abode, office or place of business in Uganda and the service witnessed by a member of the executive committee of the local council; or
- (iii) sent by post to such place of abode, office or place of business, or to the person’s usual or last known address in Uganda; or

(b) on any other person, is considered sufficiently served if— (i) personally served on the nominated officer of the person;

(ii) left at the registered office of the person or the person’s address for service of notices under this Act; or

(iii) it is left at or sent by post to any office or place of business of the person in Uganda.

Rulings.

160. Practice notes.

(1) To achieve consistency in the administration of this Act and to provide guidance to taxpayers and officers of the Uganda Revenue Authority, the commissioner may issue practice notes setting out the commissioner’s interpretation of this Act.

(2) A practice note is binding on the commissioner until revoked.

(3) A practice note is not binding on a taxpayer. 161. Private rulings.



(1) The commissioner may, upon application in writing by a taxpayer, issue to the taxpayer a private ruling setting out the commissioner’s position regarding the application of this Act to a transaction proposed or entered into by the taxpayer.

(2) Where the taxpayer has made a full and true disclosure of the nature of all aspects of the transaction relevant to the ruling and the transaction has proceeded in all material respects as described in the taxpayer’s application for the ruling, the ruling shall be binding on the commissioner with respect to the application to the transaction of the law as it stood at the time the ruling was issued.

(3) Where there is any inconsistency between a practice note and a private ruling, priority is given to the terms of the private ruling.

Remission of tax.

162. Remission of tax.

(1) Where the commissioner is of an opinion that the whole or any part of the tax due under this Act by a taxpayer cannot be effectively recovered by reason of—

(a) considerations of hardship; or

(b) impossibility, undue difficulty or the excessive cost of recovery, the commissioner may refer the taxpayer’s case to the Minister.

(2) Where a taxpayer’s case has been referred to the Minister under subsection (1) and the Minister is satisfied that the tax due cannot be effectively recovered, the Minister may remit in whole or in part the tax due by the taxpayer.



PART XVII—MISCELLANEOUS.

163. Interpretation of Part XVII.

In this Part, “repealed legislation” means the Income Tax Decree, 1974, amendments to it and subsidiary legislation made under it and section 25 of the Investment Code, 1991.

164. Regulations.

(1) The Minister may, by statutory instrument, make regulations for better carrying into effect the purposes of this Act.

(2) Without prejudice to the general effect of subsection (1), regulations made under that subsection may—

(a) contain provisions of a saving or transitional nature consequent on the making of this Act; or

(b) prescribe penalties for the contravention of the regulations not exceeding a fine of twenty-five currency points or imprisonment not exceeding six months or both, and may prescribe, in the case of continuing offences, an additional fine not exceeding five currency points in respect of each day on which the offence continues.

165. Amendment of monetary amounts and Schedules.

The Minister may, with the approval of Parliament, by statutory instrument, amend—

(a) any monetary amount set out in this Act; or (b) the Schedules.

166. Transitional.



- (1) The repealed legislation continues to apply to years of income prior to the year of income in which this Act comes into force.

- (2) All appointments made under the repealed legislation and subsisting at the date of commencement of this Act are deemed to be appointments made under this Act.

- (3) Any arrangement between the Government of Uganda and the Government of a foreign country with a view to affording relief from double taxation made under section 47 of the Income Tax Decree, 1974, or its predecessor and which is still in force at 1st July, 1997, continues to have effect under this Act.

- (4) All forms and documents used in relation to the repealed legislation may continue to be used under this Act, and all references in those forms and documents to provisions of, and expressions appropriate to, the repealed legislation are taken to refer to the corresponding provisions and expressions of this Act.

- (5) A reference in this Act to a previous year of income includes, where the context requires, a reference to a year of income under the repealed legislation.

- (6) Section 3(1)(d) of the Income Tax Decree, 1974, continues to apply to an amount referred to in section 21(1)(h) of this Act if the payer of the alimony, allowance or maintenance has obtained a deduction for the payment under the Income Tax Decree, 1974, prior to the commencement of this Act.

- (7) Sections 18(1)(a) and 22(1)(b) do not apply to business assets of a capital nature disposed of before 1st April, 1998, or to business debts of a capital nature cancelled or satisfied before 1st April, 1998.



(8) Where, as a result of the application of this Act, a gain or loss on realisation of a liability is subject to tax being a gain or loss which would not otherwise have been subject to tax, the value of the liability on 31st March, 1998, shall be used in the calculation of any income or deduction as from that date.

(9) Subject to subsections (10) and (11), where, as a result of the application of this Act, a gain or loss on disposal of an asset is subject to tax being a gain or loss that would not otherwise have been subject to tax, the cost base of the asset is calculated on the basis that each item of cost or expense included in the cost base and which was incurred prior to that date is determined according to the following formula—

$$CB \times \frac{CPI\ D}{CPI\ A}$$

$$CPI\ A$$

where—

CB is the amount of an item of cost or expense incurred on or before 30th June, 1997, included in the cost base of the asset; and

CPI D is the Consumer Price Index number published for the month ending on 30th June, 1997; and

CPI A is the Consumer Price Index number published for the month immediately prior to the date on which the relevant item of cost or expense was incurred.

(10) Where the taxpayer is able to substantiate the market value of an asset on 31st March, 1998, the taxpayer may substitute that value for the cost base determined under subsection (9).

(11) Where the asset referred to in subsection (10) is immovable property, the cost base of the property as at 31st March, 1998, is equal to the market value of the property as determined by the chief government valuer.

(12) Section 27(4)(b) shall apply to depreciable assets acquired by a taxpayer before 1st July, 1997, and held by the taxpayer at that date on the basis that the cost base of



the asset is the cost of the asset less any depreciation deductions allowed under the repealed legislation in respect of that cost.

(13) For the purposes of section 29(6), the “residue of expenditure” of an industrial building at 30th June, 1997, shall be the residue of expenditure as determined under the Income Tax Decree, 1974, at that date.

(14) The amount of a deduction allowed to a taxpayer under section 38 for the year of income commencing on 1st July, 1997, shall be determined under section 14(4) of the Income Tax Decree, 1974.

(15) The amount of a deduction allowed under sections 30 and 31 in respect of start-up costs incurred or intangible assets acquired before this Act comes into force shall be calculated on the assumption that those sections had always applied.

(16) For the purpose of applying subsections (8) to (14) to a taxpayer permitted to use a substituted year of income for the first year of income under this Act—

(a) the reference in those subsections to 31st March, 1998, is treated as a reference to the day immediately preceding the commencement of the first year of income of the taxpayer under this Act; and

(b) the reference in those subsections to 1st April, 1998, is treated as a reference to the first day of the first year of income of the taxpayer under this Act.

(17) A taxpayer entitled to use a substituted year of income under the Income Tax Decree, 1974, is permitted to continue to use that period as the taxpayer’s substituted year of income under this Act until the commissioner decides otherwise by notice in writing to the taxpayer.



(18) Where a taxpayer subject to tax under this Act but who was not subject to tax under the Income Tax Decree, 1974, is entitled to use a substituted year of income, the taxpayer is treated for the purposes of section 39(6) of this Act as having a transitional year of income for the period 1st July, 1997, to the end of the day immediately preceding the start of the first substituted year of income after that date.

(19) Section 59 does not apply to a finance lease entered into before 1st July, 1997.

(20) A reference in section 62 to a previously deducted expenditure, loss or bad debt includes a reference to an expenditure, loss or bad debt deducted under the repealed legislation.

(21) Notwithstanding the repeal of section 25 of the Investment Code, 1991, the holder of a certificate of incentives which is valid at the commencement of this Act may make an election in writing to the commissioner by 31st December, 1997, for the exemption from tax on corporate profits and the exemption from withholding tax paid on dividends and interest paid to resident persons as provided under section 25 of the Investment Code, 1991 to continue until the exemption expires in accordance with that section, as if that section had not been repealed.

(22) Notwithstanding the exemption referred to in subsection (21), a holder of a certificate of incentives validly in force at 30th June, 1997, and who has made an election under subsection (21) shall furnish a return of income in accordance with section 92 prepared on the basis that the holder is not exempt from tax for each year of income the exemption applies under this Act.

(23) Where an exemption referred to in subsection (21) expires, the following provisions apply to the holder of the certificate of incentives—

(a) subsections (8) to (14) apply to the person on the basis that—

(i) the reference in those subsections to 31st March, 1998, is treated as a reference to the day on which the exemption expired; and



- (ii) the reference in those subsections to 1st April, 1998, is treated as a reference to the day after the day on which the exemption expired;
- (b) the amount of the deduction allowed under sections 27, 29, 30 and 31 in respect of depreciable assets, industrial buildings, or intangible assets acquired, or start-up costs incurred, before the exemption expired shall be calculated on the assumption that those sections had always applied; and
- (c) the amount of any assessed loss to be deducted in the first year of income after the exemption has expired is calculated on the basis that this Act and its predecessor has always applied to the person.

(24) Notwithstanding the repeal of section 25 of the Investment Code, 1991, and without prejudice to other relevant provisions of this section, an investor who, immediately before the commencement of this Act, holds a valid investment licence under the Investment Code, 1991, and who but for this Act would be eligible for the grant of a certificate of incentives and whose application had been approved for a certificate of incentives shall be issued with the certificate in accordance with the Investment Code, 1991, as if section 25 of the Code had not been repealed.

(25) Where a person, but for the repeal of section 25 of the Investment Code, 1991, would have been issued with a certificate of incentives under the Investment Code, 1991, and the person had placed an item of eligible property, as defined in section 28(3), into service during the year of income immediately preceding the person's first year of income under this Act, the person shall be treated as having placed the item of eligible property into service during the person's first year of income under this Act.

(26) Subject to subsection (27), where the income of a person is wholly or partly exempt from tax under—

- (a) a notice published in the Gazette under section 12(2) of the Income Tax Decree, 1974; or
- (b) a provision in any agreement, the notice or provision shall have no effect under this Act unless the Minister has concurred in writing by 31st December, 1997, with the exemption provided for in the notice or provision.



(27) Subsection (26) does not apply where the exemption is provided for in an agreement between the Government of Uganda and a foreign government or the United Nations or a specialised agency of the United Nations.

SCHEDULES

First Schedule.

s. 2.

Listed institutions.

African Development Bank

African Development Fund

Aga Khan Foundation

East African Development Bank

Eastern and Southern African Trade and Development Bank

European Development Fund

European Investment Bank

European Union

Food and Agriculture Organisation

International Bank for Reconstruction and Development

International Civil Aviation Organisation



International Development Association

International Finance Corporation

International Labour Organisation

International Monetary Fund

International Telecommunications Union

United Nations related agencies and specialised agencies

Second Schedule.

s. 4.

Small business taxpayers tax rates.

1. The amount of tax payable for the purposes of section 4(5) by a taxpayer is—

Gross turnover	Tax
----------------	-----

Where the gross turnover of the taxpayer does not exceed shs. 20 million per year

Shs. 100,000

Where the gross turnover of the taxpayer exceeds shs. 20 million but does not exceed shs. 30 million per year

Shs. 250,000 or 1% of gross turnover, whichever is the lower



Where the gross turnover of the taxpayer exceeds shs. 30 million but does not exceed shs. 40 million per year

Shs. 350,000 or 1% of gross turnover, whichever is the lower

Where the gross turnover of the taxpayer exceeds shs. 40 million but does not exceed shs. 50 million per year

Shs. 450,000 or 1% of gross turnover, whichever is the lower

2. The tax payable by a taxpayer under section 4(5) is reduced by—
 - (a) any credit allowed under section 128(3) for withholding tax paid in respect of amounts included in the gross turnover of the taxpayer; or
 - (b) any credit allowed under section 111(8) for provisional tax paid in respect of amounts included in the gross turnover of the taxpayer.

Third Schedule. ss. 6, 7, 8, 82, 83, 84, 85, 86, 117, 118, 119.

Rates of tax.

s. 6(1).

Part I. Income tax rates for individuals.

1. The income tax rates applicable to resident individuals are—

Chargeable income

Rate of tax

Not exceeding shs. 1,560,000 Nil



Exceeding shs. 1,560,000 but not exceeding shs. 2,820,000

10% of the amount by which chargeable income exceeds shs. 1,560,000

Exceeding shs. 2,820,000 but not exceeding shs. 4,920,000 shs.

Shs. 126,000 plus 20% of the amount by which chargeable income exceeds shs. 1,560,000

Exceeding shs. 4,920,000

Shs. 546,000 plus 30% of the amount by which chargeable income exceeds shs. 4,920,000

2. The income tax rates applicable to nonresident individuals are—

Chargeable income	Rate of tax
-------------------	-------------

Not exceeding shs. 2,820,000	
------------------------------	--

10%	
-----	--

Exceeding shs. 2,820,000 but not exceeding shs. 4,920,000	
---	--

Shs. 282,000 plus 20% of the amount by which chargeable income exceeds shs. 2,820,000	
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Exceeding shs. 4,920,000	
--------------------------	--

Shs. 702,000 plus 30% of the amount by which chargeable	
---	--



income exceeds shs. 4,920,000

s. 7

Part II. .

Income tax rate for companies.

1. The income tax rate applicable to companies, other than mining companies, for the purposes of section 7 is 30 percent.

2. Subject to paragraphs (3) and (4), the income tax rate applicable to mining companies is calculated according to the following formula—

$70 - 1500/X$

where X is the number of the percentage points represented by the ratio of the chargeable income of the mining company for the year of income to the gross revenue of the company for that year.

3. If the rate of tax calculated under paragraph 2 exceeds 45 percent, then the rate of tax shall be 45 percent.

4. If the rate of tax calculated under paragraph 2 is less than 25 percent, then the rate of tax shall be 25 percent.

5. In this Part—

(a) “gross revenue”, in relation to a mining company for a year of income, means—

(i) the amount shown in the recognised accounts of the company as the gross proceeds derived in carrying on of mining operations during the year of income,



including the gross proceeds arising from the disposal of trading stock, without deduction for expenditures or losses incurred in deriving that amount; and

(ii) the amount, if any, shown in the recognised accounts of the taxpayer as the amount by which the sum of the gains derived by the taxpayer during the year of income from the disposal of business assets used or held ready for use in mining operations, other than trading stock, exceeds the sum of losses incurred by the taxpayer during the year in respect of the disposal of such assets; and

(b) “mining company” means a company carrying on any mining operations in Uganda.

s. 8

Part III. .

Income tax rate for trustees and retirement funds.

The income tax rate applicable to trustees and retirement funds for the purposes of section 8 is 30 percent.

ss. 82, 83, 84 and 85.

Part IV. Income tax rate for nonresident persons.

The income tax rate applicable to a nonresident person under section 82, 83, 84 or 85 is 15 percent.

ss. 117, 118.

Part V. Withholding tax rate for interest and dividends for resident persons.

The withholding tax rate applicable for interest and dividend payments to a resident person under sections 117 and 118 is 15 percent.



s. 6(2).

Part VI.

Rate of rental tax.

The rate of tax applicable to an individual for the purposes of section 6(2) is 20 percent in excess of shs. 1,560,000.

20 percent of the chargeable income

s. 86(2).

Part VII.

Rate of tax applicable to shipping and aircraft income.

The rate of tax applicable to shipping and aircraft income under section 86(2) is 2 percent.

s. 119.

Part VIII.

Withholding tax rate for goods and services transactions.

The withholding tax rate applicable for goods and services transactions and for imported goods under section 119 is 4 percent.

Fourth Schedule.

s. 16.

Chargeable income arising from short-term insurance business.



1. The chargeable income of a resident person for a year of income arising from the carrying on of a short-term insurance business is determined according to the following formula—

$$A - B$$

where—

A is the total income derived by the resident person for the year of income in carrying on a short-term insurance business as determined under paragraph 2; and

B is the total deduction allowed for the year of income in the production of income referred to in A as determined under paragraph 3.

2. The total income derived by a resident person for a year of income in carrying on a short-term insurance business is the sum of—

(a) the amount of the gross premiums, including premiums on reinsurance, derived by the person during the year of income in carrying on such a business in respect of the insurance of any risk, other than premiums returned to the insured;

(b) the amount of any other income derived by the person during the year of income in carrying on such a business, including any commission or expense allowance derived from reinsurers, any income derived from investments held in connection with such a business and any gains derived on disposal of assets of the business; and

(c) the amount of any reserve deducted in the previous year of income under paragraph 3(d).

3. The total deduction allowed for a year of income in the production of income from the carrying on of a short-term insurance business is the sum of—

(a) the amount of the claims admitted during the year of income in the carrying on of such a business, less any amount recovered or recoverable under any contract of reinsurance, guarantee, security or indemnity;



(b) the amount of agency expenses incurred during the year of income in the carrying on of such a business;

(c) the amount of expenditures and losses incurred by the person

during the year of income in carrying on that business which are allowable as a deduction under this Act, other than expenditures or losses referred to in paragraphs (a) and (b); and

(d) the amount of a reserve for unexpired risks referable to such a business at the percentage adopted by the company at the end of the year of income.

4. Where, for any year of total income, the total deduction allowed to a person under paragraph 3 exceeds the income derived by the person as determined under paragraph 2, the excess may not be deducted against any other income of the person for the year of income, but shall be carried forward and deducted in determining the chargeable income of the person arising from the carrying on of a short-term insurance business in the next year of income.

5. The chargeable income of a nonresident person for a year of income arising from the carrying on of a short-term insurance business in Uganda is determined according to the following formula—

A - B

where—

A is the total income derived by the person for the year of income in carrying on a short-term insurance business as determined under paragraph 6; and

B is the total deduction allowed for the year of income in the production of income referred to in A as determined under paragraph 7.

6. The total income derived by a nonresident person for a year of income in carrying on a short-term insurance business in Uganda is the sum of—



(a) the amount of the gross premiums, including premiums on reinsurance, derived by the person during the year of income in carrying on such a business in respect of the insurance of any risk in Uganda, other than premiums returned to the insured;

(b) the amount of any other income derived by the person during the year of income in carrying on such a business in Uganda, including—

(i) any commission or expense allowance derived from reinsurance of risks accepted in Uganda;

(ii) any income derived from investment of the reserves referable to such business carried on in Uganda; and

(iii) any gains derived on disposal of assets of the business, and

(c) the amount of any reserve deducted in the previous year of income under paragraph 7(d).

7. The total deduction allowed for a year of income in the production of income from the carrying on of a short-term insurance business in

Uganda by a nonresident person is the sum of—

(a) the amount of the claims admitted during the year of income in the carrying on of such a business, less any amount recovered or recoverable under any contract of reinsurance, guarantee, security or indemnity;

(b) the amount of agency expenses incurred during the year of income in the carrying on of such a business;

(c) the amount of expenditures and losses incurred by the person during the year of income in carrying on that business which are allowable as a deduction under this Act, other than expenditures or losses referred to in paragraphs (a) and (b); and

(d) the amount of a reserve for unexpired risks in Uganda referable to such a business at the percentage adopted by the company at the end of the year of income.



8. Where, for any year of total income, the total deduction allowed to a person under paragraph 7 exceeds the income derived by the person as determined under paragraph 6, the excess may not be deducted against any other income of the person for the year of income, but shall be carried forward and deducted in determining the chargeable income of the person arising from the carrying on of a short-term insurance business in Uganda in the next year of income.

Fifth Schedule.

s. 19(3).

Valuation of benefits.

1. The valuation of benefits for the purposes of section 19(3) of this Act shall be determined in accordance with this Schedule.

2. For the purposes of this Schedule, a benefit provided by an employer to an employee means a benefit that—

- (a) is provided by an employer, or by a third party under an arrangement with the employer or an associate of the employer;
- (b) is provided to an employee or to an associate of an employee; and
- (c) is provided in respect of past, present or prospective employment.

3. Where a benefit provided by an employer to an employee consists of the use, or availability for use, of a motor vehicle wholly or partly for the private purposes of the employee, the value of the benefit is calculated according to the following formula—

$$(20\% \times A \times B/C) - D$$



where—

A is the market value of the motor vehicle at the time when it was first provided for the private use of the employee;

B is the number of days in the year of income during which the motor vehicle was used or available for use for private purposes

by the employee for all or a part of the day; C is the number of days in the year of income; and D is any payment made by the employee for the benefit.

4. Where a benefit provided by an employer to an employee consists of the provision of a housekeeper, chauffeur, gardener or other domestic assistant, the value of the benefit is the total employment income paid to the domestic assistant in respect of services rendered to the employee, reduced by any payment made by the employee for the benefit.

5. Where a benefit provided by an employer to an employee consists of the provision of any meal, refreshment or entertainment, the value of the benefit is the cost to the employer of providing the meal, refreshment or entertainment, reduced by any consideration paid by the employee for the meal, refreshment or entertainment.

6. Where a benefit provided by an employer to an employee consists of the provision of utilities in respect of the employee's place of residence, the value of the benefit is the cost to the employer of providing the utilities reduced by any consideration paid by the employee for the utilities.

7. Where a benefit provided by an employer to an employee consists of a loan or loans in total, exceeding one million shillings at a rate of interest below the statutory rate, the value of the benefit is the difference between the interest paid during the year of income, if any, and the interest which would have been paid if the loan had been made at the statutory rate for the year of income.



8. Where a benefit provided by an employer to an employee consists of the waiver by an employer of an obligation of the employee to pay or repay an amount owing to the employer or to any other person, the value of the benefit is the amount waived.

9. Where a benefit provided by an employer to an employee consists of the transfer or use of property or the provision of services, the value of the benefit is the market value of the property or services, reduced by any payment made by the employee for the benefit.

10. Where a benefit provided by an employer to an employee consists of the provision of accommodation or housing, other than where section 19(1)(a) or (c) applies, the value of the benefit is the lesser of —

(a) the market rent of the accommodation or housing reduced by any payment made by the employee for the benefit; or

(b) 15 percent of the employment income, including the amount referred to in paragraph (a), paid by the employer to the employee for the year of income in which the accommodation or housing was provided.

11. The value of any benefit provided by an employer to an employee which is not covered by the above clauses is the market value of the benefit, reduced by any payment made by the employee for the benefit.

12. Paragraph 11 does not apply to any benefit expressly covered by section 19(1)(a) or (c) to (h).

13. In this Schedule, “statutory rate”, in relation to a year of income, means the Bank of Uganda discount rate at the commencement of the year of income.

Sixth Schedule.

ss. 27, 28, 29. Depreciation rates and vehicle depreciation ceiling.

Part I.

Declining balance depreciation rates for depreciable assets.



Class

Assets included

Depreciation rate

1

Computers and data handling equipment

40%

2

Automobiles; buses and minibuses with a seating capacity of less than 30 passengers; goods vehicles with a load capacity of less than

7 tonnes; construction and earth

35%

3 moving equipment

Buses with a seating capacity of 30 or more passengers; goods vehicles designed to carry or pull loads of more than 7 tonnes; specialised trucks; tractors; trailers and trailer-mounted containers; plant and machinery used in farming, manufacturing

30%

4 or mining operations

Railroad cars, locomotives and equipment; vessels, barges, tugs and similar water transportation equipment; aircraft; specialised public utility plant, equipment and machinery; office furniture, fixtures and equipment; any depreciable asset not

20%

included in another class

Part II. Vehicle depreciation ceiling.



The amount for the purposes of section 27(11) is shs. 30,000,000.

Part III.

Straight-line depreciation rate for industrial buildings.

The depreciation rate for the purposes of section 29 is 5 percent.

Part IV. Prescribed areas.

The following areas are prescribed for the purposes of section 28: Kampala, Entebbe, Namanve, Jinja and Njeru.

Seventh Schedule.

s. 2.

Currency point.

One currency point is equivalent to twenty thousand Uganda shillings.

History: Act 11/1997.

Cross References

Building Societies Act, Cap. 108.

Constitution of 1995.

Diplomatic Privileges Act, Cap. 201.

Income Tax Decree, Decree 1/1974.

Investment Code, Statute 1/1991.

Local Governments Act, Cap. 243.

Magistrates Courts Act, Cap. 16.

Mining Act, Cap. 148.



Uganda Revenue Authority Act, Cap. 196.





Crypto-currencies are digital assets that are designed to effect electronic payments without the participation of a central authority or intermediary such as a Central Bank or licensed financial institution. Crypto-currencies may therefore be used to effect anonymous electronic payments or bought and held for speculative purposes in the expectation that their value will rise at a future time, whereupon they could be sold for a profit. Hundreds of crypto-currencies have been designed and launched around the world, and the most well-known examples include Bitcoin and Ethereum. Such crypto-currencies are not issued or regulated by any government or central bank. The government of Uganda does not recognize any crypto-currency as legal tender in Uganda. The government of Uganda has not licensed any organization in Uganda to sell crypto-currencies or to facilitate the trade in crypto-currencies and so these organizations are not regulated by the Government or any of its agencies. As such, unlike other owners of financial assets who are protected by Government regulation, holders of crypto-currencies in Uganda do not enjoy any consumer protection should they lose the value assigned to their holdings of crypto-currencies, or should organization facilitating the use, holding or trading of crypto-currencies fail for whatever reason to deliver the services or value they have promised.

The concept of crypto currencies is more complex than that of money, and therefore difficult for some to understand. The concept of money is easier to appreciate because it is based on the need for a medium of exchange. Historically, people engaged in barter trade, for example exchanging potatoes for salt. The system was imperfect so a medium of exchange that was acceptable to everybody was developed, leading to the creation of money. For example, in the 19th Century, the dollar was created and was backed by gold, but later on the United States Federal Reserve Bank decided to move away from backing the dollar with gold. The dollar today was not worth its equivalent at that time. The growing use of the digital currency for trade now posed challenges for the traditional concept of money. Crypto currencies were now manifest among those youth who were digital natives, and arguably their use appeared to be prevalent in trade between individuals and among various organizations in the country

The upsurge in modernization in the field of information and communication technologies has ushered in the digital revolution that has birthed the global phenomenon of virtual currencies that included crypto currencies. Even so, despite large volumes of crypto currencies being traded daily, one of the challenges it faced was the volatility of the crypto currency. Bitcoin was one example- hitting a high of USD 20,000 per Bitcoin at one point before falling to 11,000 and then 8,000 USD. Such volatility raised questions about whether those investing in or buying the crypto currency, particularly non-digital natives, understood it sufficiently to appreciate its benefits and risks. Equally, policy makers and regulatory bodies were facing challenges in coping with these developments as the crypto currencies were running parallel to the legal tender, functioning as a sort of measure of value but without any oversight by the financial sector. This book circumnavigates the adage of crypto currency in Uganda.