



Protecting New Mexico's Investments with Bitcoin

Understanding the Basics of
Bitcoin and Cryptocurrency

Senator Ant Thornton, Ph.D.



Agenda

- **Unveiling Bitcoin:** Introduction and Background
- **The Pillars of Bitcoin:** Key Empowering Characteristics
- **Behind the Magic:** How Bitcoin's Secure Technology Works
- **The Bitcoin Advantage:** Why It Matters for Our Future
- **Expert Insights:** Mass Adoption is Underway
- **Our Path Forward:** Final Tips & Empowering Takeaways

THIS IS NOT FINANCIAL ADVICE.



What is Money?

Value = Economic Energy

- **Medium of Exchange:** Enabling seamless global transactions by providing a universally accepted item that can be exchanged for goods & services.
- **Unit of Account:** Money provides a standard measure of value, allowing us to compare the worth of different items in a consistent way.

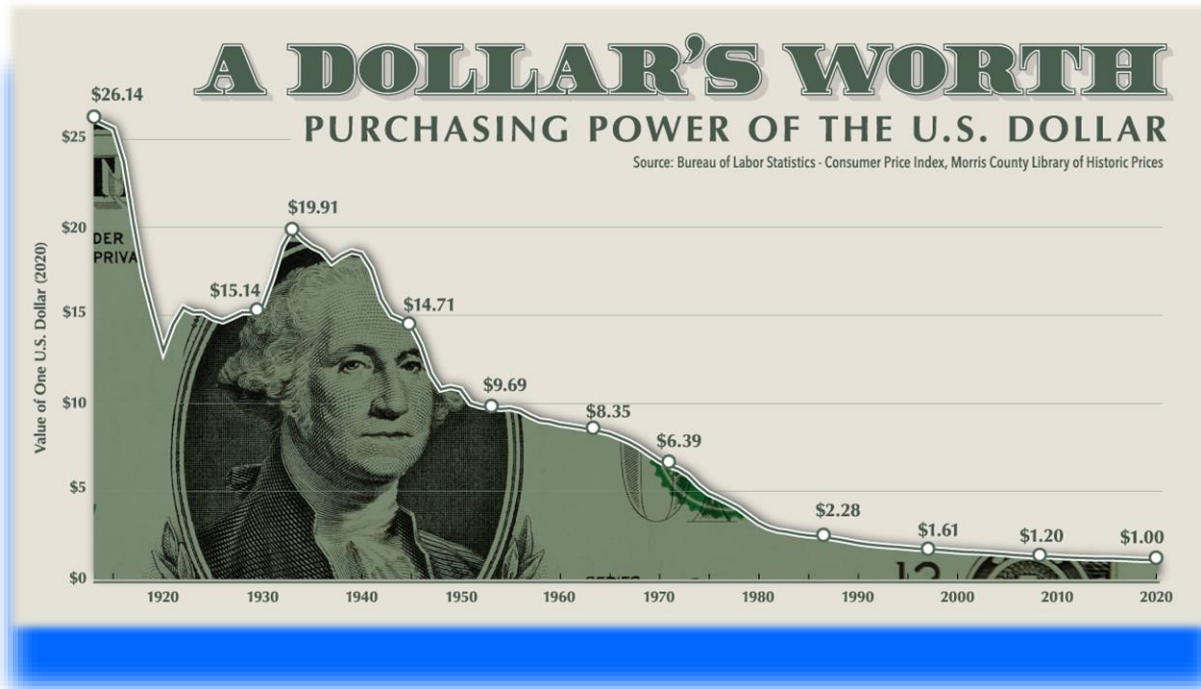
- **Store of Value:** Money (as capital) allows individuals to store wealth over time, maintaining its value.



Currency



Our Money System is Broken...



- **Fiat:** Government currency can be created with little to no effort
- **Centralized:** All sovereign governments have central banks to control money supply
- **Inflationary:** Credit and debt-based systems debase currency & encourage spending as more fiat enters circulation
- **Lack of Privacy:** Banking and credit system transactions are recorded with all identities known





What is Bitcoin?

Definition:

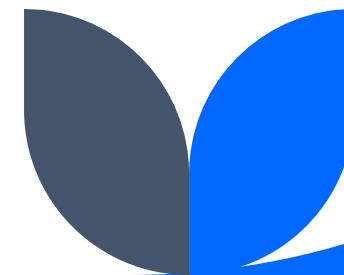
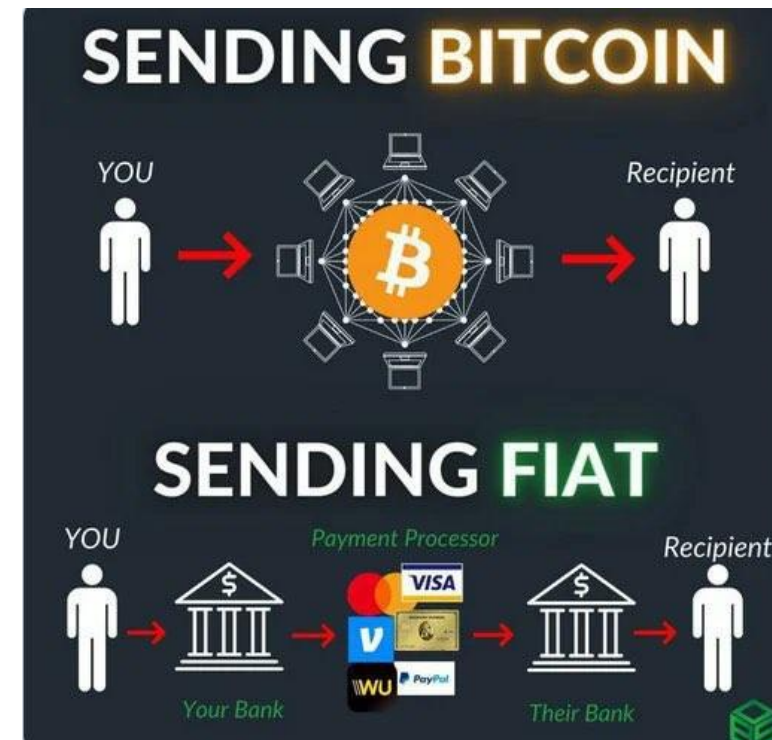
- **Bitcoin is software.**
- **Bitcoin is a financial protocol.**
- **Bitcoin is a monetary network.**
- **Bitcoin is a decentralized ledger.**



Bitcoin is designed for fairness, transparency, and predictable value.

Bitcoin is Outside the Traditional Finance (TradFi) System

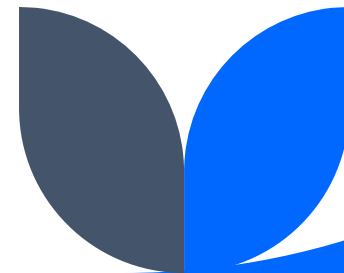
- Peer-to-Peer Network
- Available 24/7
- Low fees
- Secure network



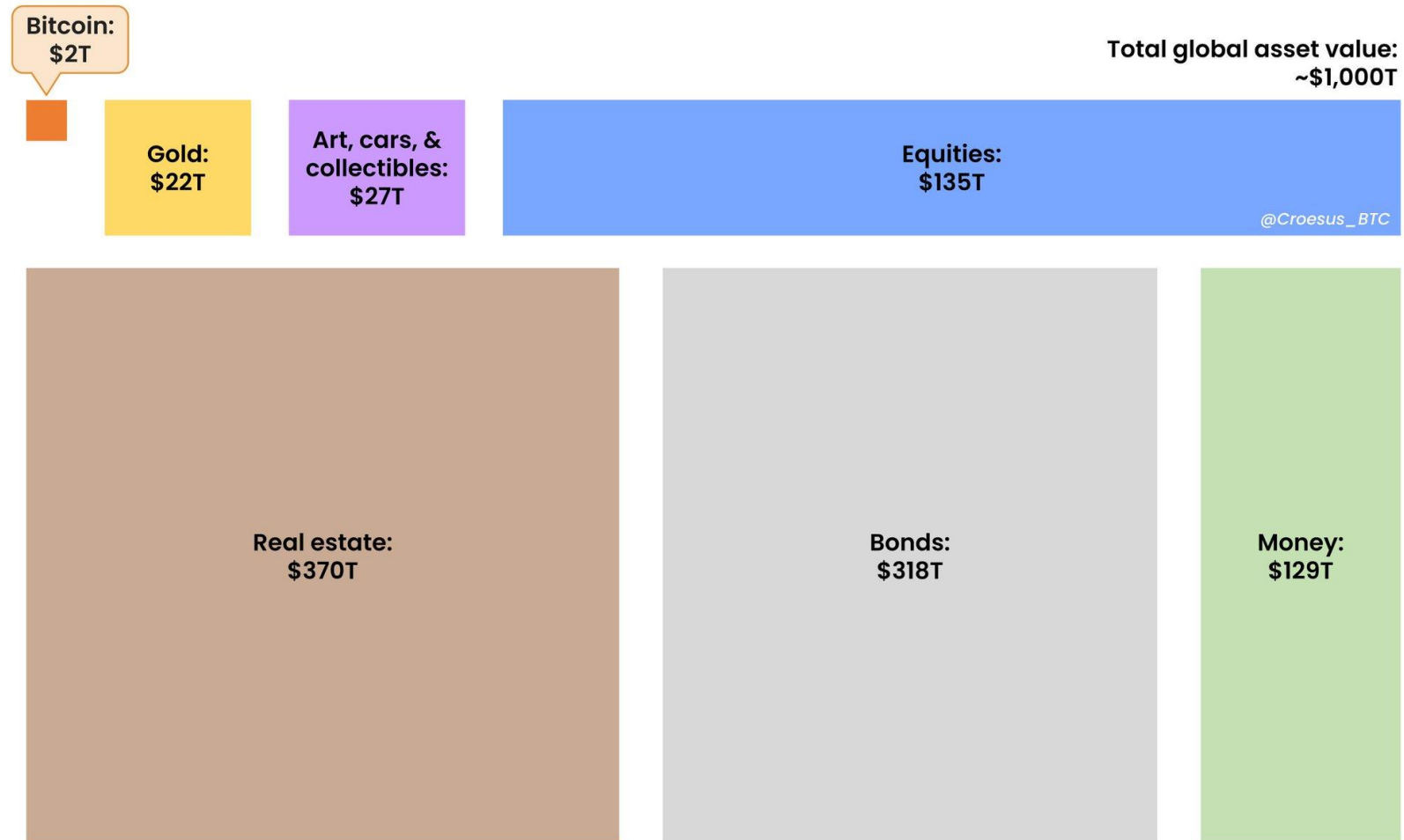
Key Characteristics of Bitcoin



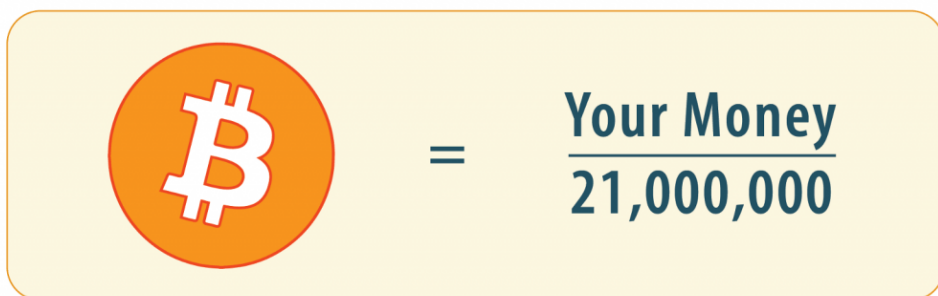
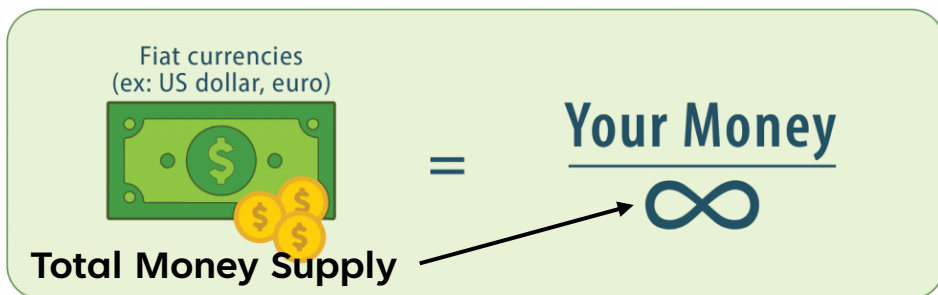
- **Digital:** Born for the internet age; instant, borderless value transfer.
- **Decentralized:** No single point of control; globally robust. As of early 2025, supported by 20,438 nodes worldwide.
- **Pseudonymous:** Transaction privacy with public verifiability.
- **Scarcity:** Only 21M BTC will exist
- **Divisibility:** 1 BTC = 100M Satoshis
- **Transparent:** All transactions auditable



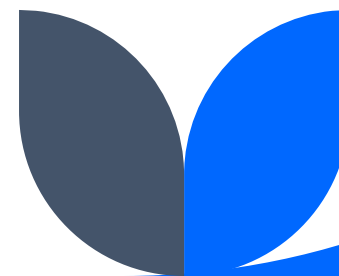
Total Global Asset Values ~ \$1000T



Limited Supply of Bitcoin



- **Fiat Network:** Central authority (government, bank, or company controls issuance). The supply is limitless. With limitless supply, the value of your fiat money erodes.
- **Bitcoin Network:** With a fixed supply of 21M, your BTC will always represent the same percentage of the network. As more capital flows into Bitcoin, your percentage remains the same. Your purchasing power increases with time.





Bitcoin Mining: How New Bitcoins are Created

- **What is Mining?**
Mining is the backbone of Bitcoin: verifying transactions and adding them to the blockchain.
- **How it works:**
Miners use powerful computers to solve complex mathematical puzzles (proof-of-work).

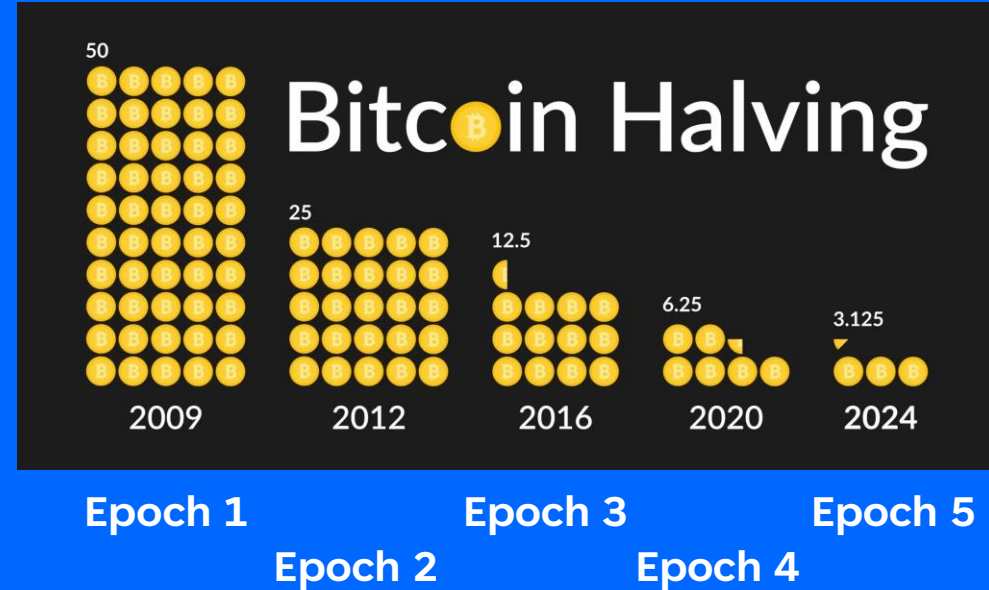
Miners who solve the puzzle first **get a reward,** newly created Bitcoins.

This process also secures the network.



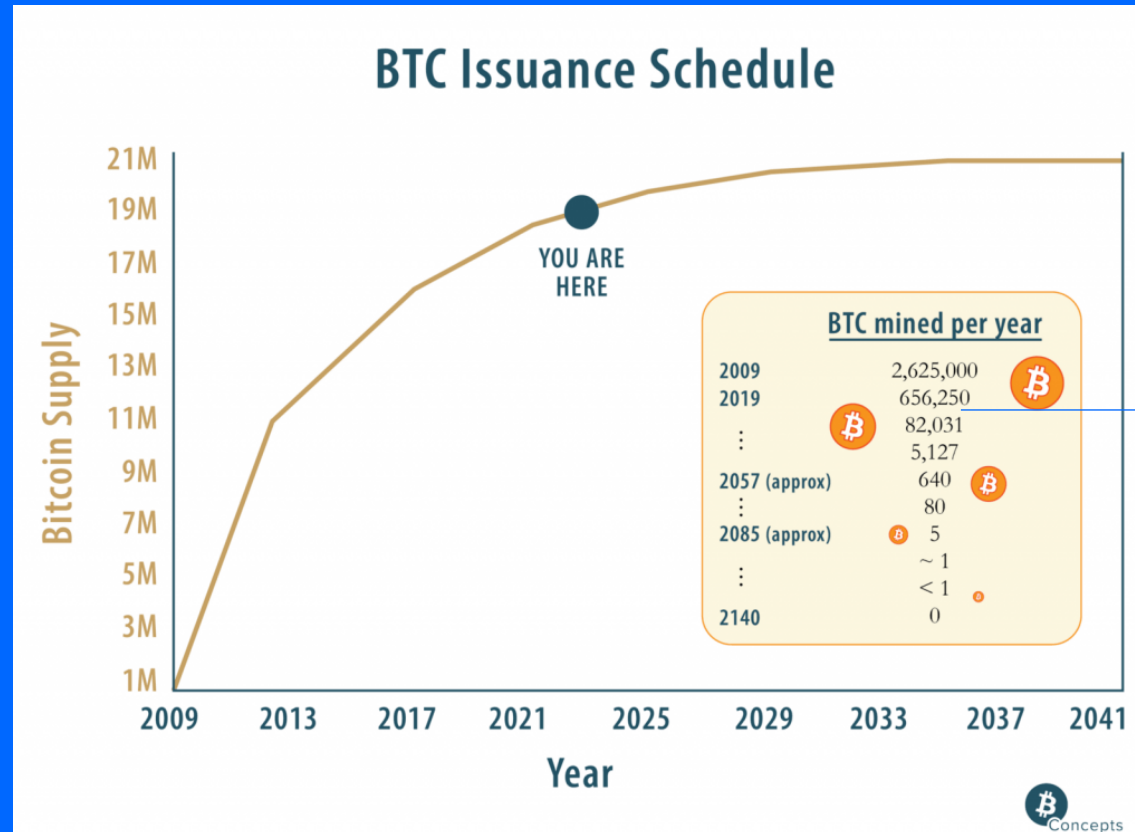
Bitcoin Halving Determines Issuance Reward

- **Built-in Scarcity Engine:** Bitcoin Protocol rewards miners ~ every 10 minutes with Bitcoin rewards.
- **Programmed Reduction:** Every ~ 4 years (210,000 blocks), this reward is cut in half – this is the halving
- **Impact:** This makes it more scarce correlating with price appreciation.



Bitcoin Issuance & Inflation Schedule

“The Path to 21 Million”



Bitcoin’s decreasing inflation makes it a uniquely sound monetary asset.

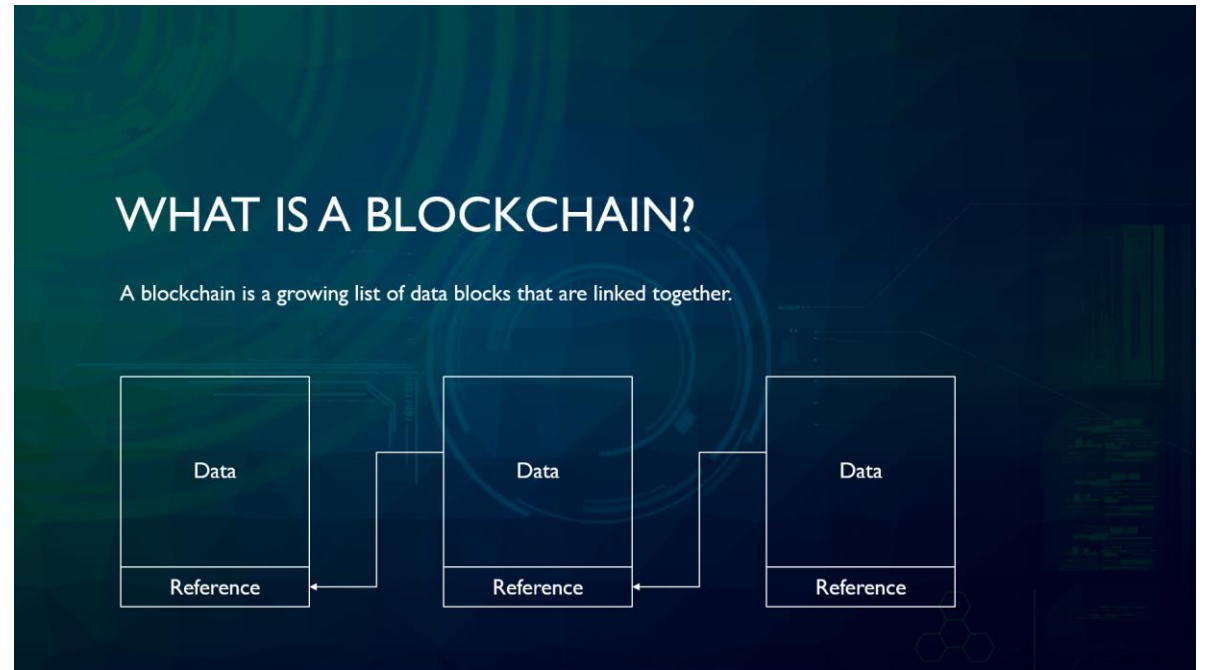
How Bitcoin Works: Blockchain Technology

The Digital Fortress:

Bitcoin transactions are permanently recorded on a public ledger called the blockchain aka “timechain”.

- **Secure Batches:** Each "block" securely bundles transactions.
- **Unbreakable Chain:** Blocks are linked in a chronological "chain" making tampering impossible.
- **Immutable Record:** Once added, a block cannot be altered.

Bitcoin's blockchain provides unprecedented security, transparency, and immutability



A Decade of Dominance: Bitcoin's Unmatched Performance

Bitcoin performance compared to major asset classes

Bitcoin has had periods of high performance and significant drawdowns
2013-2023

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Cumulative	Annualized
BTC 5,516%	SPX 12%	BTC 37%	BTC 119%	BTC 1,300%	AGG 0%	BTC 92%	BTC 302%	BTC 58%	CMT 20%	BTC 156%	BTC 315,678%	BTC 124%
SPX 26%	AGG 5%	AGG 0%	HY 17%	EM 35%	HY -2%	SPX 29%	Gold 24%	CMT 30%	Gold 1%	SPX 25%	SPX 226%	SPX 13%
HY 6%	HY 2%	SPX -1%	EM 15%	SPX 18%	Gold -3%	EM 21%	SPX 15%	SPX 29%	HY -11%	HY 12%	HY 64%	HY 5%
AGG -1%	EM 1%	HY -4%	CMT 14%	Gold 12%	SPX -7%	Gold 18%	EM 14%	HY 5%	AGG -12%	Gold 12%	EM 35%	EM 3%
EM -3%	Gold -3%	Gold -11%	SPX 11%	HY 7%	CMT -9%	HY 14%	AGG 7%	EM 0%	EM -18%	EM 9%	Gold 18%	Gold 2%
CMT -9%	CMT -18%	EM -14%	Gold 7%	CMT 6%	EM -15%	CMT 10%	HY 7%	AGG -1%	SPX -20%	AGG 5%	AGG 17%	AGG 2%
Gold -29%	BTC -58%	CMT -25%	AGG 2%	AGG 3%	BTC -73%	AGG 8%	CMT -3%	Gold -6%	BTC -65%	CMT -2%	CMT -4%	CMT 0%

**BTC is Best Performing Asset
in 11 of the last 14 years**

Past performance does not guarantee future results. Index performance is for illustrative purposes only. Index performance does not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Certain sectors and markets perform exceptionally well based on current market conditions and iShares and BlackRock Funds can benefit from that performance. Achieving such exceptional returns involves the risk of volatility and investors should not expect that such results will be repeated. Index performance does not represent actual Fund performance. For actual fund performance, please visit www.iShares.com or www.blackrock.com.

Source: Bloomberg, BlackRock calculations, as of December 31, 2023. Asset classes shown include major liquid asset classes available to U.S. investors. Bitcoin returns calculated using Bloomberg Bitcoin Spot Price. SPX is represented by the S&P 500 Total Return Index (USD). EM is represented by the Dow Jones Emerging Markets Total Return Index (USD). AGG is represented by S&P U.S. Aggregate Bond Index. HY is represented by S&P U.S. High Yield Corporate Bond Index. Gold is the 1oz price of gold from Bloomberg. CMT is represented by Dow Jones Commodity Index.



From Pennies to Powerhouse: Bitcoin's Meteoric Rise

11:27 companiesmarketcap.com

Name	M. Cap	Price
Gold 1 GOLD	\$21.709 T	\$3,233 1.43%
Microsoft 2 MSFT	\$3.411 T	\$458.97 1.03%
NVIDIA 3 NVDA	\$3.305 T	\$135.56 0.12%
Apple 4 AAPL	\$3.122 T	\$209.04 -1.05%
Amazon 5 AMZN	\$2.190 T	\$206.32 0.36%
Bitcoin 6 BTC	\$2.090 T	\$105,239 -0.46%
Alphabet (Google) 7 GOOG	\$2.019 T	\$167.14 -0.17%
Silver 8 SILVER	\$1.816 T	\$32.26 0.33%
Saudi Aramco 9 2222.SR	\$1.692 T	\$7.00 0.38%
Meta Platforms (Facebook) 10 META	\$1.612 T	\$641.35 0.16%

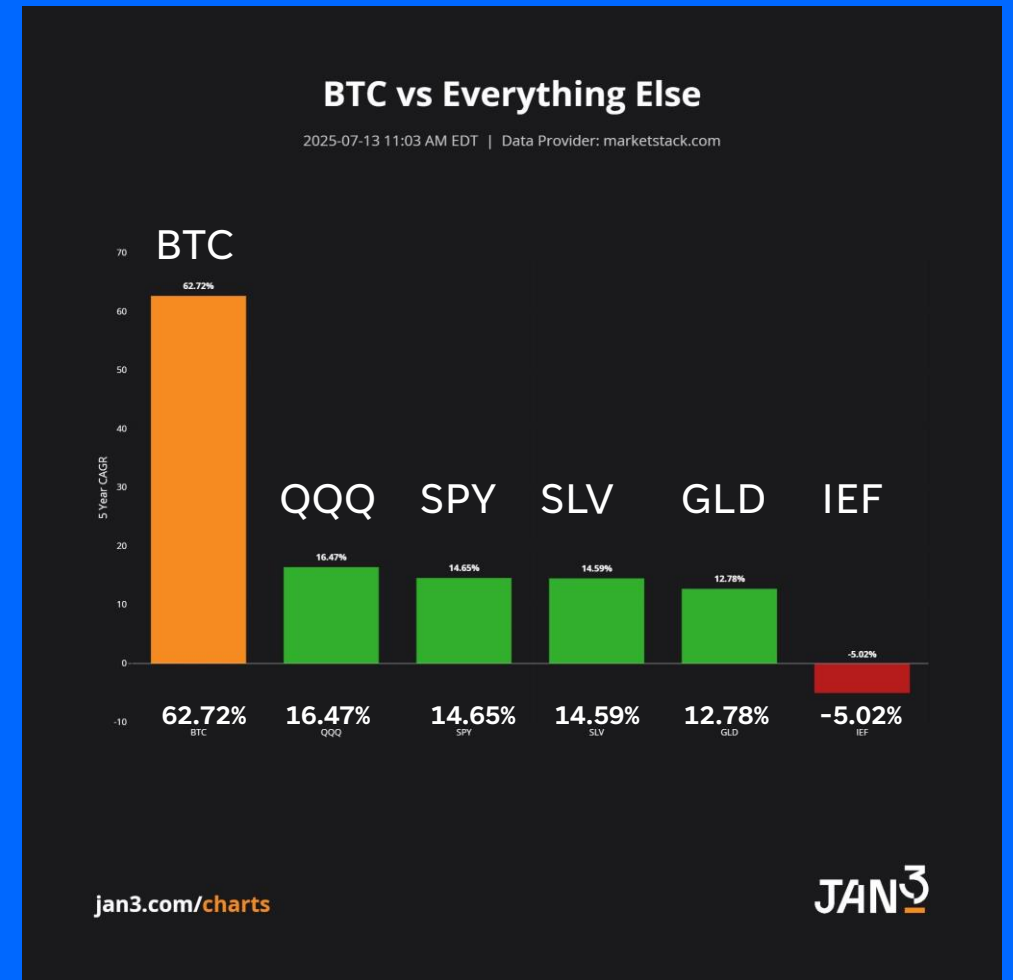
The Bitcoin Historian reposted
The Bitcoin Historian @pete_rizzo_

The price of #Bitcoin on its birthday 🚀

- 16 years: \$96,000
- 15 years: \$45,000
- 14 years: \$18,400
- 13 years: \$44,000
- 12 years: \$33,400
- 11 years: \$7,319
- 10 years: \$3,783
- 9 years: \$14,764
- 8 years: \$1,084
- 7 years: \$432
- 6 years: \$275
- 5 years: \$816
- 4 years: \$13
- 3 years: \$5
- 2 years: \$0.25
- 1 year: \$0.01

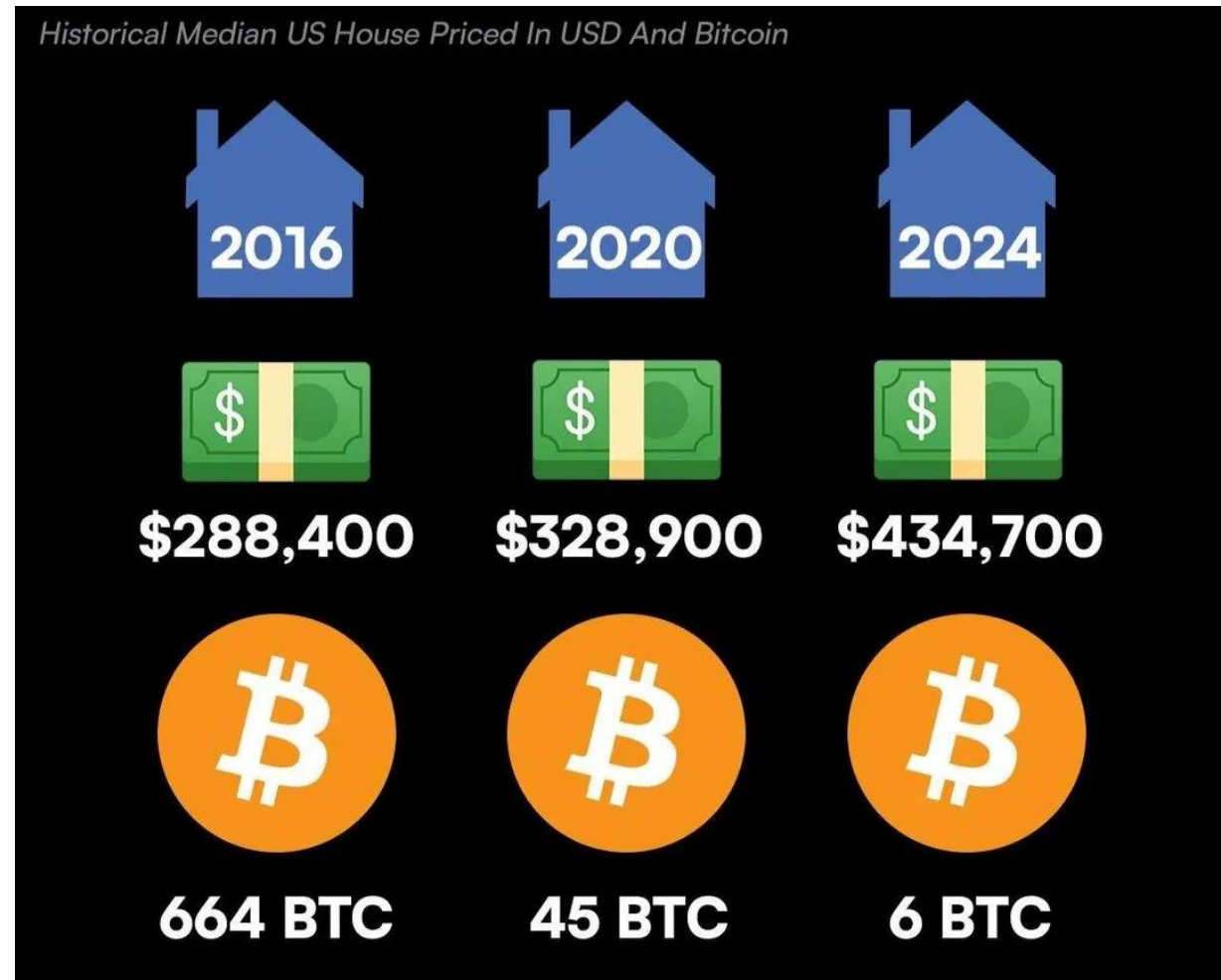
Bitcoin – Compound Annual Growth Rate

1. Bitcoin's CAGR since its inception (01/01/2010 - 01/01/2025) has been ~99%.
2. If you invested \$1,000 in Bitcoin in 2010, your investment would be worth about \$1.07 billion. Bitcoin traded at \$0.10 per bitcoin in July 2010, the closest available price data.
3. Bitcoin's CAGR in the last 5 years (01/01/2021 – 01/01/2025) has been ~ 62%



Why It Matters?

“The natural state of a free market is deflationary.” ~ Jeff Booth

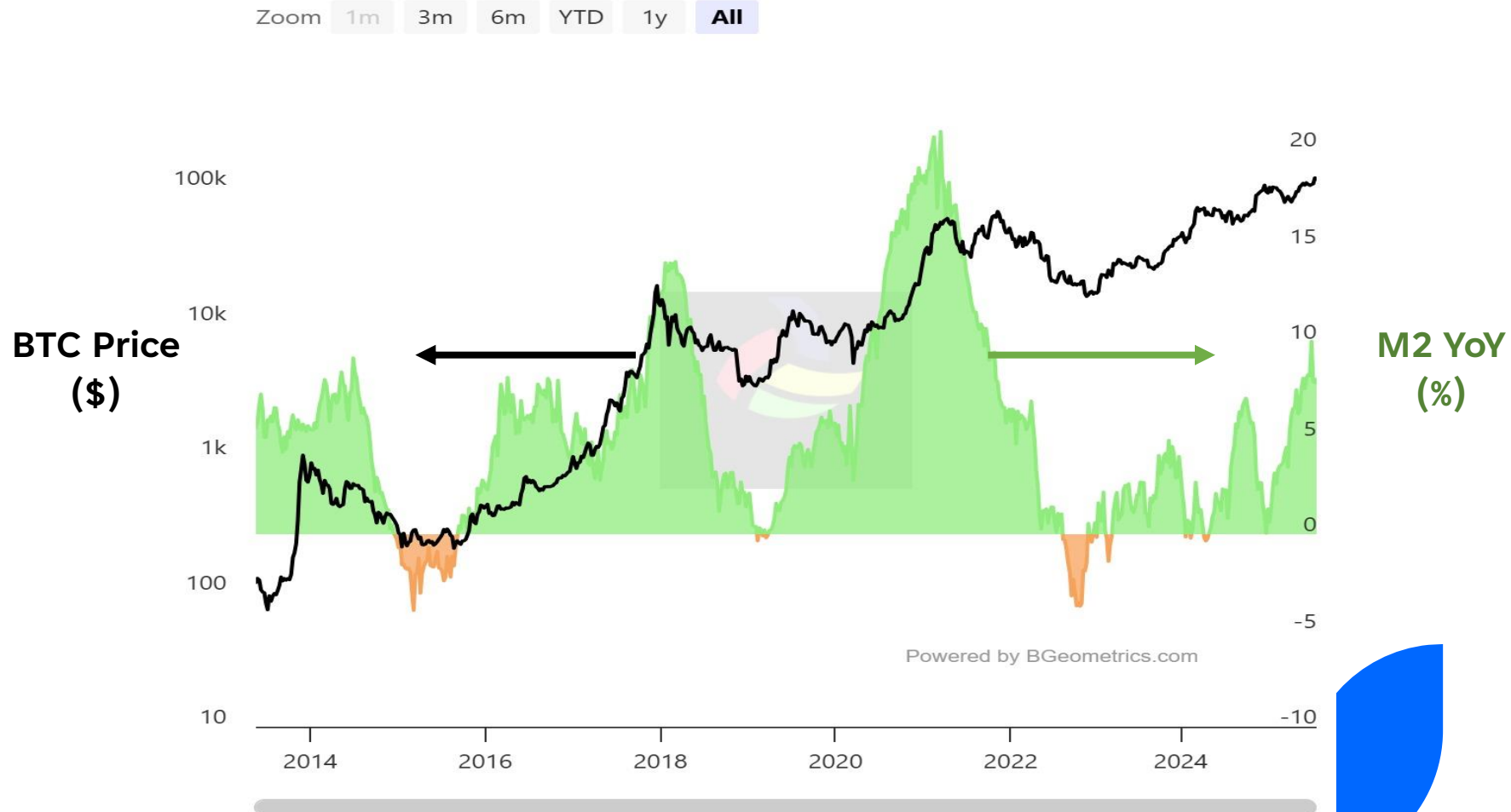


We Do Not Live in a Free Market?

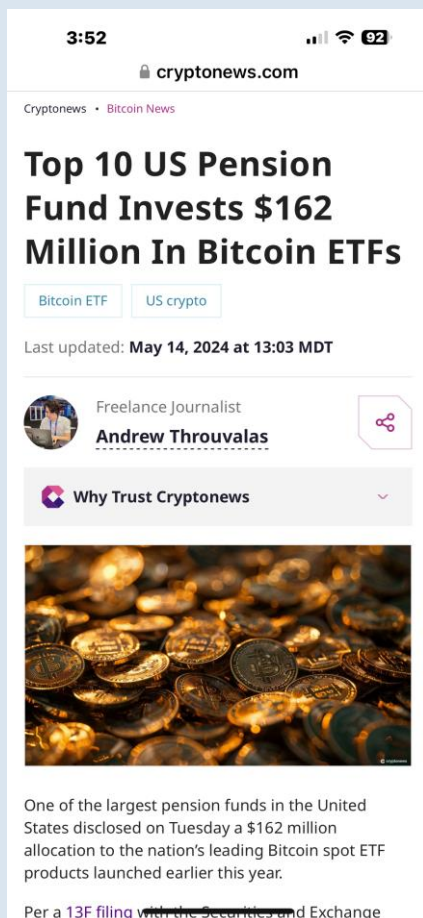
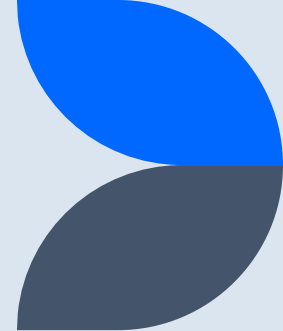
The World's Central Banks...

are expanding the money supply, exponentially.

Bitcoin and M2 Growth Global of YoY (Fed, ECB, GBM, CNM, JPM...)



Securing New Mexico's Future with Strategic Bitcoin Allocation



- **Prudent Leadership:**
Introduce legislation to create a Strategic Bitcoin Reserve
- **We Tried: Future-Proofing State Assets**
Allow the State Investment Council & State Treasurer to strategically allocate up to 10% of funds to Bitcoin (SB 275)
 - Land Grant Permanent Fund
 - Severance Tax Permanent Fund
 - Water Trust Fund
 - Tobacco Settlement Permanent Fund

Growing State-Level Recognition: A Wave of Bitcoin Legislation

New Hampshire: HB 302, **Strategic Bitcoin Reserve Act** was signed into law on May 6, 2025 by Governor Chris Sununu making it the first state in the nation to pass legislation. Designed to hold Bitcoin and other qualifying digital assets as a long-term investment.

Arizona: HB 2749, **Bitcoin and Digital Assets Reserve Fund** was signed into law by Governor Katie Hobbs on May 7, 2025. The fund is administered by the Arizona State Treasurer to hold and manage unclaimed digital assets.

Texas: SB 21, **The Texas Strategic Bitcoin Reserve and Investment Act** was signed into law by Governor Greg Abbott on June 20, 2025. The bill calls for Texas to create a Bitcoin and high-value cryptocurrencies reserve as a hedge against inflation.



Over 27 states have introduced some form of Strategic Bitcoin Reserve legislation.



Wall Street Embraces Bitcoin: Institutional Giants Lead the Way

Blackrock (IBIT): The world's largest asset manager offers Bitcoin and manages the largest Bitcoin ETF (IBIT). As of July 10, 2025 ~ \$76B AUM.

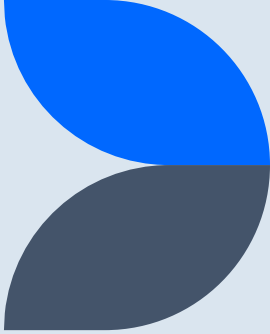
Fidelity (FBTC): Provides Bitcoin products and institutional-grade custody. Reduced management fees to make Bitcoin investments more attractive for institutional clients. As of July 31, 2025 ~ \$22.2B AUM.

ARK Invest (ARKB): An innovation leader with Bitcoin in its investment strategy. As of July 10, 2025 ~ \$3.2B AUM.



Bitcoin is no longer a speculative asset.

Public Companies Holding Bitcoin as a Reserve Asset



Bitwise®
Corporate
Bitcoin
Adoption
Q2 '25

TOTAL BITCOIN HOLDINGS

847K

23.13% CHANGE QoQ
4.03% OF 21M TOTAL BITCOIN SUPPLY

TOTAL VALUE OF BITCOIN HOLDINGS

\$91B

60.93% CHANGE QoQ
PRICE PER BITCOIN: \$107,754

NUMBER OF PUBLIC COMPANIES
HOLDING BITCOIN

125

58.23% CHANGE QoQ
46 NEW COMPANIES BOUGHT BITCOIN

Key Developments

Strategy adds 69,000+ bitcoin in Q2, sees \$14B unrealized gain

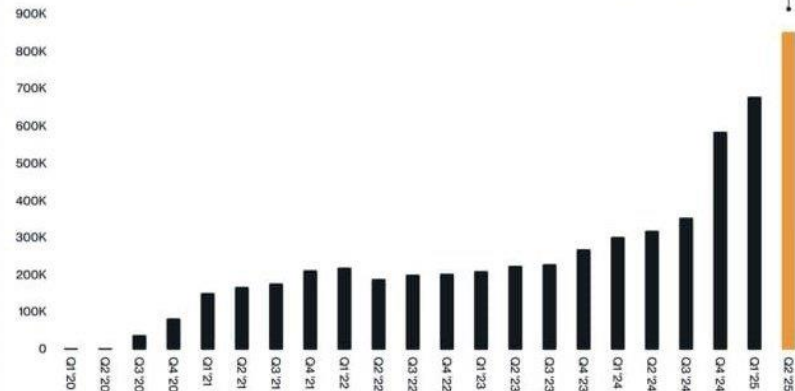
Twenty One debuts with \$685M raise, buys \$450M+ in bitcoin

Metaplanet leads Tokyo trading volume, tops Toyota and Sony

GameStop executes inaugural bitcoin purchase of 4,710 bitcoin

Trump Media files to raise \$2.5B for bitcoin accumulation

Quarterly Bitcoin Holdings



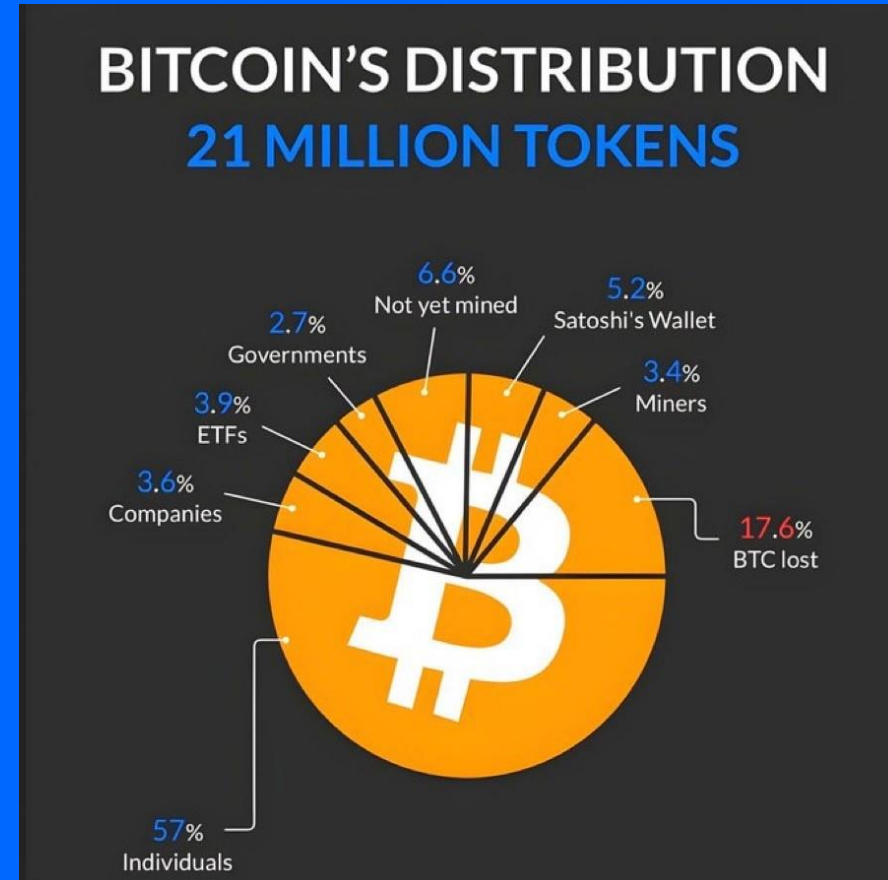
Top Five Companies

Strategy	597,325 BTC
MARA Holdings	49,940 BTC
Twenty One	37,230 BTC
Riot Platforms	19,273 BTC
Metaplanet	13,350 BTC

Source: Bitwise Asset Management with data from bitcointreasures.net, news reports, company public statements, and financial documents. Data is the most recently available as of June 20, 2025.

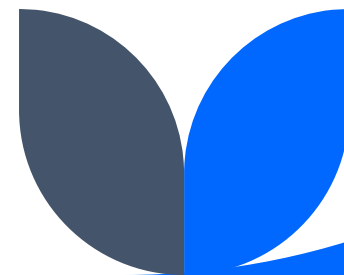
Expert Insights: Bitcoin's Mass Adoption

1. Individuals own 57% of network
2. Approximately 18% are lost BTC
3. Satoshi's wallet is 5.2% of network
4. ETFs represent 3.9% of network
5. Corporations own 3.6% of network
6. Governments own 2.7% of network



Why are Institutions and Governments slow to adopt Bitcoin?

1. Volatility and Risk
2. Regulatory Uncertainty
3. Lack of Intrinsic Value
4. Security Concerns
5. Environmental Impact
6. Portfolio Fit and Mandates
7. Market Maturity and Manipulation
8. Long-term Viability



Navigating the Path to Maturity:

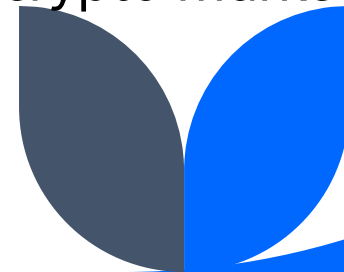
Understanding & Overcoming Challenges

- **Price Volatility:** Bitcoin is a high growth asset. Strategy - Embrace a long-term perspective to benefit from its historical upward trajectory.
- **Security & Responsibility:** Wallets empower owners to control their assets. Best practice makes secure ownership achievable. While the blockchain is secure, self-custody brings responsibility.
- **Portfolio Fits and Mandates:** Pension funds and Sovereign funds are dipping their toes in with 1%-2% exposure to the network.



Key Developments Over 16 Years

- **Decentralization:** Bitcoin's network is one of the most decentralized networks in the world with millions of nodes, miners, and users worldwide
- **Institutional Adoption:** From near zero institutional interest in 2009, now has support from corporations, hedge funds, and sovereign governments
- **Technological Maturation:** Significant protocol upgrades, layer-2 solutions like Lightning, and improved wallet security
- **Global Reach:** Bitcoin's adoption in hyperinflationary economies (e.g., Venezuela, Zimbabwe) as a hedge against fiat devaluation
- **Cultural Shift:** Bitcoin represents over 50% of the total crypto market cap.



Remaining Challenges...

Regulatory uncertainty is dissipating.

Anti-CBDC Act (Pending):

The Anti-CBDC Act (“Anti-CBDC Surveillance State Act”) prohibits the Federal Reserve from issuing a central bank digital currency (CBDC) in the United States, either directly or indirectly.

The Clarity Act (Pending):

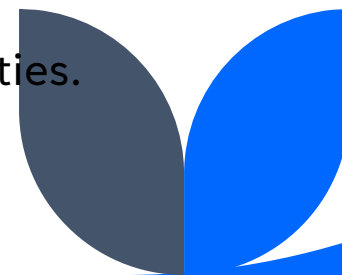
The Clarity Act (Digital Asset Market Clarity Act of 2025, H.R. 3633) creates a clear regulatory framework for digital assets and crypto markets, addressing regulatory uncertainty in the industry.

The Genius Act (Signed):

President Trump recently signed the GENIUS Act (Guiding and Establishing National Innovation for U.S. Stablecoins) into law on July 18, 2025 establishing a federal regulatory framework for payment stablecoins—digital assets designed to be fully backed by U.S. dollars or treasuries.

Strategic Bitcoin Reserve (EO):

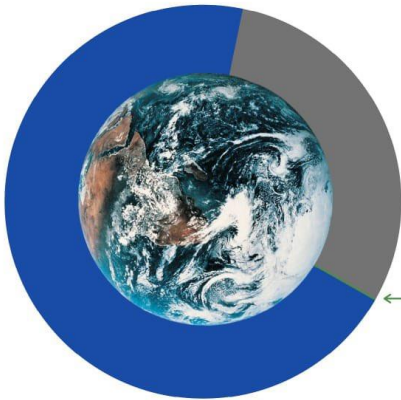
The administration launched a U.S. Strategic Bitcoin Reserve and a Digital Asset Stockpile to strengthen America’s digital asset capabilities.



Remaining Challenges...

Bitcoin Energy Consumption is merely a distraction.

BITCOIN'S COMPARATIVE ENERGY CONSUMPTION ANNUALIZED



160,000 TWh
TOTAL ENERGY GENERATED WORLDWIDE

50,000 TWh
ENERGY LOST DUE TO INEFFICIENCIES

120 TWh
ENERGY CONSUMED BY BITCOIN ON THE WORLD'S ELECTRIC GRID

BITCOIN USES LESS THAN 0.1% OF HUMAN ENERGY PRODUCTION WORLDWIDE

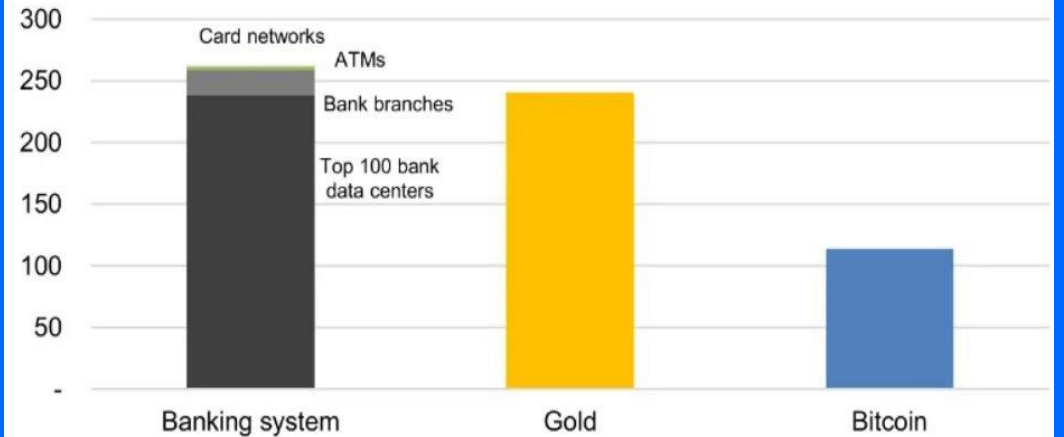
BITCOIN CONSUMES 0.25% OF THE ENERGY WASTED

BLACKCAP™

SOURCE: VACLAV SMIL (2017), ENERGY TRANSITIONS: GLOBAL AND NATIONAL PERSPECTIVES, & BP STATISTICAL REVIEW OF WORLD ENERGY
[HTTPS://OURWORLDINDATA.ORG/ENERGY-PRODUCTION-CONSUMPTION](https://ourworldindata.org/energy-production-consumption)

Estimated Annual Energy Consumption (TWh/yr)

Source: Galaxy Digital



Remaining Challenges...

Quantum Computing could break Bitcoin's cryptography

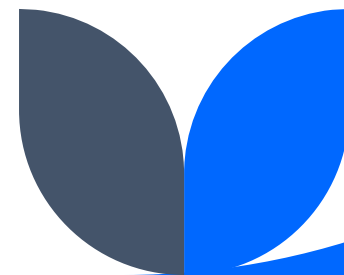
- **Quantum Threat:**
 - Bitcoin primarily secures transactions and wallets with elliptic curve cryptography (ECC) and the SHA-256 hashing algorithm. Both are vulnerable to Shor's algorithm.
- **Vulnerability Timelines:**
 - Microsoft's Majorana chip & Google's quantum progress could possibly crack Bitcoin's ECC in 3-5 years.
 - Researchers such as Google's Craig Gidney suggest that resources to break RSA or ECC cryptography are 5-10 years.
 - Other prominent crypto figures like Adam Beck (Blockstream) maintain that quantum risk is ~ 20 years away.
- **Quantum Resistant Protocols:** are under intense research.



Remaining Challenges...

Functionality Trade-offs solved by Bitcoin Layer-2s

- **Layer-2 Solutions** - are protocols or networks built atop the Bitcoin base chain. They move transactions “off-chain” to reduce congestion and add new features.
 - Scalability
 - Sidechains
 - Rollups



The Future is Calling: Don't Get Left Behind



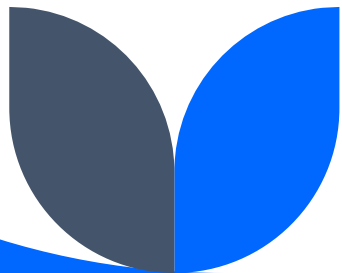
All ROADS will eventually lead to Bitcoin...

“The risk of Bitcoin, is NOT owning Bitcoin...”

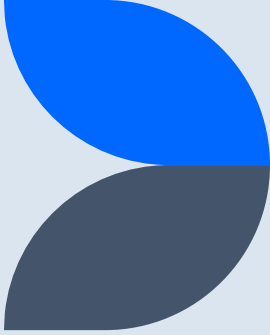


The Future of Bitcoin

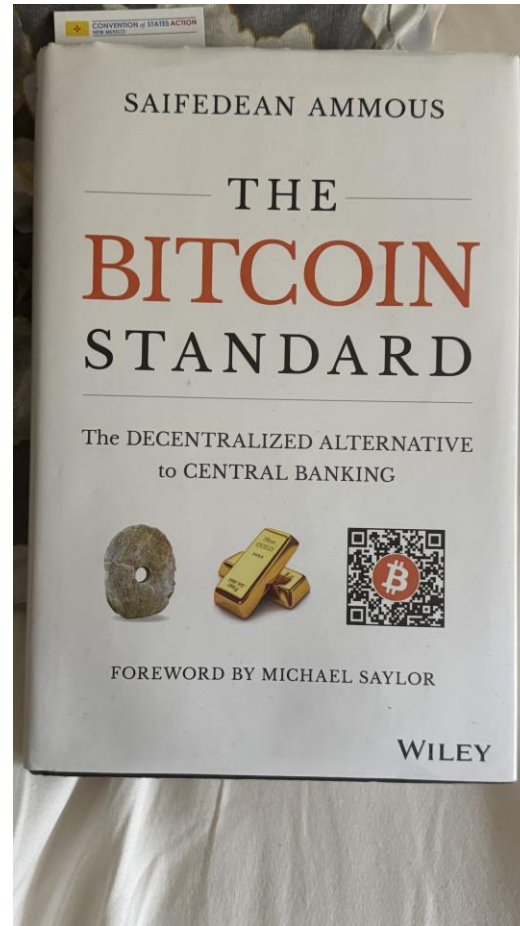
- World Embraces Adoption
- Traditional Finance Makes Connection
- Unlocking Innovation
- Challenges Ahead



If You Are Interested in Learning More...



If You Prefer to Read...



Thank you

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Appendix

Financial Charts



Bitcoin 101 Video Tutorial

- Michael Saylor's keynote presentation at the H.C. Wainwright Annual Global Investment Conference, provides an in-depth overview of Bitcoin **tailored for institutional investors**. Saylor outlines why Bitcoin is a game-changer for institutions looking to diversify their portfolios and safeguard against inflation.
- https://youtu.be/YjxhWV_Ha4g?si=RWfUIONqBc1rs_8K



The Digital Gold Rush

Michael Saylor

Michael Saylor

Powered by Zoom



Bitcoin Compound Annual Growth Rate

Bitcoin Marketcap \$1.94T Gold Marketcap \$19.71T

CASEBITCOIN
MAKING THE CASE FOR BITCOIN EVERY DAY

Bitcoin & Traditional Assets CAGR

	Bitcoin	Gold	S&P 500
1 year:	+49%	+34%	+12%
2 year:	+95%	+28%	+19%
3 year:	+52%	+21%	+15%
4 year:	+28%	+15%	+9%
5 year:	+60%	+13%	+15%
6 year:	+54%	+17%	+13%
7 year:	+44%	+14%	+12%
8 year:	+63%	+13%	+12%
9 year:	+83%	+11%	+13%
10 year:	+83%	+10%	+11%
11 year:	+62%	+9%	+11%
12 year:	+75%	+7%	+11%
13 year:	+114%	+6%	+12%
14 year:	+99%	+6%	+11%

<https://casebitcoin.com>

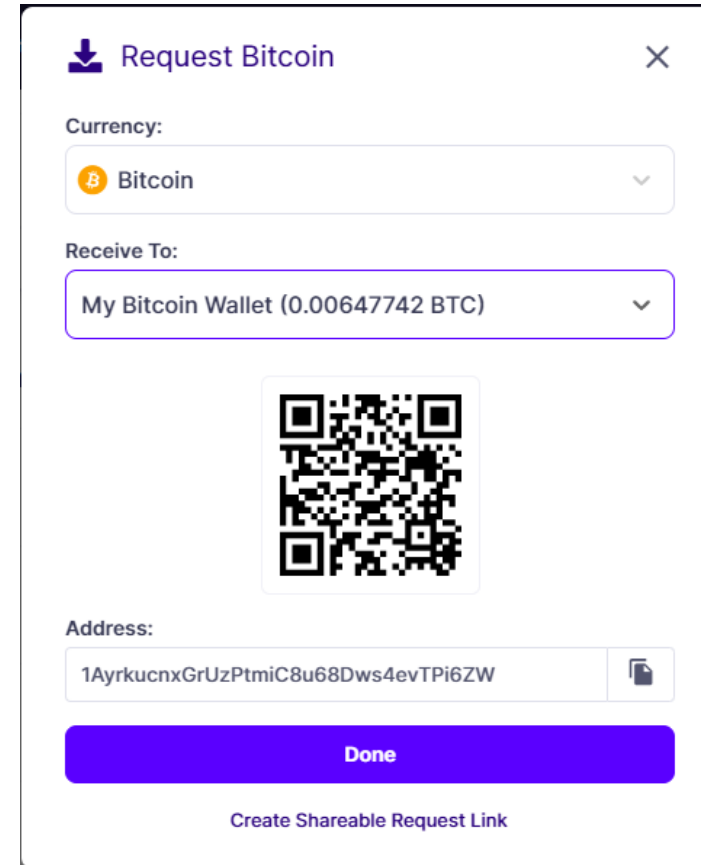


Bitcoin Inflation Schedule - Fixed

Halving	Bitcoin (BTC)		Percent of total	
	Block subsidy	Circulating supply	% mined	% remaining
Genesis	50	0	0%	100%
2012	25	10,500,000	50%	50%
2016	12.5	15,750,000	75%	25%
2020	6.25	18,375,000	87.5%	12.5%
2024	3.125	19,687,500	93.75%	6.25%
2028	1.5625	20,343,750	96.875%	3.125%
2032	0.78125	20,671,875	98.438%	1.563%
2036	0.390625	20,835,938	99.219%	0.781%
2040	0.1953125	20,917,969	99.609%	0.391%
2044	0.09765625	20,958,984	99.805%	0.195%
2048	0.048828125	20,979,492	99.902%	0.098%
...	@Croesus_BTC
2140	0	21,000,000	100%	0%

Bitcoin Transactions

- **Sending Bitcoin:**
Transfer value globally using your secure digital wallet.
- **Receiving Bitcoin:**
Easily accept payments from anyone, anywhere. Each wallet has a public key (address) to receive payments.
- **Efficiency & Cost Savings:**
Bitcoin transactions are often faster and cheaper than traditional bank transfers.



The screenshot shows a mobile application window titled "Request Bitcoin" with a close button (X) in the top right corner. The interface includes the following elements:

- Currency:** A dropdown menu set to "Bitcoin" with a Bitcoin icon.
- Receive To:** A dropdown menu set to "My Bitcoin Wallet (0.00647742 BTC)".
- QR Code:** A large QR code for scanning to receive the payment.
- Address:** A text field containing the Bitcoin address "1AyrkucnxGrUzPtmiC8u68Dws4evTPi6ZW" and a copy icon.
- Buttons:** A large blue "Done" button and a smaller link "Create Shareable Request Link" below it.





Advantages of Bitcoin

- **Unparalleled Security:** Strong encryption and decentralized nature make Bitcoin resistant to fraud.
- **Radical Transparency:** All transactions are recorded on the public blockchain.
- **Global Accessibility:** Anyone with an internet connection can use Bitcoin.
- **Significant Cost Savings:** Much lower transaction costs compared to traditional banking and remittance services.



Why Bitcoin Matters?



- **Empowering Decentralization:**

Bitcoin puts financial power back in your hands. It empowers individuals/institutions by removing the need for intermediaries.

- **Banking the Unbanked (Financial Inclusion):**

Accessible to anyone with an internet connection, even in regions with limited banking infrastructure.

- **A Digital Safe Haven (Store of Value):**

Offers a shield against inflation and economic uncertainty. Bitcoin seen as "digital gold" due to its scarcity and potential to protect against inflation.

