ANALYSIS OF CRYPTOCURRENCY VERIFICATION CHALLENGES FACED BY THE SOUTH AFRICAN REVENUE SERVICE AND TAX AUTHORITIES IN OTHER BRICS COUNTRIES AND WHETHER SARS' POWERS TO GATHER INFORMATION RELATING TO CRYPTOCURRENCY TRANSACTIONS ARE ON PAR WITH THOSE OF OTHER BRICS COUNTRIES

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SUBMITTED TO THE UNIVERSITY OF CAPE TOWN

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in partial fulfilment of the requirements for the degree M. Com (Taxation)

Faculty of Commerce

UNIVERSITY OF CAPE TOWN

Date of submission: 08 February 2019

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DECLARATION

I, Jill Scheepers, hereby declare that the work on which this dissertation is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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Dedication

I am dedicating this work to my brother, Edwin, who passed away tragically last year. His memory will live in my heart forever.

Acknowledgements

I want to express my sincere gratitude to my supervisor, Tracy Johnson, for her insight and guidance as well as her positivity and kindness. I also want to thank my employer, SARS, for their financial support and my manager, Schalk Compion, for endorsing my enrolment in this program. Finally, I want to express my heartfelt gratitude to my husband, Johan, and daughter, Lakin, for their continued support, patience and encouragement during this time.

ABSTRACT

The main objective of this study was to identify the potential difficulties that the verification of cryptocurrencies presents to SARS and determining whether these problems will also be encountered by tax authorities in Brazil, Russia, India and China (members of the BRICS group of countries). The study examined how the BRICS' countries were addressing cryptocurrency data challenges and determining whether South Africa could learn from the solutions implemented by these countries. The information gathering powers of SARS were also examined in order to determine whether those powers are on par with those of the BRICS' countries.

The findings suggest that it is vital that tax authorities link the taxpayer's real identity to the taxpayer's digital identity in order to trace the taxpayer's tax profile and verify compliance with tax legislation. The findings also suggest that certain BRICS countries did not experience significant verification difficulties.

China has, however, banned the use of cryptocurrencies. Russia is in the process of passing tax legislation pertaining to cryptocurrencies and therefore, the Russian tax authorities have not yet undertaken to verify cryptocurrency transactions. India has addressed the verification challenges presented by cryptocurrencies by introducing legislation that compels clients of cryptocurrency exchanges to register with the exchange before transacting. Brazil is in the process of passing legislation which will require cryptocurrency exchanges to supply the Brazilian tax authorities with taxpayers' identities, transaction amounts and transaction history on a monthly basis. Private altcoins, face-to-face transactions, cryptocurrency mixers and online peer-to-peer markets (which require no registration) present the largest verification challenges due to the difficulty in tracking these transactions.

It was also found that the information gathering powers of SARS are on par with those of the BRICS' countries and therefore, SARS is also able to request information from cryptocurrency exchanges as a means of collecting data for verification purposes. The study concluded with recommendations for SARS to consider in addressing the verification challenges posed by cryptocurrency transactions.

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DIAGRAMS

ABBREVIATIONS

BEPS	Base Erosion and Profit Shifting
BRICS	Members of the BRICS group of countries including Brazil, Russia, India, China and South Africa
CRS for AEO	Common Reporting Standard for Automatic Exchange of Information
G20	Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, United States and European Union.
MMAAA	Multi-lateral Mutual Administrative Assistance Agreements
OECD	Organisation for Economic Co-operation and Development
RBI	Reserve Bank of India
SAARC's	SAARC Limited Multilateral Agreement
SARS	South African Revenue Service
SARB	South African Reserve Bank
TAA	Tax Administration Act

CHAPTER 1: INTRODUCTION

1.1 Introduction and Rationale for the study

Cryptocurrencies (also known as digital or virtual currencies) and the technology behind them have grown in popularity in South Africa.[1] The South African Reserve Bank ("SARB") has not changed its stance that cryptocurrencies are not legal tender since releasing "Position Paper 2 on Virtual Currencies, 2014" (South Africa, South African Reserve Bank, 2014, p. 2).[2] To date, the SARB have not issued any specific guidance regarding cryptocurrencies and does not oversee or regulate virtual or cryptocurrencies. There are also no regulations regarding cryptocurrency trading and no legal recourse available for traders and coin exchanges. This means that the risk falls solely on the end-users (the taxpayers).

On 06 April 2018, SARS issued a media release stating that cryptocurrencies would be treated as capital assets for tax purposes.[3] Specifically, SARS classified cryptocurrencies as intangible assets and indicated that they would be subject to normal income tax legislation and taxation case law principles (namely capital receipts versus revenue receipts). The taxpayer would have to declare the income from cryptocurrency gains and would be able to claim losses and other associated expenditure against such income. Failure to declare such gains would result in the levying of penalties and interest.

In an interview conducted on Morning Live on 09 April 2018, Andrew Wes (Senior Manager of Legal Counsel at SARS) acknowledged that the nature of cryptocurrencies made them difficult to detect and regulate throughout the world.[4] He stated that detection was the more pressing issue and SARS issued the media release in anticipation of possible further growth in this area. He also acknowledged that the SARS had to rely upon the honesty of the taxpayer to some extent when they declared cryptocurrency transactions for tax purposes.

The technology behind cryptocurrencies and digital nature of cryptocurrencies will prove to be challenging for SARS. This is a practical issue that cannot be addressed by merely changing a section in the Tax Administration Act No. 28 of 2011 ("TAA").

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[1] McKane, J. (2018). *South Africa's cryptocurrency industry is booming*. Available at https://mybroadband.co.za/news/cryptocurrency/266863-south-africas-cryptocurrency-industry-is-booming.html. (Accessed 16 December 2018).
[2] South African Reserve Bank (2014). *National Payments System*. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).
[3] South African Revenue Service (2018). *SARS's stance on the tax treatment of cryptocurrencies*. Available at http://www.sars.gov.za/Media/MediaReleases/Pages/6-April-2018---SARS-stance-on-the-tax-treatment-of-cryptocurrencies-.aspx. (Accessed 01 December 2018).
[4] Wes, A. (2018). Interviewed by Leanne Manas for Morning Live, SABC 2, 9 April 2018. Available at https://www.youtube.com/watch?v=bYW_LJZsWiU. (Accessed 01 December 2018).

Similar verification challenges are also faced by other tax authorities throughout the world. This study will, however, only focus on the verification challenges relating to the BRICS countries namely Brazil, Russia, India, China and South Africa.

1.2 Research Objectives

The landscape from which SARS collects taxes is constantly evolving. The taxation of cryptocurrencies and more specifically, how to verify the validity and correctness of cryptocurrency gains or losses declared by taxpayers present new challenges to SARS and other tax authorities throughout the world.

The main objective of this study is to research and explain the problems that cryptocurrencies can pose to SARS from the verification perspective. Sub-questions that will have to be considered include whether the other BRICS' member countries face similar difficulties and what these countries are doing to address the problem; what South Africa can learn from the solutions implemented by the other BRICS countries; whether the information gathering powers in South Africa are on par with other BRICS countries (this is important as it will determine if South Africa will also be able to implement their solutions) and what other measures can be taken by SARS to address cryptocurrency verification challenges.

South Africa was invited to join the BRICS group of countries in December 2010.[5] The BRICS countries were chosen as suitable jurisdictions to analyse due to the group's common goals of economic co-operation and growth in trade between each other, and specifically their common interest in improvement of tax enforcement technology, sharing of best practices, mutual development and skills exchanges in tax matters.[6]

1.3 Research Method

A doctrinal research approach will be used by the writer. This will be done by analysing the relevant legislation in South Africa and regulations and legislation currently in force in the other BRICS member countries. A comparative analysis will be undertaken of methods used by each BRICS tax authorities in verifying cryptocurrency transactions as well as their powers to gather information domestically and from abroad.

1.4 Limitations of Scope

This study will only be limited to income tax (including capital gains tax) in South Africa, Brazil, Russia, India and China. Hong Kong and Macau will be excluded from this study even

[5] South African Government (2018). *BRICS (Brazil, Russia, India, China, South Africa)* Available at https://www.gov.za/about-government/brics-brazil-russia-india-china-south-africa-1. (Accessed 09 December 2018).
[6] Ibid (Accessed 09 December 2018).

though they form part of China. They are administered by China as "*special administrative regions*" but have separate legal, administrative and judicial systems.[7] Therefore, Hong Kong and Macau have separate forms of taxation.[8]

1.5 Structure of the Remaining Chapters

Chapter 2: Understanding cryptocurrencies and their associated risks

Chapter 2 will provide an understanding of cryptocurrencies and will include references to the Bitcoin cryptocurrency. Bitcoin is one of the remaining original cryptocurrencies in existence and the technology used in the application of Bitcoins will relate to all other cryptocurrencies.[9]

This chapter will also explore key concepts in the cryptocurrency environment. This includes what a cryptocurrency entails; the technology behind it; the reason for its inception; cryptocurrency role players; how cryptocurrencies can be acquired and the threats that cryptocurrencies pose to tax authorities.

Chapter 3: What Brazil, Russia, India and China are doing to address cryptocurrency verification challenges

Chapter 3 will briefly discuss the laws relating to cryptocurrencies the BRICS countries; the stance taken by each of the tax authorities in those BRICS countries and recent developments relating to the taxation of cryptocurrencies in those BRICS countries in order to determine if these countries are experiencing problems in verifying cryptocurrency transactions and what solutions have been implemented.

Chapter 4: Examination of the information gathering powers available to SARS and other BRICS tax authorities

Chapter 4 will discuss the mechanisms available to South Africa and the other BRICS countries to gather information for tax verification purposes. This chapter will also ascertain whether information gathering mechanisms in South Africa are on par with those of other BRICS countries, or whether South Africa needs to develop wider powers to gather information on cryptocurrency transactions.

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[7] Wikipedia. (2018). *Special administrative regions of China*. Available at https://en.wikipedia.org/wiki/Special_administrative_regions_of_China. (Accessed 18 December 2018).
[8] Investopedia. (2018). *Special Administrative Region*. Available at https://www.investopedia.com/terms/s/special-administrative-region.asp. (Accessed 22 December 2018).
[9] Reiff, N. (2018) *Were there cryptocurrencies before bitcoin?* Available at https://www.investopedia.com/tech/were-there-cryptocurrencies-bitcoin/. (Accessed 22 December 2018).

Chapter 5: Other measures that SARS can take to address verification challenges

This chapter will provide a discussion of other measures that can be used by SARS to address verification challenges. These will include measures based on solutions implemented by the other BRICS countries, technological advancements and enhancement of current processes.

Chapter 6: Conclusion

Chapter 6 will summarise the findings and conclusions reached in previous chapters in order to address the research problem statement and research objectives.

CHAPTER 2: UNDERSTANDING CRYPTOCURRENCIES AND THEIR ASSOCIATED RISKS

2.1 Introduction

The increase in e-commerce transactions has created a digital economy of producers, distributors and consumers of goods that are not necessarily bound to a specific country or region.[10] New digital economies are constantly being created and SARS and other tax authorities must become alert to the potential tax risks in order to adequately identify and track such transactions and address the tax consequences of these trade activities.

The number of cryptocurrencies has grown over the years. According to Coin Desk, there were a total of 1565 cryptocurrencies on the market as at 13 April 2018.[11] Coin Central reported that at 03 January 2018, 16.7 million of the total 21 million Bitcoins (one of the most popular cryptocurrencies) have been mined and placed in circulation.[12]

This chapter will discuss the history of cryptocurrencies and clarify key concepts in the cryptocurrency environment as well as the technology behind cryptocurrencies (including where the information is held). This will be followed by a discussion on the various role players, how cryptocurrencies can be obtained, and detail the risks associated with cryptocurrencies for SARS and other tax authorities. The chapter will conclude with a summary of the contents of this chapter.

2.2 Blockchain technology and cryptocurrencies

Bitcoin was one of the original cryptocurrencies and was introduced by Satoshi Nakamoto in 2009.[13] Satoshi Nakamoto released a whitepaper titled: "Bitcoin: A Peer to Peer Electronic Cash System" which provided details of a peer-to-peer electronic cash system which would allow the flow of electronic cash payments to be made directly from one party to another without going through a third party such as a financial institution.[14] This white paper led to the creation of cryptocurrencies (also known as virtual or digital currencies).

The SARB's Position Paper on Virtual Currencies adopted the definition of a virtual currency from the European Central Bank and Financial Action Task Force and defines a cryptocurrency as being an "*digital representation of value that can be digitally traded and*

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[10] E-commerce involves business transactions conducted electronically.
[11] FinancialBuzz.com News Commentary. (2018). *Cryptocurrency prices rebound across the board.* Available at https://www.prnewswire.com/news-releases/cryptocurrency-prices-rebound-across-the-board-679629933.html. (Accessed 08 December 2018).
[12] Butchko, S. (2018). *How many Bitcoins are left?* Available at https://coincentral.com/how-many-bitcoins-are-left/. (Accessed 17 December 2018).
[13] Satoshi Nakamoto is an individual or a group of individuals whose true identity is still not known.
[14] Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System*. Available at https://bitcoin.org/bitcoin.pdf. (Accessed 17 December 2018).

functions as a medium of exchange, a unit of account and or a store of value, but does not have legal tender status" (South Africa, South African Reserve Bank, 2014, p. 1).[15] Cryptocurrencies differ from fiat or traditional money currencies in that they are computer generated, decentralised and have a limited supply.[16] Characteristics of a fiat currency include that it is a government issued and accepted as a physical medium of exchange in the country that issues it.[17] In summary, a cryptocurrency is a digital medium of exchange which uses digital encryption methods to control the creation of monetary units and verify the transfer of funds.

Cryptocurrencies use a processing method called blockchain technology which combines three basic innovations namely cryptography, smart contracts and distributed ledger design.[18] These technologies can be used independently in stand-alone applications or jointly with others.[19] A blockchain can therefore be described as a public or private ledger where transactions and transfers of ownership are documented and validated anonymously by sharing these ledgers across a peer-to-peer network.[20] The chain will never disappear because copies of the chain and access to the chain are distributed. The result is that the system is decentralised, anonymous and secure and participants can transfer assets across the internet without having to pay fees to third parties.

2.3 Workings behind cryptocurrency transactions

Cryptocurrency ownership is defined through digital keys (digital or cryptocurrency addresses), bitcoin addresses and digital signatures. A cryptocurrency address consists of a

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[15] The South African Reserve Bank Act states that the SARB has the sole right to issue (or cause to be issued) bank notes and coins in South Africa. Also see South African Reserve Bank (2014). *National Payments System*. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).

[16] South African Reserve Bank (2014). *National Payments System*. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).

[17] Financial Action Task Force. (2014). *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*. Page 6. Available at http://www.fatf-gafi.org/publications/methodsandtrends/documents/virtual-currency-definitions-aml-cft-risk.html. (Accessed 06 December 2018).

[18] Cryptography involves the encryption and decryption of data. Encryption relates to the conversion of data from a readable form to an encoded version so that it can be decoded by the person or entity if they have access to a decryption key.

[19] Organisation for Economic Development. (2018). B*lockchain Technology and Corporate Governance*. Page 6. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/CA/CG/RD(2018)1/REV1&docLanguage=En. (Accessed 08 December 2018).

[20] A peer-to-peer network consists of 'peers' which are computer systems connected to each other via the Internet in which all computers are equally responsible for processing data. Peer-to-peer networks are decentralised as data is stored across the various computers constituting the network.

string of numbers and characters that can be given to anyone who wants to on send money (to a recipient).[21] Digital keys are not stored within the peer-to-peer network and are generated and stored by taxpayers in a file or account called a wallet.

A wallet is a software application or structured file where cryptocurrencies can be held or stored.[22] A wallet provider holds the virtual currency wallet which contains the taxpayer's private keys and allows the taxpayer to conduct the transactions more easily. The wallet provider is responsible for maintaining the taxpayer's virtual balance and provides transaction security and storage.[23]

Each taxpayer's wallet is tracked on the blockchain. The digital keys in the taxpayer's wallet can be created and managed by the taxpayer's software without having internet access or reference to the blockchain.[24] The keys are essential in decentralized control, proof of ownership and the cryptographic "proof of work" or "proof of stake" models.[25] Investopedia describes proof of work as a system that requires a feasible amount of effort in order to deter trivial uses of computing power (such as sending spam emails). The proof of stake concept states that a miner can validate transactions according to how many coins are held by that miner.

Cryptocurrency transactions need a valid signature in order to be part of the blockchain, and these signatures can only be created with valid digital keys. Thus, any party who has a copy of these keys will have control of the cryptocurrencies in that account. A private (secret) key and a public key are provided and are usually randomly selected. Such digital keys are not usually seen by users of cryptocurrencies but are stored inside the wallet file.[26]

The payment part of a cryptocurrency transactions contains a digital footprint called a cryptocurrency address which represents the recipient's public key. A private key is a number which is randomly selected and provides the user with control over the

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[21] Antonopoulos, Andreas M. (2014). '*Mastering Bitcoin: Unlocking Digital Cryptocurrencies*'. Page 70. First Edition. California. O'Reilly Media Incorporated.
[22] Marques, EG. *Cryptocurrencies: Threats and Investigative Opportunities for Law Enforcement*. Page 8. Charles University / University of Glasgow. Degree of MSc International Security, Intelligence and Strategic Studies. Available at https://is.cuni.cz/webapps/zzp/download/120311105. (Accessed 28 December 2018).

[23] Financial Action Task Force. (2014). *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*. Page 8. Available at http://www.fatf-gafi.org/publications/methodsandtrends/documents/virtual-currency-definitions-aml-cft-risk.html. (Accessed 06 December 2018).
[24] Antonopoulos, Andreas M. (2014). '*Mastering Bitcoin: Unlocking Digital Cryptocurrencies*'. Page 61. First Edition. California. O'Reilly Media Incorporated.
[25] Investopedia. (2018). *Proof of work*. Available at https://www.investopedia.com/terms/p/proof-work.asp. (Accessed 12 December 2018). Also see Investopedia. (2018). Proof of stake. Available at https://www.investopedia.com/terms/p/proof-stake-pos.asp. (Accessed 12 December 2018).
[26] Antonopoulos, Andreas M. (2014). '*Mastering Bitcoin: Unlocking Digital Cryptocurrencies*'. Page 61. First Edition. California. O'Reilly Media Incorporated.

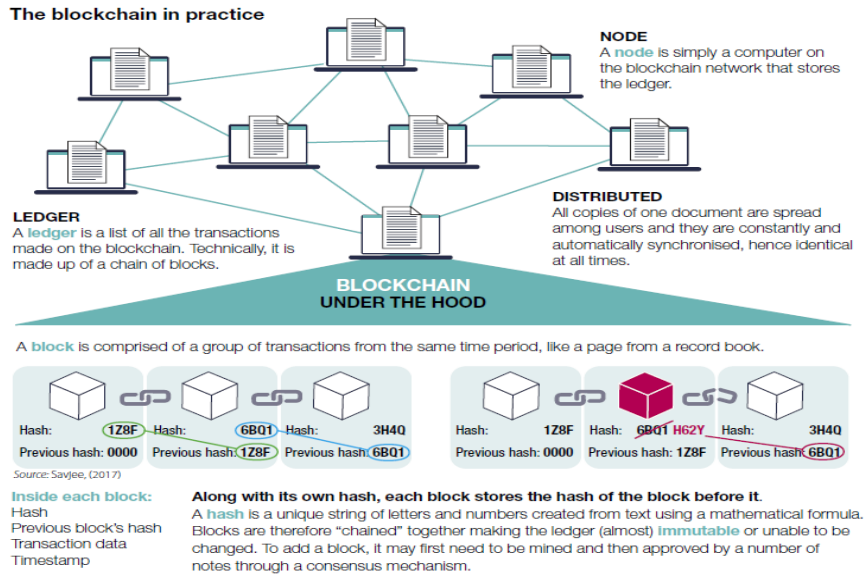
corresponding cryptocurrency address. The private key will be utilized to generate the required signatures in order to prove ownership of the funds. The private key must remain confidential as the holder of the cryptocurrencies will be at risk of losing those cryptocurrencies forever if the private key is revealed to a third party.

Blockchain technology is aimed at increasing transparency, improving the efficiency and the time taken to perform transactions while securing and lowering the cost of trust between the transacting parties. Key features of this technology included the use of digital signatures and network timestamp transactions as well as the elimination of the double spending problem.[27]

Cryptographic algorithms and smart contracts are used by computers which are on the network to confirm the transactions. These transactions are then written into blocks. Thus, a block in the blockchain consists of a list of records which are joined together to become a blockchain. Ownership records (which consist of assets as well as their values) are permanently available in the ledgers on the network.

The following diagram illustrates how a blockchain works in practice:

Diagram 1: How a blockchain works in practice



Source: The OECD Blockchain Primer

The steps involved in a standard blockchain are: a user requests that a transaction be conducted; the request is transmitted to all nodes on the peer-to-peer network and verified by consensus algorithms. The verified transactions will be combined with other related

[27] Network timestamp transactions involve the creation of a chain of hash-based 'proof of work' i.e. once information is entered, it cannot be altered. A proof-of-work problem is a mathematical algorithm that takes an extraordinary amount of computing power to solve. Each transaction is network time-stamped.

transactions to form a new block. The new block will be 'chained' to the other blocks. The chain of blocks becomes the de-centralised, distributed leger of all past transactions and will be shared by the users in the network. The transaction is confirmed and regarded as finalised and can be viewed on the internet if on a public blockchain.[28]

The following information will be found in the block: a reference to the previous block; a summary of the included transaction; a time stamp and proof of work that went into creating the secure block. A key feature of a blockchain is the immutability feature.[29] Immutability refers to the inability of historical records to be tampered with. In addition, as there is no need for an authorised intermediary to confirm the transactions, there will be no central repository of records. Such a mechanism results in a distributed database of ledgers with a continually growing record of transactions.

2.4 Characteristics of blockchains and cryptocurrencies

Cryptocurrencies can be classified as being centralised or de-centralised and convertible or non-convertible. Convertible cryptocurrencies may be centralised or de-centralised and exchanged for real currency as they have an equivalent value in real currency. The South African Reserve Bank regards convertible cryptocurrencies as "distributed, open-source, math-based peer-to-peer virtual currencies with or without a central administration" (South Africa, South African Reserve Bank, 2014, p. 2).[30]

Centralised, non-convertible cryptocurrencies pose fewer risks to the public because of their closed nature to a specific community. Decentralised cryptocurrencies are defined by the Financial Action Task Force as being "distributed, open-source, math-based peer-to-peer virtual currencies that have no central administrating authority and no central monitoring or oversight" (Financial Action Task Force, 2014, p. 5).[31] Therefore, this means that the decentralised cryptocurrency is a virtual currency which is math based, distributed along the peer-to-peer network and is available for everyone to see as it is open source. As a distributed ledger system does not have a single owner, computers are able to join the network at any time and begin validating transactions by solving complicated computer algorithms.

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[28] Ibid. Page 8. (Accessed 08 December 2018).
[29] Organisation for Economic Development. (2018). *Blockchain Technology and Corporate Governance*. Page 8. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/CA/CG/RD(2018)1/REV1&docLanguage=En. (Accessed 08 December 2018).
[30] South African Reserve Bank (2014). *National Payments System*. Page 2. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).
[31] Financial Action Task Force. (2014). *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*. Page 5. Available at http://www.fatf-gafi.org/publications/methodsandtrends/documents/virtual-currency-definitions-aml-cft-risk.html. (Accessed 06 December 2018).

Blockchain technology itself does not allow users to be completely anonymous.[32] This statement will be clarified during the discussion on the different types of blockchains.

Blockchains can generally exist in two formats: public (permissioned or permissionless) and private blockchains.[33] The following table summarises the different types of blockchains and their characteristics:

Diagram 2: Types of blockchains and their characteristics

			READ	WRITE	COMMIT	EXAMPLE
BLOCKCHAIN TYPES	OPEN	Public permissionless	Open to anyone	Anyone	Anyone	Bitcoin, Ethereum
		Public permissioned	Open to anyone	Authorised participants	All or subset of authorised participants	Supply chain ledger for retail brand viewable by public
	CLOSED	Consortium	Restricted to an authorised set of participants	Authorised participants	All or subset of authorised participants	Multiple banks operating a shared ledger
		Private permissioned "enterprise"	Fully private or restricted to a limited set of authorised nodes	Network operator only	Network operator only	External bank ledger shared between parent company and subsidiaries

Source: Hileman & Rauchs, 2017

Source: Hileman & Rachs 2017, as cited in the OECD Blockchain Primer

There is no owner in a public permissionless blockchain and participants can view, enter or exit the blockchain freely. Public blockchains are open-source and can be examined by anyone as it is in the public domain. Each participant in a blockchain will have an identical copy of the ledger and hence there will be multiple copies of the same ledger. Bitcoin is an example of a convertible cryptocurrency which exists on a public blockchain.

In public permissioned blockchains, participants require permission to join and verify transactions, but anyone can view transactions on the blockchain. The information will be available in the public domain however, this information will comprise the participant's (taxpayer's) cryptocurrency address (as in the case of public permissionless blockchains).

A private blockchain (also known as private permissioned blockchains) will allow viewing access to the blockchain to authorised nodes on the peer-to-peer network only. Such blockchains require the participant's identity to undergo a verification process before they can access the blockchain. Thus, only permissioned users will be entitled to a copy of the

[32] Organisation for Economic Development (2018). *The OECD Blockchain Primer*. Page 6. Available at https://www.oecd.org/finance/OECD-Blockchain-Primer.pdf. (Accessed 06 December 2018).
[33] Wikipedia. (2018). *Blockchain*. Available at https://en.wikipedia.org/wiki/Blockchain. (Accessed 06 December 2018).

ledger. Financial institutions such as RippleNet and Nasdaq Linq are examples of private blockchains.[34]

Hybrid or consortium blockchains are "any format between public and private blockchains".[35] Consortium blockchains will allow a restricted set of participants to join or view the blockchain.

Therefore, it appears as though the public permissioned, private and hybrid blockchains allow participants to join or access the blockchain, but only upon undergoing some type of verification process. The public, permissionless blockchain does not require any verification and therefore anyone can join, exit or view the blockchain as these blockchains are in the public domain.

Thus, in the case of public, permissioned blockchains, the identity of the participants (who underwent verification) will be held by the peer-to-peer network. In private, permissioned blockchains, the identities of the participants will be held by the network operator.

Therefore, tax authorities would be able to request the identities of the taxpayers who have joined the blockchain as taxpayers who want to join public, permissioned and private blockchains are required to undergo a verification process before joining the blockchain.

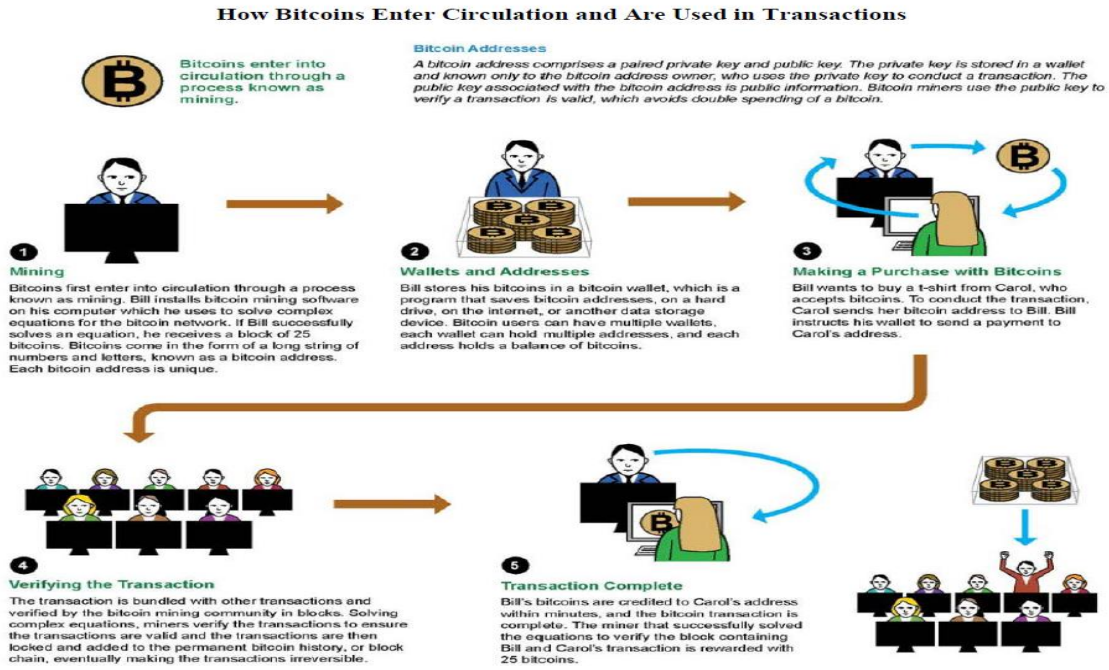
In the case of public, permissionless blockchains, the taxpayer's digital profile will be open source and available for viewing in the public domain. Nonetheless, the challenge still lies in linking the taxpayer's digital profile (cryptocurrency address) to the taxpayer's real identity. The following section will discuss the main role players and provide a brief discussion on how cryptocurrencies can be obtained by the taxpayer.

2.5 Role players in the cryptocurrency environment and methods to acquire cryptocurrencies

The main role players in the cryptocurrency environment include an exchanger or a cryptocurrency exchange (also known as a coin exchange); an administrator; a miner and a participant (the taxpayer). The following figure provides a visual illustration of the process from when Bitcoins are mined and placed into circulation until the taxpayer uses it to transact:

Diagram 3: The process from the mining of Bitcoins to transacting with Bitcoins

[34] Organisation for Economic Development. (2018). *Blockchain Technology and Corporate Governance*. Page 7. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/CA/CG/RD(2018)1/REV1&docLanguage=En. (Accessed 08 December 2018).
[35] Ibid. Page 8. (Accessed 08 December 2018).



Source: Public Discussion Draft BEPS ACTION 1: Addressing the Tax Challenges of the Digital Economy 24 March 2014 – 14 April 2014[36]

A miner can be an individual or an entity which is responsible for issuing the new cryptocurrency coins, maintaining the core software and validating and time-stamping the transactions in the cryptocurrency for a fee. An administrator puts cryptocurrency in circulation, determines rules for its own use, maintains a central payment ledger and has authority to withdraw the cryptocurrency from circulation.[37] An exchanger or cryptocurrency exchange is a person or business which acts as an exchange desk and is involved in the exchange of cryptocurrency for real currency.[38]

Cryptocurrency miners confer in order to arrive at consensus about the validity of the transaction. The whole process consumes vast amounts of electricity and therefore miners are rewarded for each block that is mined. These new coins will also form part of the computer-generated public ledger system.

A participant (the taxpayer) is a person or entity who obtains cryptocurrency and uses it to purchase goods. The taxpayer forms the focus of SARS and the other BRICS' tax authorities in that these tax authorities need to verify the information declared in the taxpayer's tax returns.

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[36] BEPS refers to Base Erosion and Profit Shifting.
[37] Ibid. Page 9. (Accessed 06 December 2018).
[38] Financial Action Task Force. (2014). *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*. Page 9. Available at http://www.fatf-gafi.org/publications/methodsandtrends/documents/virtual-currency-definitions-aml-cft-risk.html. (Accessed 06 December 2018).

Taxpayers can purchase either a whole (or part of a) cryptocurrency through purchasing of cryptocurrencies using local currency by transferring funds to a cryptocurrency exchange; purchasing cryptocurrencies from abroad; conducting face-to-face trades with sellers; engaging in specific activities to earn more cryptocurrencies (such as earning remuneration or payment for services) or by mining cryptocurrencies.[39]

Cryptocurrency exchanges provide a platform where cryptocurrencies can be exchanged for another, or where cryptocurrencies can be bought or sold or traditional (fiat) money can be exchanged for cryptocurrencies.[40] Coinbase is an example of a "regulated" cryptocurrency exchange in that it complies with laws in a few states' in the United States of America.[41] Luno is an example of a South African cryptocurrency exchange.

In a cryptocurrency exchange, traders will use pairs of cryptocurrencies to derive a profit from the currency rates. The rate of exchange of coins and tokens will be set by the cryptocurrency exchange. This rate will usually depend on the market and is determined by supply and demand.[42] If the cryptocurrency has a high supply and there is a low demand, then the value of the cryptocurrency will drop. Conversely, if the supply of a cryptocurrency is low and demand is high, then the value of the cryptocurrency will increase.

Some cryptocurrency exchanges have been created only for traders, whereas others specifically deal with crypto-fiat exchanges.[43] In order to carry out transactions on an exchange, a user is required to register with the exchange and undergo validation processes.[44]

After verifying the user's identity, the account will be opened. The user will have to deposit funds into his or her account before transacting. Funds can be transferred by direct bank transfers, money orders or credit or debit cards, depending on the payment method of the relevant exchange. A trader will be able to withdraw funds from his or her coin exchange account by bank transfers, cash delivery, bank wire or transfer to his or her credit card.

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[39] Luno. (2018). *Luno helps you buy Bitcoin and Ethereum in three easy steps*. Available at https://www.luno.com/en/. (Accessed 08 December 2018).
[40] Egorova, K. (2018). *Crypto exchanges explained*. Available at https://cointelegraph.com/explained/crypto-exchanges-explained. (Accessed 19 December 2018).
[41] Coinbase. (2018). *Legal/Licences*. Available at https://www.coinbase.com/legal/licenses. (Accessed 19 December 2018).
[42] Pauw, C. (2018). *How Cryptocurrencies prices work, Explained*. Available at https://cointelegraph.com/explained/how-cryptocurrency-prices-work-explained. (Accessed 08 December 2018).
[43] Ibid. Accessed 19 December 2018.
[44] Frankenfield, J. (2017). *Breaking down Bitcoin Exchange*. Available at https://www.investopedia.com/terms/b/bitcoin-exchange.asp. (Accessed 16 December 2018).

Therefore, the role of the cryptocurrency exchange could prove valuable from a tax verification perspective as cryptocurrency exchanges require that taxpayers register and undergo a verification process in order to buy and sell cryptocurrencies.

South African individuals can also invest in cryptocurrencies in global cryptocurrency exchanges utilising his or her single discretionary allowance of R1 million or individual foreign capital allowance of R10 million (with a tax clearance certificate issued by SARS) per calendar year through a document called an FIA001.[45] The return of value into South Africa is not a reportable transaction on the FinSurv Reporting system, however, SARS can use its own discretion and keep records of those taxpayers who have invested in cryptocurrencies abroad.[46]

Taxpayers can also acquire cryptocurrencies through face-to-face trades with sellers who prefer to meet in person. Users can either exchange cryptocurrencies for cash or use their cryptocurrency wallet to trade cryptocurrencies with other users.[47] Transactions where cash is involved is difficult to trace and therefore difficult to verify. The only time that a transaction could be traced is when proof of the change in ownership is registered on the blockchain.

However, SARS would require the taxpayer's public keys (cryptocurrency address) in order to confirm the change in ownership and ascertain the correct tax consequences of this transaction. The exchange of cryptocurrencies from one wallet to another is easier to track as the wallets are held by the cryptocurrency exchange and this information can be sourced from the exchange.

Taxpayers can access cryptocurrencies through earning remuneration or receiving payment for services rendered. Payment for services rendered can go through a local payment service provided such as Payfast which can allow South African taxpayers to be paid in cryptocurrencies and converted directly into South African currency.[48]

SARS can request information from such local payment service providers if they are aware that such conversions are taking place. Remuneration which is paid to South African taxpayers in cryptocurrency can be converted into South African currency for further use. This conversion can be done via a local cryptocurrency exchange.

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[45] South African Revenue Service. (2018). *Glossary*. Available at http://www.sars.gov.za/Pages/Glossary-F.aspx. (Accessed 08 December 2018).
[46] South African Reserve Bank. (2018). *Virtual Currences / Cryptocurrencies*. Available at https://www.resbank.co.za/RegulationAndSupervision/FinancialSurveillanceAndExchangeControl/FAQs/Pages/VirtualCurrenciesCryptocurrencies.aspx. (Accessed 08 December 2018).
[47] Bitcoinzar (2018). *Buy bitcoin in South Africa from a bitcoin exchange*. Available at https://www.bitcoinzar.co.za/buy-bitcoin-in-south-africa/. (Accessed 08 December 2018).
[48] Bitcoinzar (2018). *Buy bitcoin in South Africa from a bitcoin exchange*. Available at https://www.bitcoinzar.co.za/buy-bitcoin-in-south-africa/. (Accessed 08 December 2018).

Taxpayers can also receive fees or rewards for mining cryptocurrencies. These cryptocurrencies can also be converted into currency through a local or international cryptocurrency exchange. Newly mined cryptocurrency coins can be held as trading stock until they are sold or exchanged for cash. Cryptocurrency coins can be exchanged for traditional currency via cryptocurrency exchanges.

It is also possible to purchase Bitcoin from a Bitcoin vending machine which enables users to purchase Bitcoin in exchange for South African Rands. There are currently four Bitcoins ATM's in South Africa.[49] The information contained in these Bitcoin vending machines can be requested from the administrators of these machines by SARS. The following section will discuss potential threats for tax authorities.

2.6 Cryptocurrency risks for tax authorities

One of the main challenges related to the pseudonymous digital identities of taxpayers who transact with cryptocurrencies. In this chapter, it was found that even though taxpayers who join a public cryptocurrency blockchain, they are not completely anonymous as their transactions and digital profiles (cryptocurrency addresses) are open source and therefore freely available on the Internet for viewing.

This can prove challenging to tax authorities as each cryptocurrency address comprises of a string of letters and characters and not the taxpayer's real identity. The risk for tax authorities lies in their possible incapability to link the taxpayer's digital profile to the taxpayer's real identity.

Another risk that exists relates to online peer-to-peer online websites such as Bisq.network.[50] Such websites do not require registration and there are no regulations pertaining to buying or selling cryptocurrencies in exchange for fiat currencies.[51]

Therefore, there will be no record of who is transacting in these online forums. These types of websites bypass Know Your Customer regulations in Brazil, Russia, India, China and South Africa.[52] In South Africa, Know Your Customer requirements form part of the requirements of the Financial Intelligence Centre Act, 38 of 2001 and specify that

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[49] CoinATMRadar. (2018). *Bitcoin ATM's in South Africa*. Available at https://coinatmradar.com/country/197/bitcoin-atm-south-africa/. (Accessed 16 December 2018).
[50] Bisq. (2018). *Exchange, Decentralized*. Available at https://bisq.network/. (Accessed 29 December 2018).
[51] Bisq. (2018). *Exchange, Decentralized*. Available at https://bisq.network/. (Accessed 29 December 2018).
[52] Shah, S. (2017). *South Africa leads the way in Know Your Customer (KYC) compliance*. Available at https://blogs.thomsonreuters.com/answerson/south-africa-leads-way-know-customer-kyc-compliance/. (Accessed 29 December 2018). Also see Renner, P. (2018). *Brazil – Know Your Customer (KYC) Rules*. Available at http://kycmap.com/category/brazil/. (Accessed 31 January 2019). Russia, India, China and South Africa also follow these rules.

accountable institutions such as banks are required to validate the information of existing and new customers.[53]

Therefore, the onus will fall on the taxpayers to ensure that they are not bypassing the country's financial regulations if they transact using these peer-to-peer online websites. This poses a high risk for tax authorities as this mechanism can be used to evade payment of taxes.

Due to the digital nature of cryptocurrencies, an expansion of the digital economy and the fact that nodes in the peer-to-peer network can be in any country worldwide, there is a high probability that cryptocurrency transactions will result in cross-border transactions. For example, cryptocurrencies can be exchanged for traditional currency in the United States, however, the source of the cryptocurrency is in South Africa. That can prove challenging in terms of addressing where the gain or loss should be taxed (this can be addressed through double taxation agreements and exchange of information agreements which exist between the two countries).

Altcoins like Bitcoin Cash, Litecoin and Ethereum present another challenge. Alternative currencies function in the same manner as traditional cryptocurrencies, however, offer cheaper transaction fees and greater anonymity and privacy than conventional cryptocurrencies.[54] Dash, Monero and Zcash are considered some of the most anonymous cryptocurrencies at present. These cryptocurrencies will charge higher processing fees and their transactions will take longer due to process (in order to ensure that these transactions are more secure).[55] Such highly anonymous and secure altcoins will pose a direct threat to tax authorities in that they will prove more difficult to track and locate, and ultimately, to use for verification purposes. These types of altcoins have been found to be popular in the black markets, where drugs and firearms are sold, and can be used for tax evasion.[56]

Monero is a privacy orientated coin which hides the transaction address, amount transferred and transaction histories.[57] Current analysis tools are not equipped to track such transactions at present and this poses a challenge for tax authorities.[58] In addition, the purchase of such altcoins involves more steps than that of a general cryptocurrency and its

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[53] South Africa. Financial Intelligence Centre. *Guidance Note 3A*. Page 3. Available at https://www.fic.gov.za/Documents/. *Guidance for accountable institutions on client identification and verification and related matters*. Available at 130328%20GUIDANCE%20NOTE%203A.pdf. (Accessed 28 December 2018).
[54] Ibid. Page 44. (Accessed 28 December 2018). Also see Marques, EG. (2018). *Cryptocurrencies: Threats and Investigative Opportunities for Law Enforcement*. Page 42. Available at https://is.cuni.cz/webapps/zzp/download/120311105. (Accessed 28 December 2018).
[55] Ibid. Page 42. (Accessed 28 December 2018).
[56] Ibid. Page 42. (Accessed 28 December 2018).
[57] Ibid. Page 42. (Accessed 28 December 2018).
[58] Ibid. Page 43. (Accessed 28 December 2018).

use is also restricted to certain market places which will accept these types of coins.[59] In order to buy Monero, a taxpayer will be required to first purchase a cryptocurrency via a fiat exchange and then purchase the altcoin via a crypto-to-crypto exchange service. Fiat exchanges in South Africa, Europe and the United States comply with Know Your Customer regulations wherein the customer will have to provide identification before purchasing the cryptocurrencies. These regulations play a role in weakening the anonymity factor of these cryptocurrencies.[60]

Another challenge relates cryptocurrency mixers or cryptocurrency tumblers which are used to obscure the identity of the cryptocurrency owners by pooling together multiple investors' cryptocurrency funds in order to make the transactions less traceable.[61] Even though cryptocurrency transactions are available in the public domain, some users will want to avoid being identified by pooling their cryptocurrency resources and using a collective account. When cryptocurrencies are mixed, the user sends money via an anonymous service that will on send the same amount in cryptocurrencies belonging to other users (less a fee) in order to make it difficult to trace the investors then take out cryptocurrency of the same value.[62]

Taxpayers who conduct face-to-face transactions and exchange physical cash for cryptocurrencies also present challenges. Transactions involving physical cash are difficult to verify as the transaction can only be traced when the change in ownership is registered on the blockchain. Such transactions can be only verified if the tax authorities have the taxpayer's public keys on hand. As the record of the sale will not be held by a third party, the information pertaining to the transaction will have to be requested from either the seller or buyer (however, only if that information is known to SARS or the other BRICS tax authorities conducting the tax audit).

One of the inherent risks in cryptocurrencies (from a tax verification perspective) relate to the fact that no records are kept by a central authority as the blockchain is shared across a peer-to-peer network. In a fiat currency system, one of the main functions of financial intermediaries are to hold records for verification purposes.

In addition, there are no specific laws governing cryptocurrencies nor is there a regulatory body that cryptocurrency role players such as cryptocurrency exchanges, administrators and

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[59] Ibid. Page 43. (Accessed 28 December 2018).
[60] Ibid. Page 43. (Accessed 28 December 2018).
[61] Elliptic. (2018). *Bitcoin Mixers: Assessing Risks in Bitcoin Transactions*. Available at https://www.elliptic.co/our-thinking/bitcoin-mixers-assessing-risk-bitcoin-transactions. (Accessed 28 December 2018).
[62] Marques, EG. Cryptocurrencies: *Threats and Investigative Opportunities for Law Enforcement*. Page 44. Available at https://is.cuni.cz/webapps/zzp/download/120311105. (Accessed 28 December 2018). Also see Elliptic. (2018). *Bitcoin Mixers: Assessing Risks in Bitcoin Transactions*. Available at https://www.elliptic.co/our-thinking/bitcoin-mixers-assessing-risk-bitcoin-transactions. (Accessed 28 December 2018).

miners are required to register with. Therefore, this places a limitation on the resources available for the sourcing of information for verification purposes. For example, if there was such a regulatory body in South Africa, SARS would be able to obtain a list of all cryptocurrency exchanges, administrators and miners in terms of section 46 of the TAA which could then be used to request additional information relating to specific taxpayers.

Another possible risk area for SARS and the other BRICS' tax authorities lies in the potential lack of knowledge, skills and technology available to verify such transactions. From the South African perspective, it was found that even though the SARB issued its position paper on cryptocurrencies in 2014, this area has not been subject to extensive research in the past. It is likely that SARS and other BRICS' tax authorities will have to undertake to brief their employees on this topic and provide specific training on how to go about verifying cryptocurrency transactions. Alternatively, the SARS and the other BRICS' tax authorities might need to employ staff with specialised skills in cryptocurrencies in order to perform these verification tasks or create analysis software for this task.

2.7 Conclusion

In this chapter it was found that blockchain technology was the technology behind the invention of cryptocurrencies such as the Bitcoin. The key features of blockchain technology relates to that of cryptography, smart contracts and distributed ledgers.

The distributed ledger is built using a linked list of transactions where each block contains a certain number of transactions that were validated the network. The validation of each block entails validating the digital signatures as well as placing a network time-stamp on the transaction. Such validations are encoded with cryptography which is key to the blockchain.

As maintaining a taxpayer's privacy in the internet environment has always been an inherent risk for users of centralised networks, taxpayers who join a blockchain have "pseudonymous" identities and their "real" identities are protected by private key cryptography. Therefore, blockchain technology aims to assist by allowing participants in a blockchain to transact using digital identities. This can prove challenging from a tax verification perspective in that the tax authorities will be first required to identify the taxpayer through his digital address before linking it to the taxpayer's tax profile.

Blockchains enhance data management by recording the data in a way that tampering with the data becomes impossible. This can be beneficial for tax authorities as this type of verification forms a permanent record and therefore assists in detecting tax evasion.

Blockchains can exist as permissioned-public, permissionless-public and private blockchains. Cryptocurrencies in a permissionless-public blockchain are open-source which

means that anyone can join the blockchain, the digital address of each transaction is shared with the general public and is freely available on the internet. Permissioned-public blockchains require that the taxpayer obtains permission to join the blockchain, however, all transactions are open source and can be viewed in the public domain.

Access to cryptocurrencies in a private blockchain is granted by the network operator and taxpayers are required to undergo verification before being allowed access to the blockchain. Therefore, tax authorities could consider requesting third party data from the network operator of private blockchains as the network operator would have access to the taxpayers' identities as well as permissioned-public blockchains.

The main role players in the cryptocurrency environment relate to that of the cryptocurrency exchange, administrator, miner and the taxpayer. The administrator performs an administrative function in placing the coin into circulation or removing it from circulation. Miners mine cryptocurrency coins by using complex algorithms to perform this process.

Cryptocurrency exchanges are a forum for taxpayers to obtain cryptocurrencies by exchanging traditional currencies for cryptocurrencies. Cryptocurrencies are held in a wallet and each cryptocurrency user (taxpayer) has a private and a public key. The public key is shared to enable other taxpayers to send cryptocurrency to the taxpayer's specific "address".

South African individuals can obtain cryptocurrencies by investing abroad using his or her single discretionary allowance of R1 million or individual foreign capital allowance of R10 million per calendar year. Cryptocurrencies can also be purchased via face-to-face interaction between taxpayers, mining of cryptocurrencies or engaging in a specific activity to receive or earn cryptocurrencies.

The findings in this chapter suggest that cryptocurrency exchanges play a valuable role in that the taxpayer, miner, and taxpayers who earn remuneration or receive income or payment in the form of cryptocurrencies are likely to use a cryptocurrency exchange to exchange the cryptocurrency for traditional currency.

Cryptocurrency exchanges require the taxpayer to register first before conducting any transaction. Therefore, such information can be requested by SARS or any of the other BRICS' tax authorities for verification purposes.

A risk from a tax verification perspective lies in face-to-face interactions where it is possible for taxpayers to exchange physical cash for cryptocurrencies. This will also be difficult to verify as the transaction can only be traced when the change in ownership is registered on the blockchain (and SARS requires the taxpayer's public keys in order to verify this

information). Furthermore, the record of the sale will not be held by a third party as blockchains are decentralised and will have to be requested from either the seller or buyer.

Further risks can be found in online peer-to-peer networks which do not require prior registration before transacting. This means that the taxpayer will not leave behind a record of the transaction and therefore the tax authorities will not be able to request third party information (pertaining to the transacting parties) from these peer-to-peer exchanges.

The nature of cryptocurrencies and their role in the digital economy means that there is a good possibility that cross border transactions will take place as taxpayers can conduct transactions anywhere in the world. This can prove challenging from the tax verification perspective regarding where the transaction must be taxed and could also invoke international exchange of information agreements.

Altcoins were shown to be challenging in that they offer greater anonymity and privacy, and certain privacy orientated coins are known to hide their transaction addresses, amounts and transaction histories. These altcoins are more difficult to locate and track as the taxpayer must undergo two processes to purchase these coins namely: first purchase cryptocurrencies through a cryptocurrency exchange and then exchange them for more anonymous cryptocurrencies such as Monero. These cryptocurrencies are used in the illicit economy and for tax evasion.

Current cryptocurrency analysis tools are unable to trace these cryptocurrencies at present. However, Know Your Customer regulations which cryptocurrency exchanges need to abide by can help in making it easier to track these purchases and therefore can be beneficial to SARS and other BRICS' tax authorities.

Cryptocurrency mixers and tumblers are another risk to tax authorities and aim to obscure the identity of cryptocurrency owners by mixing multiple investors' cryptocurrency funds in order to create confusion and difficult in tracing the original owners and source.

Another area of risk relates to the lack of specific regulatory framework governing cryptocurrencies in South Africa and the other BRICS' countries, which means that there are no actual controls relating to cryptocurrency exchanges, miners, administrators or the taxpayers themselves. This also means that there is no body or authority from which information can be requested for verification purposes.

During this study, it was also found that there could be a lack of staff knowledge and skills as well as technology available to address the verification of cryptocurrencies, especially as this is a new topic which has only recently been addressed in the public forum by SARS and the other BRICS' tax authorities. It is possible that SARS and the other BRICS' tax authorities

could be required to employ staff with specialised skills in cryptocurrencies or computer programmers in order to perform these verification tasks or create new analysis software for this task.

CHAPTER 3: WHAT BRAZIL, RUSSIA, INDIA AND CHINA ARE DOING TO ADDRESS CRYPTOCURRENCY VERIFICATION CHALLENGES

3.1 Introduction

In Chapter 2, the characteristics of a cryptocurrency were addressed. It was found that one of the main characteristics related to that of pseudonymity in which the taxpayer's digital data (and not the taxpayer's real identity) is available in the public domain. The challenge for tax authorities was in linking the taxpayer's digital profile to his or her real identity.

It was found that certain blockchains required verification to take place before a taxpayer could transact or join the blockchain. In addition to that, taxpayers who acquired cryptocurrencies through various sources such as mining were more likely to use a cryptocurrency exchange to exchange the cryptocurrency for traditional currency or other cryptocurrencies. These cryptocurrency exchanges comply with regulations which means that the taxpayer must register with the cryptocurrency exchange before being able to transact. Other challenges for tax authorities also relate to highly anonymous altcoins, cryptocurrency mixers and unregulated peer-to-peer networks which do not require registration before transacting.

The increase in popularity of cryptocurrencies has prompted regulators in various jurisdictions to give this topic more attention. Legislators in South Africa have issued media releases in order to educate the public about the potential consequences of investing in cryptocurrency markets.[63] Other countries (like China) have sought to discourage any interest in cryptocurrencies by preventing financial institutions from assisting in cryptocurrency transactions.[64]

The aim of this chapter is to determine whether the other BRICS countries are experiencing challenges verifying cryptocurrency transactions and what these countries are doing about these verification challenges. This will be done by briefly addressing the regulatory framework of cryptocurrencies in each BRICS country, the tax stance taken by each of these countries and a discussion on what solutions have been implemented in order to address verifying cryptocurrency transactions. This will be followed by a discussion on what South Africa can learn and consider implementing from these solutions.

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[63] South African Government. National Treasury Department. (2014). *User Alert: Monitoring of Virtual Currencies*. Page 1. Available at http://www.treasury.gov.za/comm_media/press/2014/2014091801%20-%20User%20Alert%20Virtual%20currencies.pdf. (Accessed 09 December 2018).

[64] The Law Library of Congress. *Regulation of Cryptocurrency Around the World*. https://www.loc.gov/law/help/cryptocurrency/world-survey.php#china. (Accessed 21 December 2018).

3.2 Brazil

Policy Statement No. 25,306 of 2014 was issued by the Brazilian Central Bank wherein it was stated that virtual currencies are not the same as electronic money (as defined in Law No. 12,865); not guaranteed by a central authority, not regulated by the central banks of any country and the government does not guarantee the value of virtual currencies in official currency (Brazil, Brazilian Central Bank, 2014, p. 1).[65] This was followed by Communique 31,379 of 2017 wherein the Brazilian Central Bank warned that the storage of virtual currencies were not regulated and there was no provision in the regulatory framework for virtual currencies in the National Payments System (Brazil, Brazilian Central Bank, 2017, p. 1).[66]

Statement No. 1 of 2018 issued by the Brazilian Securities and Exchange Commission stipulated that virtual currencies are not classified as financial assets and that regulated investment funds are not allowed to purchase virtual currencies (Brazil, Brazilian Securities and Exchange Commission, 2018, p. 1).[67] The Brazilian Securities and Exchange Commission also acknowledged the inherent risks such as cyber security and privacy and stated that managers of investment funds needed to await until further guidance was given.[68]

The tax stance taken by the Department of Federal Revenue of Brazil (Brazilian tax authorities) was highlighted via questions in their publication regarding completion of the 2017 income tax declaration (IRPF 2017).[69] Question 447 of the Department of Federal Revenue of Brazil's publication read "*Should virtual currency be declared*" to which the following answer was given: "*Yes. Virtual currencies (like Bitcoins, for instance), although not considered as money, as per the terms on the current regulatory mark, they must be*

[65] Electronic money is a resource stored in a device or electronic system that will allow the consumer to make payments in the national currency. The Brazilian document refers to virtual currencies, therefore, the term virtual currencies will be used in this context. Also see Brazilian Central Bank. (2014). *Policy Statement No. 25,306*. Available at https://www.bcb.gov.br/pom/spb/ing/IComunicado25306.pdf. (Accessed 18 December 2018).
[65] Brazilian Central Bank. (2017). *Communique 31,379*. Available at https://www.bcb.gov.br/ingles/norms/Virtual-currencies-Communique-31379-English.pdf. (Accessed 18 December 2018).
[66] Brazilian Central Bank. (2017). *Communique 31,379*. Available at https://www.bcb.gov.br/ingles/norms/Virtual-currencies-Communique-31379-English.pdf. (Accessed 18 December 2018).
[67] The Law Library of Congress. (2018). *Regulation of Cryptocurrency: Brazil.* https://www.loc.gov/law/help/cryptocurrency/brazil.php). (Accessed 18 December 2018).
[68] Ibid. (Accessed 23 January 2019).
[69] Secretaria da Receita Federal do Brasil (the Brazilian tax authorities).

declared on the form "Assets and Royalties" as 'other assets,' once they can be comparable to a financial asset."[70]

The disposal of virtual currencies was addressed under topic 607 where the question relating to the taxability of income from virtual currencies was addressed. The answer was *"Yes, the revenue achieved with the alienation of virtual currency (Bitcoins, for instance), which total alienated in a month is superior to R$ 35,000.00 are taxable by way of capital gain, to the rate of 15%"*. The taxpayer had to keep adequate documentation relating to the cryptocurrency transaction.[71]

A draft proposal was published by the Department of Federal Revenue of Brazil on 30 October 2018 wherein cryptocurrency exchanges based in Brazil would be required to submit detailed financial reports on all cryptocurrency related operations each month. The detailed reports would contain the amounts of the transactions as well as the identity of their clients and personal information of the dealers.[72]

Legal entities and individuals living in Brazil would have to disclose all transactions exceeding 10 000 Brazilian reals (2 700 US dollars) conducted at foreign cryptocurrency exchanges per month.[73] The proposal includes a range of fines which will be payable should taxpayers not declare their transactions, including a fine of 1 500 Brazilian reals if the taxpayer's return is submitted late.[74] The Department of Federal Revenue of Brazil would also be able to levy a fine of up to 3 percent of the value of the transaction if the taxpayer makes a false or incorrect declaration.[75]

The proposal was available for public consultation from 30 October to 19 November 2018. The explanatory note explains that the cryptocurrency industry in Brazil has experienced substantial growth and that the number of crypto exchange clients has already surpassed the number of registered users at the Brazilian Stock Exchange. The purpose of the draft proposal was to counter money-laundering and tax evasion.[76]

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[70] Revoredo, T. (2017). *Legal "Status" of Cryptocurrencies in Brazil*. Available at https://medium.com/@tatianarevoredo/legal-status-of-cryptocurrencies-in-brazil-273b712a0e50. (Accessed 21 December 2018).
[71] Ibid. (Accessed 21 December 2018).
[72] Gogo, J. (2018). *Brazil's tax authority goes after cryptocurrency profits*. Available at https://news.bitcoin.com/brazils-tax-authority-goes-after-cryptocurrency-profits/. (Accessed 18 December 2018).
[73] Ibid. (Accessed 18 December 2018).
[74] Berman, A. (2018). *Brazilian Tax Regulator Publishes Draft on Cryptocurrency Taxation*. Available at https://cointelegraph.com/news/brazilian-tax-regulator-publishes-draft-on-cryptocurrency-taxation. (Accessed 18 December 2018).
[75] Ibid. (Accessed 18 December 2018).
[76] Ibid. (Accessed 18 December 2018).

It could not be determined if the draft proposal was passed into law yet at the date of compiling this document, however, if this draft proposal was passed into law, cryptocurrency traders would no longer be anonymous. That would mean that their identities, the transaction amounts and the identities of the dealers would be known to the Brazilian tax authorities.

This would provide significant assistance to the Brazilian tax authorities in the verification process in that they would be able to identify the taxpayers who are investing in cryptocurrencies; determine the tax compliance levels of those taxpayers by ascertaining whether those taxpayers have actually filed tax returns and whether such tax returns include gains or losses from cryptocurrency investments (depending on the which periods of assessment the Brazilian tax authorities will focus on). The same exercise can be performed for the dealers in cryptocurrencies. Therefore, it appears as though Brazil will not experience any difficulties in verifying cryptocurrency transactions conducted through locally based cryptocurrency exchanges.

3.3 Russia

The Russian Ministry of Finance introduced a draft law "*On Digital Financial Assets*" in the State Duma on 20 March 2018.[77] This bill relates to laws on digital financial assets as well as laws on investment regulation, crowdfunding platforms and amendments to the Civil Code.[78] "Mining" was defined in the bill as being activities undertaken to create cryptocurrency in order to receive compensation "in the form of cryptocurrency" and it was suggested that these activities be taxed if energy consumption levels (established by government) are exceeded 3 months in a row. The bill also contained references to initial coin offerings where only eligible investors are permitted to participate in initial coin offerings; tokens and coins are not recognised as legal tender, but property and only licenced operators are permitted to exchange tokens for rubles and foreign currency.[79]

The Ministry of Justice has confirmed that "*cryptocurrency can be classified as an object of civil rights and be subject to obligations*".[80] It was also confirmed that "*cryptocurrency has*

[77] The Law Library of Congress. (2018). *Regulation of cryptocurrency around the world*. Available at https://www.loc.gov/law/help/cryptocurrency/world-survey.php. (Accessed 23 December 2018).
[78] Caivicchioli, M. (2019). Russia: draft law for crypto regulation within two months. Available at https://cryptonomist.ch/en/2019/01/14/russia-draft-law-crypto-regulation/. (Accessed 29 January 2019).
[79] The Law Library of Congress. (2018). *Regulation of cryptocurrency around the world*. Available at https://www.loc.gov/law/help/cryptocurrency/world-survey.php. (Accessed 23 December 2018).
[80] Tassev, L. (2018). *The Daily: Japan Calls All Coins 'Crypto Assets', Russia Defines Cryptocurrency as Property*. Available at https://news.bitcoin.com/the-daily-japan-calls-all-coins-crypto-assets-russia-defines-cryptocurrency-as-property/. (Accessed 30 December 2018).

a property value recognized by its turnover" and will fall into the "*other property*" category.[81]

The Russian Ministry of Finance's tax and customs policy department stated that taxpayers will be taxed on the net gain of total income received from the sale of cryptocurrency less the purchase cost.[82] Therefore, the Federal Tax Service (Russian tax authorities) will regard cryptocurrencies as assets for tax purposes. The draft law "*On Digital Financial Assets*" was still a draft law at the date of drafting this document.[83]

The Federal Tax Service website does not contain any references to requests for information pertaining to cryptocurrencies and neither does the media. Thus, it appears as though the Federal Tax Service have not yet focussed on taxpayers who engage in cryptocurrency transactions and therefore, it cannot be confirmed whether the Russian tax authorities are experiencing difficulties in verifying cryptocurrency transactions.

3.4 India

On 24 December 2013, the Reserve Bank of India ("RBI") issued a press release warning the users and traders of virtual currencies of potential financial, legal and security risks such as hacking of wallets, lost passwords which would result in permanent loss of the virtual currencies held in them (India. Reserve Bank of India, 2013, p. 1).[84]

The latest press release issued on 05 April 2018 was titled *"Statement on Developmental and Regulatory Policies*" which was issued in order to explain certain regulatory policy measures (India. Reserve Bank of India, 2018, p. 1).[85] Item number 13 dealt with "*Ring-fencing regulated entities from virtual currencies*" and highlighted the potential of virtual currencies to improve the efficiency of the financial system and the concerns relating to consumer protection, market integrity and money laundering were also raised (India. Reserve Bank of India, 2018, p.5).[86]

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[81] Ibid. (Accessed 30 December 2018).
[82] Woo, W. *Russia: Cryptocurrency users must calculate own tax*. Available at https://bitcoinist.com/russia-finance-ministry-says-cryptocurrency-users-must-work-tax/. (Accessed 31 December 2018). See also http://mvf.klerk.ru/nb/605_08.htm. (Accessed 31 December 2018).
[83] Caivicchioli, M. (2019). Russia: draft law for crypto regulation within two months. Available at https://cryptonomist.ch/en/2019/01/14/russia-draft-law-crypto-regulation/. (Accessed 29 January 2019).
[84] The Reserve Bank of India refers to virtual currencies. Therefore, the remainder of this section will relate to virtual currencies as this term was used by the Reserve Bank of India. Also see India. Reserve Bank of India. (2013). *RBI cautions users of Virtual Currencies against Risks*. Available at https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30247. (Accessed 17 December 2018).
[85] India. Reserve Bank of India. (2013). *RBI cautions users of Virtual Currencies against Risks*. Available at https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30247. (Accessed 17 December 2018).
[86] India. Reserve Bank of India. (2013). *RBI cautions users of Virtual Currencies against Risks*. Available at https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30247. (Accessed 17

This press release was followed by a circular titled "*Prohibition on dealing in Virtual Currencies*" wherein it was specified that entities regulated by the RBI transact would not be allowed to transact in virtual currencies; facilitate any person or entity dealing with or settling virtual currencies (India. Reserve Bank of India, 2018, p. 1).[87] These regulated entities would have to "*exit the relationship*" within 3 months from the 06 April 2018 (India. Reserve Bank of India, 2018, p. 1).[88]

Taxpayers in India have invested in cryptocurrencies under the premise of receiving substantial returns which should be subject to tax.[89] These investments were made at investors' own risk as the RBI has issued several warnings regarding the risks such as money laundering and security of the investor's investment associated with such investments.

The Income Tax Department (the tax authorities in India) had started examining taxpayers' tax returns and confirmed that cryptocurrencies held for long periods of time should be viewed as capital assets. It was also confirmed that the traders who conduct regular trades in virtual currencies should regard such as business income.

The Income Tax Department addressed verification challenges by conducting survey operations on cryptocurrency exchanges in terms of section 133A of the Income Tax Act. The purpose of this was to "*gather evidence for establishing the identity of investors and the transaction undertaken by them, identity of counter-parties, related bank accounts used, among others*".[90]

The chairman of India's Central Board of Direct Taxes stated that investors in cryptocurrencies "*did not pay advance tax*" on gains accrued from virtual currency trades. This comment was made after nine cryptocurrency exchanges were surveyed and it was found that more than 3.5 billion USD worth of cryptocurrency transactions took place in 17 months. This led the Income Tax Department to issue notices to taxpayers (including high

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December 2018). See also India. Reserve Bank of India. (2018). *Statement on Developmental and Regulatory Policies*. Available at https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=43574. (Accessed 17 December 2018).

[87] India. Reserve Bank of India. (2018). *Prohibition on dealing in Virtual Currencies*. Available at https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11243. (Accessed 18 December 2018).

[88] India. Reserve Bank of India. (2018). *Prohibition on dealing in Virtual Currencies*. Available at https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11243. (Accessed 18 December 2018).

[89] Jose, T. (2018). *Cryptocurrency regulation in India*. Available at https://www.indianeconomy.net/splclassroom/cryptocurrency-regulation-in-india/. (Accessed 18 December 2018).

[90] A survey action is when tax officers undertake a surprise visit (inspection visit) to the taxpayer's business premises. Also see The Times of India. (2018). *I-T will tax bitcoin trade; has issued few lakh notices: CBDT*. Available at https://timesofindia.indiatimes.com/business/india-business/i-t-will-tax-bitcoin-trade-has-issued-few-lakh-notices-cbdt/articleshow/62755763.cms. (Accessed 18 December 2018).

net-worth individuals) to inform them of the tax implications on the capital gains derived from cryptocurrency transactions.[91]

Based on the above, it appears as though India does not have the same verification challenges as South Africa as these have been addressed by using the powers contained in section 133A of the (Indian) Income Tax Act.

3.5 China

Cryptocurrencies have not been regulated by the Chinese regulators and have not been classified as legal tender.[92] The *Notice on Precautions Against the Risks* stated that banks and other payment facilitators were not allowed to trade in Bitcoins or provide direct or indirect services relating to Bitcoins (China, Peoples Bank of China, 2013, p1).[93]

More recently, the Chinese government has stepped up regulations in order to crack down on cryptocurrency activities.[94] This announcement was made under the auspices of protecting the investor as well as prevention of financial risks such as money laundering and tax evasion.[95]

Cryptocurrency trading platforms are also not allowed to provide services relating to cryptocurrencies.[96] Government authorities were permitted to shut down websites of cryptocurrency trading platforms that did not comply.[97]

The South China Morning Post reported in February 2018 that China intended blocking all websites (local and foreign) relating to cryptocurrency trading and initial coin offerings.[98] In January 2018, local governments were requested by China's Leading Group of Internet

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[91] Ibid. (Accessed 18 December 2018).
[92] The Law Library of Congress. *Regulation of Cryptocurrency Around the World*. https://www.loc.gov/law/help/cryptocurrency/world-survey.php#china. (Accessed 21 December 2018).
[93] Ibid. Original source: China. Peoples Bank of China. *Notice on Precautions Against the Risks of Bitcoins*. Available at http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757016/c3762245/content.html). Accessed 21 December 2018). Also see The Law Library of Congress. *Regulation of Cryptocurrency Around the World*. https://www.loc.gov/law/help/cryptocurrency/world-survey.php#china. (Accessed 21 December 2018).
[94] Ibid. (Accessed 21 December 2018).
[95] Ibid. (Accessed 21 December 2018). See also Peaster, WM. (2018). *Bitcoin, Cryptocurrency and Taxes: What You Need to Know*. Available at https://blockonomi.com/cryptocurrency-taxes/. (Accessed 21 December 2018) and Bell, K. (2017). *Countries' takes on Bitcoin and taxes vary widely*. Available at https://www.dontmesswithtaxes.com/2017/09/countries-takes-on-bitcoin-and-taxes-vary-widely.html. (Accessed 21 December 2018).
[96] Wu Yujian (2017). *Bitcoin Exchanges Ordered to Formulate Non-Risk Clearance Plan and Shut Down by End of September* (Updated), Caixin (Sept. 15, 2017), http://finance.caixin.com/2017-09-15/101145796.html (in Chinese), archived at https://perma.cc/NQ4S-MDBL. (Accessed 21 December 2018).
[97] Ibid. (Accessed 21 December 2018).
[98] Ibid. (Accessed 21 December 2018).

Financial Risks Remediation to take away the favourable electricity, taxes and land usage policies for Bitcoin mining companies and prevent them from operating.[99]

Based on the above, the State Administration of Taxation (Chinese tax authority) does not have an official stance on the taxation of cryptocurrencies as cryptocurrencies are banned in China and has not publicly stated whether it will undertake to examine compliance levels of taxpayers who were engaged in cryptocurrency trading activities before the ban took place.[100] Therefore, it appears as though the Chinese tax authorities have not yet experienced any challenges pertaining to the verification of cryptocurrencies as transacting with cryptocurrencies is illegal in China at present.

3.6 Lessons that can be learnt from the other BRICS' countries

While compiling the Chapter 2, it was found that one of the main concerns from a tax verification perspective related to the pseudonymity created by cryptocurrencies. This concern was also raised by the Organisation for Economic Co-operation and Development Discussion Draft Report on Action 1 wherein the main risk lay in the lack of identification required prior to conducting transactions with cryptocurrencies.[101]

This concern was addressed by the Indian tax authorities wherein they have used their legislative powers to gather information from cryptocurrency exchanges in order to obtain the identity of the investors, their counter-parties and transactions conducted. Brazil complies with Know Your Customer legislative requirements (as found in Chapter 2). Thus, brokers and commodities brokers or traders form part of the list of entities required to conform to these requirements which will allow Brazil to request information from cryptocurrency exchanges (when the bill is passed) as cryptocurrencies could fall within the category of "commodities brokers/traders" as per Know Your Customer legislation.[102]

South Africa also complies with Know Your Customer regulations wherein the Financial Intelligence Centre Act 38 of 2001 requires that accountable institutions verify the identity of

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[99] Ibid. (Accessed 21 December 2018). Original source: Wu Yujian (2018*). China Clamps Down on Preferential Treatment for Bitcoin Mines*. Available at https://www.caixinglobal.com/2018-01-04/china-clamps-down-on-preferential-treatment-for-bitcoin-mines-101193622.html. (Accessed 21 December 2018).

[100] Peaster, WM. (2018). *Bitcoin, Cryptocurrency and Taxes: What You Need to Know*. Available at https://blockonomi.com/cryptocurrency-taxes/. (Accessed 21 December 2018).

[101] Organisation for Economic Co-operation and Development (2015). *Addressing the Tax Challenges of the Digital Economy, Action 1 - 2015 Final Report*. Page 44. Available at https://read.oecd-ilibrary.org/taxation/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report_9789264241046-en#page44. (Accessed 09 December 2018).

[102] Renner, P. (2018). *Brazil – Know Your Customer (KYC) Rules*. Available at http://kycmap.com/brazil-know-your-customer-kyc-rules/. (Accessed 23 January 2019).

new and existing customers (South Africa. Financial Intelligence Centre, 2013, P. 11).[103] Therefore, it would be possible to request such information relating to the identity of the investors, lists of transactions and banking details if the powers to request such information is contained in the TAA. The Chinese and Russian tax authorities have not yet indicated publicly if they are undertaking verification of cryptocurrency transactions.

3.7 Conclusion

In this chapter, it was found that the cryptocurrencies have not undergone regulation in any of the BRICS countries yet and the central bank in each of the BRICS countries have issued statements warning the public about the risks associated with cryptocurrencies.

Brazil, Russia, India and South Africa regard cryptocurrencies as assets for income tax purposes. It was found that China has banned cryptocurrency transactions, and thus, the State Administration of Taxation does not currently have an official stance on how cryptocurrency transactions should be taxed and is not yet involved in verifying cryptocurrency transactions.

At present, a bill of law relating mainly to cryptocurrencies is being reviewed in the Brazilian government. The Department of Federal Revenue of Brazil confirmed that cryptocurrencies should be treated by taxpayers as assets and has released a draft proposal on cryptocurrency taxation which was open for public comments and proposals from 31 October until 19 November 2018. No confirmation can be found that this draft proposal was enacted into law at the time of drafting this document.

In India, a press release was issued by the RBI stated that regulated entities would have to cease dealing in virtual currencies within three months from 06 April 2018. Russian authorities are in the process of passing legislation pertaining to the possible taxation of cryptocurrencies and therefore have not yet indicated publicly if they are undertaking verification of cryptocurrency transactions. The legislation was not yet passed at the time of drafting this document.

Thus, during this chapter it has been found that the Brazilian and Indian tax authorities do not encounter challenges in verifying information as India has requested third party data from cryptocurrency exchanges and used this information for verification purposes whereas Brazil intends passing legislation enabling its tax authorities to collect data on a monthly basis from cryptocurrency exchanges. The main lesson that can be learnt from the South

[103] South Africa. Financial Intelligence Centre. Guidance Note 3A: Guidance for accountable institutions on client identification and verification and related matters. Available at https://www.fic.gov.za/Documents/130328%20GUIDANCE%20NOTE%203A.pdf. (Accessed 29 December 2018).

African perspective is that third party data relating to cryptocurrencies can be requested from cryptocurrency exchanges as taxpayers are compelled to undergo a registration and verification process before transacting. However, the information can only be requested if SARS has the same level of information gathering powers as India and Brazil.

CHAPTER 4: EXAMINATION OF THE INFORMATION GATHERING POWERS AVAILABLE TO SARS AND OTHER BRICS TAX AUTHORITIES

4.1 Introduction

Chapter 3 found that the Brazilian and Indian tax authorities were able to deal with the anonymity of cryptocurrencies and their verification challenges by using their information gathering powers to request information from local cryptocurrency exchanges. It would also be possible for SARS to implement this solution if SARS has the similar powers to request information from cryptocurrency exchanges.

This chapter will discuss verification processes used by tax authorities, the information gathering powers of the tax authorities in the other BRICS countries as well as SARS and analyse these powers in order to determine if SARS' powers to gather information are on par with the information gathering powers of those countries. The verification of information regarding cryptocurrency transactions can also take on an international tax aspect because cryptocurrencies are digital, decentralised currencies which use a peer-to-peer network across the world to verify the transactions (as established in Chapter 2).

The actual mining of the cryptocurrencies can also take place anywhere in the world as well as computers are able to join the network at any time (if the cryptocurrency is linked to a public blockhain). Even though cryptocurrencies are not recognised as legal tender in any of the BRICS countries, they still form part of the digital economy in that they can be used by taxpayers to pay for goods or services and can also be paid to employees as remuneration.

Taxpayers can purchase cryptocurrencies using local as well as domestic cryptocurrency exchanges or peer-to-peer online exchanges which can be situated within the borders of the relevant BRICS country or outside of the country and in another tax jurisdiction. Therefore, this chapter will address the local and international aspects of the powers to gather information for each of the BRICS countries to the nature of cryptocurrencies.

4.2 Verification

Verification is described in the Oxford dictionary as "*the process of establishing the truth, accuracy, or validity of something*".[104] Hence, from the perspective of the BRICS tax authorities, taxpayers who trade or invest in cryptocurrencies will be required to disclose details relating to the gross income derived from the sale or investment in cryptocurrencies and claim the expenses or losses incurred from such cryptocurrencies in terms of domestic tax legislation.

[104] Oxford. (2018). Definition of "*Verification*". Available at https://en.oxforddictionaries.com/definition/verification. (Accessed 29 January 2019).

Cryptocurrencies are known for their inherent pseudonymity and therefore, the BRICS tax authorities would be required to use their verification powers in order to establish the identity of taxpayers who are trading in these cryptocurrencies. The purpose of this verification would be to establish if these taxpayers are registered for tax or if not, whether they should register for tax.

Upon establishing the identity of the taxpayers, the verification process can extend to confirming the validity of gross income earned or deductions claimed by taxpayers as well as the validity supporting documents provided by the taxpayer and whether they comply with the provisions of the relevant tax act. The information gathering powers of each of the BRICS' countries will be addressed in the following paragraphs, with a specific emphasis on the information gathering powers of India and Brazil.

4.3.1 Brazil's legislative powers to gather information from third parties

The Department of Federal Revenue of Brazil is tasked with the tax administration of federal taxes in Brazil.[105] The rules pertaining to tax administration in Brazil are governed by the Brazilian National Tax Code.[106]

The Constitution of Brazil passed "*Limitations of the Power to Tax*" on 05 October 1988 wherein legislators had set limitations on the taxation powers of the federal government, states, federal districts and municipalities in order to protect the taxpayers' rights.[107] Therefore, it is important that the taxpayer's rights are protected and that the tax authorities have adequate legislative powers to request information for audits and verification purposes.

In Chapter 3, it was mentioned that the Department of Federal Revenue of Brazil had proposed legislation whereby cryptocurrency exchanges would be obliged to send detailed reports which contain the clients' details and the amounts of their cryptocurrency transactions.[108] It was also indicated that legal entities as well as individuals residing in Brazil would be compelled to disclose all transactions exceeding 10 000 Brazilian reals (2

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[105] Frascino, G.L., Bueno, I., Filho, M.; Filho, V., Advogados, M., Vilardi, C.S. & Advogados, V. (2018). *Tax litigation in Brazil: overview*. Available at https://uk.practicallaw.thomsonreuters.com/2-624-3925?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1&bhhash=1#co_anchor_a400797. (Accessed 30 December 2018).

[106] See Brazilian National Tax Code (Law No. 5,172/1996) . Also see Schincariol, L.B. Barreto, A.P., de Lemos, G.S., Theodoro, M.A. and Gomensoro, A. (2018). *Tax Controversy*. Available at https://gettingthedealthrough.com/area/59/jurisdiction/6/tax-controversy-brazil/. (Accessed 30 December 2018).

[107] Frascino, G.L., Bueno, I., Filho, M.; Filho, V., Advogados, M., Vilardi, C.S. & Advogados, V. (2018). *Tax litigation in Brazil: overview*. Available at https://uk.practicallaw.thomsonreuters.com/2-624-3925?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1&bhhash=1#co_anchor_a400797. (Accessed 30 December 2018).

[108] Berman, A. (2018). *Brazilian Tax Regulator Publishes Draft on Cryptocurrency Taxation*. Available at https://cointelegraph.com/news/brazilian-tax-regulator-publishes-draft-on-cryptocurrency-taxation. (Accessed 18 December 2018).

700 US dollars) carried out at foreign cryptocurrency exchanges each month. The requirement of the Department of Federal Revenue of Brazil that legal entities also disclose such transactions implies that these legal entities would form part of the "third party data" that would be used as a source of information. The above indicates that Brazil regards cryptocurrency exchanges as "third parties" from which data can be sourced for verification purposes.

Formerly, the overall perception of the Department of Federal Revenue of Brazil was that the organisation had limited intelligence on taxpayers.[109] The tax administrative powers of the Department of Federal Revenue of Brazil had undergone modernisation through the SPED program which has three pillars which relate to Digital Accounting Bookkeeping, Digital Tax Bookkeeping and Electronic Invoicing.[110]

The requested information is to be submitted electronically in the prescribed format on a monthly, annual or instant transaction-by-transaction basis (if an electronic tax invoice).[111] Tax inspections are then carried out automatically by Department of Federal Revenue of Brazil's systems by validating the information against the taxpayers' income tax returns.[112]

If successful, the Department of Federal Revenue of Brazil will be able to obtain detailed reports from cryptocurrency exchanges. Such information would be able to assist in identifying the tax compliance levels of individuals and entities who engage in cryptocurrency transactions locally as well as those who conduct transactions with foreign cryptocurrency exchanges.

4.3.2 Brazil's legislative powers to gather information from outside the country

The Department of Federal Revenue of Brazil has powers which enable it to obtain information from other tax administrations through the international exchange of information. Brazil is a participant in the Global Forum of Transparency and Exchange of Tax Information and the Base Erosion and Transfer of Profits project and has automatic

[109] Iacia, C. (2013). *Brazilian Tax in a context*. Page 7. Available at https://www.pwc.com.br/pt/publicacoes/servicos/assets/assessoria-tributaria-societaria/2013/pwc-brazilian-tax-context.pdf. (Accessed 30 December 2018).
[110] EY Tax Insights. (2018). *Brazil: the Public Digital Bookkeeping System (SPED)*. Available at https://taxinsights.ey.com/archive/archive-articles/brazil-the-public-digital-bookkeeping-system-sped.aspx. (Accessed 30 December 2018). Also see Iacia, C. (2013). *Brazilian Tax in a context*. Page 8. Available at https://www.pwc.com.br/pt/publicacoes/servicos/assets/assessoria-tributaria-societaria/2013/pwc-brazilian-tax-context.pdf. (Accessed 30 December 2018).
[111] Ibid. Page 8. (Accessed 30 December 2018).
[112] Ibid. Page 9. (Accessed 30 December 2018).

exchange of information agreements with more than one hundred and thirty countries, tax information exchange agreements and 32 double taxation agreements.[113]

However, article 198 of the Brazilian National Tax Code prevents the Department of Federal Revenue of Brazil from disclosing a taxpayer's tax information except under exceptional circumstances, an example of which is a request made by a court authority.[114] Decree-Law n. 4.657/42, article 17 states that the Brazilian Tax authorities may decline an exchange of information request if the information would be contrary to national sovereignty, public order. Brazil has also signed the multilateral Convention on Mutual Administrative Assistance in Tax Matters in November 2011.[115] Therefore, Brazil will be able to request information on taxpayers who have conducted cryptocurrency transactions from other tax authorities as it has entered into agreements to exchange information with other tax jurisdictions. This will enable the Brazilian tax authority to verify the correctness of the information declared by such taxpayers.

4.4.1 Russia's legislative powers to gather information from third parties

The Federal Tax Service of Russia is responsible for collecting taxes.[116] This is done through the administration of the provisions of the Tax Code of The Russian Federation.[117]

No tax legislation pertaining to cryptocurrencies have been passed yet. The Tax Code of The Russian Federation has empowered the Federal Tax Service of Russia to obtain information from third parties in terms of Article 85 and Article 86.

Article 92 of the Tax Code of The Russian Federation deals with "Inspection" in Article 92 relates to the tax auditor's powers to inspect the taxpayer's premises and examine documents and other items.[118] Article 93 deals with the tax auditor's right to request information from the taxpayer and is linked to Article 93.1. which states that a tax auditor has the right to request information from other persons who possess documents relating to the activities of the taxpayer being audited.[119] Therefore, the Federal Tax Service of Russia could deem

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[113] Schincariol, L.B., AP; de Lemos, G.S.; Theodoro, M.A. and Gomensoro, A. (2018). *Tax Controversy*. Available at https://gettingthedealthrough.com/area/59/jurisdiction/6/tax-controversy-brazil. (Accessed 30 December 2018). Also see Estellita, H. and Bastos, F.S. (2018). Tax exchange of information and international cooperation in Brazil. Available at http://www.scielo.br/scielo.php?pid=S1808-24322015000100013&script=sci_arttext. (Accessed 30 December 2018).
[114] Schincariol, L.B., AP; de Lemos, G.S.; Theodoro, M.A. and Gomensoro, A. (2018). *Tax Controversy*. Available at https://gettingthedealthrough.com/area/59/jurisdiction/6/tax-controversy-brazil. (Accessed 30 December 2018).
[115] Ibid.
[116] Federal Tax Service of Russia. (2017). *The FTS of Russia Overview (video)*. Available at https://www.nalog.ru/eng/test/. (Accessed 31 December 2018).
[117] See Tax Code of The Russian Federation. Available at http://www.russian-tax-code.com/. Accessed 31 January 2019.
[118] See *The Tax Code, Part 1*. Article 92.
[119] See *The Tax Code, Part 1*. Article 93.1.

cryptocurrency exchanges to be persons who possess documents relating to the activities of the taxpayer(s) being audited and could request information from these sources. The powers contained in Article 92 of the Tax Code of The Russian Federation could assist the Federal Tax Service of Russia by allowing their auditors to inspect a cryptocurrency exchange's premises in order to examine documentation for verification purposes.

Article 85 compels "*Bodies, Institutions, Organizations and Officials to Provide Information Relating to the Registration of Organizations and Physical Persons to Tax Authorities*" and therefore to supply the Federal Tax Service of Russia with the names of taxpayers who have received licences to practice law or who was removed from the law register.[120] Article 86 states that banks are only permitted to open bank accounts for taxpayers upon presentation of a tax registration certificate and will have to provide the Federal Tax Service of Russia with details relating to taxpayers who have closed or altered the account in question within 3 days.[121]

The obligation of foreign financial institutions to report on accounts opened or maintained by Russian taxpayers (entities controlled by Russian citizens and natural persons) was introduced in Federal Law N 173-F2 on 28 June 2014.[122] This law applied to all foreign financial institutions such as banks, life insurance companies, private pension funds, joint stock investment funds, clearing funds and investment fund managers. The foreign financial institutions had to disclose the current year's information in hard copy in the prescribed format on or before 30 September of the following year.

In this way, Articles 85 and 86 Tax Code of The Russian Federation and Federal Law N 173-F2 assist in enforcing compliance with the requirements of Know Your Customer rules which Russia supports. These measures will assist the tax authorities in weakening the anonymity that investments in cryptocurrencies pose in that these measures will provide additional sources from which information (for verification purposes) can be requested.

The draft law "*On Digital Financial Assets*" has not yet been passed into law. This law proposes that only licenced operators would be required to exchange tokens for rubles and foreign currency. Therefore, the aim of the Federal Tax Service of Russia would be able to regard the licenced operators (including cryptocurrency exchanges) as third parties for the

[120] See *The Tax Code, Part 1. Article 85*. Available at https://www.nalog.ru/html/sites/www.eng.nalog.ru/Tax%20Code%20Part%20One.pdf. Accessed 31 December 2018.
[121] See *The Tax Code, Part 1*. Article 86.
[122] See Russia. Federal Law N 173-F2. (2014). Also see Federal Tax Service of Russia. (2018). *Report on financial accounts of Russian taxpayers.* Available at https://www.nalog.ru/eng/exchinf/rfart/. (Accessed 31 December 2018).

purposes of obtaining information for verification purposes in terms of Article 93 of the Tax Code of The Russian Federation.

4.4.2 Russia's legislative powers to gather information from outside the country

The Federal Tax Service of Russia complies with internally standards pertaining to taxation and co-operates with international organisations.[123] Cross border tax evasion is addressed through the exchange of information through the common reporting standard, country-by-country reporting and double taxation agreements in order to ensure tax compliance.[124] Therefore, Federal Tax Service of Russia would be able to request information pertaining to cryptocurrencies from other tax authorities in terms of these mechanisms, if required.

4.5.1 India's legislative powers to gather information from third parties

The Income Tax Department (of India) is controlled by the Central Board of Direct Taxes.[125] The tax rules relating to income and deductions as well as the tax administration powers are contained in the Income Tax Act 1961 (Indian Income Tax Act).[126] The Income Tax Department conducts audits in order to ensure that the return of income reflects the taxpayer's correct income and deductions.

Cryptocurrencies have not been defined in the Indian Income Tax Act and there are no specific sections in the Indian Tax Act relating to this topic.[127] Therefore, the Income Tax Department will have to rely on current tax legislation and principles as well as information gathering powers available to the Income Tax Department and apply these to cryptocurrencies.

In order to verify the correctness of the information declared, the Income Tax Department requests certain information from taxpayers as well as other sources. The Income Tax Department's powers to request information are contained in section 133 (Power to Call for Information), section 133A (Power of Survey), section 133B (Power to Collect Certain Information) and section 133C (Power to Call for Information by Prescribed Income Tax Authority) of the Income Tax Act 1961.

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[123] Russia co-operates with the Customs Union, Chief Executives Board of Tax Services of the CIS, Organisation for Economic Cooperation and Development, the World Bank, Intra-European Organisation of Tax Administrations and Council of the Baltic Sea States. Also see Federal Tax Service of Russia. (2018). *International Co-operation*. Available at https://www.nalog.ru/eng/international_cooperation/. (Accessed 31 December 2018).

[124] Federal Tax Service of Russia. (2017). *The FTS of Russia Overview (video)*. Available at https://www.nalog.ru/eng/test/. (Accessed 31 December 2018).

[125] Indian Income Tax Department. (2018). *Implementation of the Right to Information Act 2005 in Income Tax Department*. Available at https://www.incometaxindia.gov.in/Pages/right-to-information/proactive-disclosure.aspx. (Accessed 29 December 2018).

[126] The Income Tax-Act, 1961. Available at https://indiacode.nic.in/acts/12.%20A1961-43.pdf. (Accessed 29 December 2018).

[127] Ibid. (Accessed 29 December 2018).

Section 133 of the Indian Income Tax Act relates to the powers of the Income Tax Department to request information. This provision in the Indian Income Tax Act may permit the Income Tax Department to request information from cryptocurrency exchanges especially as these institutions transfer funds to cryptocurrency investors, and the transferred funds relate to rent, interest or commission (as cryptocurrencies can also be used as a means of payment for services rendered and remuneration).

Section 133(5) of the Income Tax Act 1961 may "r*equire any dealer, broker or agent or any person concerned in the management of a stock or commodity exchange to furnish a statement of the names and addresses of all persons to whom he or the exchange has paid any sum in connection with the transfer, whether by way of sale, exchange or otherwise, of assets, or on whose behalf or from whom he or the exchange has received any such sum, together with particulars of all such payments and receipts".*[128] The Income Tax Department can use this provision in the Income Tax Act 1961 to deem cryptocurrency exchanges as dealers, brokers, agents or any person involved in the management of a stock or commodity exchange and therefore compel these exchanges to provide information on the identities of cryptocurrency investors, addresses and provide summaries of their cryptocurrency transactions for verification purposes.

Section 133(6) of the Income Tax At 1961 *may "require any person, including a banking company or any officer thereof, to furnish information in relation to such points or matters, or to furnish statements of accounts".*[129] Section 133(6) will enable the Income Tax Department to request information from banks on cryptocurrency investors after lists of the cryptocurrency investors have been obtained using section 133(5) of the Income Tax Act 1961. Therefore, the provisions contained in section 133(5) of the Income Tax Act 1961 could be used by the Income Tax Department to request information on cryptocurrency transactions from cryptocurrency exchanges as well as banks in order to verify these against the returns submitted by taxpayers.

Section 133A (Power of Survey) relates to the authority given to Indian tax officers wherein they will be able to inspect accounting records, whereas section 133B relates to the powers given to Indian tax officials to collect information by visiting premises within the jurisdiction of said tax officials.[130] As stated in Chapter 3, the Income Tax Department have already been successful in their application of the information gathering powers contained in section 133A to conduct survey operations on nine cryptocurrency exchanges.[131] This intervention resulted in the identification of thousands of taxpayers who had not yet declared tax on gains from

[128] See section 133(5) of the Income Tax Act 1961 (of India).
[129] See section 133(6) of the Income Tax Act 1961 (of India).
[130] See sections 133A, 133(5) and 133(6) of the Income Tax Act 1961 (of India).
[131] See section 133A of the Income Tax Act 1961 (of India).

cryptocurrency trades as well as information pertaining to the cryptocurrency transactions, identity of the counter-parties and bank accounts used in the transactions.

Section 133C – Power to call for information by prescribed income-tax authority states that the Income Tax Department may request information in a prescribed manner for verification purposes and this information may be used by the Assessing Officer for further processing.[132]

Therefore, even though cryptocurrencies have not been identified specifically in the Indian Tax Act, the wording contained in the above sections of the Income Tax Act 1961 will be sufficient in order to enable to Indian tax authorities to request information relating to the identity of the investors, information relating to the cryptocurrency transactions, identity of the counter-parties to those transactions and the bank accounts used in cryptocurrency transactions for verification purposes. This information will be used to identify taxpayers and determine their levels of tax compliance by ascertaining if they are registered for tax, ascertaining if the counter-parties are registered for tax and determine if the gains and deductions from cryptocurrency transactions have been correctly declared to the Income Tax Department.

4.5.2 India's legislative powers to gather information from outside the country

The Manual on the Exchange of Information was published in May 2015 in order to obtain information from outside of India to counter offshore tax avoidance and evasion and detecting undisclosed income from abroad.[133] India has entered into agreements to exchange information with over 130 countries through double taxation agreements; tax information exchange agreements; multi-lateral mutual administrative assistance agreements (MMAAA's) in tax matters and SAARC limited multilateral agreements. SAARC limited multilateral agreement enable each tax authority to provide various forms of administrative assistance on a reciprocal basis. This includes exchange of information, tax collection assistance and joint audits. Information can also be requested from countries where there is no treaty through Mutual Legal Assistance Treaties.[134]

The risks pertaining to tax evasion and tax avoidance were addressed in a global standard called the Common Reporting Standard for Automatic Exchange of Information which has

[132] See section 133C of the Income Tax Act 1961 (of India).
[133] Indian Income Tax Department. (2015). *Manual on Exchange of Information*. Available at https://www.incometaxindia.gov.in/Documents/exchange-of-information/EOI-Manual-2015.pdf. (Accessed 30 December 2018). Also see Indian Income Tax Department. (2015). *Foreward*. Available at https://www.incometaxindia.gov.in/Documents/exchange-of-information/EOI-Manual-2015.pdf. (Accessed 30 December 2018).
[134] Ibid. Page 3. (Accessed 30 December 2018).

been supported by India and the G20 group of countries.[135] The contracting states will only be able to request information on taxpayers which have been identified and are not allowed to exchange information in the cases of "fishing expeditions".[136] Therefore, due to the numerous agreements to exchange information that exist between tax jurisdictions, India will be able to request information pertaining to a specific taxpayer and is not allowed to request information on taxpayers where these taxpayers have not been specifically identified.

4.6.1 China's legislative powers to gather information from third parties

The State Administration of Taxation is the tax agency of the Peoples Republic of China and provides tax administration services in terms of Law of the People's Republic of China on the Administration of Tax Collection.[137]

Chapter 1V of the Law of the People's Republic of China on the Administration of Tax Collection deals with Tax Inspection.[138] Articles 54 and 56 relates to the taxpayer's requirement to provide relevant material if requested.[139] Article 54 deals with the powers of the State Administration of Taxation to conduct inspections of a taxpayer's accounting records, commodities or other property. Article 56 deals states that a taxpayer or withholding agent shall co-operate with tax inspections and shall willingly provide relevant information. Therefore, the State Administration of Taxation would be able to use the provisions contained in articles 54 and 56 to request information from third parties such as cryptocurrency exchanges in order to verify the information declared in taxpayers' tax returns.

4.6.2 China's legislative powers to gather information from outside the country

The State Administration of Taxation has a close relationship with international tax authorities to exchange information, develop cross-border collaboration and multilateral actions. Initiatives to ensure the exchange of information between China and other tax jurisdictions include the Convention on Mutual Administrative Assistance in Tax Matters which was signed in 2013 and the first Multilateral Competent Authority Agreement on Automatic Exchange of Financial Account Information which was signed in 2015.

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[135] This group consists of Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, United States and European Union.
[136] Ibid. (Accessed 30 December 2018).
[137] China.org.cn. *Law of the People's Republic of China on the Administration of Tax Collection.* Available at http://www.china.org.cn/business/laws_regulations/2007-06/22/content_1214782.htm. (Accessed 31 December 2018).
[138] Ibid. (Accessed 31 December 2018).
[139] Ibid. (Accessed 31 December 2018).

China agreed to the implementation of the CRS for financial account information.[140] Bilateral cooperation agreements exist with various tax administrations.[141] The Standard for Automatic Exchange of Financial Account Information was to be implemented in China in September 2018. China has also signed 101 double tax treaties with other countries.[142]

4.7.1 South Africa's legislative powers to gather information from third parties

SARS was given its administrative powers and duties by the TAA.[143] The TAA attempts to "align the administration of the various tax Acts where possible".[144] SARS' verification powers are contained in section 3(2) of the TAA. This section of the TAA enables SARS to obtain information in respect of a taxable event, tax obligation of a person in a previous, current or future tax period; establish whether the person has declared the correct information when returns were filed and ascertain the identity of a person when determining liability for tax.[145] Third party data can be used in order to determine if the deductions claimed by the taxpayer and the supporting documents provided by the taxpayer comply with the provisions of the relevant tax Act and support the declaration made to SARS.[146]

Thus, SARS will perform a check if the income declared in the tax return is correct and complete, verify the validity of the deduction(s) claimed in the tax return and verify the correctness of the taxpayers' addresses, contact and banking details. This can be done by obtaining information from third party sources or the taxpayer's themselves.

Chapter 5 of the TAA contains all the sections which relate to "Information Gathering" including Part A which provides the "*General rules for inspection, verification, audit and criminal investigation*".[147] Taxpayers may be selected for an audit or a criminal investigation for serious tax offences either on "*a random basis or a risk assessment basis*" in terms of section 40 of Chapter 5 of the TAA.[148]

SARS is permitted to request "*relevant material*" in terms of section 46 of the TAA order to verify the validity of the information declared by a taxpayer.[149] The definition of "*relevant*

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[140] State Administration of Taxation of The People's Republic of China (SAT) website. (2018). *Exchanges and Cooperation*. Available at http://www.chinatax.gov.cn/eng/n2367741/index.html. (Accessed 31 December 2018).
[141] Ibid. (Accessed 31 December 2018).
[142] Ibid. (Accessed 31 December 2018).
[143] See Tax Administration Act No. 28 of 2011.
[144] Koekemoer, A., van Zyl, L., Wilcocks, J.S., de Swardt & R. D. (2017). *Silke: South African Income Tax, Volume 2*. Page 1120. South Africa. Lexis Nexis Incorporated.
[145] Section 3(2) of the Tax Administration Act No. 28 of 2011.
[146] South African Revenue Service. (2018). *What must be submitted?* Available at http://www.sars.gov.za/ClientSegments/Businesses/Mod3rdParty/Pages/default.aspx. (Accessed 15 December 2018).
[147] See Chapter 5 of the Tax Administration Act No. 28 of 2011.
[148] Section 40 of the Tax Administration Act No. 28 of 2011.
[149] Section 46 of the Tax Administration Act No. 28 of 2011.

material" as found in section 1 of the TAA relates to relates to any information that can be used by SARS either to conduct a risk assessment (by comparing income declared or deductions claimed by the taxpayer to the third party data obtained), to raise an assessment, to show non-compliance which could relate to a false declaration by the taxpayer.[150]

Section 46 indicates that SARS may only request relevant material "*in relation to a taxpayer, whether identified by name or otherwise objectively identifiable*".[151] Section 46(2) goes on to say that "*A senior SARS official may require relevant material in terms of subsection (1) in respect of taxpayers in an objectively identifiable class of taxpayers*". Restrictions to requests for relevant material are contained in section 46(3) of the TAA which states that relevant material requested from third parties must be limited to the records maintained or records that should be reasonably maintained by the third party.

The criteria for third party returns are contained in section 26 and 27 of Chapter 4 of the TAA. Section 26 of the TAA empowers SARS (by public notice) to request relevant material from a third party such as an employer, or anyone who pays amounts to; or who receives amounts on behalf of; or transacts with another person; or who controls the assets of a taxpayer.

Third party returns must contain all the relevant material required by the SARS and must be submitted in the recommended format as per section 26(2) of the TAA.[152] Such returns can be used by SARS to verify income declared as well as deductions claimed by taxpayers.

A key component of section 26 of the TAA relates to the fact that SARS can request relevant material from anyone who "*pays amounts to, receives amounts on behalf of or otherwise transacts with another person, or has control over assets of another person*".[153] Cryptocurrency exchanges, banks, brokers and other intermediaries can fall within these categories of persons as being entities or persons who "*pays amounts to, receives amounts on behalf of or otherwise transacts with another person, or has control over assets of another person*". Therefore, section 26 of the TAA can empower SARS to be able to request relevant material via the issuing of a public notice to third parties such as banks, cryptocurrency coin exchanges, brokers and other intermediaries who act on behalf of taxpayers. Therefore, by utilizing this method of data collection, SARS will be able to obtain relevant material on multiple taxpayers simultaneously.

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[150] Definition of "relevant material" in section 1 of the Tax Administration Act No. 28 of 2011.
[151] Section 46 of the Tax Administration Act No. 28 of 2011.
[152] South African Revenue Service. (2018). *Third Party Data Submission to SARS*. http://www.sars.gov.za/ClientSegments/Businesses/Mod3rdParty/Pages/default.aspx. (Accessed 18 December 2018).
[153] See section 26 of the Tax Administration Act No. 28 of 2011.

Section 26(3) of the TAA authorises SARS to compel a person to *"register to as a person required to submit a return under this section, an international tax agreement or an international tax standard*". The purpose of this amendment is to ensure that relevant financial institutions register with SARS in order to comply with international tax agreements or international tax standards. Cryptocurrency transactions relating to the purchase or sale of cryptocurrencies can be conducted locally or internationally and taxpayers may also opt to store their cryptocurrencies abroad.[154] Thus, the requirement of section 26(3) of the TAA that a third party (such as a bank or cryptocurrency exchange) register with SARS as a person required to submit a return can be beneficial to SARS as a possible additional source where data can be requested for verification purposes.

Section 27 of the TAA relates to "*Other returns required*" and expands on the requirements contained in section 25 and section 26 of the TAA and stipulates that a senior SARS official (such as an auditor) could request additional or more detailed returns (in the prescribed format) from a person (third party) and in the prescribed format.[155] Therefore, when verifying the validity of cryptocurrency transactions, a senior SARS official will be entitled to request additional relevant material from a third party.

In conclusion, the powers contained in section 46 combined with sections 26 and 27 of the TAA will enable SARS to request third party data in relation to taxpayers who have been specifically identified or belong to an "*objectively identifiable class of taxpayers*" which can be used for verification purposes.

Section 22(5) of Chapter 3 of the TAA states that a '*Where a taxpayer that is obliged to register with SARS under a tax Act fails to do so, SARS may register the taxpayer for one or more tax types as is appropriate under the circumstances'.*[156] This will be pertinent where taxpayers (who are not registered for Income tax) have made substantial gains from their dealings or investments in cryptocurrencies. Thus, third party data may also be used by SARS to establish the identity of taxpayers who should be registered (for any of the taxes administered by SARS) and thereby broaden the existing tax base.

Third party data can be used by SARS in order to raise an estimated assessment in terms of section 95(1) of the TAA and can verify the information contained in the taxpayer's income tax returns even after the tax returns have prescribed. Section 99(2)(a) states that prescription will not apply if the full income tax liability was not declared due to fraud, misrepresentation or non-disclosure of material facts. Section 102(2) of the TAA deals with

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[154] Mybroadband. (2018). *South Africans could face trouble for buying Bitcoin from offshore exchanges.* Available at https://mybroadband.co.za/news/cryptocurrency/261155-south-africans-could-face-trouble-for-buying-bitcoin-from-offshore-exchanges.html. (Accessed 18 December 2018).
[155] See section 27 of the Tax Administration Act No. 28 of 2011.
[156] Section 22(5) of the Tax Administration Act No. 28 of 2011.

the 'burden of proof' and states that the onus will be on SARS to prove that an estimated assessment raised in terms of section 95 is correct. Thus, it is vital that the information submitted by third parties is correct.

4.7.2 South Africa's legislative powers to gather information from outside the country

SARS is also permitted to request third party data from outside the Republic. Such agreements can be categorised into the United States Foreign Account Tax Compliance Act agreement, MMAAA's, bi-lateral tax information exchange agreements and double taxation agreements.[157]

The FATCA agreement between South Africa and the United States of America came into effect as from 28 October 2016 wherein the 2 nations agreed to exchange financial information on a reciprocal basis in order to increase international compliance in taxation. Another mechanism to gather and exchange information is the common reporting standard which is an agreement between South Africa and 100 other tax jurisdictions wherein information will be exchanged and was developed in conjunction with the G20, European Union and OECD.[158] Financial institutions would be required to keep records of all foreign held accounts with effect from 01 March 2016 on all account holders and controlling persons. South Africa would be also be entitled to request and receive financial information from other jurisdictions.

MMAAA's are agreements between two or more tax jurisdictions to exchange information and assist each other in the collection of taxes. South Africa has entered in negotiations for a MMAAA with the BRICS nations, but, this agreement has not been finalised yet. However, the Multilateral Southern African Customs Union Agreement on Mutual Administrative Assistance between South Africa and the BRICS countries was finalised on 08 March 2017.[159]

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[157] South African Revenue Service. *Exchange of Information Conventions / Agreements*. Available at http://www.sars.gov.za/Legal/International-Treaties-Agreements/Pages/Exchange-of-Information-Agreements-(Bilateral).aspx. (Accessed 16 December 2018).

[158] G20 group of countries include Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, United States and European Union.

[159] South African Revenue Service. (2018). *Summary of all Multilateral Mutual Administrative Assistance Conventions/Agreements*. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-EIA-2017-01%20-%20Status%20Summary%20all%20Multilateral%20MAACs%20or%20Agreements%20Customs.pdf. (Accessed 16 December 2018).

Bilateral tax information exchange agreements relate to an agreement between South Africa and another tax authority to exchange information when requested.[160] Country-by-country and financial data reporting pertains to an agreement for the automatic exchange of information between tax authorities upon request especially relating to multi-national enterprises. In order to assist with the automatic exchange of information, a new definition of an "international tax standard" was inserted in section 1 of the TAA (South Africa, National Treasury, 2016, p. 1).[161] In terms of country-by-country CBC reporting, MNE groups need to disclose their allocation of income per country, tax paid, description of business activities, operational structure and number of staff employed by each company in each country.[162]

Double taxation agreements are signed between two tax administrations in order to ensure that the taxpayer has not been subject to double taxation and to assist with the exchange of information.[163] The article relating to "Exchange of Information" is usually found in Article 26 of the double taxation agreements and states that authorities in each of the contracting states are permitted to exchange information in order to enforce domestic tax legislation on condition that this does not contradict the remainder of the articles in the double taxation agreement.[164] Article 26 provides administrative assistance between tax authorities of the 2 contracting states and the contracting states will be able to utilise the reciprocal supply of information in enforcing their domestic tax legislation.[165] The commentary for Article 26 provides that the contracting state is not allowed to go on a fishing expedition and request information which is not relevant to the taxpayer's affairs. Currently, there are double taxation agreement DTA's in force between SA and each of the BRICS countries.[166]

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[160] South African Revenue Service. (2018). *Exchange of Information Conventions / Agreements*. Available at http://www.sars.gov.za/Legal/International-Treaties-Agreements/Pages/Exchange-of-Information-Agreements-(Bilateral).aspx. (Accessed 16 December 2018).

[161] South African Government. (2016). *Government Gazette No. R.1598*. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/SecLegis/LAPD-LSec-Reg-2016-07%20-%20Regulation%20R1598%20GG40516%20-%2023%20December%202016.pdf. (Accessed 16 December 2018).

[162] South African Revenue Service. (2018). External business requirements specification: Country- by-Country and Financial Data Reporting. Page 14. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-EIA-CBC-2017-03%20-%20Final%20BRS%20on%20the%20OECD%20CbC%20Reporting.pdf. (Accessed 16 December 2018).

[163] South African Revenue Service. (2018). Double Taxation Agreements (DTAs) & Protocols. Available at http://www.sars.gov.za/legal/international-treaties-agreements/dta-protocols/Pages/default.)aspx. (Accessed 16 December 2018).

[164] Organisation for Economic Co-operation and Development. (2012). Update to Article 26 of OECD Model Tax Convention and its commentary. Available at https://www.oecd.org/ctp/exchange-of-tax-information/120718_Article%2026-ENG_no%20cover%20(2).pdf. (Accessed 18 December 2018).

[165] Ibid. Page 3. (Accessed 18 December 2018).

[166] South African Revenue Service. (2018). Summary of all Agreements for the Avoidance of Double Taxation. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-DTA-

4.6 Conclusion

One of the main challenges for tax authorities relate to the efficient administration of domestic and international tax laws especially if transactions with other countries are involved. Globalisation has led to additional risks for tax authorities, in that the digital economy allows taxpayers to transact with coin exchanges situated locally or abroad or online peer-to-peer markets.

During this chapter, it was found that all the BRICS countries have authority to gather information domestically as well as abroad through exchange of information agreements with other countries across the globe. Each BRICS country can request third party data from within the country using powers contained in their income tax legislation.

In this chapter it was found that the Department of Federal Revenue of Brazil have powerful information gathering powers within Brazil in that their third party returns electronic system ("SPED") allows for greater data intelligence capacity. Brazilian tax authorities have also entered into agreements with other countries wherein tax information can be exchanged. However, the Department of Federal Revenue of Brazil is not allowed to disclose taxpayer information in terms of article 198 of the Brazilian National Tax Code. Article 198 does not reconcile with the information exchange agreements that have been concluded.

The Russian Tax Code contains various powers contained in Articles 85, 86, 92 and 93 which will enable to Federal Tax Service of Russia to collect data for verification purposes from within Russia. The Federal Tax Service of Russia is also able to collect data from abroad using the exchange of information mechanisms in the CRS, country-by-country reporting and double taxation agreements.

Like all countries, the Indian Income Tax Department has vast powers which will enable it to request information from within and outside the country to verify the correctness of a taxpayer's tax declaration. However, the Income Tax Department will only be permitted to request information on specific taxpayers who have been identified by the Income Tax Department. These information gathering powers will also extend to requests for information on cryptocurrencies in that the Income Tax Department first has to identify the "risky" taxpayer before it can request information. China has banned cryptocurrencies and therefore the SAT will not be including the verification of cryptocurrencies in the scope of their audits.

It was found that SARS has similar powers as the tax authorities in the other BRICS countries to request information pertaining to cryptocurrency transactions. The

2013-01%20-%20Status%20Overview%20of%20All%20DTAs%20and%20Protocols.pdf. (Accessed 16 December 2018).

administrative process of SARS is dictated by the TAA, and SARS may only request information from an "objectively identifiable" class of taxpayers.

In Chapter 2, it was found that the BRICS countries subscribe to Know Your Customer regulations, and therefore, each BRICS country can request records from third parties who are required to keep records in terms of this legislation. These third parties include cryptocurrency exchanges who are compelled to register their clients with the exchange. Therefore, this also means that SARS could get access to their list of clients. However, verification challenges will still exist if taxpayers purchase highly anonymous altcoins or conduct cryptocurrency transactions with online peer-to-peer exchanges which do not require registration.

In this chapter, it was also noted that each of the BRICS countries (including South Africa) subscribe to mechanisms to exchange information with other countries, including automatic exchange of information and double taxation treaties amongst others. India has an additional means of gathering information through mutual legal assistance with countries where no double taxation treaty has been signed. Therefore, the findings in this chapter suggest that South Africa's information gathering powers are on par with those of the other BRICS countries.

CHAPTER 5: OTHER MEASURES THAT SARS CAN TAKE TO ADDRESS VERIFICATION CHALLENGES

5.1 Introduction

Chapter 3 addressed solutions pertaining to verification of cryptocurrencies that tax authorities in Brazil, Russia, India and China have employed. The complexity of the nature of cryptocurrencies has resulted in more complex enforcement activity required by the tax authorities. Lately, cryptocurrencies have become popular among the criminals in that they have discovered that cryptocurrencies can be used for illicit activities like tax evasion and money laundering due the anonymity that they offer. The increase in criminal activities has led to technological advances in the analysis of cryptocurrencies.

This chapter will provide an overview of two cryptocurrency analysis tools available (one of which is currently in use by the Internal Revenue Service) as well as an outline of how they work. This will be followed by a discussion of other measures that can be considered which can possibly aid the verification process used by SARS.

5.2 Analytical Tools available for use in the cryptocurrency environment

Cryptocurrencies are well known for being secure, decentralised, anonymous and untraceable. However, cryptocurrencies are pseudonymous in that their addresses can be viewed in the public blockchain and are linked to the "real-world" identities of the taxpayers.

Taxpayers who purchase cryptocurrencies through coin exchanges register their details with the exchange. Thus, it would be possible for any tax authority to request a list of all taxpayers from any coin exchange if their administrative powers permit this. SARS would be able to request this information in terms of section 46 of the TAA as the request relates to "a class of taxpayers".

Companies specialising in the analysis of blockchains are currently developing software to trace suspicious cryptocurrency transactions, addresses and users' behavioural patterns. There are various service providers which have developed cryptocurrency analytical software, however, only those developed by Chainalysis and Elliptic will be discussed.

5.2.1 Chainalysis

Chainalysis is a service provider based in New York, Washington D.C. and Copenhagen and specialises in preventing, detecting and investigating cryptocurrency money laundering, fraud and compliance violations.[167] Fortune magazine reports that the United States of

[167] Chainalysis. *Building trust in blockchains*. Available at https://www.chainalysis.com/. (Accessed 28 December 2018).

America's Internal Revenue Service has contracted with Chainalysis in order to track and identify transactions.[168] The Chainalysis blog indicates that the Bitcoin blockchain consists of 460 million addresses as of December 2018 and identified that 86% belong to a coin exchange or a darknet market.[169]

Chainalysis indicated on its website that its clients include financial institutions, cryptocurrency exchanges and government. The website advertises two main products namely *Investigation Software Suite - Chainalysis Reactor* and *Compliance Software Suite - Chainalysis KYT (Know Your Transaction).*[170]

The *Investigation Software Suite - Chainalysis Reactor ("Chainalysis Reactor")* was created in order to assist law enforcement and financial institutions to combat fraud, money laundering and extortion by determining the source of cryptocurrency transactions. This product can be used across cryptocurrencies such as Bitcoin, Bitcoin Cash, Ether, Litecoin, and other top cryptocurrencies. The *Chainalysis Reactor* works by identifying paths connected to a cryptocurrency address which assists in identifying potential suspects in investigations.

The *Compliance Software Suite - Chainalysis KYT ("Chainalysis - KYT")* was launched in April 2018 and has been designed to assess money-laundering risks of businesses by screening cryptocurrency activity and continually identifying high risk transactions as well as case management and "filtering & sorting of user profiles based on certain variables".[171]

This product also enables an individual user to trace the flow of funds for a specific transaction to the *Chainalysis Reactor*. The software works by flagging users in organisations who receive funds from a darknet market. Such a transaction will be flagged as high risk.

However, if funds are sent to a regulated coin exchange, then the transaction will be flagged as low risk.[172] This means that high risk transactions are those which do not go through a regulated coin exchange and the taxpayers behind these transactions will be more difficult to identify by tax authorities.

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[168] IRS-Chainalysis Contract. Available at https://www.documentcloud.org/documents/3935924-IRS-Chainalysis-Contract.html. (Accessed 28 December 2018.) Also see Roberts, J.J. (2017). *The IRS Has Special Software to Find Bitcoin Tax Cheats*. Available at http://fortune.com/2017/08/22/irs-tax-cheats-bitcoin-chainalysis/. (Accessed on 28 December 2018).
[169] Chainalysis. (2018). *Mapping The Universe Of Bitcoin's 460 Million Addresses*. Available at https://blog.chainalysis.com/reports/bitcoin-addresses. (Accessed on 28 December 2018).
[170]Chainalysis. (2018). *Products*. Available at https://www.chainalysis.com/#products. (Accessed on 28 December 2018).
[171] Chainalysis. (2018). *How Our Cryptocurrency Transaction Monitoring Evolved in 2018*. Available at https://blog.chainalysis.com/reports/kyt-2018-review. (Accessed 28 December 2018).
[172] Ibid.

5.2.2 Elliptic

Elliptic is another service provider which specialises in the analysis of cryptocurrency blockchains and uses software to monitor high volumes of Bitcoin transactions to comply with anti-money laundering compliance regulations for their clients.[173] The company has branches in the United Kingdom, New York and Washington DC and provides services to cryptocurrency exchanges, financial institutions and government departments.

Elliptic Forensic Software is used to trace suspicious activities on the Bitcoin blockchain by linking digital profiles to real identities.[174] The Elliptic website states that their software extracted suspicious payment information from public and private sources and was used by law enforcement in criminal cases.[175]

5.2.3 Blockchain analytical tools in practice

Elliptic forensic software was used by the United States Department of Justice.[176] In July 2018, the United States Department of Justice prosecuted officers of the GRU (a Russian military intelligence agency) who hacked into email accounts of employees and volunteers of the 2016 Hilary Clinton presidential campaign.[177] Thousands of documents were stolen and placed online using online personas.

It was found that Bitcoins were used to finance the registration of the website domain, servers and virtual private network services.[178] According to the indictment, cryptocurrencies were used to hide the connections to Russia by side-stepping traditional financial institutions. The measures used to hide the source of the Bitcoins included use of peer-to-peer exchanges, transfers into and out of other cryptocurrencies and prepaid cards.

Investigators who analysed the Bitcoin blockchain were able to connect the online personas to the Russian officers. The Elliptic analytical software identified that the source of the funds was from a European coin exchange which permitted the exchange of US dollars, Euros and

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[173] Elliptic. (2018). *What we do*. Available at https://www.elliptic.co/what-we-do. (Accessed 28 December 2018).
[174] Elliptic. (2018). *Cryptocurrency Forensics*. Available at https://www.elliptic.co/what-we-do/bitcoin-forensics. (Accessed 28 December 2018).
[175] Ibid. (Accessed 28 December 2018).
[176] Robinson, T. (2018). *How the DOJ Indictment of Russian Hackers is Supported by Blockchain Analysis*. Available at https://www.elliptic.co/our-thinking/doj-indictment-russian-hackers-blockchain-analysis. (Accessed 28 December 2018).
[177] United States of America v Netyksho, V. B. and 11 others. Available at https://www.justice.gov/file/1080281/download. (Accessed 28 December 2018).
[178] Wikipedia. (2018). "A virtual private network (VPN) extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network". Available at https://en.wikipedia.org/wiki/Virtual_private_network. (Accessed 28 December 2018).

Russian rubles for Bitcoin and other cryptocurrencies.[179] In this instance, the Russia officers were able to be traced even though they used peer-to-peer exchanges and exchanged cryptocurrencies for other cryptocurrencies. Therefore, cryptocurrency analysis software can be valuable in the tax environment as it can be used to identify taxpayers by tracking them to their internet protocol addresses and can also be used to extract transactions pertaining to a specific taxpayer after the taxpayer has been identified.

5.4 Additional measures to consider

The following paragraphs will address other measures that can be considered by SARS to assist in addressing the verification of taxpayers who invest in cryptocurrencies.

5.4.1 Third party data requests from South African cryptocurrency exchanges

During my research, it was found that the Department of Federal Revenue of Brazil (Brazilian tax authorities) had published a draft proposal relating to the requirement that cryptocurrency exchanges based in Brazil submit detailed financial reports (containing amounts of transactions; identities of their clients as well as personal information of the dealers) to them. The proposal also required that legal entities and individuals who reside in Brazil disclose all transactions exceeding 10 000 Brazilian reals per month which are carried out at foreign cryptocurrency exchanges.

It was also learnt that India had conducted survey operations in bitcoin exchanges in terms of section 133A of their Income Tax Act in order to "gather evidence for establishing the identity of investors and the transaction undertaken by them, identity of counter-parties, related bank accounts used, among others" as the investors did not pay advance tax on gains from virtual currency trades.[180] The Income Tax Department used this information to issue notices to the cryptocurrency investors to inform them of the tax implications from cryptocurrency transactions.

SARS has a similar mechanism which can be found in sections 26 and 27 of the TAA wherein third parties such as banks, other financial institutions, attorneys, estate agents and foreign resident companies listed on the JSE as well as institutions listed in the FATCA agreement located in South Africa submit "returns" called "third party returns". These returns must be in a format prescribed by SARS.

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[179] Robinson, T. (2018). *How the DOJ Indictment of Russian Hackers is Supported by Blockchain Analysis*. Available at https://www.elliptic.co/our-thinking/doj-indictment-russian-hackers-blockchain-analysis. (Accessed 28 December 2018).

[180] The Times of India. (2018). *I-T will tax bitcoin trade; has issued few lakh notices: CBDT*. Available at https://timesofindia.indiatimes.com/business/india-business/i-t-will-tax-bitcoin-trade-has-issued-few-lakh-notices-cbdt/articleshow/62755763.cms. (Accessed 18 December 2018).

It is suggested that SARS consider issuing a public notice requiring South African cryptocurrency exchanges to provide investor information to SARS twice a year (for the 6 months ending 31 August and the 6 months ending 28 February). The Department of Federal Revenue of Brazil proposal is that the "third party" returns on cryptocurrency transactions be submitted monthly, however, it might become too cumbersome from an administrative point of view if SARS had to implement a similar request.

5.4.2 Tax clearance certificates and suggested improvements to FIA001 application form

South African investors are required to apply for a tax clearance certificate in order to utilise their R10 million annual foreign capital allowance. Currently, the FIA-001 application form does not contain any reference to cryptocurrencies, even though a taxpayer can indicate the type of investment that will be made, the institution and country in which the investment will be made.[181]

It is suggested that the administrative requirements of the FIA-001 application form be enhanced to include the following (in addition to the current requirements) a separate field to be created on Page 1 so that the taxpayer can insert his or her public key (or public address).

The heading "Particulars of foreign investment" to be amended to include a new question: "*Does the purpose of this investment relate to an investment in cryptocurrencies?*" Furthermore, under the heading, "*Details of foreign investment to be made*", the field "*What type of investment (call deposit, shares, other financial instruments etc)*" to be amended to specifically include cryptocurrencies and to read as follows: "*What type of investment (call deposit, shares, other financial instruments, cryptocurrencies etc)*" [my emphasis].

5.4.3 Tax clearance certificate requirement for cryptocurrency investors

In subchapter 5.4.2, it was suggested that the current FIA-001 application form be enhanced to specifically include questions addressing investments in cryptocurrencies. The recommendation in this subchapter relates to the possible implementation of a new tax clearance certificate application form and process that specifically caters for taxpayers who will be investing in cryptocurrencies locally as well as abroad.

This will enable SARS to keep a database of all taxpayers who apply for tax clearance certificates for the purpose of investing in cryptocurrencies. This database can be used as a source of identifying such cases for the audit process. It is suggested that the new tax

[181] An FAI-001 form is an application for a tax clearance certificate should an individual wish to invest funds abroad. Also seeSee FIA-001application form. Page 1. Particulars of foreign investment.

clearance certificate application form for cryptocurrencies be based on the same requirements as per the current FIA-001 application form.

5.4.4 Special Voluntary Disclosure Program

This recommendation stems from the Indian Income Tax Department's notices that were issued to cryptocurrency investors informing them of the tax implications that can arise from cryptocurrency transactions. In undertaking this action, the Income Tax Department attempted to create a culture of voluntary compliance.

SARS has a permanent voluntary disclosure program which is administered through the TAA. From time to time, SARS implements a special voluntary disclosure program in order to give non-compliant taxpayers an opportunity to become compliant. The last special voluntary disclosure program took place from 01 October 2016 to 31 August 2017 where individuals and companies were asked to voluntarily disclose foreign assets and income. It is suggested that SARS implements another special voluntary disclosure program to give taxpayers an opportunity to declare income and gains made from cryptocurrency transactions.

5.4.5 Enhancement of the income tax return for individuals, trusts and companies

The income tax return for individuals and trusts contains sections for the taxpayer's registration details, income, deductions and assets and liabilities.[182] The following amendments and additions to the income tax return for individuals and suggested: source code buttons to be updated to include codes for "*Profits – Cryptocurrencies*" and "*Losses – Cryptocurrencies*"; fields for the taxpayer's cryptocurrency public key(s) and the name of the cryptocurrencies from where the profit or loss arose; fields for the name of cryptocurrency coin exchange(s) involved in the transactions and account number at the coin exchange.

It is suggested that the Assets and Liabilities portion of the individual taxpayer's or trust's income tax return be enhanced to include the following: under Assets, a field for "*Cryptocurrencies at cost*" and underneath "*Cryptocurrencies at cost*", the E-Filing Wizard should open up field(s) where the taxpayer will be required to specify the name of each cryptocurrencies owned, and the cost and current value. The name of each cryptocurrency will provide an indication if the information will be on a public blockchain or on a private blockchain (and will also provide insight into how difficult the information will be to verify).

[182] South African Revenue Service. (2018). *SARS Helps you eFile*. Available at http://www.sars.gov.za/ClientSegments/Individuals/Need-Help/Pages/Help-you-eFile.aspx. (Accessed 29 December 2018).

Similarly, certain amendments can be made to the company income tax return as suggested hereunder: the first page of the return which contains the Registered Details to reflect a specific section relating to cryptocurrencies under capital gain / loss transactions. If the taxpayer ticks Yes, then the E-Filing Wizard will open another screen relating specifically to cryptocurrency transactions. In addition, source code buttons to be updated to include codes for "*Profits – Cryptocurrencies*" and "*Losses – Cryptocurrencies*"; fields for the taxpayer's cryptocurrency public key(s) and the name of the cryptocurrencies from where the profit or loss arose to be included in the income tax return. A reminder is to be placed on the screen reminding the taxpayer to upload its supporting documents pertaining to cryptocurrencies. The reason behind the above suggestions relate to the taxpayer's public key which is crucial in assisting SARS in identifying a taxpayer on a public blockchain and therefore will be able to enhance the verification process.

5.4.6 Public Education Programs

According to the SARS website, free tax education workshops which cover a range of topics are held at SARS branches on a regular basis with the aim of educating the public on how taxes work and what is required in order to be tax compliant. [183] It is suggested that SARS conducts workshops to educate the public as well as tax practitioners on cryptocurrencies, and what would be required when disclosing income from these sources.

5.4.7 Training of SARS staff

The field of cryptocurrencies is constantly evolving and SARS staff (particularly their auditors) will need to be kept abreast of these developments. It is recommended that SARS implement a nationwide education program for auditing and processing staff who will engaging with taxpayers in this field (e.g. auditing staff as well as staff who process tax clearance certificates).

It is important that SARS has staff with the correct skills to deal with complex cryptocurrency transactions stemming from private cryptocurrency blockchains, bitcoin mixers or tumblers (for money laundering and tax evasion). SARS might need to consider employing staff with specialised skills in cryptocurrencies or computer programmers in order to perform these verification tasks or create new technology (or computer application) to verify cryptocurrency income (deposits) against income tax returns.

5.5 Conclusion

Blockchain analytical software is constantly being developed and enhanced upon in order to identify and track user behaviour in cryptocurrency blockchains and assist in compliance

[183] Ibid. (Accessed 29 December 2018).

with anti-money laundering regulations. A practical example where forensic cryptocurrency software was used to provide evidence in a criminal case which resulted in the successful indictment of the accused was also included in this chapter. In this instance, the cryptocurrency analysis tool was able to track the suspects even though they had used used peer-to-peer exchanges and exchanged cryptocurrencies for other cryptocurrencies.

In conclusion, SARS will be able to use cryptocurrency analysis software to track transactions; link digital profiles to real identities through their internet protocol addresses and to determine the source of cryptocurrency transactions. Thus, it would be possible for SARS to either undertake to develop in-house analysis software to track, trace and analyse cryptocurrency transactions or contract with an external service provider to provide these services.

The Chainalysis blog software identified that over 86% of the addresses on the Bitcoin public blockchain belonged to the cryptocurrency exchanges and the darknet. Therefore, it appears as though a large component of cryptocurrency addresses can be tracked via cryptocurrency exchanges. Previously, it was established that most cryptocurrency exchanges require the individual to register before conducting transactions. Thus, based on the powers contained in tax administration legislation, SARS and the other tax authorities in the BRICS countries can use their information gathering powers to request information from cryptocurrency exchanges as well as other tax jurisdictions depending on the source of the information (as discussed in Chapter 4).

Therefore, it is suggested that SARS publicly request third party information from cryptocurrency exchanges in terms of sections 26 and section 27 of the TAA. The information requested can include the identity of the investors, summaries of transactions, bank account details of all investors who have transactions exceeding R10 000 per month. It is suggested that the information be submitted to SARS twice a year (for the 6 months ending 31 August and the 6 months ending 28 February).

Another recommendation relates to improvements which can be made to the tax clearance certificate application form (FIA-001). It is suggested that the FIA-001 form be amended to include the taxpayer's public key and that the form be amended to specify questions relating to investments in cryptocurrencies. Alternatively, it was suggested that a new tax clearance application form and process be devised for taxpayers who are investing in cryptocurrencies both locally and abroad in order to keep record of all taxpayers who intend investing in cryptocurrencies.

A further suggestion relates to the possible implementation of a special voluntary disclosure program. The Income Tax Department issued notices to cryptocurrency taxpayers wherein

these taxpayers were informed of the tax implications of these transactions and encouraged voluntary compliance.

Another suggestion relates to the possible enhancement of the individual, company and trust's income tax returns to include source codes pertaining to profits or losses derived from cryptocurrencies, fields for the taxpayer's public key and cryptocurrency exchange details as well as updates to the assets and liabilities section of the individual taxpayer or trust's income tax return.

Another initiative could include free tax education workshops which will be held to educate the public (including tax practitioners) on cryptocurrencies and the tax consequences that can arise from such transactions. A final recommendation relates to the training of SARS staff in order to keep them abreast of developments in this field. The following chapter will provide a summary of findings from this study.

CHAPTER 6: CONCLUSION

6.1 Introduction

In Chapter 1 it was highlighted that there are no specific regulations pertaining to trading in cryptocurrencies in South Africa. This research suggests that this also applies to the other BRICS member countries.

SARS has addressed some of the taxation aspects relating to cryptocurrencies through their April 2018 media release on the cryptocurrencies. In South Africa, the following legislative proposals pertaining to cryptocurrencies have been suggested in the Explanatory Memorandum on the Taxation Laws Amendment Bill 2018: sub-clause (c) of clause 1 contains a suggestion that "*cryptocurrency*" be included in the definition of a "*financial instrument*"; clause 35 contains a proposal that section 20A of the Act incorporate the ring-fencing of assessed losses that are derived from cryptocurrencies and clause 88 contains a proposal that the VAT Act include an amendment whereby cryptocurrencies are added to section 2 of the VAT Act which deals with Financial Services (South Africa, Explanatory Memorandum on the Taxation Laws Amendment Bill 2018 (Draft), 2018, p. 42).

The latest development took place in January 2019 where National Treasury released a "*Statement on consultation paper on crypto assets*" wherein members of the public and other relevant stakeholders were invited to provide comments by 15 February 2019 (South Africa, National Treasury, 2019, p. 5). The input would be utilized to assist in drafting a crypto assets policy paper that will depict how crypto assets would be managed within the regulatory and legislative framework in South Africa. No legislative amendments relating to the taxation of cryptocurrencies have taken place when this research was finalised. However, the above legislative proposals and issuance of the consultation paper provide an indication of the importance and relevance of cryptocurrencies in South Africa at present.

The research in this document is significant in that it examined the challenges that the verification of cryptocurrencies pose to tax authorities, especially when determining the identity of taxpayers. The study examined the characteristics of cryptocurrencies and blockchain technology, and the risks that cryptocurrencies can pose to tax authorities. The study examined how tax authorities in the BRICS were treating these challenges by looking at the measures that they had implemented to gather information. Further research was conducted on the information gathering powers of each country in order to ascertain if South Africa's ability to gather information was on par with theirs. This would assist in evaluating whether South Africa could use the solutions implemented by the BRICS countries.

Finally, the research discussed other measures that can be taken by SARS to address verification challenges posed by cryptocurrencies. The answers to the research questions will now be discussed.

6.2 Research questions answered

Question: What problems can cryptocurrencies pose to SARS from the verification perspective?

Answer*:*

1. Pseudonymous identities of taxpayers

Taxpayers who join a public blockchain are pseudonymous in that their transactions and digital profiles (cryptocurrencies) are open source and can be viewed in the public domain on the internet. The challenge for tax authorities lies in linking the taxpayer's digital profile (the cryptocurrency addresses which comprise of a string of letters and characters) to the taxpayer's real identity. The taxpayer's real identity is required in order to obtain the taxpayer's tax profile and therefore, determine whether gains or losses from cryptocurrency transactions have been declared.

2. No central authority in public, private cryptocurrency and hybrid blockchains

Cryptocurrencies can exist on a public, private or hybrid blockchain. Public cryptocurrency blockchains exist in the public domain and the transaction with its cryptocurrency address can be found online. Access is only granted to authorised individuals in private cryptocurrency blockchains whereas a network operator has access to the info in hybrid cryptocurrency blockchains. Transactions are verified by a peer-to-peer computer network which can be situated in multiple countries across the globe. However, further information pertaining to the identity of the taxpayers would have to be requested when dealing with these blockchains due to the pseudonymous nature of blockchains. Therefore, an inherent problem in cryptocurrencies pertains to the fact that there is no central authority (from which data can be requested) in a public blockchain, and this could prove challenging to SARS.

3. Cross border transactions

The digital nature of cryptocurrencies combined with the possibility that nodes in the peer-to-peer computer network can be situated in any country in the world means that there is a good probability that cryptocurrency transactions will result in cross border transactions. That can prove challenging from a verification perspective in that SARS would have to resort

to exchange of information agreements with the relevant country in order to request information.

4. Certain cryptocurrency investors will remain anonymous and will fall outside of the tax net

Private cryptocurrencies (altcoins) such as Dash and Monero were created with the specific intention of high anonymity and require two steps in order to purchase these types of altcoins. First, cryptocurrencies are bought via a coin exchange using fiat or traditional cash, and thereafter, the cryptocurrencies can be exchanged for the private altcoin (private cryptocurrencies). The challenge regarding private cryptocurrencies relates to the two-step transaction to purchase altcoins. The real identity of the user can be traced through the coin exchange as the user (taxpayer) must register with the exchange, however, the traceability of the user will diminish when the Bitcoins are exchanged for the more private cryptocurrency. At present, there are no analytical tools available to trace the taxpayer after the purchase of the private altcoins such as Monero or Dash.

5. No specific laws governing cryptocurrencies

There are no regulatory framework pertaining to cryptocurrency trading in South Africa. The lack of a regulatory framework poses a problem for SARS in that there is no regulatory body that cryptocurrency exchanges, administrators or miners need to register with. This places a limit on the resources from which information pertaining to cryptocurrency investors can be sourced.

6. No registration required before transacting using online peer-to-peer markets

Online peer-to-peer markets are unregulated and allow users to exchange cryptocurrencies for traditional currencies without the need to register, thereby bypassing Know Your Customer regulations. This creates a risk for SARS and the other BRICS countries as that means that there is no way of tracking the identity of the taxpayer as these online markets will not have record of who is transacting. This leads to the risk that some cryptocurrency investors will not be identified which can in turn lead to tax evasion.

7. Challenges with examination of cryptocurrency mixers (tumblers)

Cryptocurrency tumblers or cryptocurrency mixers are used by taxpayers to hide the identity of the cryptocurrency owners. Cryptocurrency investors pool their funds together in order to make the funds less traceable. When cryptocurrencies are mixed, the taxpayer sends money using an anonymous service that will on send the same amount in cryptocurrencies belonging to other taxpayers (less a fee). Thus, in using cryptocurrency tumblers and mixers,

taxpayers are knowingly trying to evade tax by making it more difficult for tax authorities to trace these types of cryptocurrency transactions.

8. Exchange of cryptocurrencies for cash

Another verification problem is that of taxpayers who exchange physical cash for cryptocurrencies through face-to-face interaction. This is because usually, transactions involving physical cash can be difficult to verify as the transaction can only be traced when the blockchain registers the change in ownership. Therefore, information pertaining to such transactions can only be requested from either the seller or the buyer, which can prove challenging if SARS is not even aware of that the transaction took place).

9. SARS and the potential lack of knowledge skills and technology

Another verification problem lies in the possible lack of knowledge, skills and technology available to verify such transactions. This area of taxation is relatively new as SARS has not provided any guidance relating to the taxation of cryptocurrencies before April 2018. Therefore, there is a possibility that SARS might not have the knowledge, skills or technology to verify cryptocurrency transactions.

Question: Do other member countries of the BRICS face similar difficulties?

Answer:

The abovementioned challenges that have been highlighted will relate to tax authorities worldwide as the difficulties presented are inherent in all cryptocurrencies due to their characteristics. However, the findings suggest that India and Brazil do not face similar difficulties. China has banned cryptocurrencies in their country, and therefore does not face any verification challenges as they are not following up on cryptocurrency tax risks at present. Russia in the process of drafting cryptocurrency taxation legislation, but the findings suggest that their tax authorities are not addressing the taxation of cryptocurrency transactions yet.

Question: What are the BRICS countries doing to address the problem? What can South Africa learn from the solutions implemented by the other countries?

Answer:

During this study, it was found that cryptocurrency exchanges formed part of a survey operations campaign conducted by the Income Tax Department in India where the investors' identities, transactions, bank accounts and counter-parties were requested. After comparing this information to the investors' tax returns, it was found that investors did not declare "advance tax" on cryptocurrency gains. This led to the issuing of notices to these taxpayers to

inform them of the tax implications on such cryptocurrency gains. The Department of Federal Revenue of Brazil in Brazil has published a draft proposal wherein all cryptocurrency exchanges based in Brazil would be required to submit detailed financial reports on all cryptocurrency related operations each month.

Therefore, if SARS follows the solutions implemented by India and Brazil, the powers contained in section 26 and section 27 of the TAA will enable SARS to request financial information from South African based cryptocurrency exchanges in order to determine the identities of the investors and the materiality of the transactions conducted. SARS will be able to conduct a risk screening exercise by examining the taxpayers' income tax returns in order to determine if any gains (or losses) from cryptocurrency transactions have been declared. If significant risk is detected, then those affected taxpayers can undergo further risk profiling in order to be referred for audits. The Russian tax authorities have not yet implemented any measures to deal with cryptocurrencies and cryptocurrencies have been banned in China.

Question: Are information gathering powers of SARS on par with those of the tax authorities in the other BRICS countries when it comes to gathering information?

Answer:

The answer is yes. Each of the BRICS countries, including South Africa, can obtain information from third parties such as cryptocurrency exchanges using provisions in tax legislation. In addition, each of the BRICS countries have entered into exchange of information agreements such as automatic exchange of information agreements, country by country reporting and double taxation agreements with other countries. In addition, India can request information from countries where no double taxation treaty has been signed through their mutual legal assistance treaties with those countries.

Question: What other measures can be taken by SARS to address verification challenges

Answer:

This question will be answered by first discussing mechanisms that are can be implemented using powers that are available in the TAA, suggestions taken from what the other BRICS tax authorities have or are considering implementing and other measures that can be implemented by SARS.

Recommendation 1: Use of forensic analytical tools to identify taxpayers and track and trace cryptocurrency transactions

Various companies have developed software which can aid in analysing the blockchain and identifying and tracking users and their behaviour on the blockchain. Based on the success attained by forensic software companies, it is recommended that SARS could consider entering into a contract with a software cryptocurrency analysis company in order to test how effective this tool can be in the South African tax environment. Alternatively, SARS could develop its own cryptocurrency analysis tool.

Recommendation 2: Third party data requests from South African cryptocurrency exchanges

SARS can consider following the methods employed by the Brazilian and Indian tax authorities and request third party data from South African cryptocurrency exchanges in terms of sections 26 and 27 of the TAA.

Recommendation 3: Tax Clearance Certificates and improvements to be made to FIA-001

It is suggested that the tax clearance application form be enhanced to make specific references to cryptocurrencies, the cryptocurrency exchange and the country in which the investment will be made.

Recommendation 4: Tax clearance certificate requirement for cryptocurrency investors

At present, it is possible to invest in cryptocurrencies abroad by applying for a tax clearance certificate from SARS. It is recommended that a new tax clearance certificate application form be developed which specifically addresses taxpayers who intend investing in cryptocurrencies both locally and abroad. Therefore, taxpayers who invest in cryptocurrencies should request a tax clearance certificate from SARS before doing so.

Recommendation 5: Special voluntary disclosure program

SARS can implement a special voluntary disclosure program which will give taxpayers an opportunity to declare their income from cryptocurrency transactions.

Recommendation 6: Enhancement of the income tax return for individuals, trusts and companies

SARS could consider enhancing the income tax returns for individuals, trusts and companies to cater for cryptocurrency transactions.

Recommendation 7: Public Education Programs

SARS can consider hosting workshops and education programs to educate the public on cryptocurrencies and how to disclose these transactions in their income tax returns.

Recommendation 8: Training of SARS staff

SARS could consider educating their staff on cryptocurrencies and the associated risks and challenges. Alternatively, SARS might be required to employ staff with specialised skills to analyse the information.

6.3 Conclusion

During the research process, it was found that South Africa is on the same level as the other BRICS countries in terms of information gathering powers which can assist in verification of cryptocurrency transactions. SARS will be able to use existing processes such as requesting information through third party returns in terms of section 26 and section 27 of the TAA. The BRICS countries have the same powers to request information. Therefore, this study suggests that SARS and the other BRICS countries can successfully address most verification challenges by requesting data from cryptocurrency exchanges.

Furthermore, the latest developments in the blockchain analytical software arena has helped to make cryptocurrencies less anonymous. Nonetheless, it will still be important for tax auditors to understand how cryptocurrencies function when auditing the various types of cryptocurrencies. However, the nature of cryptocurrencies themselves, specifically the highly anonymous nature of altcoins such as Monero and Dash, cryptocurrency mixers, the exchange of physical cash for cryptocurrencies as well as unregulated, online peer-to-peer exchange websites (which require no registration) will remain a challenge to SARS, other tax authorities in the BRICS group of nations as well as the rest of the world.

REFERENCES / BIBLIOGRAPHY

BIBLIOGRAPHY

South African statutes

Financial Intelligence Centre Act 38 of 2001

Income Tax Act No. 58 of 1962, as amended

South African Reserve Bank Act 90 of 1989

South African Revenue Service Act No 34 of 1997

Tax Administration Act No 28 of 2011

Brazilian statutes

Bill of Law No. 2,303 of 2015

Brazilian National Tax Code Law No. 5,172/1996

Decree-Law n. 4.657/42, article 17

Russian statutes

The Tax Code of the Russian Federation, Part 1

Federal Law N 173-F2. (2014)

Draft law "*On Digital Financial Assets*" (not yet passed into legislation)

Indian statutes

Income Tax Act 1961

Chinese statutes

Law of the People's Republic of China on the Administration of Tax Collection

Legal notices: Brazil

Brazilian Central Bank. (2014). *Policy Statement No. 25,306*. Available at https://www.bcb.gov.br/pom/spb/ing/IComunicado25306.pdf. (Accessed 18 December 2018).

Brazilian Central Bank. (2017). *Communique 31,379*. Available at https://www.bcb.gov.br/ingles/norms/Virtual-currencies-Communique-31379-English.pdf. (Accessed 18 December 2018).

Brazilian Securities and Exchange Commission (2018). *Statement No. 1*. Available at http://www.cvm.gov.br/export/sites/cvm/legislacao/oficios-circulares/sin/anexos/oc-sin-0118.pdf

Legal notices: India

Reserve Bank of India. (2013). *RBI cautions users of Virtual Currencies against Risks*. Available at https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=30247. (Accessed 17 December 2018).

Reserve Bank of India. (2018). *Prohibition on dealing in Virtual Currencies*. Available at https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11243. (Accessed 18 December 2018).

Reserve Bank of India. (2018). *Statement on Developmental and Regulatory Policies*. Available at https://rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=43574. (Accessed 17 December 2018).

Legal notices: China

Peoples Bank of China. *Notice on Precautions Against the Risks of Bitcoins*. Available at http://www.miit.gov.cn/n1146295/n1652858/n1652930/n3757016/c3762245/content.html. Accessed 21 December 2018).

Legal notices and reports: South Africa

Davis Tax Committee. (2015*). Davis Tax Committee: Second Interim Report on Base Erosion and Profit Shifting in South Africa*. Page 31. Available at http://www.taxcom.org.za/docs/New_Folder3/3%20BEPS%20Final%20Report%20-%20Action%201.pdf.(Accessed 09 December 2018).

Financial Intelligence Centre. *Guidance Note 3A. Guidance for accountable institutions on client identification and verification and related matters.* Page 3. Available at https://www.fic.gov.za/Documents/130328%20GUIDANCE%20NOTE%203A.pdf. (Accessed 28 December 2018).

National Treasury Department. (2014). *User Alert: Monitoring of Virtual Currencies*. Available at http://www.treasury.gov.za/comm_media/press/2014/2014091801%20-%20User%20Alert%20Virtual%20currencies.pdf. (Accessed 09 December 2018).

South African Government. (2018). *Explanatory Memorandum on the Taxation Laws Amendment Bill, 2018 (Draft)*. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Drafts/LAPD-LPrep-Draft-2018-50a%20-%202018%20DRAFT%20EXPLANATORY%20MEMORANDUM%20TO%20THE%202018%20DRAFT%20TLAB.pdf. (Accessed 09 December 2018).

South African Government. (2016). *Government Gazette No. R.1598*. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/SecLegis/LAPD-LSec-Reg-2016-07%20-%20Regulation%20R1598%20GG40516%20-%2023%20December%202016.pdf. (Accessed 16 December 2018).

South African Reserve Bank (2014). *National Payments System*. Page 2. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).

South African Revenue Service. (2018). *Comprehensive Guide to Capital Gains Tax (Issue 7)*. Page 49. Available at http://www.sars.gov.za/AllDocs/OpsDocs/Guides/LAPD-CGT-G01%20-%20Comprehensive%20Guide%20to%20Capital%20Gains%20Tax.pdf. (Accessed 12 December 2018).

South African Revenue Service. (2018). *SARS' stance on the tax treatment of cryptocurrencies. Available at http://www.sars.gov.za/Media/MediaReleases/Pages/6-April-2018---SARS-stance-on-the-tax-treatment-of-cryptocurrencies-.aspx. (Accessed: 17 May 2018).*

South African Revenue Service. (2019). *Statement on consultation paper on crypto assets.* Available at http://www.sars.gov.za/AllDocs/LegalDoclib/DiscPapers/LAPD-LPrep-DP-2019-01a%20-%20Joint%20media%20statement_crypto%20assets%20consultation%20paper%20vfinal.pdf.(Accessed 23 January 2019).

Court cases

United States of America v Netyksho, V. B. and 11 others. Available at https://www.justice.gov/file/1080281/download. (Accessed 28 December 2018).

Books

Antonopoulos, Andreas M. (2014). '*Mastering Bitcoin: Unlocking Digital Cryptocurrencies'*. First Edition. California. O'Reilly Media Incorporated.

Koekemoer, A., van Zyl, L., Wilcocks, J.S., de Swardt & R. D. (2017). *Silke: South African Income Tax, Volume 2*. Page 1120. South Africa. Lexis Nexis Incorporated.

Online resources

Bell, K. (2017). *Countries' takes on Bitcoin and taxes vary widely*. Don't mess with taxes.com, 15 September 2017. Available at https://www.dontmesswithtaxes.com/2017/09/countries-takes-on-bitcoin-and-taxes-vary-widely.html. (Accessed 21 December 2018).

Berman, A. (2018). *Brazilian Tax Regulator Publishes Draft on Cryptocurrency Taxation*. Coin Telegraph, 02 November 2018. Available at https://cointelegraph.com/news/brazilian-tax-regulator-publishes-draft-on-cryptocurrency-taxation. (Accessed 18 December 2018).

Bisq. (2018). *Exchange, Decentralized*. Available at https://bisq.network/. (Accessed 29 December 2018).

Bitcoinzar (2018). *Buy bitcoin in South Africa from a bitcoin exchange*. Available at https://www.bitcoinzar.co.za/buy-bitcoin-in-south-africa/. (Accessed 08 December 2018).

BRICS (2018). *South Africa in BRICS*. Available at http://www.brics2018.org.za/south-africa-brics (Accessed 09 December 2018).

BRICS (2018). *What is BRICS?* Available at http://www.brics2018.org.za/what-brics. (Accessed 09 December 2018).

BRICS (2018). *Economic Co-operation*. Available at http://www.brics2018.org.za/economic-cooperation. (Accessed 09 December 2018). Also see South African Revenue Service (2018). *SARS to host BRICS Tax Experts and Heads of Tax Administration*. Available at http://www.sars.gov.za/Media/MediaReleases/Pages/13-June-2018---SARS-to-host-BRICS-Tax-Experts-and-Heads-of-Tax-Administrations.aspx. (Accessed 01 December 2018).

Butchko, S. (2018). *How many Bitcoins are left?* Coincentral, 03 January 2018. Available at https://coincentral.com/how-many-bitcoins-are-left/. (Accessed 17 December 2018).

Caivicchioli, M. (2019). Russia: draft law for crypto regulation within two months. Available at https://cryptonomist.ch/en/2019/01/14/russia-draft-law-crypto-regulation/. The Cryptonomist, 14 January 2019. (Accessed 29 January 2019).

Chainalysis. (2018). *Building trust in blockchains*. Chainalysis.com. Available at https://www.chainalysis.com/. (Accessed 28 December 2018).

Chainalysis. (2018). *Mapping The Universe Of Bitcoin's 460 Million Addresses*. Chainalysis.com. Available at https://blog.chainalysis.com/reports/bitcoin-addresses. (Accessed on 28 December 2018).

Chainalysis. (2018). *Products*. Chainalysis.com. Available at https://www.chainalysis.com/#products. (Accessed on 28 December 2018).

Chainalysis. (2018). *How Our Cryptocurrency Transaction Monitoring Evolved in 2018*. Chainalysis.com. Available at https://blog.chainalysis.com/reports/kyt-2018-review. (Accessed 28 December 2018).

China.org.cn. *Law of the People's Republic of China on the Administration of Tax Collection*. Available at http://www.china.org.cn/business/laws_regulations/2007-06/22/content_1214782.htm. (Accessed 31 December 2018).

CoinATMRadar. (2018). *Bitcoin ATM's in South Africa*. Available at https://coinatmradar.com/country/197/bitcoin-atm-south-africa/. (Accessed 16 December 2018).

Egorova, K. (2018). *Crypto exchanges explained*. Coin Telegraph, 10 July 2018. Available at https://cointelegraph.com/explained/crypto-exchanges-explained. (Accessed 19 December 2018).

Elliptic. (2018). *Bitcoin Mixers: Assessing Risks in Bitcoin Transactions*. Elliptic, 07 May 2018. Available at https://www.elliptic.co/our-thinking/bitcoin-mixers-assessing-risk-bitcoin-transactions. (Accessed 28 December 2018).

Elliptic. (2018). *Cryptocurrency Forensics*. Elliptic.com. Available at https://www.elliptic.co/what-we-do/bitcoin-forensics. (Accessed 28 December 2018).

Elliptic. (2018). *What we do*. Elliptic.com. Available at https://www.elliptic.co/what-we-do. (Accessed 28 December 2018).

EY Tax Insights. (2018). *Brazil: the Public Digital Bookkeeping System (SPED)*. EY Tax Insights. Available at https://taxinsights.ey.com/archive/archive-articles/brazil-the-public-digital-bookkeeping-system-sped.aspx. (Accessed 30 December 2018).

Federal Tax Service of Russia. (2018). *International Co-operation*. Available at https://www.nalog.ru/eng/international_cooperation/. (Accessed 31 December 2018).

Federal Tax Service of Russia. (2018). *Report on financial accounts of Russian taxpayers*. Available at https://www.nalog.ru/eng/exchinf/rfart/. (Accessed 31 December 2018).

Financial Action Task Force. (2014). *Virtual Currencies: Key Definitions and Potential AML/CFT Risks*. Page 11. Available at http://www.fatf-gafi.org/publications/methodsandtrends/documents/virtual-currency-definitions-aml-cft-risk.html. (Accessed 06 December 2018).

FinancialBuzz.com News Commentary. (2018). *Cryptocurrency prices rebound across the board*. FinancialBuzz.com, 13 April 2018. Available at https://www.prnewswire.com/news-releases/cryptocurrency-prices-rebound-across-the-board-679629933.html. (Accessed 08 December 2018).

Finder.com. (2018). *Binance exchange – January 2019 review*. Finder.com, 28 December 2018. Available at https://www.finder.com/binance-exchange-review. (Accessed 28 December 2018).

Frankenfield, J. (2018). *Proof of work*. Investopedia, 30 July 2018. Available at https://www.investopedia.com/terms/p/proof-work.asp. (Accessed 12 December 2018).

Frankenfield, J. (2017). *Breaking down Bitcoin Exchange*. Available at https://www.investopedia.com/terms/b/bitcoin-exchange.asp. (Accessed 16 December 2018).

Frascino, G.L., Bueno, I., Filho, M.; Filho, V., Advogados, M., Vilardi, C.S. & Advogados, V. (2018). *Tax litigation in Brazil: overview*. Thomson Reuters Practical Law. Available at https://uk.practicallaw.thomsonreuters.com/2-624-3925?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1&bhhash=1#co_anchor_a400797. (Accessed 30 December 2018).

Gogo, J. (2018). *Brazil's tax authority goes after cryptocurrency profits*. Bitcoin.com, 03 November 2018. Available at https://news.bitcoin.com/brazils-tax-authority-goes-after-cryptocurrency-profits/. (Accessed 18 December 2018).

Iacia, C. (2013). *Brazilian Tax in a context*. Page 7. Price Waterhouse Coopers, 2013. Available at https://www.pwc.com.br/pt/publicacoes/servicos/assets/assessoria-tributaria-societaria/2013/pwc-brazilian-tax-context.pdf. (Accessed 30 December 2018).

Indian Income Tax Department. (2015). *Foreward*. Available at https://www.incometaxindia.gov.in/Documents/exchange-of-information/EOI-Manual-2015.pdf. (Accessed 30 December 2018).

Indian Income Tax Department. (2018). *Implementation of the Right to Information Act 2005*
in Income Tax Department. Available at https://www.incometaxindia.gov.in/Pages/right-to-information/proactive-disclosure.aspx. (Accessed 29 December 2018).

Indian Income Tax Department. (2015). *Manual on Exchange of Information*. Available at https://www.incometaxindia.gov.in/Documents/exchange-of-information/EOI-Manual-2015.pdf. (Accessed 30 December 2018).

Investopedia. (2018). *Proof of stake*. Available at https://www.investopedia.com/terms/p/proof-stake-pos.asp. (Accessed 12 December 2018).

Investopedia. (2018). *Special Administrative Region*. Available at https://www.investopedia.com/terms/s/special-administrative-region.asp. (Accessed 22 December 2018).

IRS Chainalysis Contract. Available at https://www.documentcloud.org/documents/3935924-IRS-Chainalysis-Contract.html.

JD Supra. (2018). *The IRS is on to Crypto*. JD Supra.com, 26 February 2018. Available at https://www.jdsupra.com/legalnews/the-irs-is-on-to-crypto-74544/. (Accessed 31 January 2019).

Jose, T. (2018). *Cryptocurrency regulation in India*. Indian Economy.net, 07 January 2018. Available at https://www.indianeconomy.net/splclassroom/cryptocurrency-regulation-in-india/. (Accessed 18 December 2018).

Khatwani, S. (2018). *What does Double spending mean*? Coinsutra, 11 October 2018. Available at https://coinsutra.com/bitcoin-double-spending/. (Accessed 17 December 2018).

Luno. (2018). *Luno helps you buy Bitcoin and Ethereum in three easy steps*. Luno.com.Available at https://www.luno.com/en/. (Accessed 08 December 2018).

McKane, J. (2018). *South Africa's cryptocurrency industry is booming*. Available at https://mybroadband.co.za/news/cryptocurrency/266863-south-africas-cryptocurrency-industry-is-booming.html, My Broadband, 03 July 2018. (Accessed 16 December 2018).

McKinlay, J (2018). *Blockchain: background, challenges and legal issues*. DLA Piper.com, 02 February 2018. Available at https://www.dlapiper.com/en/denmark/insights/publications/2017/06/blockchain-background-challenges-legal-issues/. Accessed 01 February 2019.

Mybroadband. (2018). *South Africans could face trouble for buying Bitcoin from offshore exchanges*. My Broadbad, 23 May 2018. Available at https://mybroadband.co.za/news/cryptocurrency/261155-south-africans-could-face-trouble-for-buying-bitcoin-from-offshore-exchanges.html. (Accessed 18 December 2018).

Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System*. Available at https://bitcoin.org/bitcoin.pdf. (Accessed 17 December 2018).

Organisation for Economic Co-operation and Development (2015). *Addressing the Tax Challenges of the Digital Economy, Action 1 - 2015 Final Report*. Page 44. Available at https://read.oecd-ilibrary.org/taxation/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report_9789264241046-en#page44. (Accessed 09 December 2018).

Organisation for Economic Co-operation and Development (2015). *Addressing the Tax Challenges of the Digital Economy, Action 1 - 2015 Final Report*. Page 44. Available at https://read.oecd-ilibrary.org/taxation/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report_9789264241046-en#page44. (Accessed 09 December 2018).

Organisation for Economic Development. (2018). *Blockchain Technology and Corporate Governance*. Page 7. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/CA/CG/RD(2018)1/REV1&docLanguage=En. (Accessed 08 December 2018).

Organisation for Economic Development (2018). *The OECD Blockchain Primer*. Page 6. Available at https://www.oecd.org/finance/OECD-Blockchain-Primer.pdf. (Accessed 06 December 2018).

Organisation for Economic Co-operation and Development. (2012). *Update to Article 26 of OECD Model Tax Convention and its commentary*. Available at https://www.oecd.org/ctp/exchange-of-tax-information/120718_Article%2026-ENG_no%20cover%20(2).pdf (Accessed 18 December 2018).

Oxford. (2018). Definition of "*Verification*". Oxford Dictionaries.com. Available at https://en.oxforddictionaries.com/definition/verification. (Accessed 29 January 2019).

Pauw, C. (2018). *How Cryptocurrencies prices work, Explained*. Coin Telegraph, 24 July 2018. Available at https://cointelegraph.com/explained/how-cryptocurrency-prices-work-explained. (Accessed 08 December 2018).

Peaster, WM. (2018). *Bitcoin, Cryptocurrency and Taxes: What You Need to Know*. Blockonomi.com, 26 January 2018. Available at https://blockonomi.com/cryptocurrency-taxes/. (Accessed 21 December 2018)

Reiff, N. (2018) *Were there cryptocurrencies before bitcoin?* Investopedia, 03 April 2018. Available at https://www.investopedia.com/tech/were-there-cryptocurrencies-bitcoin/. (Accessed 22 December 2018).

Renner, P. (2018). *Brazil – Know Your Customer (KYC) Rules*. Available at http://kycmap.com/category/brazil/. (Accessed 31 January 2019).

Revoredo, T. (2017). *Legal "Status" of Cryptocurrencies in Brazil*. Medium.com, 07 November 2017. Available at https://medium.com/@tatianarevoredo/legal-status-of-cryptocurrencies-in-brazil-273b712a0e50. (Accessed 21 December 2018).

Roberts, J.J. (2017). *The IRS Has Special Software to Find Bitcoin Tax Cheats*. Fortune.com, 22 August 2017. Available at http://fortune.com/2017/08/22/irs-tax-cheats-bitcoin-chainalysis/. (Accessed on 28 December 2018).

Robinson, T. (2018). *How the DOJ Indictment of Russian Hackers is Supported by Blockchain Analysis*. Elliptic.com. 24 July 2018. Available at https://www.elliptic.co/our-thinking/doj-indictment-russian-hackers-blockchain-analysis. (Accessed 28 December 2018).

Schincariol, L.B. Barreto, A.P., de Lemos, G.S., Theodoro, M.A. and Gomensoro, A. (2018). *Tax Controversy*. Thomson Reuters Practical Law. Getting the deal through.com, September 2018. Available at https://gettingthedealthrough.com/area/59/jurisdiction/6/tax-controversy-brazil/. (Accessed 30 December 2018).

Shah, S. (2017). *South Africa leads the way in Know Your Customer (KYC) compliance*. Thomson Reuters, 11 April 2017. Available at https://blogs.thomsonreuters.com/answerson/south-africa-leads-way-know-customer-kyc-compliance/. (Accessed 29 December 2018).

South African Reserve Bank (2014). *National Payments System*. Available at https://www.resbank.co.za/RegulationAndSupervision/NationalPaymentSystem(NPS)/Legal/Documents/Position%20Paper/Virtual%20Currencies%20Position%20Paper%20%20Final_02of2014.pdf. (Accessed 01 December 2018).

South African Revenue Service. (2018). *Double Taxation Agreements (DTAs) & Protocols*. Available at http://www.sars.gov.za/Legal/International-Treaties-Agreements/DTA-Protocols/Pages/default.aspx. (Accessed 16 December 2018).

South African Revenue Service. *Exchange of Information Conventions / Agreements*. Available at http://www.sars.gov.za/Legal/International-Treaties-Agreements/Pages/Exchange-of-Information-Agreements-(Bilateral).aspx. (Accessed 16 December 2018).

South African Revenue Service. (2018). *External business requirements specification: Country- by- Country and Financial Data Reporting*. Page 14. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-EIA-CBC-2017-03%20-%20Final%20BRS%20on%20the%20OECD%20CbC%20Reporting.pdf. (Accessed 16 December 2018).

South African Revenue Service. (2018). *Glossary*. Available at http://www.sars.gov.za/Pages/Glossary-F.aspx. (Accessed 08 December 2018).

South African Revenue Service. (2015). Government Gazette No. 93. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-EIA-2014-04%20-%20FATCA%20IGA.pdf. (Accessed 21 January 2019).

South African Revenue Service. *How does CRS reporting work*. Available at http://www.sars.gov.za/ClientSegments/Businesses/Mod3rdParty/AEOI/Pages/How-does-CRS-reporting-work.aspx. (Accessed 16 December 2018).

South African Revenue Service. (2018). *SARS Helps you eFile*. Available at http://www.sars.gov.za/ClientSegments/Individuals/Need-Help/Pages/Help-you-eFile.aspx. (Accessed 29 December 2018).

South African Revenue Service (2018). *SARS Annual Performance Plan 2017/2018*. Page 11 and 12. Available at http://www.sars.gov.za/AllDocs/SARSEntDoclib/Ent/SARS-Strat-19%20-%20SARS%20Annual%20Performance%20Plan%202017%20to%202018%20-%2015%20June%202017.pdf. (Accessed 16 December 2018).

South African Revenue Service. *SARS FAQ Guide Common Reporting Standard*. Available at http://www.sars.gov.za/AllDocs/OpsDocs/Guides/LAPD-TAdm-G10%20-%20SARS%20Common%20Reporting%20Standard%20FAQ.pdf. (Accessed 16 December 2018).

South African Revenue Service. (2018). *Third Party Data Submission to SARS*. http://www.sars.gov.za/ClientSegments/Businesses/Mod3rdParty/Pages/default.aspx. (Accessed 18 December 2018).

South African Revenue Service. (2018). *What must be submitted?* Available at http://www.sars.gov.za/ClientSegments/Businesses/Mod3rdParty/Pages/default.aspx. (Accessed 15 December 2018).

South African Revenue Service. (2018). *Summary of all Agreements for the Avoidance of Double Taxation*. Available at http://www.sars.gov.za/AllDocs/LegalDoclib/Agreements/LAPD-IntA-DTA-2013-01%20-%20Status%20Overview%20of%20All%20DTAs%20and%20Protocols.pdf. (Accessed 16 December 2018).

South African Revenue Service (2018). *The taxes we collect*. Available at http://www.sars.gov.za/about/howtax/Pages/default.aspx. (Accessed: 17 May 2018).

South African Reserve Bank (2018). *Virtual Currencies / Crypto-currencies*. Available at https://www.resbank.co.za/RegulationAndSupervision/FinancialSurveillanceAndExchangeControl/FAQs/Pages/VirtualCurrenciesCryptocurrencies.aspx. (Accessed: 01 December 2018).

South African Reserve Bank. (2018). *Virtual Currences / Cryptocurrencies*. Available at https://www.resbank.co.za/RegulationAndSupervision/FinancialSurveillanceAndExchangeControl/FAQs/Pages/VirtualCurrenciesCryptocurrencies.aspx. (Accessed 08 December 2018).

State Administration of Taxation of The People's Republic of China (SAT) website. (2018). *Exchanges and Cooperation*. Available at http://www.chinatax.gov.cn/eng/n2367741/index.html. (Accessed 31 December 2018).

Tassev, L. (2018). *The Daily: Japan Calls All Coins 'Crypto Assets', Russia Defines Cryptocurrency as Property*. Bitcoin.com, 15 December 2018. Available at https://news.bitcoin.com/the-daily-japan-calls-all-coins-crypto-assets-russia-defines-cryptocurrency-as-property/. (Accessed 30 December 2018).

The Law Library of Congress. (2018). *Regulation of cryptocurrency around the world*. Available at https://www.loc.gov/law/help/cryptocurrency/world-survey.php. (Accessed 23 December 2018).

The Law Library of Congress. (2018). *Regulation of Cryptocurrency*. https://www.loc.gov/law/help/cryptocurrency/brazil.php). (Accessed 18 December 2018).

The Times of India. (2018). *I-T will tax bitcoin trade; has issued few lakh notices: CBDT*. The Times of India, 02 February 2018.Available at https://timesofindia.indiatimes.com/business/india-business/i-t-will-tax-bitcoin-trade-has-issued-few-lakh-notices-cbdt/articleshow/62755763.cms. (Accessed 18 December 2018).

Wikipedia. (2018). *Blockchain*. Available at https://en.wikipedia.org/wiki/Blockchain. (Accessed 06 December 2018).

Wikipedia. (2018). *Special administrative regions of China*. Available at https://en.wikipedia.org/wiki/Special_administrative_regions_of_China. (Accessed 18 December 2018).

Wikipedia. (2018). *Virtual private network*. Available at https://en.wikipedia.org/wiki/Virtual_private_network. (Accessed 28 December 2018).

Woo, W. *Russia: Cryptocurrency users must calculate own tax*. Available at https://bitcoinist.com/russia-finance-ministry-says-cryptocurrency-users-must-work-tax/. Bitcoinist.com. 07 June 2018. (Accessed 31 December 2018). See also http://mvf.klerk.ru/nb/605_08.htm. (Accessed 31 December 2018).

Wu, Y. (2017). *Bitcoin Exchanges Ordered to Formulate Non-Risk Clearance Plan and Shut Down by End of September* (Updated), Caixin (Sept. 15, 2017), http://finance.caixin.com/2017-09-15/101145796.html (in Chinese), archived at https://perma.cc/NQ4S-MDBL. (Accessed 21 December 2018).

Wu Y. (2018*). China Clamps Down on Preferential Treatment for Bitcoin Mines*. Caixinglobal.com, 04 January 2018. Available at https://www.caixinglobal.com/2018-01-

04/china-clamps-down-on-preferential-treatment-for-bitcoin-mines-101193622.html. (Accessed 21 December 2018).

Videos

Federal Tax Service of Russia. (2017). *The FTS of Russia Overview (video)*. Available at https://www.nalog.ru/eng/test/. (Accessed 31 December 2018).

Wes, A. (2018). Interviewed by Leanne Manas for Morning Live, SABC 2, 9 April 2018. Available at https://www.youtube.com/watch?v=bYW_LJZsWiU. (Accessed 01 December 2018).

Theses / Dissertations

Marques, EG. *Cryptocurrencies: Threats and Investigative Opportunities for Law Enforcement*. Page 42. Charles University / University of Glasgow. Degree of MSc International Security, Intelligence and Strategic Studies. Available at https://is.cuni.cz/webapps/zzp/download/120311105. (Accessed 28 December 2018).