

# DECRYPTING CRYPTOCURRENCIES:

## Learning about Bitcoin and Other Cryptocurrencies

The online forum aims to promote a better understanding of finance and investments through providing an orientation on Bitcoin and other cryptocurrencies, including implications for investors and financial institutions.

### WHAT IS BITCOIN?

#### Blockchain – Bitcoin’s Predecessor

- Bitcoin’s technology is called Blockchain
- Blockchain is not an invention of the person behind Bitcoin, it has predecessors from 1982 up to 2000 who innovated blockchain to what it is today.
- It is a block of time-stamped data that is linked to another block.
- Blockchain ensures the authenticity of the records contained in the blocks.

#### Historical Beginnings

##### November 1, 2008

→ Satoshi Nakamoto “publishes” his white paper by sending it to a list of computer coders through email.

##### January 3, 2009

→ The Genesis Block was created; the first set of 50 BTC was mined

##### October 2009

→ Bitcoin was first sold in an Internet exchange at \$1:1,006 BTC

##### May 18/22, 2010

→ Laszlo bought 2 pizzas for 10,000 BTC (equivalent to \$25)

#### The Satoshi White Paper - Bitcoin: A Peer-to-Peer Electronic System

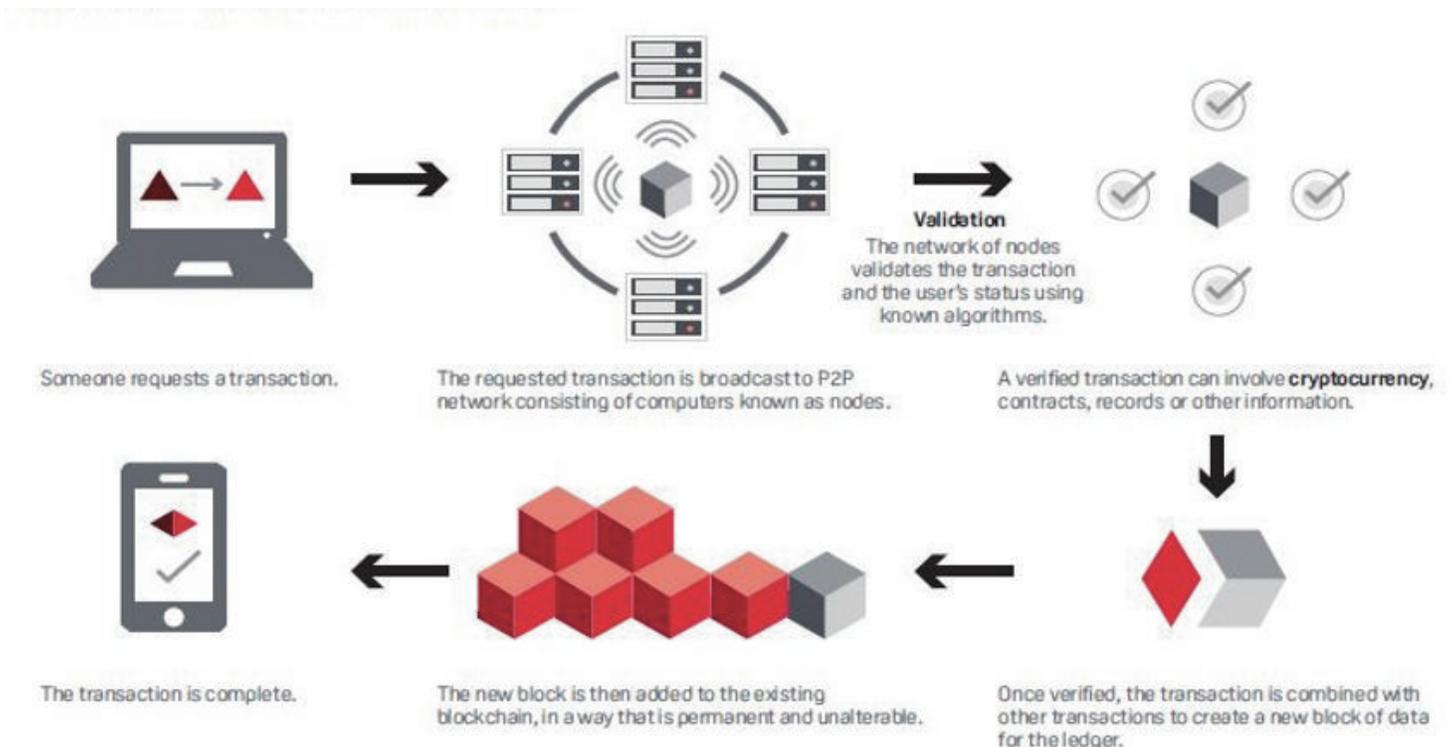
- Satoshi Nakamoto found a way of making digital payments without double-spending.
- Decentralized - peer-to-peer; sent directly from one party to another
- Secure - digital signatures
- Time-stamped
- Hash-based - hashed transactions/hashed blocks
- Transactions are broadcast to all nodes in network
- Proof-of-work: to incentivize nodes in securing the entire network



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## THE BITCOIN BLOCKCHAIN

### How It Works



Source: PWC

## ISSUES FACED BY BLOCKCHAIN TECHNOLOGY

- Performance, scalability, and efficiency 100,000 transactions per second (tps) for credit cards vs. 7-8 tps for Bitcoin); a possible solution: Lightning Network
- Privacy and security – transactions are by nature public
- Interoperability – Bitcoin network does not interact with Ethereum network
- Governance – difficulty in updating blockchain software because of its decentralized nature
- Commercial use cases
- Public policy and legal frameworks

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### BITCOIN (BTC) VS ETHEREUM (ETH)

- The Bitcoin software is free and open source. Anybody can download it from Github, and build on it.
- Vitalik Buterin is a Russian-Canadian computer coder who believed that the Bitcoin blockchain could be improved upon. Buterin built Ethereum on another blockchain.
- Bitcoin is a payment network while Ethereum is a decentralized public ledger for verifying and recording transactions. The network's users can create, publish, monetize, and use applications on the platform, and use its Ether cryptocurrency as payment. Insiders call the decentralized applications on the network as 'Dapps' according to Investopedia.



### BITCOINS AND ALTCOINS

**Crypto assets** - digital goods that have market value; includes crypto currencies and other tokens

**Crypto currencies** - can also be viewed as blockchain-native tokens; essential for the underlying blockchain to work or be incentivized; e.g., BTC, ETH

**Tokens** - generic definition: something issued by an issuer to be used in a specific context or marketplace, perhaps under specific conditions or timing

**Stablecoins** - crypto assets use blockchain technology plus smart contracts technology whose value is pegged to some external reference; e.g., Tether, USDC

**CBD-Cs** - Central Bank Digital Currency using blockchain technology, but permissioned and centralized

### IS CRYPTO ASSET A SECURITY?

- Determining the nature of a crypto asset is important for regulatory purposes
- The Howey Test is used to determine whether a contract is an investment contract; check if –
  - (1) there is an investment of money
  - (2) in a common enterprise
  - (3) with the expectation of profit; and
  - (4) to be derived from the efforts of others.
- The Howey Test was already used in the Philippines, not in crypto but in other investment contracts.

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### PRICING CRYPTO ASSETS

- Primary determining factor – supply and demand; buyers and sellers who make trading decisions
- The price of crypto assets is subject to the same factors as any other financial instrument.
- It is more volatile because the world has still not fully grasped what it is.
- Factors in trading decisions (the “pathetic dot” theory in practice)
  - Sentiment – how traders feel about the asset
  - Gossip and chatter of fora and social media
  - Technical successes
  - Technical failures
  - Celebrity endorsements
  - Law
  - Market manipulation (pump and dump)
  - Fear and greed

### INVESTING IN CRYPTO ASSETS

#### Buying

- Outright purchase - purchasing exchanges using your bank account or credit card
- Dollar Cost Allocation (DCA) - the practice of purchasing the same amount of bitcoin over a period of time resulting to higher returns

#### Earning

- Rewards - bitcoins are being distributed as rewards
- Income - bitcoins are distributed as a salary

**Trading** – buying and selling in the exchanges

**Mining** – block reward; transaction fees through validation of blockchain

**Indirect exposure** – buying stocks of corporations involved in bitcoin and other crypto assets; exchange traded funds (ETFs)

### INVESTMENT RISKS

- Liquidity Risks – the risk that the market cannot support your transaction at the price you expect; comes and goes.
  - The rule is to never invest money that you will be needing in the near future
- Exchange Risks – exchanges can be hacked
  - Illegal/unethical activities (rampant in the financial markets industry) – painting the tape; spoofing; front-running; running stops; fake liquidity
- Wallet Risks – wallets can be hacked; or you may lose access; Best is self-custody; soft and hard wallets
- Regulatory Risks – actions by the government
- Scams - due diligence must be done before investing to avoid scams

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## CRYPTO ASSETS AND THE LAW

- Reasons for regulation
  - **Taxation**
  - **Guard against illicit uses – the Silk Road; money laundering**
  - **Protecting the investing public**
  - **Market stability**
- See the Morell study: illicit use of crypto is less than 1% of all crypto activities from 2017 to 2021
- Crypto friendly nations – Sweden, Singapore, Canada
- Crypto in the Philippines
  - Bangko Sentral ng Pilipinas (BSP) Memorandum Circular No. 1108
  - Regulating Virtual Asset Service Providers (VASPs)
  - Securities and Exchange Commission and Bureau of Internal Revenue are about to come up with guidelines

## DOES BITCOIN PERFORM THE THREE FUNCTIONS OF MONEY?

### Medium of Exchange

- it is not yet widely recognized however we are slowly getting there as some credit card companies have adopted it and there are some establishments which are already accepting bitcoin as a mode of payment.

### Store of Value

- bitcoin is now considered as virtual assets wherein people can place their money and expect it to grow over time.

### Unit of Account

- it is still quite difficult to tell the value of our holdings using bitcoin because it is too volatile.

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### WEBINAR Q&A

#### **I want to try Cryptocurrency. Where do I go, how much do I need, and what will I use to pay?**

Any Digital Cryptocurrency Application may be used (Ex: Coins.ph). All you have to do is load your digital wallet with pesos then convert it into cryptocurrency. There is no minimum amount, but there is a maximum amount implemented by the BSP.

#### **How can you steal Bitcoins when everything is recorded in multiple blockchains?**

You cannot steal Bitcoins. This is a common worry of many, but Bitcoins do not actually come into your possession. What you get is the key or ownership in your wallet wherein you can sell or trade. It is still in the blockchain. What can be "stolen" is the cryptography of the Bitcoins that will allow one to become the owner. However, this is very difficult to do today since Bitcoin is already very big and the blockchain is protected.

#### **What industries use blockchain technology at the moment?**

There are many projects ongoing, like Ethereum. The blockchain of Ethereum is programmable unlike Bitcoin. You can make them do things, some of them are even non-financial. Anybody can do projects. If we have coders, we can get the original Bitcoin software, then use it to adapt to our needs. For example, we have clients who need to pay loans, we can put it in the blockchain.

#### **My daughter is playing Axie Infinity. What is that? Is that okay?**

It is like a game where you can get rewards that can be used in the real world if converted. Tokens can be used to buy more equipment in the game or you can sell it to people who will buy it in Pesos. There is a new exchange that will be trading the tokens of Axie.

#### **What about PDAX and Binance? Are they good and safe trading apps?**

PDAX is good, it is BSP regulated and licensed. Binance is an international exchange that is safe, easy to use, and insured. It is banned in some states in the US because it has a component like stock exchange, but the platform itself is legitimate.

#### **How viable is the return on investment on NFT (non-fungible tokens) games like Axie? How will it impact the crypto scene in the Philippines?**

The tokens of NFT are like a certificate of ownership of an original thing. There is big money in NFT. Artists are going into NFT as well, they sell ownership of their art. Other tokens like utility tokens/gaming tokens are good as well.

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### WEBINAR Q&A

#### **Are there any agencies regulating cryptocurrencies? What about the case of BSP with LYKA's operations?**

There are no agencies yet that regulate cryptocurrency. The only thing being regulated by the BSP is the exchanges/service providers. There is no taxation. Cryptocurrency may be treated like foreign exchange but according to BSP it is not considered as legal tender in the Philippines. Only one country, El Salvador, has considered it as legal tender.

#### **What are the ill-effects of mining to the environment? There are articles that raise concerns about the process of mining since a single bitcoin transaction uses power equivalent to monthly power consumption of an average American household and it is responsible for a million times more carbon emission than a single visa transaction. What is your take on that?**

That is actually one reason why the price of bitcoin went down. Elon Musk said that he is no longer accepting bitcoin as payment for Teslas unless it is done through renewable clean energy. Because of that, the Bitcoin mining industry adjusted; 60% of mining has already shifted to renewable energy.

#### **For NGOs with unrestricted funds, do recommend crypto transactions as a good investment option now?**

If you play it right, you could earn a lot for your NGO. But it is important to be careful because it is a very risky thing. For organizations in the US, they only use 3-5% of their capital reserves for crypto. The rest is used on more stable investments like bonds and stocks. Do not put too much into crypto.

#### **Is FOREX trading similar to crypto?**

Yes, but it depends on if you consider it an asset rather than a currency. Many say that it is like real estate or a commodity. That's why regulations are needed so there will be clarity on what to do and what not to do.

#### **I have experience with Bitcoin mining. I joined through an agent that facilitates Bitcoin investments. They required an initial investment of 50 USD. I opened a Coins.ph wallet and he taught me step-by-step how to convert. I opened an account in Coin Apex where my 50 USD was deposited. The agent said to check my account every day to see my 50 USD increase. It increased every day until it reached 1,500 USD. To be able to withdraw, I was directed to join a blockchain council that will issue a blockchain certificate and ID that have charges so I have to cash-out around 300 USD. And apparently, when I withdraw, I have to commit to re-invest. It seemed like I was tricked, is the process really like that?**

There are many red flags with what happened. First, Bitcoin mining is done through a machine that can be purchased online, however it takes up plenty of electricity. Mining is difficult. Also, the supposed increase from 50 USD to 1,500 USD in a short time, the requirement for you to first pay charges before you can withdraw and the requirement to join a blockchain council are all signs that it is a scam.