Bitcoin and farm tokens: a historical link to the decentralization of money

Mauricio Garita Gutiérrez[16], Sergio Martinez Cotto[17]

Abstract: This paper analyzes the relationship between farm tokens, which were used in the 19th and 20th centuries, and their comparison with digital currencies focused on cryptographic technology. The paper stresses on the similarities that have existed since its conception between farm tokens and cryptographic currencies, specifically bitcoin. Farm tokens presented a quest for decentralization of the traditional financial system with the aim of addressing a lack of supply within due to currency limitations. On the one hand, this presented a possibility for haciendas and farms to create

a decentralized financial system that would allow exchange based on trust. On the other hand, the growth of cryptocurrencies which began in 2009 due to the consequences of a financial crisis that, according to those who promoted bitcoin, was based on the impact of the traditional financial system and its relationship with the printing of currency. due to the change from a gold standard system to a fiat money system [World Gold Council, 2022]. The consequences of the impact of fiat money, that is, money based on various currencies instead of gold, created a demand focused on the decentralization of money with the purpose of being able to make sovereign decisions.

The importance of currencies in exchange

The exchange economy is born with the realization of the first barter, that is, the first exchange between two people. Barter is considered an exchange of products when there is a double coincidence of needs.

However, the word barter has been limited within the exchange economy itself. At the beginning, it only covered products and this has expanded to the possibility of providing services. The above has led to the similarity in terms that exists between the exchange economy and direct exchange. [Dodd, 2017].

The limitation is based on the fact that, for the existence of an exchange, identical needs must exist in order for it to take place. In other words, for a transaction between two people, one of them must need what the other is offering and vice versa. If there is no double coincidence of needs, the transaction cannot proceed. The previous dilemma leads to the creation of money, the search to be able to avoid double coincidences and lead the discussion towards the importance of price [Corporate Finance Institute, 2021].

Alfred Marshall (1890) questioned in his book *Economic Principles* the importance of demand, supply and their relationship with price. Because money seeks to avoid double coincidence, it must define a value for the object or service. The way to define a price can be based on its value and to determine the value, demand and supply must be taken into account. The relationship between the price and the service or product is defined through the willingness to pay *that* the person has based on your indifference curves. The previous assumption has an impact on the definition of value [Bohm, 1979].

The creation of money must satisfy three functions, these being:

- being a medium of exchange,
- being a unit of account,
- storing value. For a currency to fulfill the first function, it must be a medium of exchange and the currency must be durable, transportable, divisible, fungible. and not falsifiable.

To fulfill the second function, the currency must be stable, because to quantify exchanges you must know what the exchange price is based on supply and demand[1].

Finally, the third function is one of the most complex functions, because storing value is based on the appreciation of the value of the currency itself. Here, the value of the currency itself is a complex issue to determine since the value is divided between objective and subjective [(Chen, Fiat Money, 2022].

As previously mentioned, one of the reasons that determines the value of a currency is its supply and demand based on the economic principle of scarcity. The economic principle of scarcity determines that a limited supply of a good (in this case a currency) linked to high demand results in a mismatch between the balance between demand and supply. This is how a scarce currency, which indicates a lower supply than demand, establishes its value given the restriction it gives people to own it. The principle of scarcity works in the opposite way, that is, if there is a much greater supply than demand, its value would tend to decrease.

A complementary function in determining the value of a currency is based on its predictability. If the individual can predict its value based on what will happen to its supply and demand, he will be able to plan accordingly for his decision making.

Therefore, transparency considerably affects the value of a currency through its issuance. Transparency is based on the clarity of the currency issuer about issuance plans so that

[16] Professor at the Francisco Marroquín University and a researcher at the Universidad del Istmo, both in Guatemala

[17] PhD Candidate in the Doctoral Programme of International Affairs and Political Economy at the University of St. Gallen in Switzerland

[1] It has always been a topic of discussion whether this should be a requirement given the levels of inflation that several countries have presented in history, including Venezuela, Mexico, Argentina or Zimbabwe, to name a few.

the individual can foresee the impact of supply and demand in the money market [Chen, Scarcity Principle, 2020].

The predictability of the currency allows the integration of investment, savings and exchange decisions within the theoretical framework of the currency users that allow the opportunity cost to be identified. Among the opportunity costs of a predictable currency is the impact that variability can have on decisions, such as savings, where the user will seek not to lose value due to changes that the currency may present with respect to other currencies.

Regarding the above, both a private currency and a government currency need to fulfill the functions of money in order to function consistently. In terminology, a decentralized currency is usually referred to as a *token* and a government currency as a currency. The difference between a token currency or a currency is based on who is in control of the issuance, that is, the monetary supply [Banco Central de Ecuador, 2021].

When a government intervenes in the issuance of a currency, it becomes a currency, and the first known currency was issued by Mesopotamia known as the *shekel* [Baur, Hong, & Lee, 2017]. The issuance of a currency is limited to an institution, usually governmental, that allows control of supply, which in turn affects demand and that fulfills the functions of money. The fact of controlling the supply means that only the government can issue currency and even, legally, issuing another currency would be penalized or punished by the government.

For its part, the token is different because the issuance is not governmental but private, so it can have diversity in its issuance parameters. Diversity can focus on the supply and demand of the currency to the material used as a token.

Characteristics of farm tokens as a token

Farm tokens[2] and cryptocurrencies share common attributes that bridge the history of tokens with blockchain technology. In a shared language, the word token is used to refer to farm tokens such as cryptocurrencies. The word token has historically referred to different forms of accounting, such as a wooden artifact where accounting information was stored in a currency based on blocks of information in cyberspace [Chen, Fiat Money, 2022]. Since its first use, there has been one constant and that is the use of information as a trust mechanism.

A token fulfills the functions of a currency, and its difference usually lies in its intrinsic value being less than its face value [Pedrosa, 2021]. In the historical evolution of money, tokens have been characterized by their decentralization of the traditional financial system, known in popular cryptocurrency parlance as *TradFi* [CoinFlex, 2021]. *TradFi* is an anglicism to identify traditional finance, that is, those that are characterized by having a high degree of centralization, control and exclusion of retail investors from financial services. The contrast to *TradFi* is *DeFi* , which refers to decentralized finance. DeFi seeks to separate the traditional financial system and provide the individual with the ability to make financial decisions. When analyzing the reason for the disparity between traditional and decentralized finance, farm tokens play an important role in said decentralization.

The farm file[3] was born for Latin America in coffee farms. After the colonial era, haciendas were considered large agricultural operations that employed many people working in a limited system of economic integration [Wienhold, 2022]. It is under this situation where the farm token fills the existing supply-based currency limitation, filling the void of traditional finance.

The purpose of the farm currency was to implement a means of payment in the future [Banco de Guatemala, 2022]. The use of the farm token was that the worker received his payment in the token and could use it in the farm's own stores or in other businesses that had an agreement with the farm or hacienda [Wienhold, 2022]. The above means that the farm record fulfilled the function of being a means of exchange based on the trust that existed between the farm or farm and commerce. The second function of farm tokens is characterized by their ability to be a unit of account because one of the limitations of current currencies was the difficulty in dividing them [Vicente, 2013].

The value of the farm token depended directly on the issuing farm. In some cases, as happened in El Salvador, the value of the farm token was set by the family that owned the farm or was indexed to the value of a product for which the token could be exchanged [Delgado, 2018]. In Colombia it was established in terms of the work necessary for harvesting coffee or for other tasks [Wienhold, 2022]. In Costa Rica, the farm token, in continuation with the token, had a lower intrinsic value than the silver coins in circulation so that its exchange with the official currency was not allowed, which simulated a mobile exchange rate or *crawling peg*. In the case of Ecuador, in the second cocoa boom of the years 1870 to 1920, farm tokens were introduced in the provinces of Los Ríos, Manabí, Guayas and Gold where the value of the tokens was related to the days of work. these being one, two and five days [Banco Central de Ecuador, 2021].

Table 3: Fountain:(Banco de Guatemala, 2012)

Classification by use within farms in Guatemala

Assist Control	Task control	coffee cutting	Inputs to workers
Noon	half task	Drawer	corn
Day	1 task	half drawer	candle
Wage	Clean	a quarter drawer	firewood
		others	others

Source: own study.

There were various modalities for the exchange of farm tokens depending on the financial conditions of the farms. On some farms in Guatemala (Tabel 1), the exchange

[2]Farm tokens are also known as *farm tokens.*

[3]In methodological aspects, the similarity between the word token and property token given that the word token comes from the French *jeton,* which in turn meant token [3]. The name of farm tokens was also related to words such as tokens, hacienda tokens or coffee tickets due to the similarity of the words to the concept of token [3]. Likewise, the divisions of the currency are known as *jitneys,* later used to refer to the *nickel* or five-cent coin.

method was carried out periodically. This consisted of an exchange between tokens and legal tender, however, the practice was not common [Sandoval Abullarade, n.d]. A second modality was based on the acceptance by establishments as means of payment considering that the property was known and solvent.

Similarities between farm tokens and bitcoin

Digital currency is defined as virtual money that, being virtual, does not exist physically and that allows transactions to be carried out electronically [Banco INV, 2022]. The term digital currency is used to encompass encrypted currencies known as cryptocurrencies, currencies and virtual currencies. An encrypted currency is characterized by being anonymous, having no intermediaries, a high level of security and decentralization. Each of the cryptocurrencies has its own characteristics that can differ considerably from one or the other. Encryption within the currencies allows there to be communication between both entities that carry out the transaction so that the transaction is unique and thus avoids the problem of double spending. Double spending occurs when there may be several transactions on the same entity, leading to the transaction being invalidated and therefore canceling an expense that has already been made, harming the offeror of the transaction or, failing that, the transaction may be charged to the entity. entity or user several times. To verify double spending, banks usually do it by validating the transaction with the merchant. In the case of cryptocurrencies, these are validated with the encrypted information system that allows the public keys of both the offeror of the transaction and the demander of the transaction to be identified so that it can be validated[4].

currencies begin with the publication of the article [5]I n which the main aspects of the creation of a currency based on blockchain technology were detailed.

The post titled *Bitcoin: A Peer-to-Peer Electronic Cash System* was made on October 31, 2008 on a cryptography mailing list [www.metzdowd.com: update: 11.10.2023]. The publication was made under the name Satoshi Nakamoto, which is thought to be a pseudonym for a person or group of people who were behind the development of the cryptocurrency.

Bitcoin germinates, in the same way as farm tokens, in the face of an unmet need given a failure within the traditional finance system. In the case of farm tokens, the failure was the lack of access to Guatemalan currency and for bitcoin the problem was based on transaction costs and the lack of transparency in traditional banking processes, especially after the financial crisis of 2009 (Nakamoto, 2008). Although the idea stems from the financial crisis, it is important to highlight that the underlying reason is based on the ability of governments to make decisions about the currency, as a monetary issue, which can affect the country through inflation [Hayes, Riba, 2022].

Bitcoin, to be a digital currency, must fulfill the three functions of money. The first function, that of being a medium of exchange, bitcoin proposes low transaction costs to be able to purchase goods or services [6]. The reason why transaction costs are lower when using bitcoin is due to its conception of a peer-to-peer system that allows the transaction to be carried out without an intermediary. The concept of peer-to-peer transactions refers to a transaction between buyer and seller directly without the use of an intermediary. The method of making a transaction between a buyer and a seller without an intermediary is done through a verification network. At the time a transaction is recorded, the transaction is sent to each of the computers (nodes) joined to the verification network and the transaction is recorded in an accounting book known as a *ledger*. The above allows the transaction to be recorded in several ledgers due to the network of nodes and is impossible to alter without altering the network completely. This is how bitcoin manages to avoid double spending of a currency and creates the block technology known as *blockchain* [https://www.blockchain.com/explorer: apdate: 12.10.2023].

The block chain 7is formed with a first block where transactions of a certain period are recorded. From the first block a second block is born, connected to the first, which includes the transactions carried out previously and the new transactions, thus forming a chain. The blockchain eliminates the possibility of modifying a transaction to create a double spend of the currency since modifying the transaction would have to modify a block and modifying a block would have to modify the chain. This chain is the one that is verified on the computer network.

Block technology allows you to not have intermediaries because the validation of the expense is carried out through the network of nodes. Not having a centralized entity reduces the cost of transactions and increases response time. The result is a more efficient means of exchange than the traditional one since a transaction can be verified in three to ten minutes.

The second function, being a unit of account, is developed by bitcoin through a metric division of the currency. The division is done keeping eight decimal places to ensure that it is an effective medium of exchange. The reason why bitcoin uses eight decimal places is because the value of the currency is not yet defined and given its supply characteristics, the value can increase over time. As the value of the currency increases, the possibility of dividing it into eight decimal places allows transactions with a low denomination. Bitcoin can be divided based on the number of decimals up to a Satoshi, the smallest unit named this way by the author of the first article.

Finally, the third characteristic, storing value is one of the most complex aspects when discussing bitcoin. The first approach to the value of bitcoin is based on the limited

[4]The public keys in the traditional financial system would be the account number, name and type of account. In the case of cryptocurrencies, it is only necessary to know the public key to identify the transaction.

[5]Known as *white paper*.

[7]The benefit of the ledger of a cryptocurrency is due to the fact that the transactions can be consulted since they are public.

supply of its currency. Bitcoin has a limited supply of 21 million BTC and the issuance of BTC is limited by half every four years in a process known as *halving* .

At the beginning, there was an issuance of 50 BTC per block and by May 2020 the issuance was limited to 6.25 BTC per block. The idea of limiting the emission is based on the fact that the supply of BTC must end by the year 2140. With the above, it can be concluded that one of the reasons underlying its value is the limitation of supply.

A second hypothesis about the value of bitcoin is based on its behavior with respect to inflation, assuming its similarity to gold. The reason it is compared to gold is due to:

- the shared language that exists between both assets,
- scarcity.

Regarding shared language, bitcoin uses words such as miner, mining and mining linked to the digital gold reference. For its part, the shortage is due to the limitation on both the total amount of BTC that can exist and the new supply of BTC that is integrated into the market per day [Dodd, 2017]. A third hypothesis is based on the marginal production cost involved in producing a bitcoin given the increase in complexity in the algorithms that must be solved to obtain bitcoin.

When comparing the functions of farm tokens and bitcoin, it is evident that they share similar aspects. Regarding limited production, the farms controlled the issuance of the tokens and in the case of bitcoin its issuance is centered on a previously determined algorithm.

Regarding the function, as a unit of account, both farm tokens and bitcoin are divisible so that they can be used as a means of payment. Finally, regarding the storage of value there is a divergence, the property card presented its value based on what could be purchased or the services offered. The value could be determined by the estates or farms. In the case of bitcoin, the value depends on the existing supply and the marginal costs of production.

Estate tokens and bitcoin as symbols of decentralization

The foundation of a property card was established in the limitations that traditional banking offered to users, in this case farms or haciendas. The limitations focused on:

- The lack of coverage of traditional banking in certain sectors, specifically rural ones in Latin America.
- The inability to have an exchange currency that fulfilled the divisibility function
- The lack of access to currency [Banco de Guatemala, 2012]. Therefore, one of the common names for farm tokens was necessity coins.

The farm token allowed the hacienda or farm to have its own means of exchange with the worker and guarantee its decentralization from the traditional financial system. Through the determination of the value of the work of the farm's day laborers, the possibility of an internal or external market that allows exchange and a decentralized currency allowed exchange within the farm itself.

Among the benefits of using his own token for the farm, was not having to use his own cash so that transactions could be carried out because by using the token the day laborer could exchange it in a nearby business or could belong to the farm[8]. The farm token allowed the farm to operate in a decentralized manner , meeting its needs and providing sustainability to the token through the cash generated by the sales and purchases of the product produced within the farm.

For its part, bitcoin has become a symbol of decentralization of financial decisions that are made unilaterally by traditional or governmental financial systems. Regarding the aspects of financial decentralization, one of the critical issues is based on the possibility of money creation that banks and governments have when needing a monetary disbursement [Dodd, 2017].

The above is a result of the separation between governments and the gold standard. The gold standard begins as a support for the issuance of currency through a financial asset, specifically metallic. An example of this was during the Napoleonic War or during the First World War of 1914 where the printing of currency was based on gold. The gold standard, despite its name, was not specifically based on gold as it could be another metal such as silver or even the use of two metals called the bimetallic standard.

The use of the gold standard was abandoned by Great Britain in 1931 and the United States began its abandonment in 1933, ending in 1973. The change from the gold standard leads countries to adopt a fiat money system known as *fiat* in Anglo-Saxon language. Fiat money, referred to as inorganic, is backed by society's trust in the local currency since, as it is not based on a metallic standard, its foundation focuses on the general acceptance that the money issued has value [Pedrosa, 2021].

The creation of fiat money allows the government to control the printing of legal currency. The fact that a government can print monetary mass allows it greater control over the economy, the ability to create seigniorage, because it has greater efficiency than a currency tied to a consumer good, and the flexibility to make decisions through of exchange rates with intervention.

The negative aspects identify the possibility of creating a bubble through unrealizable expectations that alter the economic behavior of people and the risk of inflation. The latter has been one of the problems of fiat currencies given their ability to create a hyperinflationary environment, that is, where inflation above 50% is recorded. One of the notable cases about the government decision to print fiduciary money and its consequence in the general rise in price levels was the situation in Hungary in 1946. In 1946, given the impact of the Second World War, the Hungarian government authorities They decided to print money to meet the country's needs. The consequence was an inflation level that doubled every 15.6 hours and was established at 13,600,000,000,000,000% [Toscano, 2014].

[8]There is criticism of this method in which several authors identify this behavior as a way of imposing rules and lack of freedom for the day laborer. Several of these studies have been accessed, however, they have not been included here given the focus of the document.

Based on the above, bitcoin proposes decentralization of government decisions on money printing and the ability to create highly inflationary environments. A similar situation occurs with traditional finance where a bank can make financial decisions, such as transaction costs, which limit decentralization in financial decision making. For farm tokens as for bitcoin, decentralization reflects the ease of individual decision making given a government financial market that works as a monopolistic market.

Resistance to decentralization

Decentralization has never been without resistance and the case of tokens and bitcoin share similarities in the process. In Guatemala, the extinction of property tokens begins with the Government Agreement of November 26, 1924 [Banco de Guatemala, 2012]. The reason why the current president, José María Orellana, decreed the agreement was based on the existence of a monetary disorder due to the unsupported printing of tokens. Added to the above is the lack of resources to pay external debt as a reason. According to data from the time, the money in circulation had increased from 75 million pesos in 1910 to 370 million pesos in 1923 [Hemeroteca Prensa Libre, 2016].

During the same time, the Constitution of the Federal Republic of Central America was established in 1921, whose article 146 determines the regulation of contracts on the minting of currency and the issuance of paper. The issue had to be approved by the Assembly through a vote of two-thirds of its members. The minting of the currency was exclusively in charge of the Federation. The above led to the creation of decree 152 for the Monetary and Conversion Law and the Government Agreement of June 30, 1926 where the Central Bank of Guatemala was created.

Since the quetzal was established as currency in 1924, based on decree 1379, the Monetary and Conversion Law mentions in chapter III, articles 21 and 22 that the use of farm tokens as a substitute for any legal currency is prohibited. and that those who put a property card into circulation would be punished by the Penal Code.

The last mention of property tokens is made by President Arevalo in 1945 where he emphasizes that the tokens that are issued will be considered fraudulent and void, and whoever issues them will be punished by the Penal Code. The previous articles mark the disappearance of the Guatemalan farm records [Pérez Longo & Quisquinay Rojas, 2014].

In the case of Costa Rica, the issuance of farm tokens or tickets ended in the 1940s under the presidency of Rafael Angel Calderon Guardia through the Labor Code ordering an end to the abuse promoted by farm tickets and tokens as changes of merchandise. In Law number two of August 27, 1943, article 165 establishes that salaries will only be paid in legal currency and any other means of payment is prohibited. Finally, the use of tickets remains in force in accordance with Law 31 of 1943, which establishes that tickets will be allowed with the condition that the exchange of a ticket to the current currency is within one week from delivery [Vargas Zamora, 2020].

In the case of El Salvador, farm tokens were used between the years 1860 and 1934 and disappeared with the creation of the Central Reserve Bank. At the beginning of the 20th century in El Salvador, the issuance of currency was assigned to commercial banks. For the year 1922, the creation of a Reserve Bank was proposed, however the Salvadoran, Western and Commercial Agricultural Banks still had until December 31, 1950 to continue issuing currency. To avoid the issuance of currency by the banks, they were compensated in the amount of ¢4,497,106.00. This is how the Central Reserve Bank of El Salvador was established on June 19, 1934 [Banco Central de Reserva de El Salvador].

Historical lessons for a decentralized future

For its part, the history of bitcoin and decentralization has gone through an accelerated process due to its acceptance. Since bitcoin was issued in 2009, by 2022, countries such as Algeria, Bangladesh, Bolivia, Egypt, Indonesia, Ghana, Nepal, and northern Macedonia are some of the countries that have vetoed the participation of bitcoin as a currency within the country.

In Islamic countries, a debate has developed about whether cryptocurrencies, specifically bitcoin, are allowed (halal*)* or not allowed (haram*)* . The discussion centers on whether the currency is the object of financial interest, which within Islamic finance would be considered the practice impermissible.

Since bitcoin in its nature is interest rate free there is a position that this is permitted. It is important to note that in Islamic finance it is prohibited to charge interest (*riba*) even at low interest rates because it is unethical and encourages usury. Depending on the stance within the country whether it is halal or haram, bitcoin is allowed or excluded.

In countries like Bolivia, the reason why they have banned bitcoin is because they consider that citizens could be part of a scam and lose their income. Added to this is the reason that bitcoin is highly volatile, which is the argument of Algeria, Qatar or Indonesia. There are other cases such as Nepal and Bangladesh who cite that bitcoin is linked to illegal activities, terrorist financing and money laundering.

Similar to the criticisms made of farm tokens, bitcoin repeats history as part of the accelerated acceptance process. The important thing regarding the historical process of farm tokens is that the tokens functioned during a period of time independent of a central system that controlled monetary issuance. Its acceptance and ability to meet the requirements to be a currency gave it an important space within the history of Latin American finance.

Reflection on decentralization

Farm tokens, like bitcoin, remind us of the importance of the search for decentralization in various areas, including finance. Although today the convention is to follow a traditional system focused on the issuance of currency by a government agency, it is a convention that has had macroeconomic flaws.

The impossibility of existing financially outside of a government system, in which the individual, company or farm

does not have the capacity to provide guidelines on monetary aspects that would affect payment parity, means that it is the user who would have to respond to the macroeconomic situation. The same situation is noticeable when El Salvador decides to use bitcoin as legal currency due to its dependence on the dollar and the lack of interference in the country's monetary and financial decisions.

One of the consequences of not being able to count on the possibility of decentralization is the ability to confront inflation. In Argentina, it has been decided to pay salaries in digital currency for the year 2023 due to the high level of inflation that affects the country. Without cryptocurrencies, Argentina would be in a situation similar to those it has faced since 1944.

Another consequence would be to be able to dictate monetary rules. Controlling issuance to prevent inflation or to decrease the value of a currency with practices that the user of the currency usually faces. In the same way that a farm owner could not receive the amount of currency to be able to operate and that, without the farm tokens, he would have had to accept the probability of not being able to exist as a farm, in the same way the monetary decisions of the present.

Estate tokens provide a glimpse into what bitcoin could be, both in its strengths and limitations. Estate tokens filled a gap in traditional finance that disabled the functions of a currency and a market.

In conclusion, there are several lessons that farm tokens could transmit to bitcoin, especially in Latin America. The first conclusion is that a decentralized system can work given that historically, farm tokens worked productively for a long time.

The second conclusion comes with the control and supply of the currency. Currency control, as allowed by bitcoin through identifying user keys in transactions, is vital to the existence of an orderly decentralized system. The time that the currency can be counterfeited or that there is the possibility of creating a double spend, is the time that the currency moves away from being accepted. This disorder led to the argument about a centralized currency being sustained to the present. However, the impossibility of being able to decentralize the currency has remained a reality in Latin American countries, which is a limitation at the present.

The third conclusion is the legal consequence of decentralization. The farm tokens, through their internal problems, led to the possibility of decentralization being legally inhibited. The same has happened in several countries that seek to avoid decentralization. However, decentralization should be a person's right to be able to decide where to place their trust. In countries whose macroeconomy is controlled in a transparent and adequate manner, it seems that decentralization has no reason to exist.

However, we must reflect on those countries in which wealth has been lost and poverty has increased based on government monetary decisions that have led to a situation of hyperinflation where price and value are lost.

Summary

Farm tokens presented a quest for decentralization of the traditional financial system with the aim of addressing a lack of supply within due to currency limitations. On the one hand, this presented a possibility for haciendas and farms to create a decentralized financial system that would allow exchange based on trust.

On the other hand, the growth of cryptocurrencies which began in 2009 due to the consequences of a financial crisis that, according to those who promoted bitcoin, was based on the impact of the traditional financial system and its relationship with the printing of currency. due to the change from a gold standard system to a fiat money system.

The consequences of the impact of fiat money, that is, money based on various currencies instead of gold, created a demand focused on the decentralization of money with the purpose of being able to make sovereign decisions.

There were various modalities for the exchange of farm tokens depending on the financial conditions of the farms. On some farms in Guatemala, the exchange method was carried out periodically. This consisted of an exchange between tokens and legal tender, however, the practice was not common. A second modality was based on the acceptance by establishments as means of payment considering that the property was known and solvent

References

Banco Central De Reserva De El Salvador. (n.d). (2022), Historia. Retrieved septiembre 23, from: https://www.bcr.gob.sv/historia.

Banco de Guatemala. (2022). Reseña histórica de la moneda de Guatemala. Retrieved septiembre 23, from: http://www.banguat.gob.gt/page/resena-historica-de-la-moneda-de-guatemala-0.

Banco de Guatemala. (2012). Serie Joyas Numismáticas de Guatemala del Jade al Polímero. Retrieved septiembre 23, 2022, from: ttps://www.banguat.gob.gt/sites/default/files/banguat/Publica/libros/Libro_Jade_al_Polime, from: hero.pdf.

Baur, D., Hong, K., & Lee, D. A. (2017). Bitcoin: Medium of Exchange or Speculative Assets? Journal of International Financial Markets Institutions and Money.

Bit2me. (2022). What is a unit of account in Bitcoin? Retrieved septiembre 23, from: https://academy.bit2me.com/en/que-es-unidades-de-cuenta-bitcoin.

Blystone, D. (2022, enero 13). Bitcoin vs. Credit Card Transactions: What's the Difference? Retrieved septiembre 23, from: https://www.investopedia.com/articles/forex/042215/bitcoin-transactions-vs-credit-card transactions.asp#:~:text=For%20shoppers%2C%20the%20advantages%20of,borrowing%2d- 0money%20and%20reward%20points.

Chen, J. (2020). Scarcity Principle. Retrieved septiembre 22. from: https://www.investopedia.com/terms/s/scarcity- principle.asp#:~:text=What%20Is%20the%20Scarcity%20Principle,desired%20supply%20- and%20demand%20equilibrium.

CoinFlex. (2021). What is TradFi? Retrieved septiembre 22, from: https://coinflex.com/education/what-is-tradfi.

Coinbase. (2022). What is the Bitcoin Blockchain? Retrieved septiembre 23, from: https://help.coinbase.com/en/coinbase/getting-started/crypto-education/what-is-the-bitcoin blockchain.

Corporate Finance Institute. (2021). How is Currency Valued. Retrieved septiembre 22, from: ttps://corporatefinanceinstitute.com/resources/knowledge/economics/how/-is-currency-valued.

Cryptopedia. (2021). Crypto Denominations Explained: BTC & Satoshis; ETH & Gwei. Retrieved septiembre 23, from: https://www.gemini.com/cryptopedia/satoshi-value-gwei-to-ether-to-wei-converter-eth-gwei.

Delgado, E. (2018). Fichas de Finca Monedas de Cambio en El Salvador. Retrieved septiembre 22, from: https://elsalvadoregionmagica.blogspot.com/2018/08/que-eran-las-fichas-de-finca-en-el.html.

Dodd, N. (2017). Social life of bitcoin. Theory, Culture & Society.

Gold, D. L. (2009). Studies in etymology and etiology. Alicante: Universidad de Alicante.

Hemeroteca Prensa Libre. (2016). Surge el Quetzal como moneda en 1924. Retrieved septiembre 23, from: ttps://www.prensalibre.com/hemeroteca/surge-el-quetzal-como-moneda-en-1924/#:~:text=El%2026%20de%20noviembre%20de,al%20Quetzal%20como%20moneda%h -%20oficial.

Hayes, A. (2022). Riba. Retrieved septiembre 23, 2022, from: https://www.investopedia.com/terms/r/riba.asp#:~:text=In%20Islamic%20finance%2C%20rriba%20refers,transactions%20without%20charging%20explicit%20interest.

Hayes, A. (2022, agosto 23). What Happens to Bitcoin After All 21 Million Are Mined? Retrieved septiembre 22, from: https://www.investopedia.com/tech/what-happens-bitcoin-after-21-million-mined/.

Ibáñez, M. (2015). Numisarchives. Retrieved septiembre 21, from: https://numisarchives.blogspot.com/2015/12/los-primeros-tokens-y-el-origen-de-la.html.

Kapoor, E. (2022). 10 countries that banned cryptos calling them threats, ponzi schemes & more. Retrieved septiembre 23, from: ttps://www.businessinsider.in/cryptocurrency/news/top-10-countries-where- cryptocurrency-is-anned/articleshow/93029397.cms#:~:text=The%20Bolivian%20central%20bank%20placed, fall%20victim%20to%20%E2%80%9Cscams%E2%80%9D.

Keller, P. J. (2022). Why Do Bitcoins Have Value? Retrieved septiembre 23, from: https://www.investopedia.com/ask/answers/100314/why-do-bitcoins-have-value.asp.

Krause, M. (2018). Las limitaciones del trueque. In S. Hintze, Trueque y Economía Solidaria, pp. 107-120. Buenos Aires: FLACSO. Retrieved from: ttps://biblio.flacsoandes.edu.ec/libros/digital/48976.pdf.

Kusimba, C. (2017). The Conversation. Retrieved septiembre 22, from: https://theconversation.com/when-and-why-did-people-first-start-using-money-78887.

Lioudis, N. (2022). What Is the Gold Standard? Advantages, Alternatives, and History. Retrieved septiembre 23, from: https://www.investopedia.com/ask/answers/09/gold-standard.ashp.

Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. Retrieved septiembre 23, 2022, from: https://bitcoin.org/bitcoin.pdf.

Orji, C. (2022). Bitcoin ban: These are the countries where crypto is restricted or illegal. Retrieved septiembre 23, from: ttps://www.euronews.com/next/2022/08/25/bitcoin-ban-these-are-the-countries-where--crypto-is-restricted-or-illegal2.

Pedrosa, S. J. (2021). Dinero fiduciario. Retrieved septiembre 23, from: https://economipedia.com/definiciones/dinero-iduciario.html#:~:text=El%20dinero%20fiduciario%20o%20dinero,papel%20moneda%20-fo%20dinero%20inconvertible.

Pérez Longo, A., & Quisquinay Rojas, E. (2014). Acercamiento a la historia y uso de las fichas de finca en Guatemala. In C. P. Andrade, Fichas de Finca de Guatemala. Guatemala: D'Buk Editors.

Rutherford, D. (1992). Routledge Dictionary of Economics. London: Routledge.

Sandoval Abullarade, V. H. (2022). Fichas de Finca. Retrieved septiembre 23, from: https://www.monedasdeguatemala.com/fincashis.html#:~:text=Las%20fichas%20de%20finca%20en%20un%20principio%20fueron%20usadas%20como,proveedor%20del%20servicaio%20o%20producto.

Seth, S. (2022). Explaining the Crypto in Cryptocurrency. Retrieved septiembre 27, from: https://www.investopedia.com/tech/explaining-crypto-cryptocurrency.

Tobar Guerrero, S. A. (2015). Historia de la Regulación Legal de la Moneda en Guatemala. Retrieved septiembre 23, from: http://biblio3.url.edu.gt/Tesis/2015/07/01/Tobar-Sheyla.pdf.

Tocancipá-Falla, J. (2008). El trueque: tradición, resistencia y fortalecimiento de la economía indígena en el Cauca. Revista de Estudios Sociales, pp. 131-146. Retrieved from: https://journals.openedition.org/revestudsoc/17700.

University of Nicosia. (2022). DFIN 511: Introduction to Digital Currencies. Retrieved September 22, from A Brief History of Money https://courses.unic.ac.cy/pluginfile.php/1671232/mod_resource/content/15/1.%20A%20brief%20history%20of%20money_31Jan2021_APv1.pdf.

Vargas Zamora, J. A. (2020). Boletos de Café y Fichas de Empresas: Herencias Coleccionables. Revista Herencia, pp. 27-52.
Vicente, J. R. (2013). Curiosidades Numismáticas. Retrieved septiembre 22, from: http://curiosidadesnumismaticas.blogspot.com/2013/05/fichas-de-finca-de-guatemala.html.