

Cryptocurrency: A New Money

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Abstract:

Crypto currency is used as digital money in electronic payment systems that do not require government approval or the involvement of a middleman, such as a bank. Users of the system, on the other hand, verify payments through the use of protocols. Since the first crypto currency, Bitcoin, was created in 2008, the number of crypto currencies has grown exponentially. They've had a sharp rise in recent years, followed by a sharp fall in price. According to one prediction, there will be over 5,100 crypto currencies in circulation by March 2020, with a combined market cap of \$231 billion. Because of their quick growth and high volatility, crypto currencies have caught the interest of the general public as well as policymakers. Crypto currencies' ability to serve as a substitute form of money is one of their most recognized features. A currency's value might be obtained from its inherent worth or from government decision. Electronic money has traditionally required the use of a trusted intermediary's private ledgers and systems. Users agree to valid value transfers in crypto currencies through a channel of users and cryptographic protocols. In order to make modifications to a public ledger and move value between accounts, crypto currency users often use a pseudonymous address and a password or private key. In the network, other computers verify the transfers.

Key Words: *policy makers, currencies, private ledgers, general public, crypto currency and predictions.*

Introduction:

It is only through the use of block chain technology that crypto currency systems can safeguard their public ledgers of accounts from manipulation and thus allow for valid transfers to be made by users without the need for a central, trusted middleman. Block chain technology allows for this. As a means of trade, an accounting unit, and a store of value, money fulfils three economic roles. The future value and significance of crypto currencies will likely be heavily influenced by how well they perform these roles in comparison to other forms of money and payment systems. People who believe in crypto currencies believe it will be extensively used and will be effective for these purposes. A decentralized crypto currency system, according to these people, will be more efficient and secure in the long run. Crypto currencies skeptics question whether or not crypto currencies can be used as money in the real world. Their findings include economic (such as existing faith in traditional systems and unpredictable crypto currency values) and technological (e.g. scalability) as well as usability challenges that stand in the way of wide-scale adoption of crypto currencies (e.g., access to equipment necessary to participate). On top of all this, detractors say crypto currencies are now expensive and unregulated.

When it comes to crypto currency creation and dissemination, there are many hazards and policy considerations to consider. Because of their pseudonymous and decentralized nature, crypto currencies may make it easier for criminals to launder money and commit other crimes, raising the question of whether current legislation adequately protect against this risk. In general, people may be unfamiliar with crypto currencies and how they work. Furthermore, despite the fact that bitcoin ledgers look impervious to manipulation, individuals and exchanges have fallen victim to hacks or frauds involving crypto currencies. As a result, crypto currency critics have raised concern that present laws and regulations do not adequately protect consumers who engage in crypto currency transactions.

Coin proponents warn against over-regulating what they see as a promising new technology that will bring substantial rewards. To sum up, the Federal Reserve and other central banks may be harmed if bitcoin becomes extensively used as money. This has led some analysts to urge that central banks should build their own digital currencies (instead of a cryptocurrency); others disagree with this notion.

Since the year 2009, cryptocurrencies have transformed from obscure, niche technological marvels to widely used financial tools, generating a great deal of attention. 3 Other financial transactions and products have recently included them. Initial coin offerings (ICOs) have sold cryptocurrencies to investors in order to raise capital, and the terms of some derivatives are now based on cryptocurrency values 4. 5 There are certain government central banks that have looked into the possibilities of issuing digital currency. 6 Because of the enormous media attention on cryptocurrencies, many people believe they are either the future of money and payment systems that will supersede government-backed currencies or a gimmick with no actual value..

Cryptocurrencies have the potential to have significant public policy ramifications, but it's vital to remember what they're really meant to be: alternative electronic payment methods. These findings are intended to help uncover potential benefits, problems, risks, and policy issues associated with cryptocurrencies by evaluating how well they

accomplish their intended function of transferring value. 8 Prior to examining the fundamental properties and functions of money, the paper first examines the conventional procedures for producing new money as well as the conventional methods for electronically moving existing money. After that, it goes into detail on the qualities and features of cryptocurrencies, as well as the possible advantages and difficulties they may present when used as a form of payment. According to the paper, there are hazards associated with the usage of cryptocurrencies as money, as well as policy concerns regarding these currencies' potential role in aiding criminal activity and consumer protection concerns. As a final point, this research examines the implications of cryptocurrency on financial policy, including possible government-backed digital currency issues.

“Limited Role for a Central Authority”

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The Electronic Settlement of Financial Instruments Because digital files can be duplicated several times and maintain the same information as their predecessors, electronic payment systems can encounter some challenges due to the lack of scarcity and the lack of confidence between parties. The so-called "double spending problem" affects electronic money transfers. It is possible for a payer to send a digital file straight to a payee in order to make a transfer of value through the use of the file. Payees must check that the payer has not transmitted identical files to several other payees before allowing a transfer to go through. Money would lose its value in such a system since it may be doubled (or multiplied by any quantity). This difficulty has historically been overcome by using at least one centralised, trusted intermediary in electronic money transfers, such as a private bank, a government central bank, or another financial institution, as stated in the preceding section.

Private ledgers of accounts, maintained by the trusted intermediaries, record the amount of money that each participant has. To initiate a payment, an electronic message (or series of messages) is sent to an intermediary, or to and between many intermediaries, instructing each to make the necessary alterations to its ledger system. They deduct a specified amount from the payer's account and deposit it in the payee's account to ensure the payer has sufficient funds. The intermediary or intermediaries confirm the transaction. 25 Using a debit card transaction as an example, a retail customer in the United States can initiate an electronic payment and then tell their bank to transmit payment to the seller's bank via an electronic message sent over a network. These banks then update their account ledgers to reflect the amount transferred from the purchaser's account to the seller's account (perhaps via the Federal Reserve's payment system).

Systems for electronic money transfers have a significant financial and physical infrastructure component to ensure the integrity, performance, and availability of the systems. Banks run and maintain networks to connect retail sites with them, whereas payment system providers operate and maintain networks to connect retail locations with each other and with the Federal Reserve. These third parties are in charge of storing and safeguarding enormous volumes of data. These intermediaries are tightly regulated to maintain their safety, profitability, consumer protection, and financial stability. They recoup their costs by charging fees directly to users of the system (for example, a merchant's price for a card reader and on each transaction) or by charging fees for associated services.

“Cryptocurrency: A New Money?”

Cryptocurrency serves as money in an electronic payment system where transactions are validated by a network of computers rather than a single third-party intermediary. As a general rule, these electronic payment systems make use of public ledgers, which allow users to create a pseudonymous account with a public key or an address that corresponds to a public key, as well as an account password or private key known only to the account holder and paired with the public key. When two parties agree to send bitcoin from one account to another (such as payment for a good or service), that's a transaction. The buyer will use their private key to unlock the bitcoin they're paying for, and the seller will use their private key to lock it. An exchange or service provider's "wallet" is generally required to access the cryptocurrency system. The mechanics of the system appear to users to be the same as allowing payments on any website that asks for a

username and password.

To make cryptocurrency transactions more user-friendly, several organisations provide programmes or user interfaces that may be downloaded onto a device. Blockchain technology is frequently used by cryptocurrency platforms to validate modifications to ledgers. 37 The public ledger is protected by blockchain technology's cryptographic protocols, which use strong encryption to prevent tampering or manipulation. Before any transaction can be placed into the ledger and the ledger is permanently altered, it must be validated by a member of the network. Validation on some bitcoin systems necessitates the member solving a computational decryption that is nearly impossible. Validated transactions are then added to the ledger and tracked. 38 Digital signatures are used in these protocols to ensure the security of each transaction and to verify the integrity of the entire ledger, making any modifications to the ledger transparent to all stakeholders. Due to the platform's and its cryptographic protocols' ability to prohibit duplicate spending and inaccurate ledger updates, parties that do not know one another can exchange something of value (such as digital currency).

For successful calculations, cryptocurrency platforms reward members with freshly created units of the currency (usually, the first person to solve the problem receives the new units), but in rare cases, the payer or payee may also be compensated with a fee that is paid to the validating member. The rate at which new cryptocurrency units are created, as well as the overall amount of currency in circulation, are both constrained by the platform protocols developed by the cryptocurrency's developers. 39 These restrictions impose scarcity in order to keep the cryptocurrency's value stable. Because cryptocurrency platform users, like those who mine precious metals, have to put in effort to gain access to the limited supply of the rare unit of value, these users are referred to as cryptocurrency miners. People can also buy bitcoin on exchanges that let them use official government currencies or other cryptocurrencies to pay for their purchases.

For the most part, cryptographers and computer scientists agree that blockchain-based cryptocurrency ledgers are mathematically safe and nearly hard to manipulate. To steal cryptocurrency from an exchange or an individual, hackers have taken advantage of flaws in particular exchanges and gadgets.

The Price of Cryptocurrency and Its Usage If you look at specific qualities and how they're being used, you can see how well cryptocurrency works as a payment method and what it's potential for future use as money. It's difficult to undertake this type of analysis now, though. Because of the decentralised nature of cryptocurrencies, locating reliable industry data sources can be difficult. Additionally, with the recent emergence of cryptocurrencies, conducting industry-wide analysis has become even more difficult. According to one industry association, as of March 10, 2020, there were 5,170 cryptocurrencies trading at prices indicating a total market worth of about \$231 billion.

As a result of these difficulties, it is not possible to conduct a comprehensive quantitative analysis of the entire cryptocurrency business in this document. It instead employs Bitcoin as an instructive example, which is the industry's first and most well-known cryptocurrency, with a market cap of \$2.35 billion. Recent price, value-in-circulation and transaction-number statistics for Bitcoin may shed light on how well cryptocurrencies as an alternative payment mechanism are performing in general.

Proponents of bitcoin claim that compared to existing payment systems, cryptocurrency may offer a significant cost benefit for international money transfers and payments. For the most part, sending money abroad requires more intermediary steps than sending money within the same country. These include transfers between banks and other money transmitters in other nations, and the possibility of currency conversions from one national currency to another. Cryptocurrency proponents claim that because transactions take place over the internet, which is already worldwide, and are not backed by government-issued fiat currencies, they might eliminate these costs.

However, it's hard to say how much traditional payment systems cost, and how much of that cost gets passed on to customers. Traditional payment methods. The scope of this report does not allow for a quantitative examination of this kind. 54 What's important to note is that certain traditional payment system costs, such as the fees intermediaries have levied on consumers, have been high enough to worry policymakers and prompt them to take action.

Traditional payment systems necessitate the credibility and trust of government and financial institutions, as explained in the "Traditional Money" section. It doesn't matter how much trust the general public has in these institutions; some people may still distrust them. Cryptocurrencies may be a viable option for those who are dissatisfied with the level of faith they have in various institutions. 58 Mistrust may be less common (but it's still there) in countries with developed economies like the United States. Typically, developed economies are stable and have minimal inflation, as well as well-respected financial institutions and a solid political structure. Some countries' economies do not have these characteristics. As a result, countries with a greater mistrust of existing institutions may see a greater uptake of cryptocurrencies than countries where faith in existing systems is generally high.

There are a variety of reasons why people distrust traditional private financial organisations. Without fully informing them of this danger, an individual may be anxious that a company may go bankrupt or otherwise lose their money. Financial organisations keep a record of all transactions associated with a particular customer's identity. They may evaluate or share this information with a credit-reporting bureau, for example, under specific circumstances. Financial institutions have been targeted by hackers in the past, raising questions about their ability to safeguard critical data. 61 When it comes to personal data protection and control, traditional systems fall short when compared to cryptocurrencies like Bitcoin and Ethereum.

Some people may doubt a government's competence or motivation to keep the value of a fiat currency steady. It's not uncommon for government-backed currencies in some countries to lose virtually all of their value during periods of hyperinflation, so some people may fear that their fiat money will lose a major amount of its value if those countries experience another period of hyperinflation.

Problems Facing Effective Money Management Remember that the usefulness of a cryptocurrency as a medium of trade, a unit of account, and a store of value depends on how efficiently it satisfies these functions. Cryptocurrency has several qualities that make it unsuitable for serving these three purposes in the United States and abroad. Only a small percentage of companies and individuals are now accepting bitcoin payments or using it themselves.

Price volatility has recently reduced many cryptocurrencies' usefulness as both a unit of account and an investment vehicle. Prices for goods and services in cryptocurrency can fluctuate dramatically in a short period of time, necessitating regular repricing and potentially creating confusion among buyers and sellers.

Conclusion

Rapid Transaction Validation and Energy Consumption in Large Scale Applications Cryptocurrency systems' scalability (the ability to raise their capacity while maintaining functionality) is still up for debate. Cryptocurrencies' underlying technology and processes look incapable of handling the volume of transactions necessary by a widely used global payment system at this time. A modest percentage of all financial transactions are processed by the Bitcoin platform each day, as explained in "The Price and Usage of Cryptocurrency" section. Bitcoin is the largest (by a huge margin) cryptocurrency. A well-established payment system handles the vast majority of these transactions. Furthermore, Bitcoin's processing speed is still inferior to other electronic payment methods, such as credit and debit cards, which complete transactions in milliseconds.

Running and cooling the machines used in bitcoin mining consumes a significant amount of energy. A small country like Ireland's daily energy needs are said to be the same as the Bitcoin networks. Along with raising questions about whether cryptocurrencies will ultimately be more efficient than current payment systems, such high energy consumption could result in significant negative externalities—where the price of a market transaction, such as purchasing electricity, may not fully reflect all societal costs, such as pollution from electricity production.

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