Cryptocurrency, Nature and Future, A Theoretical Approach

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Abstract:

In this paper, the researcher gave an introductory and historical overview of the cryptocurrencies, its characteristics, the method of its creation and its risks, as well as the difference between it and other electronic and traditional currencies, However in second part the researcher tried to look into the future of cryptocurrencies under a series of developments and difficult conditions experienced by these currencies, the most important was the new trend of international regulation - like Algeria - aimed to reduce its risk, because of money laundering crime, decentralization and sharp price fluctuations, in addition to the demand for high technology that makes it difficult to hold and maintain, Many electronic companies stop dealing with this currency and criminalize its promotions, such as Google and Facebook

Keywords: Cryptocurrency, Bitcoin, Bloc Chain, Monetary and Banking Policies. **Jel Classification Codes**: G02, L31, G11, G12, G18.

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1. INTRODUCTION

Cryptocurrencies are virtual currencies that are traded and transacted through the network, perhaps the most famous is Bitcoin, It has become famous for its advantages of fast conversion, low cost and privacy and its decentralization.

Cryptocurrencies have caught the minds of some, raised the fear and panic of some, and caused the concern of others, but the important that everyone agrees that cryptocurrency represents technological revolution that can change the form of funds in this world, and affect the largest and most important financial institutions in the world and the way it works.

Since 2009 when Bitcoin was born, events accelerated, lot of defferent developments happened to e-currencies life, that made also deferent opinions around this new intermediator, Hackers represented the first staff of supporters however some governments were Inhibitors.

Study Problematic :

Any topic has a problematic aims to answer, so we ask a principal question which is : what is the nature of cryptocurrency and how will be its future?

- This question contains some Secondary questions :
- What is cryptocurrency?
- How could it be created?
- What is bloc chain?
- What are cryptocurrencies features?
- What are cryptocurrencies risks?
- Can cryptocurrencies continue existing(what are barriers)?

Study hypotheses:

Answering precedent problematics, we can say:

- Cryptocurrency is a virtual currency can be owned by anyone can get place in the network.
- The best characteristic of cryptocurrency is Easy currency conversion and transaction.
- Cryptocurrencies can continue to exist through The passion of investors.

Importance of the study:

The importance of the study is shown by defining cryptocurrencies and detecting its nature as a modern topic, as well we predict for its future, so this paper can be added as an additional reference, and according to my knowledge this topic has not been discussed before in lots of local magazines.

Objectives of the study:

Researcher aims through this paper to:

- Open discussion of a new topic which is cryptocurrencies.
- Defining a new investment area, and unconventional topic.
- Showing cryptocurrency legal and economic position in different countries and unions.
- Trying to expect currency future through some present data and conditions.

Methodology of the study:

This study is theoretical, Therefore the researcher relied on the analytical descriptive method to collect scientific theoretical material and describe phenomenon dimensions. The analytical method was adopted by researcher in order to interpret tables and curves and draw conclusions.

Previous studies:

Despite the subject is relatively recent, there were many studies that dealt with the subject such as:

- The study of David Lee Kuo Chuen, Li Guo, and Yu Wang, entitled : Cryptocurrency: A New Investment Opportunity?, this study was published on July 4th, 2017, and it was about: the potential of cryptocurrencies as an investment class? Results showed that the correlations between the cryptocurrencies and traditional assets are low, and incorporation of CRIX index will improve the performance of the portfolio that consists mainly of mainstream assets. Sentiment analysis also indicates the CRIX index has a relatively high Sharp ratio (David Lee Kuo Chuen, 2017).

- The study of JOHN M. GRIFFIN and AMIN SHAMS, entitled: Is Bitcoin Really Un-Tethered?, the study was published on June 13, 2018, this study aimed to describe defferent cryptocurrencies and show its characteristics (JOHN M. GRIFFIN, 2018).

- The study of Alexander D'Alfonso, Peter Langer, Zintis Vandelis, entitled: The future of Bitcoin, published on October 17th, 2016, in RYERSON University, as a result they found that that Bitcoin can leverage its existing user base and proven use case is likely to experience more growth in the five-year time horizon.

2- Cryptocurrency definition:

Cryptocurrency, an encrypted, peer-to-peer network for facilitating digital barter, is a technology developed eight years ago. Bitcoin, the first and most popular cryptocurrency, is paving the way as a disruptive technology to long standing and unchanged financial payment systems that have been in place for many decades. While cryptocurrencies are not likely to replace traditional currency, they could change the way Internet-connected global markets interact with each other, clearing away barriers surrounding normative national currencies and exchange rates.

Technology advances at a rapid rate, and the success of a given technology is almost solely dictated by the market upon which it seeks to improve (Devries, 2016)

A cryptocurrency is a digital or virtual currency that uses cryptography for security. A cryptocurrency is difficult to counterfeit because of this security feature (Alexander D'Alfonso, 2016).

Many cryptocurrencies are decentralized systems based on blockchain technology, a distributed ledger enforced by a disparate network of computers, A defining feature of a cryptocurrency, and arguably its biggest allure, is its organic nature; it is not issued by any central authority, rendering it theoretically immune to government interference or manipulation (investopedia, 2018)

However, Margaret Rouse says that cryptocurrency is a digital medium of exchange that uses encryption to secure the processes involved in generating units and conducting transactions.

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We can say that cryptocurrency is any form of currency that only exists digitally, that usually has no central issuing or regulating authority, but instead uses a decentralized system to record transactions and manage the issuance of new units, and that relies on cryptography to prevent counterfeiting and fraudulent transactions (merriam-webster, 2018).

From these definitions we can observe that cryptocurrency is: a digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of any central bank.

Fig 1: « some symbols of most popular coins »



source: gathered by researcher from different references.

And those are the most famous cryptocurrencies names:

			J J		•			
curren	Bitcoi	Ethereu	Liteco	Dash	Dogeco	Mone	BitShar	MaidSa
cy	n	m	in		in	ro	es	fe
Token	(btc)	(XRP)	(LTC)	(DAS	(DOGE	(XMR	(BTS)	(MAID)
				H)))		
curren	Nxt	Bytecoi	Zcash	Facto	NEM	Ripple	Ethereur	n Classic
cy		n		m				
Token	(NXT	(BCN)	(ZEC)	(FCT)	(XEM)	(XRP)	(E7	(C)
)	, í	, í	, í				ŕ

 Table n 1: « cryptocurrency and its tokens »

Source: (David Lee Kuo Chuen, 2017).

3- Features of cryptocurrencies:

Cryptocurrencies have lot of features that makes it a an acceptable Exchange broker (David Lee Kuo Chuen, 2017):

a. cryptocurrencies can be used to buy things electronically. But unlike any fiat money or platform-based digital currencies, cryptocurrencies are decentralized.

b. In other words, there is no single group or institution that controls the cryptocurrencies network. Its supply is governed by algorithms, and anyone can have access to it via the Internet.

c. cryptocurrencies wallets or cryptocurrencies addresses can be easily set up online without any fees or regulations.

d. Also, transactions are not location-specific, so cryptocurrencies can be transferred among different countries seamlessly.

e. Every transaction will be broadcast to the entire network. Mining nodes or miners will validate the transactions, record them in the block they are creating, and then broadcast the completed block to other nodes.

f. Records of all transactions are stored in blockchain, which is open and distributed, so every miner has a copy and can verify them.

g. The transactions are broadcast within a few seconds, and it takes about 10 minutes for the transaction to be verified by miners.

h. Anyone can transfer the cryptocurrencies anywhere in the world and the transactions will usually be completed minutes later.

i. No transaction fee is required to make a transfer, but the owner can opt to pay extra to facilitate a faster transaction.

j. So far, miners have been incentivized mainly by the newly created coins but that is changing.

k. As cryptocurrencies in circulation gets close to its limit, transaction fees will eventually be the incentive for miners to carry out the costly verifying process

We conclude from previous advantages that cryptocurrency can be a successful alternative to the traditional currency if there will be no obstacle.

In order to boost these previous points searcher can add the shape bellow:



Fig n 2: « cryptocurrency characteristics»

Source: created by searcher according to: (Mohammed, 2014) 4- **Deference between virtual, digital and cryptocurrencies:**

Virtual, digital and Cryptocurrencies terms are unknown for lot of people, so we should differ between them as below:

Since they exist in a lot of variants, digital currencies can be considered a superset of virtual currencies and cryptocurrencies (investopedia, 2018).

If issued by a central bank of a country in a regulated form, it is called the Central Bank Digital Currency (CBDC).

While the CBDC only exists in conceptual form, England, Sweden and Uruguay are a few of the nations that have considered plans to launch a digital version of their native fiat currencies.

Along with the regulated CBDC, a digital currency can also exist in unregulated form. In the latter case, it qualifies for being called a virtual currency and may be under the control of the currency developer, the founding organization, or the defined network protocol, instead of being controlled by a centralized regulator. Examples of such virtual currencies include cryptocurrencies, and coupon- or rewards-linked monetary systems.

A cryptocurrency is another form of digital currency which uses cryptography to secure and verify transactions and to manage and control the creation of new currency units. Bitcoin and Ethereum are the most popular cryptocurrencies. Since cryptocurrencies are unregulated, they are also considered to be virtual currencies.

Currenc	Real	Digital	Virtual	Crypto-
y y	Currency	Currency	Currency	Currency
Characte				
r				
Physical	exist	Not exist	Not exist	Not exist
existence				
mint	Central	Financial	Financial	Free from
	bank	institutions	institutions	any official
				institution
Internati	difficult	Easy	Easy	Easy crypto
onal		transfer	transfer	transfer
trading				
value	То	To real	To real	To mining
coordina	economy	currency	currency	size (free
tion	integratio			demand and
	n			supply)
Public	By	By country	By	Transnationa
trust	country	and	country	1 currency
	and	institutions	and	
	unions		institutions	
Control	Centralize	Centralized	Centralize	Decentralizat
	d		d	ion

Table n 2: « comparison between real, digital, virtual and cryptocurrencies »

Source: created by researcher

5- History of cryptocurrency:

The real last birth of Bitcoin was only 10 years ago, but there have already been many bumps along the way for all cryptocurrencies. Here are some of the most notable:

According to Wikipedia in 1983, the American Cryptographer David Chaum conceived an anonymous cryptographic electronic money called e-cash.

Later, in 1995, He implemented it through Digicash, an early form of cryptographic electronic payments which required user software in order to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient, this allowed the digital currency to be untraceable by the issuing bank, the government, or any third party.

In 1996, the NSA¹ published a paper entitled: "How to Make a Mint, the cryptography of anonymous electronic cash", describing a cryptocurrency system first publishing it in a MIT² mailing list and later in 1997, in The American Law Review.

In 1998, Wei Dai³ published a description of "b-money", characterized as an anonymous, distributed electronic cash system, shortly thereafter, Nick Szabo described bit gold, like Bitcoin and other cryptocurrencies that would follow it, Bit-gold was described as an electronic currency system which required users to complete a proof of work function with solutions being cryptographically put together and published, a currency system based on a reusable proof of work was later created by Hal Finney who followed the work of Dai and Szabo (wikipedia, 2018).

The first two milestones for cryptocurrency take place. On 18 August 2008, the domain name Bitcoin.org is registered. Then, on 31 October, the mysterious and so-called Satoshi Nakamoto, who designed Bitcoin, publishes a paper that sets the ball rolling: Bitcoin: A peer-to-peer Electronic Cash System. (Bigmore, 2018)

6- Cryptocurrency creation:

The creation of Bitcoins began in 2008 by a man allegedly named Satoshi Nakamoto as we detected before, Satoshi created a formula so sophisticated that when it is solved (using computer processing power), it creates a "block" of data which contains Bitcoins, there is a maximum amount of Bitcoins that will exist, and there is diminishing returns built into the system, for example, users were formerly able to create 50 Bitcoins in one block, but since the end of 2012, the amount created reduced to 25.

Bitcoin is also unique in its creation, anyone can create their own Bitcoins, this process is called mining and requires an excessive amount of computer power in order to do efficiently (Sagona, 2018).

Creating a coin (which requires building a blockchain from scratch) is very expensive and takes a lot of time. You also need an amazing team of developers.

However, if you don't need your own blockchain, you can just create a token. This way, rather than building your own blockchain, you can just build an app that runs on an existing blockchain, like Ethereum or NEO. creating a token and app (dApp/decentralized application) does still require a lot of time, money and a great team of developers, but, it is much easier and cheaper to do than creating a coin/building your own blockchain.

In shape bellow we can see how blockchain generally is constructed:

Fig n3: « conceptual blockchain structure»



Source: created by researcher through different references.

The transaction data can be stored in blocks, which are actually the leaf nodes of a merkle tree. The root hash can then be stored in the block. So the blocks of a blockchain hold valid transactions that are hashed and encoded into a merkle tree, and here in shape bellow we can observe this transaction in Bitcoin blockchain structure.





Source: Suraj Kumar, Introduction to Blockchain, published in https://medium.com.

7- Cryptocurrencies Future:

It becomes clear that cryptocurrencies has a dark future, most economists says that will be difficult to continue existing, In part next we shall try to summarize most affective reasons:

7-1 Legal reasons:

This is the strongest disadvantage in later time, most countries today refused crypto- currencies holding and exchanging, for example Algeria legalized in 2018 a new law under article number 117 that says: « It is prohibited to buy, sell and hold the virtual currency», because of probability using it in illegal investments as drugs, tax evasion or money laundering, However Algeria was not alone in refusing cryptocurrencies, in table below we detect cryptocurrencies legal positions in deferent countries and unions:

country	c-c legal position	By institution/ law
USA	Legal as a	Federal Court
	merchandize	
Japan	Legal as an official	Government
	currency	
European	Legal but risky	European Parliament, and
Union		Commission
China	Not Legal in china	People's Bank of China
	banks	
Germany	Legal as a currency	German Finance Ministry
Brazil	Legal but not secure	Central Bank of Brazil
Argentina	Legal as a property	civil Code
Mexico	Legal	By fintech act
Canada	Legal as Intangible	Personal Property Security
	property	
Morocco	Legal but not as a	Governor of Morocco Bank
	currency	
South Africa	Not legal	South Africa Reserve Bank
Nibal	Not legal	Nibal bank
Bangladesh	Not legal	Bangladesh bank
KSA	Not legal	Saudi Arabian Monetary Bank
Egypt	Not legal	Central Bank

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Source: gathered by searcher from deferent references.

7-2 - Economic reason:

From first day there have been many fluctuations in cryptocurrencies price, which has led to a decline in confidence in its reliability as a currency, with simple analysis we can observe Size of risk in Bitcoin exchange as a leader cryptocurrency, in next shape between November 2016 and August 2017 (point A, point B) every one Bitcoin gained (4764.87-697.3) =4067.57 \$, and gained after four months (point c) 9095.27 \$ because of the meteoric rise, however Bitcoin lost 6934.14 after only three months!

In same meaning David rote (Steven N. Durlauf, 2014): This volatile trend raises questions about the price of cryptocurrencies: What is the fundamental value of a Bitcoin? Why is Bitcoin so volatile? What could increase or decrease the volatility of Bitcoin in the future?



Source: www.statista.com (modified by researcher)

These huge fluctuations made cryptocurrencies holding and exchanging very difficult investment area, so that pushed countries to avoid its risky environment by laws we detected before.

7-3- Technological reason:

Simply cryptocurrencies demand very advanced technology in creating (bloc chain, and devices), so that make it far from public properties, in 2008 more than 1.6 million Bitcoin disappeared after the launch of the system. It is not known till now who took it or where? And majority says that Satoshi Nakamoto took it (cryptoarabic, 2018).

7-4- Decentralization reason:

Many people believe that decentralization and liberalization are the strength of cryptocurrencies, but in fact this became an obstacle to its spread and perhaps the most important proof of that was US (bit-chain.com:, 2018) courts when it barred Ripel because of its excessive decentralization.

7-5- Google obstacle reason:

Google plans to stop publishing any promotion on Bitcoin or other nonofficial currencies, in addition Facebook has taken a similar step in January 2018, and both of companies has same opinion : that cryptocurrencies promotion is a deceptive promotion.

7-6- Organizational reason:

Cryptocurrencies do not have central banks to regulate the money supply or oversee financial institutions, but no one should neglect the importance of cryptocurrency governance institutions (Steven N. Durlauf, 2014).

Conclusion:

Cryptocurrency are an impressive technical achievement, but they are still a currency experience has been hit by many obstacles: economic obstacle due to sharp fluctuations in price, legal obstacle due to its rejection by a lot of countries, and organizational obstacle due to the lack of any institution to supervise, So even if cryptocurrencies survive, they may not fully displace traditional currencies.

Nevertheless, many people, especially hackers cling to the cryptocurrency as a hobby and property, but we believe that if it is enough to survive now, it will not seem to be so for its adoption as an official currency.

Interpretation

- 1. The National Security Agency (NSA) is a national-level intelligence agency of the United States Department of Defense, under the authority of the Director of National Intelligence
- 2. The Massachusetts Institute of Technology.
- 3. Wei Dai (Chinese) is a computer engineer best known as the creator of the Bitcoin predecessor "b-money" and as the developer of the crypto library

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