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White Spaces. Big Potential.

Regulatory unlocks for the digital assets ecosystem

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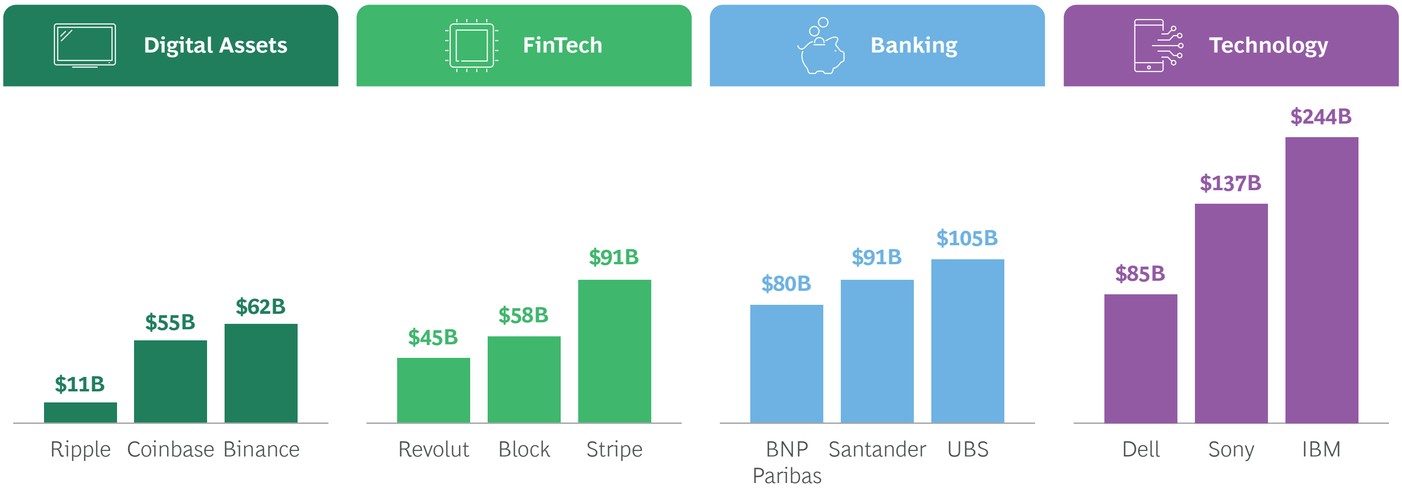
The Maturation of Digital Assets: Institutional Adoption and Regulatory Evolution

Over the past few years, digital assets have rapidly evolved from a niche sector to a key pillar of global finance, as they continue to bridge the valuation gap versus incumbents (See Exhibit 1). This evolution is characterized by the **convergence of surging institutional adoption and evolving regulatory oversight of digital assets.**

The surge in institutional adoption is reshaping market structure. Major traditional and digital assets firms are launching spot Bitcoin ETFs and exploring tokenized assets. At the 2025 World Economic Forum in Davos, top financial leaders emphasized the growing integration of digital assets into mainstream finance. Meanwhile, leading banking institutions signaled readiness to incorporate cryptocurrencies into payment systems, contingent on clear regulatory frameworks. These developments highlight the accelerating convergence between traditional finance and digital assets, reinforcing the need for structured risk management and compliance models.

Exhibit 1 - Digital assets players continue to bridge the valuation gap vs. incumbents

Market cap ($B) in Feb 2025



Sources: Reuters, Forbes, CoinMarketCap.

Note: Ripple's market cap is the equity market cap of Ripple Labs'. Does not include the XRP token market cap of $135B. Solana's valuation based solely on SOL token market cap; Market cap values subject to market fluctuations.

Regulatory oversight of digital assets has evolved rapidly, especially following major failures like FTX and ByBit (reportedly the largest crypto theft in history; see Sidebar). The authorities —particularly in the U.S.— had historically pursued strict enforcement, imposing record $5.8 billion in fines on crypto firms in 2023, including $4.3 billion on Binance.[1] This crackdown signaled the need for stronger compliance, yet regulators soon recognized that overregulation risked stifling innovation. Today, frameworks such as MiCA in Europe and Federal Deposit Insurance Corporation (FDIC) revisions in the U.S. reflect a more structured & balanced approach, aiming to foster responsible growth while maintaining financial stability.

The convergence of regulation and institutional adoption is accelerating structured growth. FDIC, the U.S. agency responsible for maintaining financial stability and public confidence in the banking system, is revising guidelines to enable banks to offer crypto-related services without prior approval, signaling a shift toward institutional accessibility.[2] As regulatory clarity increases, financial institutions are incorporating digital assets into their offerings, focusing on tokenized securities, institutional-grade DeFi, and stablecoins. MiCA in Europe regulates stablecoins and crypto-asset service providers, while other jurisdictions are implementing similar frameworks. This shift is transforming digital assets from speculative investments to structured financial instruments embedded in the global economy.

Trust is the cornerstone of sustainable growth. Blockchain was designed to eliminate reliance on intermediaries, yet its success now hinges on exchanges, custodians, and governance models. Institutional and retail investors alike demand transparency, security, and regulatory alignment. Firms that embed robust risk management, real-time auditing, and clear accountability frameworks will emerge as market leaders. In this new landscape, risk management is not just about compliance—it is the foundation for competitive advantage and the bridge to widespread adoption.

Regulatory Gaps and White Spaces: The Unfinished Framework for Digital Assets

Regulatory clarity is improving, but significant “white spaces” – regulatory gaps or contentious issues – remain, especially where digital assets intersect with traditional finance. The current patchwork approach across jurisdictions leads to inconsistencies, cross-border compliance challenges, and regulatory arbitrage. While major frameworks like MiCA, the proposed US Financial Innovation Technology Act for the 21st Century (FIT21), and the 2024 Digital Assets Law enacted by the UAE’s Dubai International Financial Centre (DIFC) set foundations, several critical areas remain unresolved, creating uncertainty for businesses and investors.

Key regulatory “white spaces” include:

1. Stablecoins and central bank digital currencies (CBDCs):

- Reserve backing and issuer obligations vary by jurisdiction, with no global consensus on collateralization standards.
- Interoperability between CBDCs and private stablecoins remains unresolved.
- The treatment of algorithmic stablecoins is still unclear in many regulatory frameworks.

1. Source: hhttps://www.ft.com/content/f2a8c1e4-30f2-49c7-939b-73e0d1a22033.
2. Source: https://www.fdic.gov/news/press-releases/2025/fdic-releases-documents-related-supervision-crypto-related-activities.

2. Decentralized Finance (DeFi):

- Classification of DeFi protocols—either as financial intermediaries or software providers—differs across jurisdictions.
- Regulatory enforcement challenges continue due to DeFi's pseudonymous and autonomous nature.
- Liability and compliance obligations for smart contracts remain undefined.

3. Tokenization of Assets and Securities:

- The legal classification of tokenized securities, commodities, and real-world assets (RWAs) varies.
- Licensing requirements for tokenization platforms are inconsistent across markets.
- Cross-border recognition of tokenized assets remains a significant hurdle.

4. Crypto Custody & Investor Protection:

- Bankruptcy protection is uncertain for custodians holding digital assets.
- Custody standards diverge for centralized vs. decentralized platforms.
- Insurance and security requirements for crypto custodians remain fragmented.

5. Cross-Border Compliance & Regulatory Arbitrage:

- Diverging AML and KYC requirements create compliance challenges for global firms.
- Differences in tax treatment of crypto transactions (for example, capital gains vs. VAT) cause legal uncertainty.
- There is no unified enforcement mechanism for global crypto regulation.

6. NFTs and Digital Collectibles:

- Classification of NFTs as securities, commodities, or collectibles remains unclear.
- Consumer protection rules for NFT marketplaces remain underdeveloped.
- Regulatory treatment of fractionalized NFTs is still undefined.

7. Sustainability and ESG Considerations:

- There are no universal standards for disclosures of carbon impact by blockchain networks.
- Green finance regulations for tokenized assets remain in their early stages.
- The sustainability incentives in digital asset policies are inconsistent.

From Obligation to Opportunity: Embedding Risk and Compliance for Long-Term Growth

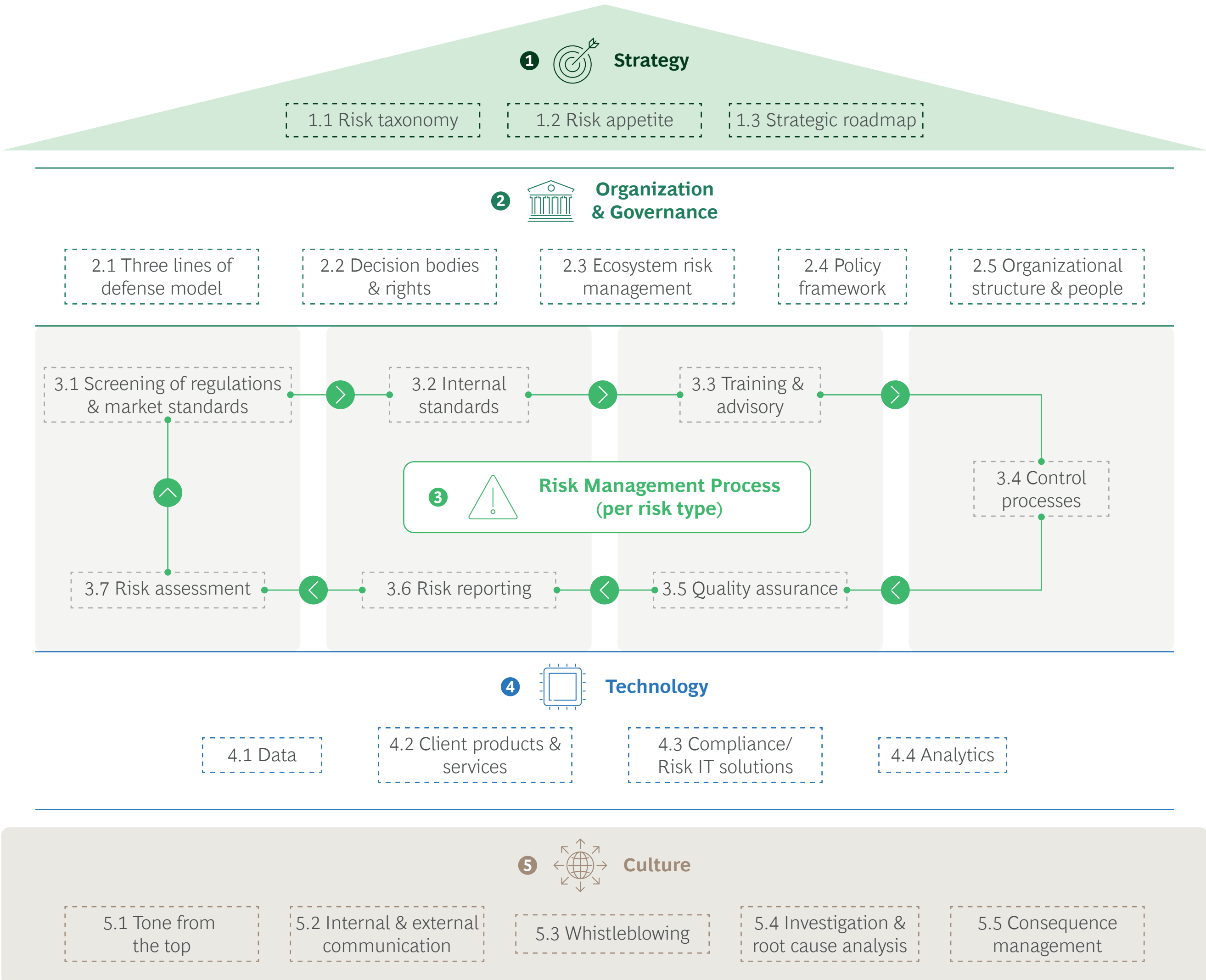
Market risks and compliance pressures continue to intensify as global regulators work toward consensus on digital asset oversight. Digital asset firms must move beyond reactive compliance. Regardless of how regulations evolve, they must adopt a proactive, risk-aware approach to ensure operational resilience and long-term value creation.

For many firms, this requires a cultural shift. Historically, digital asset companies have taken a minimalist approach to compliance, treating it as a burden rather than an enabler. Not that long ago, a legal officer at a mid-sized exchange said, “We should have a choice of whether we want to be regulated or not.” That choice no longer exists. Regulation and risk management are no longer optional. They are essential to securing institutional partnerships, maintaining financial stability, and achieving sustainable growth.

A few prominent digital finance companies are changing their mindsets accordingly. They have adopted a more appropriate risk management and compliance target operating model (TOM) for a decentralized world, with a bank-like approach to governance, risk management, and compliance. Exhibit 2 shows what this operating model might look like for a company. It involves changes in strategy, organization and governance, risk management processes (including a loop of continuous improvement), technology, and culture.

Exhibit 2 - Five Elements of a Resilient Digital Assets Firm

Best practice Risk & Compliance Target Operating Model



The TOM is essentially a comprehensive way to future-proof a digital asset company via five elements:

1. Strategy: Establishing Risk Parameters and a Roadmap

Embedding Risk and Compliance into strategic decision-making rather than treating it as an afterthought includes:

- **Risk taxonomy:** Classifying financial, operational, and regulatory risks to ensure structured assessment and mitigation.
- **Risk appetite:** Setting clear limits on acceptable risks aligned with the company's regulatory and business strategy.
- **Strategic roadmap:** Defining a multi-year plan for risk management priorities, resource allocation, and regulatory readiness.

2. Organization & Governance: Building a Strong Risk Framework

A mature governance structure that ensures accountability and clarity across risk functions may be achieved by applying the principles of the Three Lines of Defense (3LoD) model, a standard in the regulated financial services industry:

- **First Line:** Business units execute risk controls as part of their operations.
- **Second Line:** Compliance and risk management teams develop policies, monitor risk exposure, and intervene when necessary.
- **Third Line:** Independent audit and assurance functions validate the effectiveness of controls and governance structures.
- **Risk Management and Compliance Committees:** These committees ensure regulatory adherence and enterprise-wide risk oversight at the executive level.

3. Risk Management Processes: Screening, Standards, and Controls

Risk management must be a structured, ongoing process that evolves alongside regulatory and market developments. Firms need to address each relevant risk type through:

- **Screening external regulations and standards:** Identifying relevant regulatory changes and aligning internal policies accordingly.
- **Internal standards and training:** Aligning compliance processes with best practices and ensuring that staff are trained to handle risks.
- **Control processes and quality assurance:** Implementing risk controls, monitoring adherence, and continuously improving compliance measures.
- **Risk reporting and assessment:** Establishing real-time reporting mechanisms and conducting periodic risk assessments to refine the firm's risk posture.

4. Technology: Leveraging AI and Automation for Scalable Compliance

Technology must be at the core of risk and compliance functions, ensuring efficiency, scalability, and accuracy. Firms should:

- **Use AI-driven transaction monitoring** to identify and prevent financial crime.
- **Automate compliance workflows** to improve reporting accuracy and minimize human error.
- **Implement smart contracts** to enforce compliance directly within digital transactions.
- **Strengthen cybersecurity protocols** to mitigate operational risks and ensure data protection.

5. Culture: Establishing a Risk-Aware and Compliance-Driven Mindset

A compliance-first culture is essential for ensuring long-term resilience. This culture requires:

- Executive leadership driving compliance awareness across the organization.
- Firm-wide compliance training programs tailored to operational roles.
- Encouragement for internal reporting and whistleblowing mechanisms.
- Alignment of performance incentives with risk management objectives.
- A compliance-first mindset embedded into daily operations.

For digital asset firms, adopting this structured TOM for risk management and compliance is not optional. It is a requirement for survival and scale. Firms that institutionalize risk and compliance will:

- Secure regulatory approvals and institutional partnerships.
- Mitigate financial and operational risks while avoiding enforcement actions.
- Ensure long-term resilience and credibility in an evolving market.
- Adapt effectively to global regulatory changes with minimal disruption.

The digital asset industry is maturing, and firms that integrate risk and compliance as strategic enablers rather than as burdens will define the future of finance.

Crypto's Reckoning: Failures, Enforcement, and the Fight for Legitimacy

A significant part of the ongoing challenge for digital asset companies is the reputational impact and value attrition from high-profile failures and lawsuits (see exhibit). The FTX[1] collapse in November 2022 set the stage for a series of regulatory enforcements over the next two years across the digital assets sector. When Binance announced it would liquidate its entire stake in FTX, worth $584 million, it triggered a liquidity crisis at FTX, which had used customer funds to cover losses. The episode revealed the risky and fraudulent practices at the company and demonstrated a need for stronger internal controls across the sector. It also increased scrutiny of the relationships between firms and regulators, given FTX's close ties with the Commodity Futures Trading Commission and its employment of former CFTC officials.

In 2023, the fines paid by crypto players totaled $5.8 billion,[1] exceeding those paid by traditional finance firms ($835 million). The largest share was the $4.3 billion penalty on Binance by the US Department of Justice for violating sanctions and money laundering rules.

The Singapore-based cryptocurrency exchange KuCoin[2] paid over $22 million (including $16.7 million in customer refunds and $5.3 million in state fines) for failing to register as a securities and commodities broker-dealer and for falsely representing itself as a crypto exchange. KuCoin was also banned from trading securities and commodities in New York and prohibited from making its platform available to New Yorkers. In 2025, KuCoin agreed to pay nearly $300 million[3] to settle allegations that it operated as an unlicensed money-transmitting business in the US. The company added that it is looking to re-enter the US market with proper licensing in the future and has made compliance remediations over the past year.

In 2025, a group of hackers swiped $1.5 billion in funds from ByBit,[4] the crypto exchange. This is reportedly the largest crypto theft in crypto history, with over $300 million of the funds being deemed unrecoverable, further underscoring the perils of cyberattacks, even on digital assets players.

These enforcement actions had immediate financial consequences. Binance's revenue plunged 75%, forcing it to cut two-thirds of its workforce. Hex's market cap halved from $1.47 billion to $706 million, while Coinbase shares dropped 16% in pre-market trading after its lawsuit. Beyond financial losses, these cases further eroded public confidence in the sector, reinforcing concerns about governance, transparency, and investor protection.

Yet, for some companies, these crises have become turning points. Binance has strengthened its KYC protocols, transaction monitoring, and anti-money laundering controls. Others are following suit, recognizing that survival depends on aligning innovation with regulation. The coming years will reveal whether these efforts rebuild trust or if the sector remains mired in volatility and scrutiny.

Exhibit - Key enforcement actions on digital assets players

BINANCE

SEC lawsuit resulting in $4.3B fine, a 75% revenue drop, layoff of 2/3rd of its workforce

BYBIT

$1.5B worth of digital currencies were swiped by a hacker group - reportedly the biggest crypto theft in history

FTX

Collapse driven by risky financial practices & the loss of $8.9B in customer assets

coinbase

SEC lawsuit resulted in a 16% market cap erosion in pre-market trading following the lawsuit

HEX.COM

SEC lawsuit resulting in market cap plummeting from $1.47 billion to approximately $706 million

KUCOIN

Over $300M paid to settle allegations of operating as unlicensed money transmitter in the US

1. Source: https://www.ft.com/content/f2a8c1e4-30f2-49c7-939b-73e0d1a22033.
2. Source: https://ag.ny.gov/press-release/2023/attorney-general-james-secures-more-22-million-cryptocurrency-platform-operating.
3. Source: https://www.wsj.com/articles/kucoin-to-pay-nearly-300-million-for-operating-an-unlicensed-money-transmitter-in-the-u-s-dada6505.
4. Source: https://www.bbc.com/news/articles/c2kgndwwd7lo.

Global Regulatory Approaches: Four Models for Digital Assets

The regulatory climate for digital assets and cryptocurrency continues to evolve, with new laws emerging under different jurisdictions. We observe four fundamental approaches to regulating digital assets (see exhibit).

Proactive (leading innovation while maintaining financial stability):

Countries in this category position themselves as crypto hubs, using regulation to attract businesses while maintaining financial stability. **Switzerland** has established itself as a pioneer in digital finance regulation. Its Distributed Ledger Technology Act, implemented in 2021, integrated blockchain-based services into the established Swiss financial system. The Monetary Authority of **Singapore** regulates crypto under the nation's Payment Services Act (PSA), focusing on AML and CFT compliance, the licensing of digital payment token services, and consumer protection.

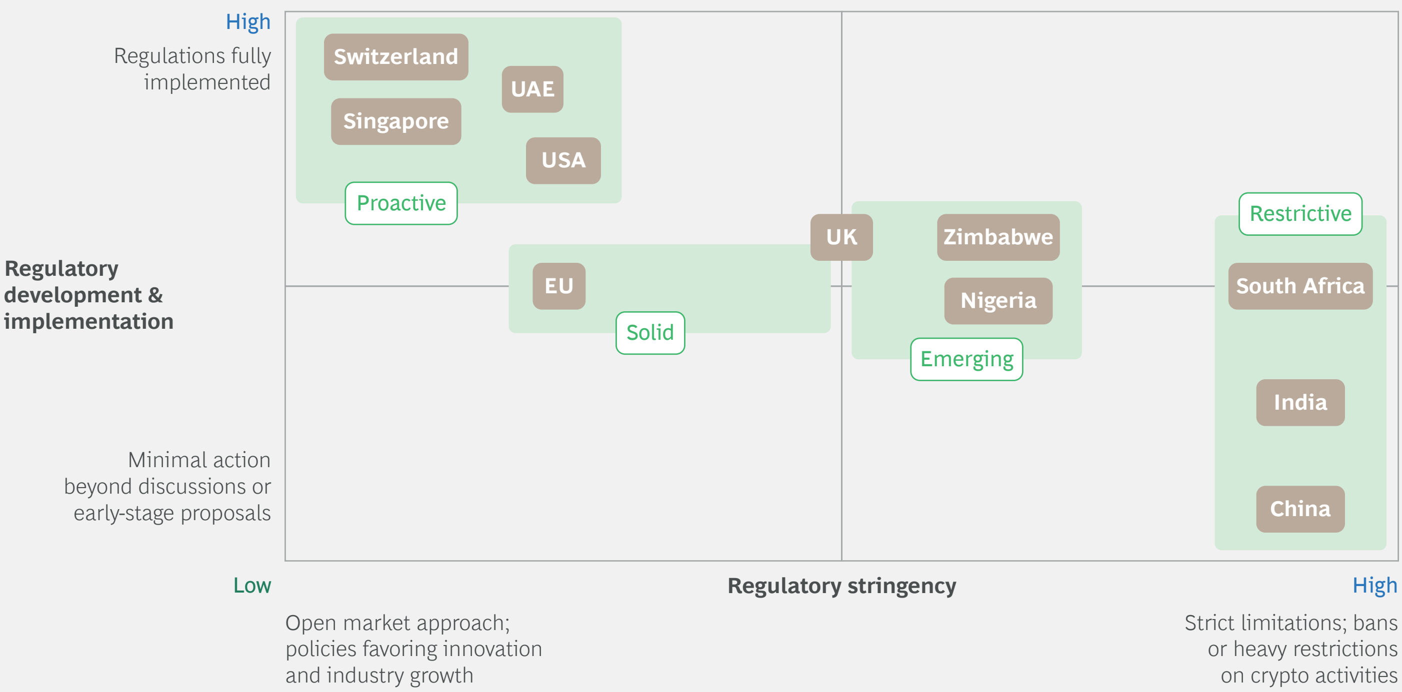
The **UAE** supports digital assets through specialized free zones that offer tax incentives and streamlined regulatory frameworks. Dubai's VARA and Abu Dhabi's ADGM set clear compliance standards, attracting global crypto businesses while fostering a regulated growth environment.

The **United States** has shifted into the proactive category, post the change in administration in 2025. It continues to move from taking a fragmented regulatory approach to actively fostering crypto innovation. Historically, oversight was divided among the SEC (securities), CFTC (commodities), and IRS (taxation), with state-level policies varying widely - Wyoming encourages crypto development, while New York enforces strict licensing requirements.

In January 2025, the "Strengthening American Leadership in Digital Financial Technology" executive order was signed to position the US as a global crypto leader, curbing aggressive enforcement actions and regulatory uncertainty. This shift was further reinforced in March 2025, when the government announced the creation of a US strategic reserve of cryptocurrencies, signaling direct state involvement in the digital asset economy.

Proactive regulation can accelerate industry adoption, but without vigorous enforcement and global coordination, it risks creating fragmented markets where compliance standards vary.

Exhibit - Four regulatory approaches for digital assets



Solid (strong regulatory foundation for digital assets):

These countries balance consumer protection with innovation, with the **European Union** leading through the Markets in Crypto-Assets (MiCA) regulation, the first single-market framework for crypto-assets. Adopted in 2023, MiCA introduced rules that took effect in June 2024 for stablecoins and in December for crypto-asset service providers. All relevant EU regulations are now in force, including the Digital Operational Resilience Act (DORA) for IT security, the DLT Pilot Regime for blockchain-based securities, Basel III Crypto Rules for bank capital requirements, and the Directive on Administrative Cooperation (DAC8) for crypto tax reporting.

By setting clear rules for market participants while integrating digital assets into mainstream finance, the EU offers regulatory certainty that many jurisdictions still lack, making it a model for structured crypto oversight.

Emerging (early-stage, fragmented regulatory approach):

Many jurisdictions still lack a unified regulatory framework, though some are advancing toward more explicit oversight.

Nigeria and Zimbabwe have launched CBDCs (eNaira and ZiG), but broader crypto regulations remain underdeveloped. Nigeria has introduced crypto taxation, while Zimbabwe is drafting its first regulatory framework after previously banning crypto-related banking.

In 2024, the **UK** announced plans to establish a comprehensive regulatory framework for the crypto industry, encompassing stablecoins and staking services. As these regulations are currently under development, the UK is transitioning from an emerging regulatory stance toward a more solid approach.

Restrictive (strict limitations or outright bans on digital assets):

Several countries have implemented strict regulations or outright bans on private cryptocurrencies, often citing financial stability and consumer protection concerns.

China has launched the digital yuan (e-CNY) while maintaining a comprehensive ban on private cryptocurrencies, prohibiting all crypto transactions and mining. This approach allows the government to control financial transactions and mitigate risks associated with decentralized digital assets.

India has historically taken a cautious stance, with regulatory ambiguity surrounding private cryptocurrencies. The government has introduced a framework for crypto taxation and is developing a digital rupee. As of February 2025, discussions are underway to establish a more defined legal framework.

South Africa does not ban cryptocurrencies but regulates them under traditional financial laws. Crypto exchanges and digital asset service providers must register as Financial Service Providers and comply with anti-money laundering (AML) and know-your-customer (KYC) requirements.

These varying approaches reflect the tension between maintaining financial control and allowing innovation in digital assets.

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