

# Intro to Crypto

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BAU International University

[www.hugobenedetti.com](http://www.hugobenedetti.com)

@Prof\_Cryptoken /

hugo.benedetti@bc.edu

# Very Brief Bio

- 5<sup>th</sup> year PhD Candidate in Finance, Boston College
  - Member of working group at MIT Digital Currency Initiative (Decentralized Exchanges and Security tokens)
- Research on Fintech, mostly crypto-economics
  - Cited in The Economist, Bloomberg, WSJ, crypto-media
- Biased, evangelizer of the disruptive potential of blockchain technologies in Finance

# Outline

- What is Bitcoin?
- Why would anyone want to use Bitcoin?
- What's next after Bitcoin?
- Questions... hopefully many

# Why should we even talk about this?

- Crypto-market size \$200 billion as of Oct 2018
  - Bitcoin \$110 billion, 15 over \$ 1 billion and 60 over \$100 million
  - Over 3,000 cryptos actively traded
- Daily trading volume \$12 billion (150+ marketplaces)
  - Binance, the largest crypto marketplace (20% global market share) had trading revenues of aprox \$800 million in the first half of 2018.
  - This is equal to ICE (parent of NYSE) and 5 times NASDAQ Inc (parent of Nasdaq and 79 other exchanges)
- Crypto-assets raised over \$20 billion in 2018 through Initial coin offerings (ICO)... the “new crowdfunding”
  - Only 7% of them could be considered securities (semi-equity), the rest are rewards/presale of products.
- Research initiatives led by Central banks, Financial Institutions Consortia, Philanthropic foundations, payment processors (Visa, Mastercard and AMEX), etc.

# What is bitcoin?

- Evolution of several digital money proposals dating back to 1976<sup>(1)</sup>. Satoshi Nakamoto (pseudonym) distributed a whitepaper of his protocol on 2008 and shared the code in January 3<sup>rd</sup>, 2009.
- bitcoin is a consensus network that enables a new payment system and a completely digital money. It is the first decentralized peer-to-peer payment network that is powered by its users with no central authority or middlemen <sup>(2)</sup>.

(1) Cypherpunk mailing list

(2) [www.bitcoin.org](http://www.bitcoin.org)

# What is bitcoin?

- Self-sufficient, peer-to-peer payment network, based on cryptographic proofs and blockchain accounting (rather than trust between participants or institutions).
- The bitcoin protocol allows to create payment services, without a central authority to validate transactions... fast settlement, no counter party risk, no counterfeit risk... on the digital side.
- Bitcoin (BTC) is the digital asset created by the bitcoin protocol.

# What can you do with Bitcoin?

- Transfer value (as Bitcoin) to people that are willing to receive value (as Bitcoin):
  - Relevant if you cannot pay them in another way
  - Or it's too expensive, too slow, too cumbersome
  - Or illegal
- Hold value (as Bitcoin) in an “account”, instead of holding fiat currency in cash or in a bank account:
  - Relevant if holding cash or having a bank account is not possible (banking restrictions to refugees, minorities, gender, start-ups)
  - Or too expensive, too risky (inflation, bank runs, seizures by govt)
  - Or illegal

# Does Bitcoin have value?

- Why does anything have value?
- Does Bitcoin provide a service that is valuable to people?
  - Yes: peer to peer payment system
  - Maybe: Storage of value
- How much is that service worth?
  - No idea
  - If people only used the payment system, the price is not really relevant (assuming low volatility and cheap cross-currency conversion)



# Is Bitcoin a currency?

- 3 basic properties:
  - Medium of payment
  - Storage of value
  - Unit of account

# Do we need a medium of payment like Bitcoin?

- In countries with good banking and payment systems... probably not... but:
  - Payment systems tend to be monopolistic and are able to exclude some participants/ charge monopolistic price.
  - Some payment systems are slow (US bank transfers). Fintechs have partly solved this (Paypal, Venmo, etc.)... But you still require a bank account.
- If we had fast international money transfers... probably not... but:
  - SWIFT slow and expensive.
  - Money Gram and international remittance around 7% for \$500
  - Bitcoin transferred \$200 million for \$0.10 last week (any amount costs the same anyway)

# Do we need a storage of value like Bitcoin?

- In countries with credible banking and central banking systems... probably not... but:
  - Inflation and Hyper inflation: Argentina, Venezuela, Uganda, etc.
  - Nationalization of banks, seizure of bank accounts: Argentina, Greece
  - Rapid deterioration of exchange rates and increase in bond spreads: Turkey
  - Capital controls: all of the above
  - War, refugee migration, etc.

# Do we need a unit of account like Bitcoin?

- Definitely not... Bitcoin (and crypto) volatility has hindered adoption.
  - Most cryptocurrencies are priced in terms of Bitcoin

# Will Bitcoin be the global currency?

- Probably not
  - I believe in Central Bank intervention (stabilization and stimulus)
  - I believe in international coordination (EU)
  - I believe markets react. Banks and payment systems will adapt, adopt or acquire
  - Many problems with Bitcoin (Concentration of stakeholders, lack of centralized decision making, concentration of mining, cost of network maintenance, pricing mechanism, etc.)
  - New, more efficient, user friendly crypto-currencies will probably evolve faster than Bitcoin.
  - Bitcoin does have the first mover advantage, largest market value and largest user adoption so far.
  - New projects have cash (EOS/ Block one raised \$4 billion, Telegram \$2 billion)

# Will we have a digital currency?

- Probably yes
  - Digital currencies in cash-less societies are already in place (Sweden)
  - Digital payments with pseudo cash is already widely used in advanced economies (South Korea, Japan, EU) and developing economies (M-Pesa in Kenya, Afghanistan, Tanzania, etc)
  - High efficiencies
  - Lower crime

# Will we have a global/national blockchain currency?

- Hopefully not
  - Blockchain infrastructure creates a perfect tracking system across all users
  - Severe privacy issues
  - Severe censorship issues
  - Severe property rights issues
- Venezuela is in the verge of fully launching the PETRO, the first national cryptocurrency

# What do I think is the next step?

- Tokenized US dollars
  - (if you don't like the US Dollar, you can tokenize something else... Euro, Yen, Chilean Peso...)
- A digital and blockchain-enabled representation of a dollar that is kept in storage by a trusted, auditable and liable third party
  - All the benefits of blockchain
  - The potential stability of the underlying asset
- Downside:
  - The asset might not be stable
  - Relies on the third party that has custody of the asset



# So... what comes next for you?

## Fall down the crypto rabbit hole

- Suggestions:
  - Read Satoshi's paper (available in the media section of my webpage)
  - Learn about Ethereum
  - ICOS (initial coins offerings, Token generation events, etc).
  - Tokenized Assets
  - Security Tokens
  - Reach out to me, I'll love to help.

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