Bitcoin: In the News

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The opinions expressed are solely those of the presenters and do not reflect the opinions of the Federal Reserve Bank of Dallas or the Federal Reserve System.

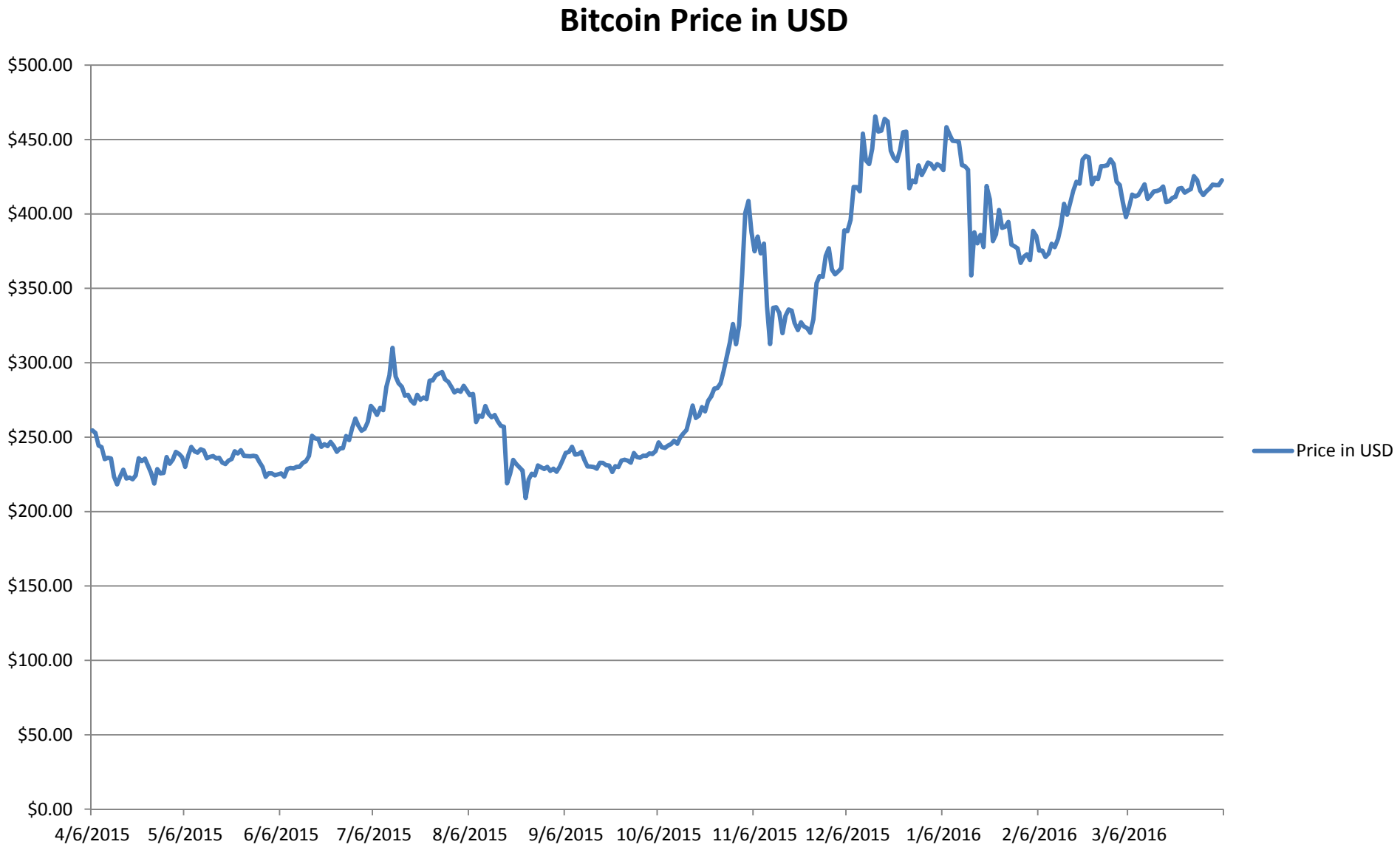
What is Bitcoin?

- A **peer-to-peer** internet currency that allows **decentralized** transfers of value between **individuals and businesses**.

Is Bitcoin Money?

- Anything that is generally acceptable as payment for goods and services or for repayment of debts
- Store of Value
- Medium of Exchange
- Unit of Account

Let's (pretend) to buy something


Bitcoin Price in USD
$500.00
$450.00
$400.00
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$0.00
4/6/2015
5/6/2015
6/6/2015
7/6/2015
8/6/2015
9/6/2015
10/6/2015
11/6/2015
12/6/2015
1/6/2016
2/6/2016
3/6/2016
Price in USD

What are people talking about?

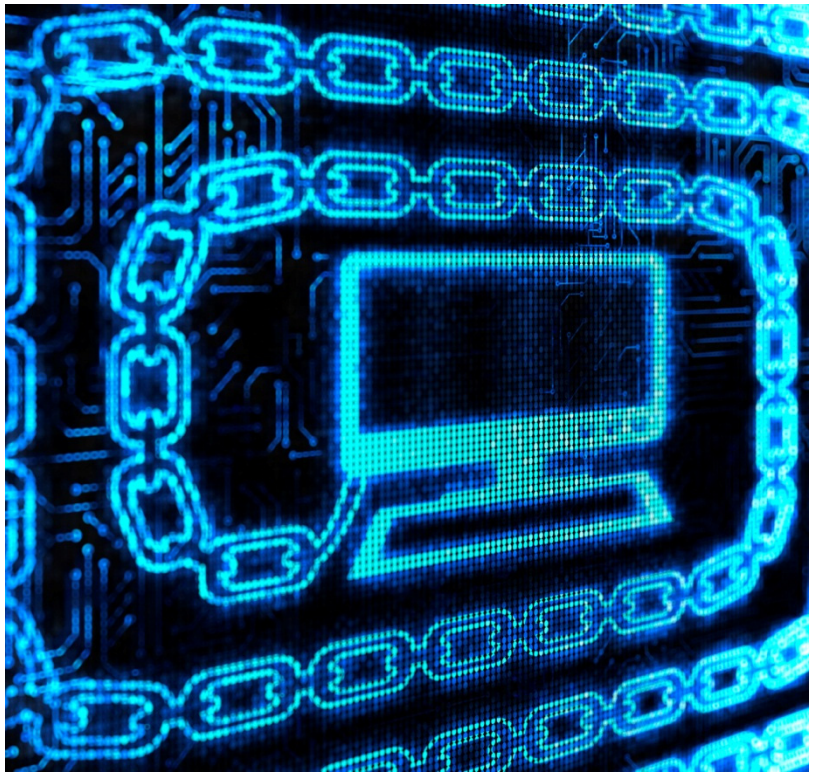
- Bitcoin Scaling
  - The system is running up against current capacities
  - Changes in the system require a near consensus
  - Differing opinions on how to scale the system up
  - A coming “Hard Fork”

What are people talking about?

- The Blockchain may persist, even if bitcoin doesn't
  - What does the blockchain offer outside of Bitcoin?
    - Securities Settlements
    - Foreign Exchange
  - Who can adopt blockchain technology?
    - Nasdaq
    - Banks
  - This is where the capital is going.

Blockchain

- Transactions are recorded in a community-built record of all transactions that acts as a proof-of-work.
- Computers connected to the network accept the longest chain as accurate.



What are people talking about?

- Governance
  - How does Bitcoin adjust to changes?
  - In consensus the right answer?
  - Can anonymous cryptocurrency exist with governance?

What are people talking about?

- Regulation
  - How do sovereign nations and states respond?
  - How will the internet be regulated?
  - What is Bitcoin to governing institutions?

What are people talking about?

- Can Bitcoin go “Mainstream”
  - Financial Tech firms are interested in becoming national banks
  - Currency exchangers are complying with anti-money laundering regulations
  - Transactions are moving to the “light” web.
  - Some Financial Tech firms are getting easier access to banking and capital

Bitcoin: Where it Goes

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What is a non-national currency?

- Not run through a central bank or government
- Not tied to national economic goals

Examples of non-national currency

- Eurozone
- Milltowns
- Prisons
- Internet

Who benefits?

- Unstable countries
- People with large multinational operations
- Internet based service providers

What are the risk?

- Not anchored in domestic economy
- If they are decentralized, no monetary oversight
- May not be regulated
- May not be trustworthy

Why would you want one?

- Exchange rate risk
- Ease of multi-national transactions
- Stability in unstable nations

Why wouldn't you want one?

- Lack of oversight can facilitate black markets
- Lack of regulation can allow for fraudulent systems
- Might not be a tangible asset

How does the internet fit in?

- Exists (for the most part) across borders
- Allows for transmission of services across borders
- Transfer information and opportunities to low cost producers

What is Bitcoin?

- A **peer-to-peer** internet currency that allows **decentralized** transfers of value between **individuals and businesses**.

Where does Bitcoin fit in?

- "Native" currency to the internet
- Low-cost international payments
- "Anonymous"

What is Bitcoin's Future?

- Laid foundation for a secure non-national payment
- Pioneered the Blockchain
- Highlighted, in practice the advantages and risks
- Is beginning the address scalability

What is non-national currency's future?

- Some view as an inevitability
- National borders are already breaking down
- Globalization as a whole is progressing
- Resistance?

Bitcoin: How It Functions

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Bitcoin vs. bitcoins

- **Bitcoin** is the system
- **bitcoins** are the units

Creating a currency from scratch

- Motivation
  - Distrust of financial institutions
  - Transaction costs
- Primary concerns
  - Transaction security
  - Double spends

Distrust of financial institutions

- Any noncash transaction requires a trusted third-party administrator—commonly a bank or financial service provider.
- The system forces participants to trust financial institutions that are not always trustworthy.

Transaction costs

- Traditional payments are revocable, even on irrevocable services.
- Financial institutions act as an arbitrator between counterparties in disputed claims.
- Arbitration costs are passed on to consumers.

Transaction security

- Two levels of verification
  - Source is legitimate
  - Coins are legitimate
- Public/private key verification ensures the legitimacy

Double spends

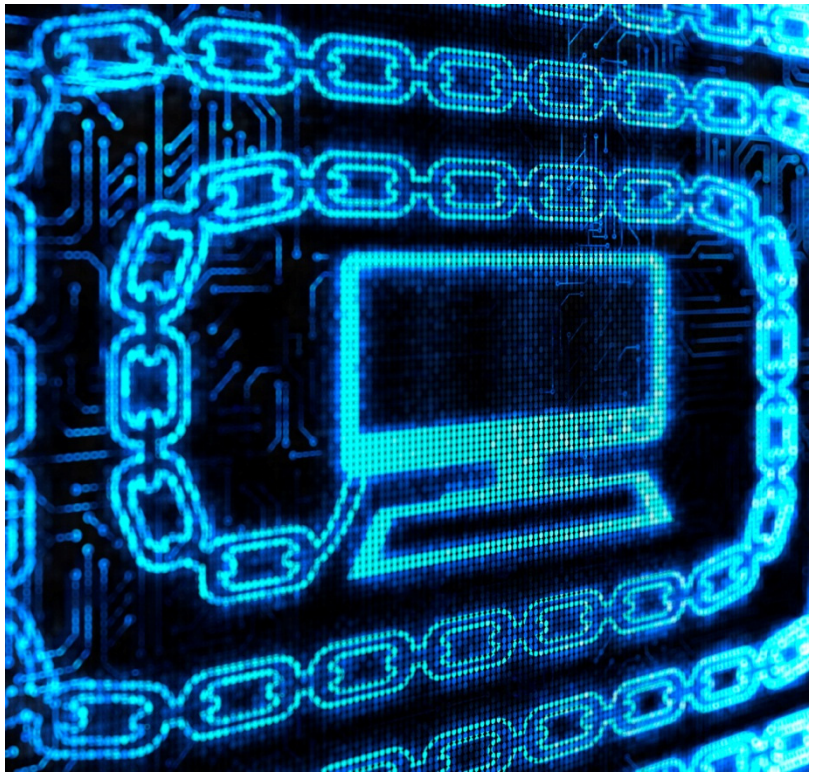
- If the money is just digital codes, why not copy and paste to make more money?
  - Timestamps
  - Hashes
  - Block chain

Double spends

- Timestamp
  - Each transaction is packaged and publically recorded in the order it was carried out.
- Hash
  - The time-stamped group of transactions are given a unique algorithmically derived number

Double spends

- Block chain
  - Transactions are recorded in a community-built record of all transactions that acts as a proof-of-work.
  - Computers connected to the network accept the longest chain as accurate.

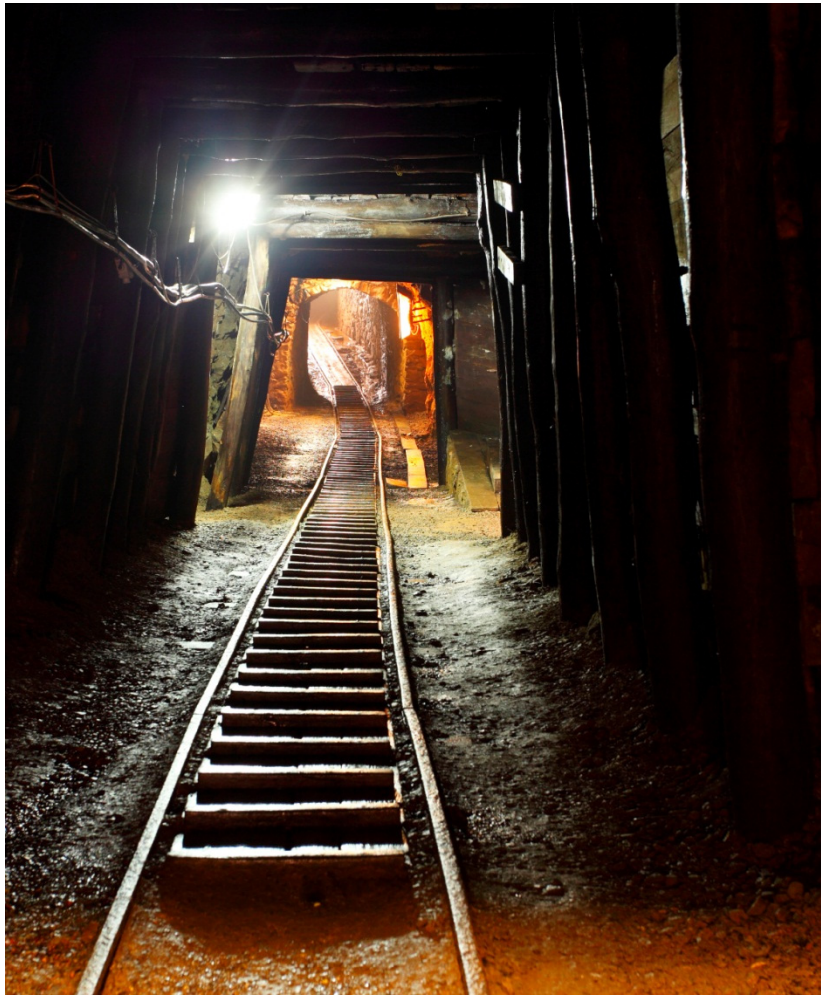


Where do bitcoins come from?

- They're mined, silly.
- High-powered computers solve complicated math problems.
- Each time a problem is solved, the finder is paid a bounty.

Mining bitcoins

- Miners solve complicated algorithms to find a solution called a hash.
- Finding a hash creates a block that is used to process transactions.
- Each new block is added to the block chain.



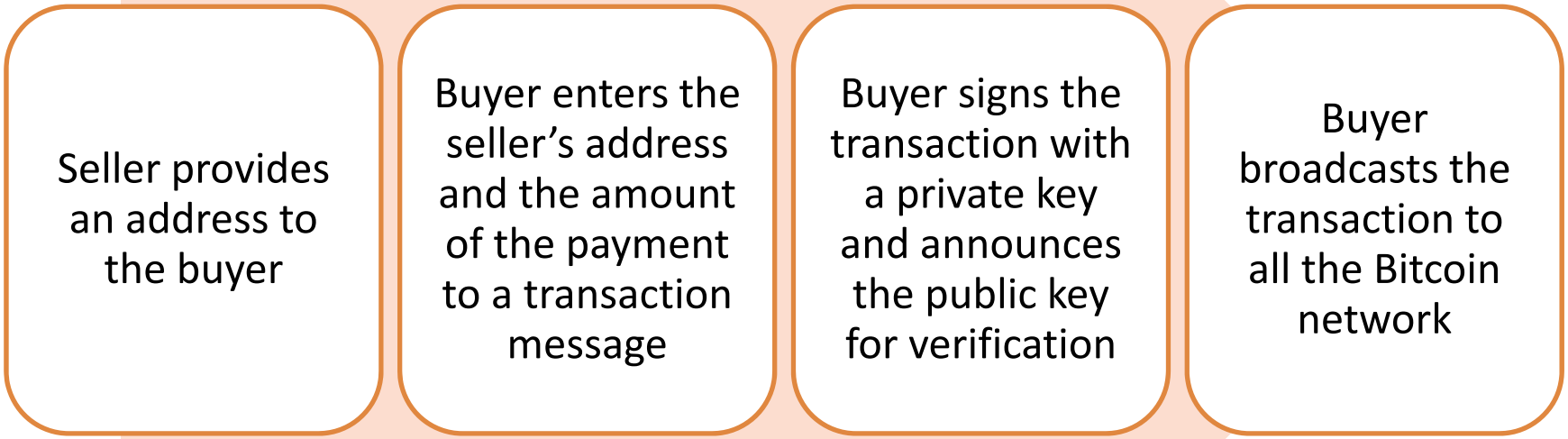
Mining bitcoins

- Until there are 21 million bitcoins, miners are paid for finding a hash in new coin.
- After 21 million, miners will charge transaction fees for creating a new block.
- The amount paid per hash goes down by half about every 4 years.

Owning bitcoins

- Users create accounts called wallets.
- Wallets are secured using passwords and contain the private keys used for transferring bitcoins.

Spending bitcoins



Bitcoin security

- Computers accept the longest block chain, which inhibits hacking.
  - Hackers would have to create a longer chain of fraudulent information faster than the combined effort of all other computers.
- Public/private cryptography means individual bitcoins are secured when not being transacted.

Is it money?

- Store of value
- Medium of exchange
- Unit of account

Is it money?


1
2
2
3
2
SCARCE


$20!
$20!
$20!
1¢!
1¢!
1¢!
1¢!
UNIFORM


FIELD TRIP!
PORTABLE


LOOKIN' GOOD!
THANKS
DURABLE


GOT CHANGE?
WE ARE CHANGE!
DIVISIBLE


WANNA TRADE PLACES?
ACCEPTABLE