The Political Philosophy of Cryptocurrency

Digital Money, Decentralization, and the Future of Finance

Computing and AI Ethics

Rochester Community and Technical College

Central Questions

- What is money, and why does it matter who controls it?
- Can technology solve political and economic problems?
- Should individuals have financial privacy from governments?
- Is cryptocurrency a revolutionary innovation or a speculative bubble—or both?

Discussion

Have you ever used or owned cryptocurrency? What's your impression of it?

What Is Money? A Brief History

Money is a **social technology**—not a natural phenomenon. It works because people *believe* it works.

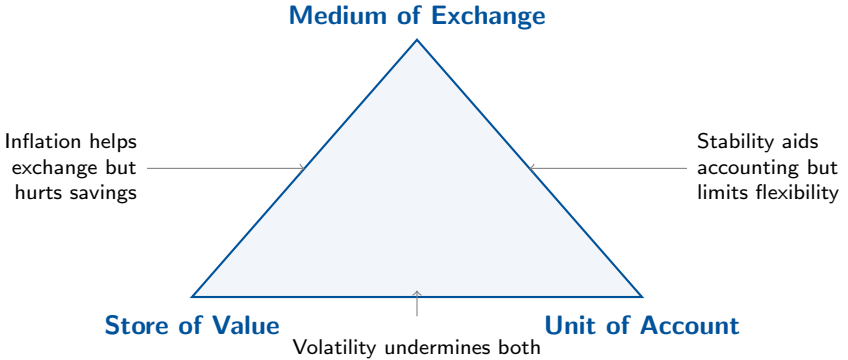
Era	Form	Backing	Controller
Ancient	Commodity (gold, shells)	Intrinsic value	Markets
19th–20th C	Representative	Gold reserves	Central banks
Post-1971	Fiat	Government decree	Central banks
2009–present	Cryptocurrency	Cryptography/code	Algorithms

Key transition: Nixon ended gold convertibility in 1971, ushering in the pure fiat era.

Discussion

What gives money its value if it's not backed by gold?

The Three Functions of Money



Key tension: These functions can conflict with each other. A currency optimized for one function may fail at others.

Discussion

Which function do you think is most important?

How Traditional Banking Works

Banks serve as **trusted third parties** (intermediaries) in financial transactions.

Key features of modern banking:

- **Fractional reserve**: Banks lend out most deposits (keep only 10% or less)
- **Ledger system**: Your "money" is really database entries
- **Central banks**: Act as "lender of last resort" during crises
- **Deposit insurance**: Government guarantees (FDIC up to $250,000)

Vulnerabilities: Bank runs, systemic risk, requires trust in institutions.

Key Example

2008 financial crisis: What happens when trust breaks down?

What Is Cryptocurrency?

Definition

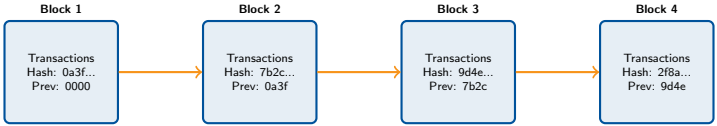
Cryptocurrency: Digital currency that uses cryptography for security and operates on a decentralized network without central authority.

Key innovations:

- **Decentralized**: No single point of control or failure
- **Blockchain**: Distributed, public ledger of all transactions
- **Peer-to-peer**: Direct transactions without intermediaries
- **Cryptographic**: Secured by mathematics, not institutions

Analogy: Email vs. postal mail—digital, direct, no central post office needed.
First and most famous: **Bitcoin** (2009)

How Blockchain Works (Simplified)



Each block contains transactions, timestamp, and a cryptographic hash of the previous block. Changing any block would break all subsequent hashes. Copies are stored on thousands of computers worldwide.

Analogy

A shared Google Doc everyone can read and some can write to, but no one can delete or alter past entries.

Proof of Work vs. Proof of Stake

How do we trust a system with no central authority? Different **consensus mechanisms**:

Feature	Proof of Work (Bitcoin)	Proof of Stake (Ethereum)
Security method	Computational puzzles	Economic collateral
Energy use	$\sim$150–175 TWh/year	$\sim$0.02 TWh/year
Hardware	Specialized ASICs	Standard computers
Entry barrier	Equipment costs	Token ownership
Criticism	Wasteful energy	"Rich get richer"

Key Point

Both mechanisms solve the same problem: How to agree on valid transactions without a central authority.

Key Features of Cryptocurrency

Technical Features:

- **Decentralized**: No single controller
- **Pseudonymous**: Addresses, not names
- **Transparent**: Public ledger
- **Immutable**: Can't reverse transactions

Economic Features:

- **Programmable**: Smart contracts
- **Limited supply**: Bitcoin caps at 21 million
- **Borderless**: Works globally
- **Permissionless**: Anyone can participate

Important Distinction

Pseudonymity $\neq$ anonymity. Blockchain analysis can often identify users.

Bitcoin—The Original Cryptocurrency

Created **January 3, 2009** by "Satoshi Nakamoto" (pseudonymous, identity unknown).

> Genesis block message: "The Times 03/Jan/2009 Chancellor on brink of second bailout for banks"

Key properties:

- Maximum supply: 21 million BTC (ever)
- "Halving" every ∼4 years reduces new supply
- Emerged during 2008 financial crisis—not coincidental
- Current market cap: $2+ trillion

The Mystery

Satoshi disappeared in 2011. Estimated holdings: ∼1.1 million BTC ($100–135 billion)—never moved.

The Broader Crypto Ecosystem

"Cryptocurrency" is a diverse ecosystem, not just Bitcoin.

Crypto	Year	Purpose	Consensus	Supply
Bitcoin (BTC)	2009	Digital gold	Proof of Work	21M cap
Ethereum (ETH)	2015	Smart contracts	Proof of Stake	No cap
Tether (USDT)	2014	Stablecoin ($1)	Centralized	No cap
Solana (SOL)	2020	High-speed	Proof of Stake	No cap

Other categories: DeFi (decentralized finance), NFTs (non-fungible tokens), DAOs (decentralized autonomous organizations), thousands of "altcoins."

Discussion

Is the diversity of the crypto ecosystem a strength or weakness?

Case Study: Satoshi Nakamoto and the Cypherpunk Vision

The Cypherpunk Movement (1990s)

Privacy advocates, cryptographers, and libertarians who believed: "Privacy is necessary for an open society in the electronic age." Key figures: Timothy May, Eric Hughes, Nick Szabo, Hal Finney.

Prior attempts: DigiCash (1989), b-money (1998), bit gold (2005)—all failed.
Satoshi's breakthrough: Solved the "double-spending problem" without a trusted third party using blockchain and proof of work.
The mystery: Satoshi communicated only via email/forums, disappeared in 2011, holds $\sim\$100+$ billion in BTC that has never moved.

Discussion

Does it matter that we don't know who created Bitcoin?

The Political Philosophy Behind Cryptocurrency

Cryptocurrency is **not politically neutral**—it embodies specific values.

Primary influences: Libertarianism, Austrian economics, cypherpunk ideology.
Key thinkers: Friedrich Hayek (*Denationalization of Money*, 1976), Murray Rothbard.

> "I don't believe we shall ever have a good money again before we take the thing out of the hands of government... all we can do is by some sly roundabout way introduce something that they can't stop."
> —Friedrich Hayek (1984)

Core claim: Government monopoly on money is harmful; competition would be better.

Argument 1: Sound Money and Inflation Protection

The Sound Money Argument

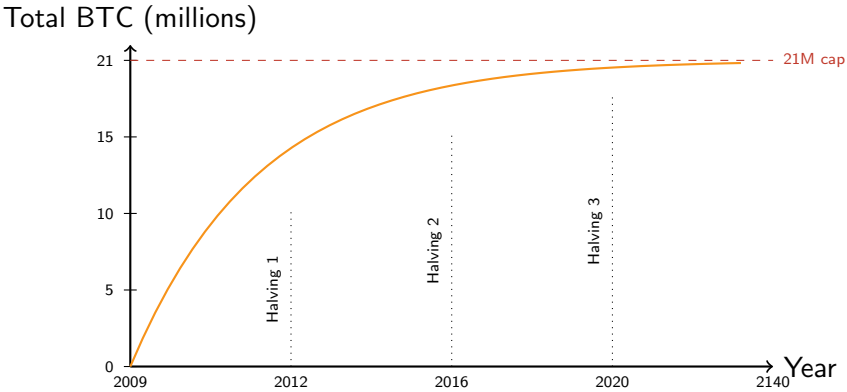
1. Governments consistently inflate fiat currencies (expand money supply)
2. Inflation is a hidden tax that erodes savings and purchasing power
3. Those closest to money creation benefit; ordinary savers lose
4. Fixed-supply cryptocurrency cannot be inflated by political decisions
5. **Therefore**: Cryptocurrency protects wealth from government debasement

Historical examples: Weimar Germany (1923), Zimbabwe (2008), Venezuela (2018), Argentina (ongoing).
Bitcoin as "digital gold"—scarce, durable, portable, divisible.

Discussion

Is inflation always bad? What are its purposes?

Bitcoin's Fixed Supply Schedule



Unlike fiat currency, Bitcoin's supply is **algorithmically fixed**. No central bank can "print" more. Block rewards halve every ∼4 years until all 21 million are mined (∼2140).

Argument 2: Financial Freedom and Privacy

The Financial Privacy Argument

1. Financial transactions reveal intimate details about our lives
2. Governments and corporations increasingly surveil financial activity
3. Privacy is necessary for freedom (self-censorship under surveillance)
4. Cash provided anonymity; digital payments eliminate it
5. **Therefore**: Cryptocurrency restores financial privacy in the digital age

Examples: Bank account freezes for political dissidents, "debanking" of controversial figures, Canadian trucker convoy (2022).
Philosophical connection: Money is speech; financial censorship is a form of silencing.

Discussion

Where should the line between privacy and accountability be?

Argument 3: Financial Inclusion (Banking the Unbanked)

The Inclusion Argument

1. ∼1.3 billion adults globally lack access to banking (World Bank 2025)
2. Traditional banking has high barriers: ID, minimums, physical access
3. Cryptocurrency requires only internet access—no bank, ID, or credit history
4. **Therefore**: Cryptocurrency can provide financial services to the excluded

Region	Account Ownership	Change since 2011
High-income	97%	+3%
Sub-Saharan Africa	58%	+35%
Global	**79%**	**+28%**

Table: *

Source: World Bank Global Findex 2025

Argument 4: Protection from Government Overreach

The Anti-Tyranny Argument

1. Authoritarian governments control citizens through financial systems
2. Bank accounts can be frozen, assets seized, transactions blocked
3. Cryptocurrency is "censorship-resistant"—no government can stop transactions
4. **Therefore**: Cryptocurrency protects human rights and individual liberty

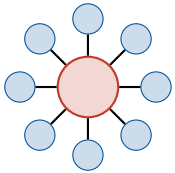
Examples: Hong Kong protesters (2019–2020), Russian dissidents, Venezuelan refugees.
Philosophical grounding: Property rights as human rights; economic freedom as prerequisite for political freedom.

Discussion

Can a technology be both a tool for freedom fighters and criminals?

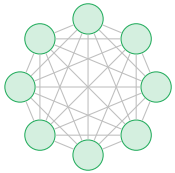
Argument 5: Decentralization as a Democratic Value

Centralized System



Single point of failure

Decentralized System



No single point of failure

The argument: Centralized institutions accumulate power and become corrupt. "Too big to fail" creates moral hazard. Decentralized systems distribute power and increase resilience.

Discussion

Is decentralization always better? What are its costs?

Case Study: El Salvador's Bitcoin Experiment

Timeline

September 2021: First country to adopt Bitcoin as legal tender.
2021–2024: Chivo wallet launched; $30 bonus for sign-ups; mixed results.
January 2025: Bitcoin legal tender status **revoked** as condition for $1.4B IMF loan.

What happened?

- By 2024, 92% of Salvadorans did not use Bitcoin for transactions
- Only 1.3% of remittances used cryptocurrency
- Chivo wallet plagued by technical issues, fraud, identity theft
- IMF demanded Bitcoin be made voluntary for loan approval

Lesson

Top-down adoption failed. Trust must be earned, not mandated.

Critique: The Deflation Problem

Response to Sound Money Argument

- Moderate inflation serves economic purposes (encourages spending/investment)
- Deflation is economically dangerous (Great Depression, Japan's "lost decades")
- Fixed supply creates deflationary pressure as economy grows
- Hoarding incentive: Why spend if it will be worth more tomorrow?
- Result: Poor medium of exchange—too volatile to price goods

The volatility problem: Bitcoin has lost 50%+ of value multiple times:

- 2014: -85% from peak
- 2018: -84% from peak
- 2022: -77% from peak

Paul Krugman: Cryptocurrency is "a solution in search of a problem."

Critique: The Dark Side of Privacy

Response to Privacy Argument

- Financial surveillance serves legitimate purposes (crime prevention, tax enforcement)
- Cryptocurrency enables: money laundering, ransomware, sanctions evasion, terrorism financing
- Pseudonymity $\neq$ anonymity—blockchain analysis can identify users
- Privacy vs. accountability: Should anyone have untraceable wealth?

North Korea's Lazarus Group (2025 data):

- Stole $2.02 billion in cryptocurrency in 2025 alone
- Cumulative theft: $6.75 billion since 2017
- Largest single heist: $1.5 billion from Bybit (February 2025)
- Funds weapons and missile programs

Critique: Who Actually Benefits from Crypto?

Response to Financial Inclusion Argument

- The unbanked often lack: internet access, smartphones, technical knowledge
- Volatility hurts the poor most—they can't afford to lose 50%
- Complexity creates barriers; scams target unsophisticated users
- Transaction fees can be high during network congestion
- In practice, crypto adoption highest among already-banked, tech-savvy users

Alternative: Mobile banking (M-Pesa), fintech apps, and traditional financial inclusion efforts may be more effective and less risky.
Reality check: Most crypto trading is speculation, not payments or remittances.

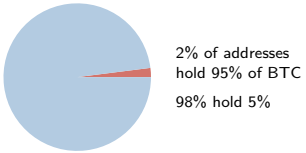
Discussion

Does cryptocurrency help the unbanked, or mainly benefit speculators?

Critique: Is Cryptocurrency Actually Decentralized?

The "Decentralization Theater" Problem

- **Mining concentration**: ∼4 mining pools control >50% of Bitcoin hashrate
- **Wealth concentration**: ∼2% of accounts hold ∼95% of Bitcoin
- **Development centralized**: Small number of core developers make key decisions
- **Exchanges centralized**: Most trading on Coinbase, Binance, etc.



Governance question: Who decides on protocol changes? (Bitcoin block size debate, Ethereum hard forks)

The Environmental Critique

Bitcoin's Energy Consumption (2025)

- Annual electricity: ∼150–175 TWh (comparable to Poland or Argentina)
- Single transaction: ∼1,400+ kWh (weeks of household use)
- E-waste: ∼20,000+ tonnes annually from mining hardware

Entity	Annual TWh
Bitcoin network	∼150–175
Poland (country)	∼170
Google (global)	∼33
Ethereum (post-merge)	∼0.02

Counterargument: Proof of Stake (Ethereum) uses 99.9% less energy; some mining uses renewable/stranded energy.

Case Study: Silk Road and Ross Ulbricht

The Dark Web Marketplace

Silk Road (2011–2013): First major dark web marketplace using Bitcoin. Primarily drugs, also forged documents and hacking services.

Ross Ulbricht ("Dread Pirate Roberts"):

- Libertarian philosophy: "victimless crimes" shouldn't be crimes
- Arrested October 2013; convicted February 2015; life sentence
- **Pardoned by President Trump in January 2025**

Significance: Demonstrated Bitcoin's use for illegal activity; shaped early public perception.

Philosophical Question

Does enabling criminal activity invalidate the technology, or is it a feature (like cash)?

The Dominant View: Why Most Experts Are Skeptical

Cryptocurrency skeptics include most academic economists, central bankers, securities regulators, and many technologists.

Key concerns: Consumer protection, financial stability, crime facilitation, environmental harm.

> "Whether it goes up or down... I'm pretty sure of is that it doesn't produce anything."
> —Warren Buffett

> "In my life, I try to avoid things that are stupid and evil and make me look bad... and bitcoin does all three."
> —Charlie Munger (2022)

Nobel laureates critical of crypto: Paul Krugman, Joseph Stiglitz, Robert Shiller.

Argument 1: Consumer Protection

The Consumer Protection Argument

1. Most retail investors lack technical knowledge to evaluate crypto
2. The space is rife with fraud, scams, and manipulation
3. "Pump and dump" schemes, rug pulls, fake projects are endemic
4. Volatility causes devastating losses for unsophisticated investors
5. **Therefore**: Regulation is necessary to protect ordinary people

Examples of fraud:

- BitConnect (Ponzi scheme, 2018): $2.5 billion lost
- OneCoin (2014–2017): $4+ billion defrauded
- Countless "rug pulls" where developers abandon projects with funds

FOMO psychology: Social media hype drives irrational investment.

Argument 2: Financial Stability

The Systemic Risk Argument

1. Crypto markets are increasingly connected to traditional finance
2. Large-scale crypto collapse could spread contagion
3. Stablecoins create "shadow banking" risks without regulation
4. Leverage and derivatives amplify risks
5. **Therefore**: Crypto threatens broader financial stability

Example: Terra/Luna collapse (May 2022)—$40–60 billion evaporated in days.
Stablecoin risk: If confidence breaks, rapid liquidation could crash markets (like a bank run, but faster).
Historical parallel: 2008 financial crisis began with unregulated financial instruments (CDOs, CDS).

Argument 3: Enabling Crime

The Criminal Enablement Argument

Cryptocurrency is the preferred payment for ransomware, darknet markets, money laundering, and sanctions evasion. Cross-border, instant, irreversible transactions defeat law enforcement.

Year	N. Korea Theft	Notable Incident
2022	$1.7 billion	Ronin Bridge ($620M)
2023	$660 million	Multiple exchanges
2024	$1.3 billion	DMM Bitcoin ($308M)
2025	$2.02 billion	Bybit ($1.5B)
Total	**$6.75 billion**	Funds weapons programs

Table: *

Source: Chainalysis 2025

Key Point: State-sponsored hackers funding nuclear weapons development.

Argument 4: The "Greater Fool" Theory

The Speculative Bubble Argument

1. Cryptocurrency has no intrinsic value (produces nothing, pays no dividends)
2. Value depends entirely on finding someone to pay more later
3. Eventually, greater fools run out—bubble bursts
4. **Therefore**: Cryptocurrency is not a legitimate asset class

> "If you told me you own all of the bitcoin in the world and you offered it to me for $25, I wouldn't take it because what would I do with it?"
> —Warren Buffett (2022)

The tulip analogy: Speculative manias are nothing new (Dutch tulip mania, 1637).

Argument 5: Regulatory Arbitrage and Tax Evasion

The Democratic Governance Argument

1. Cryptocurrency enables moving wealth outside legal frameworks
2. Tax evasion deprives societies of resources for public goods
3. Regulatory arbitrage undermines labor, environmental, consumer protections
4. "If you can't beat them, join them"—regulatory race to the bottom
5. **Therefore**: Cryptocurrency undermines democratic governance

Philosophical point: Oliver Wendell Holmes Jr.: "Taxes are the price we pay for a civilized society."
Tax evasion = free-riding on public goods others pay for.

Discussion

Is avoiding taxes through crypto different from using offshore accounts or other tax havens?

Case Study: The FTX Collapse and Sam Bankman-Fried

The Rise and Fall

Sam Bankman-Fried: MIT physics graduate, "effective altruist," crypto wunderkind.
FTX: Founded 2019, grew to $32 billion valuation, celebrity endorsements (Tom Brady, Larry David).

The collapse (November 2022): Customer funds misappropriated to sister company Alameda Research. At least $8 billion in customer funds stolen.

Legal outcome:

- Convicted November 2023 on 7 counts of fraud
- **Sentenced March 28, 2024 to 25 years in prison**
- Ordered to forfeit $11 billion

Judge Kaplan: "There was a risk that this man will be in a position to do something very bad in the future, and it's not a trivial risk."

Case Study: Terra/Luna and Do Kwon

Algorithmic Stablecoin Failure

Terra/Luna: UST "stablecoin" maintained $1 peg through algorithmic arbitrage with LUNA token—no actual reserves.
Do Kwon: Founder, known for dismissing critics as "poor."

The collapse (May 2022): UST lost its peg, triggering "death spiral." $40–60 billion destroyed in days. Triggered cascade affecting Celsius, Three Arrows Capital, FTX.
Aftermath:

- Do Kwon arrested March 2023 in Montenegro with fake passport
- **Sentenced December 2025 to 15 years in prison**

Lesson

"Algorithmic" doesn't mean safe. Confidence can evaporate instantly.

Critique: Traditional Finance Also Has Problems

Response to Regulation Arguments

- 2008 crisis was caused by *regulated* banks, not crypto
- HSBC, Deutsche Bank laundered billions for cartels—small fines, no executives jailed
- Fraud exists everywhere; crypto is just newer
- "Illicit use" is small percentage of crypto transactions ($\sim$0.5–1%)

The double standard: Why hold crypto to higher standard than traditional finance?
Counter: Two wrongs don't make a right. "Traditional finance is bad" doesn't make crypto good.

Discussion

Should we compare crypto to an ideal financial system, or to the actual one we have?

Critique: Innovation Requires Permissionless Experimentation

Response to Precautionary Regulation

- Early internet faced similar criticisms (fraud, illegal content, etc.)
- Premature regulation would have killed transformative technology
- Regulators often don't understand the technology they're regulating
- Innovation happens at the margins; regulation protects incumbents
- Some beneficial uses only emerge through experimentation

Historical examples: SEC was initially hostile to money market funds, ATMs, online trading—all now mainstream.
Counter: Crypto has had 15+ years. What beneficial uses have emerged beyond speculation?

Discussion

How long should we wait before regulating a potentially harmful technology?

Critique: Regulatory Capture and Incumbent Protection

Response to "Expert Consensus"

- Central bankers have obvious interest in maintaining monetary monopoly
- Banks have obvious interest in blocking competition
- "Experts" failed to predict 2008 crisis—why trust them on crypto?
- Regulatory capture: Industries often control their regulators
- CBDCs may be the real agenda—total financial surveillance

Public choice theory: Regulators act in their own interest, not public interest.
Counter: Expertise matters. Populist distrust of experts is itself dangerous.

Discussion

How do we distinguish legitimate expertise from self-interested gatekeeping?

Critique: The International Coordination Problem

Response to National Regulation

- Cryptocurrency is global; national regulation is limited
- Harsh regulation just pushes activity offshore
- Regulatory arbitrage: Projects relocate to friendly jurisdictions
- Prohibition doesn't work (alcohol, drugs, etc.)
- Better to regulate and engage than ban and lose oversight

Example: China banned crypto mining in 2021; miners moved to US, Kazakhstan, Russia. Adoption continued globally.

The challenge: How to regulate a borderless technology with bordered governments?

Discussion

Is crypto more like the internet (hard to regulate) or like banking (heavily regulated)?

Central Bank Digital Currencies (CBDCs)—A Middle Path?

CBDCs: Digital currency issued by central banks. Adopts crypto's technology while rejecting its philosophy.

Country	Status	Notes
Bahamas	Launched (2020)	Sand Dollar—first CBDC
Jamaica	Launched (2022)	JAM-DEX
China	Pilot	e-CNY: 260M wallets, 7T yuan in transactions
EU	Preparation	Digital Euro in development
USA	**Banned**	Trump executive order (Jan 2025)

Table: *

Source: Atlantic Council CBDC Tracker (134 jurisdictions exploring)

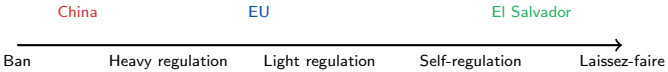
Potential benefits: Financial inclusion, payment efficiency, monetary policy tools.
Concerns: **Total financial surveillance**, programmable restrictions, negative interest rates.

Conclusion: Evaluating Cryptocurrency Ethically

Key tensions to weigh:

- **Privacy vs. Accountability**: Where should the line be?
- **Innovation vs. Protection**: How to balance experimentation with preventing harm?
- **Freedom vs. Stability**: Individual liberty vs. collective security?
- **Decentralization vs. Governance**: Who makes rules in a decentralized system?

Framework for evaluation: Who benefits? Who is harmed? What are the alternatives? What values are at stake? What does the evidence show?



Final Discussion

After considering all arguments, what's your view? Should crypto be banned, regulated, or left alone?