2023 STATE OF CRYPTO POLICY SPOTLIGHT

a16zcrypto

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What's really going on in crypto and web3?

The annual "State of Crypto" report from Andreessen Horowitz shares data on web3 activity and innovation. This November 2023 "Policy Spotlight" curates insights from the report for U.S. policymakers, and for anyone else interested in the state of crypto policy today. The spotlight covers:

PART 1: Why web3 matters

Web3 is an internet that's better for consumers, with benefits and uses well beyond financial services

PART 2: The state of the crypto industry

Crypto is here to stay, and support cuts across party and identity lines -- yet the U.S. may be losing its lead

PART 3: Policy principles and frameworks

How do we stay competitive on emerging technology innovation, while also protecting consumers?

PART 1: WHY WEB3 MATTERS

The internet is one of the most important technological innovations in human history

Yet it often fails the very people who depend on it: *consumers*, *creators*, and *developers*

But the internet is evolving in ways that can benefit consumers with web3

web1

- **Governed loosely by various bodies**
- Open technologies (protocols) that anyone can build on, such as email (built on SMTP) and web (built on HTTP)
- **Value does not accrue to the network**

web2

- **Governed by corporations**
- **Centralized, siloed** platforms where decisions can be made at the whim of one person deciding for all (e.g., social networks)
- **Value accrues to a few Big Tech companies** – not also to the people creating that value

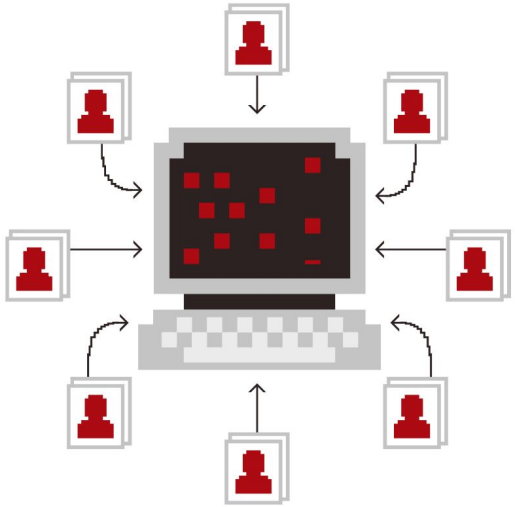
web3

- **Governed by communities**
- **Decentralized, interoperable** services owned & maintained by the network (example: blockchains such as Bitcoin, Ethereum)
- **Value accrues to users, builders, and communities** contributing to that network: developers entrepreneurs, creators, fans, and other consumers

1990→ 2005→ 2020→

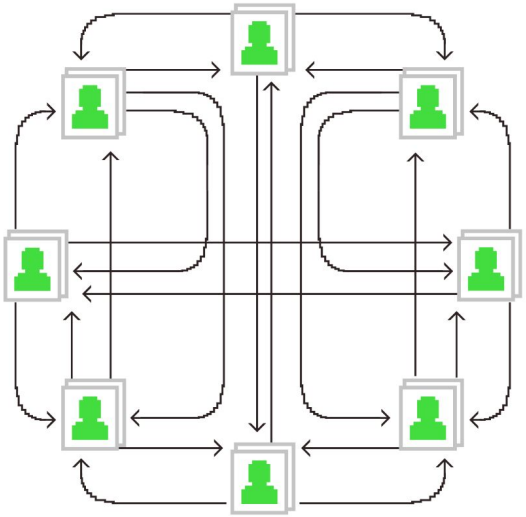
Big Tech consolidates control. Web3 decentralizes it

BIG TECH



Centralized companies

WEB3



Decentralized networks

Only **3** companies generate **a third** of all global web traffic today – **Facebook, Google, and Twitter**

Just **5** companies – **Amazon, Apple, Facebook, Google, Microsoft** – represent **50%** of the total market cap on the Nasdaq-100 (this was 25% just a decade ago)

source: CapIQ, SimilarWeb.

How does network value go to more people in web3? By unlocking *ownership*

What are tokens? The building blocks of web3

Tokens are units of ownership

Tokens can represent ownership of any item: digital (such as art, tickets, or game items); or physical (such as clothing, experiences, or even real estate)

Tokens are building blocks

Tokens are not inherently financial

As with websites in web1 and posts in web2, tokens are the generic units for building in web3

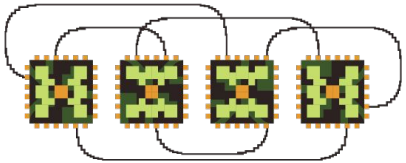
Tokens empower people

Tokens are a new way for people to control their digital identities across different platforms and services – much like property rights, but for the *internet*

…tokens have many more uses than speculation

Blockchains are powerful computers, not just casinos

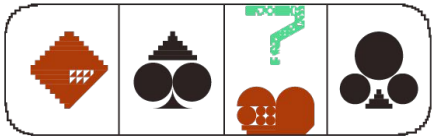
Computers



- Advancing computing: a technological innovation
- Trust in math: 'Can't be evil' as a hard-coded rule
- Transparent operations
- Very resilient

VS

Casinos



- Gambling: financial speculation not innovation
- Trust in whims: 'Don't be evil' as a changing choice
- Opaque operations
- Very fragile

There's a difference between activities built around speculation, which paint crypto as a **world casino** – and products that use crypto as a **world computer** built on transparent, community-controlled networks: the next internet

BENEFITS & USE CASES

If blockchains are a new kind of computer…

What can they do today that other technologies can’t?

Blockchains can protect consumers as artificial intelligence (AI) advances by...

...fighting deep fakes

In a world of endless AI-generated yet high-quality fakes, crypto technologies can help track the authenticity and origins of the things we are presented with

AI

...democratizing AI innovation

Instead of relying on Big Tech companies – which have the most data and computational resources – crypto can help decentralize and democratize access to such resources for more builders

Crypto

...lighting up 'the black box' of AI

AI does not have to be a black box where no one knows what is happening or where the data is coming from. Crypto technologies can make the data used by AI more transparent and auditable while preserving data privacy

...letting people own their data

Crypto technologies can help enforce data privacy in AI models – while also helping companies compensate consumers and creators for the data they (already) contribute

Crypto can upgrade broken legacy systems

Apple charges up to 30% in fees on purchases made in mobile apps by consumers

Apple wields tremendous pricing and decision-making power over mobile distribution. Crypto can lower take-rates (percent revenue that platform owners take from users), increase competition, and offer more options for consumers

People spend $647 billion on remittances every year, with an average cost of 6.25%

Crypto can remove unnecessary middlemen, and eliminate up to $40 billion in international transaction fees

Only 18% of social media users believe companies like Facebook protect their data

In web3, people own their data – from posts they create to music they make to the networks they build. More importantly, they can take their networks and data from platform to platform

sources: World Bank, FDIC, Apple, Insider Intelligence

Crypto addresses many real needs today

The identity problem

Instead of depending on big platforms to manage user identities, Spruce empowers people to control and own them. Organizations can also manage the lifecycle of digital credentials (like DMV is doing with mobile driver licenses in California)

The creator monetization problem

Only 18K musicians (less than 0.2%) on streaming services make more than $50K per year. Sound cuts out the middlemen, enabling artists to monetize directly with fans

The carbon offset problem

The voluntary carbon credit market is opaque and inefficient. With Flowcarbon more funds can flow directly to major environmental projects

The moderation & deplatforming problems

Biased platform leaders can decide the rules and reach of social networks. But decentralized social networking protocol Farcaster lets users choose among apps while letting them easily move (and own) their data

The infrastructure issue

Lack of competition in the telecom industry leads to higher prices and spotty coverage. Helium is working to make 5G available anywhere, at a fraction of the cost, via decentralized wireless infrastructure

The online collaboration opportunity

Who decides what stories get made, told, and by whom? Story Protocol and Adim provide open infrastructure that helps people write, remix, collaborate, and create characters together – while protecting IP and compensating creators

source: a16z portfolio examples

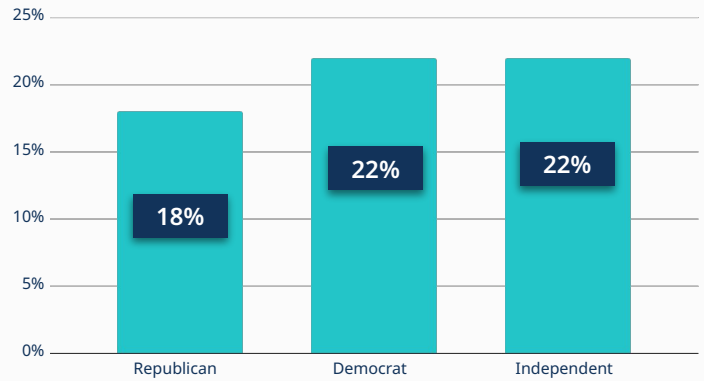
PART 2: STATE OF THE CRYPTO INDUSTRY

Web3 is here to stay

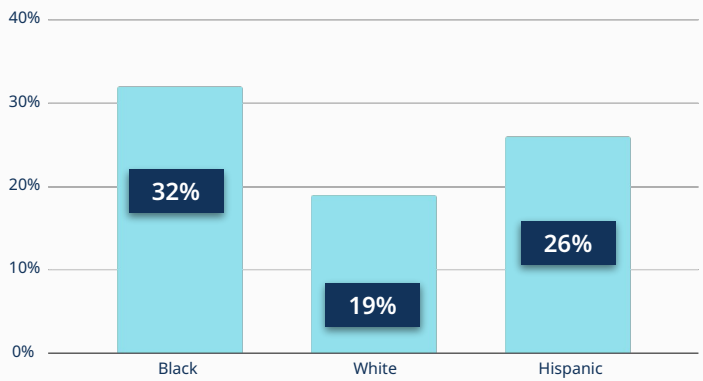
Crypto is already owned by millions of Americans, and is growing in use

Over 40 million Americans already own crypto, beyond party and identity lines

Cryptocurrency ownership by political affiliation



Cryptocurrency ownership by race/ethnicity



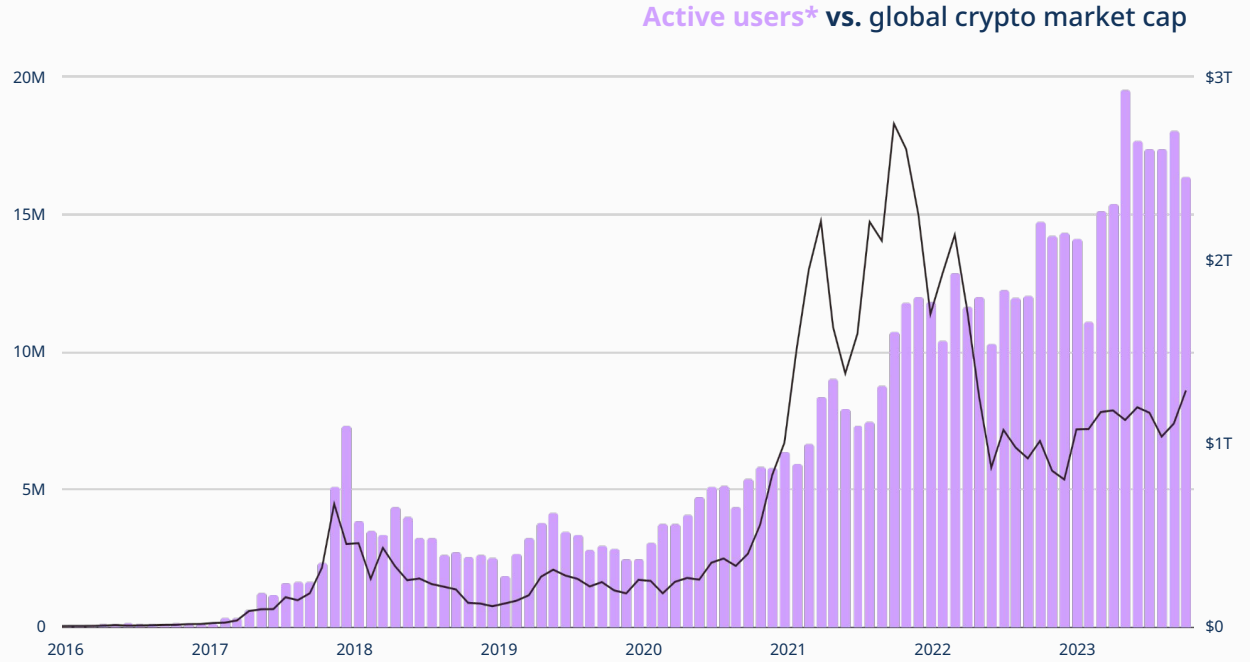
16-20% of American adults (about 40-50 million people) have purchased crypto

sources: White House Fact Sheet (Sep 2022); Morning Consult Cryptocurrency Perception Study (Jul 2023), conducted on behalf of Coinbase (n=2,022 US adults)

Crypto use is on the rise

Despite fluctuating prices, we've seen four4 consecutive years of double-digit growth in the number of active users*

- +135% in 2020
- +108% in 2021
- +20% in 2022
- +14% in 2023



*The number of unique active (sending) addresses across all tracked blockchains. Tracked blockchains include Ethereum, Polygon, Solana, Avalanche, Fantom, Celo, Optimism, Base, and Arbitrum. Note that 1 address does not necessarily correspond to 1 person. | Sources: Nansen Query, CoinMarketCap

There's a growing body of crypto research; it also advances progress in other areas

21,000+

crypto publications
contributing to top-of-mind issues:

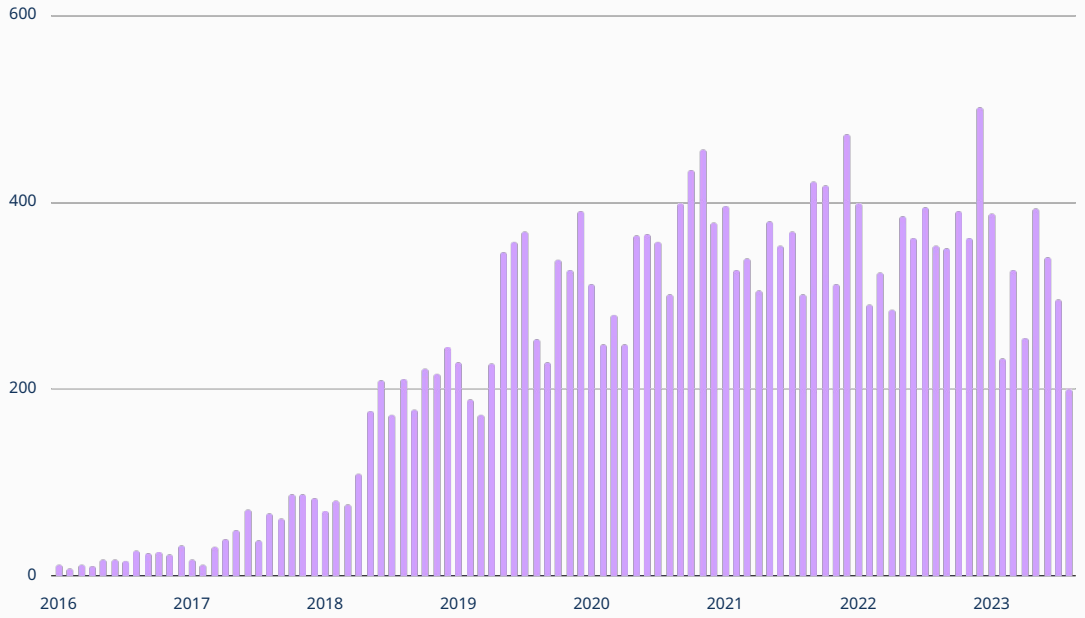
Privacy-preserving financial compliance
..using zero-knowledge (which is moving quickly from theory to practice)

Fighting disinformation
...using crypto methods for proving authenticity

Checks and balances on artificial intelligence
...using blockchain networks and decentralization

Blockchain performance and security
...crypto-economic game theory, networking, and more

Crypto-related academic publications



source: dblp

PART 3: THE IMPORTANCE OF U.S. LEADERSHIP

Leading in web3 innovation will keep the U.S. competitive

It’s also a matter of national security

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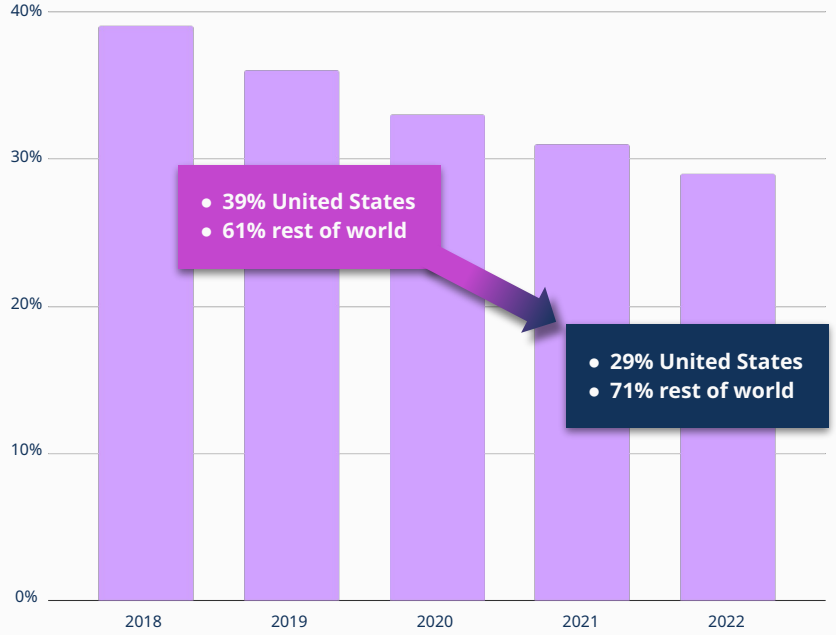
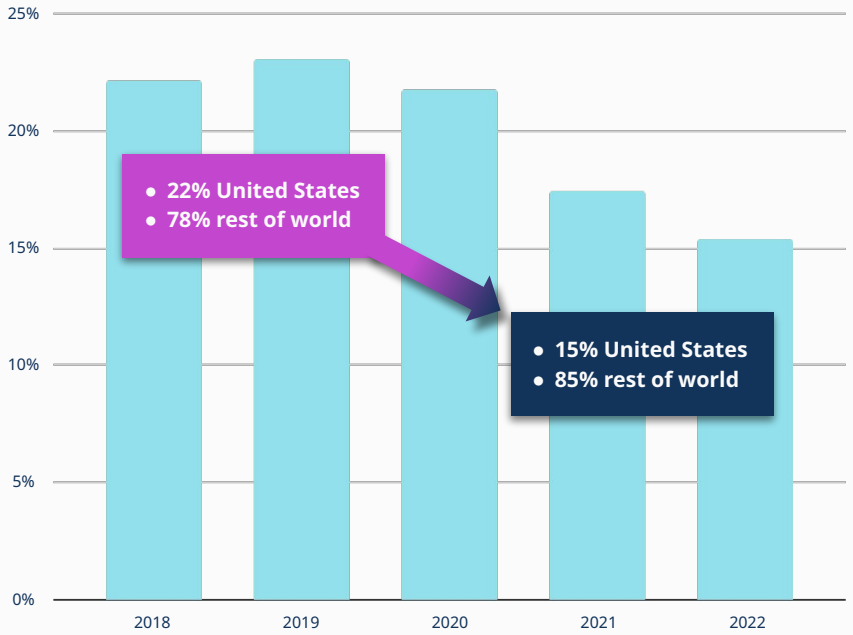
The U.S. has always been a beacon for tech innovation, but may be losing its lead in web3

% of all crypto developers from the United States



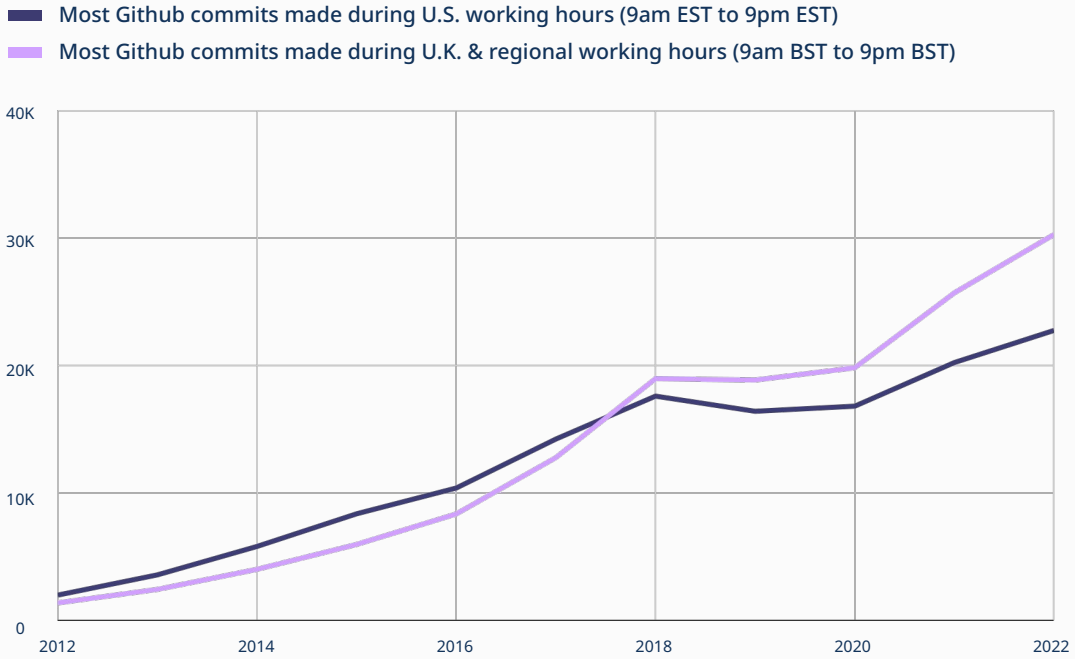
% of global traffic coming to top crypto websites from the United States



source: Electric Capital, SimilarWeb | *Includes Coinbase.com, Binance.com, Coinmarketcap.com, Coingecko.com, Etherscan.io.

More developers are working on crypto projects outside U.S. time zones

Number of unique crypto developers: when are they coding?



U.K. proactively leaning in to crypto:

GOV.UK

Home > Government

News story

Government sets out plan to make UK a global cryptoasset technology hub

The government has today announced moves that will see stablecoins recognised as a valid form of payment as part of wider plans to make Britain a global hub for cryptoasset technology and investment.

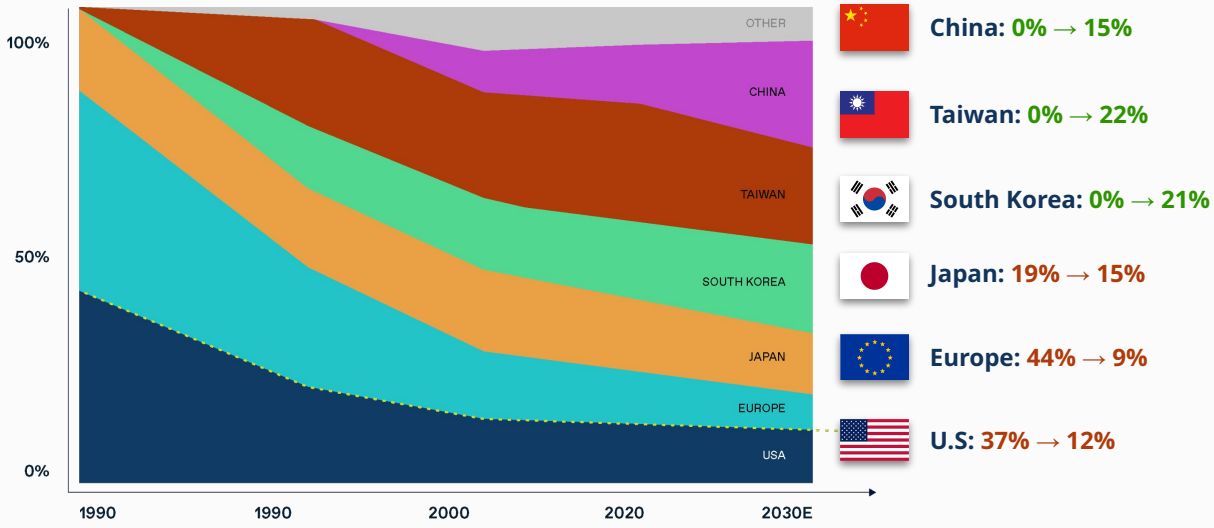
a16z crypto startups already in U.K. ecosystem:

arweave Aztec PIMLICO IMPROBABLE gensyn

source: GitHub and Electric Capital | note: This analysis shows directional trends only; note overlapping time zones or other working hour factors

As with semiconductors, the crypto industry could quickly move outside of the U.S.

Leaders in semiconductor manufacturing, from 1990-2020:



China: 0% → 15%

Taiwan: 0% → 22%

South Korea: 0% → 21%

Japan: 19% → 15%

Europe: 44% → 9%

U.S: 37% → 12%

source: Boston Consulting Group, Semiconductor Industry Association

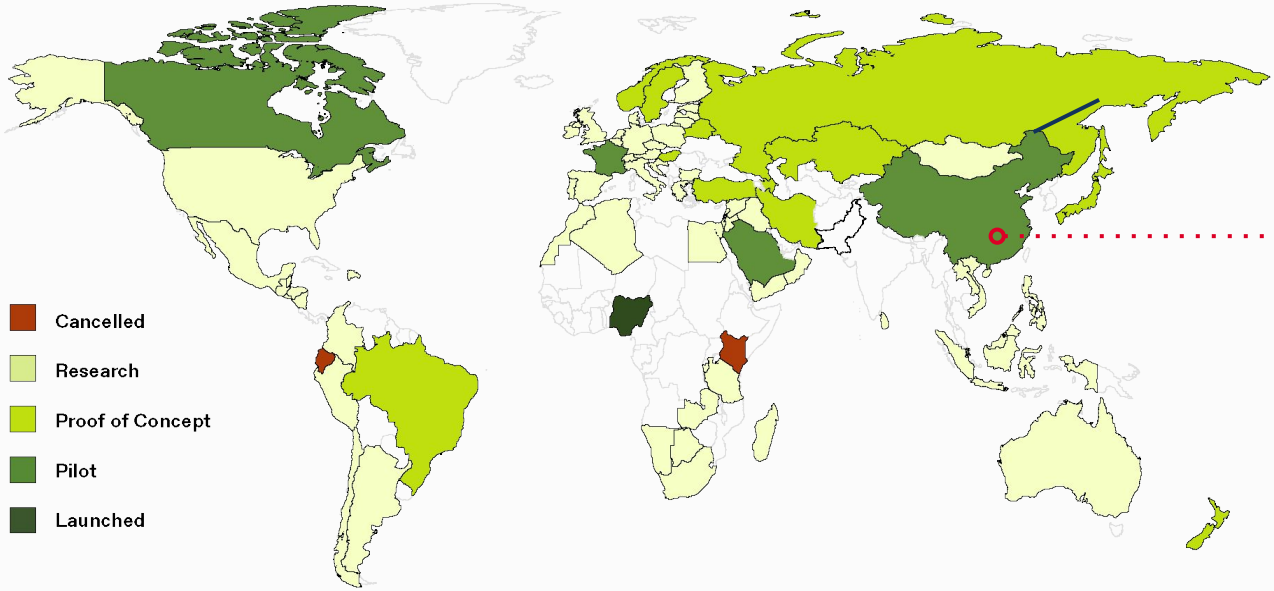
Lesson learned from past industry innovation:

In the case of semiconductor manufacturing today, the U.S. should not have to depend on foreign suppliers for critical tech infrastructure that has outsized impact on our daily lives.

The same can be said for decentralized computing infrastructure, which is where the future (of the internet, of organizations, of work) is going. The U.S. should lead.

Because the status of the U.S. dollar is under threat from sovereign digital currencies

Status of central bank digital currencies (CBDCs) around the world



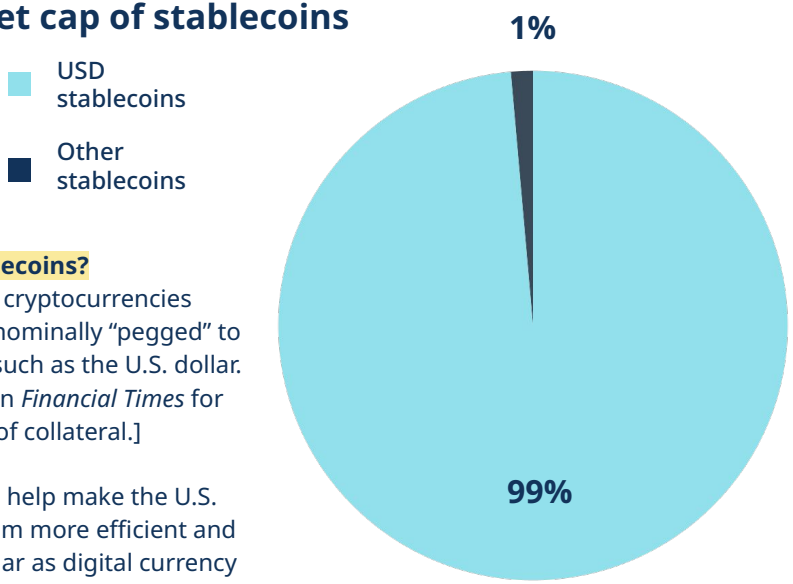
The development of China's central bank digital currency (CBDC) poses a threat to the U.S. dollar as the world's reserve currency

Transactions involving digital RMB totaled $250 billion by June 2023

source: CBDC tracker, Reuters

Innovations in stablecoins can strengthen the dominance of the U.S. dollar

Total market cap of stablecoins



What are stablecoins?
Stablecoins are cryptocurrencies whose price is nominally "pegged" to a stable asset, such as the U.S. dollar. [See this piece in *Financial Times* for more on types of collateral.]

Stablecoins can help make the U.S. payments system more efficient and cement the dollar as digital currency around the world.

source: CoinGecko

This isn't just about protecting Silicon Valley startups: it's about maintaining our national lead.

The U.S. can win through a free-market approach, as opposed to one that's centrally planned. This bottom-up approach allows many new experiments, and the best innovations to emerge.

And it may be the only way to outcompete the top-down approach to central bank digital currencies (CBDCs) taken by countries like China.

PART 3: POLICY PRINCIPLES AND FRAMEWORKS

Good policy in the U.S. incentivizes innovation

It also protects consumers and provides businesses a path to compliance

Regulatory activity is still front and center

Crypto legislation has passed out of House committees for the first time in history

Financial Innovation and Technology for the 21st Century Act
Reps. French Hill R-AR, Glenn "GT" Thompson R-PA, and Dusty Johnson R-SD

Clarity for Payment Stablecoins Act of 2023
Rep. Patrick McHenry R-NC

Courts are deciding several impactful cases

Court rules in SEC/Ripple Enforcement Action; SEC dismissed claims against individuals and is appealing the trial court's legal ruling

Treasury Tornado Cash Civil Action headed to the U.S. Court of Appeals for the Fifth Circuit

Coinbase defends against an SEC Enforcement Action in the District Court, while their Petition for a Writ of Mandamus is still pending in the U.S. Court of Appeals

Government agencies are proposing new rules

IRS proposed rules on Digital Asset Broker Reporting Requirements

CFTC Notice of Proposed Rulemaking on self-certification of derivatives contracts

FinCEN Notice of Proposed Rulemaking on convertible virtual currency mixers

SEC considering proposed amendments on custody rule; also definition of "exchange"

Good regulation can crack down on bad actors and protect consumers

Former legislators, agency heads, and more recommend that U.S. legislators do 3 things:

Protect consumers

Require **registration and supervision of centralized firms**

Regulators should probe for risk arising from custodial relationships, conflicts of interests, and use of digital assets in illicit finance

Provide a path to compliance

Any legislation should provide entrepreneurs who have been building non-centralized networks and legitimate businesses (despite this uncertain environment) a disclosure-based **pathway to compliance**

Incentivize community ownership

Laws and regulation should properly **incentivize decentralization and community ownership** — the core promise of web3 technologies that benefit the public and pave the way for future innovations

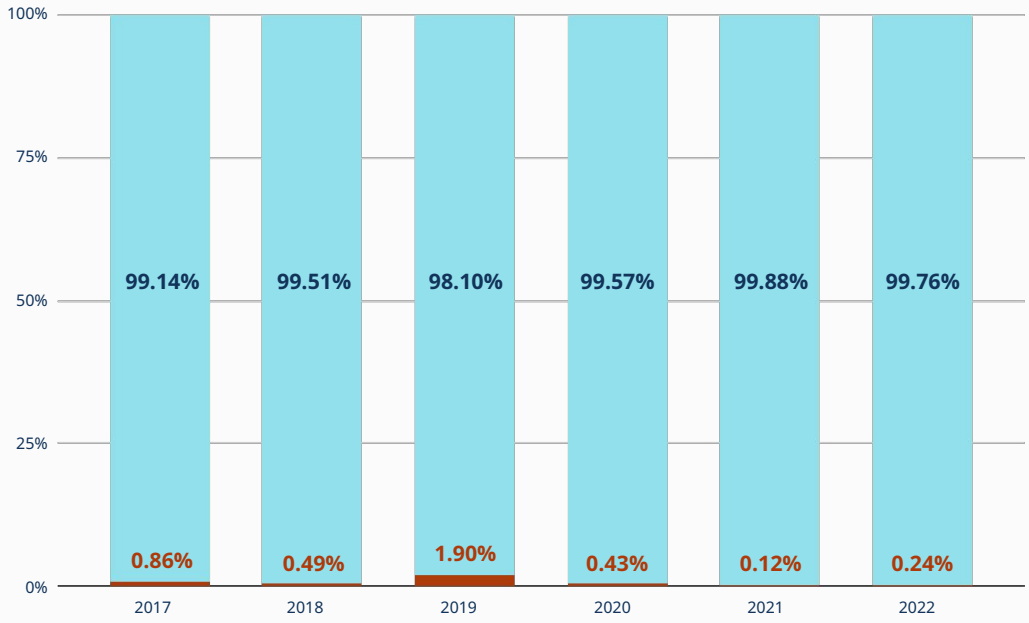
Guiding principles for U.S. crypto policy and regulations

- **Banning new business models or technologies undermines American values** and drives innovation and jobs elsewhere
- Agency guidance and legislation that establishes appropriate, clear rules will not only protect consumers but help **foster healthy competition for all** – including allowing new innovators to fight entrenched, centralized players and regulatory capture by incumbents
- Legal businesses and their customers **deserve access to financial services and lawful protections** – from banking relationships to data privacy
- **Businesses should be the focus of regulation** – not broad, decentralized, autonomous software that provides a foundation for innovation. Regulate apps, not protocols

More at a16zcrypto.com/policy

Misconception: Crypto is only used for illicit activity

Total transaction volume vs. illicit transaction volume



source: Chainalysis; see also TRM Labs, Elliptic, Coindesk for more data

Blockchain analytics firms estimate that less than 2% of total crypto activity is illicit transactions

...in 2022, such activity accounted for roughly 0.10-0.24% of all crypto activity

Far more money laundering occurs through fiat methods than through crypto

...in 2021, it was estimated that 100-250x the amount of money laundering in crypto was laundered each year in traditional financial markets [source: head of Nasdaq's anti-financial crime technology]

Fiat methods for money laundering (cash, bank wires, real estate, etc.) far exceed crypto, in both volume and percentage

Fact: Crypto can help fight crime

Criminals still prefer traditional financial products and services over crypto

...while criminals and terrorists look for any means available (including emerging technologies) to finance and carry out their activities, the Treasury Department's 2022 National Terrorist Financing Risk Assessment found that use appears to be "limited when compared to other financial products and services" – blockchain's traceability inherently disadvantages these groups

Blockchains are public, traceable, and immutable

...which makes them useful in investigations, prosecutions, and asset recovery. Fiat currency, particularly cash, is far less traceable and still used more frequently for criminal activity

Crypto plays a role in fighting crime

...law enforcement is incredibly effective at tracking down cryptocurrency activity (with sophisticated analysis tools) compared to fiat and other methods used by bad actors. Governments have also proven their ability to recover funds in this manner

Misconception: All crypto is bad for the environment

Estimated annual energy consumption by product/industry

Product / Industry	Annualized Energy Consumption (TWh)	Comparison to Ethereum
Banking system	239	**92,000x**
Global data centers	190	**73,000x**
Bitcoin	149	**53,000x**
Gold mining	131	**50,000x**
Gaming in USA	34	**13,000x**
Google	19	**7,300x**
Netflix	0.457	**176x**
PayPal	0.26	**100x**
PoS Ethereum	**0.0026**	**1x**

note: The estimates provided are sourced from publicly available information, accessed in July 2023, with links to the sources available in the table above. Each underlying source includes more details on exactly what is being measured.

Other industries and companies consume significantly *more energy than* Ethereum today

How? In September 2022, Ethereum moved to a PoS ('Proof of Stake') consensus mechanism – which many modern developers choose for building their applications on – resulting in a **99.9% reduction in energy consumption**

All blockchains require such consensus mechanisms because they are decentralized; the PoS approach to network consensus is much less energy-intensive than the PoW ('Proof of Work') approach used by Bitcoin