

# BITCOIN / BITCOIN CASH (BTC)

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CSC 595 – Bitcoin & Blockchain



# THE FOUNDATION



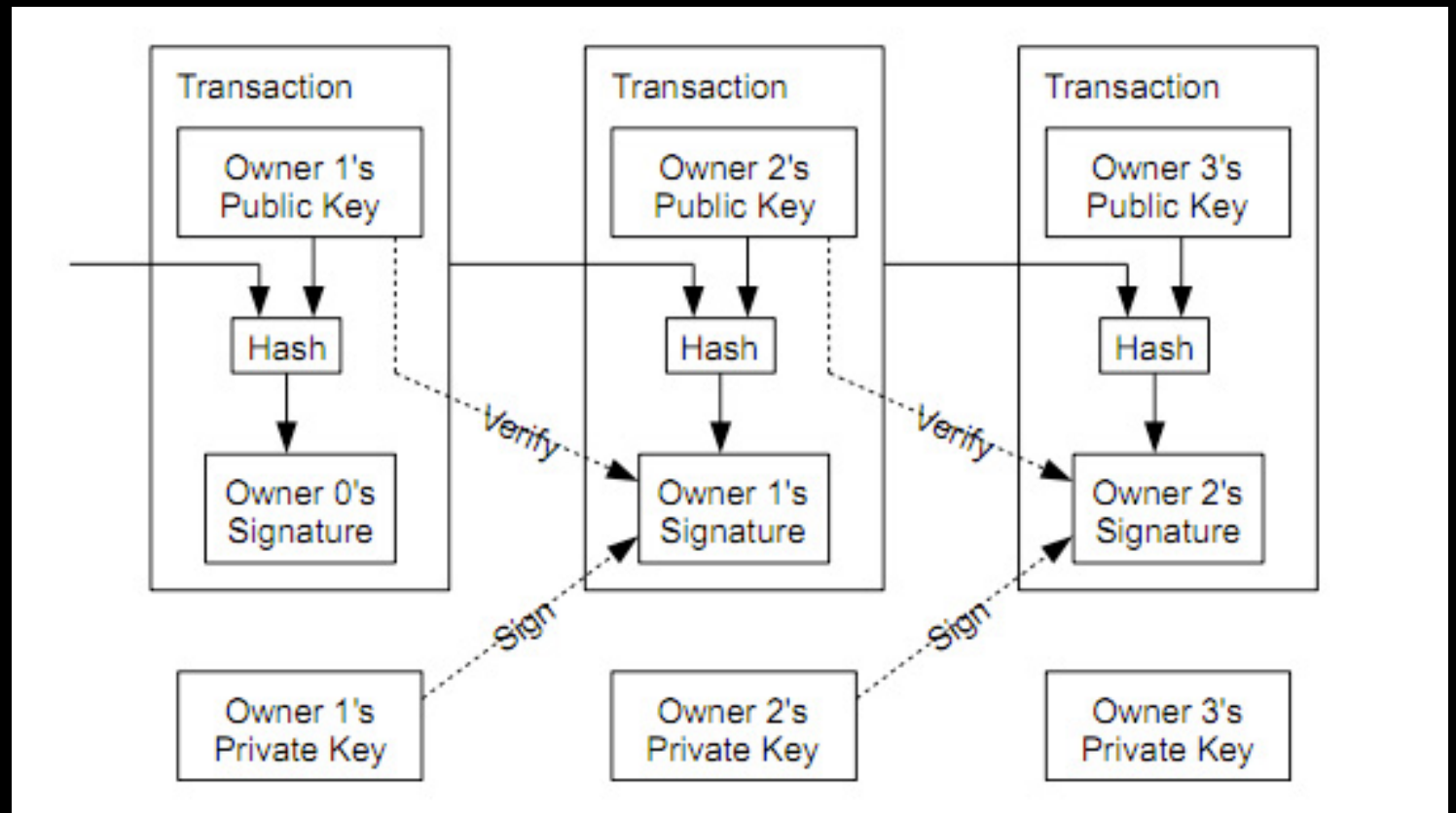
- Founded as a decentralized cryptocurrency without the need of central banks or intermediaries.
- 2012 - Over 1,000 worldwide industries accepted BTC.
- 2014 – Mt. Gox (744K)
- 2017 – Nearly \$20,000
- The brilliance behind BTC
  - The Blockchain

# THE CONSENSUS ALGORITHM

- SHA256
- Proof of Work
- Public Key
- Private Key



# PROCESS OF TRANSACTION



# PLATFORMS OF TRADE



A screenshot of the Coinbase dashboard. The top navigation bar is blue with the 'coinbase' logo on the left and a user profile 'Devin Peterson' on the right. Below the navigation bar are links for 'Dashboard', 'Buy/Sell', 'Accounts', 'Tools', and 'Settings'. A green button on the right says 'Invite friends, earn \$10'. The main content area shows 'YOUR PORTFOLIO VALUE' as '\$12.88' with a line chart showing price fluctuations from March 7 to April 8. Below this is a 'Following' section with three cards for Bitcoin, Bitcoin Cash, and Ethereum, each showing its current price and a 24-hour percentage change.

coinbase

Devin Peterson

Dashboard Buy/Sell Accounts Tools Settings

Invite friends, earn \$10

YOUR PORTFOLIO VALUE

1H 24H 1W 1M 1Y ALL

\$12.88



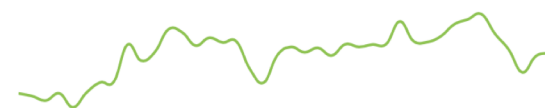
Following

Edit

Bitcoin 24h  
\$5,275.88 +2.64%



Bitcoin Cash 24h  
\$315.67 +1.73%



Ethereum 24h  
\$183.03 +9.35%



# MINING AND BOOTSTRAP

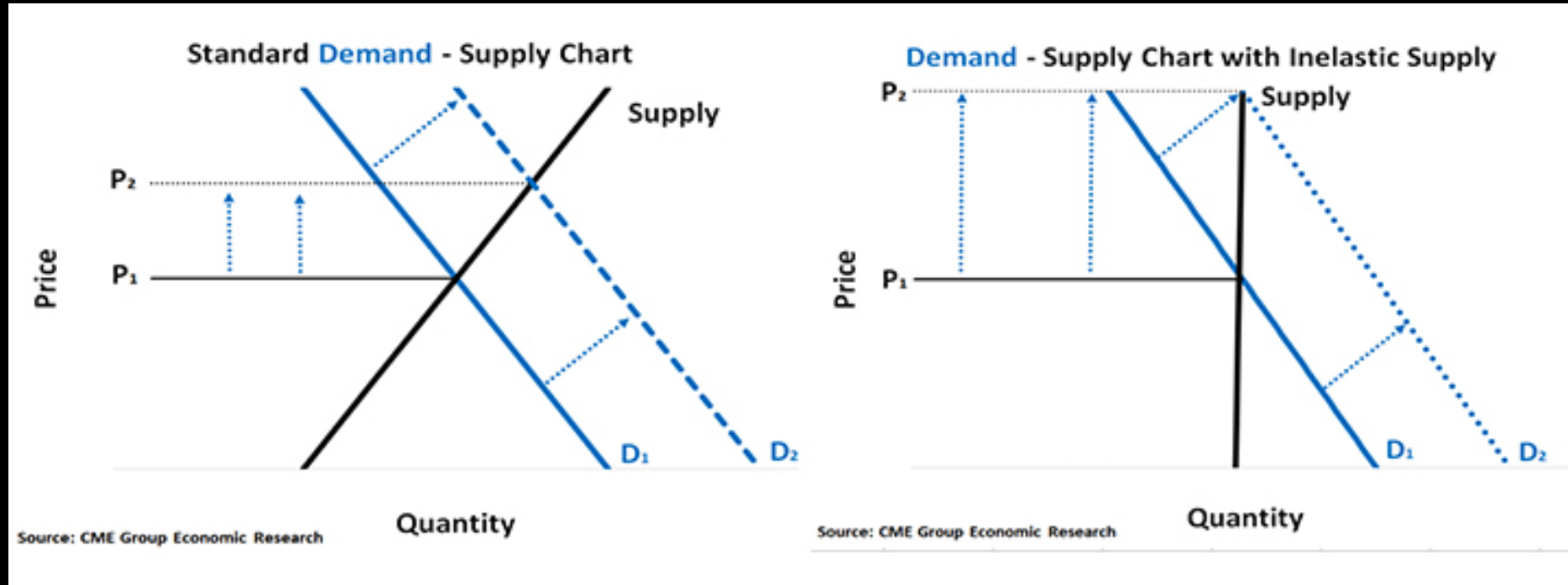
- The Equation
- The Bootstrap Process
- The Common Prefix

The screenshot shows the Bitcoin Core - Wallet application window. The title bar reads "Bitcoin Core - Wallet" and the menu bar includes "File", "Settings", and "Help". The main navigation bar has "Overview", "Send", "Receive", and "Transactions". The interface is currently displaying a warning dialog box with a yellow triangle icon. The text in the dialog reads: "Recent transactions may not yet be visible, and therefore your wallet's balance might be incorrect. This information will be correct once your wallet has finished synchronizing with the bitcoin network, as detailed below. **Attempting to spend bitcoins that are affected by not-yet-displayed transactions will not be accepted by the network.**" Below the text is a green progress bar and a button labeled "bootstrap.dat". The dialog also displays the following synchronization statistics:

Number of blocks left	Unknown. Syncing Headers (534249)...
Last block time	Wed Oct 14 12:44:53 2015
Progress	24.35%
Progress increase per hour	0.10%
Estimated time left until synced	Unknown...

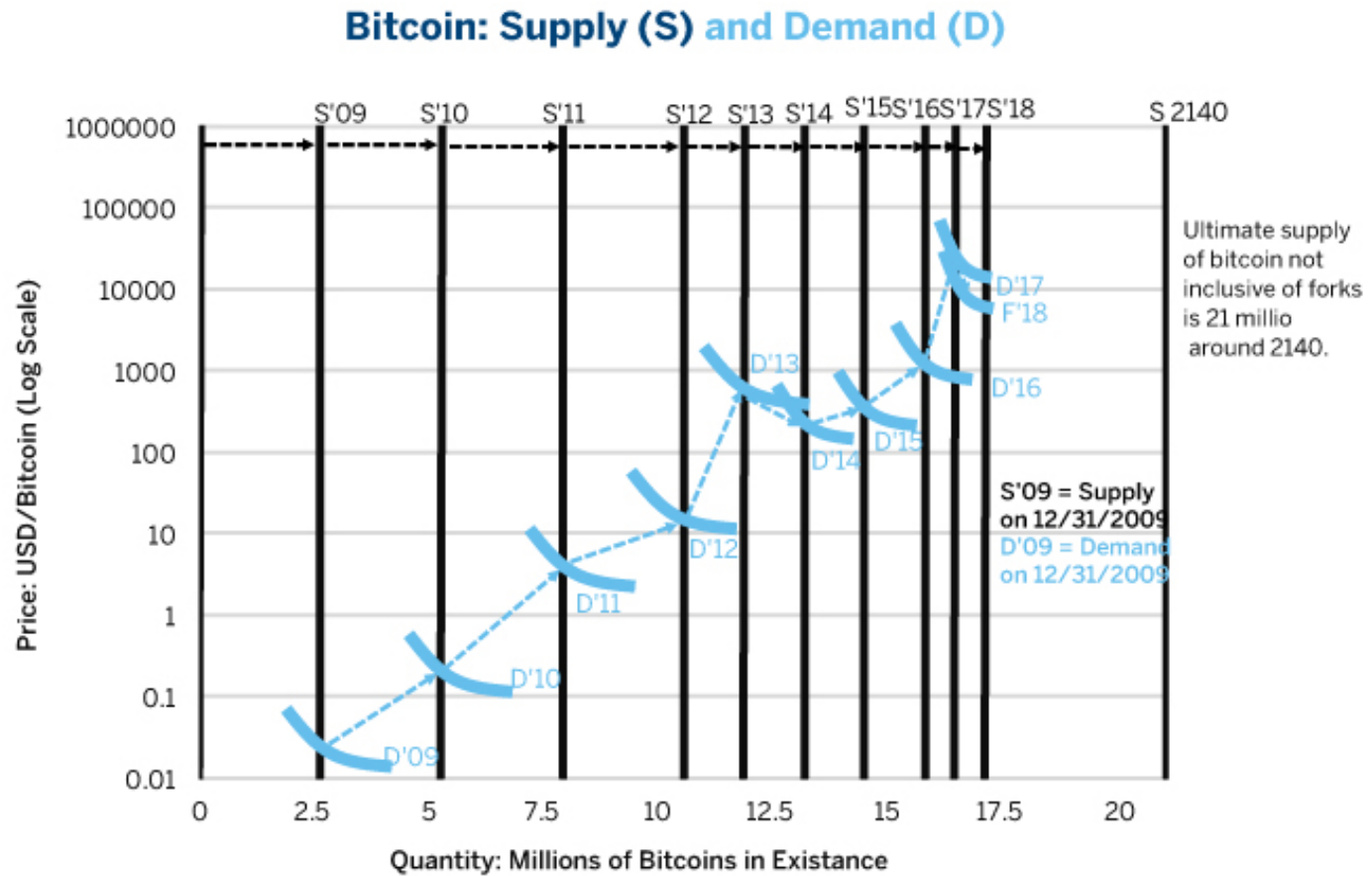
A "Hide" button is located at the bottom right of the dialog. At the bottom of the application window, a status bar shows "Processing blocks on disk..." with a green progress bar and "2 years and 45 weeks behind". The bottom right corner of the window displays "BTC HD" and a refresh icon.

# ECONOMICS OF BITCOIN



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## INELASTIC EXPANSION AND SLOW GROWTH

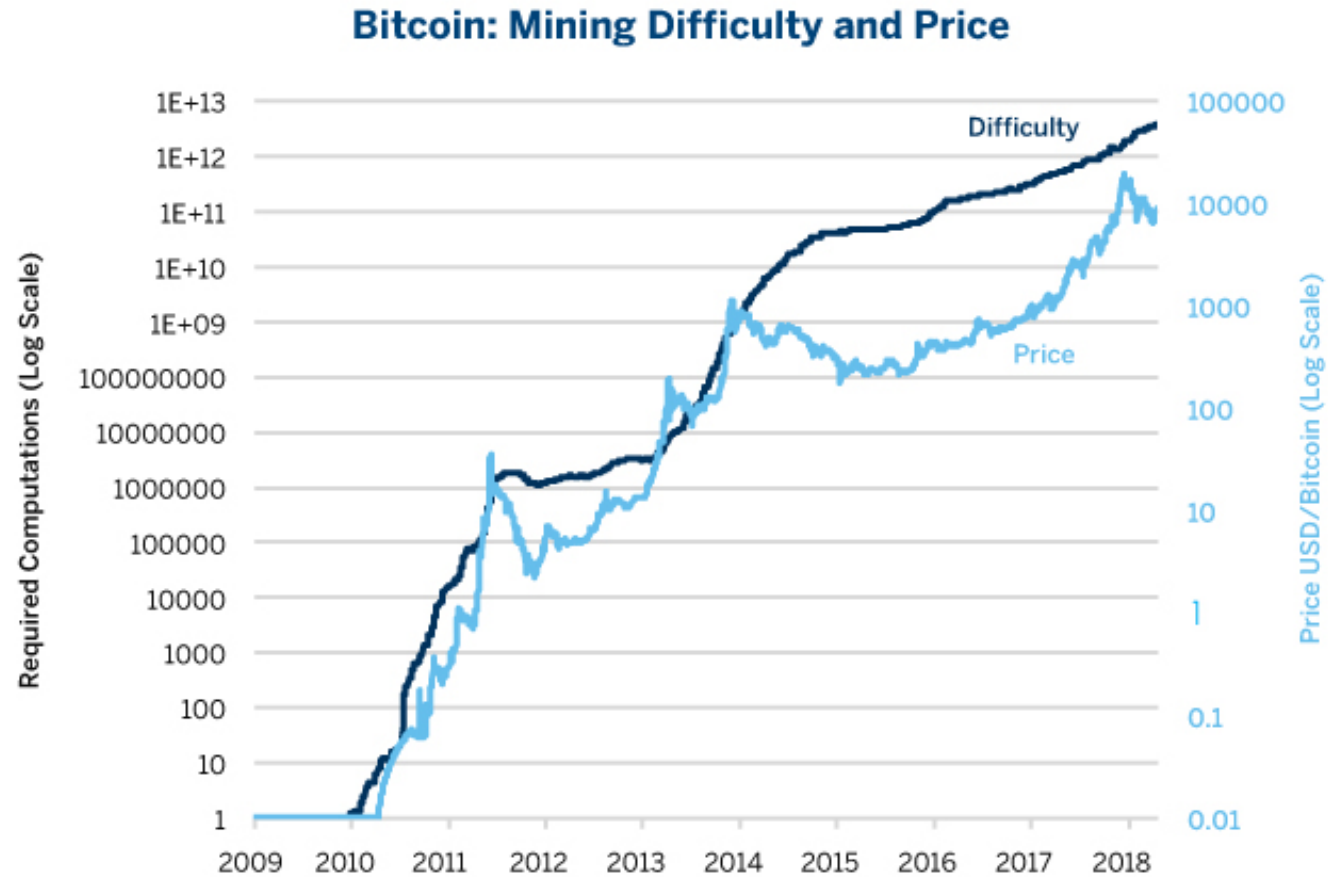


Source: Bloomberg Professional (XBT), Blockchain.Info (supply), CME Economic Research Calculations



# ECONOMICS OF BITCOIN

## MINING DIFFICULTY AND PRICE



Source: <https://blockchain.info/charts/market-price?timespan=all> and <https://blockchain.info/charts/difficulty?timespan=all>

# ECONOMICS OF BITCOIN

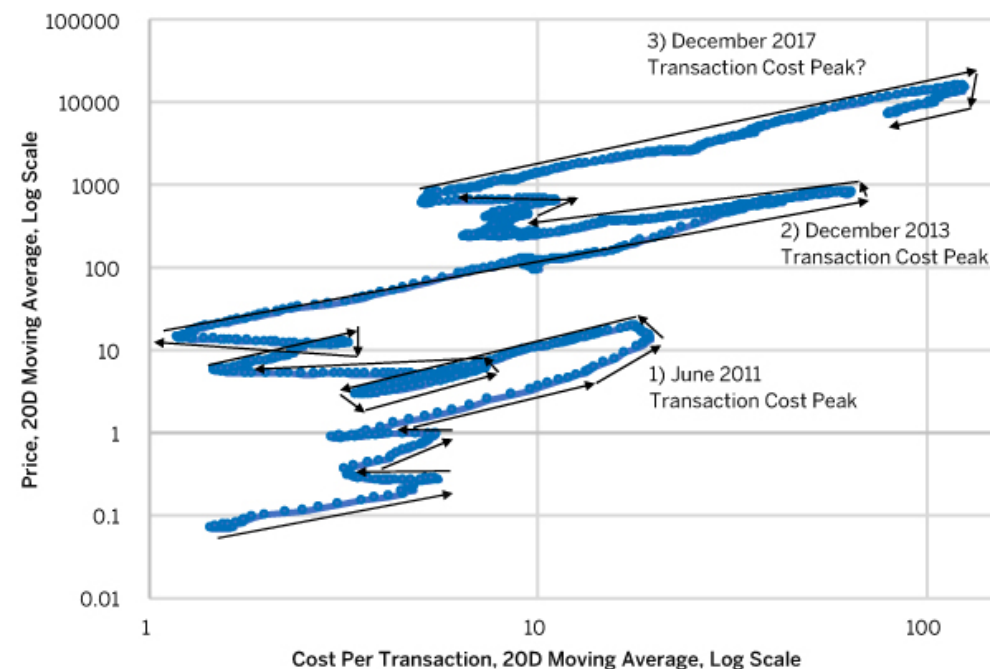
## MARKET REACTIONS

### Bitcoin: Cost per Transaction and Price



Source: <https://blockchain.info/charts/market-price?timespan=all> and <https://blockchain.info/charts/n-transactions?timespan=all>

### Bitcoin: Prices Versus Cost Per Transaction



Source: [blockchain.info/charts](https://blockchain.info/charts) (Price, Cost Per Transaction), CME Economic Research Calculations



Common Question - "Will bitcoin replace fiat currencies?"

Most likely no, because the too volatile price cannot compete as a store value currency in the long run considering the high transactions costs. Moreover, an ideal replacement for an existing fiat currency that will economically function as a proper rate of exchange will lose its appreciation slowly over time, which is not the excitable Bitcoin, or its alternatives.