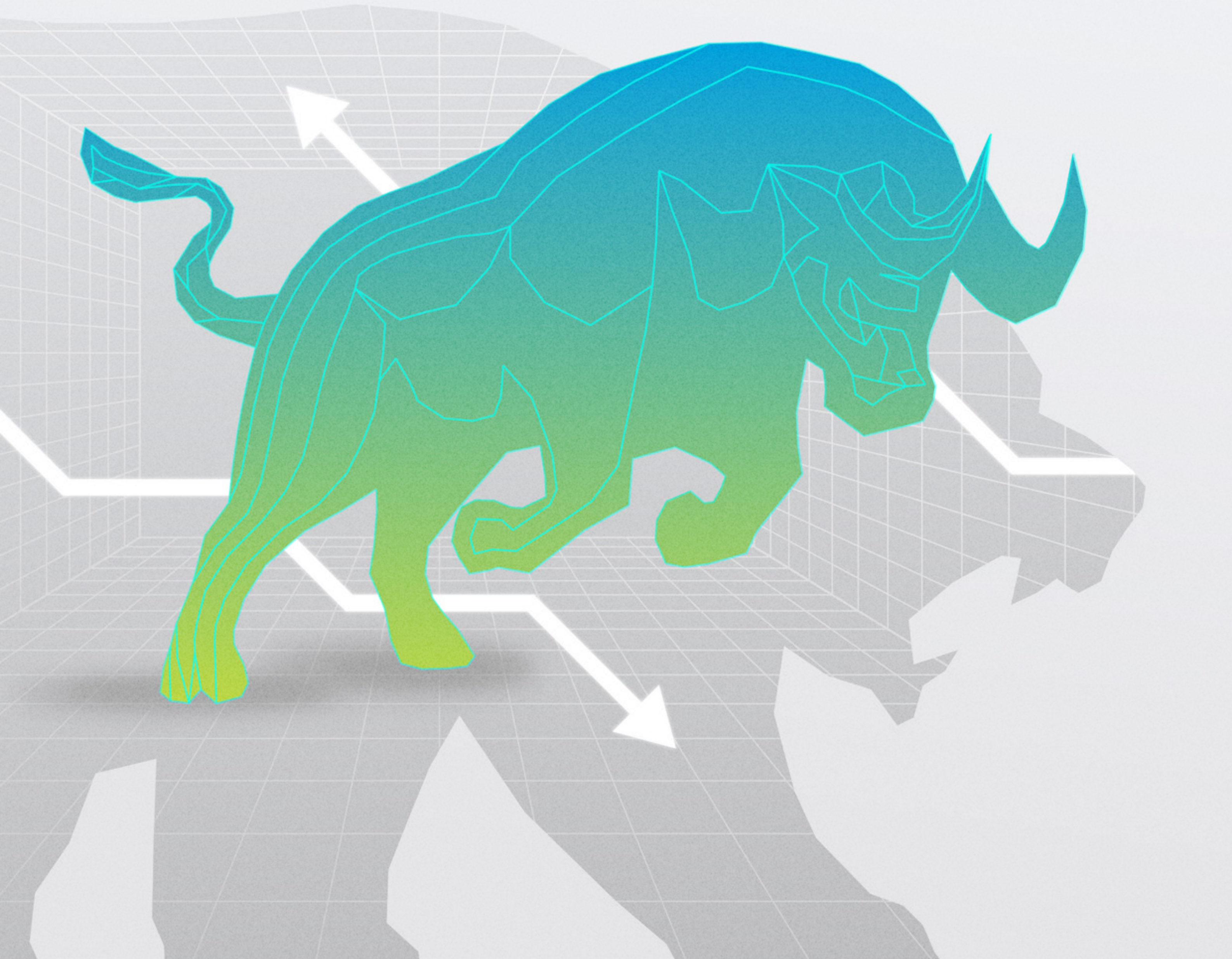
How the Crypto Winter May Help **Save the Digital Asset Economy**

Blockchain Leadership Perspectives on Market Events



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Executive Summary

MICHAEL COSCETTA, HEAD OF REVENUE, PAXOS

This crypto winter is another pivotal period in the history of blockchain. As with the last winter (2018-2020), the fear that crypto has peaked or that it was a quixotic trend is in the air. But a deeper conviction remains by many that blockchain is bound to change our financial system and even society as a whole.

This crypto winter has brought failures and fraud in the form of FTX, whose collapse ensnared other market participants and painted an unseemly picture of the industry. There's also been regulatory ambiguity and pressure on those trying to work within the confines of existing regulations – as well as immense public pressure on regulators to act. These events have cast doubt on the future of blockchain in the minds of some.

Yet in time, these forces may have also created a more efficient environment – with regulatory involvement – that will eventually help the digital asset economy to flourish.

Paxos produced the following report to better understand the current environment. Looking beyond this crypto winter can help us understand how best to respond to today's market conditions.

I want to thank our internal teams and our cryptocurrency market data provider Kaiko who helped develop this white paper, especially:

- **Clara Medalie**, Director of Research, Kaiko
- **Jonathan Avni**, Senior Product Manager, Paxos
- **Alex Guttler**, VP Business Development, Paxos
- **Dan Burstein**, US General Counsel, Paxos

In sharing this information, we hope others see beyond the cyclical downturn and are better prepared for the next market upturn.

INTRODUCTION

No Ordinary Winter

2018-2020

We are not in the first "crypto winter." In November 2018, cryptocurrency markets lost $70 billion in market capitalization, an exclamation point on a year in which they lost $700 billion. Winter also came for both Bitcoin and Ethereum, lasting until 2020. Overall crypto market cap plummeted from a high of $821 billion to a low of $100 billion in late 2018. 2021 brought a pandemic rebound, an NFT summer, a GameFi explosion, celebrities shilling for crypto on screens everywhere, Bitcoin at $60,000 and venture investment rained cash onto the ecosystem. After companies raised $30 billion in 2021, they raised $36 billion more in 2022 (mostly in Q1).

Present Day

The current crypto winter saw the market cap fall from $2.9 trillion to a low of about $800 billion before clawing back to $1 trillion as the calendar changed to 2023. It only takes a cursory glance to see that the stakes have climbed exponentially higher in four years. However, much more has changed in the economy and the markets since 2018, making an apples-to-apples crypto winter comparison impractical.

Importantly, attitudes and activities around regulation have also changed. Current ideas on government oversight may need more clarity and consistency, but the growing chorus of voices calling for regulators to act is working to prompt more regulatory activity.

These events help make this current crypto winter different from previous ones. With a growing sense that potential regulation is on the horizon, more enterprises are looking ahead, trying to figure out what's next. Many are placing big bets on the core opportunities blockchain offers asset markets: transparency, efficiency and security.

SECTION 01

Tailwinds Turn Against Crypto

Last winter's rebound

In the summer of 2021, crypto exchanges were operating laissez-faire in an economy designed to nurture capital markets. The American Rescue Plan Act doled out pandemic relief checks to Americans with more disposable income, low mortgage rates and high employment. In Q4 of 2020, under 200 crypto deals were completed, and by Q1 2021, that number rose to 700, and venture capital firms (continued to invest in crypto and blockchain until peaking at 1,200 deals in Q1 2022.

It wasn't just quantity – in the third quarter of 2021, there were 15 deals for $100 million or more each and average valuations for crypto deals tripled in a year, reaching $35 million in 2021.

TerraUSD became the third largest stablecoin in April before losing its $1 peg on May 9, 2022, eventually melting $45 billion in submerged value. The US Securities and Exchange Commission (SEC) had been knocking at crypto's doors months earlier, including Terra's, and critics were leveling accusations of a Ponzi model. But perhaps most notable was the failed experiment of algorithmic stablecoins and the $300 billion crater Terra/Luna left on the rest of the crypto markets.

> "During good times, when everything is booming and capital is free, speculation takes over because there's a fear of missing out. There's a growth opportunity that people would rather take a risk on and not miss out on potential gain. But when things turn the other way, there's a small upside and a huge uncapped risk on the downside."

MICHAEL COSCETTA, HEAD OF REVENUE, PAXOS

Opaque leverage is often a factor in these failures, and it's certainly at the heart of FTX's failure. Excess leverage can ultimately hurt the end customer, especially for nonsegregated assets. Unregulated exchanges frequently use dodgy practices of lending off-platform, borrowing against customer funds or speculating.

FTX's owner Sam Bankman-Fried also owned the Alameda Research fund and oversaw an operation that allowed Alameda to borrow billions in customer funds from its founder's exchange. They also used their token as collateral to cover their trades, but FTX's FTT token – like other speculative cryptocurrencies – has no value.

These events sullied the shine of the crypto markets – creating a significant decline in trust, especially among regulators.

Current crypto winter

The crypto winter of 2022-2023 bears little resemblance to the crypto winter of 2018-2020, when Bitcoin price fell over 80% to $3,100 and cost the global market about $700 billion in market capitalization. Markets were impacted in 2018 by a hype cycle, the initial coin offering boom and millions of retail traders trying to pump crypto prices and dump the tokens to make as much as possible.

As of December 2022, the global market capitalization for a cache of nearly 13,000 cryptocurrencies tracked across 618 different exchanges was valued at a reported $845 billion, a 65% year-over-year decline.

> "With every crypto winter comes an opportunity. I think the last crypto winter, everyone was building. I know it's a bit of a stereotype to say that during a bear market, that's when you build. Still, 2018 laid the foundation for our historic run in 2021, and a lot of it was infrastructural. A lot of exchanges built up their internal systems to support a lot more trading activity."

CLARA MEDALIE, DIRECTOR OF RESEARCH, KAIKO

Yet many experts believe seizing the opportunity to build during this crypto winter may be a decisive step in emerging with the capabilities and resources to advance in the Web3 world and digital currency ecosystem.

SECTION 02

Tokenization, Trust & the Industry's Response

Surge in calls for regulatory action and policy by enforcement
The FTX November debacle was the exclamation point of a turbulent 2022, prompting vocal calls for regulations. The SEC issued a stern warning and official new guidance in which it called for disclosures of crypto risks and named crypto one of its highest priorities for 2023. So far, the agency is living up to its word, sending out a litany of enforcement in the first months of the year.

> "I do think the technology holds a lot of promise for socially beneficial uses, payments to settlement, clearing, tracking supply chains... There are a lot of interesting use cases that can and should be developed. The problem is most of the industry has gone into speculative assets. And that works until it doesn't."

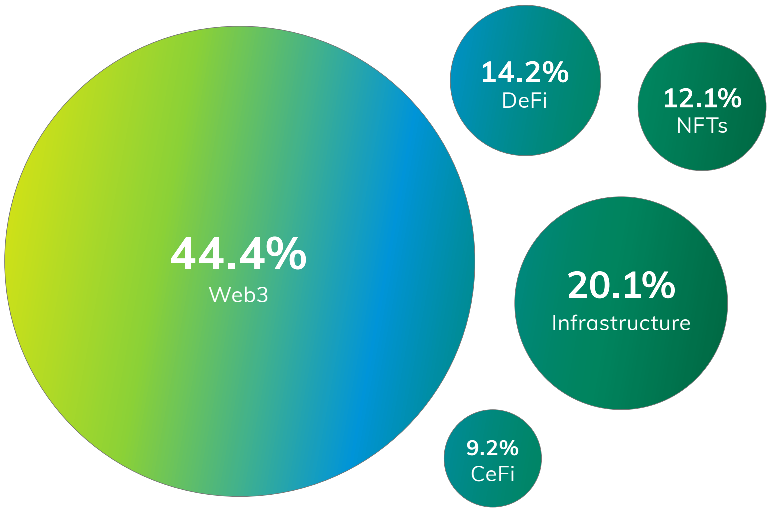
SHEILA BAIR, FORMER CHAIR OF THE US FEDERAL DEPOSIT INSURANCE CORPORATION AND PAXOS BOARD MEMBER, ON CNBC TV

The industry is highly motivated to win back the trust of retail consumers, VCs and institutional investors. Above all else, this crypto winter has lit a fire under the seats of US lawmakers, as they introduced several crypto bills for consideration in a January 3, 2023, Congressional session. The Senate Banking Committee convened on February 14 in a hearing to discuss the FTX crash.

The SEC's assertive posture isn't coming without controversy, as many disagree with its treatment of certain crypto assets as securities, and the industry worries that the SEC's aggression will deter the markets' progress. The SEC offensive drew waves of praise and criticism, even some from within its walls, with Commissioner Hester Pierce noting, "using enforcement actions to tell people what the law is in an emerging industry is not an efficient or fair way of regulating."

Less VC money, low liquidity and high-interest rates change the game

Venture Capitalist Funding Allocations by Project Type



Source: Venture Capital Report

Crypto company funding decreased every quarter of 2022, and the initial Q1 2023 results show no uptick. However, where the funding goes is more telling than how low it fell. In Q3 2022, 44% of VC deals flowed into Web3 projects like GameFi and the Metaverse, followed by infrastructure projects at 20% and DeFi at 14%. Noticeably falling into the last position was centralized finance (CeFi). Industry consolidation indicated a market correction in Q3 2022, with 13 acquisitions centered on consolidating companies and blockchain infrastructure.

> "A general drop in market liquidity can either make markets more volatile because there's less resistance or support for price movements, or it can cause further price crashes if the sentiment remains low. We're seeing prices rally even though there's not really much of a cause for this over the past few weeks. I think many crypto traders are done selling right now. And also, we finally have the resolution with Genesis. And that could mean that it's only up from here."

CLARA MEDALIE, KAIKO

Legacy financial institutions are using blockchain
Even though the digital asset industry is struggling, big-name legacy players continue to enter the sector:

- Fidelity launched a crypto service for investors, including for 401Ks
- BlackRock began granting clients access to cryptocurrency
- JPMorgan trademarked a digital wallet brand and executed the first-ever DeFi trades on a public blockchain in coordination with the Monetary Authority of Singapore
- Legacy stalwarts Goldman Sachs, BNY Mellon and NASDAQ entered the crypto ecosystem in late 2022, even as the market fell

This institutional adoption mirrored that of the public sector, with several major countries experimenting with blockchain-based central bank digital currencies (CBDCs). Eleven nations' central banks have formally launched CBDCs, and this year over 20 countries will take significant steps towards piloting a CBDC, including China, Australia and Brazil. Likewise, the US may soon decide whether to create a CBDC to preserve the dollar's global domination, Secretary of Treasury Nellie Liang recently announced.

While investors behave more cautiously, virtual asset service providers (VASPs) move more quickly. There has been no slowdown of interest in companies moving into the industry. Still, companies are moving much more methodically, asking many more risk and compliance-related questions and conducting deeper due diligence on when, how and with whom they enter the market – making it more secure in the long run.

> "People are asking many more questions like: Who are you trading with? Do you know who's executing your trade-in and out? Is this a party you can trust? Are you holding your assets in a wallet and trading them? Are those assets sitting on an exchange? Which up until the FTX collapse, most thought was very safe. These are questions no one asked five months ago."

MICHAEL COSCETTA, HEAD OF REVENUE, PAXOS

SECTION 03

Risk and Regulatory Impact in the US

From the margins to the mainstream

As with every technological advancement, the balance needed between fostering innovation and protecting the public has been historically a trial-and-error process of incremental movement – which can take decades of experimentation to perfect.

> "In the digital asset space, consumers are relearning the same hard lessons from a century's worth of financial crime and scandal, all condensed into 10 or 15 years. They are learning that it matters where you put your money. Digital assets are just assets. These aren't new. It's new technology. It's faster, it's better, it's more agile. But the risks are the same."

DAN BURSTEIN, US GENERAL COUNSEL, PAXOS

Sensible regulation helps to make security and protection commercial enablers. By establishing rules of the road and assisting participants in knowing when and where to invest, we can protect the end user, especially the newer, less sophisticated customers.

Regulation by enforcement

We are at a watershed moment for the regulation of digital assets. The lack of clarity by lawmakers has left regulators to fill the void, and they have chosen to, not with rulemaking, but with enforcement forward regulatory turf wars. The Treasury and Federal Reserve argue that fully-backed, regulated, fiat stablecoins are payment instruments and thus under their authority. Having been sidelined in the President's Working Group paper and criticized for missing FTX and other failures, the SEC has stepped in to claim that every digital asset except bitcoin is within their jurisdiction. And the Commodity Futures Trading Commission (CFTC) has taken enforcement actions to challenge the jurisdictional authority of the SEC.

Turf wars through enforcement may be a great way of staking out jurisdictional positions, but they can never replace the underlying requirements of administrative procedure and rulemaking. Unfortunately, this approach also creates an environment where most compliance-forward firms don't know how to comply and are beginning to exit the United States rather than subject themselves to the ongoing enforcement onslaught and seeming efforts to de-bank the industry.

There may be signs that the US Congress knows it must act. We expect that, at least on stablecoins, the path to legislation will be short and we will soon see legislation that includes: clear minimum consumer protections standards for stablecoin issuers with full dollar backing of reserves, bankruptcy remoteness of custodied assets and prudential oversight (this could be by state regulators with a federal regulator acting as a backup in the same way the FDIC acts as a backup regulator for state-chartered banks).

CeFi actors ask for forgiveness instead of permission
There's no such thing as self-regulation in the United States because even if a company is not regulated, its counterparty is regulated. Therefore, it must abide by the rules and requirements that the counterparty participates in and is still civilly and criminally liable in the US.

Unregulated businesses holding customer assets independently that desire to move them into a crypto custodian need to ensure that the custodian has the protections of a trust company, which go beyond that of a money transmitter license (MTL). Only trust-level protections provide proper bankruptcy protection and remote funding segregation, and a regulator can affirm accurate reporting. The industry needs to put more positive pressure on companies to establish some level of trust structure, because federal or state-level trusts ensure the customers' assets are held separately from the businesses' assets.

> "There's a lot of prioritization among policymakers trying to do something in response to FTX. But there are a lot of different views on what to do and what the actual problems are: whether the problem is just the existence of the industry altogether or whether the problem is the bad actors and insufficient oversight. There's a lot of division regarding what to do in this crucial moment."

DAN BURSTEIN, US GENERAL COUNSEL, PAXOS

SECTION 04

Opportunities Emerging From Crypto Winter

The corrective mechanisms of a collapse

As the industry negotiates this historical crossroads, new opportunities for blockchain players are opening. Bear markets are historically good times to invest in innovation and focus more on fundamentals (instead of hype). This bear market is unlike any other in the short history of blockchain, with regulatory agencies flexing enforcement muscles like never before. The previous crypto winter of 2018-2020 could be characterized by a bubble rife with scammers, schemes, hackers, and unhealthy ICOs (Statis Group revealed that an astounding 80% of ICOs conducted in 2017 were identified as scams) and illicit activities.

The takeaway is that moving a traditional industry and multiple factions within that industry into brand-new sets of technology takes time. Implementation of new financial infrastructure needs time for planning, strategic development and deployment. What many enterprises do wrong is wait; wait for the winter to show signs of subsiding before taking action. And unfortunately, activity at the point of industry ascension is often too late to beat the early innovators.

> "We'll probably see a wave of consolidation of many crypto companies over the next year, consolidation or more bankruptcies and going out of business. That's natural in a bear market. It happened the last time around too. From there, you're left with the best of the best, which also means you end up with a more advanced industry with actual product market fit and a business model that works."

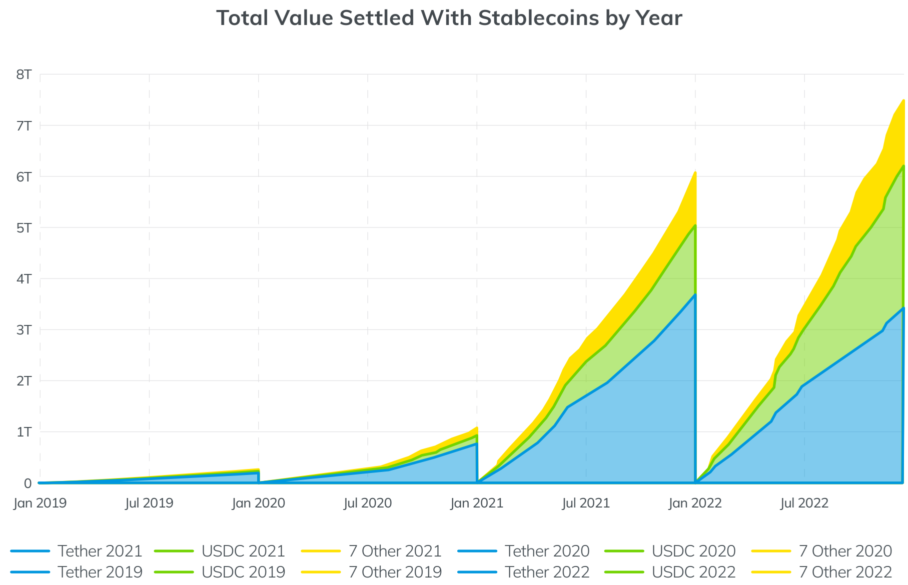
CLARA MEDALIE, DIRECTOR OF RESEARCH, KAIKO

The crypto winter provides an opportunity for enterprises to seek solutions and potential partners focused on building a business that uses innovative technologies to meet the real-world needs of the financial sector.

Solutions within reach include:

- Unlocking wealth and increasing market liquidity
- Securing instant, global payments
- Reducing the costs (and time) of security settlement
- Inclusive access to banking and $USD
- Improved usability of the platform by developers
- An onramp to Web3 future
- And more

Stablecoins will survive and thrive



Source: CoinMetrics

While the crypto market cap was imploding in 2022, the usage of dollar-backed stablecoins eclipsed 2021's total value in settlements by a trillion dollars, rising to over $7 trillion. Most stablecoin usage is restricted or somewhat related to crypto use cases. More than 75% of cryptocurrency trading occurs between a stablecoin and other tokens. The market share of algorithmic stablecoins as of January 2023 was 1.71%, down from an all-time high of 12.4% in April 2022. The overall market capitalization of stablecoins declined for the tenth consecutive month.

> “Stablecoin is the one crypto use-case that has consistently proven itself over time how useful it is for the entire industry… But we need more transparency over the reserves of these stablecoins, which I think we’re going to see.”

CLARA MEDALIE, DIRECTOR OF RESEARCH, KAIKO

Stablecoins serve as the building blocks for DeFi tools. Traders and institutions are discovering more reasons to embrace stablecoins every month. The stablecoin is the first tokenized real-world asset (RWA). When safely managed by regulated private issuers, each token is fully collateralized by fiat currency held in cash and cash equivalents.

Tokenization of RWA unlocks immense wealth

DeFi is the space where tokenization of RWA on chain can realize its potential while simultaneously unlocking DeFi’s potential. The World Economic Forum estimates that the tokenization of illiquid assets like fine art, real estate, exotic cars, gold and other natural resources will make up about 10% of global GDP by 2030. It amounts to only about 0.4% today, making this an enormous opportunity for protocol developers, private markets exchanges, tech companies and retail investors.

Asset-backed cryptocurrency lowers the barriers to entry for interested investors who perceive physical assets like art and gold to be out of reach because of storage and minimum purchase costs. The bypassing of traditional brokers, the ability to transact investment-grade physical assets in fractional increments, lower fees and the speed of making 24/7 transactions will introduce a broader population of customer and unlock immense amounts of liquid wealth.

A group of 12 banks (including Bank of America and Citi) recently conducted a pilot program to tokenize various projects to reduce the time it takes to settle transactions to T+1 institutional adoption. RWA-backed loans have also surged, reaching up to $140 million, indicating the growing demand for RWA tokens to finance real-world assets.

> "Gold is heavy, and it's hard to transport. When you tokenize it, you can move it instantly. You know it contains the same trackers and custody provisions that you would if you were holding the physical gold, except the transaction happens immediately."

MICHAEL COSCETTA, HEAD OF REVENUE, PAXOS

Technological, regulatory and educational impediments remain for DeFi to come to fruition as a staple of the financial system. But RWA tokenization will substantially rejuvenate the current illiquidity in the DeFi sector.

Stablecoins for payments

Consumers have displayed a genuine interest in easier, faster methods of moving money, as shown by how they use fintech apps predominately for payments (73%). In our 2023 Cryptocurrency Adoption and Purchasing Behavior Survey, 42% of respondents said they were interested in using crypto to pay for goods or services, while 34% were interested in using crypto to send money to friends or family.

> "Stablecoins built with consumer protections in mind and backed 1-to-1 by the dollar are central to the future of finance. The best stablecoins are subject to strict oversight by a prudential regulator and meet the highest consumer protection standards. Reserves should be held bankruptcy remote in cash and cash equivalents with customer funds always available for redemption — and never commingled."

JONATHAN AVNI, SENIOR PRODUCT MANAGER, PAXOS

Stablecoins for settlement

We'll soon see more publicly available products based on stablecoins around payments, remittances, B2B payment flows and cross-border transactions. The young technology is maturing as developers work to simplify the network of relationships that need to be maintained for trading in shares and bonds, which leads to lower costs, greater speed and greater transparency for investors.

Stablecoins for clearing and settlement are another significant on-ramp toward the institutionalization of blockchain. Traditional clearing and settlement methods could be faster, smoother and more opaque. Eminent institutions like Mastercard and State Street have piloted conversion and settlement of fiat and crypto, including tokenized securities trading, which automates the lifecycle of a trade. This model promises to reduce costs and friction, bring simultaneous delivery versus payment and interoperability with the depository trust companies.

Stablecoins increasing access to the US dollar

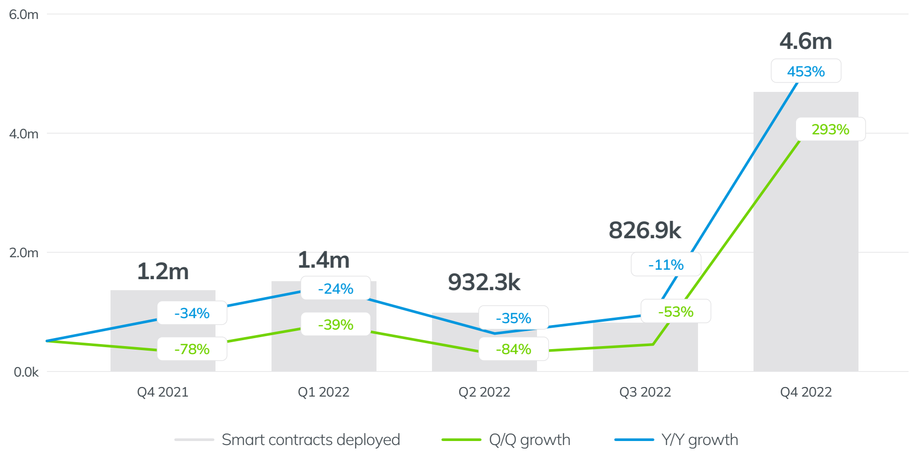
Outside the US, digital assets have proven a useful proxy for the US dollar, allowing under-banked citizens to access loans, purchasing power, credit and cheaper remittances. While some are concerned that the spread of crypto could threaten the US dollar's dominion as the world's favored currency, stablecoins might make the US dollar even more dominant worldwide than it is today.

Remittances are a significant part of Latin America's economic engine and often represent an enormous share of the recipient nations' GDP. The Western Unions of the world recognize cross-border remittances as a promising new rail in payments use cases, all adopting crypto services for their customers in the past couple of years.

Engineers know what works and embrace blockchain

Developers are particularly interested in a certain category of blockchain, Web3, as Alchemy found that Web3 dev activity surged 453% in Q4 2022. Despite the challenge of working with varying languages, developers believe crypto's underlying technology to be a game-changer and want in. Demand for these developers is equally high – showing no signs of slowing in the future.

Ethereum mainnet smart contracts deployed per quarter



Source: Alchemy

> "The other significant paradigm shift — versus 2018-2020 — is that developer infrastructure was practically non-existent back then. It's just so much easier to write smart contract-based systems now than in the previous cycle."

PANTERA CAPITAL, REFERRING TO THE PREVIOUS CRYPTO WINTER

Enterprises don't want to lose ground

Those who see the crypto winter as a season for bridge-building between the old and the new will likely come out of the winter ahead of the rest.

> "There's a ton of upside because 99% of companies haven't done anything around crypto, and everybody's curious. And so that manifests itself as a stablecoin product, a payments product, a remittance product offering, the ability to buy or hold and sell native crypto assets like Bitcoin. During Covid, we saw ten years of change happening in six months where all these businesses said, 'We're not a digital company. We have to be a digital company. That is the way of the future.'"

ALEX GUTTLER, HEAD OF PARTNERSHIPS AT PAXOS

Even as we weather this crypto winter, these blockchain ecosystems' underlying technology can work at scale. Networks like Bitcoin and Ethereum have demonstrated resilience. Much of what is being implemented on top of these networks also works as advertised, beginning with the Beacon Chain.

Build now, build first

Nobody knows how long the chilling crypto winds will keep blowing – but they will change. The previous crypto winters preceded extraordinary advancements on multiple levels. And it pays to be ready when the bull market shows up.

> "Ultimately, the compliant, regulated good actors with good risk management that care about their customers will strengthen the ecosystem. And this applies to the developers that are building these protocols and also to companies like Paxos and others. The genie is out of the bottle. Now that we know how to transact in these blockchain systems, we will figure out the safest and most compliant way to tokenize assets, enable more efficient transactions and onboard more people."

JONATHAN AVNI, SENIOR PRODUCT MANAGER, PAXOS

As we head toward the midpoint of 2023, some believe the end of the crypto winter is in sight. Others, especially investors, are bracing for more uncertainty in 2023. Current interest rates remain an obstacle for crypto, and there are a lot of regulatory issues to untangle. However, although the crypto winter may have impeded industry progress, its lasting effects allow crypto to reach its full potential.

Poor market performance, high-profile collapses and a lack of regulation have yet to curtail crypto's appeal to crypto believers. At the same time, these forces seem to be galvanizing a fractured industry behind a steady drumbeat for needed improvements. First among those needs are clear regulation and compliance standards. The ecosystem will likely thrive when the industry and governing bodies agree on keeping assets safe. As one result of this winter, we may finally see real crypto rules.

The other key opportunity this crypto winter provides is clarity on what it means to be trustworthy. With participants better educated by Terra and FTX, crypto enthusiasts (retail and enterprise alike) now know that transparency is non-negotiable and independent reviewers must review reserve reports. Informed market participants make for better, more secure and efficient markets.

Lastly, this crypto winter has also proven crypto to be resilient. The digital asset space is no longer being called a trend, and though it has a short history, we have seen crypto recoup losses rather quickly after a downturn. Recently, crypto's market capitalization increased from $727.58 billion on November 21, 2022, to $1.15 trillion on March 24th, 2023. Its ability to survive and thrive is not just another point in the story. It is the story.

Total Cryptocurrency Market Cap

Source: CoinMarketCap

The winter of 2022-2023 finds the blockchain markets more connected to mainstream financial markets: infrastructure investment and development is charging ahead, stakeholders are pressing for regulatory clarity, the crypto market structure is starting to look like the traditional market structure and the underlying technology of blockchain ecosystems has proven to work at scale. The next crypto spring should elicit a healthier ecosystem with greater oversight, fewer fraudsters and, for those making the best use of crypto winter, more upside than ever.

Paxos is the first regulated blockchain infrastructure platform whose mission is to redefine the financial system to enable assets to instantaneously move anywhere in the world, at any time, in a trustworthy way. Using technology to tokenize, custody, trade and settle assets, Paxos builds enterprise blockchain solutions for institutions like PayPal, Mercado Libre, Nubank, Bank of America, Societe Generale, Interactive Brokers and more. As a top-funded fintech company with more than $540 million raised from leading investors including Bank of America, Oak HC/FT, Founders Fund, Declaration Partners, Mithril Capital and PayPal Ventures, Paxos is powering transparent, trusted and transformative financial solutions.

For more information or to get in touch with Paxos, reach out to insights@paxos.com or visit paxos.com.