

Ted Lee's Presentation: Bitcoin and Blockchain

kpu.ca/talk

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Agenda

- What Is Bitcoin?
- How It Works (Blockchain & Mining)
- Why People Use It
- Risks & Challenges
- Getting Started Safely
- Q & A

What Is Bitcoin?

- Digital currency launched in 2009
- No physical form – exists only on the blockchain (online)
- Created by “Satoshi Nakamoto” (pseudonym)
- Permission less
- Decentralize
- Bitcoin is NOT Crypto, fails the Howey Test

Bitcoin vs. Traditional Money

Feature	Traditional Money	Bitcoin
<i>Issuer</i>	<i>Central bank/government</i>	<i>Decentralized network 21K Nodes, 40% TOR nodes</i>
<i>Supply</i>	<i>Can expand at will (7%)</i>	<i>Fixed at 21 million BTC 1 BTC = 100M Satoshis</i>
<i>Ledger</i>	<i>Bank records Digital Database</i>	<i>Public blockchain 800 Gb in size (August 2025)</i>
<i>Transaction Type</i>	<i>Reversible (Chargebacks)</i> (C) 2025 btc.tedlee.ca	<i>Irreversible (99.9%) Except when there is a fork</i>

Gold vs Bitcoin: Properties of Money

 Property	 Gold	 Bitcoin
Durability	Extremely durable; doesn't corrode	Digital and immutable; cannot degrade
Portability	Heavy and bulky to transport	Highly portable; global transfer in seconds
Divisibility	Limited; hard to divide precisely	Infinitely divisible (up to 100M satoshis)
Uniformity	Requires assay to verify purity	Every Bitcoin is identical and verifiable
Limited Supply	Scarce, but supply increases slowly	Fixed supply: 21 million BTC max
Acceptability	Widely accepted for centuries	Growing adoption; increasingly accepted
Verifiability	Requires physical testing	Instantly verifiable via blockchain
Storage	Requires secure physical vaults	Stored digitally in wallets (hot/cold)
Counterfeit Risk	Possible with fake alloys	Impossible due to cryptographic security
Transport Cost	High (insurance, logistics)	Low (internet-based transfer)
Inflation Resistance	Strong, but not perfectly capped	Perfectly capped; deflationary

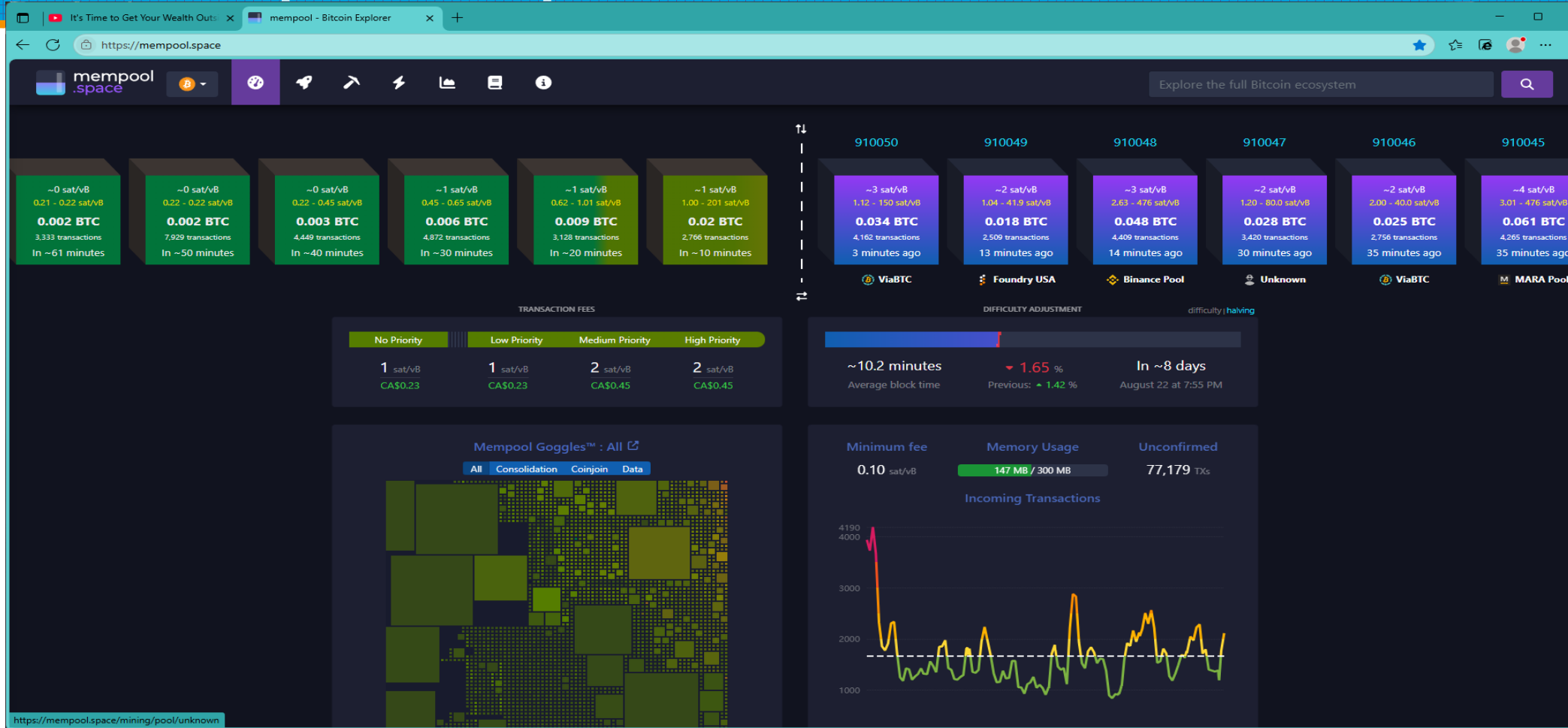
Bitcoin Mining

- Miners compete to solve math puzzle (proof-of-work)
- First to solve adds a block to the blockchain (forks?)
- Reward: newly minted bitcoins + transaction fees
- Energy-intensive and competitive process (ASIC)

How Blockchain Works

- Public ledger of every Bitcoin transaction
- Transactions grouped into “blocks”
- Blocks linked by cryptographic “blocks” SHA256
- Tamper-evident and transparent

Mempool.Space



Bitcoin Wallets

- Software wallets (mobile or desktop apps)
- Hardware wallets (physical USB-like devices)
- Public key = address (like an email)
- Private key = secret (like a password)
- Signing transactions with ECDSA (Elliptic Curve Digital Signature Algorithm)
- Seed words (BIP-39)
- Not your keys, not your Bitcoin

Why People Use Bitcoin

- Peer-to-peer transfer-no banks or middle persons
- Hedge against inflation (limited supply)
- Pseudonymous-addresses, not names (traceable)
- Global-send money anywhere quickly
- Layer2 Bitcoin=Lightning, transactions in seconds
- Went from \$0 to \$1 T in 15 years, \$1T to \$2.5T 12 months

CAD vs USD 5 years

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From



CAD – Canadian Dollar



To



USD – US Dollar



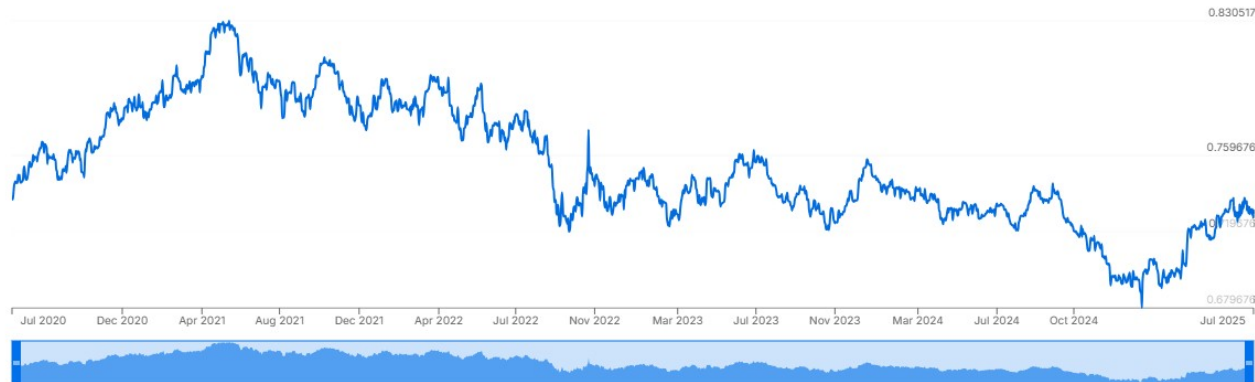
We use midmarket rates ⓘ

[Track currency](#)[View transfer quote](#)

CAD to USD Chart -0.93% (5Y)

● 1 CAD = 0.729747 USD Jul 17, 2025, 00:45 UTC

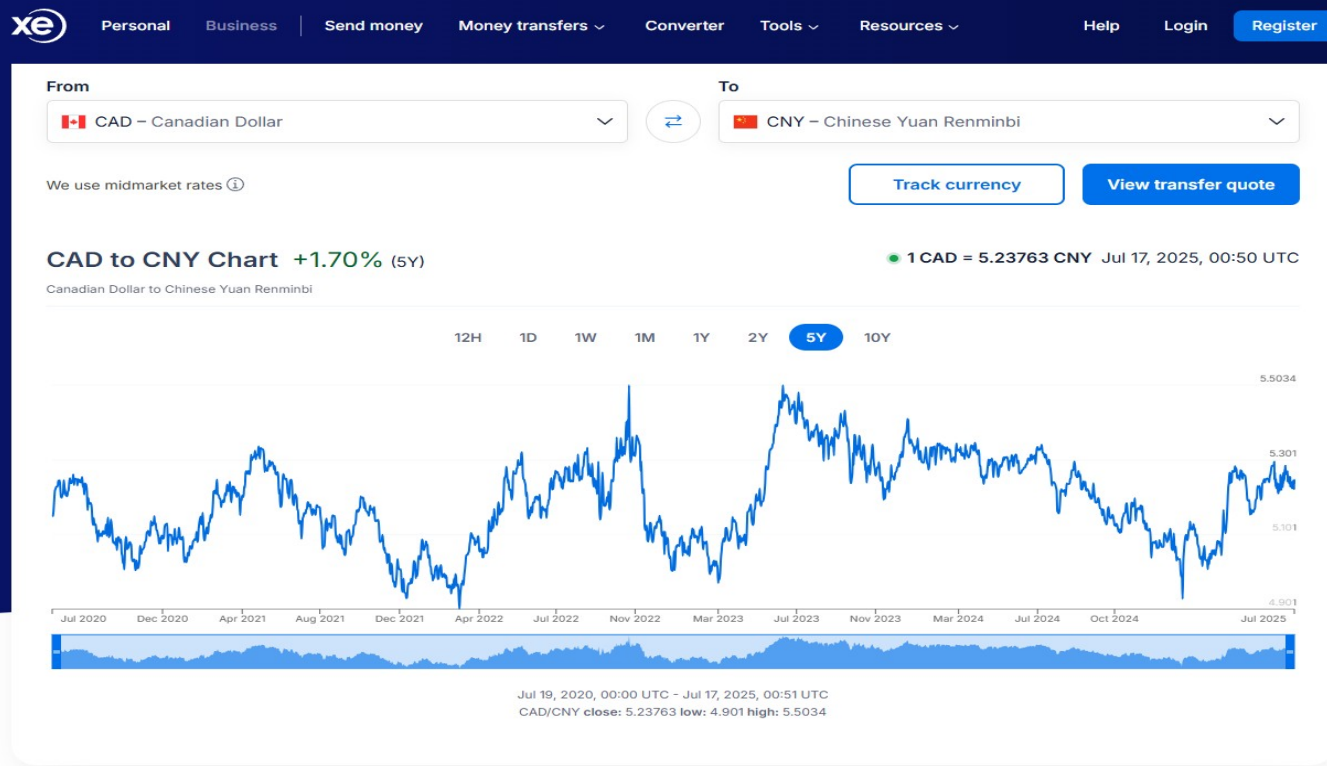
Canadian Dollar to US Dollar

[12H](#)[1D](#)[1W](#)[1M](#)[1Y](#)[2Y](#)[5Y](#)[10Y](#)

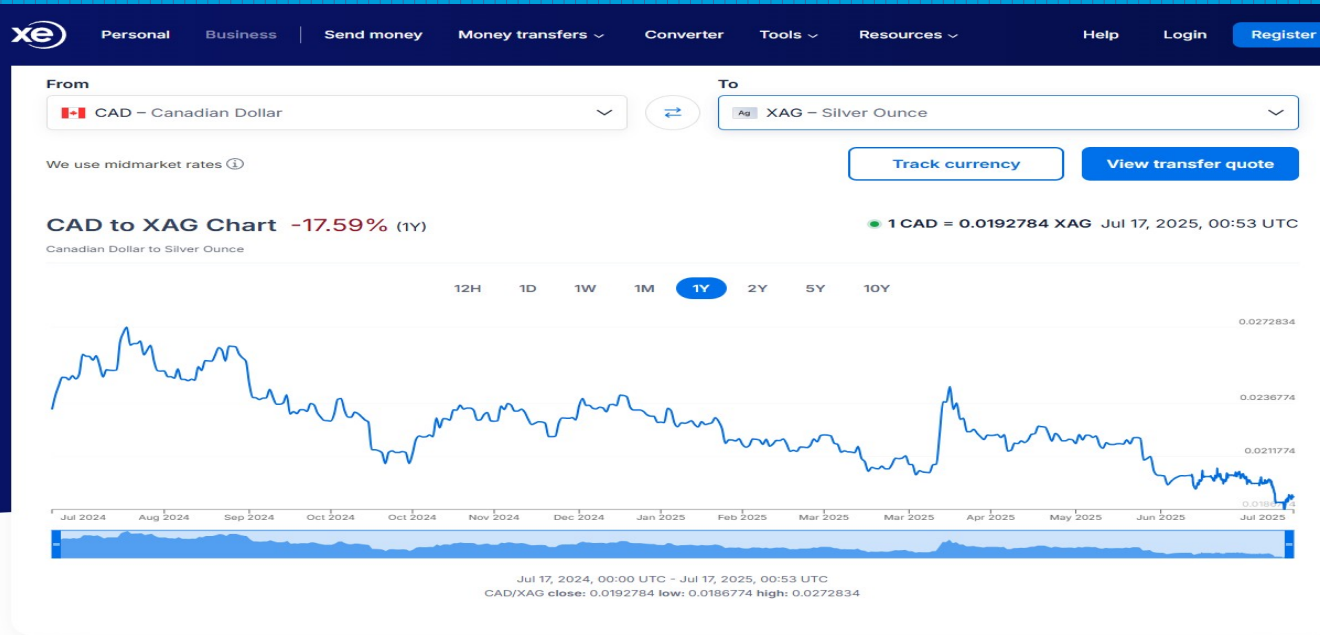
Jul 19, 2020, 00:00 UTC - Jul 17, 2025, 00:45 UTC

CAD/USD close: 0.729747 low: 0.679676 high: 0.830517

CAD to CNY 5 years

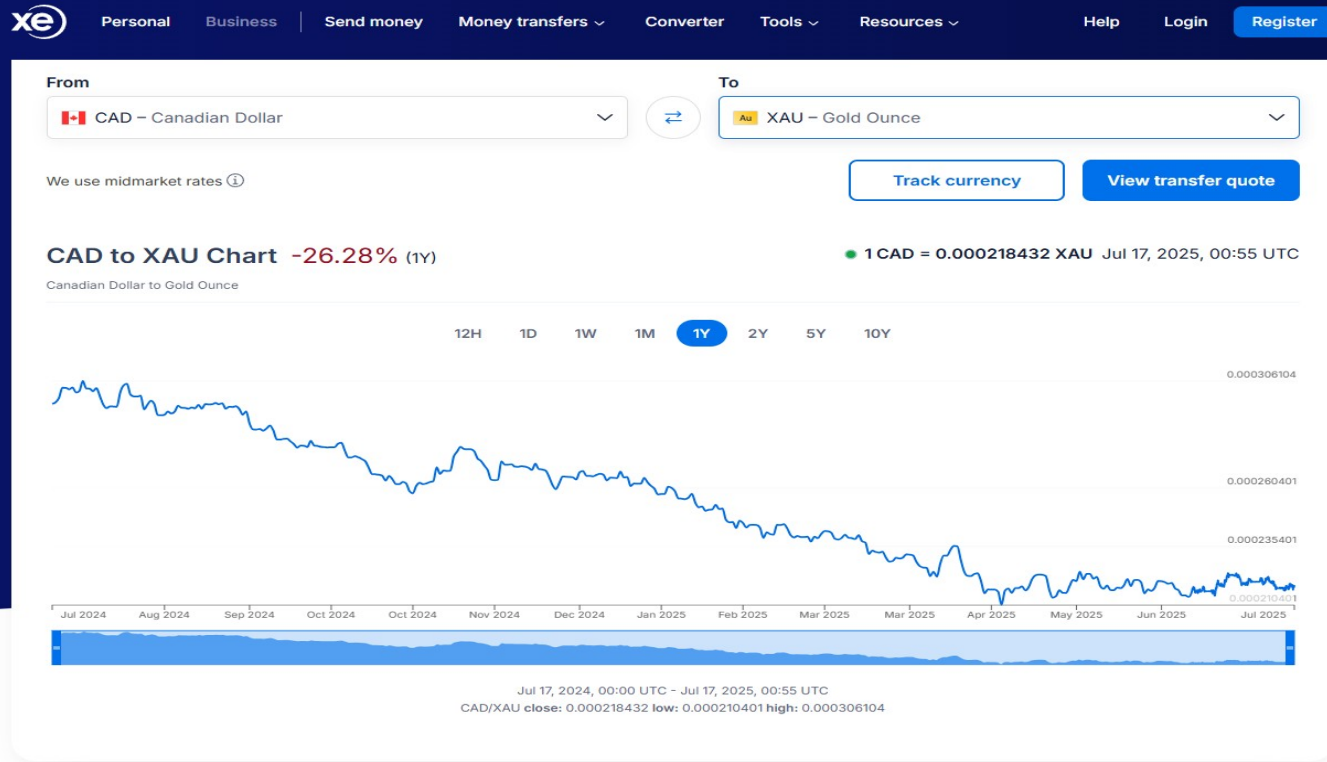


CAD vs Silver 5 years



Xe Currency Charts

CAD vs Gold 5 years



CAD vs Bitcoin (BTC) 5 years

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From



CAD – Canadian Dollar



To



BTC – Bitcoin



We use midmarket rates ⓘ

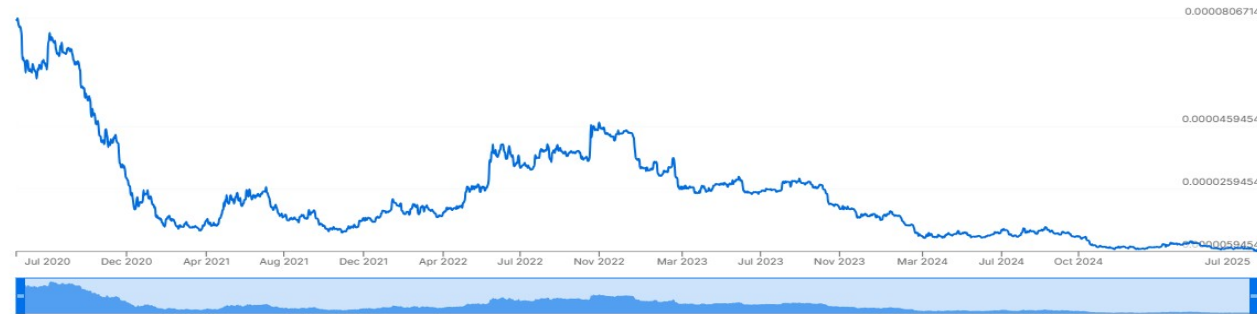
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CAD to BTC Chart **-92.36%** (5Y)

1 CAD = 0.0000061322 BTC Jul 17, 2025, 00:57 UTC

Canadian Dollar to Bitcoin

12H 1D 1W 1M 1Y 2Y **5Y** 10Y



Jul 19, 2020, 00:00 UTC - Jul 17, 2025, 00:58 UTC

CAD/BTC close: 0.0000061322 low: 0.0000059454 high: 0.0000806714



Record Highs & 5-Year Growth: Gold, Silver, S&P 500, Bitcoin vs CAD

-  Record Highs & 5-Year Growth: Gold, Silver, S&P 500, Bitcoin vs CAD
-  Assets at Record Highs (2025)
- Gold: Surpassed \$5,740 CAD/oz
- Silver: Hit \$73.06 CAD/oz
- S&P 500: Reached 9,505.83 CAD (based on 6,791.69 USD index level)
- Bitcoin: Climbed above \$173,919 CAD

Asset	CAGR (%)	Notes
Gold	~13.5%	Driven by inflation hedge and central bank demand
Silver	~15.9%	Based on 110% total gain
S&P500	~11.5%	Reflects strong equity performance
Bitcoin	~57.3%	Highest among all assets



Risks of Storing Wealth: Gold vs Bitcoin vs Stock Market

Risk Type	🟡 Gold	₿ Bitcoin	📈 S&P 500
Market Volatility	Moderate	Very High	High
Security Risk	Theft or damage	Cyberattacks, wallet loss	Fraud, data breaches
Storage Risk	Vaults and insurance	Cold/hot wallet risks	Minimal
Liquidity Risk	Low	High	High
Regulatory Risk	Low	High	Moderate
Income Generation	None	None (unless lent)	Yes (dividends)
Counterfeit/Fraud Risk	Fake alloys	Scams, phishing	Pump-and-dump schemes
Environmental Risk	Minimal	High (energy use)	Varies by industry
Technology Risk	None	Quantum computing threat	Low
Inflation Protection	Strong	Deflationary	Historically strong

🟡 Gold Summary

- **Pros:** Tangible, long history, inflation hedge
- **Cons:** No income, storage costs, theft risk, illiquidity

₿ Bitcoin Summary

- **Pros:** Portable, scarce, decentralized, high upside
- **Cons:** Extreme volatility, cybersecurity risk, regulatory uncertainty

📈 S&P 500 Summary

- **Pros:** Income-generating, liquid, historically strong returns
- **Cons:** Market crashes, company-specific risks, emotional investing

Performance

💡 Property	👉 Gold	₿ Bitcoin	📈 S&P 500
Durability	Extremely durable	Digital and immutable	Not applicable (financial asset)
Portability	Heavy and bulky	Instant global transfer	Tradable electronically
Divisibility	Limited	Up to 100M satoshis	Fractional shares possible
Uniformity	Requires purity testing	Identical units	Standardized index units
Limited Supply	Scarce, mined	Capped at 21M BTC	Unlimited; reflects market cap
Acceptability	Widely accepted	Growing adoption	Highly accepted investment
Verifiability	Physical testing needed	Blockchain verification	Public market data
Storage	Vaults required	Digital wallets	Brokerage accounts
Counterfeit Risk	Possible with fake alloys	Cryptographically secure	Low; regulated markets
Transport Cost	High	Low	None (digital)
Inflation Resistance	Strong	Deflationary design	Growth outpaces inflation
5-Year Performance	~35% gain	~300% gain	~94% gain

Risks & Challenges

- High price volatility-values can swing 10-20% in days
- Scams and phishing-fake wallets or exchanges
- Irreversible transactions-no chargebacks
- Regulatory uncertainty in many countries

Getting Started Safely

- Choose a reputable wallet (Blue, Aqua, CoinOS)
- Register on a trusted exchange (Bitcoin Well, Bull Bitcoin)
- Enable two-factor authentication (2FA) or password
- Securely back up your seed phrase offline (paper, metal)
- Test with a small transaction first

Bitcoin is a decentralized digital currency that allows secure peer-to-peer transactions without the need for intermediaries. Here's a simple roadmap to begin your journey into Bitcoin ownership.

Good: Buy and Hold on an Exchange

Create an account with a trusted cryptocurrency exchange (like Bitcoin Well, Bull Bitcoin, Kraken or Coinbase).

Purchase Bitcoin using fiat currency (e.g., USD, CAD).

Risk: Your Bitcoin is stored by the exchange, meaning you don't control the private keys. Exchanges can be hacked, go offline, or freeze your funds.

Better: Use a Hot Wallet with Seed Words

Withdraw your Bitcoin from the exchange into a **hot wallet that uses Seed Words** (e.g., mobile or desktop wallets like Aqua, Muun or BlueWallet).

Hot wallets are connected to the internet, offering convenience but less security.

Pros: You control your private keys. Easy access and user-friendly.

Cons: Vulnerable to malware, device theft, or phishing attacks.

Best: Use a Cold Wallet + Sparrow Wallet

Set up a **cold wallet** using Sparrow Wallet with an air-gapped device or hardware wallet.

Sparrow Wallet allows advanced privacy features like generating a new Bitcoin address for each transaction to improve anonymity.

Cold wallets are offline, offering excellent security and peace of mind.

Pros: Full control of your Bitcoin. Resistant to online attacks.

Cons: Requires more setup and responsibility. If you lose your seed phrase or backup, recovery can be impossible.

Hot vs Cold Wallets: What's the Difference?

- **Hot Wallets:** Connected to the internet. Convenient but less secure.
- **Cold Wallets:** Fully offline. Much safer but less convenient.

Risks of Storing Bitcoin Online

Storing Bitcoin on exchanges exposes you to several risks:

- Exchange hacks and cyberattacks
- Regulatory shutdowns
- Withdrawal freezes
- Lack of true ownership

Tip: Always withdraw your Bitcoin to a wallet where you control the private keys. Remember: *Not your keys, not*

Bitcoin & Retirement

- Consider a small allocation-diversification principle
- Tax implication (capital gains) and record-keeping
- Estate planning: securely passing private keys to heirs
- Consult a licensed financial advisor before large investments
- Not me!, no longer licensed and no E&O insurance

Gandalf's Warnings and Guidance

- **Keep it secret, Keep it safe:** This iconic line is Gandalf's urgent instruction to Frodo. He emphasizes that no one must know Frodo has Bitcoin, and that it must be protected at all costs.
- **Do not sell it:** Gandalf warns Frodo never to sell his Bitcoin, even in desperation. Selling it would expose him to the Government gaze and tax him over time.
- **Trust no one too easily:** Gandalf cautions Frodo to be wary, even of friends, because Bitcoin can corrupt anyone.
- Gandalf's advice sets the tone for Frodo's Bitcoin journey: secrecy, caution, and the heavy burden of responsibility. For the Government is coming for your Bitcoin.

Q&A

- What stuck out to you?
- Hands up if you've ever heard of or used Bitcoin before
- Answers at <https://btc.tedlee.ca>
- <https://hope.com>
- Free Bitcoin Wallets to give out!