The Development of Cryptocurrencies as a Payment Method in South Africa

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Abstract

The use of currency as a medium of exchange for goods and services is essential in our daily lives. The concept of currency evolved from bartering to the use of coins and notes and now to the current digital age as the continuation of society's advancement has led to a new series of technological innovations with regard to payment methods around the world. Methods of payment are built on various platforms such as mobile phones, the internet, and digital storage cards. These payment systems have fostered the development and growth of fintech companies such as Paypal, Apple Pay, Samsung Pay, Alipay and others. The latest development is the use of blockchain to facilitate payments, more specifically the use of cryptocurrencies to facilitate transactions. The most popular cryptocurrency is bitcoin. Payments form part of commercial contracts which parties have a legal obligation to perform. South Africa has a legislative framework for payment systems wherein users have rights and obligations. This article will discuss the development of currency in South Africa and determine whether the current legislative framework for payment systems is applicable to cryptocurrencies such as bitcoin.

Keywords

Cryptocurrency; bitcoin; payment systems; legal tender.

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1 Introduction

Fiat currency is money, including coins and paper notes, that a State government issues and that is circulated in its economy as legal tender, although no physical commodity backs it.[1] Government-issued currency is considered legal tender and is the payment method recognised by the legal system of a State. Fiat currency can be legally offered in payment of an obligation and a creditor will be obliged to accept it in settlement of the obligation.[2] Legal tender is thus a means of payment facilitating the exchange of goods or services. With legal tender, a person can purchase food, property, pay for services such as electricity, or service a car. In most, if not all States, the central bank has the sole right to issue currency for circulation. For example, in South Africa the *Currency and Banking Act* 31 of 1920 regulates legal tender, currency, exchanges and banking.[3] The Reserve Bank was established as the South African central bank.[4] The South African Reserve Bank (hereafter the SARB) has the sole right to issue currency in terms of the *South African Reserve Bank Act* 90 of 1989.[5]

Cryptocurrency is a new medium of payment that has been adopted at a rapid rate all around the world. The reasons for such vast growth are primarily due to the faults in the current fiat payment system.[6] Generally, these faults relate to fiat currency's centralised nature, high transaction costs, slow transactions, especially when making international transactions, and low confidence in governments and institutions managing the current monetary system.[7]

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1 Ritter 1995 *Am Econ Rev* 134-135.

2 Bollen 2013 *JBFLP* 14. Also see Lotz 2002 *JMCB* 563-588.

3 *Currency and Banking Act* 31 of 1920, as amended by the *Currency and Banking Act Amendment Act* 22 of 1923, and the *Currency and Banking (Further Amendment) Act* 26 of 1930.

4 Section 9 of the *Currency and Banking Act* 31 of 1920, as amended by the *Currency and Banking Act Amendment Act* 22 of 1923, and the *Currency and Banking (Further Amendment) Act* 26 of 1930.

5 Refer to s 14 of the *South African Reserve Bank Act* 90 of 1989 (SARB Act).

6 These faults relate to privacy, transparency, the convenience of using the current model, high transaction costs, slow transactions - especially when making international transactions and high fees for the use of such services, and a lack of confidence in governments and institutions managing the current fiat monetary system.

7 Nian and Chuen "Introduction to Bitcoin" 8-9.

The aim of this article is to discuss the development of currency in South Africa and determine whether the current legislative framework for payment systems is applicable to cryptocurrencies such as bitcoin. In order to achieve this objective, the remainder of the article is structured into five parts. The first part of the article discusses the development of the different payment methods in South Africa's legislative framework for payments. The second part discusses problems associated with current payment methods. The third part provides a background on cryptocurrency, notably bitcoin, as a payment method through blockchain technology and highlights the risks associated with this method of payment. The fourth part discusses whether cryptocurrencies fall within the ambit of the current legislative framework for payments in South Africa. The last part is the conclusion.

2 The development of different methods of payment

The development of methods of payment commenced with a system of bartering.[8] Bartering is a type of trade where goods or services are exchanged for a certain amount of other goods or services. No money is involved in the transaction - for example, a cow might be exchanged for a quantity of maize meal.[9] Goods could also be used to settle obligations. Three significant problems were associated with the bartering system. First, trade could occur only if each party had what the other sought. Second, purchase and sale transactions could not be separated, resulting in its being a simultaneous transaction. In other words, the sale or purchase of goods could not be deferred. The third major problem related to the perishability of some goods. If the owner of perishable goods could not trade his or her goods before expiry, they soon lost their value. For example, the goods of a fruit trader would soon reach their expiry date.[10]

The methods of payment evolved from bartering to the use of precious metals such as gold and silver as a medium of exchange.[11] This was more convenient than the bartering system. For example, travelling with ten gold coins to purchase maize meal was much convenient than travelling with cattle to exchange it for a maize meal. Further advantage relates to the ease of storing precious metals, as they lasted longer than certain goods such as fruits. Even though the use of precious metal as a medium of exchange was convenient, it also had disadvantages. These disadvantages include but are

8 Humphrey, Pulley and Vesala 1996 *JMCB* 914. Also see Hughes and Middlebrook 2015 *Yale J on Reg* 495-532.

9 Mishkin *Economics of Money* 63.

10 König 2001 http://www.ww.uni-magdeburg.de/fwwdeka/student/arbeiten/009.pdf 4.

11 McKinney *et al* "Counterfeiting in Cryptocurrency" 182.

not limited to the heavy weight of metal and the difficulty involved in transporting large quantities of metal for high-value commercial transactions such as the purchase of land. Security was also a concern for those who travelled long distances with many precious metals as it increased their risk of being robbed.[12]

The faults in using precious metals as a payment method led to the development of a new payment method, namely paper currency and coins.[13] Paper currency and coins are legal tender known as fiat currency, as it is backed by government fiat. Fiat currency is one of the most used methods of payment in most parts of the world. The value of fiat money arises from the perceived authority and creditworthiness of the issuer. These national currencies are issued and managed by central banks.[14] A central bank is an institution which controls the money supply of the country. If the monetary authorities are competent and honest, the fiat currency is relatively stable, reliable and efficient.

An objective of the SARB in developing the national payment system of South Africa is to develop an acceptable national payment system and payment methods and the legal framework within which the system may operate.[15] The banking industry has been encouraged to develop these payment instruments and systems. The current payment instruments and systems include various payment instruments such as cheques, electronic funds transfer mechanisms, debit orders, debit cards and credit cards.[16] The national payment system does not only involve transactions between banks but also includes the entire payment process, which includes institutions, agreements, procedures, rules and laws that come into play from the moment a party using a payment instrument issues an instruction to pay another person or a business, through to the final interbank settlement of the transaction in the books of the central bank. The national payment system provides a conducive environment that enables parties to exchange value to conduct business.

A significant development among payment methods was that of negotiable instruments such as bills of exchange, promissory notes, traveller's cheques and documentary letters of credit.[17] A bill of exchange was originally a

12 König 2001 http://www.ww.uni-magdeburg.de/fwwdeka/student/arbeiten/009.pdf 4.
13 König 2001 http://www.ww.uni-magdeburg.de/fwwdeka/student/arbeiten/009.pdf 5.
14 Lim "Facilitative Model for Cryptocurrency Regulation in Singapore" 363.
15 The legal foundation for the national payment system is derived from s 10(1)(c)(i) of the SARB Act and the *National Payment System Act* 78 of 1998 (the NPSA).
16 Refer to SARB *Review of the National Payment System Act*.
17 Also see Mishkin *Economics of Money* 57.

means by which a trader in one country paid a debt in another country without the transfer of paper currency.[18] For example, if A in South Africa owed money to C in Namibia, but himself was owed an equal sum of money by B in Namibia, A would order B to pay C, the debts would be cancelled, and the same effect would have been produced as if A had sent money to C, and B had sent money to A. A's written order to B, sent to C, and acceded to by B, was the first form of a bill of exchange. Now the geographic location of the traders is irrelevant. Cheques are a type of debt instrument payable on demand that allows transactions without using currency. They can also be written for any amount up to the balance in a debtors' account.[19] This simplifies the process when dealing with large transactions. For example, it reduces transportation costs and therefore, improves economic efficiency. In 2001 a total of 237 781 million cheques was presented for collection, amounting to R3 840 billion. In 2014 the amount decreased significantly to an estimated 13.8 million cheques presented for collection, amounting to R244 million. The reason for the decrease was the developments that had taken place.[20]

In South Africa, bills of exchange, cheques and promissory notes are regulated in terms of the *Bills of Exchange Act* 34 of 1964 and cheques are the most commonly used payment method amongst the three negotiable instruments. In line with the directive of SARB to develop payment systems, including payment methods, a cheque is drawn on a bank and payable on demand.[21] The rights and duties relating to cheque transactions are regulated in terms of the *Bills of Exchange Act*,[22] including the relationship between the bank and users of cheques. However, it is essential to note that negotiable instruments such as cheques are not a legal tender in terms of the *South African Reserve Bank Act* 90 of 1989 (the SARB Act) and a creditor is not obliged to accept a cheque as a form of payment.[23] The advancement in technology and payment systems has made it more

18 Usher 1914 *J Polit Econ* 568.

19 Since 1 January 2002 South African banks no longer accept any cheque in excess of R5 million for collection. The electronic transfer of funds has become the preferred method of payment, especially where large amounts are involved. The modest but nevertheless welcome growth in reported as well as unreported case law in the area of electronic fund transfers bears testimony to the practical consequences of the banks' decision of 2002, as well as to the general growth in popularity of this type of payment. For a discussion of the available South African case law dealing with electronic transfers, see Malan and Pretorius 2007 *THRHR* 1-22.

20 Roestoff "Payment Systems" 248-250.

21 A cheque needs to comply with the requirements of s 2(1) of the *Bills of Exchange Act* 34 of 1964.

22 *Bills of Exchange Act* 34 of 1964.

23 *Tjollo Ateljees (Edms) Bpk v Small* 1949 1 SA 856 (A) 876.

convenient for users to transact, resulting in such a decline in the use of cheques as to render them obsolete. To this end, the SARB, the Financial Sector Conduct Authority, the Payments Association of South Africa, and the Banking Association South Africa mutually agreed that from the 31st of December 2020 the use of cheques as a method of payment would cease in South Africa.[24]

The development of the computer and its associated technology has led to advances in methods of payment, with the use of cards generally replacing cash payments.[25] Different types of cards are used as a payment method, including cheque cards and various payment cards. A cheque card has no value, just like a credit and debit card. However, the cardholder's bank guarantees the payments made in this manner up to a maximum amount.

Concerning payment cards, there are three types of cards. The first type is bank-issued cards, including debit cards and credit cards. For example, there are ABSA, Nedbank, and Standard Bank-issued debit and credit cards. Credit card transactions are the dominant payment method used online today. Generally, if a person would like to make a purchase online with a credit card, the person has to insert his or her credit card details in the electronic document which is sent to the retailer. The retailer then communicates these credit card details and to a financial system involving processors, banks, credit card companies, and other intermediaries such as Visa and Mastercard.

These cards allow people to make purchases for goods or services. The purchases are paid for by reserving the amount from the person's bank account either immediately or at the end of a month.[26] The main difference between credit and debit cards is that credit card holders can extend their credit up to a given limit. Presently, credit cards and debit cards are the most widely used method of payment.[27] The second type is travel and entertainment cards. These cards are issued by a banking institution or a merchant service provider to a business. The reason for issuing travel and entertainment cards is so that a business can pay for hotels, airline tickets, car rentals and other business-related expenses. The third type is retail cards such as Edgars or Markham cards. Some retail cards allow a person

24 Staff Writer 2020 https://businesstech.co.za/news/banking/449591/south-africa-officially-ditches-cheques/. South African banks cannot issue or accept cheques any longer, but foreign cheques are still accepted.

25 Refer to Roestoff "Payment Systems" 248-304.

26 *Tjollo Ateljees (Edms) Bpk v Small* 1949 1 SA 856 (A) 876.

27 Besson *E-Money* 77.

to make purchases on credit whereby the consumer pays off the debt monthly but at a very high-interest rate, even exceeding those of banks in some instances. In 2001 186 657 credit card purchases were made, amounting to R54 million. In 2014 approximately 447 million credit card purchases were made amounting to R228 million.[28]

With technological advancements and the demand for a more convenient system, the development of electronic funds transfer occurred.[29] The term electronic funds transfer embraces any transfer of funds in which electronic techniques replace one or more steps in the process that were previously done by paper-based techniques. In the case of credit transfer, funds are "pushed" from the transferor's account to the account of the transferee. With a debit transfer, funds are "pulled" from the transferor's account to the account of the transferee. Users can use the internet to facilitate such transactions if the bank or other trusted financial institutions authorises them. Electronic funds transfer may also take place at the point of sale. This is the computer-age version of a cash transaction. It allows for retail payments to be affected by the transfer of funds electronically from the accounts of customers to the retailer’s account. It is much more efficient than payment systems based on paper because it reduces the cost of transferring money and therefore decreases the frequency of using cheques or paper money. With the development of technological advancements resulting in more convenient forms of payment, there is an increase in the volume of usage.[30]

These innovations relating to electronic payment systems have helped to reduce transaction costs and initiated the creation of digital money. Electronic payments have become popular in people’s daily lives. These alternative electronic payment methods have seen the development of payments through mobile devices.[31] Mobile devices equipped with Near Field Communication chips allow consumers to make payments at merchant shops without using a card. This method of payment is not limited to mobile devices. Some debit cards and credit cards have these chips embedded in them, allowing for contactless payments to occur. For example, if consumers want to make purchases for groceries, they do not have to swipe their debit or credit cards. They can simply place their

28 Roestoff "Payment Systems" 248-250.
29 Nian and Chuen "Introduction to Bitcoin" 6.
30 Roestoff "Payment Systems" 248-250.
31 Nian and Chuen "Introduction to Bitcoin" 6.

cards/mobile devices close to the merchant's data reader, if it has a Near Field Communication chip embedded in it, to facilitate the transaction.[32]

The continuing maturation of the internet has brought significant changes to the methods by which individuals make payments. Peer to peer systems like PayPal facilitate hundreds of millions of payments a year amongst individuals.[33] With peer to peer transactions, there is an intermediary framework. A company acts as an intermediary to facilitate the transaction between the buyer and the seller. The buyer sends his or her credit card details to this intermediary, which approves the transaction and notifies the seller. The intermediary will settle its balance with the seller at the end of each day. The advantage is that the buyer does not have to give the seller his or her credit card details, which could be a security risk. In some instances the buyer does not need to provide the seller with any form of identification, which improves the buyers' privacy.[34]

There is no universally accepted legal definition of an electronic fund transfer regarding the electronic payment method.[35] SARB published a position paper in 2009 on electronic money. SARB defined electronic money as the monetary value represented by a claim on the issuer and provided that electronic money is not a legal tender in terms of the SARB Act.[36] An electronic funds transfer is not an instrument of payment. Electronic fund transfers are a method of payment. This method of payment does not constitute payment by legal tender.[37] The transfer is executed by way of a series of mandates which eventually result in crediting the beneficiary's account and debiting the originator's account. Therefore, payments by electronic fund transfer entail the crediting and debiting of balances on account of the payer and payee. This process is done through trusted intermediaries and financial institutions such as banks.[38] These trusted intermediaries are specifically designated intermediaries who can access the ledger to facilitate transfers, and they are regulated. In the context of

32 Ondrus and Pigneur 2009 *ISeB* 347.
33 See Statista 2021 https://www.statista.com/statistics/277841/paypals-total-payment-volume/.
34 Sumanjeet 2009 Glob J Int Bus Res 1-20.
35 The United Nations Commission on International Trade provides a funds transfer in which one or more steps in the payment process that were previously done by paper-based techniques are now done by electronic techniques.
36 Section 10(1)(c) of the SARB Act.
37 Roestoff "Payment Systems" 263.
38 *Pestana v Nedbank Ltd* 2008 3 SA 466 (W).

electronic fund the transfers, the relationship between users and the bank or intermediaries is governed by contract.[39]

SARB has always taken a direct interest in the advances and the likely consequences of electronic payments, but realises that emerging electronic money products may require regulatory adjustment or intervention, which may arise from the need:

- to maintain the integrity, confidence and limit the risk in the national payment system;
- to assist other regulatory authorities in providing consumers with adequate protection from unfair practices, fraud and financial loss; and
- to assist law enforcement agencies in the prevention of criminal activity.

Electronic money-related schemes must not be in contravention of any legislation, including *inter alia*:

- the *South African Reserve Bank Act* 90 of 1989;
- the *National Payment System Act* 78 of 1998;
- the *Banks Act* 94 of 1990; and
- the *Financial Intelligence Centre Act* 38 of 2001.

The role banks play with the advancement of payment systems is vital. From negotiable instruments to electronic payment systems, banks have always played an active role in facilitating transactions. For example, the bank has a relationship between itself as the card issuer and the account holder, or between itself and the merchant. As a result of the current payment methods being centralised, the legal norms are easily defined to regulate different financial institutions.[40]

The system of fiat currency as a payment method evolved with the advancement of technology. This system requires trust in the central authorities in order to have value and to be efficient.[41] Rights and obligations arise with every transaction. It provides a means of payment acceptable to

39 Schulze 2007 *SA Merc LJ* 379.
40 Raymaekers 2015 *Journal of Payments Strategy and Systems* 30-40.
41 Berentsen and Schár 2018 *Fed Reserve Bank St Louis Rev* 1-16.

buyers and sellers even of different nationalities. Banks, central banks and other financial institutions are placed in a trusted position. These banks and financial institutions act as trusted intermediaries to update the electronic ledgers, which can be accessed only by trusted intermediaries. This is a fundamental principle of our double-entry accounting system, in which every debit must be equal to a corresponding credit. Commercially, this is how electronic cash payments occur. Payments are transferred online and offline using cryptographic protocols and blind signatures to protect their users' privacy.

The current payment methods available have faults, some of which are discussed in the next section.

3 Problems associated with the current payment methods

Despite the advantages that cheques held, there were also disadvantages. Cheques took a long time to process and the volume of the paper-flow involved in the cheque collection process was vast. It could take up to seven to fourteen working days before the banks credited the account, when a cheque was used. This might be an inconvenience if an obligation had to be paid promptly. Further, processing cheques was costly, and these costs had to be passed on to the consumer.[42] There was also a counterparty risk of non-payment, either due to insufficient funds or fraud.[43]

As alluded to above, paper currency and coins can be and are easily stolen. Large transactions such as purchasing 100 acres of land for R40 million in cash is not convenient in modern society. Paper currency is also expensive to produce and the cost of production is increasing due to security risks relating to criminals counterfeiting notes.[44] As a result, banks have developed other payment methods in the form of electronic payments in line with developing the National Payment System under the SARB directive. These payment methods enable payments to facilitate the circulation of money and include any instrument and procedures related to the system.[45]

Using cards as a form of payment also has issues. These issues relate to privacy, as credit card details and the details of the users are exposed to facilitate most of these transactions.[46] Some users are sceptical about using

42 Mishkin *Economics of Money* 63.
43 Mishkin *Economics of Money* 250-270.
44 Nian and Chuen "Light Touch of Regulation" 320.
45 Roestoff "Payment Systems" 248.
46 Bank for International Settlements 2014 https://www.bis.org/cpmi/publ/d118.pdf 11.

their credit cards to make online purchases, as a user is generally required to reveal private information such as his or her identity to trusted intermediaries for a transaction to be facilitated. High transaction costs and slow transactions, especially when making international transactions, and the high fees charged for such services are problematic.[47] The use of cards as a payment method exposes users to card fraud. For example, the magnetic strips can be copied and used to make withdrawals.

Electronic fund transfer is the next method of payment - more specifically, the transfer of funds from one bank account to another electronically. Electronic forms of payment have become increasingly popular, and are facilitated by banks and other financial institutions.[48] As convenient and efficient as electronic fund payments through trusted institutions are, they have their faults. These faults are related to the fact that intermediaries are involved. When a consumer needs to initiate an electronic fund transfer from one country to another, the money will go through a chain of different banks and services. For example, in the United States the money a person with a local bank account will go from the local bank account to the national bank's account, and then to the corresponding bank working with the United State market.[49] Thereafter, the wire will go to the SWIFT network, and then on to a corresponding bank serving the market of the person receiving the transfer. The process can take up to a few days. Fees are charged for every step taken in the facilitation of the transfer. Another burden is that the facilitation of international transfers is subject to currency exchange, meaning that the amount sent is not the amount received. When using intermediaries such as Western Union, the company has to develop a global system of physical access points to send and receive money. Supporting such an extensive infrastructure is expensive. These expenses are passed on to the consumers.

South Africa has specific legislation in place to curb the possible use of currency as a medium of exchange for illegal activities, such as the *Prevention of Organised Crime Act* 121 of 1998, the *Financial Intelligence Centre Act* 38 of 2001, and the *Protection of Constitutional Democracy against Terrorist and Related Activities Act* 33 of 2004, and the SARB ensures that the national payment system adheres to the legislation. The intermediaries and trusted institutions are mandated to fight money laundering and the financing of terrorism. This generally means that trusted

47 Lim "Facilitative Model for Cryptocurrency Regulation in Singapore" 387.

48 Roestoff "Payment Systems" 275.

49 Lashkov 2018 https://hackernoon.com/trends-and-problems-how-cryptocurrencies-and-blockchain-will-fix-the-global-remittance-industry-41150c760b2a.

institutions and intermediaries must perform certain functions such as additional audits, credit certifications, and identity verifications. The cost of performing such tasks is typically passed on to the participants using the national payment system as a payment method.

Society's dependency on trusted institutions such as banks and intermediaries such as Paypal has placed them in a position in which they are too big to fail. This sets a low standard of transparency and of holding individuals working at banks accountable when their banks misbehave. For example, the global financial crisis in 2008 caused many consumers to distrust not only the government and the banks but also intermediaries in the financial system such as Visa. The current system is open to the manipulation by high profile bankers and governments of exchange rates and figures.[50] The introduction of cryptocurrency as a medium of payment does away with the need to have trusted institutions and intermediaries to facilitate transactions.

4 The development and risks associated with bitcoin

Ongoing technological innovations have led to the recent development of payment methods based on blockchain technology. The first and most notable cryptocurrency created was bitcoin. Bitcoin was created by Mr Satoshi Nakamoto in 2008 and launched in 2009, based on blockchain technology.[51] Mr Satoshi Nakamoto is an alias. The true identity of the creator of Bitcoin is still unknown. Bitcoin is a cryptocurrency which can be used to transfer value or it can even be exchanged into other currencies using the blockchain. Mr Satoshi Nakamoto's whitepaper[52] provided that "Bitcoin: A Peer-Peer Electronic Cash System" combines advances in computer science, cryptography and game theory to develop blockchain technology.[53] Mr Nakamoto envisaged a transparent electronic means of transferring tokens of value without relying on third parties, such as banks. Rather than using a third party to manage the transaction, the necessary

50 Levine 2014 https://www.bloomberg.com/view/articles/2014-11-12/banks-manipulated-foreign-exchange-in-ways-you-can-t-teach.

51 See Nakamoto Date Unknown https://Bitcoin.org/Bitcoin.pdf. From a user perspective, to make or receive payments you need Bitcoin wallet software to store the private key(s) used to access the funds allocated to your public address and to sign transactions.

52 A white paper is an informational document issued by a person, including a company or a not-for-profit organisation, to promote or highlight the features of a solution, product, or service. White papers are sales and marketing documents used to entice or persuade potential customers to learn more about and to persuade them to purchase a particular product, service, technology or methodology.

53 Refer to Nakamoto Date Unknown https://Bitcoin.org/Bitcoin.pdf.

record-keeping is decentralised into a virtual ledger known as the blockchain. In simple terms, a blockchain is a distributed database of records or a public ledger of all transactions or digital events that have been executed and shared among participating parties.[54] Each transaction in the public ledger is verified by the consensus of the participants in the system. Once entered, information can never be erased. The blockchain contains a specific and verifiable record of every single transaction ever made.

Bitcoin is a decentralised, partially anonymous currency, not backed by any government or other legal entity, and not redeemable for gold or other commodities.[55] The rules that regulate bitcoin are contained in the bitcoin Protocol.[56] The Protocol provides for the total number of bitcoins that can ever exist. Users may acquire a bitcoin wallet. A bitcoin wallet is a software programme that includes private keys for each bitcoin address saved in the wallet of the user who owns the balance. Similarly, these wallets contain unique information that confirms the identity of the users.[57]

In its purest form. as a method of payment, bitcoin is a peer-to-peer version of electronic cash. It is well known for its peer-to-peer network, which allows its users to transact instantly between them without the use of intermediaries such as banks. A consumer can make direct payments with bitcoin to a merchant who accepts it as a payment option. It is noted that the interest in bitcoin is growing at a fast rate, as several retailers around the world are now accepting bitcoins and other cryptocurrencies as a means of payment for goods and services. Bitcoin has a maximum supply of 21 million to prevent inflation.[58] Subsequently, as demand for bitcoin grows, so does its value.

The use of bitcoin as a payment method has certain advantages in comparison with the other methods mentioned earlier. Bitcoin operates on a peer-to-peer cryptocurrency network. There is no master server responsible for all operations. There is no central control authority in the network and every bitcoin transaction is recorded on the public blockchain ledger, which increases transparency. Bitcoin generally carries lower transaction costs than credit cards.[59]

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54 Nian and Chuen "Introduction to Bitcoin" 8.
55 Grinberg 2012 *Hastings Sci & Tech LJ* 159.
56 Ritter 1995 *Am Econ Rev* 134-135.
57 Nakamoto Date Unknown https://Bitcoin.org/Bitcoin.pdf.
58 Nakamoto Date Unknown https://Bitcoin.org/Bitcoin.pdf.
59 Mink 2017 *De Rebus* 33.

Using bank accounts or credit cards for international transactions can be problematic at times. The reason for this is that such transactions are linked to the legal tender of a specific government. There are added costs and other facts to consider such as interest rates, exchange rates, and country-to-country transaction fees, which can slow down the transaction process. Bitcoin is not bound to the laws or status of any one government currency. As a result, using bitcoin as a payment method for international transactions is faster and more efficient than traditional methods.[60]

An important point of the use of cryptocurrency as a payment method is that there is no chance of using personal data for fraud. When purchases are made with credit cards online, the data supplied is not always secure. When filling in forms on websites, customers must enter the following data: the card number, the expiration date and the code. It is challenging to come up with a less secure way of making payment. Credit card details are therefore very often stolen. With bitcoin transactions, users are not required to disclose any personal data. Instead, the system uses two keys: public and private. The public key address is available to all, but the private key is known only to the owner. The transaction needs to be signed by interacting with private keys and applying a mathematical function. This creates evidence that it is the owner who is performing the transaction.[61] Further, bitcoin cannot be counterfeited or spent twice.

There are also risks associated with using bitcoin as a method of payment. Payments made with bitcoin are irreversible as there is no centre point in payment processing. If a user transfers bitcoin to another address incorrectly, the user will not be able to get a refund unless the other wallet owner decides to send back the bitcoin.[62] Unfortunately, if users lose their wallet information, particularly their private keys, there is no way of retrieving the bitcoins.

Another disadvantage of bitcoin is that it is subject to high volatility. For example, in December 2018 the all-time high of bitcoin was estimated to be 19 500 dollars, as against a value of 4000 dollars in February 2018. As of April 2021, bitcoin is trading above 50 000 dollars. Due to bitcoin's volatility, parties to a contract who use bitcoin as a payment method are exposed themselves to additional risk. The bitcoin can either gain a lot in value or lose a lot in value for the while. This is problematic when performance in

60 Mink 2017 *De Rebus* 33.
61 Mink 2017 *De Rebus* 34.
62 Mink 2017 *De Rebus* 34.

terms of a contract needs to occur, as when a refund needs to occur for a defective product.

Bitcoin is not the only cryptocurrency. There are other cryptocurrencies that are referred to as "altcoins". Some of these "altcoins" are designed as alternatives to fiat, while others have additional unique functionality. For example, there are "dividend" bearing altcoins whereby users receive "rewards" in crypto that can be exchanged for fiat, and there are also altcoins that provide certain privileges such as discounts on a platform. Other tokens can be found to provide users the right to participate in the governance of a project which has an influence on the decision-making process of a blockchain-based project. A common feature amongst all cryptocurrencies is that they are not tangible and exist only on the blockchain. Cryptocurrencies are nothing more than code on a digital ledger. Thus, they exist anywhere and everywhere, and have a global nature. Due to their nature, regulators around the globe are experiencing difficulties in regulating crypto-related activities. There is no global uniform legal consensus on the regulation of cryptocurrencies. The next section will discuss the regulatory status of cryptocurrencies as a payment method in South Africa.

5 Regulating cryptocurrencies as a form of payment in South Africa

The SARB regulates the national payment system involving South African currency in terms of the SARB Act and the *National Payment Systems Act* 78 of 1998 (the NPSA). Currently, only the SARB is allowed to issue legal tender. The SARB Act provides SARB with the sole right to issue or cause to be issued banknotes and coins in South Africa.[63] The SARB Act provides that a legal tender of payment of money is as follows:

> [a] tender, including a tender by the Bank itself, of a note of the Bank or of an outstanding note of another bank for which the Bank has assumed liability in terms of section 15(3)(c) of the Currency and Banking Act or in terms of any agreement entered into with another bank before or after the commencement of this Act, shall be a legal tender of payment of an amount equal to the amount specified on the note.[64]

and

63 Section 14 of the SARB Act.
64 Section 17(1) of the SARB Act.

> [a] tender, including a tender by the Bank itself, of an undefaced and unmutilated coin which is lawfully in circulation in the Republic and of current mass … .[65]

The cash payment is the only form of payment that is declared a legal tender.[66] People use different methods to facilitate the payment of goods or services, such as paper notes, coins, credit cards, and other forms of online fiat payment systems issued by banks and retailers. For example, retailers such as Amazon Prime Rewards Visa Signature Card,[67] Game, Pick 'n Pay and Makro provide credit cards.[68] The SARB has taken a position in terms of the NPSA that provides it with the power to use directives, position papers and circulars.[69] The NPSA further provides that a contravention of a SARB directive is an offence.[70] The SARB publishes position papers in order to provide its view on specific payment system issues. Although a position paper does not have the same binding power as a directive, it is usually followed because of its persuasiveness, its having been issued by SARB. SARB published a position paper in 2020 that highlighted the risks associated with cryptocurrencies such as bitcoin, which are, *inter alia*:

(a) there is a lack of a proper regulatory legal framework, which substantially increases the risks associated with the enforcement of the principle of finality and irrevocability in the payment system;

(b) there is no regulatory protection that would compensate the owner or user of a cryptocurrency for any loss that may be suffered;

(c) cryptocurrencies such as bitcoin are less susceptible to freezing or seizure actions by law enforcement agencies. The identification of relevant laws applicable to the contravention and the gathering of evidence regarding a transaction can become an unattainable task;

65 Section 17(2) of the SARB Act.

66 See s 17 of the SARB Act regarding the requirements of legal tender.

67 Amazon 2018 https://www.amazon.com/Amazon-Prime-Rewards-Visa-Signature/dp/BT00LN946S.

68 Credit Card Apply 2017 https://creditcardapply.co.za/1424-store-branded-credit-cards/.

69 Section 2 of the NPSA.

70 See s 12 of the NPSA. As per s 14, any person convicted of an offence referred to in s 12 is liable to a fine not exceeding R1 million, or to imprisonment for a period not exceeding five years, or to both such a fine and such imprisonment.

(d) exchange regulations do not govern the transfer of cryptocurrencies in and out of South Africa. Any cross-border exchange can therefore not be authorised by SARB.[71]

The above analysis demonstrates that the legal classification of cryptocurrencies such as bitcoin has not been determined in South Africa. Due to the different nature of cryptocurrencies, the current regulatory framework for payment methods is not applicable. This has left a gap in various aspects of the law. For example, in relation to security laws, cryptocurrencies that provide "dividends" would in a legal lens in South Africa be classified as securities, but that is currently not the case. Matters are more complex when dividend-bearing cryptocurrencies can also be used as a means of making payment. Therefore, as it stands there is a legal vacuum in South Africa regarding the use of cryptocurrencies as a payment method and the legal consequences thereof.

6 Conclusion

The future of cryptocurrencies may be a mystery, but the concept of their being a method of payment is here to stay. At the rate of development of cryptocurrencies, it is not a matter of if they will be globally accepted as a payment method, but a matter of when they will be globally recognised. The above discussion has made it clear that there is a *lucana* in South African legislation in the regulation of cryptocurrencies as a method of payment. Currently, cryptocurrencies are unregulated, are not legal tender, and this raises concerns because only the central bank in South Africa is authorised to issue legal tender and manage the national payment system. Even though electronic payments are not regulated, the intermediaries and financial institutions which use electronic fund transfers are regulated. Thus, the method of using electronic fund transfer as a method of payment conforms with the standards provided by SARB in line with international standards. This is primarily due to the intermediaries and financial institutions being mandated to conform with such standards. Cryptocurrencies are designed in a manner to negate the need for trusted institutions and intermediaries to facilitate transactions. Therefore, the full legal ramifications for a lack of regulation still remain unknown, and the crypto currencies are operating in a legal vacuum. The implications of the

71 IFWG 2020 http://www.treasury.gov.za/comm_media/press/2020/20200414%20IFWG%20Position%20Paper%20on%20Crypto%20Assets.pdf.

lack of legal clarity impacts on other areas of law such as the protection of consumers rights, security laws, and tax and insolvency law.

It is important to note that SARB has warned about these risks, noting that cryptocurrencies have no legal status or regulatory framework and are not regarded as a legal tender. Those who choose to use them, therefore, do not have the guarantee of legislative protection. The use of cryptocurrencies, therefore, depends on the merchant's willingness to accept them. A merchant may refuse them as a payment instrument without breaking the law. SARB is monitoring developments around cryptocurrencies for future regulatory approaches that may be needed in the South African legal system. There is certainly a high risk involved in the use of cryptocurrency as a payment method that should be considered from a consumer protection perspective and the legality of transactions, as it is unclear whether there is legal protection or recourse afforded to users of cryptocurrency in South Africa.[72] However, the potential use of cryptocurrencies as a method of payment should not be ignored as it does have certain benefits, as illustrated above.

In this context, public authorities and legislators need to tread carefully in drafting legislation and regulatory guidelines, as a blanket approach will not be practical due to the inherent nature of cryptocurrencies. As provided above, there are various potential benefits of cryptocurrencies as a payment method when compared to the current payment methods. Regulators must realise and assess the impact the recent developments in blockchain advancement have had, which make it possible to realise new opportunities, competitiveness, growth, and social integration in South Africa.

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List of Abbreviations

Am Econ Rev	American Economic Review
Fed Reserve Bank St Louis Rev	Federal Reserve Bank of St Louis Review
Glob J Int Bus Res	Global Journal of International Business Research
Hastings Sci & Tech LJ	Hastings Science and Technology Law Journal
IFWG	Intergovernmental Fintech Working Group
ISeB	Information Systems and e-Business Management
J Polit Econ	Journal of Political Economy
JBFLP	Journal of Banking and Finance Law and Practice
JMCB	Journal of Money, Credit and Banking
NPSA	National Payment Systems Act 78 of 1998
PELJ	Potchefstroom Electronic Law Journal
SA Merc LJ	South African Mercantile Law Journal
SARB	South African Reserve Bank
THRHR	Tydskrif vir Hedendaagse Romeins-Hollandse Reg
Yale J on Reg	Yale Journal on Regulation