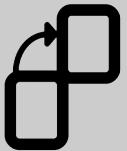


Introduction to Cryptocurrencies for Finance Students



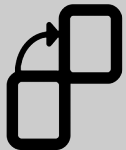
First, a Little About Me

- 2017 CS Graduate from St. Vincent
- Software Engineer at Microsoft (Azure Storage)
- Don't have a formal finance background
- Cryptocurrency tech enthusiast!
 - Run a hobby website called chaintuts.com
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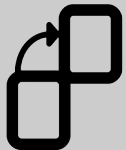
Bitcoin Basics

- What is Bitcoin? -
 - “The Internet of Money” - Andreas Antonopoulos (Technologist, Security Expert, Bitcoin Evangelist)
 - A protocol for creating, managing, and transferring money *entirely* over computer networks



Important Properties of Bitcoin

- Bitcoin is *decentralized*
 - No central authority controls it – no government, corporation, or individual
 - Peer to peer network controls issuance, transfers, security
 - Think P2P network likes bittorrent, etc.



Important Properties of Bitcoin

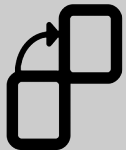
- Bitcoin is *cryptographically secured*
 - Properties of cryptography secure the issuance and transfer of the currency
 - Uses the concepts of digital signatures, proof-of-work, and blockchain databases to do so



Important Properties of Bitcoin

- Because of decentralization and cryptographic security,

Bitcoin is Trustless



Technical Components

- Blockchain Databases
 - Transactions are grouped together and processed every 10 minutes
 - Groups are called blocks
 - Each block is cryptographically linked to the last block
 - Because of linking, further back blocks become nearly impossible to forge



Technical Components

- Proof of Work
 - Every block, thousands of computers on P2P network race to solve a cryptographic puzzle based on transactions
 - This puzzle can only be solved by guessing using CPU power (hence “Proof of work”)
 - Proof of work (answer) can be quickly verified by any other party on network
 - Winner of race gets reward of new currency



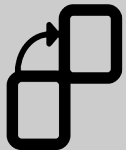
Technical Components

- Digital signatures
 - Each wallet user has “private keys” that cryptographically *prove* they own a public address
 - Address is public and funds shown on blockchain
 - Can’t go backwards from address to private key



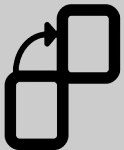
The Value of Bitcoin

- Why does Bitcoin have Value?
 - Unique Properties make it *Useful*
 - People have faith in its utility and future uses
 - Because it is *useful*, people will expend real world resources (electricity and computing power) to maintain the network



Financial Implications

- Less need for “trusted” institutions
 - End the fed? You could with bitcoin!
 - Instead of endless inflation, you have a limited supply, deflationary currency
 - No need to trust third parties to process transactions
 - Censorship resistant
 - More secure tx verification – No more worrying if Visa, Target, etc. get hacked



Financial Implications

- Individual control for *digital* money
 - Unlike credit cards, bitcoin behaves like digital cash!
 - You hold private keys, you hold the money
 - Security model is much harder to breach (network is secure, have to target individuals)



Societal Implications

- Banking the Unbanked
 - Imagine you're a migrant worker in the US
 - It could cost you 30-40% to wire funds back home across borders
 - Bitcoin is borderless and low fee
 - Many 3rd world economies have cell phone towers, but not banking infrastructure



Societal Implications

- Banking the Unbanked
 - Imagine you're a Palestinian living in the West Bank under military rule
 - Confiscation and repression of free exchange are a large risk
 - Bitcoin can freely flow in and out
 - Bitcoin cannot be easily confiscated! Even if a device is stolen, a 12 word phrase can back up an *entire wallet*



Final Thoughts

- Bitcoin is an *entirely different* way to do money in the digital age
- Decentralization and trustlessness gives power to the *people* instead of powerful, corrupt institutions
- This is just scratching the surface...the use cases are numerous...



Recommended Resources

- Andreas Antonopoulos
 - Youtube channel
 - AA on the *Joe Rogan Experience* podcast
 - *Mastering Bitcoin* (technical) and *The Internet of Money*
- The Bitcoin Whitepaper (technical, but a solid summary)
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 - Be wary of bias – there are some divisions in BTC community

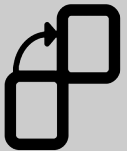


Do You Like Free Stuff??

- You're in college, of course you do
 - Go to app store of your choice or bitcoin.com
 - Download the bitcoin.com wallet
 - Set up a *Bitcoin **Cash*** wallet (not Bitcoin Core)
 - See me as time permits for some free Bitcoin Cash!



Questions?



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bitcoin
CASH



ethereum



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