

The Cryptocurrencies Could Change The Nature of Monetary Policy^(*)

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Abstract

This paper considers whether the development of cryptocurrencies poses any threat to the ability of central banks to control the value of their national currencies. Can cryptocurrencies play the same role as actual currencies in influencing monetary policy? Despite all this inconvenience, the volume of transactions carried out using cryptocurrencies is still insignificant compared to those carried out using official currencies. Official money fulfils its main functions successfully when its value is sufficiently stable and there are no serious financial crises. While cryptocurrencies are able to work as a medium of exchange only, they cannot perform the rest of the functions of money successfully. They cannot be used as a unit of account or as a store of value due to their instability. In addition, cryptocurrencies cannot control the inflation target, unlike official currencies. However, the future role of cryptocurrencies remains uncertain. The new technology "like a block chain" will likely revolutionise finance in the future by conducting transactions faster, more securely and facilitating calculations that are beyond the capabilities of traditional computers. Therefore, we must keep an open mind about the new financial technologies, not only because of the risks they pose but also because they could improve our lives.

Keywords

Emergence, Cryptocurrencies, Change, Nature, Monetary Policy

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الملخص

تتناول هذه الورقة ما إذا كان تطور العملات المشفرة يشكل أي تهديد لقدرة البنوك المركزية على التحكم في قيمة عملاتها الوطنية. هل يمكن أن تلعب العملات المشفرة نفس الدور الذي تلعبه العملات الرسمية في التأثير على السياسة النقدية؟ وقد أوضحت الورقة انه على الرغم من كل هذا القلق بشأن العملات المشفرة إلا أن حجم المعاملات التي تتم باستخدام العملات المشفرة لا يزال ضئيلاً مقارنة بالمعاملات التي تتم باستخدام العملات الرسمية.

حيث تؤدي الأموال الرسمية وظائفها الرئيسية بنجاح في أوقات استقرار قيمتها وعدم وجود أزمات مالية خطيرة. في حين أن العملات المشفرة لا تستطيع أن تقوم بكل الوظائف النقدية، فهي قادرة فقط على العمل كوسيلة للتبادل، ولكنها لا تستطيع أداء بقية وظائف المال بنجاح فلا يمكن استخدامها كوحدة حساب أو كمخزن للقيمة بسبب عدم استقرارها.

بالإضافة إلى ذلك، لا تستطيع العملات المشفرة التحكم في استهداف التضخم، وذلك على عكس العملات الرسمية. فمثلاً عملة البيتكوين قد تكون ذات مصداقية كبيرة في التنبؤ بقيمتها، إلا إن نمو العرض الخاص بها المنخفض لا يمكنها أن توفر الاستقرار المالي وأيضاً لأن زيادة الطلب على عليها ستؤدي إلى ارتفاع السعر بصورة كبيرة. بالإضافة إلى إن عمليات التصفية للمقننات من هذه العملة قد تتسبب في انخفاض كبير في الأسعار، مما ينتج عنه تقلبات كبيرة في الأسعار.

لذلك فإن الدور المستقبلي للعملات المشفرة لا يزال غير مؤكد، فمن المرجح أن تحدث تقنية جديدة "مثل blockchain" ثورة في مجال التمويل في المستقبل من خلال إجراء المعاملات بشكل أسرع وأكثر أماناً وأن تقوم بتسهيل العمليات الحسابية التي تتجاوز قدرات أجهزة الكمبيوتر التقليدية، وبالتالي، يجب أن نبقي عقولنا متفتحة حول التكنولوجيا المالية الجديدة ليس فقط بسبب المخاطر التي تشكلها ولكن أيضاً لأنها تقوم بتحسين حياتنا.

الكلمات المفتاحية: العملات المشفرة – السياسة النقدية

I. Introduction

Scientific progress and the digital revolution led to the emergence of the digital economy and the development of economic relationships by pushing trade forward in all productive sectors, industries, and services. This has led to the increase of economic transactions in the whole world through the Internet. In addition, the emergence of the digital economy has led to the emergence of new means of payment to facilitate world trade via Internet. When we look at online economic transactions, we find that these transactions represent almost a fifth of retail sales in all countries.

Furthermore, we have seen the emergence of cryptocurrencies, such as bitcoin, used as a medium of exchange. However, the volume of transactions carried out using cryptocurrencies is still insignificant compared to those carried out using official currencies, at least for the time being. Also, it is thought that using cryptocurrencies instead of actual currencies as a medium of exchange may constrain the ability of central banks to manage their economic policy goals.

In addition, there are some concerns about the cryptocurrencies that represent a challenge to face the monetary policy, where it is thought that the Cryptocurrency are being used instead of the actual currencies as mediums of exchange. In addition, there are some concerns that the cryptocurrencies may constrain the ability of central banks to manage their economic policy goals.

Money is an essential element of human relationships, so the emergence of new means of payment is a complex issue, because people become upset when they face any disruptions in monetary policy happen.

Therefore, in this paper, we will try to respond to the question of whether cryptocurrency can play the same role as official currencies or not. In addition, we will be discussing the ability of cryptocurrencies to impact monetary policy. In addition, it can be considered money and replace the central bank-controlled money, because it achieves the three essential functions of money. Are the central banks reluctant to accept cryptocurrencies? Should they start issuing them to the public? It is like what happened in Venezuela when the government tried to slog down on cryptocurrency activity within its borders by seizing mining equipment

that people imported into the country. The Venezuelan government had issued a new currency called "Petrocoin," which was a tactic to trick the citizens into purchasing a state-controlled currency that was not a real cryptocurrency at all. Nevertheless, this has done little to stop the surge of true cryptocurrency activity undertaken by Venezuelans to protect their financial assets.

II. The problem

Technological progress contributes to the development of a new kind of currency where this new approach refers to transactions conducted electronically, how cryptocurrencies can keep the balance between money supply and money demand without any control tools! Another question is, do the prospective advances in cryptocurrencies really threaten central banks' capacity to regulate the overall level of spending in the economy, and stabilise the general level of prices? So, this paper examines whether cryptocurrencies can play the same role as official currencies by assessing how well they perform the three traditional functions of money: as a medium of exchange, store of value, and unit of account, and whether it affects monetary policy in general.

III. The hypothesis of this paper

This paper's hypothesis is that cryptocurrencies cannot perform the same functions as official currencies and so cannot influence monetary policy.

IV. Objective

This paper discusses the concern about the role of the central banks with the emergence of cryptocurrencies. Does the development of cryptocurrencies pose any threat to the ability of central banks to control the value of their official currencies, particularly with the increasing progress of technology?

V. Research Methodology

This paper expands on the descriptive approach to address the subject of cryptocurrencies' ability to influence monetary policy. We will do our best to comprehend and review prior literature on this subject in order to provide a better understanding of all elements based on the

descriptive approach in order to reach the best findings and provide appropriate recommendations.

VI. Literature Review

- Till now, research suggests that cryptocurrencies are not as commonly utilised as traditional money and are not a viable alternative to traditional money. Their protocols are, at least so far, relatively rudimentary and arbitrary in comparison to what current financial systems administration necessitates. Therefore, we do not see any risk of cryptocurrencies on central bank-controlled currencies. Because international currencies have a long history of good practises and price stability, as well as legal statuses and large user networks.⁽¹⁾
- According to certain other studies, cryptocurrencies will continue to exist and have authority in the near future due to the customers' mandated power. Central banks, on the other hand, do not see the presence of cryptocurrencies as posing a serious danger to the official currency; they will easily remedy the problem by expanding their oversight to cryptocurrencies.⁽²⁾

VII. The official money

Money is used to achieve important economic goals; it facilitates transactions and acts as a social tool to make economic transactions appear simple. In addition, money used to come in a variety of shapes and sizes, with anything of inherent value, such as precious metals, serving as a form of payment. Furthermore, the properties of these metals make them well suited to serving the three functions of money. Money can take the shape of non-perishable goods, and numerous items and assets have been used as money and accepted as payment in the past.

Governments have played an important role in putting a value on money. Money that has intrinsic value is not regarded as official currency unless its value is determined by government edict. A government can control the supply of money if it is powerful and reputable enough.

Official money must serve three purposes:

1. The first function is the Unit of Account, which is used to measure and reduce transaction costs in the economy.
2. The second function is that of a value store, which is utilised to accumulate purchasing power over time.
3. The third role is that of a medium of exchange: it must be generally accepted and simple to use in transactions.

Money's functions, which attract a currency, are based on two features.

First: To maintain purchasing power over time, the value of money must remain steady. Money will not be extensively used until its value remains reasonably consistent throughout time. Stability indicates that the currency's value is maintained by ensuring that the supply of the currency keeps pace with demand, avoiding both high inflation and deflation.

Second: To be widely accepted: If a currency's value is stable, it is extensively used. The level of user acceptability of the currencies is also crucial to the success of a stable currency. However, this is insufficient because two traits must exist in tandem.

The institutional arrangements or monetary system is responsible for a currency's stability and prosperity. The management of official currencies is supported by a system that is part of the larger set of rules that govern any country.

VIII. The Monetary system

The monetary system is a set of methods for managing the total liquidity of all cash assets, which are used to immediately meet transaction debt.

The monetary system strives to rebalance the economy while also addressing liquidity issues during periods of high prices. Central banks employ the monetary system to maintain prices generally steady, ensuring that the creation of money does not occur at a rate that causes prices to grow too quickly.

Because operating according to a financial system is vital to economic transactions, confidence in the financial system is considered the

foundation of a successful financial system. It cannot be a weak foundation to prevent the happening of a financial system shock.

As a result, the monetary system is concerned about money demand expectations, which are based on confidence, and prepares to increase money supply to satisfy them at a rate that keeps consumer prices rising at a low and steady rate. In addition, when confidence is lost, the central bank implements monetary policies to control financial crises that could result in a currency collapse; this is done by injecting liquid money into the banking system on a regular basis.

The monetary base is divided into two parts:

1. The currency that private parties hold for use as a means of payment. "The liabilities of the central bank that are held by private parties so as to facilitate payments".
2. The reserves that commercial banks hold in accounts in proportion to the size of the transactions' balances that the public maintain at the banks, owing to the existence of legal reserve requirements.

IX. The Cryptocurrency

Keeping and paying official money comes with a number of dangers. As a result, new technologies emerged with enticing potential for people since they provide more secure payment methods. Cryptocurrencies are a new type of money that provides rewards while also posing threats.

Cryptocurrencies are digital money used in electronic payment systems that are not backed by the government or shared with a third party. Ledger technology is used in electronic payment systems and intelligent applications to allow individuals to open accounts with pseudonymous identities that are known to the entire network and passcodes that are known only to the account holders.

With the advent of distributed ledger technology (DLT), transactions and data may now be recorded and shared over a distributed network of multiple participants at the same time. This particularly important trait has contributed to the creation of over a thousand different types of cryptocurrencies. Although they are all based on block chain technology, they may differ in terms of technology, making them better suited to specific aims.

Cryptocurrencies are a new type of currency that Satoshi Nakamoto, a programmer, created, who introduced a cryptography cash system named Bitcoin in October 2008, and it went live in January 2009. Any two interested parties can deal directly with each other without the need for a trusted third party using an electronic payment system based on cryptographic evidence (peer to peer). They were then listed on an exchange for \$0.000764 each. The first true Bitcoin transaction was recorded in May 2010.

• **The General characteristics of cryptocurrency**

We will shed some light on how well cryptocurrencies in general have been performing as an alternative payment system.

1. Electronic cryptocurrencies: These are digitally recorded and used in transactions.
2. Peer-to-peer transactions: unlike electronic payments, peer-to-peer transactions allow any two people to transact directly with each other without the need for an intermediary financial institution to complete the transaction.
3. No accountability: electronic cryptocurrencies are distinct from practically all other forms of paper or electronic money in that they have no issuer responsibilities, are not controlled by a government or central bank, and do not represent a liability to anyone. Payments and other operations are made faster and more efficient with cryptocurrency.

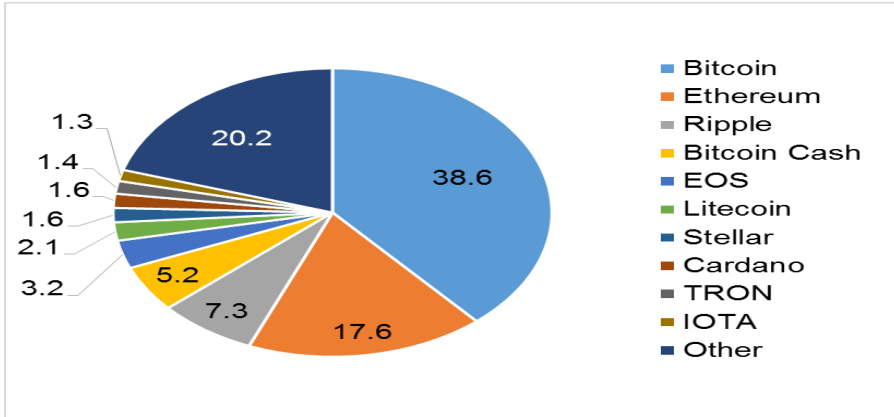
• **The uses of Cryptocurrency**

We will look at how bitcoin is used, which will help us figure out if cryptocurrency has an impact on monetary policy and how cryptocurrency works as a payment alternative.

In May 2018, there were over 1500 crypto-currencies on the market, and the top ten currencies accounted for roughly 80% of the total market value, while the two most important of the top ten currencies represented around 55% (bitcoin and etherium). In terms of market value, cryptocurrencies are worth roughly \$330 billion in coins.

The Federal Reserve released coins worth \$1.6 trillion, while the European Central Bank issued coins worth €1.2 trillion. ⁽⁴⁾

Figure (1) the percentage of Cryptocurrencies in the market in 2018



Source: Brue gel based on coinmarketcap.com.

Figure (1) by the end of May 2018, while cryptocurrencies were worth around \$330 billion in terms of market value, the top ten cryptocurrencies accounted for 80 percent of the total market, while bitcoin and ethereum accounted for only about 55 percent.

Now we will recognize the first and most well-known cryptocurrency, "Bitcoin," and examine the recent trends in circulation and supply growth.

Disadvantages of using of cryptocurrency

1. While a number of intermediaries are required to provide technical services, no single person is accountable for the operation of Cryptocurrencies.
2. Cryptocurrencies are ineffective as a monetary unit.
3. Cryptocurrencies have not proven to be effective as a store of value.
4. There are no central banks in the country.

5. They lack a system for determining interest rates and reserve ratios for businesses that deal with them.
6. They have no monetary policies in place to organise money production.
7. They cannot anticipate the need for money.
8. They have no strategies to meet money growth at a rate that keeps consumer prices rising at a modest and consistent rate.
9. They lack central power to deal with deflationary financial crises that result in a money supply collapse. Financial crises that cause a collapse in the money supply.
10. They are unable to infuse liquidity into the monetary system in order to prevent inflation.

Because cryptocurrencies lack central banks and a method to maintain prices, relatively steady, traditional approaches for studying monetary policy would be useless.

In addition, we cannot anticipate money demand, and we cannot plan to increase the money supply at a rate that keeps consumer prices rising at a low and consistent rate, in the range of 2% to 3%. We also do not have any plans to keep up with the rate of inflation.

What happens if the central banks are confronted with deflationary financial crises that could result in the money supply collapsing, injecting liquidity into the banking system?

Therefore, the cryptocurrencies are decentralized in settlement of transactions.

- **The supply of cryptocurrency**

The prices of cryptocurrency are extremely volatile, and so the supply of them differs depending on each case, where the demand for cryptocurrencies can highly fluctuate leading to the ultimate price volatility. As many cryptocurrencies limit their monetary supply, the prices will fluctuate with changes in demand, when the supply is limited.

Despite putting limit on the final total supply of a cryptocurrency to avoid devaluation of the currency by increasing the issuance, there are ways in which these limits could be circumvented to some extent.

For example, the Bitcoin increased more than 15 times through 2017, and decreased by more than 25% in the first month of May 2018. Likely the volatility of Cryptocurrency continues.

In some cases, the supply rules are often to change. For example, when the Bitcoin allowed users to change the supply algorithm, this led to the emergence of new currencies. In other words, new cryptocurrencies that are backed by holdings of existing cryptocurrencies could be created on less than a one-to-one basis. The creation of these new cryptocurrencies expands the actual money supply.

X. The Bitcoin

Bitcoin is a digital currency that can also be called a cryptocurrency. It was mainly created to speed up the transactions without having intermediaries, and to reduce the government's control over the transactions. From all the cryptocurrencies issued, "Bitcoin" is the most important currency.

The Bitcoin is not formally accepted as medium of payment, but people around the world use it for various kinds of transactions. Bitcoin is an electronic program to record all transactions every 10 minutes in blocks (called blockchain). Any member can verify the transactions of a block, solve the mathematical proof associated with it, and then be rewarded with newly issued bitcoins.

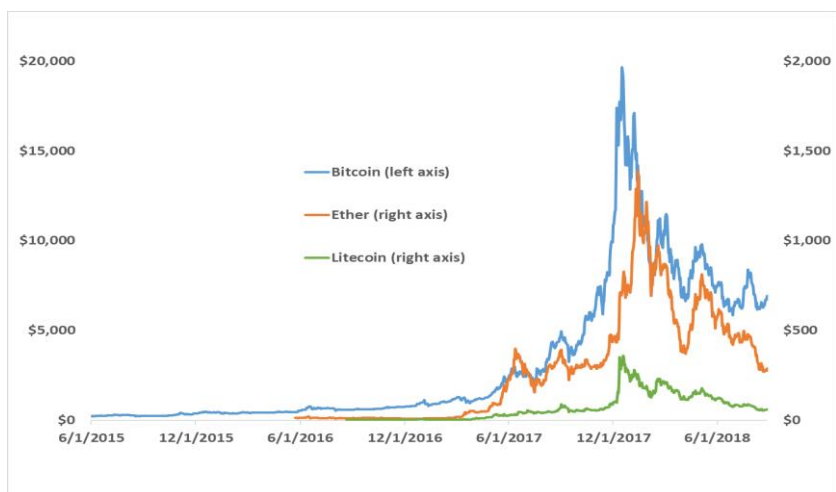
The first issuance of bitcoins was in November 2012; the reward associated with each block was 50 bitcoins. Then the reward was programmed to halve every four years almost, until the incremental extension of coins disappears in around 2140.

The new coins issued are not exactly as foreseen from the algorithmic point of view, because new blocks are not mined precisely every 10 minutes. This variance from the theoretical growth will decrease as the supply grows, but the issuance schedule is improbable to change, because the Bitcoin demonstrated very strong credibility in maintaining this schedule.

The appreciation of value for cryptocurrency "Bitcoin" in 2017 contributed to increasing the importance of these currencies to the public. At the beginning of 2017, the price of a Bitcoin on an exchange was about \$993.43. The price jumped in that year, reaching about \$19,650 in December 2017. Then early in 2018, the price dramatically declined by

65% to reach about \$6.905 in less than two months. From February through August 2018, the price of a Bitcoin remained volatile. Then in October 2018, the price of one piece of "Bitcoin" was \$6.570 and the total value of Bitcoins circulated approximately about 17.3 million in 2018 has the total value of Bitcoins circulated about \$113.6 billion in general.

Figure No (2) The three most important from 6/2015 to 6/2018



Source: the Federal Reserve Bank, Economic Data website on August 2018

Figure (2) shows the price of the three most important Cryptocurrencies. We can see from Figure (2) that the price of bitcoin in June 2017 and the price of an exchange Bitcoin were about \$993.43, and then the price jumped in that year to reach about \$19.650 early in December 2017. These statistics are central to the analysis of Cryptocurrencies, where volatility in the price of Cryptocurrencies suggests the following:

- **Characteristics of Bitcoin**

Cryptocurrencies do have interesting characteristics that make them attractive, unlike other currencies.

1. Unofficial currencies: The Cryptocurrencies are not issued by any government, are so they are protected from political influence and the threat of manipulation.

2. Digital currencies: Cryptocurrencies are similar to electronic money issued by central and commercial banks, and offer greater anonymity than conventional payment systems. They are also fiduciary (they have no intrinsic value).
3. Decentralized in settlement of transactions: Cryptocurrencies are peer-to-peer, which it means, users ensure anonymity, Cryptocurrencies use decentralized ledger technology (DLT).
4. Private system: Cryptocurrencies enable to use a private system in one of the safety environments. The system is very much simple and increases the speed of transactions.

XI. Cryptocurrencies and Blockchain

Cryptocurrencies and blockchain have become hot topics in the last couple of years. Whilst the two are often referred to in the same sentence and are clearly linked to each other, when we talk about Cryptocurrencies and blockchain, people generally think they are the same, because blockchain is a particular type or subset of so-called distributed ledger technology (DLT). the distributed ledger technology forms the backbone of the crypto-market, where the DLT is a way of recording and sharing data across multiple data stores (also known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, which are called nodes.

Blockchain technology uses cryptographic protocols to prevent unauthorised changes or manipulations of the public ledger. These methods protect each transaction by ensuring that the private keys required to write the file are in their possession. Every user on a blockchain network is given a pair of keys. There are two types of keys: a private key that is used to produce a digital signature for a transaction and a public key that is known by everyone on the network. A public key can be used in two ways.

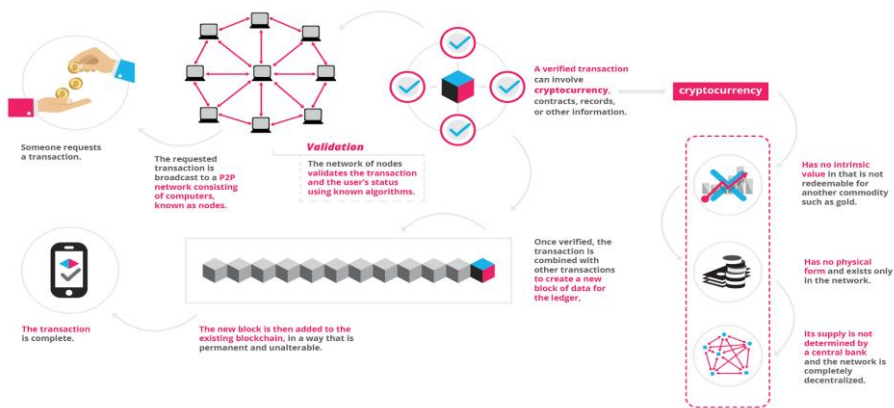
-It functions as a blockchain network address.

-It is used to certify the identities of the two parties involved by verifying digital signatures, as well as to ensure that the entire ledger is safe and that any modifications to the ledger are accessible to all participants.

The massive blockchain technology that underpins the wide range of cryptocurrencies is now in use. It may also be used in a variety of industries and has a wide range of applications; it fits all of the requirements of other industries.

The blockchain transaction is depicted in the diagram below. ⁽⁵⁾

Figure (3) the blockchain transaction



¹⁰ <http://www.ft.com/fastft/289502/bitcoin-still-gaining-currency-china>

XII. Can cryptocurrencies change the nature of monetary policy and its application?

The monetary policy administration of official money is based on defined regulations and is part of a package of national policies that are subject to monitoring and revision. It is not an automated decision, where central banks have the tools in place to enact monetary policies that can be controlled by limiting the amount of money in circulation. Monetary policy is also influenced by interest rates on money deposits and money credit.

Countries with relatively robust and stable economies have effective control over the amount of money in circulation; when they want to keep inflation under control, they buy, sell, lend, and settle in official currencies.

In the case of the cryptocurrency that circulates on the internet, a specified algorithm that made its management completely automatic and independent of any monetary rules managed the protocol. This is the primary distinction between bitcoin and traditional currency.

As a result, it is difficult to see how algorithms could be very effective in dealing with monetary decisions that are complex.

Because there are no genuine decision makers, no one can be held accountable. The value of a currency is a vital component of a society's economic potential; this is a dangerous disadvantage in the electronic system of cryptocurrencies.

As a result, society cannot continue without administering and controlling monetary policy, which aids in the resolution and decision-making of complicated economic problems.

After we have completed our cryptocurrency study, we will need to compare national currency to cryptocurrencies in order to determine the volume and growth of cryptocurrencies vs. the growth of official money. People in developing countries abandon their national currencies in favour of international currencies, particularly the dollar and the euro, which are widely available in most regions of the world and account for a major share of global currency demand. International currencies also serve as a store of value, a means of exchange, and a unit of account. They are accessible to the majority of the population on the planet.

These currencies have also recently become more stable in value, making them more essential than cryptocurrencies. The following data shows the average annual growth rate in the money supply of the selected countries over a 25-year period between 1990 and 2015. The following table shows that the average annual money supply growth rate for countries is 7.17%.

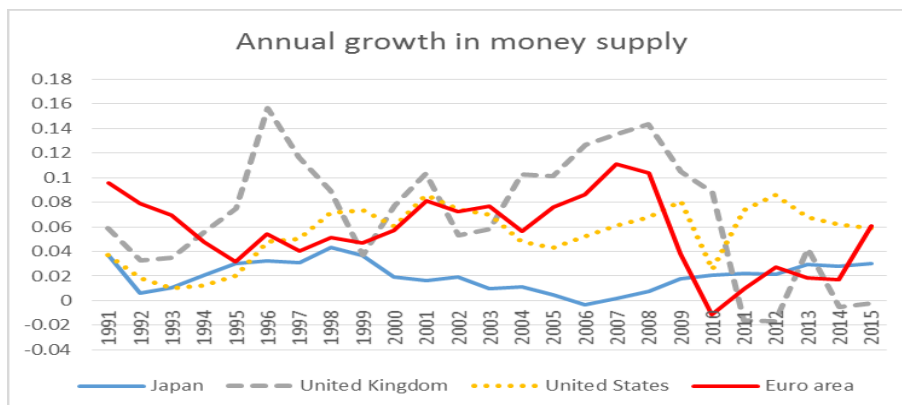
Table (1) the average annual growth rate in the money supply of the selected countries for the 25-year period between 1990 and 2015.

Currency Region	Average annual supply increase (%)
Australia	8.81
Canada	6.54
China	20.14
Colombia	18.47
Denmark	6.34
Euro area (19 countries)	5.55
Iceland	11.12
India	16.48
Japan	2.01
Korea	12.06
New Zealand	7.59
Norway	6.65
OECD - Total	7.17
South Africa	12.42
Sweden	5.47
Switzerland	4.04
United Kingdom	6.9
United States	5.4

Source: OECD.Stat.

As shown in the previous table, wealthy countries experienced a slower increase in currency supply than emerging countries, which had experienced price hikes and other types of inflation. Money growth rates in wealthy countries were around 5% on average, rarely exceeding double digits or falling into negative territory. The growth rates of developing countries, on the other hand, have been significantly more volatile, and they may even go into negative territory, indicating the financial instability of these countries and their currencies.

Figure (4) the annual growth rate in the money supply for 25 years



Source: OECD. Stat.

The following data shows the average annual growth rate in the cryptocurrencies supply of Bitcoin. In 2009, when very few people had started using Bitcoin, the issuance was far below the showing schedule. Thus, the number of new coins was not issued exactly as was predicted from the algorithm, because new blocks were not examined precisely every 10 minutes. However, in 2010 this variance decreased as the supply growth became above the theoretical number predicted from the supply. Nevertheless, the supply was growing very quickly in the first few years at a rate similar to the highly inflationary and unstable developing country currency. Then, it dropped quickly as the block reward halved twice. We can say; that it is only Bitcoins among the cryptocurrencies that could demonstrate credibility in maintaining this schedule. The issuance schedule shows the growth rate of supply and the predictability of the schedule. The following table represents the annual growth rate of Bitcoin. We notice that the new Bitcoin supplied in 2010 was 3.394.950 billion, the total Bitcoin supplied 5.018.350 billion and the growth rate was about 209.1%. The numbers of new coins were not issued exactly as it was predicted from the algorithm. The new Bitcoin supplied in 2016 was about 1.022.550 billion, while the total Bitcoins supplied were about 16.051.150 billion and the growth rate was about 6.8%.

Table (2) Bitcoin supply and annual growth rate from 2009 to 2024

Year	2009	2010	2011	2012	2013	2014	2015	2016
New BTC Supply	1,623,400	3,394,950	2,981,700	2,613,125	1,585,625	1,471,775	1,358,025	1,022,550
Total BTC Supply	1,623,400	5,018,350	8,000,050	10,613,175	12,198,800	13,670,575	15,028,600	16,051,150
Annual growth rate		209.13	59.42	32.66	14.94	12.06	9.93	6.80
Year	2017	2018	2019	2020	2021	2022	2023	2024
New BTC Supply	657000	657000	657000	492750	328500	328500	328500	246375
Total BTC Supply	16,708,150	17,365,150	18,022,150	18,514,900	18,843,400	19,171,900	19,500,400	19,746,775
Annual growth rate	4.09	3.93	3.78	2.73	1.77	1.74	1.71	1.26

Bitcoin Historical Prices, <http://www.in2013dollars.com/bitcoin-price>.

If we look at the following table of Bitcoin historical prices for each year, we can see how much Bitcoin was worth when it first debuted in 2011 and how one Bitcoin could be purchased for \$0.30. The currency, on the other hand, completed the year with a value of roughly \$3. Bitcoin will hit \$12.56 by the end of 2012.

The price of bitcoin fell from \$266 to roughly \$50 in early April 2013, before rising to around \$100. By November, the price had recovered and had risen to \$198.51. However, it saw a huge increase, closing the month at \$946.92.

In 2014. It was the only year in which Bitcoin closed the year at a lower price than when it began it reached around \$850 in February after extending the previous year's gain, but closed the year at \$378.64. For a few months in 2015, the price of a Bitcoin fell, but it rose near the end of the year, reaching \$362.73 in December. Prices steadily increased in 2016 and 2017, culminating in a huge rise at the end of 2017. In 2018, prices fell slightly, but surged significantly when compared to the start of 2017.

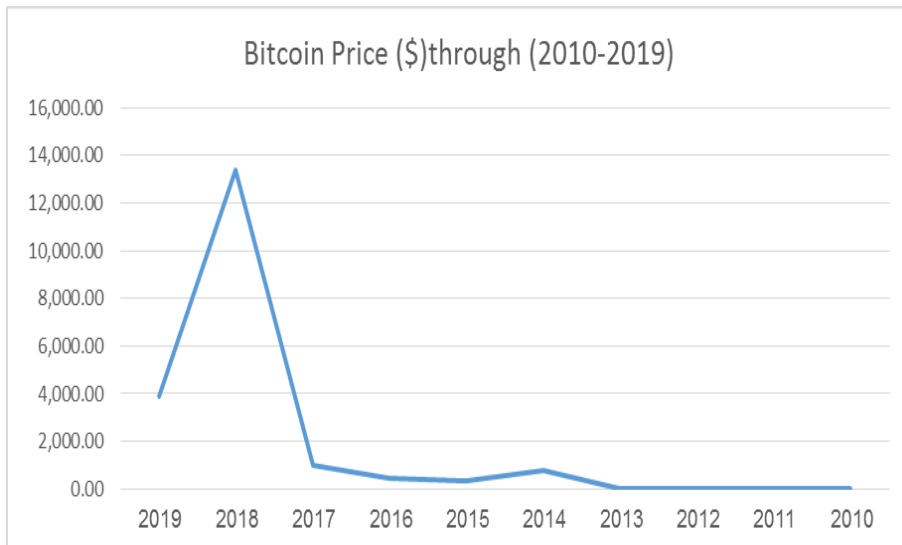
Table (3) Bitcoin Historical Prices in January each year. (2010-2019)

Year	Bitcoin Price (\$)	Change (%)
2019	3,869.47	-71.15
2018	13,412.44	1,244.35
2017	997.69	129.64
2016	434.46	38.4
2015	313.92	-59.25
2014	770.44	5,690.96
2013	13.3	152.56
2012	5.27	1,655.90
2011	0.3	249.65
2010	0.09	0

Bitcoin Historical Prices, <http://www.in2013dollars.com/bitcoin-price>.

Bitcoin’s Historical Prices of each year the shows the price (\$) of the Bitcoin when from 2011 to 2019.

Fig (5) Bitcoin Historical Prices from 2010 to 2019



Make by researcher.

XIII. Experiences of some countries with dealing cryptocurrency

In 2015, the states of the United States, particularly New York, made moves to establish regulatory frameworks for cryptocurrencies. New York was the first state to enact cryptocurrency-specific legislation, announcing the final structure of Bit License, a complete framework for the regulation of cryptocurrency enterprises. The Bit License framework includes consumer protection regulations as well as a prohibition on anyone who engages in virtual currency business activities without first obtaining a Bit License. The Bit License framework requires every person who engages in virtual currency business activity to obtain a Bit License. It must apply for a Bit License if it meets the criteria, and virtual currency business activity is defined as the conduct of any one of the following involving New York or residents in New York:

1. Receiving Virtual Currency for Transmission or Transmitting Virtual Currency unless the transaction is for non-financial purposes and involves the transfer of a small sum of Virtual Currency.
2. storing, keeping, or maintaining virtual currency custody or control on behalf of others
3. Using Virtual Currency to buy and sell as a customer service.
4. Providing Exchange Services to customers as a customer service.
5. Controlling, administering, or issuing a Virtual Currency is number five on the list.
6. The development and dissemination of software in and of itself does not constitute Virtual Currency Business Activity.

It appears that New York's regulations have discouraged the adoption of cryptocurrency, Only four companies had been successful in obtaining a license. Japan, on the other hand, had already given 16 licenses in less than a year.

XIV. Conclusion

As such, cryptocurrencies are unlikely to fulfil all monetary functions. They do not have complete control over their issuance, as anticipated by the algorithm, and they lack monetary mechanisms to influence the volume of cryptocurrencies, like interest rates and minimum reserve ratios. In addition, Because of their volatility, cryptocurrencies have a tendency to resemble speculative investments. Furthermore, the decentralisation of cryptocurrencies would provide anonymity to dealers when making transactions, which is beneficial for privacy. But it has the potential to promote transactions involving criminal activities or tax evasion. As a result, cryptocurrencies are even more suited to these operations due to their ability to manage big transactions

Therefore, that anxiety over the role of central banks in cryptocurrencies is excessive and unfounded. The ability of central banks to manage the value of their national currencies through conventional monetary policy is unaffected by the rise of cryptocurrencies.

Because cryptocurrencies are issued automatically and privately, they are unable to manage inflation. As a result, unlike the official currencies regulated by the central bank, cryptocurrencies are unable to respond to liquidity crises and act in concert with them to defend financial stability. Despite the fact that cryptocurrencies "like Bitcoin" are trustworthy and predictable, low supply, growth cannot provide financial stability, because an increase in demand for cryptocurrencies would lead to the price climbing rapidly.

Furthermore, even if cryptocurrencies experience significant changes in the future, these changes will have no discernible impact on monetary policy. Many economists agree with this viewpoint, believing that macroeconomic stability is solely dependent on the ability of central banks to set the short-term nominal interest rate. If they could do this, they would be able to keep control over aggregate demand and inflation.

Thus, electronic money is unlikely to supplant bank notes or central bank settlement services in the near future.

XV. Recommendations:

1. There is no doubt that there is no worldwide consensus on the subject of cryptocurrency. As a result, officials around the world should work together to coordinate the legal and regulatory regulation of cryptocurrencies transactions by holding international conferences.
2. Central banks should be able to develop new alternative technology options, to promote global transactions and fulfil monetary policy goals.
3. We suggest that the central banks use the technologies underlying cryptocurrencies to issue their own cryptocurrency and realize efficiencies in the payment system in a safe way.
4. When a central bank uses cryptocurrencies to implement monetary policy, it must reap the benefits of new technology while maintaining trust in the official system.
5. Another method to address the cryptocurrency issue is to broaden the scope of central bank supervision to include anyone who uses cryptocurrencies.
6. The government can generate new tax revenue from cryptocurrency transactions, which will be classified as investment assets, or fixed assets by the government. The creation of additional tax revenue from cryptocurrencies in poor countries will have an impact on fiscal policy by reducing the government's ability to create money.

Notes :

- (1) Michael Woodford (2000)
- (2) the European Parliament's Committee on Economic "Monetary Dialogue"(2018)
- (3) Eric Helleiner (1998)
- (4) the European Parliament's "Monetary Dialogue"
- (5) Study of Cryptocurrencies and blockchain, the European Parliament's 2018

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