For the past few months, it has been almost impossible to turn on a TV, open a newspaper, or log in to social media without being inundated with cryptocurrency discussion. When asked, many people tend to have strong opinions about cryptocurrencies' value and utility. Some pundits view them as a replacement to the greenback, while others regard the coins as the biggest bubble in the history of financial transactions. There is a bit of irony here because when asked a direct question as simple as “Well, what is a cryptocurrency?” most people struggle to provide a coherent answer. How can an investor truly value something they do not understand? How can one rationally invest in something they cannot explain? Whether an investor is looking to make an initial investment, or a pessimist is attacking cryptocurrencies as a bubble, they both must understand the investment vehicle or risk acting on assumptions and/or faulty information. By no means does this research intend to provide a numerical value or projection for any cryptocurrency. The goal is to provide an analysis of what cryptocurrencies are, their origin, and their current and possible future uses.

What is a cryptocurrency? In general, a cryptocurrency is simply a digital currency that applies the use of cryptography as a means of security. You may ask, what is cryptography? Cryptography is a technical term for using encryption to prove who controls what. Put the two together and you have a digital coin wholly owned by its carrier (cryptocurrencies can be lost just like physical currencies. In the same fashion as $20 falling out of your pocket, losing the private keys means losing access to the funds. To date, an estimated 3.6 million bitcoins have been lost). An alternative view is thinking about cryptocurrencies as a digital form of cash. Cryptocurrencies and cash are owned by the holder and can be spent with no form of approval from a third party (i.e. a financial institution). For example, if McDonald’s one day accepts cryptocurrencies as payment, a $5 bill or $5 worth of Bitcoin could be used to buy a Big Mac. The bill/coin would be passed to the cashier as the Big Mac is delivered to the purchaser. The transaction is complete. Instead, suppose the customer used a debit card for this purchase. The customer swipes their card to pay and a request is sent from the POS to the customer’s bank asking for payment. Even though the customer has a sufficient balance and has approved the purchase by swiping their card, it is still up to the financial institution to approve the fund transfer. In the past, a debit card has provided a safe way to access funds without actually having to carry cash. However, one of the freedoms given up in this type of system is complete control over the funds. Historically, the safety and efficiency offered by the debit card outweighed the loss of control. In the late 90’s when the internet started to transform into a means of doing business, forward thinkers began laying the ground work for a digital currency that could be directly transferred from person to person, alleviating the need for a debit card, and potentially the financial institutions altogether. But a monumental roadblock remained. How can one anonymous person trust another anonymous person without relying on a trusted third party? Bitcoin creator Satoshi Nakamoto endeavored to solve this seemingly impossible problem and offered the world an answer.

The Blockchain

Satoshi combined several different ideas into one brilliant solution. His solution? The blockchain. A blockchain is another term for a distributed ledger. Despite how boring and mundane a distributed ledger sounds, it is a revolutionary upgrade from the 500-year-old double-entry form of accounting. A blockchain is essentially a record of all previous transactions and balances that is continually refreshed by every computer on the network. Theoretically, the data on the blockchain is extremely trustworthy because there are thousands of copies of the data that stay synchronized and confirm each other’s results. Moreover, there is no entity in charge of the ledger. For a traditional payment medium like Visa or PayPal, there is one company in charge of recording transactions and account balances. If PayPal decides to reverse a transaction, freeze your account for investigations, permanently block you from accessing your funds, or even take all the money out of your account, they have that ability because they control the ledger. Malicious entities (e.g. hackers) could gain the same control over an institution’s ledger. An established blockchain provides security

*Satoshi Nakamoto is thought to be a pseudonym for an individual or group of individuals wishing to remain anonymous.
†By “established blockchain” we are referring to those that require a significant amount of computing power to validate blocks (e.g. Bitcoin, Ethereum). As the required computing power grows, it is less and less likely that a group or person could gain control of more than 50% of a network. Even for smaller blockchains, it is still extremely unlikely for them to be dishonestly altered, though it is technically possible.
from such attacks, since no actor has the ability to create false historical data (fraudulently debiting funds from one account to another). Once a transaction has been accepted by the network, it is permanent.

The implications of a decentralized ledger are staggering; monetary transactions no longer require a financial intermediary. This disintermediation means cryptocurrencies could have the potential to compete with traditional financial institutions, especially in areas where the financial infrastructure is not very robust. When the prerequisite for securely sending money is merely a stable and reliable internet connection, large swaths of unbanked populations suddenly have access to previously unavailable financial tools. One of the most important of these tools is the ability to send any amount of money to anyone around the world on demand. As an example, migrant workers could send money home for fractions of a penny and allow their families to access those funds within minutes. This money transfer method is a massive improvement over the status quo; currently international remittances can take days and cost a significant portion of the money being sent. Traditional payment processors are exploring potential benefits of blockchain, as they’ve begun testing transactions using Ripple and other blockchain technologies. However, there are still barriers preventing cryptocurrencies from being adopted across the globe. In addition to reliable internet, a less obvious requirement is a stable power grid. Populations plagued with frequent blackouts could struggle to participate simply because they cannot access the network required to send coins or spend those they receive. Some governments intermittently turn off the internet for political and/or military purposes. For now, an internet connection is a requirement for transactions or transfers of cryptocurrencies. For developed countries, natural disasters should be kept in mind. A large earthquake on the west coast or hurricane on the east coast has the potential to take out power for millions of people for an extended amount of time. Today, in times of disaster, there is at least the option to buy necessities with cash; but, if we move to a world dependent on cryptocurrencies before we untether from the internet, people will not be able to buy the items they need when they need them the most.

Current and Possible Future Uses

Apart from speculative trading, this money-sending ability is the primary use for cryptocurrencies today. Over $2 billion is sent back and forth on the Bitcoin network daily in the form of international remittances, daily purchases, and online transactions all happening without a centralized coordinator. The peer-to-peer nature of blockchain and cryptocurrencies means that the coin’s owner has full control to spend their money without any oversight. Rather than relying on another party to send and receive money, cryptocurrencies put the control back in the user’s hands. One potentially negative aspect of this control, and of the blockchain, is that transaction history and financial information is available to almost anyone. Privacy coins aim to solve this transparency issue by concealing transaction amounts and account balances. However, these types of coins’ inherent privacy brings to light potential concerns: money laundering and other illicit uses. The entire idea of a “dark web” would be infeasible without cryptocurrencies as they are the primary means of payment. In addition to the underground internet activity catalyzed by cryptocurrencies, many criminals have seen cryptocurrencies as an ideal avenue for money laundering. Therefore, current financial institutions have their work cut out for them monitoring new customers’ source of funds (in industry terms this is known as the Bank Secrecy Act and Anti-Money Laundering requirements, or BSA/AML requirements). Current Secretary Treasurer Steven Mnuchin has stated publicly that banks who hold cryptocurrencies for clients in the form of “wallets” will still be held responsible for following the rules and regulations requiring them to confirm customer identities. These issues are not insignificant; government regulatory crackdowns pose an existential threat to cryptocurrencies’ futures. If there is any question as to the legality of accepting cryptocurrencies as a form of payment, businesses will not adopt the practice. This reality has left this up and coming asset class in limbo, as it waits for government agencies to determine, and agree upon, what it actually is and how to regulate it.

In addition to facilitating means of exchange, cryptocurrencies have the ability to function as a store of value. When financial institutions or national currencies are deemed unreliable or untrustworthy, people can turn to cryptocurrencies to take control of their finances. In fact, a rapidly growing number of Venezuelans have depended on cryptocurrencies to protect them from the continued hyperinflation of the Bolivar. Apart from protecting one’s purchasing power from the Bolivar or other downwardly spiraling currencies, cryptocurrencies potentially allow a secure storage of wealth in countries with banks of questionable integrity. Fortunately, the risk of a banking collapse in present-day United States is negligible, but in other countries, such fear is justified. In addition to banks becoming insolvent, some countries merely take money out of every bank account, for example, Cyprus in 2013. Because cryptocurrencies do not have centrally controlled ledgers, it’s impossible for a similar action to be carried out with a blockchain.

Another potential solution is a low Earth orbit constellation of broadband providing satellites (currently being tested by SpaceX under the project name Starlink). This still won’t help businesses regain power, but it has the potential to provide internet to peoples’ cellphones, with which they can transfer coins in exchange for necessities in a peer-to-peer format.
While cryptocurrencies were created to function as a currency, and could potentially function as a form of a safe haven investment like gold, currently they are predominately used as speculative commodities. Because the price and volatility swings make great headlines and promote investor euphoria, there have been a flood of retail investors trying to participate in the next run up or get in early on the next Ripple (35,159% return in 2017). To put the term “flood” into nominal terms, major trading platforms have been adding more than 100,000 users per day (Binance, one of the world’s largest exchanges, has reportedly added over 250,000 accounts in a single day). In fact, many of the larger exchanges intermittently stop opening new accounts because their systems cannot keep up with the surge in demand. At one point in December 2017, daily trading volume surpassed $50 billion, even more than the NYSE. While volatility can be wind in the sails for day trading, it can also cause incredible anxiety for buy and hold investors. At any given time, Bitcoin could be trading up or down 5%, for no discernible reason. Imagine if the S&P 500 moved plus or minus 5% throughout the day, 7 days a week, 24 hours a day? Would a 75/25 stock/bond asset allocation be as appealing? Again, in this example we are categorizing the coins like equities that come with expected volatility, but remember the original purpose of the coins was to be currencies. When classifying them as currencies, the volatility picture can be downright frightening. So much so that Vitalik Buterin, co-founder of Ethereum, recently felt compelled to tweet “Reminder: cryptocurrencies are still a new and hyper-volatile asset class, and could drop to near-zero at any time. Don’t put in more money than you can afford to lose. If you’re trying to figure out where to store your life savings, traditional assets are still your safest bet.”

Even the industry leaders are calling for a more cautionary investment style in this burgeoning asset class. Based on these factors, Regions currently does not invest in, nor recommend investing in, cryptocurrencies from an asset allocation perspective.

Outside of financial applications, cryptocurrencies also have the ability to provide legal documentation and facilitate contractual obligations using the blockchain technology. Any sort of information that needs to be secure, reliable, time dated, and publicly verified can potentially benefit from a distributed ledger. Not limited to, but of particular interest to traditional banking institutions, some alternative projects seek to solve the complexity of regulatory auditing and litigation, quality control issues, mergers and acquisitions’ due diligence, and document authentication. One issue that could potentially be solved by these projects is electoral fraud. Electoral fraud remains a problem in many of the world’s governments; countries use “voter privacy” as a crutch to shade malicious, behind the scenes actions that can impact the results of an election. Being an incorruptible ledger, an established blockchain could be used to protect individual’s identities while at the same time accurately recording votes vital for democracy.

Conclusion

In the not too distant future, this industry has the potential to witness a major paradigm shift. This shift may not happen overnight. It may not happen in a week, a month, or even a year. But before it’s even realized, cryptocurrencies and blockchain technology may have morphed out of the early adopter’s stage and into a stage of hyper application. Imagine if you never had to worry about your identity being stolen due to a corporate hack. Or no longer had to worry about your employees being robbed at gunpoint while they work the cash register. How amazing would it be to have the ability to securely vote in your state, local, and national elections from anywhere in the world from your phone? Each of these “what ifs” might sound too far in the future to be taken seriously, but surprisingly the technology is quickly approaching. Any function that can benefit from the efficiencies offered through blockchain technology will start to move in that direction. But how will society get there? Answered simply, by better understanding the technology, more trust in the “system”, and most importantly by the industry rebranding itself from a “speculators’ commodity” to a usable currency and technology. As with any new and exciting technology, there comes a crowd of bleeding edge entrepreneurs jockeying for the first major foothold in the industry. But validation for the early adopters’ beliefs is still lacking; that validation will only be achieved through adoption and realization of the theorized benefits.
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