CIBC Wood Gundy

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Blockchain: The $121 Billion US Dollar Industry You've Never Heard Of

What is blockchain, what are cryptocurrencies and how are they different?

We typically hear the words blockchain and cryptocurrencies mentioned together but they are not the same thing. The blockchain is the technology used by cryptocurrencies and is entirely dependent on it. Just as the Internet is the underlying technology for companies such as Google, Facebook, Paypal, etc., the blockchain is the underlying technology for cryptocurrencies such as Bitcoin, Ethereum, Litecoin, Monero, Augur, and many others. Like the Internet, the application for the blockchain is infinite, but in short, the aim of the blockchain is to transfer value the way the Internet transfers information: seamlessly.

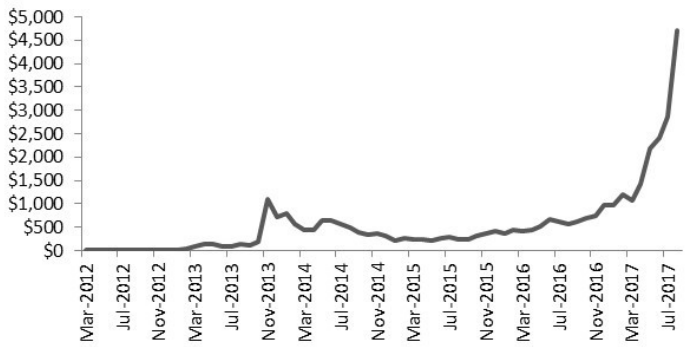
What is Bitcoin and where did it come from?

We hear so much about Bitcoin in the media but it remains poorly understood. What makes it so difficult to understand is that we need to accept that it is simply an idea and a computer algorithm. What makes it even more baffling is that anyone can download this algorithm and computer code and do whatever they want with it. Including creating their own cryptocurrency.

In short, bitcoin is a decentralized digital currency. No individual or institution backs the currency and there is no centralized database or control center. While this might be difficult to grasp, it actually isn't that different from the Canadian or U.S. dollars in your wallet except that it is intangible. The physical cash we use on a daily basis has value because we confer a value on it and because our government tells us it has value. The same thing is true of bitcoin: it has value because people are willing to give value to it and because the technology behind it constrains supply.

The term Bitcoin refers to the technology that creates the bitcoin currency, which is denoted by the lower case 'b'. No one really knows who created the technology. While it was released under the name of Satoshi Nakamoto, it is widely believed to be a pseudonym. Because the currency moves around with anonymity, it was initially used for black market activity and by individuals looking to conceal funds. While it took a significant amount of time for bitcoin to come to prominence, it has recently experienced exponential growth and now governments and financial regulators must acknowledge it and find ways to deal with it. As demand from individual and institutional investors grows, the financial system will have to acknowledge the currency's legitimacy. The market is also beginning to see the power behind the blockchain technology.

CIBC is a great example of this. In a recent news article in Thomson Reuters, it was reported that CIBC and five other banks have joined a UBS-led effort to create a digital cash system that allows for payments and quick transaction settlement using blockchain technology. They aim to create a utility settlement coin, a digital cash equivalent of each of the major currencies backed by central banks.



Source: Coindesk.com

Figure 1 - bitcoin price appreciation since 2012. The price of bitcoin in 2017 has grown exponentially and has many concerned that a bubble is in place.

How do cryptocurrencies work and what exactly is the blockchain?

A general rule of thumb in the investment world is to avoid industries and investments that you know nothing about. This well thought out principle has scared off institutional investors and amateur cryptocurrency enthusiasts alike. That said, how does a cryptocurrency fundamentally work? Essentially, cryptocurrencies run on a digital ledger called a blockchain which is a concept that creates a list of all transactions that occur. It is public and unchangeable. This digital ledger is a real-time accounting of every single transaction occurring in a given cryptocurrency and is available to anyone at any time. The implication is that since everyone can see when a currency is traded, it is impossible to fraud given the system knows how much of a particular cryptocurrency is in circulation. Every computer engaged in the cryptocurrency network is continuously working to validate every transaction and confirm its legitimacy. We have to think of this as a massive spider web where every strand represents a connection to every other point in the web. And since every strand contains the entire blueprint for the web, you would have to take out every single one simultaneously to get away with a fraudulent transaction.

What are the different types of cryptocurrencies?

There are many types of cryptocurrencies with various applications. They all boil down to the same underlying technology: the blockchain. They each have their own distributed ledger which serves the same purpose: transparency.

Technology: Ethereum
Currency: Ether
Purpose: Smart contracts
Smart contracts are digitally administered agreements between two parties that can be coded to perform tasks such as enforcing any part of the agreement without the need of human intervention.

Technology: Ripple
Currency: XRP
Purpose: Cross border payments
Ripple is revolutionizing the way cross boarder payments happen by eliminating the need for an intermediary or trusted third party to confirm transactions. This facilitates instantaneous peer-to-peer payments across the ripple network at much lower fees than what banks typically charge.

Technology: Monero
Currency: XMR
Purpose: Completely anonymous payments
Monero is creating a currency which is completely anonymous for transactions that one would not like to have discovered. There is no indication of the sum, payee or payer.

Technology: Dashcoin
Currency: DASH
Purpose: Daily peer-to-peer payments
Dashcoin Is focused on the retail market and is used for purchases with instantaneous settlement, such as buying your morning coffee from Starbucks.

Technology: Golem
Currency: GNT
Purpose: Computer processing power
Golem has created a network that allows the processing power of your computer to be rented out, or you can rent power from others. This can be done anonymously to perform tasks that your computer would not be able to perform on its own or would take too long. Examples include rendering films and complex financial calculations.

Why should we care and what are the potential applications of blockchains?

We should care because the blockchain is at the forefront of financial technology and there is an endless list of potential applications. The blockchain is disruptive to any third-party intermediary service and has grown to a staggering $121 billion US market cap across all of the currencies.

How are cryptocurrencies different from stocks? Why can't you invest in them like stocks?

Their price is exclusively driven by supply and demand. As such Cryptocurrencies are not to be confused with equity or how Apple shares represent an equity stake in Apple. Cryptocurrencies are more comparable to a gift card from a specific store. They represent money but more importantly, they are only redeemable in the store from which the gift card is bought. The major difference between gift cards and cryptocurrencies is that the underlying value of a cryptocurrency can appreciate which is why people have found implicit investment opportunities. When you purchase shares in Apple, you are purchasing an equity position directly in the company. Only cryptocurrencies whose sole use is to store value (e.g., Bitcoin and Litecoin) can be representative of an equivalent equity stake in a publicly traded company like Apple. Otherwise, you are buying a cryptocurrency whose value is partially determined by the underlying technology on which the coin is based. It is still heavily influenced by supply and demand, but does not represent a pure play on the coin.

A good example of this is Ripple. While Bitcoin and Litecoin only represent a store of value, which means that their price has a low correlation with the actual cryptographic software backing the coin, Ripple is quite different. Ripple, and its native currency, XRP, are more than just a currency play. You are also partially playing the underlying software. That said, when purchasing a coin such as XRP, you must consider the supply and demand, as well as the software implications. You should not invest purely based on the success of the software, and you should not invest purely based on your theories of supply and demand. This is because in the case of cryptocurrencies that are not just a store of value, they are affected by both variables while currencies that are merely a store of value can have a much higher correlation to only supply and demand. Basically, you are betting on which cryptocurrency will be favored by the market. The entire space is not currently regulated and new coins are launched on an alarmingly frequent basis.

What are the risks?

The cryptocurrency market has undoubtedly grown at tremendous rates and some would argue that it looks like a bubble. This has caused a lot of concern due to the complexity of cryptocurrencies. It is very likely that many people investing in bitcoin do not understand the underlying technology and whether it has any investment merits. Other than that, most of the concerns stem from the lack of information and their overall appeal to criminal organizations and hackers. Overall, most major exchanges should insure your money in the event of fraud. Information is being released every day relating to how governments and major banks across the world are tackling blockchain related businesses and this will only accelerate as market penetration and institutional demand increases.

Where can I learn more?

https://www.coindesk.com/
https://cryptoinsider.com/
https://cointelegraph.com/

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