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# Cryptocurrencies and Blockchain Technology

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# Agenda

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## Cryptocurrencies

- What is currency? Do Bitcoin and others fit the mold?
- Features and drawbacks
- Is this a sound investment?

## Blockchain – the Technology that Powers Cryptocurrencies

- What is blockchain?
- Benefits of a decentralized ledger?
- What can blockchain revolutionize?

# What is Money?

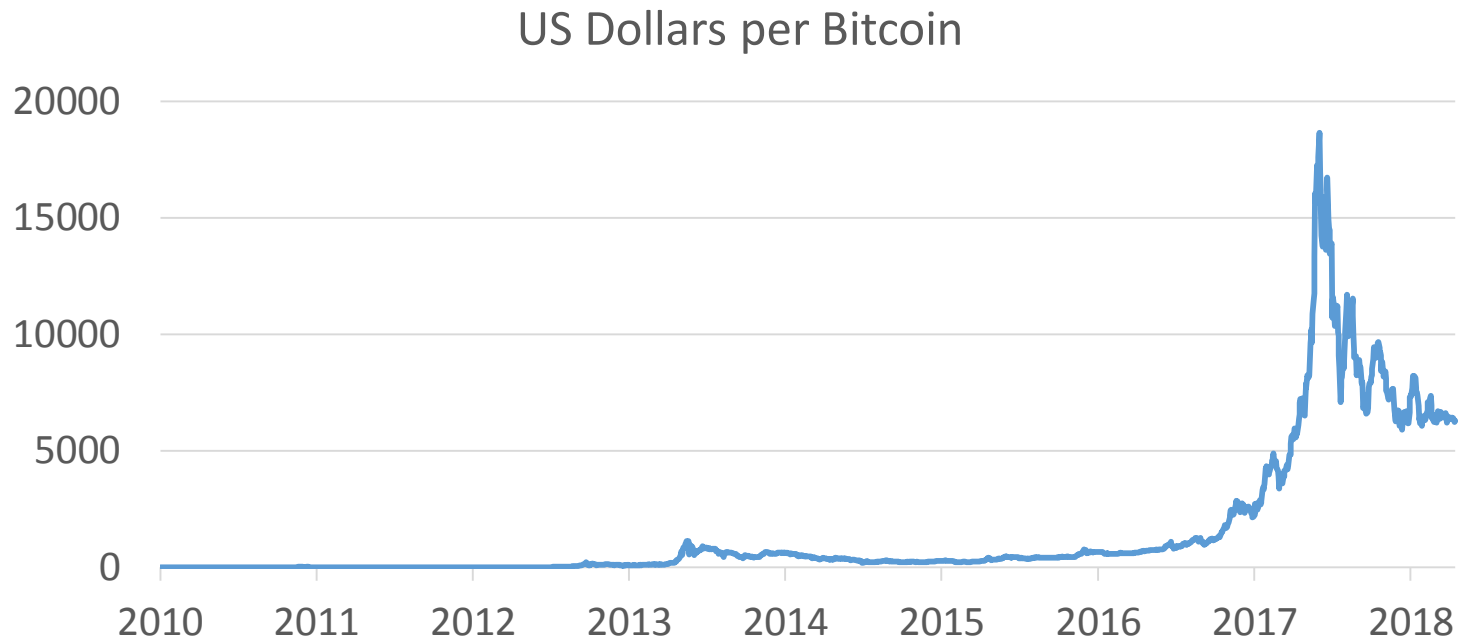
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- Medium of Exchange
- Unit of Accounting
- Store of Value

# What makes Bitcoin a currency?

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- Medium of Exchange – used in transactions
- Unit of Accounting – not so much...
- Store of Value – Bitcoin has experienced a lot of volatility!



# Cryptocurrency Features

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- Electronic payments based on cryptographic proof
- Resists censorship, capital controls
- Enables transactions between parties that have no basis to trust each other
- Supply is limited – a feature that may limit inflation
- Requires no central authority, or central payment processor
- Central payment processors have high fees – cryptocurrencies can get them out of the loop
- Transactions are impractical (nearly impossible) to reverse

# Cryptocurrency Drawbacks

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- Electronic payments based on cryptographic proof
- Little recourse for law enforcement
- Has no central authority, or central payment processor
- Transactions are impractical (nearly impossible) to reverse
- No deposit insurance/FDIC protection
- Not broadly accepted as a currency

# Cryptocurrency Drawbacks

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- Common uses include gray-market and black-market activity
- Limits perception of legitimacy
- Large fluctuations in value relative to standard currency

# Custody is an essential feature!!!

- Many examples of Cryptocurrency institutions going bust, losing customer funds
- Mt Gox, BitFloor, Poliniex, Bitfinex, and many others





# **Blockchain – cryptocurrency technology**

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- Blockchain
  - Gathers transactions into recording blocks
  - Distributes this transaction ledger to users
  - Uses cryptography to chain the blocks of transactions together

# Blockchain – cryptocurrency technology

- Ledgers
  - Ledgers record transactions, keep track of property ownership
  - Ledgers are complex, expensive
  - Ledgers in finance are centralized
    - The bank that holds an account
    - Clearinghouses for stocks and bonds
  - Centralization has costs, drawbacks

# Blockchain – cryptocurrency technology

- Ledgers for Cryptocurrency
  - Records all transactions across a network. No central repository
  - Each participant has a copy of the full transaction ledger
  - Cryptography provides privacy in a shared ledger
    - Identity not linked to transaction
  - Cryptography increases costs – anonymity makes transaction verification more complex
  - Distributed ledgers not ideal for high transaction volumes

# **Blockchain – cryptocurrency technology**

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- Blockchain eliminates the need for a central transaction ledger, such as at a bank
- Blockchain allows multiple users with no basis to trust one another to engage in transactions, trust the history of old transactions
- This is a distributed ledger – requires no central authority and enables trust among users

# Potential Uses of Distributed Ledgers

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- Can be used to issue investment certificates
  - Make IPO less expensive to issuing company, potentially more returns for investors
- Can be used to prove ownership – voting shares in a proxy vote

# Potential Uses of Distributed Ledgers

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- Can transfer value or ownership of an asset
  - Real estate title transfer
  - Trace the ownership of a mortgage
  - Trade settlement

# Potential Uses of Distributed Ledgers

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- Non Financial Uses
  - Medical records
  - Patents
  - Vehicle registration