THE NEED TO INTRODUCE VIRTUAL CURRENCYIN ETHIOPIA: DRAWING LESSONS FROM SOME JURISDICTIONS

LLM THESIS

KAMIL NASSIR MOHAMMED

HAWASSA UNIVERSITY, HAWASSA, ETHIOPIA

March, 2024

THE NEED TO INTRODUCE VIRTUAL CURRENCYIN ETHIOPIA: DRAWING LESSONS FROM SOME JURISDICTIONS

KAMIL NASSIR MOHAMMED

ADVISOR: SHIMELES A. (ASST. PROF.)

LLM THESIS SUBMITTED TO THE SCHOOL OF LAW,

COLLEGE OF LAW AND GOVERNANCE, SCHOOL OF

GRDAUATE STUDIES, HAWASSA UNIVERSITY, HAWASSA, ETHIOPIA

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF MASTER OF LAWS

March, 2024

HAWASSA

ADVISORS' APPROVAL SHEET

This is to certify that the thesis entitled "THE NEED TO INTRODUCE VIRTUAL CURRENCY IN ETHIOPIA: DRAWING LESSONS FROM SOME JURISDICTIONS**"**submittedin partial fulfillment of the requirements for the degree of Master's with specialization inCommercial Law the Graduate Program of the Department/School ofLaw,and has been carried out byKamil Nassir MohammedID.No. GPKoLaK 007/11 under my supervision. Therefore I recommend that the student hasfulfilled the requirements and hence hereby can submit the thesis to the department.

Name of major advisor Shimeles Ashagre Signature _____ Date_____

EXAMINER'S APPROVAL SHEET

We, the undersigned, members of the Board of Examiners of the final open defense by **Kamil Nassir Mohammed Id No 007/11** have read and evaluated his/her thesis entitled **"THE NEED TO INTRODUCE VIRTUAL CURRENCY IN ETHIOPIA: DRAWING LESSONS FROM SOME JURISDICTIONS"** and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of master of Law.

Name of Major Advisor **Shimeles Ashagre** Signature_____ Date_____

Name of Internal Examiner-I _____Signature _____ Date _____

Name of Internal Examiner-II _____Signature _____Date_____

Name of External examiner _____Signature _____Date _____

SGS Approval _____Signature _____Date _____

Stamp of SGS_____

Date_____

DECLARATION

I hereby declare that "THE NEED TO INTRODUCE VIRTUAL CURRENCY IN ETHIOPIA: DRAWING LESSONS FROM SOME JURISDICTIONS" is my original work and has not been

Presented for a degree in any other university, and all sources of material used for this Thesis have been duly acknowledged.

Name: KAMIL NASSIR MOHAMMED ID No GPKoLak 007/11

Signature: _____

This LLM thesis title has been submitted for examination with my approval as thesis advisor.

ACKNOWLEDGEMENT

First of all I would like to thank the almighty God/Allah. Secondly I would also like to express my special gratitude to my advisor Shimeles Ashagre(Asst. prof.) for his unlimited support on his suggestion and careful advice through the process of this work.

Finally, I am extremely grateful to all the people who were contributed and supported me directly or indirectly to complete this thesis project.

Contents

LIST of ABREVIATIONS/ACRONYMS

ACCC: Australian Competition and Consumer Commission

AML: Anti-Money Laundering

ATO: Australian Taxation Authority

ASIC: Australian Securities and Investments Commission

AUSTRAC: Australian Transaction Reports and Analysis Centre

BSA: Bank Secrecy Act

CBDC: Central Bank Digital Currency

CDD: Customer due diligence

CFTC: Commodity Futures Trading Commission

CFT: Counter Terrorist Financing

CGT: Capital Gains Tax

CFPB: Consumer Financial Protection Bureau

CIP: Customer Identification Program

DLTs: Distributed Ledger Technologies

EFTA: Electronic Fund Transfer Act

FATF: Financial Action Task Force

FEC: Federal Election Commission

FSB: Financial Stability Board

FinCEN: Financial Crimes Enforcement Commission

GDP: Gross Domestic Product

GPU: Graphic Processing Unit

IRS: Internal Revenue Service

ICOs: Initial Coin Offerings

IOHK: Input Output Hong Kong

KYC: Know Your Customer

MSB: Money Service Business

SEC: Securities Exchange Commission

SHA: Secure Hash Algorithm

VC: Virtual Currencies

ABSTRACT

Though physical cash is still widely circulating, Virtual currencies are under more scrutiny than ever as those governments, global corporations, and banks that make decisions begin to take them seriously as a solution for the future. The role of financial intermediaries such as banks in guaranteeing the value of the currency is not needed in cryptocurrency transactions. Due to convenience to account Cryptocurrencies & transact it or otherwise, the popularity of Cryptocurrency is rising day to day in Ethiopia. Ethiopian government, however, warn against the use of Virtual currencies. Because of Virtual Currencies anonymous nature the ban will not be achieved. In addition banning is the cutting of innovation. Virtual Currencies has a number of advantages with their own risks too. The natures and the scope of applications of Virtual Currencies raise important legal compliance issues.To these issues traditional fait money regulations are not always compatible to Virtual currencies. This research tries to address the need of introducing Virtual Currencies, by showing prospects and challenges of introducing Virtual Currencies, in Ethiopia. To address the issue the study has employed doctrinal research to pin point and analyze risks and opportunities of introducing Virtual Currencies and to address the Laws in Ethiopia in ways of introducing Virtual currencies, by analyzing lessons of some jurisdictions. Though it has few risks, introducing Virtual currency is beneficial to the country in collecting tax, protecting the rights of the public, promoting innovation and to adopt central bank digital currency. Therefore, the government should modify or enact new laws and policies in the country to address the growth and effects of using Virtual Currencies, andto introducing Virtual Currencies in Ethiopia.

Key words: **Virtual Currency, Ethiopia, Cryptocurrency, Central Bank Digital Currenc**y.

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Digital currency is the main result of recent technological innovation. Financial Action Task Force (FATF, 2021) defines digital currency as a digital representation of either Virtual Currency (VC) (non fait money) or electronic money (fiats).[1]There are two types of digital currency; VC and Electronic Money.[2] Electronic money is a digital representation of fiat money, which is legal currency designed and issued by central authority in every country.[3] On the other hand VC, the focal point of the research, is a code or serial numbers that represent a value and uses the internet a vehicle and uses cryptography for the security of transaction.[4]It is the recent invention after 2008 that Satoshi Nakamoto invents Cryptocurrency type of VC called bitcoin.[5] Now a day the major type of VC so called Cryptocurrencies and the underlying blockchain technology are becoming a pervasive force in the global economy, affecting everything from cross border retail payments to interbank transfers.[6]Over the past few years, Bitcoin, Lite coin, and Dash have begun to compete with PayPal, Western Union, and bank wires as a global payment system.[7]

There are two types of VC; centralized like central bank digital currency and decentralized like cryptocurrency.[8] Robby Houben and Alexander Snyers(2018) defines, Cryptocurrency asmedium of exchange as fait money uses, and can be exchangeable to legal tenders.[9] On Cryptocurrency there is no central bank and participants do not need to trust each other, trust only applies to the

[1] FATF, *Updated Guidance for A Risk Based Approach to Virtual Assets and Virtual Asset Service Providers*(FATF 2021)
[2] Ibid
[3] Gonzalo Arias Acuña and Andrés Sánchez Pullas, *The Digital Currency Challenge for the Regulatory Regime(*University of Melbourne *2016)*
[4] Ibid
[5] Jacinta Bernadette Rico Shirakawa and Upalat Konwatanasakul , *Cryptocurrency Regulations: Institution and Financial openness*(Asian Development Bank 2019)
[6] Global Future Council on Cryptocurrency, *Navigating Cryptocurrencies Regulation: An Industry Perspective on the Insights and Tools Needed to Shape Balanced Crypto Regulation* (World Economic Forum 2021)
[7] Scott D.Hughes, 'Cryptocurrency Regulations and Enforcement in the United States' (2017), 45(1) Western state Law Review 45
[8] Robby Houben and Alexander Snyers, *cryptocurrencies and blockchain: legal context and implication of financial crime, money laundering and tax evasion* (European Union Policy Department for Economic, Scientific and Quality of Life Policies 2018)
[9] Ibid

algorithm and the network that defines the particular blockchain.[10]The other type is Central Bank Digital Currency (CBDC); IMF staff defined it as "a new form of money, issued digitally by the central bank and intended to serve as legal tender."[11] Thus, it is similar with cryptocurrency in using Distributed ledger technology (DLT), and issued and regulated by a country's national authority or central bank.[12] The declining use of cash and the growing role of crypto assets have led central banks to contemplate CBDCs.[13]

The 2021 IMF's Global Financial Stability Reportnoted that the market capitalization almost tripled in 2021 to an all-time high of US $2.5 trillion.[14]This growing adoption and decentralized nature of Cryptocurrencies pose unique and unprecedented challenges for financial authorities, capital markets regulators, consumer protection and privacy bureaus, and tax authorities around the world.[15]

World Economic Forum outlined four general approaches followed by countries of the world regarding regulations of Cryptocurrency;[16] the first is the **Wait and see"** approach: this implies not issuing specific regulation on the nascent industry in order to allow for its development. The second is the **Public-private partnership** approach (balanced/risk-proportionate approach). This approach implies that regulators tend to develop a better understanding of the innovators balancing individual right with public interest. The third is the **Comprehensive regulatory approach**: this involves designing and implementing a specific regulation. The final one is the **Restrictive approach**: this approach implies complete ban. On the other hand, States are in formulation of their own digital currency correspondent with unregulated VCs.[17]

---

[10] Wolfgang Karl Hardle, Campbell R. Harvey and Raphael C. G. Reule, *Understanding Cryptocurrencies* (Humboldt University At Zu Berlin 2019)
[11] IMF Working Paper, *Legal Aspects of Central Bank Digital Currency: Central Bank and Monetary Law Considerations(IMF 2020)*
[12] United Nations Conference on Trade and Development,*Crypto Assets and Central Bank Digital Currencies; Potential implications for developing Countries* (UN 2023)
[13] Ibid
[14] NASDAQ.COM/crypto surveillance(ed.), *crypto currency regulation summery(* 2022) <httpswww.clubgestionriesgos.orgwp-contentuploadsCryptocurrency-Regulation-Summary-2022-edition.pdf.pdf> accessed 6 April, 2023
[15]Jacinta Bernadette Rico Shirakawa and Upalat Konwatanasakul, Supra note 5
[16] Robby Houben and Alexander Snyers, Supra note 8
[17] United Nations Conference on Trade and Development, Supra Note 12

Most developing countries have not determined the legality of Cryptocurrency, preferring instead to take a 'wait and see' approach.[18]The practice in Ethiopia shows that several activities are being undertaken by interested individual in Ethiopia to spread the payment system of Cryptocurrencies in general and Bitcoin in particular.[19] Several bitcoin networks such as ArchiversKlub school of Cryptocurrency, Bit Club, and AWS mining are doing extensive works to introduce and expand the business of Bitcoin in Ethiopia.[20] Many Ethiopians are joining the business of Bitcoin by purchasing it.[21] Additionally, Ethiopia signed an agreement with Input Output Hong Kong (IOHK) Company to provide training on how to develop Cryptocurrency in Ethiopia and to create a new digital payment system that will allow these million users to pay their power and electronic bills with cryptocurrency.[22] Ethiopia's digital strategy 2025 too promotes creating a cashless society.Despite these facts, National Bank of Ethiopia on its official announcement warns against the use of VCs.[23] According to the National Bank, studies have found that people are widely using Bitcoin.[24] The Bank said "Transactions via VCs have also helped the transfer of illegally earned money, increasing money laundering."[25]In addition to these, regulations about fait money are not always compatible to handle the issue of VCs. Due to this reforming the existing law in some extent that allows using VC with restrictions is needed. As using VC has economic benefit and introducing it will allow controlling crimes relating with it, the country will benefit from introducingVC. On the other hand, the position of the bank too did not recognize the possibility of formulating central bank virtual currency called CBDC. Again total prohibition halts innovation too. These issues need an investigation.

Messay Asgedom (2021) argues, by referring the provisions of the Ethiopian National Payment System Proclamation, Cryptocurrencies are prohibited with regard to the provisions of thisproclamation.[26] On the other hand Messay also argues, Anti money laundering law of

[18] Messay Asgedom Gobena, 'The Regulation of Cryptocurrencies under Ethiopian Legal Norms'(2021), 15(1) Mizan Law Review 173
[19] Ibid
[20] Ibid
[21] Ibid
[22] See For Example, 'Reporter, Blockchain technology to debut in Ethiopia'(may 5,2018)<https://www.thereporterethiopia.com/5297/#:~:text=debut%20in%20Ethiopia-,Blockchain%20technology%20to%20debut%20in%20Ethiopia,-By>Accessed 05 April, 2023
[23] Addis Insight & Addis Getachew and Sileshi, Supra Note 19
[24] Ibid
[25] Ibid
[26] Messay Asgedo, Supra note 18

Ethiopia do not govern VCs, as the law prohibits only banks and central institutions other than individuals.[27] During the conclusion of Messay's article the National Bank of Ethiopia was not disclosed its position on the use of Cryptocurrencies. So that, Massay's study doesn't show the need of adopting Virtual currencies. On the other hand Samuel Girma, on his graduate thesis examines the issue of Cryptocurrency regarding the Trade Competition and Consumer protection proclamation and the Federal Income Tax Proclamation, and he suggests the importance of addressing prohibition of Cryptocurrency on these legislations arguing these laws doesn't address the area.[28] His study too, does not focus on the possible benefits and challenges of introducing Cryptocurrency and other VCs.

This study examines and analyzes the need to introduce VCs as long as it do not conflict with the national interest and criminal regulations, by analyzing lessons of other jurisdictions.The study may help the law makers and stake holders to take measures and enact laws that enable introducing VCs, and understanding the opportunities and risks of introducing VC. Giving understanding notes may also pave the way for further studding in this area.

1.2 STATEMENT OF THE PROBLEM

Due to convenience nature of cryptocurrency,its popularity is rising day to day in Ethiopia.So that,legislators are bind to make consumers and businesses within a specific geographic location to obey the regulation.[29] The goals of the legislation should be clearly formulated and transparent for VC market participants.[30]In order to reduce compliance costs, governments shall provide suggested guidelines for consumers and businesses that are subject to the new legislation.[31]

The other problems are that, restricting the use of VCs results the cutting of innovation on the technology from growth, and the ban also may not be achieved due to anonymous nature of VCs.In addition, permitting the use of Cryptocurrency without restrictions may also enable individuals to commit a crime and fraud via this technology. The National bank of Ethiopia

[27] Ibid
[28] Samuel Girma Buta, *Legal Status and Regulation of Cryptocurrency In Ethiopia*(LLM Thesis, Addis Ababa University 2021)
[29] Scott D.Hughes, Supra Note 7
[30] Ibid
[31] Ibid

warns against the use of Cryptocurrencies like Bitcoin on its official statement, with no clear detail regulation under the area.[32]This position does not recognize opportunities of introducing VCin handling; innovation on the area, the issue of taxation, controlling money laundering and cybercrimes, adopting CBDC- which has many advantages and so on. Adopting VCs may raise many criminal and civil legal issues such as money laundering, fraud, tax, terrorist financing, consumer protection, and exchange rate and so on.[33]Cryptocurrency regulations are evolving quickly around the globe with authorities responding to developing risks professed by criminals exploiting the latest payment methods to mask and launder the profits from their crimes.[34]Despite, the governments' a complete ban is with no detail regulation on the area.

Furthermore, Ethiopia's digital payment system Strategy 2025 recommends digital payment system and e- commerce. This cannot be fulfilled by electronic payment system alone, but it should be supported by VCs too.Cryptography which is underlying technology of Cryptocurrency is not simply attacked by Cyber-attack due to the technology is more secured as in electronic payment, which has challenges of power interruptions, machine breakdowns, and related problems on the quality and growth of the services; security problems that shadows service provision.[35]To sum up, importance of knowing how to deal with cybercriminals to prevent the disruptions of the markets is important.[36]Customer Identification Program (CIP) is another set of legal issues aimed at fighting money laundering by basically requiring due diligence (DD) from companies to identify their customers.[37]A consumer protection is also another issue that concerns and risks to consumers of Cryptocurrency products and services will typically be the same as for existing financial services.[38]Because of VCs special nature, the

[32] See, for instance Addis Insight, Supra note 19
[33] Free Man Law, 'legal issues in Cryptocurrency' (2022) <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiZgtqam7n5AhUqiP0HHaNHAGoQFnoECEEQAQ&url=https%3A%2F%2Ffreemanlaw.com%2Flegal-issues-surroundingcryptocurrency%2F&usg=AOvVaw3lroaE1PKff6gqp1dtyCBI> accessed 7 April,2023
[34] Ibid
[35] Equbamarian Kidane Asegu, 'The Limits of Electronic Banking Regulations in Ethiopia'(Editions Universitaires Europeennes, 2018)
[36] Mircea Constantin Scheau, 'A Cryptocurrency Spectrum Short Analysis'*(2020)*, 13(184) Journal of Risk and Financial Management 4
[37]Tien Dang Vo-Huu and Reza Mirzazade Farkhani, 'Cryptocurrency: A Challenge to Legal System'*(2018)*, Electronic Journal 5
[38] Ibid

regulations of fait money are not always compatible to VCs too.Therefore, it needs specific regulations on handling VCs.

Consequently, this study will help to examine the regulations regarding the need to introducing virtual currency, to examine and analyze possible legal risks and opportunities of introducing VCs, to show how the existing corresponding laws and policies be constructed in order to introduce VCs to benefit from its fruit and to handle the challenges of VCs.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to show the need of introducing VCs by indicating opportunities and riskin order to enable the regulators of addressingVCs in Ethiopian laws.

1.3.2 Specific Objectives

- To examine and analyze the corresponding Ethiopian laws in introducing VC by drawing lessons of jurisdictions.
- To indicate legal ways of introducing VCs in Ethiopia by examining and analyzing lessons of selected jurisdictions.

1.4 RESEARCH QUESTIONS

The principal research question of this study is;

- What are the positive and negative legal factors that results the need of introducing VCs in Ethiopian regulations?

Moreover, this study will try to address the following specific questions.

- What is the practice of introducing VC in selected jurisdictions?
- What are the related legal issues in introducing VC related activities in Ethiopia?
- What legislative reforms are required for effective regulation in introducing VC in Ethiopia?

1.5 SIGNIFICANCE OF THE STUDY

The findings of this study will aid to answer the issue of reforming the existing laws and policies or enacting a new law on the area, which helps the government in introducing and adequate handling of the practice on the usage of VCs. In addition to this, the findings of this study will provide important attributes for those who desire to conduct further study in the area.

1.6 METHODOLOGY and SPECIFIC METHODS

1.6.1 Research Design

This study is primarily doctrinal research method. It is a library based study to identify the "only correct answer" to specific legal issues or questions. The **primary data** used to conduct a research are legislations of Ethiopia.Further, the laws of *U.S., Tunisia, and Australia* are used as a primary source as these jurisdictions regulated the issue well and accessible. **Secondary data** such as books, journals, periodicals and internet sources are used for specifically examining issues dealing with the legal issues of VCs and how VCs are introduced in selected jurisdictions.

1.6.2 Data Collection Methods

The major data selected for this study is collected from the various national and international publications by using internet websites that widely published their circulation on the topic of the use of the VCs.

1.6.3 Data Analysis

A Comparative legal analysis is employed to clarify and assess the advantages and challenges of introducing VCs in Ethiopia. The analysis will focus on the experience of *U.S., Tunisia,* and *Australia* on the use of VCs, and the extent to which they regulate the use of Cryptocurrencies and CBDCs. The reason to examine the laws of U.S and Australia is that, because of *U.S.* and *Australia* already developed legal frameworks for the regulation of virtual currencies and their legal materials are freely accessible which makes them suitable to conduct a research. The

experience of *Tunisia* selected because of the country is already developed their nationwide digital currency controlled by the central Bank and its experience could be a lesson for Ethiopia. The study applies drawing lessons of these jurisdictions regulations to responses to particular questions which are sought and checked by the researcher, helping to decide if more study is needed.

1.7 Ethical Considerations

The writer of this study refrains from any deception or exaggeration about the aims and objectives of the research. The writer care about any type of misleading information, and representation of primary data findings stated as they are and stated without any biased way. The writer avoids plagiarism; others' works are cited properly and gives a credit in the paper. A research communication is with no harming of other researchers too. The writer also takes care on research misconduct, which means not falsify data or manipulating data analyses, or misrepresenting results in research reports.

1.8 SCOPE OF THE STUDY

The scope of this study is limited to the examination and analysis of corresponding *Ethiopian*, *USA*, *Australian* and *Tunisian* available laws and policies regards to introducing virtual currency related activities. Thus, Ethiopian government policies and federal financial regulations by comparing the laws and policies of *USA*, *Australia* and *Tunisia* will only be examined and analyzed.

1.9 LIMITATIONS OF THE STUDY

Scarcity of available materials in the area in relation to Ethiopian laws was one of the limitations faced by the researcher. Written books regarding the subject are not available in our library. All of them are found in the internet websites and searching of them is also challenging as many of them are not permitted to load freely, i.e. need payment and researcher can't adjust the payment

system, because researcher have no internet credit card. This will affect finding accurate study books written on the subject and some books essential to the subject might be failed to be assessed due to such reason, as searching the appropriate source is, difficult and challenging. Because of VCs are used by individuals confidentially the researcher cannot get exact number of users of this technology to put in number, to show criticality of the subject.

1.10 ORGANIZATIONOF the THESIS

This study is divided in to five chapters; **Chapter one** introduces about the basic ideas of the research topic and contains, statement of problem related to the research, objectives general as well as specific, research questions framed in light of the problem, significance of the study, methodologies applied by the researcher for collection and interpretation of data in light of the research question, scope of the study, and limitations of the study has been discussed. **Chapter two**of the study discusses conceptual analysis of the VCs, which includes historic development, the meaning, definition, and types of VCs.**Chapter four** of the study assesses the experiences of introducing VCs by expressing lessons of selected foreign jurisdictions. **Chapter Five** of the study examines and analyzes the available regulations by drawing lessons of some jurisdiction that enable to know advantages and challenges of introducing VCs in Ethiopia. **Chapter Five** will assess findings, Conclusion and Suggestion on the subject.

CHAPTER 2: CONCEPTUAL ANALYSIS OF VIRTUAL CURRENCIES

2.1 DEFINITIONS OF VIRTUAL CURRENCY

Digital currency system is a recent payment method never used before. The term digital currency is a form of currency that is available in either digital or electronic form. It can also be said as digital money, electronic money, electronic currency, or cyber cash. The transaction involving digital currencies is made using computers or electronic wallets connected to the internet or designated networks and have utility similar to physical currencies.[39]To clear more, digital currency is a digital representation of either VC or electronic money (fiat), and thus is often used interchangeably with the term VC.[40] Then this definition suggests two types of digital currency: Virtual Currency and electronic money, however the purpose of this study relies only on the former. In consequence, it is necessary to address the differences between VC, and electronic money.

VC is a digital representation of value that also includes digital currencies which are not issued by a government or a public authority but may be accepted as a means of payment.[41] It can be transferred, stored, or traded digitally and don't have geographical or political borders. Instead, the community that supports a particular VC makes the decisions about it to accept or not.[42] While VC does not always have a physical equivalent in the real world or represented by a legal tender, it does share some characteristics with traditional money.[43]This is because:[44] One, VC is a digital representation of a value and is a type of digital money issued and controlled by its developers and members of a specific community accepting it. Second, VC used as a medium of exchange, a unit of account, and a store of value. However, despite these features, VC is distinguished from fiat currency ("real money,") which is the coin and paper money of a country that is designated as a legal tender; circulates; and is customarily used and accepted as a medium

[39] Jake Frankenfield, 'Digital Currency Types, Characteristics, Pros and Cons, Future uses'(April 2023) <Https://www.investopedia.com/terms/d/digital-currency.Asp> Accessed 31 July,2023
[40] Gonzalo Arias Acuna and Andres Sanchez Pullas, Supra Note 3
[41] Ibid
[42] Ibid
[43] National Standard for Personal Financial Education, 'Wondering About Virtual Currencies'(Consumer Finance Protection Bureau 2022)<Https://www.consumerfinance.gov/financial-education-grossary> accessed 10 July, 2023
[44] FATF, Supra Note 1

of exchange in the issuing country.[45] This is because VC is used digitally and not linked to any physical money.

On the other hand, Electronic money is a digital transfer mechanism for fiat currency. i.e., it electronically transfers value that has legal tender status.[46]It is a fiat/real currency with electronic representation like Tele birr, CBE birr and M-Pessa in our country. Fiat money means any physical legal currency designated and issued by a central authority in every country.[47]In other words, electronic money is a digital transfer mechanism for fiat currency the transfer is of the value that has legal tender status.[48] VC does not have legal tender status.[49] VCs depend on the processing power of vast networks of unidentified, private computers around the world, which maintain and update a public ledger called the "blockchain".[50] Thus, the term virtual currency can refer to decentralized cryptocurrencies like bitcoin, but also centralized alternatives that might be issued, stored, transacted, or redeemed by a single party like Central bank digital currency.[51] VCs value emerges solely from the ability to transfer it from one place to another inside the particular Virtual Currencies "electronic ecosystem", and relies entirely on trust, as there is no legal way of forcing anybody to accept it as a means of payment.[52]

The question of whether VCs share characteristics of full-fledged money also remains controversial too. Some argue it is not money and others argue it is private money. For example, Söderberg (2018) argues, that Virtual Currencies do not satisfy the traditional definition of money discussed in economic literature.[53] In particular, in their opinion, they do not meet the conditions outlined by Jevons (1875) he defines money as it shall fulfill three basic functions: be a means of payment, a unit of account, and a store of value.[54] Critics argue that VCs serve as means of payment to a very limited extent, as only a very limited number of merchants accept

[45] Ibid
[46] Ibid
[47] Gonzalo Arias Acuna and Andres Sanchez Pullas, Supra Note 3
[48] Ibid
[49]Ibid
[50]'Cunsumer Advisory,Risks to Consumers Posed by Virtual Currencies'(August 2014)<https://www.filesconsumerfinance.gov/f/201408_cfpl_consumer-advisory_virtualcurrencies.pdf> Accessed 31 July, 2023
[51] USAID, *Examining Virtual Currencies: Risks and Uncertainty of Novel Payment Technology in International Development* (2021)
[52] Ibid
[53] European Union Parliament, *Virtual Currency and Central Banks Monetary Policy Challenges Area* (EU 2018)
[54] Ibid

them, the number of transactions is still negligible compared to sovereign currencies, salaries are not paid in VCs too, and no known government accepts them as a legal tender or unit of account. They also argue VCs fail to effectively serve as a store of value because of an enormous volatility of their purchasing power.[55] On the other hand, one cannot exclude the possibility that a number of users and transactions will increase to the extent that VCs will become a fully-fledged substitute of sovereign currencies in the future. We assume that VCs have potential to serve as full-fledged private money regardless of their future share in the overall volume of transactions and financial assets.[56]

2.2 Blockchain Technology

The development of blockchain technology is a new phenomenon, and is the result of circumventing different technological drawbacks of Data base and emailing system applications.[57] Thus, a blockchain is a database structure that can only be updated by joining a new set called a block of valid transactions to the log of a previous transaction.[58] That mean the data be transacted towards one block to another without remaining a copy of data on a transferring block. It also distinguished from an ordinary distributed database by its unique structure, which linearly connects smaller pieces of the database, or the blocks, that is decentralized. The chaining comes in the form of a cryptographic hashing function. Any change to history will break the chain on a particular copy of the database.[59] When a chain is broken, the network fixes it by replacing any corrupted block with a valid block. At the end of each block is a digest that summarizes the contents of the block. The digest is repeated as the first line of the next block. In this sense, the database is immutable on blockchain. The digest at the end of a block and at the beginning of the next is generated by a cryptographic hashing function.[60]Therefore a blockchain is "a distributed database that maintains a continuously growing list of ordered records, called blocks."[61] Each block contains a cryptographic hash of

[55] Ibid
[56] Ibid
[57] Josias N.Dewey, *Blockchain and Cryptocurrency Regulation*(fourth edn.), (Global Legal Insight 2022)
[58] Ibid
[59] Ibid
[60] Wolfgang Karl Handle and Others, Supra Note 10
[61] Ibid

theprevious block, a timestamp, and transaction data.[62] It is a decentralized, distributed and public digital ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the consensus of the network, which cannot be possible.[63]Transactions are recorded in an account book called a ledger.[64] It is a type of *distributed* database or ledger which has a power to update a blockchain is distributed between the nodes, or the whole participants, of a public or private computer network.[65] This is known as distributed ledger technology (DLT). [66]

Blockchain enables the user for the permanent, immutable, and transparent recording of data and transactions. Thus, it has three central attributes.[67] First, a blockchain database must be cryptographically secure. That means in order to access or add data on the database, you need two cryptographic keys: a public key, which is basically the address in the database, and the private key, which is a personal key that must be authenticated by the network.[68] Next, a blockchain is a *digital* log or database of transactions, meaning it happens fully online. And finally, a blockchain is a database that is shared across a public or private network. Over centuries, systems of accounting and auditing have evolved to verify transactions, ledgers, ownership and distribution of economic goods.[69] These systems are costly and ultimately duplicative but essential to modern economies and finance.[70] Crypto uses this blockchain technology on which each participant has a copy of the ledger and offers an algorithmic consent on the correct ledger.[71] It is also possible to design a blockchain so that only specific trusted parties have the ability to add to the ledger in decentralized blockchain.[72] Transactions are signed off by the parties involved using the software, checked by the network or the 'crowd', then added to the blockchain, a long string of code that records all activity. The software cuts out the need for a 'trusted middleman' to sit in between parties in a transaction, such as a bank or

[62] Ibid
[63] Synopsys inc., 'Blockchain'(2023)<https://WWW.Synopsis.com/glossarry/whatis-blockchain.html> Accessed 02 August, 2023
[64] Ibid
[65] Ibid
[66] Ibid
[67] Ibid
[68] Ibid
[69] John Collins, *Crypto,Crime And Control; Cryptocurrencies as an enabler of Organized Crime* (Global Initiative Against Transnational Organized Crime2022)
[70] Ibid
[71] Ibid
[72] Ibid

clearinghouse.[73] There is no need of middle man to control a transaction system. This makes transactions quicker, cheaper, and easier when compared to the current systems banks use.[74]

On the other hand, Centralized distributed blockchain that is permissioned blockchain is a source of considerable interest for many central banks. In contrast to cryptocurrencies such as bitcoin, trust is necessary in the permissioned blockchain, because the central banks actually "own" the coins, i.e. as a governing layer they have the right to change the supply of coins.[75]In both centralized and decentralized blockchain, a blockchain is divided into sub sheets of data, each one called a block. Any type of transaction, for example, a financial contract for any type of property transfer, can be put into a blockchain[76]

For example Bitcoin's distributed consensus algorithm derives from transaction validators, or 'miners', freely joining and competing to win rewards of bitcoin.[77] The technological breakthrough is the application of a 'proof of work' function, which imposes computational costs on those mining for rewards.[78] The network then validates the block through consensus, verifying that transactions are legitimate and no double spending has occurred. Then, competition for the next block begins, mathematically building on the preceding chain of blocks that computationally trace all the way to the origin Bitcoin block.[79] The proof of work consensus mechanism makes it near mathematically impossible that a malicious actor can alter the blockchain without controlling per cent of nodes within the network.[80]

2.3 TYPES OF VIRTUAL CURRENCIES

With regard to administration VCs can be categorized into two subtypes: non-**centralized/decentralized** and **centralized**. The Detail is as follow.

2.3.1 Decentralized Virtual Currencies

[73] MC Kinsey and Company, Supra Note 77
[74] Josias n.Dewey, Supra Note 57
[75] Ibid
[76]Ibid
[77] John Collins,Supra Note 69
[78] Ibid
[79] Ibid
[80] Ibid

Decentralized VCs, also known as cryptocurrencies, are distributed, open-source, peer-to-peer currencies that have no central administrating authority and no central monitoring authority or over sighting body. Examples of decentralized virtual currencies include Cryptocurrencies like: Bitcoin, Litecoin and Ripple.[81]We will see the details of Cryptocurrencies in the next part. Decentralized VCs relies on public and private keys to transfer value from one person to another, and must be cryptographically signed each time it is transferred.[82] The safety, integrity and balance of data ledgers is ensured by a network of mutually distrustful parties (in Bitcoin, referred to as miners) who protect the network in exchange for the opportunity to obtain a randomly distributed fee (in Bitcoin, a small number of newly created bitcoin, called the "block reward" and in some cases, also transaction fees paid by users as incentive for miners to include their transactions in the next block).[83] Hundreds of Cryptocurrency specifications have been defined mostly derived from Bitcoin, which uses a proof of-work system to validate transactions and maintain the blockchain. [84]

While Bitcoin provided the first fully implemented Cryptocurrency protocol, there is growing interest in developing alternative, potentially more efficient proof methods, such as systems based on proof-of-stake.[85] Thus, on decentralized virtual currency the public users and the network itself insure the security of the transaction without central body rules.

2.3.2 Centralized Virtual Currencies

The other type of virtual currency, Centralized virtual currencies are either convertible or non-convertible with legal tenders, as they are issued by a single administrating authority.[86]An administrator issues the currency; establishes the rules for its use; maintains a central payment ledger; and has authority to withdraw it from circulation. The exchange rate for a convertible virtual currency may be either floating i.e., determined by market supply and demand for the virtual currency or pegged, which mean fixed by the administrator at a set value measured in fiat

[81] Ibid
[82]Krishna Kumar Thakur and Dr G.t Bakin, 'Cryptocurrency: Its Risks and Gains And the way a head'(2018), 9(2) JEF 38
[83]Ibid
[84] FATF, Supra Note 1
[85]Ibid
[86] Ibid

currency or another real-world store of value, such as central bank digital currency.[87] Currently, the vast majority of virtual currency payments transactions involve centralized virtual currencies for example, central bank digital currency.[88] The similarity is that the online payment systems, both centralized and decentralized, offer legitimate financial services.[89]

2.4 CRYPTOCURRENCY

Several definitions of cryptocurrencies have been given over the past few years. Various governing authorities have developed their own terminology and classifications for this technology. The majority of the rulings explicitly state that Cryptocurrencies are a form of virtual currencies. As we have seen in the above part of the thesis once the currency is no longer available in physical form, the currency is deemed to be a virtual currency. Due to this cryptocurrency can be said as one type of virtual currency.[90]From this definition we can infer that Cryptocurrency is a type of virtual currency that can be used as a means of exchange.

Instead of being physical money carried around and exchanged in the real world, Cryptocurrency payments exist purely as digital entries to an online database describing specific transactions.[91] When we transfer Cryptocurrency funds, the transactions are recorded in a public ledger. Then Cryptocurrency is stored in digital wallets that are owned by individuals of a company.[92] There is encryption, to verify transactions, that is base for cryptocurrency received its name. The aim of encryption is to provide security and safety.[93]Therefore, Cryptocurrency: Also called "crypto," is a type of encrypted digital currency that generally only exists digitally.[94] Encryption by itself is a process that protects something from unauthorized access.[95] There is no physical coin or bill unless you use a service that allows you to cash in cryptocurrency for a physical token. our usually exchange cryptocurrency, a value represented by a number 1, 2...With someone online,

[87]Robleh Ali and Others, *Innovation in Payment Technologies and the Emergence of Digital Currencies* (Bank of England 2014)
[88] Ibid
[89] Scott D. Hughes, Supra Note 7
[90] Ibid
[91]Gonzalo Arias Acuna and Andres Shanchez Pullas, Supra Note 3
[92]Ibid
[93] Kaspersky, 'What is Cryptocurrency and How does it work?'(2023)<https://WWW.kaspersky.com/resources-center/definitions/what-is-cryptocurrency> Accessed 06 August,2023
[94] Ibid
[95] Ibid

with our phone or computer, without using an intermediary like a bank by using blockchain technology.[96] This transaction is completed on a distributed ledger such as the Bitcoin network or Ethereum network are not denominated in dollars or any other country's fiat currency.[97] This is not similar to PayPal, where fiat currencies are converted into digital bits that PayPal recognizes as PayPal accounting units.[98]

If you own Cryptocurrency, you don't own anything tangible. What you own is a key that allows you to move a record or a unit of measure from one person to another without a trusted third party.[99]Here, in the world of Cryptocurrency, miners are of vital aspect and importance, their job is all about to confirm the transactions.[100] In the network of cryptocurrency, transactions are received by miners; to confirm legality of the transaction and to spread them in the network. Every node has to add to its database, as soon as the transaction is confirmed by the miner.[101]In addition to miners, to control its admissibility, algorithmic governance rules for what are considered valid cryptocurrency transactions are embedded in the peer-to-peer software that cryptocurrency miners and users run.[102]. On Bitcoin(one of the cryptocurrencies), the pre-determined amount is not scheduled to be constant over time, but rather is set to halve every 210,000 blocks, or about every four years. The total supply of bitcoin will never exceed 21 million. It will reach 20 million in 2025 and stop growing altogether in 2140.[103]

Many different cryptocurrencies exist, each with their own set of rules.[104] Bitcoin is the first example of a digital asset, which has no backing or intrinsic value, based on blockchain technology. A common characteristic of cryptocurrencies is a network of peers with equal standing.[105]It becomes a part of an irretrievable record of historical transaction of the so called block chain.[106] Academic papers are arguing that bitcoin and cryptocurrencies represent a unique

[96] National Standard for Personal Financial Education, Supra Note 43
[97] Ibid
[98] Scott D.Hughes, Supra Note 7
[99] Kaspersky, supra note 108
[100] Ibid
[101] Krishna Kuman Thakur and Dr G.T. Bakin, Supra Note 82
[102] Ibid
[103] Eli Dourado, *Cryptocurrency* (The New Palgrave Economy of Dictionary, 2016)
[104] Krishna Kuman Thakur, Supra Note 82
[105] Wolfgang Karl and Others, supra note 11
[106] Eli Dourado, Supra Note 103

asset class because the correlation of price fluctuations with other asset classes such as securities and bonds is low.[107]

Established merchants, including Dell, Virgin, Expedia, and Microsoft have started to accept Bitcoin for payment.[108] After being ridiculed as money for computer nerds and a conduit for illegal activity, businesses and consumers are finally beginning to take notice of the cryptocurrency, bitcoin, and the underlying technology, blockchain. [109] Due to these new businesses, such as cryptocurrency exchanges, cryptocurrencies custodians, referred to as cryptographic wallet providers, cryptocurrency automated teller machines, blockchain developers, cryptocurrency payment processors, and cryptocurrency mining companies, amongst others, are being developed.[110] Millions of dollars are being invested in improving the user experience of cryptocurrencies. In addition to use as a medium of exchange, investors are using cryptocurrencies as a commodity or security that is ripe for investment.[111] Every day, approximately 315,000 transactions occur worldwide with a volume of approximately $100 million.[112] The number of block and mortar and online retailers that accept bitcoin are over 125,000 worldwide.[113] The growing adoption of bitcoin as a payment system is testament to the fact that cryptocurrency enthusiasts are not blocked by the lack of traditional customer protection policies.[114]

2.5 CENTRAL BANK DIGITAL CURRENCY

The declining use of cash and the growing role of crypto assets have led central banks to contemplate Central bank digital currencies (CBDCs).[115]Despite the lively debate on the merits of CBDC, no widely accepted definition of CBDC has yet emerged.[116]However, different institutions define it in similar ways. They are similar to cryptocurrencies, except that their value

[107] Scott D.Hughes, Supra Note 7
[108]Scott D.Hughes, Supra Note 7
[109]Wolfgang Karm Handle and Others, Supra Note 10
[110] Scott D.Hughes, Supra Note 7
[111] Ibid
[112]Ibid
[113]Ibid
[114] Eli Dourado, Supra Note 103
[115] Shobhit Seth, 'What is CBDC?'(April ,2023)<https://WWW.investopedia.com/terms/c/central-bank-digital-currency>Accessed 10 october,2023
[116] Wouter Bossu and Others, 'IMF working Paper'(2020)

is fixed by the central bank and equivalent to the country's fait currency, because it uses a blockchain technology.[117] A CBDC is publicly issued digital money denominated in the national unit of account.[118] It is issued and regulated by a country's national authority or central bank by using blockchain technology. As such, it offers, in digital form, the unique advantages of central bank money: monetary anchor, settlement finality, liquidity and integrity.[119] IMF staff defined CBDC as "a new form of money, issued digitally by the central bank and intended to serve as legal tender."[120] Even though the definition of CBDC is not yet settled, the definitions of the two staffs shows a key distinctive feature of CBDC is that it is digital.

According to IMF staff as CBDC is digital, whether it qualify as digital money or not is, it will depend on jurisdiction-specific circumstances.[121] Its regulatory framework generally consists of rules of the licensing of electronic money institutions, their required initial capital and own funds, general prudential rules, oversight, as well as rules safeguarding funds received in exchange for electronic money.[122] In most countries, the legal framework contemplates the issuance of electronic money by private institutions and not by the central bank.[123]However, in case of CBDC it is issued by the central bank or central authorities of the state.

There are two main types of central bank digital currency: retail CBDC and wholesale CBDC. A retail CBDC is issued to the general public, such as individuals and businesses, and exhibits characteristics of cash (but in digital form), while a wholesale CBDC is issued primarily for interbank transactions and available only to selected financial institutions (similar to bank reserves).[124] However, compared to bank reserves, a wholesale CBDC may be accessible to a wider range of counterparties and be interoperable with other payment systems, both domestic and foreign.[125] Most developing countries central banks are investigating both retail and

[117]Ibid
[118]Steven Schwarcz, 'Regulating Digital Currencies'(Boston University Law Review,2022)
[119] Wouter Bossu, Supra Note 116
[120] Ibid
[121]Ibid
[122]Ibid
[123] Ibid
[124]Steven Schwarcz, Supra Note 118
[125]Ibid

wholesale CBDCs.[126] Countries are in adopting their own central bank digital currency and their publics are in using it.

CBDC does not require it to compete with other forms of payment out of existence rather; this channel would be operative even if CBDC were a complement to other digital currencies.[127] Interoperability (work in all banks/to all people) between CBDC and large digital platforms may also be essential in ensuring the success both of CBDC and those platforms.[128] Therefore, interoperability may be critical in maintaining the link between public money and the general public.[129] From the platform's perspective, interoperability may be beneficial as well. Users would likely be more prone to use the platform if they were permitted to use both the network's currency and whatever publicly issued digital currency they hold.[130]CBDCs could also help to set privacy standards for digital payments.[131]

On the other hand Central bank digital currency is a new form of digital currency to circumvent a cash payment. Due to this it needs a prudent regulation that is different with cash regulations.[132] The amount of outstanding coins issued is much smaller than the amount of outstanding central bank notes in circulation due to the smaller units, so coins are used only for small purchases.[133] The amount of cash is based on the quantity demanded by the general public, which is associated with transaction demand (normally proxies with nominal gross domestic product (GDP), as well as the opportunity cost (normally a deposit rate paid by the commercial bank to the general public).[134] Thus, a central bank supplies cash passively in response to demand. A central bank provides commercial banks with cash by withdrawing the equivalent amount from their reserve deposit accounts; commercial banks then distribute the acquired cash to the general public on demand through windows of bank branches and/or ATMs.[135] This economic principle works also

[126] UNCTAD, Supra Note 13
[127]Ibid
[128]Ibid
[129]Ibid
[130] Jean Pierre Landau, *The Digitalization of Money*(Princeton University 2019)
[131] UNCTAD, Supra Note 12
[132] Global Future Council on Cryptocurrency , Supra note 6
[133]Jean Pierre Landau, Supra note 130
[134]Ibid
[135]Ibid

to CBDC.[136] As such for issuing CBDC the monetary principles should be considered on central authorities.

2.6 VIRTUAL CURRENCY SYSTEM PARTICIPANTS

Various other entities may participate in a virtual currency system. These include web administration service providers (administrators); miners; exchangers; and wallet providers.[137]

2.6.1 Administrators

An administrator is a person engaged as a business in issuing (putting into circulation) a virtual currency and who has the authority to redeem (to withdraw from circulation) the virtual currency.[138]It is a person or entity engaged as a business in issuing, establishing the rules for its use; and maintaining a central payment ledger that controls over all activity of the virtual currency system.[139] The central administrator of a virtual currency is typically the issuer of that currency. The role is similar to a central bank in a regulated currency system.[140]

2.6.2 Miners

There are three primary ways of obtaining bitcoin and other cryptocurrencies. Some can buy them on an exchange like Coin base, receive them as payment for goods or services, or virtually mine them.[141] It's the third category that we're explaining here, using Bitcoin as our example. To get a bitcoin in mining a specialized computers perform the calculations required to verify and record every new bitcoin transaction and ensure that the blockchain is secure.[142] Every computer on the network races to be the first to guess a 64-digit hexadecimal number known as a

[136] Sayuri Shira, *Money and Central Bank Digital Currency*(Asian Development Bank Institute 2019)
[137] FATF,supra Note 1
[138]'Crypto Compliance'(2021)<https://WWW.cryptocompliance.io/about-us/how-do-msns-and-virtual-currency-related> Accessed 17 September, 2023
[139] Financial Crimes Enforcement Networks, *Regulation to Persons Administering, Exchanging, or Using Virtual Currencies*(2023)
[140]'Corporate Finance Institute'(May, 2023)https://Corporatefinanceinstitute.com/resources/cryptocurrency/virtual-currency (may 2023) Accessed 16 September, 2023
[141]Ahmed Abullan Aisar and Kailash Kumar(2019), 'Mining Process in Cryptocurrency Using Blockchain Technology: Bitcoin as a Case Study'(2018) 16 Journal of Computational and Theoretical Nano science 4293–4298
[142]Ibid

"hash".[143] The winner updates the blockchain ledger with all the newly verified transactions, thereby adding a newly verified block containing all of those transactions to the chain and is granted a predetermined amount of newly minted bitcoin.[144]

The point is that, Miners are individual or entity that runs the cryptocurrency software on computers, graphic processing units (GPUs), or special hardware devices known as application specific integration circuits (ASICs).[145] The competition involves solving a mathematical problem called a nonce that requires large amounts of computing per second. This process is repeated over and over again as new transactions are broadcast to the network.[146]A Miners may be users, if they self-generate a convertible virtual currency solely for their own purposes, e.g., to hold for investment or to use to pay an existing obligation or to purchase goods and services.[147] When a miner solves the puzzle, they broadcast it along with the block, to the broader Bitcoin network and claim their reward.[148] The value of Bitcoin is the incentive for miners to continue the process of validating transactions and maintaining the blockchain of transaction histories. Thus, mining is the process by which networks of specialized computers generate and release new Bitcoin and verify new transactions whether it is valid or not.[149]

2.6.3 Exchanger

An exchanger is a person engaged as a business in the exchange of virtual currency for real currency.[150]Exchangers engaged as a business in the exchange of virtual currency for real currency, funds, or other forms of virtual currency and also precious metals, and vice versa, for a fee (commission). They generally accept a wide range of payments, including cash, wires, credit cards, and other virtual currencies, and can be administrator-affiliated, non-affiliated, or a third

[143]Ibid
[144] Coinbase, 'What is Mining'(2023)<https://WWW.coinbasecom/learn/crypto-basics/what-is-mining> Accessed 17 september, 2023
[145]Ibid
[146] John Collins, Supra Note 83
[147] FATF Update, Supra Note 1
[148] John Collin, Supra Note 69
[149] Eli Dourado, Supra Note 103
[150]Palm Bains & Other, *Regulating the Crypto Ecosystem: The Case of Unbacked Crypto Assets*(IMF,2022)

party provider. Exchangers can act as a bourse or as an exchange desk.[151] Individuals typically use exchangers to deposit and withdraw money from virtual currency accounts.[152]

2.6.4 Wallet Provider

Wallet provider is an entity that provides a virtual currency wallet for holding, storing and transferring bitcoin or other virtual currency.[153] A wallet holds the user's private keys, which allow the user to spend virtual currency allocated to the virtual currency address in the block chain. A wallet provider facilitates participation in a virtual currency system by allowing users, exchangers, and merchants to more easily conduct the virtual currency transactions.[154] They maintains the customer's virtual currency balance and generally also provides storage and transaction security. For example, beyond providing bitcoin addresses, the wallet may offer encryption; multiple key (multi-key) signature protection, backup/cold storage; and mixers.[155] All Bitcoin wallets can interoperate with each other.[156] Wallets can be stored both online ("hot storage") and offline ("cold storage").[157]

2.6.5 Hashing

Hashing functions have a long history in computer science and are integral to the blockchain technology. It should not be confused with encryption.[158] With encryption, a file is encrypted with a key and decrypted with a key.[159] Hashing has no decryption step. Additionally, a good hashing algorithm makes it computationally infeasible to find two input values that produce the same hash value (output); this is known as collision resistance. One common cryptographic hashing algorithm, the Secure Hash Algorithm (SHA256), has a maximum input size of 264-1 bits (more than 2 million terabytes) and an output of 256 bits.[160] Before sending the email, we obtain a SHA-256 of the document and post the SHA-256 on our website. We then send the

[151] Ibid
[152] Ibid
[153]Ibid
[154]Ibid
[155]Palm Bains & Others, Supra Note 150
[156] Wolfgang Karl Handle and Others, Supra Note 10
[157] Ibid
[158]Ibid
[159]Ibid
[160] Ibid

document. The recipient also hashes the document to verify the hash is the same as the hash on our website. If they are identical, we have securely sent the document. Posting the hash on our website does not reveal the content of the email. Here are some examples, which you can try by using the R package "digest", the Python libary "hashlib", or many online programs such as interactive Github-based repositories.[161]

Input:Hello CRIX

Output: f9a2b57d86cc4ba463a3bedbbe0c7e850da5b34c6bcc1a92b794308ceaf93761

Input:Hallo CRIX

Output: 0198c2ea3632efd2758cd40a5609037fe4aa1590850339ad6d6a7fd3e518ec65

Note that changing a single letter from "e" to "a" completely changes the hash.[162]

2.6.6 Initial Coin Offering

Initial Coin Offerings (ICOs) or token sales are a mechanism to raises external funding through the emission of tokens.[163] Simply putting it is the process of providing digital tokens into the market.[164] To work ICOs, the first step is to set up the details of the campaign. This includes creating tokens with a specific bundle of rights attached to them, setting the timeline for the liquidity events, targeting an audience, pricing the tokens, issuing the 'white paper' and the business plan for the venture, and setting up social media tools for the marketing activity.[165] The entrepreneurial firm normally announces additional information, such as an advisory board, and hires experts to conduct the ICO campaign, in exchange for either capital or a considerable number of tokens. The second step is the pre-ICO or presale. At this stage, a small proportion of the issued tokens are sold at a discount to a select group of contributors or to the public at

[161]Ibid
[162]Maria Demertzis & Guntam B. Wolf, *Economic potential and Risks of Crypto Assets: Is a regulatory Framwork Needs(*Bruegel, 2018)
[163]Ibid
[164]Ibid
[165]Ibid

large.[166] During the ICO phase, starting from the predefined opening time for the call for contributions, cryptocurrencies can be sent to a public digital wallet address.[167]

A critical milestone for every cryptocurrency therefore is the listing on a token exchange following the ICO. The listing ensures that the tokens can be traded; hence it provides the main source of runniness. Runniness attracts new investors and paves the way for using the token as an actual currency. It must also be noted, however, that for many ICOs the journey ends with a delisting. This signals a project's termination, as there is no platform for the currency to be exchanged.[168]

[166]Blake Hamil, 'EU Crypto Currency Regulaton Creating A Heaven For Businesses or for Criminals'(2020), 48 JICL 833
[167] Ibid
[168]Maria Demertzis & Guntam B. Wolf, Supra Note 162

CHAPTER 3: LESSONS OF SELECTED JURISDICTIONS ON INTRODUCING VIRTUAL CURRENCIES

3.1 UNITED STATES OF AMERICA

3.1.1 Status of Cryptocurrency in Respect to Regulatory Authorities

The U.S. has been taking a method to foster innovation and increase of blockchain and Cryptocurrency even as protective traders from excessive dangers and fraud.[169] On 2018, the Securities Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) took the location that 'we owe it to this new technology to admire their enthusiasm for digital currencies, with a considerate and balanced response, and now no longer a dismissive one.'[170] Before that, the SEC states the fact that Initial Coin Offerings (ICOs) are challenge to U.S. Securities regulations, which means most effective accepted traders, might also additionally take part in ICOs which can be now no longer registered.[171] However, the SEC's coverage is supposed to mitigate hazard to traders, defend traders from fraud, and keep cryptocurrency tasks probably answerable for promoting non-registered securities to U.S. traders. CFTC has regulated and may continue to regulate virtual currencies as commodities.[172] SEC also requires registration of any virtual currency traded in the U.S. if it is classified as a security and of any trading platform that meets its definition of an exchange.[173]

On 2013, the other federal authority, Financial Crimes Enforcement Commission (FinCEN), announced that the Bank Secrecy Act (BSA) applies to consumers and businesses engaged in the cryptocurrency ecosystem.[174] This opinion means that exchangers and administrators of cryptocurrencies are expected to register with FinCEN as a Money Service Business (MSB) and that any firm working with cryptocurrencies are expected to comply with anti-money laundering (AML) and Know-Your-Customer/Customer-Due-Diligence (KYC)/CDD) regulations.[175] Exchangers, such as Coinbase and Gemini that receive large sums of money from users in suspicious patterns are expected to file Suspicious Activity Reports (SARs) on customer

[169] Scott D. Hughes, Supra Note 7
[170] Ibid
[171] Frank Emmert, *The Regulation of Cryptocurrencies in the USA*(Pardu University Indiana Polis 2022)
[172]See the Power of CFTC at<https://www.consumerfinance.gov/rules-policy/final-rules/code-federal-regulations/.>
[173] NASDAQ.COM, Supra Note 14
[174] Seman Jafari and Others, *Cryptocurrency a Challenge to legal System*(2018) EJ <Doi:10.2139/ssm.3172489>
[175] Ibid

transactions that are over $2,000.[176]These exchangers can also freeze accounts during investigations.[177] In accordance with FinCEN regulations on MSBs, cryptocurrency exchangers must allow the federal government to access business records in a transparent manner.[178] Also, the cryptocurrency firm is responsible for reporting to FinCEN on a regular basis, and FinCEN can perform random audits on the firm.[179] This guidance provided by FinCEN specifically stated that consumers of cryptocurrencies are not considered to be MSBs, and therefore, we can conclude that the regulations do not specifically apply to individuals but for exchangers/businesses.

In January of 2014, FinCEN issued other guidance for miners and further clarification of the 2013 virtual currency guidance. According to FinCEN, miners, or individuals that perform transaction validation in a decentralized proof-of-work consensus network, are not required to be registered as a MSB in most cases even if they are businesses.[180] Furthermore, companies that develop software that enable users to trade cryptocurrencies are also not subject to registering as a MSB with FinCEN.[181]

The other governmental organ, the Internal Revenue Service (IRS), describes Virtual Currencies (VCs) as "a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value and does not have legal tender status in any jurisdiction."[182] In current position of IRS cryptocurrency is treated as property, which topics it as property tax buying and selling activities.[183] In this instance, in February 2018, the Arizona Senate surpassed an invoice that could permit citizens to pay profits taxes with Bitcoin and different state-diagnosed cryptocurrencies.[184]The Advisory Opinion, the Federal Election Commission (FEC) in

[176] Frank Emmert, Supra note 171
[177] Ibid
[178] Ibid
[179] Ibid
[180]*Application of FinCEN's Regulations To Virtual Currency Mining Operations*, (U.S. Department of State Treasury , 2014)<https://www.fincen.gov/sites/default/files/shared/FIN-2014-R001.pdf.> Accessed 24 September, 2023
[181] Ibid
[182]Internal Revenue Service, (Notice 2014-21)<https://www.irs.gov/uac/Newsroom/IRS-Virtual-Currency-Guidance> Accessed 24 September, 2023
[183] Blake Hamil, Supra Note 166
[184] Ibid

May 2014 decided that Bitcoin donations are permitted under FEC laws.[185] This decision will permit micro donations, and it may encourage more people to donate to campaigns. However, till now the Federal Deposit Insurance Corporation (FDIC) does not insure VCs.[186]

Lastly, in August 2014 too, the Consumer Financial Protection Bureau (CFPB) released a consumer advisory to warn consumers of the risk of VCs. The advisory warned consumers of hackers, scammers, loss of VCs by losing the private key, fewer regulations, and an inability to make chargebacks.[187] Thus, as we have seen in this part, even if VCs are not taken as a legal tender like dollar, authorities of federal government takes prudent different measures, in order to minimize the risks of VCs and to benefit from its fruits.

3.1.2 Regulatory FrameWorks

3.1.2.1 Tax regulations

As we see in the above part, as IRS treats VC as property it requires for gains or losses upon an exchange of VC to be calculated.[188] This means that every VC users must inform the gains or losses of every one of their VC transactions to stay in compliance with IRS regulations. Thus, it needs record keeping. On this issue the Tax Foundation, a tax policy research organization, argues that the IRS got it wrong by categorizing VC as property because the required record keeping creates compliance obstacles, and by categorizing VC as property, the IRS is ignoring how VC is used and treating it as something that people hold for an investment.[189]The anonymity of VC accounts allows users to hide funds and evade taxes.[190]Similar to receiving cash, merchants may not report the earnings to the IRS if the merchant believes the IRS will not be able to account for the transaction.[191] The IRS may be able to audit a VC exchange the merchant uses, but if the merchant is using a personal VC account or using multiple exchanges, the IRS

[185]Federal Election Commission Record Advisory Opinions, 'Federal Election Commission' (May,2014), <http://www.fec.gov/pages/fecrecord/2014/june/ao2014-02.shtml> Accessed 24 September, 2023
[186] Blake Hamil, supra Note 166
[187] CPFB(2014)<https://www.consumerfinance.gov/newsroom/cfpb-warns-consumers-about-bitcoin> Accessed 24 September, 2024
[188] Internal Revenue Service, Supra Note 182
[189]Johannes Schmidt, Alexander Derrick and Joseph Henchman, *Internal Revenue Service Says Bitcoin to be Taxed as Gains; New Rule is Retroactive*(Tax Foundation 2014)
[190] Ibid
[191] Ibid

may not be able to track these transactions. So, it is clear that some difficulties are there in practicing tax on VCs.

3.1.2.2 Electronic Fund Transfer Act

Virtual currencies lack many of the regulations and consumer protections that legal tender currencies have. Under U.S. law, a cardholder of a credit card is protected from liability in excess of $50 if the card was used for an unauthorized transaction.[192] The Electronic Fund Transfer Act (EFTA) was written to protect consumers in transfers through ATMs, point-of-sale terminals, ACH systems, remote transfers, and remittance transfers.[193] However, the EFTA does not apply to VCs, and due to the nature of many VCs, it may not be possible for VCs to be in complete compliance with the Act.[194] For example, the regulations require for a consumer to be allowed 30 minutes to cancel an electronic transfer.[195]Many VCs, such as Bitcoin, do not allow chargebacks, so cancelling the Bitcoin transfer is not possible. Additionally, a credit card that transacts in VC is not protected by the fifty-dollar maximum liability for the holder of the credit card.[196] So that, EFTA is applied only to electronic money and credit card money other than VCs and the regulation of EFTA are not compatible to VCs.

3.1.2.3 Monetary Policy

According to the May 9, 2014, meeting of the Federal Advisory Council and Board of Governors of the Federal Reserve, Bitcoin was deemed to "not present a threat to economic activity by disrupting traditional channels of commerce" but rather a potential "boon".[197] Its global transmissibility opens new markets to merchants and service providers and capital flows from the developed to the developing world should increase.[198] In its 2009 Report to Congress, the U.S. Treasury claimed that the dollar will continue to be a major reserve currency as long as

[192]15 U.S. Code Section 1643.
[193] Ibid
[194] Ibid
[195]Jerry Brito & Andrea Castillo, *Bitcoin A Primer for Policymakers (*Mercatus Center at George Mason University 2013)
[196] Ibid
[197]Federal Reserve 11 (May, 2014)<https://www.federalreserve.gov/aboutthefed/fac-20140513.pdf> Accessed 25 September, 2023
[198] Ibid

the United States maintains sound macroeconomic policies and deep, liquid, and open financial markets.[199]

On March 9, 2022, President Joe Biden signed an executive order regarding digital assets,which is the first time a "whole-of-government approach" was utilized to provide protections regarding digital assets for both individual citizens and the United States as a whole.[200]According to a press statement given by Secretary of State Antony J. Blinken, the executive order is intended to protect and promote positive financial innovation whilst putting a stop to malicious use of digital assets, and he specifically addresses the Russian attack on Ukraine as one of the reasons for the executive order's creation.[201]Thus, the US now gives full protection to digital asset, either individual or government.

3.1.3 Controlling Illegal Activities with Virtual Currency

3.1.3.1 Money laundering

The U.S. Government Accountability Office reported that the pseudonym in VCs makes it difficult for the government to detect money laundering and other financial crimes, and it may be necessary to rely on international cooperation to address these crimes.[202] Over the last few decades, United States has passed several acts to fight money laundering. Per the Money Laundering Control Act of 1986, money laundering is a federal crime.[203] Bank Secrecy Act of 1970 has established the requirements for record keeping and reporting with the purpose of identifying the volume, source, third parties involved, destination of transactions.[204] CIP is another set of regulations aimed at fighting money laundering by basically requiring due diligence from companies to identify their customers. The requirement of CIP to identify

[199]U.S. Department of the Treasury Office of International Affairs 3, (Oct,2009)<http://www.treasury.gov/resource-center/international/exchange-rate-policies/Documents/FX%20Report%20FINAL%20October%2015%202009.pdf>Accessed 25 September, 2023
[200]The White House(2022)<https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/09/fact-sheet-president-biden-to-sign-executive-order-on-ensuring-responsible-innovation-in-digital-assets/> Accessed 25 September,2023
[201] US state Department(2022)<https://www.state.gov/ensuring-the-responsible-development-of-digital-assets/> Accessed 25 September, 2023
[202] U.S. Government Accountability Office,'Virtual Currencies: Emerging Regulatory, Law Enforcement, and consumer protection Challenges' (May 2014)<http://www.gao.gov/assets/670/663678.pdf>Accessed 25 September, 2023
[203]Tein Dang Vo Huu and Reza Mirzazade Farkhani, supra note 37
[204]Financial Crimes Enforcement Network - FinCEN.gov,'History of Anti-Money Laundering Laws'(2021) <www.fincen.gov/history-anti-money-laundering-laws.>accessed 24 October, 2023

customers contains collecting the name, date of birth, address and identification number information from them.[205]

Although the BSA applies to VC exchanges and administrators, VC is still used to finance crime and launder money because not every transaction in VC networks is required to comply with the BSA and not every online exchange complies with the BSA. In September 2014, Robert M. Faiella, a/k/a "BTCKing", pleaded guilty to operating an unlicensed exchange that exchanged over a million in cash for Bitcoin, used for criminal enterprise known as "Silk Road".[206]Despite BSA regulations, Faiella and the users of his exchange were able to hide their identity through both pseudonymous Bitcoin addresses and an anonymous network that hid their IP addresses.[207]

In 2013, FinCEN issued guidance concluding that VC is a form of "value that substitute for currency", and that certain persons administering, exchanging, or using VC therefore qualify as MSB regulated under the Bank Secrecy Act.[208] In doing so, FinCEN distinguished those who merely use VC to purchase goods or services from exchangers and administrators of virtual currency, concluding that the latter two qualify as MSBs unless an exemption applies.[209] In both cases, such a business qualifies as a covered MSB if it "(1) accepts and transmits a convertible virtual currency or (2) buys or sells convertible virtual currency for any reason".[210]FinCEN has clarified in subsequent administrative rulings that this definition was not intended to cover companies buying and selling cryptocurrencies for their own use or software developers that do not also operate exchanges.[211]The extent to which a software developer that creates the cryptocurrency that it then sells directly to users (for example, as ICO) falls within the MSB definitions remains uncertain.[212]Separately from FinCEN's MSB regulations, the SEC regulates

[205]FDIC: Federal Deposit Insurance Corporation,'Customer Identification Program – Overview'(Aug. 2007)www.fdic.gov/regulations/examinations/bsa/ffiec_cip.pdf.accessed 24 october, 2023
[206]The Federal Bureau of Investigation (September, 2014)<https://www.fbi.gov/newyork/press-releases/2014/bitcoin-exchangers-plead-guilty-in-manhattan-federal-court-in-connection-with-the-sale-of-approximately-1-million-in-bitcoins-for-use-on-the-silk-road-website> accessed 25 September, 2023
[207] Ibid
[208]U.S. Dep't of the Treasury Fin. Crimes Enforcement Network, 'FIN- 2013-G001 Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies'(2013)https://www.fincen.gov/sites/default/files/ shared/FIN-2013-G001.pdfaccessed September, 2023
[209] Daniel Holman and Barbara Stettener, Supra Note 8
[210] Ibid
[211] Ibid
[212]Peter van Valkenburgh, *The Bank Secrecy Act, Cryptocurrencies, and New Tokens: What is Known and What Remains Ambiguous*, (Coin Center 8, 2017

transactions in securities, including by requiring issuers to register offerings of securities or to rely on an available exemption from registration.[213]According to these regulations 0n 6 May, 2022, the United States Treasury issued a sanction on a VC mixer called Blender.io, for the first time.[214] According to their press release, this is in response to its usage by a DPRK hacking group in processing $20.5 million in stolen currency.[215]

Finally, some online wagers do not fit under the typical definition of gambling or a game of chance. The CFTC refers to these as "Event Contracts".[216] In December 2011, the CFTC ordered an online business to cease listing Political Events Contracts (i.e., betting on who will be elected) for trade, as it is contrary to the public interest.[217] The CFTC's jurisdiction is being tested by online businesses that accept virtual currency for event contracts. A website, accepting Bitcoin and other VCs, called predictious.com lists trades such as trying to call who will be elected, whether a celebrity will have a boy or girl child, or who will be the winner of a science competition.[218]

3.2 AUSTRALIA

3.2.1 Regulations and the Legal Status of Virtual Currency on Regulatory Authorities

Bitcoin and other cryptocurrencies are legal in Australia and are treated as property.[219]It is legal to trade, spend, receive and store cryptocurrency, and they are an accepted means of payment for personal and business transactions, although merchants are not obliged to accept it.Cryptocurrency and cryptocurrency exchanges achieved full legal status in 2017.[220] Since then, Australian laws have never interfered much with the industry and have embraced the innovation that comes with the technology.[221] Blockchain and cryptocurrency in Australia have always

[213] Daniel Holman and Barbara Stettener, Supra Note 8
[214] Ibid
[215] 'Tor: Overview Tor'(2014)<https://www.torproject.org/about/overview.html.en> Accessed 25 September,2023
[216] North American Drevative Exchange Order(2012), <https://www.cftc.gov/stellent/groups/public/@rulesandproducts/documents/ifdocs/nadexorder040212.pdf>Accessed 30 September, 2023
[217] Ibid
[218] Ibid
[219]'Cryptocurrency Regulation Around The World'<https://complyadvantage.com/insights/cryptocurrency-regulations-around-world/> accessed 12 October, 2023
[220] Ibid
[221] Ibid

enjoyed neutral and stable market incentives, encouraging technological innovation in payments, crypto assets, lending, investment and custodial services.[222]Thus, the regulation of virtual currencies in Australia is so progressive and prudent.

In May 2019, the Australian Securities and Investments Commission (ASIC) issued updated regulatory requirements for both initial coin offerings (ICOs) and cryptocurrency trading.[223] Similarly, in August 2020, Australian regulation forced many exchanges to delist privacy coins, a specific type of anonymous cryptocurrency.[224] While progressive, Australia's efforts to regulate cryptocurrency exchanges have sometimes had unintended adverse effects. In imposing its licensing regime on exchanges, Australian Transaction Reports and Analysis Centre (AUSTRAC) previously prompted many Australian banks to close the accounts of cryptocurrency service providers.[225] Latter, Because of de-banking trend emerging as a result of compliance fears, AUSTRAC clarified that the AML/ Counter Terrorist Financing(CFT) Act does not require banks to terminate their business relationships with cryptocurrency exchanges then banks use accounts of cryptocurrency.[226]AUSTRAC chief executive Paul Jevtovic added that AUSTRAC considered disruptive technology, such as cryptocurrency, necessary for Australia's business sector to keep pace with its international competitors.[227] The clarification was welcomed by the Australian Digital Currency Commerce Association (ADCCA).[228]

The Australian Taxation Office's rulings, which were finalized on 17 December 2014, determined the following: Transacting with bitcoins is akin to a barter arrangement, with similar tax consequences.[229] The Australian Taxation Authority's (ATO's) view is that Bitcoin is neither money nor a foreign currency, and the supply of bitcoin is not a financial supply for goods and services tax.[230]Bitcoin is, however, an asset for capital gains tax (CGT) purposes. The summary

[222] Coin Telegraph, 'An Over View Of the Cryptocurrency Regulation in Australia'(2023>https://cointelegraph.com/learn/an-overview-of-the-cryptocurrency-regulation-in-australia> Accessed 11 October, 2023
[223] Comply Advantage, 'Cryptocurrency in Australia: Regulations and Law'(12 June, 2023)<https://complyadvantage.com/cryptocurrency-in-australia-regulation-and-law/> Accessed 11 august,2023
[224] Ibid
[225] Ibid
[226] Ibid
[227]Patricia Tsang,*The State of Bitcoin Regulation in Australia*(2025)
[228] Ibid
[229] Henri Venter, Supra Note 60
[230] Ibid

of the taxation implication of the ATO's rulings on digital currencies as follows: CGT those using virtual currency for investment or business purposes may be subject to CGT when they dispose of digital currency, in the same way they would be for the disposal of shares or similar CGT assets; Individuals who make personal use of digital currency, and where the cost of the Bitcoin was less than AUD$10,000, will have no CGT obligations.[231]In 2021, the ATO stepped up its enforcement of Capital Gains Tax reporting violations. Under the rules, where the ATO detects a reporting violation regarding a profit derived from a cryptocurrency transaction, it may collect a penalty of 75% of the outstanding tax liability on top of the original tax (and interest). [232]

3.2.2Financial Regulation and Consumer Protection

The Reserve Bank of Australia (RBA) is the principal regulator of the payments system, and administers the *Payment Systems (Regulation) Act 1998* (PSRA).[233] The RBA currently considers VCs to be in limited use and do not yet raise any significant concerns with respect to competition, efficiency or risk to the financial system and are not currently regulated by the RBA or subject to regulatory oversight.[234] Thus, VC does not be considered as a treat to Australia's dollar and it is not illegal to use VC for exchanges. However, the RBA was informed the Senate committee in April 2015 that it would be assessing whether the current regulatory framework could accommodate alternative mediums of exchange such as virtual currencies.[235]

The current financial services regulatory regime under the *Corporations Act 2001* applies to financial products.[236] Accordingly, the view of the Australian Securities and Investments Commission (ASIC) is that digital currencies themselves do not fall within the legal definition of 'financial product' under the Corporations Act (or the *Australian Securities and*

[231] Patricia Tsang, Supra Note 227
[232] Hall and Wikom Smater Law, 'Crypto Regulation in Australia: Where are We now and Where are we Headed?'(2023)https://WWW.lexalog.com/library/detailaspx?g=6af2cgf3_42de-4dfb-8582-009alaf9a13f9a034> Accessed 11 september,2023
[233]Payment Systems Regulation Act of 1998
[234] Comply Advantage, Supra Note 223
[235] Patricia Tsang, Supra Note 227
[236] Australian Corporation Act 2001

InvestmentsCommission Act 2001).[237]This means that 'a person is not providing financial services when they operate a digital currency trading platform, provide advice on digital currencies or arrange for others to buy and sell digital currencies'.[238]

Consistent with the ATO's view, ASIC does not consider that VCs are money or currency for the purposes of the Corporations Act or the ASIC Act; Instead they are more akin to a commodity. As such, the exchanges of digital currency and national currency are not treated as foreign exchange contracts.[239]However, even if a crypto token is not deemed a financial product, certain activities related to crypto activities may still be regulated under Australian's consumer protection laws too. For example,ASIC has suggested the use of marketing and social media to inflate the true level of interest in a crypto product or wash selling (the practice of buying and selling crypto assets to artificially increase the price), are examples of activities that constitute misleading or deceptive conduct which contravene Australian law.[240]However ASIC advised that its understanding was that contracts for exchanging national currency for virtual currency through online platforms or ATMs are typically settled immediately, and the normal licensing and disclosure requirements under the Corporations Act would not apply to VC exchanges.[241]

On the other hand, while VC itself does not fit within the definition of financial products, ASIC considers that some VC businesses offer facilities, such as noncash payment facilities, which may be financial products. ASIC noted that where regulated financial services providers have expanded their product offerings to include the use of digital currencies, these products are considered financial products.[242] An example cited by ASIC is PayPal's recently entered into an agreement with leading Bitcoin payments processors Bitpay, Coinbase and GoCoin to enable its merchants to accept Bitcoin.[243] So that, in such instance, the usual financial services licensing, conduct and disclosure obligations for financial products in the Corporations Act apply.

[237] Patricia Tsang, Supra Note 227
[238] Ibid
[239] Ibid
[240] Hall and Wikom Smater Law, Supra Note 232
[241] Ibid
[242] Patricia Tsag, Supra Note 227
[243] Ibid

ASIC noted that intermediary facilities for paying for goods and services may be providing a facility through which noncash payments are made in VC, regardless of whether the merchant accepts VC.[244] Noncash payments are a type of financial product and this type of digital currency intermediary facility may require an Australian Financial Service (AFS) license. An example of this kind of facility is the recently announced CoinJar Swipe card, which allows CoinJar customers to convert the value in their CoinJar Bitcoin wallet to Australian dollars loaded onto an EFTPOS card.[245] On 7 December 2014, the final report of the Australian government's Financial System Inquiry (FSI) was released and the Australian Treasury is currently conducting a consultation process on the FSI recommendations.[246] The FSI found that: VCs are not currently widely used as a unit of account in Australia and as such may not be regarded as money.[247] Finally, while ASIC does not consider VCs to be currency or money for the purposes of the Corporations Act or the ASIC Act, the general consumer protection provisions of the *Competition and Consumer Act* 2010 apply to digital currencies, rather than the equivalent provisions in the ASIC Act.[248]

3.2.3 Law Enforcement

In 2018, crypto laws in Australia have factored in Anti-Money Laundering (AML) and counter-terrorism financing (CTF) measures because transferring value in digital currencies involves procedures that could facilitate such illicit activities. As a consequence, the *Financing Act 2006* started including VCs in the AML and CFT regime.[249] Cryptocurrencies are subject to the A*nti-Money Laundering and Counter-Terrorism Financing Act 2006* (AML/CTF 2006), section 5 and associated rules.[250]Australia's AML/CTF crypto regime seeks to prevent money laundering and terrorist financing activities involving crypto tokens by imposing obligations on virtual currency exchange businesses that provide fiat-crypto on/off ramping.[251]These obligations include registering with Australia's AML/CTF regulator, the AUSTRAC, performing know your

[244] Comply Advantage, Supra Note 232
[245] Ibid
[246] Henri Venter, Supra Note 60
[247] Ibid
[248] Patricia Tsang, Supra Note 227
[249]Ibid
[250]Anti-Money Laundering and Counter-Terrorism Financing Act 2006, Section 5
[251] Henri Venter, Supra Note 60

customer/KYC and due diligence/DD procedures to verify a customer's identity, reporting to AUSTRAC on certain matters, keeping records, and having systems and controls in place to mitigate and manage money laundering and terrorist financing risks.[252] Australia's virtual currency regulations also require exchanges to register with AUSTRAC in compliance with the AML/CTF *Act 2006 Part 6A*, Digital Currency Exchange Register. The regulations require entities acting as exchanges, or providing registrable exchange type services, to identify and verify their users, maintain records, and comply with government AML/CTF reporting obligations.[253] The CEO of AUSTRAC maintains the Digital Currency Exchange Register and unregistered exchanges are subject to criminal charges and financial penalties.[254]

3.3 TUNISIA

Unlike USA and Australia private VC are neither described clearly by authorities nor accepted as a national tender. However Tunisian government developed its own CBDC while it is silent about private VCs. Article 14 of the *2016 Act NO° 35* relating to fixing the status of the Central Bank of Tunisia states that the only legal tender accepted is the one emitted by the Central Bank i.e., the Tunisian dinar.[255] As such, cryptocurrency does not have the ability to replace the Tunisian dinar. It is important to mention Tunisian government does not resort to applying criminal provisions unless the conditions of the related crimes are proven to be united. This is the case for the money-laundering crime. That means using virtual currencies is not crime unless it related with money-laundering.[256] This requirement refers to being money in the eyes of a jurisdiction's financial laws. Usual money (fiat currency) such as the dinar does enjoy this recognition. In order to be blessed with this characterization, the currency has to be recognized explicitly by a legal text.[257]

[252]Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF 2006), section 5
[253]Ibid at Part 6A
[254] Henri Venter, Supra Note 60
[255]2016 Act NO° 35 article 14
[256] Democratic Tunisian and Human Rights Support Center, *Cryptocurrency in Tunisian Official Choice to Remains Silent*(DTHRSC 2021)
[257] Ibid

3.3.1 Tunisia's Central Bank Digital Currency

As we have seen in the above parts of the thesis Central Bank digital currency is one type of virtual currency, in Tunisia called E-dinar which uses a blockchain technology, the underlining technology behind virtual currencies. Tunisia took the lead in issuing retail DLT-based digital tokens for its government initiative. This is so far the first and only successful case of a digital coin being issued by a governmental body or a central bank in the world.[258]E-dinars are now available to transfer between citizens, with shops, cafes, and restaurants slated to accept the currency in several months.[259]

The other private virtual token other than E-dinar appears to have not yet been actively utilized to the extent envisaged in Tunisia and can be used in Tunisia to transfer funds, pay for goods and services, pay salaries and bills, and manage official identification documents with limited costs, i.e., transferring funds between virtual accounts and a postal account, and between different virtual accounts, etc.[260]The central bank of Tunisia plans also to use it in cross-border payments, circumventing the need for US dollars. The CBDC of Tunisia issued to consumers set up in Tunisia.[261] There, they can add funds to a digital wallet through a browser application or, in the future, a mobile app. Transfers are completed between people and businesses by scanning a QR code. Instead, the central bank is the only body to oversee the system.[262] Tunisia's CBDC began to apply in cross border level when the Tunisian and French central banks successfully completed a joint CBDC experiment, which conducted wire transfers between French andTunisian commercial banks utilizing a blockchain-based CBDC.[263]The solution would be invaluable in making remittances faster and cheaper. Director General of the Development and Supervision of Payment Systems and Means at the central bank, Mohamed Sadraoui, said, "This platform will likely reinforce transparency, speed and cost savings, all of which are conducive to

[258] Mirand Wood, 'Tunisia Issues Central Bank Digital Currency' (2019) <https://WWW.ledgerinsights.com/category/industries/tunisia-issues-central-bank-digital-currency//> Accessed 14 October ,2023
[259] Ibid
[260] Sayui Shirai, Supra Note 136
[261] Mirand Wood, Supra Note 258
[262]Ibid
[263]Ledger Insights 'Central banks of France, Tunisia in wholesale cross border CBDC trial'*(July 2021)* <https://www.ledgerinsights.com/central-bank-of-france-tunisia-in-wholesale-cross-border-cbdc-trial/>Accessed 11 September, 2023

a better inclusion of the Tunisian diaspora in Europe".[264] The success of this experiment is an opportunity to start thinking about the deployment of alternative channels for cross-border transfers initiated by the Tunisian community in Europe to Tunisia."[265] In 2020, Tunisia received approximately USD$2.1 billion in remittances,about 5.35% of its GDP and if CBDC is used in in cross border level it is better to utilize this remittance well.[266]On the other hand the Tunisia's 2021-2025 strategy outlines six guidelines that aim to drive digital transformation, develop the national fintech ecosystem, promote financial inclusion and attract foreign investment.[267] Key goals include bolstering digital literacy, developing e-payment services, expanding internet access, digitalizing government services, boosting data protection and establishing a cyber-security policy.[268] CBDC is the one of the steps to foster digital Tunisia and achieves this strategy.[269]

[264] Ibid
[265]Central Bank of Tunisia tests CBDC pilot with Central Bank of France." *(July 2021)* <*https://www.unlock-bc.com/news/2021-07-14/central-bank-of-tunisia-tests-cbdc-pilot-with-central-bank-of-france/*>*Accessed 11 September, 2023*
[266]The World Bank, 'Personal remittances, received (% of GDP) – Tunisia'<https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=TN>Accessed 11 September, 2023
[267] Financial Regulation in Tunisia (2023)<https://WWW.onespan.com/resources/financial/regulations/tunisia>Accessed 12 september,2023
[268] Ibid
[269] Ibid

CHAPTER 4: ADVANTAGES AND CHALLENGES OF INTRODUCING VIRTUAL CURRENCY IN ETHIOPIA

4.1 ADVANTAGES OF INTRODUCING VIRTUAL CURRENCY IN ETHIOPIA

Virtual Currencies have many advantages to the general public as well as the individuals and companies.

4.1.1 Advantages for the Government and the General Public

4.1.1.1 To Manage the Reality

The government of Ethiopia, through the National Bank of Ethiopia Announced its position about Cryptocurrency (a type of private VC) that warns not to use Cryptocurrency and using Cryptocurrency is as illegal in the country.[270] According to the National Bank, studies have found that people are widely using Bitcoin and other Cryptocurrencies in Ethiopia. "A huge amount of financial transactions are taking place via these Virtual Currencies," the National Bank said on its announcement.[271]Several activities are also being undertaken by interested individuals in Ethiopia to expand the payment system of cryptocurrencies in general and Bitcoin in particular.[272] Hence, the National Bank of Ethiopia admits the fact that the usage of private VCs is high in the country.

Other bitcoin networks such as ArchiversKlub school of Cryptocurrency, Bit Club, and AWS mining are doing extensive works to introduce and expand the business of Bitcoin in Ethiopia.[273] According to Messay(2021) the clubs host meeting in Addis Ababa to inform people, how Bitcoin works, and how they can invest in it. They encourage individuals either to buy Bitcoin or investing Bitcoin and the meeting was crowded that some people even had to return home.[274] These cryptocurrencies promoters also use social Medias such as you tube, Facebook, Instagram, Telegram, WhatsApp, and twitter(X) to advertise the business. Many Ethiopians are joining the

[270] Addis Insight and Addis Getachew and Sileshi Tessema, Supra Note 19
[271] Ibid
[272] Ibid
[273] Messay Asgedom Gobena, Supra Note 18
[274] Ibid

business of Bitcoin by purchasing it.[275] Additionally, Ethiopia signed an agreement with Input Output Hong Kong (IOHK) Company to provide training on how to develop cryptocurrency in Ethiopia and to create a new digital payment system that will allow these million users to pay their power and electronic bills with cryptocurrency.[276] Ethiopia's digital strategy 2025 too, promotes creating a cashless society.[277]

These all pushing factors shows there are high demands of VCs, and need of creating cashless societies in the country irrespective of the total banning of the use of Cryptocurrency by the national bank of Ethiopia. This is due to the fact that, a complete ban is technically infeasible, given the decentralized, digital and anonymous nature of cryptocurrencies, and the Technology is portable.[278]If a person desires to obtain a cryptocurrency, he/she needs to download a blockchain wallet application and provide the wallet address to the cryptocurrency trader.

Due to this nature leaving VCs unregulated is undesirable.[279] The lack of regulatory certainty not only puts participants in the ecosystem at risk but is detrimental to the prospects of long-term committed investments in the industry and losing the benefit that government would get in this technology.[280] The above Sample countries are at different stages of regulatory response that is prudent than our country's regulation on the area. For example in USA and Australia Cryptocurrencies are prohibited as a currency but regulated as an asset whereas in Tunisia there is Uncertain regulatory regime on private VC while adopted CBDC through its central bank. In USA the SEC need the registration of VC transaction in order to control illegal acts. FinCEN also needs reporting the suspicions and can order freezing the account in investigations in order to control Money Laundering. In Australia too, ASIC and AUSTRAC can control illegal acts following VC transactions. However in Ethiopia the government applied a total banning of VC without a detail regulations to ban irrespective of the nature of VCs. This will create a vacuum and uncertainty in regulating VC in the country.

---

[275] Ibid
[276] Ibid
[277]Federal Democratic Republic of Ethiopia, 'Digital Ethiopia 2025: A strategy for Ethiopia inclusive prosperity'(2021) <https://drive.google.com/file/d/18KbIfd65E_5AS6u9HTn6s_SC8j1wS17z/view.> Accessed 20 September, 2023
[278] UNCTAD, Supra Note 12
[279] UNCTAD Policy Brief No.100, *All That Glitters is not Gold; The High Cost of Leaving Cryptocurrencies Unregulated*(UNCTAD 2021)
[280] Ibid

The amended National Payment system Proclamation no 1282/2023 neither categorized VC as foreign currency nor as Electronic money. According to Article 2(29) 0f proclamation no 718/2011 as amended in proclamation number 1282/2023 foreign Currency means any currency other than Ethiopian legal tender which is legal tender in outside Ethiopia as to which the national bank has declared to be acceptable for payment. So that, according to this provision as VC, is not legal tender in any country except in El Salvador and the National Bank is not accepted as a foreign currency, it is out of the ambit of foreign currency. On the other hand according to article 2(31) of this proclamation electronic money means a monetary value represented by a claim on its issuer that is electronically stored in payment instruments or electronic equipment, issued against receipt of fund equipment in Ethiopian Birr accepted as a means of payment by persons other than the issuer and can be redeemed in cash. We have seen before that VC is not Equivalent to any legal tender, and not represented by a legal tenderso that it cannot be categorized as electronic money according to this proclamation. Thus, we can say that VC in Ethiopia is not accepted as foreign currency or as Electronic money, rather ignored in any category.

4.1.1.2 Taxation

Some claims VC is used as a currency and hence it is an asset. Therefore in VC transactions are subject to tax like any other asset or currency. Transaction may attract capital gain tax, income tax, transaction tax and wealth tax. Even if VC is not taken as a legal tender, as we have seen in USA and Australian case, the tax law of these countries empowered the tax authorities to charge taxes on such transactions categorizing it as a property or commodity tax. We have seen in the above part of the thesis that, the IRS in USA ruled that Cryptocurrency is treated as property for tax purposes as opposed to currency. This means it is subjected to capital gains tax. It makes the income generated through transaction using cryptocurrency is taxable. This requires businesses to record and report the transactions. It is also in Australia. A similar chance is exist in charging transaction tax for any dealing with cryptocurrency in Ethiopia, even if the country will be late to accepted Cryptocurrency as a legal tender. As long as VC is not taken as a legal tender it is clear that VC is out of the ambit of income tax. However, we can infer from USA and Australian case that even if VC is not accepted as a legal tender the tax law of these countries are treated VC as a property or commodity and thus categorized in property tax.

In article 2 of Ethiopian Federal Tax Administration proclamation number 983/2016, VCs and its participants are not defined. It is just ignored on this part of the proclamation to define VC or its participants; like Miners, Exchanges, and Wallet providers and so on. However it needs a clear understanding of this issue to include VC in a tax system. VC is not categorized in any tax in Ethiopia too and needs investigation on the area.

4.1.1.3 To Protects the Rights of Public

The transaction of private VCs is based on trust on peers, promoters and the system. In case of any breach, the victim may not be able to produce a suit and acceptable legal evidences for recovery of the damages. In addition cryptocurrency used information technology and hence the possible disputes encompass rule on Information Technology, e.g. hacking and digital licenses. There is also scams and cheating in the transactions. Policy responses have needed at increasing awareness of users and investors about the risks, and clarifying the scope of relevant legislation**.** For example, the aforementioned countries haveissued statements highlighting the protection of users. These states are also beginning to clarify howexisting consumer protection legislation including securities legislation applies to Virtual Currencies or to amendsuch legislation where appropriate. National authorities have also taken enforcement actions againstVirtual Currency businesses found in violation of relevant customer protection legislation. For instance in USA CFPB established 'consumer advisory' in order to protect the rights of the consumer during transactions. In Australia too AUSTRAC follows whether the transactions on VC are conflicting with Customer protection laws.

When we come to our country there is a consumer protection law, Trade Competition and Consumer Protection Proclamation (TCCPP). TCCPP requires businesses to disclose basic information regarding address and describe characteristics of the goods and services they offer,[281] however, as long as virtual currencies have not taken as an asset or property it is difficult to protect the rights of the customer in the ambit of this provision.[282] Private virtual

[281] A Proclamation on Trade Competition and Consumer's Protection, No. 813/2013, Fed. Negarit Gazeta 20th year No. 28,Art 14 And 15
[282] Samuel Girma, Supra Note 38

currencies are banned in Ethiopia without a giving clear defining to them in any way. This makes the situation difficult to empower the authorities to push VCs dealers to obey TCCPP rules.[283] Due to these situation Cryptocurrency exchangers in Ethiopia disregard the obligation of the rights of consumer because it is totally banned to use, and their exact location is not disclosed and mostly they operate their business of exchanging fiat currency against cryptocurrency online escaping the ban. In addition to this violation it is also difficult to statutory requirements such as displaying trade name at overt place[284] or issuing a receipt to consumers in a complete ban, due to the use of it is banned with ignoring banning details, and transaction itself is also anonymous and the mainly utilizes internet. If the country introduces VC in corresponding regulations it will be easy in protecting consumers in transactions of VCs. Ethiopian Computer crime proclamation number 958/2016 also is silent about VC or cryptocurrency crimes. Thus, it needs a prudent regulation in these parts too.

4.1.1.4 To Promote Innovation

The rise of Virtual money has spurred a wave of innovation in retail and cross-border payments.[285] Under the pressure of competition, retail payment systems have been pushed to improve and innovate.[286]The use of DLT may promote a technological environment and foster fintech (financial technologies). Many emerging economies develop global financial centers and regard fintech as one of the most promising routes for this objective.[287]While those economies may find it difficult to develop banking systems and capital markets that are comparable to those in advanced economies, fintech services are new and innovative, and the general public may be more eager to use them given that the banking system and capital markets are still in the early processes of development.[288]In Ethiopia, the regulatory environment for digital payments is still evolving, and as part of the implementation of the Digital Strategy 2025 the NBE should consider implementing a fintech regulatory sandbox that will enable banks and emerging fintech

[283] Ibid
[284] Art 18(1) of TCCPP
[285] Johannes Ehrenfraud, Jermy Prenio and Others, *Fintech and Payment: Regulating Digital Payment Services an E- Money*(Financial stability Institute 2021)
[286] Ibid
[287] Group of Twenty, *G20 Note on the Macro Financial Implication of Crypto Asset*(IMF 2023)
[288] Ibid

players to experiment with innovative financial products or services in a live environment but within a well-defined space and duration.[289]This is also to VC developers, as relaxed regulations promote innovation. A complete banning of using VCs may halts innovations on digitalization of money. Therefore the statutory regulations should not be harsh, rather be prudent in order to promote other fintech innovations in the area.

4.1.1.5 To Create Job Opportunities

Article 41(1) of FDRE constitution stipulates that Every Ethiopian has the right to engage freely in economic activity and to pursue a livelihood of his choice anywhere within the national territory. Thus, the government has an obligation to protect this economic right. Because Cryptocurrency blockchain technologies uses open code, mining crypto currency is also open for everyone, who have a mobile phone or computer access. The only difference of Internet banking is the disclosure of information about the users. All information about the transaction in the Cryptocurrency is shared (how, when), but there is no data about the recipient or the sender of the coins (there is no access to the personal information of the owner`s wallet).[290]Since distributed ledgers lack a centralized authority, the mining process is crucial for validating transactions.[291] Miners are, therefore, incentivized to secure the network by participating in the transaction validation process that increases their chances of winning newly minted coins.[292] So that, anyone who has a computer and mobile phone with mining tools can be a miner and can earn revenue by proofing the validity of the Cryptocurrencies transaction. This may create a job for a number of individuals who have a need to participating in the area in our country.

According to article 2(2) of commercial registration and business licensing proclamation number 980/2016 as amended in proclamation number 1150/2019 a business person is any person who professionally and for gain carries on any of the activity specified in the commercial code, and

[289] UNCDF, *Ethiopia Remittance Review: Assessment of Payment and Financial Markets Infrastracture*(UNCDF 2021)
[290] Saeed Alzahrani, *Analysis of Cryptocurrency Adoption Decision: Litrature review*(Poland State of University 2019)
[291] Ibid
[292] Freeman Law, 'Mining Explained A Detail Guide on How Cryptocurrency mining works'(2022)<https://freemanlaw.com/mining-explained-a-detailed-guide-on-how-cryptocurrency-mining-works/> Accessed 15 August,2023

the Ethiopian business licensing categories. The new FDRE commercial code stipulates activities of the business person under article 5 of the code. Organizing, providing or storing of information by using computer and software technologies and supplying it to the public through the internet and provision of space and computer for customers to access the information is one of the business activities as article 5(25) of the code. VC is the act of computer work by using internet and so that it is under the ambit of this provision. However the current Ethiopian business licensing category review number 1, do not specifically lists the works of VC under the business licensing category. Due to this, it needs investigation on this area.

4.1.1.6 To Adopt Central Bank Digital Currency

As we have seen in the above portion of the research CBDC is a type of VC working in blockchain technology that is DLT, and is controlled by central bank of the country. Adopting CBDC has a lot of advantages. Among the benefits of CBDC, the details of the Advantages of CBDC are as follow:-

One of the advantages of CBDC is that, it is necessary to provide safe, liquid payment instruments to the general public, just as central banks have been doing for financial institutions using reserve deposits for a long time.[293] So that, it is important to provide a safe, liquid payment instrument to both the general public and financial institutions.

The other advantage of CBDC is that some economies, especially emerging ones, wish to reduce the cost of printing and managing cash and contain the associated crimes by promoting cashless payment. The retail CBDC based on DLT pertains to this motivation.[294]

Financial inclusion is another important benefit for some emerging economies regarding CBDC proposals based on DLT. There are still many low-income people or people living in rural areas, which are unbanked and without access to commercial banks and the internet and, thus, use cash as their main payment method.[295] Retail CBDC might promote digitization of the economy and, thus, economic and social development.

[293] Sayuri Shirai, Supra Note 136
[294] Ibid
[295] Ibid

As we have seen in the above part of the research Tunisia develops its own CBDC called E-dinar. This VC uses the country in reducing the cost of printing and even it is arranged to collect remittance from citizens living in Europe. As developing nation, Ethiopia too is advantageous if it introduces CBDC in the country's regulations like, Tunisia. We have seen in the above portion that the national payment system law of Ethiopia doesn'trecognize VC as a legal tender. As CBDC is one of VC type as long as the laws of Ethiopia are amended Ethiopia cannot apply CBDC, which is monetary value controlled by the national bank used virtually other than commercial banks.

4.1.2 for Individuals and Companies

Potential benefits may even be greater for corporates and financial intermediaries. The following are details of benefits.

4.1.2.1 Peer-to-Peer Network /No intermediaries/

In virtual currencies networks there is no master server, which is responsible for all operations. Exchange of information (in this case money) is between 2-3 or more software clients.[296]For example in Bitcoin case, all installed by user's program-wallets are part of a bitcoin network. Each client stores a record of all committed transactions and the number of virtual currencies in each wallet.[297] Transactions are made by hundreds of distributed servers. Neither banks or taxes, nor governments can control the exchange of money between individuals. Interactions between machines and algorithms will increasingly shape business activities and relations. Virtual money offers the possibility to transfer value between computers in extremely short periods of time, with no settlement risk too.

4.1.2.2 No Boundaries

[296] Investopedia, Cryptocurrency Explained With Pros and Cons For Investment(November 02, 2023) <https://www.investopedia.com/terms/c/cryptocurrency.asp> Accessed 20 November,2023
[297] Ibid

Payments made in this system are impossible to cancel. The coins cannot be faked, copied or spent twice.[298] These capabilities guarantee the integrity of the entire system without boundaries. Every month the number of online shops, resources, and companies to accept BTC is expanding.[299] It is also used to pay for goods in E-commerce transactions.[300]This will enable the life of the people to becoming easy globally and the remittance funds will be transferred easily.

4.1.2.3 LowOperation Cost

VCs work as a physical cash and combines the functions of e-commerce. No need to pay commission and fees to banks and other organizations. The main part of such process is mathematics, which does not need money. The commission fee in this system is lower than in any other. It amounts to 0.1% of the transaction amount.[301] The operation interest charges go to Cryptocurrency miner's wallets. The fees for transacting in cryptocurrency are very nominal and sometimes zero. This is because third parties and intermediaries, such as VISA and PayPal, are eliminated in the process. Additionally, cross-border transactions using cryptocurrencies are accelerated without challenging foreign exchange procedures, increasing their efficiency and lowering their cost.

4.1.2.4 Easy to Use

Virtual currencies can be accessed by anyone with an internet connection and crypto wallet. In contrast to typical bank accounts, opening a crypto wallet does not need identity verification, background checks or credit checks.[302] Virtual currencies can also make cross-border transactions easier and faster as it doesn't involve long processing times and intermediaries that typically come with traditional banking systems. An individual needs approximately 5 minutes to create a BTC wallet and immediately starts to use it without any questions and commissions.

---

[298] Kinza Yasar, 'Pros and Cons of Cryptocurrency'(July, 2023) <https://www.techtarget.com/whatis/feature/Pros-and-cons-of-cryptocurrency> Accessed 20 November, 2023
[299] Ibid
[300] Ibid
[301] Ibid
[302] Investopedia, Supra Note 295

4.1.2.5 Investment

Cryptocurrency investments can generate profits.[303] Cryptocurrency markets have skyrocketed in value over the past decade, reaching almost $2 trillion. Bitcoin was valued at more than $680 billion in crypto markets as of November 2023.[304]As Ethiopia is generating highest Electricity power, national and foreign companies may urged to develop mining center in a country. If Ethiopia permitted to mine cryptocurrency, it will attract national and foreign mining companies to invest in the area.

4.2 CHALLENGES OF INTRODUCING VIRTUAL CURRENCIES

4.2.1 Difficult to Regulate

According to Financial Stability Board (FSB) many crypto-asset activities and markets are not compliant with applicable regulations or have remained unregulated.[305] One reason may be the technological novelties of crypto assets, and that activity of cryptocurrencies escape existing regulation because of decentralization and the limited transparency of the crypto universe create significant data gaps.[306] Definitional issues, such as difficulties in establishing whether a VCs issuer is a narrow bank or a money market mutual fund, or whether Bitcoin is a commodity or a security, also hamper effective regulation.[307]

Another reason according to FSB is that it regards the very characteristics of crypto assets.[308] Their inherently borderless nature and absence of an identifiable operator imply that risks are faced directly by end users, rather than by regulated financial institutions as in traditional financial systems.[309] Moreover, the variety of involved actors and the frequent combination of services may require the disaggregation of certain functions and activities with the resulting parts

[303] Ibid
[304] Ibid
[305] Financial Stability Board, *Regulation, Supervision and Oversight of Crypto-Asset Activities and Markets: consultative Document*(FSB 2022)
[306] Ibid
[307] Ibid
[308] Ibid
[309] Ibid

attributable to a multitude of regulators regulating banks, commodities, securities, payments, etc. with sometimes fundamentally different frameworks and objectives.[310]

National authorities also face the dilemma that the borderless nature of crypto assets demands an internationally coordinated, consistent and comprehensive regulatory framework as a benchmark.[311]The current limited availability of such a benchmark complicates the establishment of national regulation that would both avoid regulatory fragmentation and reflect national specificities in the use cases of crypto assets and characteristics of national financial markets.[312]

4.2.2 Used for Criminal Acts

Cryptocurrencies have become a popular tool with criminals for nefarious activities such as money laundering and illicit purchases. Cryptocurrencies have also become a favorite of hackers who use them for ransom ware activities.[313]Preventive measures including customer due diligence (CDD), transaction monitoring, and record keeping, and obligations to report suspicious transactions are an important component of national AML/CFT frameworks, and can assist in detecting, prosecuting and deterring instances of ML, predicate offenses, and TF. According to Investopedia the challenge in applying AML/CFT controls to VCs is two-fold:[314] (i) whether operations in VCs (for example, exchanges of VCs for fiat currency, transactions in VCs) should fall within the purview of the AML/CFT regime; and, if so, (ii) who should bear these obligations.

The anonymous and digital nature of virtual currency transactions has facilitated the growth of 'darknet' online marketplaces in which illegal goods and services are traded.[315] This means that the purchase of goods and services like drugs, human trafficking, child pornography, and even

[310]USAID, *Examining VCs: Risks and Uncertainties of A Novel Payment Technology in International Development*(July 2021)
[311] Ibid
[312] Financial Stability Board, Supra Note 304
[313] Investopedia, Supra Note 295
[314] Ibid
[315] Dong He and Others, *Virtual Currency and Beyond: Initial Considerations*(IMF 2016)

organs are facilitated through the use of virtual currency.[316] An unsettlingly large portion of VC users is associated with illegal activity.[317] For instance, researchers in 2017 found that approximately one-quarter of all Bitcoin users and forty-four percent of Bitcoin transactions are associated with illegal activity.[318] The risks created by virtual currencies in this context are best exemplified by the "Silk Road" marketplace.[319]The Silk Road marketplace was a website founded by Ross Ulbricht that operated similarly to Ebay.[320] Buyers exchange Bitcoin for illegal drugs, weapons, and other products by making offers on listings advertised by sellers.[321]

In addition, though cryptocurrency blockchain are highly secure, off-chain crypto-related key storage repositories, such as exchanges and wallets, can be hacked. Many cryptocurrency exchanges and wallets have been hacked over the years, sometimes resulting in the theft of millions of dollars in coins.[322] Virtual currency wallets and exchangers provide hackers with attractive targets for fraud and identity theft.[323] If hacked, virtual currency wallets and accounts can be easily emptied to an anonymous account and then liquidated.[324]Virtual currencies also create a market vulnerable to manipulation and fraud.[325] Unregistered ICOs and unlicensed VC exchangers make it difficult to detect and deter insider trading, as well as market abuse such as front-running, pump-and-dump schemes, and more.[326]

Finally, VCs are attractive to money launderers for a multitude of reasons.[327] Certain characteristics inherent in VCs make them prime targets for money laundering.[328] The characteristics that make VC attractive to money launderers are the anonymity provided by the

[316] Ibid
[317] Sean Foley, Jonathan R. Karlsen & Talis J. Putnins, 'Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed Through Cryptocurrencies?' (Feb. 19, 2018)<https://www.law.ox.ac.uk/business-law-blog/blog/2018/02/sex-drugs-and-bitcoin-how-much-illegal-activity-financed-through> Accessed 20 October, 2023
[318]Daniel Holman and Barbara Stettner, Supra Note 8
[319] Ibid
[320]Blake Hamil,Supa Note 166s
[321] Andrew Norry, 'The History of Silk Road: A Tale of Drugs, Extortion & Bitcoin' (BLOCKONOMI Nov. 20, 2018),<https://blockonomi.com/history-of-silk-road/> accessed 23 september, 2023
[322]Daniel Holman and Barbara Stettner, Supra Note 8
[323] Ibid
[324]Blake Hamil, Supra Note 166
[325]Daniel Holman and Barbara Stettner, Supra Note 8
[326] Investopedia, Supra Note 318
[327]Daniel Holman and Barbara Stettner, Supra Note 8
[328] Blake Hamil, Supra Note 166

trade in VCs on the internet, the limited identification and verification of participants, the lack of clarity regarding the responsibility for regulatory compliance and enforcement in cross-border transactions, and the lack of a central oversight body.[329]The trading of VCs on the internet is characterized by non-face to face transactions, as well as anonymous funding and transfers.[330] In addition, the ability to rapidly and anonymously open accounts provides a low-risk means for potential money launderers to convert and consolidate cash.[331] These factors are attractive for an entity looking for a discreet way to launder money, and virtual currencies provide a means of doing so that is anonymous and difficult to trace.[332] In addition, VC transactions take place entirely on the Internet; therefore, it would be simple to launder money through international cross-border systems.[333]Due to the varying regulations on virtual currencies worldwide and the complicated technology backing these currencies, regulators may be hesitant to bring virtual currencies under regulations.[334]

4.2.3 Excessive Cost of Production

Depending on its type, mining cryptocurrency may require a large supply of electricity and other resources.[335] For example, most Bitcoin-related costs are associated with the energy required to create the currency, according to Harvard Business Review.[336] This increased power usage may result in local pollution, noise and other consequences such as increased greenhouse gas emissions for communities living near the mining sites.[337]

[329]Daniel Holman and Barbara Stettner, Supra Note 8
[330] Ibid
[331] Ibid
[332] Ibid
[333] FATF, Supra Note 1
[334] Blake Hamil, Supra Note 166
[335] Investopedia, Supra Note 295
[336] Ibid
[337] Flamur Bunjaku and Others, *Cryptocurrencies, Advantage and Disadvantage* (University Goce Delcev Stip 2018)ISSN 1857-9973

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

Virtual Currencyis one of the main results of the recent technological innovations. What VC mean a code or serial numbers that represent a value and uses the internet as a vehicle and uses cryptography for the security of transaction.There are two types of VCs; Centralized like Central Bank Digital Currency (Central bank controlled) and Decentralized like Cryptocurrency. Cryptocurrencies, such as Bitcoin, are VCs of the latter type: they can both be bought with traditional money as sold against traditional money, and they can be used to buy both digital and real goods and services. They are a medium of exchange as fait money uses, and can be exchangeable to legal tenders.Whereas CBDC is a new form of money, issued digitally by the central bank and intended to serve as legal tender.Their similarity is that they both use DLT.

The growing adoption and decentralized nature of Cryptocurrencies pose unique and unprecedented challenges for financial authorities, capital markets regulators, consumer protection and privacy bureaus, and tax authorities around the world. So that, a prudent regulation that accommodates the characteristics and use cases of Cryptocurrency is needed. To this end, countries are now tasked with creating a legal framework that is modern and accommodative but also prudent. There are four general approaches followed by countries of the world regarding regulations of Cryptocurrency; “Wait and see” approach, Public-private partnership, Comprehensive regulatory approach and Restrictive approach.

In Ethiopia too, there are high demands of Virtual Currency, and need of creating cashless societies. Despite this fact the National Bank of Ethiopia on its official announcement warns against the use of VCs. The position of the bank contradicts; the countries Digital strategy 2025 of creating cashless society, promoting digital payment, and innovation. In addition, even if the government prohibits using it or not, people may use secretly, and thus, a lot of legal issues will be followed. To handle adequately of legal issues arising out of the use of VC, regulations about fait money are not always compatible to VCs transactions. On the other hand, the position of the bank too did not recognize the possibility of formulating central bank VC called CBDC, and did not recognize whether the existing law is comprehensive of handling the position. In the usage of

VC system there are various other entities that may participate in a VC system. These include web administration service providers (administrators); miners; exchangers; and wallet providers. These all participants need different their own regulatory frameworks. The existing regulations of the country have no detail provision regarding these participants too.

Ethiopian Commercial Registration and Business licensing proclamation number 980/2016 as amended in proclamation number 1150/2019 defines a 'business person' as any person who professionally and for gain carries on any of the activity specified in the commercial code and the Ethiopian business licensing categories. With respect to this definition the new FDRE commercial code stipulates activities of the business person under article 5 of the code. As VCs is providing a software function by using internet, we can say that the code's provision is applicable to VCs. However, Ethiopian business licensing category review number 1 do not specifically lists the works of VC under the business licensing category. So that it needsinvestigation.

On the other hand, the amended National Payment system Proclamation no 1282/2023 neither categorized VC as foreign currency nor as Electronic money. As VC is not Equivalent to any legal tender and not represented by fait money, it cannot be categorized as electronic money according to this proclamation. Thus, we can say that VC in Ethiopia is not accepted as foreign currency or as electronic money, rather ignored in any category.

Additionally, under Ethiopian Federal Tax Administration proclamation number 983/2016, VCs and its participants are not defined. It is just ignored on this part of the proclamation to define VC or its participants; like Miners, Exchanges, and Wallet providers and so on. However it needs a clear understanding of this issue to include VC in a tax system. In addition VC is not categorized in any tax in Ethiopia too. The sample countries, assessed on the research, treat VCs as property. This is the better way of treating VC for tax purpose. Ethiopia too, shall adopt this position to get revenue from VC transactions. The other issue is that, Cryptocurrency is widely used by Ethiopian citizens. However there is no specific law that obliges to create awareness about fraud and scam on cryptocurrency transaction. Cryptocurrency exchangers in Ethiopia disregard the obligation of the rights of consumer because it is totally banned to use, and their

exact location is not disclosed and mostly they operate their business of exchanging fiat currency against cryptocurrency online escaping the ban. So that it needs a care on this area.

Finally,the Ethiopia's payment system proclamation is constructed to regulate electronic money. As CBDC is one of VC type, unless the provisions of payment system proclamation are amended Ethiopia cannot apply CBDC, which is monetary value controlled by the national bank used virtually other than commercial banks.

5.2 RECOMMENDATIONS

The mere banning on using VC without detail regulations does not make the ban automatically achieved. VC by its nature become circumvent under traditional laws related to National Bank, domestic currency, foreign currencies, property, tax, and other civil & criminal issues. In addition, the VCs mostly are governed by non-government entities, anonymous promoters in form of trust or society or in some hybrid form or through any unknown status. Due to this nature of VCs with circumventing the ban, people may continue to use VCs secretly and anonymously. Using VCs have opportunities and risks too, for the public as well as the government. Therefore, the government of Ethiopia should seek to balance the material risks of VCs with the potential benefits and regulatory opportunities. The followings are recommendations that the federal government should take into action in order to introduce VCs;

- Article 2 of Commercial Registration and Business licensing proclamation number 980/2016 and its amended proclamation number 1150/2019 should be amended to add the definition of VCs, Cryptocurrency, Miners, Exchangers, administrators and Wallet providers.
- In order to introduce VC transaction and to include VCs transaction participants as Business work, the existing Ethiopian business licensing category review 1 should be amended to include Mining of cryptocurrency, administering of it, wallet providing and exchanging cryptocurrency in a list of Business activities.
- Ethiopian Federal Tax Administration proclamation number 983/2016 should be amended to define VCs and its participants in order to understand it as taxable activity

and to include the new property tax proclamation be compiled. Appropriate tax treatment of VCs should be included in the taxation, with particular regard to property tax. So that, the new property tax proclamation that is aimed to be ratified should include the cryptocurrency gain as a property tax.

- In Ethiopia VCs lack regulatory framework and public over sight. The definition of Virtual Currency is still controversial. This is because the VC system is a new payment method never used before. Therefore VCs poses serious legal threat pertaining to operational risk, fraud, and clear definition. Article 2 of the national payment system proclamation no 718/2011 should be amended in order to differentiate VC with other payment systems, and to define the term VC clearly.
- Consumer protection law of Ethiopia should adopt or have in place a regulatory approach that aims at specific adequate protection for all relevant participants of VCs, including consumers and investors, and aims at achieving the same regulatory outcome. The laws should enable authorities to promote the public understanding of VCs markets risks.
- In order to require compliance with rules and regulations for effective governance irrespective of the structures of activities and technology used to conduct the VCs issues, the government needs to create awareness for stakeholder such as the police, public prosecutor, Judges and other government bodies.
- Since CBDC enables monetary policy credibility, reinforcing the central bank's independence, maintaining a sound fiscal position and implementing effective legal and regulatory measures to disincentive foreign currency use and maintain use of national currencies Ethiopia Should adopt it. Central bank digital currency is a new form of digital currency to circumvent a cash payment. Due to this it needs a prudent regulation that is different with cash/electronic regulations enabling interoperability and balancing the value of the token with the amount of demand in the public. National bank law should consider this in adopting CBDC in Ethiopia. Article 2 0f proclamation no 718/2011 and amended proclamation number 1282/2023 should be amended to include the definition of CBDC and rules of CBDC. In addition the new provision should be included in the amended part of the proclamation number 718/2011 to include CBDC as national banks payment system.

REFERENCES

Legislations

Local

- National payment system Proclamation Number 718/2011.
- The National Bank Establishment Proclamation Number 591/2008.
- Amended Banking Business Proclamation Number 1159/2019
- Commercial Registration and Business licensing proclamation number 980/2016
- Ethiopian Federal Tax Administration proclamation number 983/2016

Foreign

- Australian Payment Systems (Regulation) Act 1998
- Australian Corporation Act 2001
- Australian Anti-Money Laundering and Counter-Terrorism Financing Act 2006
- Australian Anti-Money Laundering and Counter-Terrorism Financing Act 2006 (AML/CTF 2006)
- Tunisian 2016 Act NO° 35

Books

- Acuña JA and Pullas AS, *The Digital Currency Challenge for the Regulatory Regime(University of Melbourne 2016)*
- Alzahrani S, *Analysis of Cryptocurrency Adoption Decision: Literature review*(Poland State of University 2019)
- Bains P & Other, *Regulating the Crypto Ecosystem: The Case of UnbackedCrypto Assets*(IMF,2022)
- Bossu W and Others, *IMF working Paper*(2020)
- Brito J, Castillo A, *Bitcoin A Primer for Policymakers*,(Mercatus Center at George Mason University 2013)
- Bunjaku F and Others, *Cryptocurrencies, Advantage and Disadvantage* (University Goce Delcev Stip 2018)ISSN 1857-9973
- Collins J, Crypto, *Crime And Control; Cryptocurrencies as an enabler of Organized Crime* (Global Initiative Against Transnational Organized Crime 2022)
- Demertzis M & Wolf GB, *Economic potential and Risks of Crypto Assets: Is a regulatory Framwork Needs*(Bruegel, 2018)
- Dewey JN, *Blockchain and Cryptocurrency Regulation*(fourth edn.), (Global Legal Insight 2022)
- Democratic Tunisian and Human Rights Support Center, *Cryptocurrency in Tunisian Official Choice to Remains Silent*(DTHRSC 2021)
- Dourado E, *Cryptocurrency*(The New Palgrave Economy of Dictionary, 2016)

- Ehrenfraud J, Prenio J and Others, *Fintech and Payment: Regulating Digital Payment Services an E- Money*(Financial stability Institute 2021)
- Equbamarian KA, *The Limits of Electronic Banking Regulations in Ethiopia*(Editions Universitaires Europeennes, 2018)
- Emmert F, *The Regulation of Cryptocurrencies in the USA*(Pardu University Indiana Polis 2022)
- European Union Parliament, *Virtual Currency and Central Banks Monetary Policy Challenges Area* (EU 2018)
- FATF, *Virtual Currencies—Key Definitions and Potential AML/CFT Risks*(OECD 2014)
- FATF, *Updated Guidance for A Risk Based Approach to Virtual Assets and Virtual Asset Service Providers*(FATF 2021)
- Feyen E and Others, *What Does Digital Money Mean for Emerging Market and Developing Economies*(Bank for International Settlement, 2021)
- Financial Stability Board, *Regulation, Supervision and Oversight of Crypto-Asset Activities and Markets: consultative Document*(FSB, 11 October, 2022)
- Global Future Council on Cryptocurrency, *Navigating Cryptocurrencies Regulation: An Industry Perspective on the Insights and Tools Needed to Shape Balanced Crypto Regulation* (World Economic Forum 2021).
- Group of Twenty, *G20 Note on the Macro Financial Implication of Crypto Asset*(IMF 2023)
- Hardle WK, Harvey CR and. Reule RG, *Understanding Cryptocurrencies* (Humboldt University At Zu Berlin 2019).
- He D and Others, *Virtual Currency and Beyond: Initial Considerations*(IMF , 2016)
- Holman D and Stettner B, *Ant-Money Laundering Regulation of Cryptocurrency (Allen And Overy* 2018)
- IMF Working Paper, *Legal Aspects of Central Bank Digital Currency: Central Bank and Monetary Law Considerations(IMF 2020)*
- Jafari S and Others, *Cryptocurrency a Challenge to legal System*(EJ 2018) <Doi:10.2139/ssm.3172489>
- Landau JP, *The Digitalization of Money*(Princeton University 2019)
- Robleh Ali and Others, *Innovation in Payment Technologies and the Emergence of Digital Currencies* (Bank of England 2014)
- Robby Houben and Alexander Snyers, *cryptocurrencies and blockchain: legal context and implication of financial crime, money laundering and tax evasion* (European Union Policy Department for Economic, Scientific and Quality of Life Policies 2018)
- Schwarcz S, Regulating Digital Currencies(Boston University Law Review,2022)
- Shirakawa JBR and Konwatanasakul U, *Cryptocurrency Regulations: Institution and Financial openness* (Asian Development Bank 2019).
- Shira S, *Money and Central Bank Digital Currency*(Asian Development Bank Institute 2019)
- Schmidt J, Derrick A and Henchman H, *Internal Revenue Service Says Bitcoin to be Taxed as Gains; New Rule is Retroactive*(Tax Foundation 2014)
- UNCTAD Policy Brief No.100, *All That Glitters is not Gold; The High Cost of Leaving Cryptocurrencies Unregulated(*UNCTAD 2021)

- UNCDF, *Ethiopia Remittance Review: Assessment of Payment and Financial Markets Infrastracture*(UNCDF 2021)
- United Nations Conference on Trade and Development, *Crypto Assets and central Bank Digital Currencies: potential implications for developing countries*(United Nations 2023)
- UNCTAD, *Crypto Assets and Central Bank Digital Currencies; Potential implications for developing Countries* (UN 2023)
- USAID, Examining VCs: *Risks and Uncertainties of A Novel Payment Technology in International Development*(2021)
- Wolfgang Karl Hardle, Campbell R. Harvey and Raphael C. G. Reule, *Understanding Cryptocurrencies* (Humboldt University At Zu Berlin 2019)
- Venter H, *Digital Currency-A case For Standard Setting Activities*(Australian Standard Board Staff 2018)
- Valkenburgh PV, *The Bank Secrecy Act, Cryptocurrencies, and New Tokens: What is Known and What Remains Ambiguous*, (Coin Center 8, 2017

Journals

- Aisar AA and Kumar K, 'Mining Process in Cryptocurrency Using Blockchain Technology: Bitcoin as a Case Study(2019), 16 Journal of Computational and Theoretical Nano science 4293–4298
- Buta SG, Legal Status and Regulation of Cryptocurrency In Ethiopia(LLM Thesis, Addis Ababa University 2021)
- Gobena MA, 'The Regulation of Cryptocurrencies under Ethiopian Legal Norms'(2021), 15(1) Mizan Law Review 173
- Hughes SG, 'Cryptocurrency Regulations and Enforcement in the United States' (2017), 45(1) Western state Law Review 3
- Nawang NI, 'cryptocurrency an insight into the Malaysian regulation'(university Sultan Zainal Abidin 2020),143(5) JHI 262
- Scheau MC, 'A Cryptocurrency Spectrum Short Analysis'*(2020)*, 13(184) Journal of Risk and Financial Management 4
- Thakur KK and Dr G.t Bakin, 'Cryptocurrency: Its Risks and Gains And the way a head'(2018), 9(2) JEF 38
- Tien Dang Vo-Huu and Reza Mirzazade Farkhani, 'Cryptocurrency: A Challenge to Legal System*'(2018),* Electronic Journal 5
- Vo-Huu TD and Farkhani RM, 'Cryptocurrency: A Challenge to Legal System'*(2018),* Electronic Journal 5

Internet Sources

- Addis Insight, 'Why Banning cryptocurrencies in Ethiopia Right Move' (June, 2022) <https://addisinsight.net/why-banning-cryptocurrencies-in-ethiopia-is-a-right-move> Accessed 7 April 2023.
- *Application of FinCEN's Regulations To Virtual Currency Mining Operations*, U.S. Department of State Treasury

(2014)<https://www.fincen.gov/sites/default/files/shared/FIN-2014-R001.pdf.> Accessed 24 September, 2023

- Blockchain Council, 'How many Bitcoin are There and How Many are Left to Mine?'(March, 2023)https://WWW.blockchain-council.org/cryptocurrency/how-many-bitcoin-are-left/ Accessed 10 october,2023
- Cunsumer Advisory, 'Risks to Consumers Posed by Virtual Currencies'(August 2014)<https://www.filesconsumerfinance.gov/f/201408_cfpl_consumer-advisory_virtualcurrencies.pdf> Accessed 31 July, 2023
- Coinbase, 'What is Mining'(2023)<https://WWW.coinbasecom/learn/crypto-basics/what-is-mining> Accessed 17 september, 2023
- Crypto Compliance(2021)<https://WWW.cryptocompliance.io/about-us/how-do-msns-and-virtual-currency-related> Accessed 17 September, 2023
- Corporate Finance Institute(May, 2023 https://Corporatefinanceinstitute.com/resources/cryptocurrency/virtual-currency (may 2023) Accessed 16 September, 2023
- CPFB(2014)<https://www.consumerfinance.gov/newsroom/cfpb-warns-consumers-about-bitcoin> Accessed 24 September, 2024
- "Customer Identification Program - Overview." *FDIC: Federal Deposit Insurance Corporation* (Aug. 2007)www.fdic.gov/regulations/examinations/bsa/ffiec_cip.pdf.
- Coin Telegraph, *An Over View Of the Cryptocurrency Regulation in Australia*(2023>https://cointelegraph.com/learn/an-overview-of-the-cryptocurrency-regulation-in-australia> Accessed 11 October, 2023
- Comply Advantage, Cryptocurrency in Australia: Regulations and Law(12 June, 2023)<https://complyadvantage.com/cryptocurrency-in-australia-regulation-and-law/> Accessed 11 august,2023
- *Central Bank of Tunisia tests CBDC pilot with Central Bank of France.(July 2021) <https://www.unlock-bc.com/news/2021-07-14/central-bank-of-tunisia-tests-cbdc-pilot-with-central-bank-of-france/>Accessed 11 September, 2023*
- *Cryptocurrency Regulation Around The World*<https://complyadvantage.com/insights/cryptocurrency-regulations-around-world/> accessed 12 October, 2023
- Deresse A, Ethiopians Creeping into Crypto (April 2022) <https://ethiopianbusinessreview.net/ethiopians-creeping-into-crypto/> Accessed 10 April, 2023
- Getachew A and Tessema S, Bitcoin, cryptocurrencies in Ethiopia illegal, Central Bank (06 June 2022) <https://www.aa.com.tr/en/economy/bitcoin-cryptocurrencies-illegal-in-ethiopia-says-central-bank> Accessed 7 April 2022.
- Free Man Law, legal issues in Cryptocurrency (2022) <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiZgtqam7n5AhUqiP0HHaNHAGoQFnoECEEQAQ&url=https%3A%2F%2Ffreemanlaw.com%2Flegal-issues-surroundingcryptocurrency%2F&usg=AOvVaw3lroaE1PKff6gqp1dtyCBI> accessed 7 April ,2023
- Free Man Law, legal issues in Cryptocurrency (2022) <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiZgtqam7n5AhUqiP0HHaNHAGoQFnoECEEQAQ&url=https%3A

%2F%2Ffreemanlaw.com%2Flegal-issues-surroundingcryptocurrency%2F&usg=AOvVaw3lroaE1PKff6gqp1dtyCBI> accessed 7 April,2023

- Frankenfield A, Digital Currency Types, Characteristics, Pros and Cons, Future uses(April 2023) <Https://www.investopedia.com/terms/d/digital-currency.Asp> Accessed 31 July,2023
- Federal Election Commission Record Advisory Opinions, Federal Election Commission (May,2014), <http://www.fec.gov/pages/fecrecord/2014/june/ao2014-02.shtml> Accessed 24 September, 2023
- Federal Reserve 11 (May, 2014)<https://www.federalreserve.gov/aboutthefed/fac-20140513.pdf> Accessed 25 September, 2023
- Federal Democratic Republic of Ethiopia, *Digital Ethiopia 2025: A strategy for Ethiopia inclusive prosperity* (2021) <https://drive.google.com/file/d/18KbIfd65E_5AS6u9HTn6s_SC8j1wS17z/view.> Accessed 20 September, 2023
- Financial Regulation in Tunisia (2023)<https://WWW.onespan.com/resources/financial/regulations/tunisia>Accessed 12 september,2023
- Forbes Digital Asset, What is a Crypto Miner and How Does Bitcoin Mining Work?(2023)<https://WWW.forbes.com/sites/qai/2023/01/24> Accessed 16 September, 2023
- Hall and Wikom Smater Law, Crypto Regulation in Australia: Where are we now and Where are weHeaded? (2023) https://WWW.lexalog.com/library/detailaspx?g=6af2cgf3_42de-4dfb-8582-009alaf9a13f9a034> Accessed 11 september,2023
- History of Anti-Money Laundering Laws." *Financial Crimes Enforcement Network - FinCEN.gov*, <www.fincen.gov/history-anti-money-laundering-laws.>
- Internal Revenue Service, Notice 2014-21<https://www.irs.gov/uac/Newsroom/IRS-Virtual-Currency-Guidance> Accessed 24 September, 2023
- Investopedia, Cryptocurrency Explained With Pros and Cons For Investment(November 02, 2023) <https://www.investopedia.com/terms/c/cryptocurrency.asp> Accessed 20 November,2023
- Kinsey MC and Company, 'What is Blockchain'(December 2022)<https://www.Mckinsey.com/featured-insights/Mckinsey-explainers/what-is-blockchain/> Accessed 02 August,2023
- Kaspersky, What is Cryptocurrency and How does it work?(2023)<https://WWW.kaspersky.com/resources-center/definitions/what-is-cryptocurrency> Accessed 06 August,2023
- NASDAQ.COM/crypto surveillance (ed.), *crypto currency regulation summery (*2022) <httpswww.clubgestionriesgos.orgwp-contentuploadsCryptocurrency-Regulation-Summary-2022-edition.pdf.pdf> accessed 6 April, 2023.
- National Standard for Personal Financial Education, Wondering About Virtual Currencies(Consumer Finance Protection Bureau 2022)<Https://www.consumerfinance.gov/financial-education-grossary> accessed 10 July, 2023

- North American Drevative Exchange Order(2012), https://www.cftc.gov/stellent/groups/public/@rulesandproducts/documents/ifdocs/nadexorder040212.pdf Accessed 30 September, 2023
- Norry A, *The History of Silk Road: A Tale of Drugs, Extortion & Bitcoin*,(Nov. 20, 2018), https://blockonomi.com/history-of-silk-road/ .
- Power of CFTC at<https://www.consumerfinance.gov/rules-policy/final-rules/code-federal-regulations/.>
- *"Personal remittances, received (% of GDP) – Tunisia." The World Bank*<https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=TN>Accessed 11 September, 2023
- Reporter, Blockchain technology to debut in Ethiopia"(may 5,2018)<https://www.thereporterethiopia.com/5297/#:~:text=debut%20in%20Ethiopia-,Blockchain%20technology%20to%20debut%20in%20Ethiopia,-By>Accessed 05 April, 2023
- Synopsys inc.,Blockchain(2023)<https://WWW.Synopsis.com/glossarry/whatis-blockchain.html> Accessed 02 August, 2023
- Seth S, What is CBDC(April ,2023)<https://WWW.investopedia.com/terms/c/central-bank-digital-currency>Accessed 10 october,2023
- The Federal Bureau of Investigation (September, 2014)<https://www.fbi.gov/newyork/press-releases/2014/bitcoin-exchangers-plead-guilty-in-manhattan-federal-court-in-connection-with-the-sale-of-approximately-1-million-in-bitcoins-for-use-on-the-silk-road-website>
- *The White House*(2022)<https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/09/fact-sheet-president-biden-to-sign-executive-order-on-ensuring-responsible-innovation-in-digital-assets/> Accessed 25 September,2023
- Tor: "Overview Tor"(2014)<https://www.torproject.org/about/overview.html.en> Accessed 25 September,2023
- U.S. Department of the Treasury Office of International Affairs 3, (Oct,2009)<http://www.treasury.gov/resource-center/international/exchange-rate-policies/Documents/FX%20Report%20FINAL%20October%2015%202009.pdf>Accessed 25 September, 2023
- *US state Department*(2022)<https://www.state.gov/ensuring-the-responsible-development-of-digital-assets/> Accessed 25 September, 2023
- "Virtual Currencies: Emerging Regulatory, Law Enforcement, and Consumer Protection Challenges", U.S. Government Accountability Office (May 2014)<http://www.gao.gov/assets/670/663678.pdf>Accessed 25 September, 2023
- Wood M, Tunisia Issues Central Bank Digital Currency (2019) <https://WWW.ledgerinsights.com/category/industries/tunisia-issues-central-bank-digital-currency//> Accessed 14 October ,2023
- Yasar K, Pros and Cons of Cryptocurrency(July, 2023) <https://www.techtarget.com/whatis/feature/Pros-and-cons-of-cryptocurrency> Accessed 20 November, 2023