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CLARIFYING CRYPTO: A UNIFIED MARKET STRUCTURE TAXONOMY

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CLARIFYING CRYPTO: A UNIFIED MARKET STRUCTURE TAXONOMY

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There is a paradox at the heart of today's economy: crypto is a multi-trillion-dollar sector and federal policy priority—yet there is remarkably little consensus regarding what “crypto” actually means. Even so, Congress is racing to enact sweeping, industry-backed legislation that would entrench crypto's preferential treatment while reshaping the rules governing everyday finance. The underappreciated danger is that, in codifying crypto policy errors, these measures may also displace essential regulatory safeguards precisely when markets and consumers need them most.

This Article provides a reasoned alternative: rather than treating crypto as exceptional, apply the ordinary logic of financial regulation. As a starting point, it presents the long-missing roadmap: a comprehensive taxonomy of the full 10,000-plus crypto-instrument universe, grounded in legal and economic substance, not technical labels. The framework and accompanying empirical analyses show that most crypto instruments resemble familiar constructs—such as debt, equity, or loyalty rewards—and should be regulated accordingly. Assets lacking discernible analogs, in contrast, often reflect obfuscation rather than innovation.

Building on these insights, the Article outlines an actionable policy blueprint to: (i) rationalize regulatory architecture, including SEC–CFTC jurisdictional allocation; (ii) manage legacy assets; and (iii) ensure consumer protection. Modernizing market structure should not mean upending time-tested foundations of financial stability. Congress must act now to avoid hard-coding mistakes that distort oversight for years to come.

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INTRODUCTION

“Crypto regulations will be written by people who love the industry.”

– President Donald J. Trump²

Imagine two friends, alike in every relevant respect. Watching a football game, they see back-to-back ads: Peyton Manning explaining how Nationwide is “more than insurance,” followed by Tom Brady pitching FTX.³ Each taps a link to purchase. One automatically benefits from a highly developed, time-tested consumer protection regime—with licensing, disclosure, and meaningful remedies. The other steps into an uncertain oversight patchwork, where recourse may be limited and losses can be total.

Why? What justifies such starkly different treatment?

That is the unresolved—and increasingly urgent—challenge at the heart of crypto policy. For years, regulation has been paralyzed by a gating question: is crypto truly *sui generis*, or can it fit within existing frameworks? That indecision has proven costly, with millions of defrauded consumers, trillions in value destruction—and precious little innovation to show for it. As crypto politics have shifted from fringe to center stage, however, the principal danger is no longer inaction, but Congress rushing to adopt industry-backed proposals. Fast-tracking market-structure legislation without an organizing framework risks hard-coding category errors that destabilize market safeguards and endanger the broader economy.

This Article argues that the path forward is far clearer than most assume: apply the ordinary logic of financial regulation and treat “like alike,” regardless of form or technological wrapper. As Judge Frank Easterbrook famously explained, we did not need a new law for “property in cyberspace” any more than a “law of the horse.”⁴ Our common law frameworks have consistently proven capable of addressing nuanced issues—agnostic as between bits, atoms, or stallions. Indeed, Easterbrook cautioned that adopting “new law” for seemingly novel matters can isolate technology from essential context and institutional guideposts.⁵ Treating crypto as exceptional risks committing that very error.

² President Donald J. Trump, *Keynote Speech at the Bitcoin 2024 Conference* (July 27, 2024), BITCOIN MAGAZINE; Kenichi Serino, *What Another Trump Administration Could Mean for Crypto*, PBS NEWS (Dec. 13, 2024 at 12:07 PM ET), <https://www.pbs.org/newshour/politics/what-does-a-trump-administration-mean-for-crypto>.

³ NATIONWIDE MUTUAL INSURANCE COMPANY, *Nationwide is So Much More (Paintin’ Manning)*, (YouTube, Sep. 5, 2024), https://www.youtube.com/watch?v=_fyuCB0sxMQ; FTX, *You In? Tom Brady, Gisele Bundchen*, (YouTube, Sep. 9, 2021), <https://www.youtube.com/watch?v=-2nqN3uGi98>.

⁴ Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 208 (1996) (“Only by putting the law of the horse in [] context . . . could one really understand the law about horses.”).

⁵ *Id.*; see also J.B. Ruhl & James Salzman, *Climate Change Meets the Law of the Horse*, 62 DUKE L.J. 975, 975–1027 (2013).

For instance, differences between internal combustion and electric vehicles may warrant certain tailored regulations. Yet we do not scrap existing regimes and start from scratch. EVs still have wheels and airbags; their drivers remain subject to speed limits and DUI laws.

Why pretend that crypto is exempt from the basic logic of market regulation?

The disconnect has familiar antecedents: from railroads to dotcoms and derivatives, oversight often lags technology. Crypto’s scale and political momentum, however, amplify the stakes – particularly as Congress considers sweeping market-structure legislation, including proposals such as the CLARITY Act that could “shape the future of everyday financial services” for years to come.⁶

Policy premised on crypto carve-outs—and regulatory classification based on technological labels—risks leaving the sector underregulated while unsettling long-standing financial market oversight.⁷ Illustrating the danger, so-called “tokenization” represents existing assets like stocks and bonds on blockchain networks, effectively rebranding them as “crypto.” If crypto-favorable legal treatment turns on labels alone, tokenization could become a \$30 trillion conduit for regulatory arbitrage.⁸

Policymakers have long recognized that meaningful crypto oversight begins with a comprehensive sector map.⁹ Yet given the fast-paced, cross-disciplinary nature of the problem, prior efforts have fallen short.¹⁰ This Article fills that gap and makes three critical contributions that advance both scholarship and policy:

- **First**, it constructs a substance-over-form unifying taxonomy for the full 10,000-instrument crypto universe—providing a common language for courts, regulators, and market participants.
- **Second**, it demonstrates the framework’s explanatory power through empirical analyses of category-level market dynamics, including pinpointing asset distributions and risk concentrations.

⁶ Rana Foroohar, *The Coming Crypto Crisis*, FIN. TIMES, (July 27, 2025), <https://www.ft.com/content/efc848c0-0990-4623-98ed-1176e97f04cb> (arguing that crypto will “cause the next financial crisis . . . It’s all too reminiscent of 2000”); Amrith Ramkumar, et al., *The Crypto CEO Who’s Become Enemy No. 1 on Wall Street*, WALL ST. J. (Jan. 29, 2026), <https://www.wsj.com/finance/currencies/coinbase-ceo-brian-armstrong-wall-street-a7895786> (noting that “the Clarity Act, might shape the future of everyday financial services, including bank deposits and electronic payments.”).

⁷ See *infra* Appendix II. This Article does not yet reflect the March 2026 SEC-CFTC ‘*Application of the Federal Securities Laws to Certain Types of Crypto Assets and Certain Transactions Involving Crypto Assets*.’ See <https://www.sec.gov/rules-regulations/2026/03/s7-2026-09#33-11412final>

⁸ Steven Hu, *Real World Asset Tokenization: A Game Changer for Global Trade*, STANDARD CHARTERED (2024) (estimating \$30 trillion tokenization market by 2034).

⁹ According to the IMF “no internationally agreed taxonomy exists for crypto assets” even though “[a] globally consistent taxonomy would help create common regulatory standards and approaches.” See Parma Bains et al., *Regulating the Crypto Ecosystem, The Case of Unbacked Crypto Assets*, INT’L MONETARY FUND (Sep. 2022) at 11.

¹⁰ See *infra* Appendix I.

- **Third**, it translates those insights into a practical reform blueprint to recalibrate regulatory architecture, manage legacy assets, and ensure consumer protection for new products.

The Article begins with brief background, clarifying technological terms and financial concepts that are often misapplied in crypto discourse.¹¹ It then traces the sector’s rapid evolution from a fringe experiment to a multi-trillion-dollar market.¹² That growth funded sophisticated advocacy that capitalized on balkanized oversight to create a regulatory gray area where crypto scaled rapidly, often normalizing practices plainly impermissible in traditional markets.¹³ In retrospect, the lobbying proved too effective, as industry-manufactured definitional uncertainty continues to confound regulators, courts, and market participants alike.

The Article’s foundational contribution is a comprehensive, unifying taxonomy that segments crypto assets and maps them onto existing economic and legal classifications.¹⁴ Methodologically, it is organized as a three-tier hierarchy of increasing specificity. First, it divides the crypto universe into three core (Tier 1) groups: (i) Infrastructure & Stored Value, mature assets comprising over 80% of sector value; (ii) Security & Utility Crypto, the most legally fraught assets; and (iii) Liability-Based Instruments. Tier 2 subdivides the Tier 1 groups into 10 categories, such as Infrastructure Coins, Stablecoins and Meme Coins. Tier 3 further refines those categories into 17 unique sub-categories – yielding the first mutually exclusive and collectively exhaustive (MECE) taxonomy for the full crypto asset universe.

Subsequent analyses apply the framework to sharpen sub-category boundaries and map instruments to existing regulatory paradigms.¹⁵ The analysis shows that most crypto assets have recognizable traditional finance analogs that present the logical baseline for regulatory treatment. Crypto without substantive parallels often simply lacks substance. This also illuminates the sector’s core pathology: persistent divergence between economic reality, market understanding, and legal treatment. Regulatory first principles logically emphasize consistency across these dimensions. The incongruence explains and amplifies crypto’s challenges – and must be reconciled for the sector to move forward.

After diagnosing these issues, the Article turns to practical solutions guided by a straightforward principle: treat “like alike.”¹⁶ In other words, regulatory treatment should follow economic reality and enforceable rights – not form or technical wrapper. The policy blueprint thus focuses on: (i) harmonizing

¹¹ See *infra* Part I.

¹² See *infra* Part I.C.

¹³ See *infra* Part I.D.

¹⁴ See *infra* Part II.

¹⁵ See *infra* Part III.

¹⁶ See *infra* Part IV.

the regulatory architecture, including SEC–CFTC jurisdictional allocation;¹⁷ (ii) a transition and enforcement posture for legacy assets that deters arbitrage while acknowledging path dependence; and (iii) consumer protection-focused oversight for new products, including instruments that may fall outside traditional regulatory categories.¹⁸

This Article is organized in four parts. Part I sets the stage with background regarding crypto’s technology, financial concepts and regulatory challenges. Part II details the Article’s foundational crypto asset taxonomy and presents associated market analyses. Part III delves into asset-level considerations, detailing economics, market perception and regulatory treatment, while emphasizing salient discrepancies. Part IV presents proposals to rationalize oversight and enhance consumer protection.

I. CRYPTO IN CONTEXT

Crypto is complicated. The hodgepodge of acronyms, memes, and get-rich schemes is confusing—and often intentionally so. Moreover, as critics have long warned—and the FTX collapse confirmed—the ecosystem remains rife with misrepresentation and outright fraud. Yet crypto is also a multi-trillion-dollar sector poised for further growth, including through tokenization and the maturation of adjacent technologies such as blockchain, smart contracts, and generative AI.¹⁹

Part I sets the stage for the broader discussion with a brief, four-part background. First, it outlines technical and terminological concepts relevant for subsequent analyses. Second, it discusses foundational finance concepts, focusing on core asset class definitions. Third, it briefly charts the sector’s evolution and associated growing pains. Finally, it analyzes crypto’s uneasy fit within America’s notoriously complex regulatory system.

A. Tech Terms: Blockchain ≠ Crypto

In the depths of the 2008 financial crisis, a now-seminal, anonymously authored paper presented a system where “online payments [could] be sent from one party to another without going through a financial institution.”²⁰ Building on earlier research,²¹ this system – later dubbed “Blockchain 1.0” – introduced key

¹⁷ See *infra* Part IV.A.

¹⁸ See *infra* Part IV.B.

¹⁹ Steven Hu, *Real World Asset Tokenization: A Game Changer for Global Trade*, STANDARD CHARTERED (2024) (estimating \$30 trillion tokenization market by 2034); *Approaching the Tokenization Tipping Point*, BCG (Apr. 2025) (estimating \$18 trillion of tokenized assets by 2033); *Money, Tokens, and Games: Blockchain’s Next Billion Users and Trillions in Value*, CITI GPS (Mar. 2023) (estimating \$5 trillion of tokenized assets by 2030).

²⁰ Satoshi Nakamoto, *BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM* (2008). Satoshi Nakamoto is understood to be pseudonym for a developer or group of developers, the identity of which remains unknown.

²¹ See DAVID CHAUM, *COMPUTER SYSTEMS ESTABLISHED, MAINTAINED, AND TRUSTED BY MUTUALLY SUSPICIOUS GROUPS* (1982); NICK SZABO, *BITGOLD* (1998).

innovations to overcome challenges that plagued earlier iterations of digital ‘money,’²² including the so-termed “double spend” problem.²³ Bitcoin, the first modern crypto asset, launched in 2009 as the associated unit of account.²⁴

Taking a step back, blockchain is a specific type of distributed ledger technology (DLT). DLT represents the “foundational innovation underlying the crypto-asset ecosystem”²⁵ because it can facilitate “nearly immutable” transactions between parties who do not trust each other—without a third-party between them. Removing that intermediation layer drives much of the excitement around value creation through DLT and crypto.²⁶ Among DLT subtypes, blockchain is distinguished by its data structure, which records transaction information as sequential cryptographically-linked data blocks, creating an immutable but independently verifiable record.²⁷

Operationally, blockchain’s complex technology achieves the conceptually straightforward utility of “providing a distributed yet provably accurate record.”²⁸ In simple terms, it is akin to an advanced database

²² Early 1980s vintage “cryptocurrencies” like Digicash and Ecash failed because of the “double spend” problem (multiple uses of the same digital key), which Bitcoin solved. Matt Levine, *The Crypto Story*, BLOOMBERG (Oct. 25, 2022), <https://www.bloomberg.com/features/2022-the-crypto-story/?sref=OOpRUZ8l#life-in-databases> (“Bitcoin demonstrated a way for me to send you a computer message so that you’d have it and I wouldn’t, to move items of computer information between us in a way that limited their *supply* and transferred *possession*.”).

²³ The challenge stems from a game theoretical issue termed the “Byzantine General Problem.” See Leslie Lamport, et al., *The Byzantine General Problem*, 4 ACM TRANSACTIONS ON PROGRAM. LANGS. & SYS. 382–401 (1982), <https://lamport.azurewebsites.net/pubs/byz.pdf>.

²⁴ “Bitcoin” is capitalized in reference to the system as a whole, and lowercase when referencing a unit of currency. As Professor Werbach observes, “many of the concepts in Nakamoto’s paper were familiar to cryptographers, but the system was implemented in a novel and elegant way to create a private, decentralized form of digital cash, called bitcoin.” Kevin Werbach, *Trust, But Verify: Why the Blockchain Needs the Law*, 33 BERK. TECH. L.J. 489, 493, 500 (2018) [henceforth, ‘TRUST BUT VERIFY’].

²⁵ FIN. STABILITY OVERSIGHT COUNCIL, REPORT ON DIGITAL ASSET FINANCIAL STABILITY RISKS AND REGULATION 7 (2022), <https://home.treasury.gov/system/files/261/FSOC-Digital-Assets-Report-2022.pdf>.

²⁶ Appreciating the potential requires taking a step back. If a company represents a nexus of contracts, the global economy reflects networks of companies, linked by billions of transactional counterparty obligations. The complexities and contingencies underlying transactions drive the need for intermediation, adding costs and frictions—which DLT can theoretically mitigate.

²⁷ The technical architecture consists of: (i) blocks; (ii) cryptographic hashes; (iii) consensus mechanisms; and (iv) network nodes. See, U.S. GOV’T ACCOUNTABILITY OFF., GAO-19-704SP, *Science & Tech Spotlight: Blockchain & Distributed Ledger Technologies* (Sep. 16, 2019), <https://www.gao.gov/assets/gao-19-704sp.pdf>.

²⁸ TRUST BUT VERIFY, *supra* note 25, at 491.

technology²⁹ with sophisticated cryptography³⁰ providing distributed, streamlined, and secure recordkeeping.³¹

The structural relationship between crypto and blockchain is that permissionless (public) ledgers—open systems available to anyone—“incentivize activity”³² through internal “currency” often termed “utility tokens,” as described below.³³ Permissioned ledgers (closed systems) do not require such incentives and thus do not use internal currency.³⁴

A logical corollary is that blockchain is not analogous to crypto. To the contrary, the former is a broad enabling technology, while the latter is a facet relating to a subset of applications of that technology.³⁵ Indeed, some have posited that “[t]he worst use that ever came out for blockchain was currency. . . its halted a lot of innovation.”³⁶

Terminologically, it is important at the outset to clearly delineate some commonly used but often conflated concepts. For consistency and interoperability, where feasible, this Article incorporates recognized standards developed by multilateral organizations, including the IMF, FSB and IOSCO:

- “Digital Asset” is a broad umbrella term that refers to “[a] digital representation of value or contractual rights which can be used for payment or investment purposes.”³⁷

²⁹ That observation is intended to contextualize rather than trivialize blockchain’s significance—after all, “[m]odern life consists in large part of entries in databases.” Matt Levine, *The Crypto Story*, BLOOMBERG (Oct. 25, 2022), <https://www.bloomberg.com/features/2022-the-crypto-story/?sref=OOpRUZ8l#life-in-databases> (“Saying that modern life is lived in databases means, most of all, that modern life involves a lot of trust.”).

³⁰ IBM, *What Is Cryptography?*, <https://www.ibm.com/think/topics/cryptography> (last visited July 4, 2025) (“Cryptography is the practice of developing and using coded algorithms to protect and obscure transmitted information . . . so that unauthorized parties are unable to access them.”).

³¹ Blockchain offers two benefits relative to existing tools: (1) allows confidence in transactions without trusting individual counterparties; (2) reduced transaction costs through single distributed ledger (replacing multiple private ledgers). TRUST BUT VERIFY, *supra* note 25, at 491 (“The software enabling this uses digital cryptography and game-theoretic incentives to make it difficult to cheat the system.”).

³² One way of looking at it is that while blockchain can reduce the power of intermediaries, it cannot create altruists; market participants still need incentives to make the systems operable, which crypto provides. *See id.* at 498.

³³ As detailed below, “currency” is something of a misnomer, as most crypto assets are more analogous to other constructs. *See infra* Part III.

³⁴ Marcos Allende López, *LACChain Framework for Permissioned Public Blockchain Networks: From Blockchain Technology to Blockchain Networks*, at 12 (Oct. 2021) (“In permissioned networks there is no need to simulate validator nodes by rewarding them with a cryptocurrency.”).

³⁵ David Solomon, *Blockchain Is Much More Than Crypto*, WALL ST. J. (Dec. 6, 2022), <https://www.wsj.com/articles/blockchain-is-much-more-than-crypto-david-solomon-goldman-sachs-smart-contracts-11670345993>.

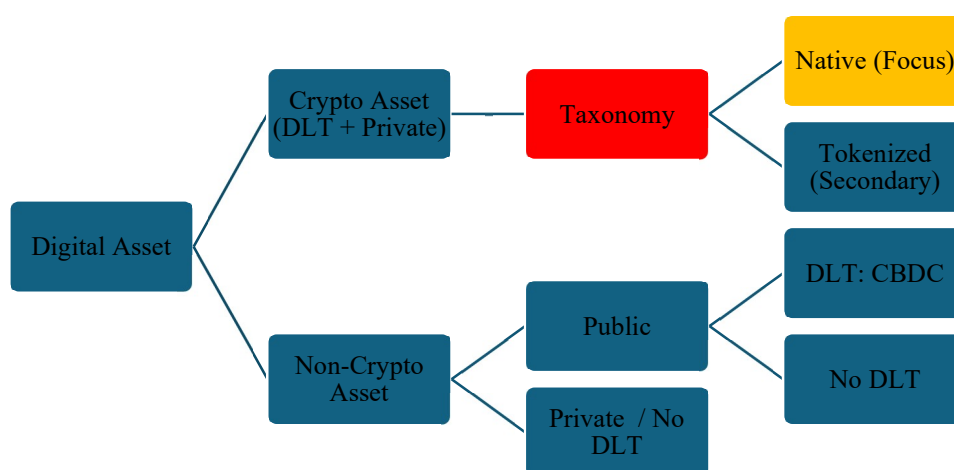
³⁶ *See* Casper Labs, *Blockchain Hub Davos | Day 0 (Bonus Day!)*, YOUTUBE (Jan. 16, 2023), <https://www.youtube.com/watch?v=zyTeQKnU1tA> (Panel Interview with David Branch, Consensus Capital).

³⁷ INT’L MONETARY FUND & FIN. STABILITY BD., *IMF-FSB Synthesis Paper: Policies for Crypto-Assets*, at 43 (Sept. 7, 2023).

- “Crypto Asset” is a subset of digital assets, issued by the private sector “that depends primarily on cryptography and distributed ledger or similar technology.”³⁸

In essence, all crypto assets are digital assets, but not all digital assets are crypto assets. The key distinction is that crypto assets specifically use cryptographic technology (usually blockchain) as their foundation, whereas digital assets include any digitally stored or captured item of value, regardless of the underlying technology. The diagram below summarizes the hierarchy, with the portions in red and orange highlighted as the focus of this Article:³⁹

Figure 1. Digital Assets v. Crypto Assets



The evolution of blockchain technology has introduced two new and increasingly important concepts:

- “Smart contracts,” which refer to “[c]ode deployed in a distributed ledger technology environment that is self-executing and can be used to carry out certain “if/then” computations.”⁴⁰
- “Tokenization,” which refers to “the process of generating and recording a digital representation of traditional assets on a programmable platform.”⁴¹

In other words, there are two ways an asset can be recorded on a cryptographic technology: (i) it can start “digitally native” (on-chain) or (ii) it can be “tokenized,” starting as a real world asset (RWA) (off-chain)

³⁸ See *id.* at 42 (defining “crypto-asset ecosystem” as “[t]he entire ecosystem that encompasses all crypto-asset activities, market and participants”).

³⁹ As discussed in Part II, this framework also illustrates why certain assets (such as CBDCs and NFTs) are expressly excluded from this Article’s taxonomical framework and analyses.

⁴⁰ INT’L ORG. OF SEC. COMM’NS, POLICY RECOMMENDATIONS FOR CRYPTO AND DIGITAL ASSET MARKETS FINAL REPORT (2023).

⁴¹ BANK FOR INT’L SETTLEMENTS & COMM. ON PAYMENTS & MKT. INFRAS., CPMI Papers No. 225, TOKENISATION IN THE CONTEXT OF MONEY AND OTHER ASSETS: CONCEPTS AND IMPLICATIONS FOR CENTRAL BANKS (Oct. 2024).

and subsequently transitioned on-chain.⁴² A critical implication is that tokenization, rather than digitally native issuance, is likely to drive crypto asset growth, with forecasts of an \$18-30 trillion tokenization market by the mid-2030s.⁴³ As discussed in Part IV, while this has the potential to significantly improve legacy operations, it introduces immense legal risks and potential for regulatory arbitrage in connection with prospective crypto-specific legal frameworks and legislation.

B. Finance Foundations: Crypto ≠ Currency

This sub-section focuses on foundational finance concepts important to untangling crypto's substantive and terminological incongruencies. In simplest terms for our present purposes, four core asset types can be understood to represent the fundamental building blocks underlying global financial markets and products:⁴⁴

- **Equity.** An ownership interest in an asset, including (but not limited to): a company, real estate or a diversified fund.⁴⁵
- **Debt.** Contractual and liability-based instruments, ranging from bonds and loans to contingent claims, referencing entities including (but not limited to) corporates, sovereigns and real assets.⁴⁶
- **Commodity.**⁴⁷ A fungible good or standardized intangible interest – including raw materials (such as grain, metals, energy product or mineral) or agricultural products – often traded, or capable of being traded, in organized spot or derivative markets.⁴⁸

⁴² In computer science, “Tokenization” is defined as the process of breaking text into smaller units called tokens, which serve as the basic units of processing for natural language processing (NLP) systems – a fundamental technique with applications across computational linguistics, machine learning, and information retrieval. The definition (and substantive processes) are, however, conceptually adjacent and technically related. See Yonghui Wu, et al., *Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation* (Sep. 26, 2016); Taku Kudo & John Richardson, *SentencePiece: A simple and language independent subword tokenizer and detokenizer for Neural Text Processing*, in *Proceedings of the 2018 Conference on Empirical Methods in Natural Language Processing: System Demonstrations*, at 66–71 (2018).

⁴³ Steven Hu, *Real World Asset Tokenization: A Game Changer for Global Trade*, STANDARD CHARTERED (2024) (estimating \$30 trillion tokenization market by 2034); *Approaching the Tokenization Tipping Point*, BCG (Apr. 2025) (estimating \$18 trillion of tokenized assets by 2033); *Money, Tokens, and Games: Blockchain's Next Billion Users and Trillions in Value*, CITI GPS (Mar. 2023) (estimating \$5 trillion of tokenized assets by 2030).

⁴⁴ There are many variations on the asset class taxonomy, with modern finance practitioners (or at least marketers) seemingly recognizing an ever-expanding menu, from private equity to hedge funds and private credit. However, from first principles, these branding innovations are firmly rooted in the above foundations – as are crypto assets.

⁴⁵ Global total of \$123.6 trillion (\$60Tr US). See Christina Kostandi, *The \$124 Trillion Global Stock Market, Sorted by Region*, VISUAL CAPITALIST (Feb. 26, 2025), <https://www.visualcapitalist.com/124-trillion-global-stock-market-by-region/>.

⁴⁶ SEE INT'L MONETARY FUND, CHAPTER 4: CLASSIFICATION OF FINANCIAL ASSETS AND LIABILITIES, IN *MANUAL ON FINANCIAL SOUNDNESS INDICATORS*, at 4.72, 4.66 (2006) (defining debt securities such as bonds and credit-linked notes backed by loans, bonds, mortgages, and other assets types); see also *Investment & Loans Guide*, RSM US LLP, at 3 (Dec. 2023) (listing convertible debt, commercial paper, securitized debt [CMOs, RMICs], corporate and municipal bonds).

⁴⁷ This category is often (and perhaps not unreasonably) termed “alternatives.” However, for purposes of this article “commodity” is used due to the regulatory operation of that term, as well as its innate ties to core crypto concepts.

⁴⁸ See BLACK'S LAW DICTIONARY (11th ed. 2019) (11th ed. 2019) (defining ‘commodity’ as “A fungible article of commerce that can be bought and sold; esp. a raw material (such as grain, metals, or a mineral) or an agricultural

- **Currency.**⁴⁹ Physical or dematerialized medium of exchange that circulates in commerce, including coins, banknotes, scriptural money, and e-money.⁵⁰ Statutory and academic definitions consistently include a requirement of authorization as legal tender by a sovereign or monetary union.⁵¹

Of the four asset classes, “currency” is in many respects the most complex and misunderstood.

Substantively, it is commonly understood to serve three basic purposes as: (i) a unit of account; (ii) a store of value; and (iii) a medium of exchange. The medium of exchange function inherently drives some category confusion⁵² in that a dollar, for instance, can be retained as a unit of U.S. currency, or exchanged for equity, debt, commodities or a foreign currency.⁵³

Crypto’s critical terminological challenge has been that it not only collectively straddles aspects of each asset class – but does so in a manner inconsistent with regulatory and market practices. The nomenclature mismatch starts with the term “cryptocurrency,”⁵⁴ which poorly describes most crypto assets, let alone the entire sector. Correspondingly, it represents a logical starting point for correcting misconceptions.⁵⁵

There is a strange dissonance underlying digital “money” without institutions, in that it is preposterous yet also strangely pedestrian. Logically, it makes little sense to ascribe value to newly-created digital assets.

product.”); Commodity Exchange Act, 7 U.S.C. § 1(a)(9) (“The term ‘commodity’ means wheat, cotton, rice, corn ... and all other goods and articles ... and all services, rights, and interests in which contracts for future delivery are presently or in the future dealt in.”); Markets in Financial Instruments Regulation (MiFIR), Art. 2(1)(30) (cross-referenced by MiFID II, Art. 4(1)(50)) (“Commodity derivative’ means a derivative contract relating to a commodity or to an underlying ... enumerated in Annex I, e.g., energy, metals, agriculturals [sic], climatic variables, freight, inflation, etc.”); HULL, OPTIONS, FUTURES & OTHER DERIVATIVES 11th ed. (2022), ch 5 (“A commodity is a physical asset—often a raw material or energy product—traded in standardized form on organized spot or derivative markets.”)

⁴⁹ From an accounting perspective, this category may be termed “cash & cash equivalents” and include short-term US Treasuries, money market funds and certain bank deposits. Certain of those categories are expressly excluded here to zero-in on the fundamental first-principles elements of ‘currency.’

⁵⁰ BLACK’S LAW DICTIONARY, 11th ed. (2019) (“*Currency*—coined money and such bank-notes or other paper money as are authorized by law and do in fact circulate from hand to hand as the medium of exchange.”)

⁵¹ See Uniform Commercial Code § 1-201(b)(24) (“*Money* means a medium of exchange currently authorized or adopted by a domestic or foreign government.”); Bank Secrecy Act, 31 C.F.R. § 1010.100(m) (“*Currency* means the coin and paper money of the United States or of any other country that is designated as legal tender and that circulates and is customarily used and accepted as a medium of exchange in the country of issuance.”); Mann & Proctor, *The Legal Aspect of Money* (8th ed. 2020) § 2.02 (describing currency as “that portion of a state’s money supply which has legal-tender status and circulates hand-to-hand in everyday commerce.”).

⁵² While certain types of debt (particularly U.S. Treasuries) can be used as a medium of exchange, and companies may use their own equity to fund transactions, these other variations of overlap are far more limited in scale.

⁵³ The formal position of USD as an obligation of the U.S. also in some respects makes it a debt, but that raises questions beyond our present scope. See Jaromir Benes & Michael Kumhof, *THE CHICAGO PLAN REVISITED* (2022) (describing the narrow banking model advocated by many scholars following the Great Depression).

⁵⁴ TRUST BUT VERIFY, *supra* note 24, at 491 (defining “cryptocurrency” as “a form of digital money secured not through the backing of a state or financial institution, but through cryptography”).

⁵⁵ See Part III.A (discussing Security & Utility Crypto assets).

Yet, humans have a long history of doing just that—from shiny metals⁵⁶ to tulips⁵⁷ to Pokémon cards and beanie babies.⁵⁸ After all, what is the immutable logic of gold having value but not Bitcoin?⁵⁹

Furthermore, while “currency” formally has a government nexus, the long history of “quasi-currency” in various forms – from cowrie shells to gold and loyalty programs – makes the idea less novel than it initially appears. For instance, before the Civil War, individual U.S. banks often issued their own “money,”⁶⁰ resulting in 8,000 or so vintages with geographically limited utility.⁶¹ This state of affairs persisted until the North’s push for a central currency through the 1863 National Currency Act⁶² and taxation levels that drove local bank currencies “out of existence.”⁶³ In the modern era, near-ubiquitous loyalty program points have evolved into a “valuable, aspirational currency” and key profit center for issuers and financial institutions.⁶⁴ In many respects, crypto represents an evolution of that construct with the distinct innovation of technology and decentralization reducing dependence on third parties, be they governments (U.S. Dollars), financial institutions (pre-Civil War U.S. currency) or other entities (rewards programs).⁶⁵

⁵⁶ See generally Eric Rauchway, Opinion, *Why Republicans Still Love the Gold Standard*, N.Y. TIMES (Nov. 13, 2015), <https://www.nytimes.com/2015/11/13/opinion/campaign-stops/why-republicans-still-love-the-gold-standard.html>.

⁵⁷ See Ryan Vlastelica, *Why Bitcoin Is Now the Biggest Bubble in History: In One Chart*, MARKETWATCH (Dec. 14, 2017), <https://www.marketwatch.com/story/why-bitcoin-is-now-the-biggest-bubble-in-history-in-one-chart-2017-12-13> (until Bitcoin in 2017, “the Dutch tulip mania in the 1600s [] previously reigned as history’s biggest” bubble).

⁵⁸ Jamie Powell, *Looking Back at The Beanie Baby Bubble*, FIN. TIMES (Oct. 8, 2019), <https://www.ft.com/content/1563d643-332f-3887-8c6e-caf7435f396a>.

⁵⁹ See *supra*, Part III.A (discussing gold and Bitcoin as constituting the “store of value market”).

⁶⁰ Rose Eveleth, *Before The Civil War, There Were 8,000 Different Kinds of Money in the U.S.*, SMITHSONIAN MAG. (Dec. 12, 2012), <https://www.smithsonianmag.com/smart-news/before-the-civil-war-there-were-8000-different-kinds-of-money-in-the-us-158310489/>; Planet Money, *Episode 421: The Birth Of The Dollar Bill*, NAT. PUB. RADIO (Dec. 7, 2012), <https://www.npr.org/sections/money/2012/12/07/166747693/episode-421-the-birth-of-the-dollar-bill>.

⁶¹ This is because merchants located far from the issuing bank were reluctant about its value, requiring “a discount or wouldn’t take it at all.” See, Livia Gershon, *Banks’ Own Private Currencies In 19th-Century America*, JSTOR DAILY (May 29, 2021), <https://daily.jstor.org/banks-own-private-currencies-in-19th-century-america>.

⁶² *1863–1865: Founding of the National Banking System*, OFF. OF THE COMPTROLLER OF THE CURRENCY, (Aug. 9, 2023) <https://occ.gov/about/who-we-are/history/1863-1865/index-occ-history-1863-1865.html>.

⁶³ Eric Foner, *The Hidden Story Of The North’s Victory In The Civil War*, N.Y. TIMES (Mar. 8, 2022), <https://www.nytimes.com/2022/03/08/books/review/ways-and-means-roger-lowenstein.html> (“[during the Civil War, Treasury Secretary Salmon] Chase and the bankers were ‘fighting over the definition of money’ and who should issue and control it, the government or private institutions.”).

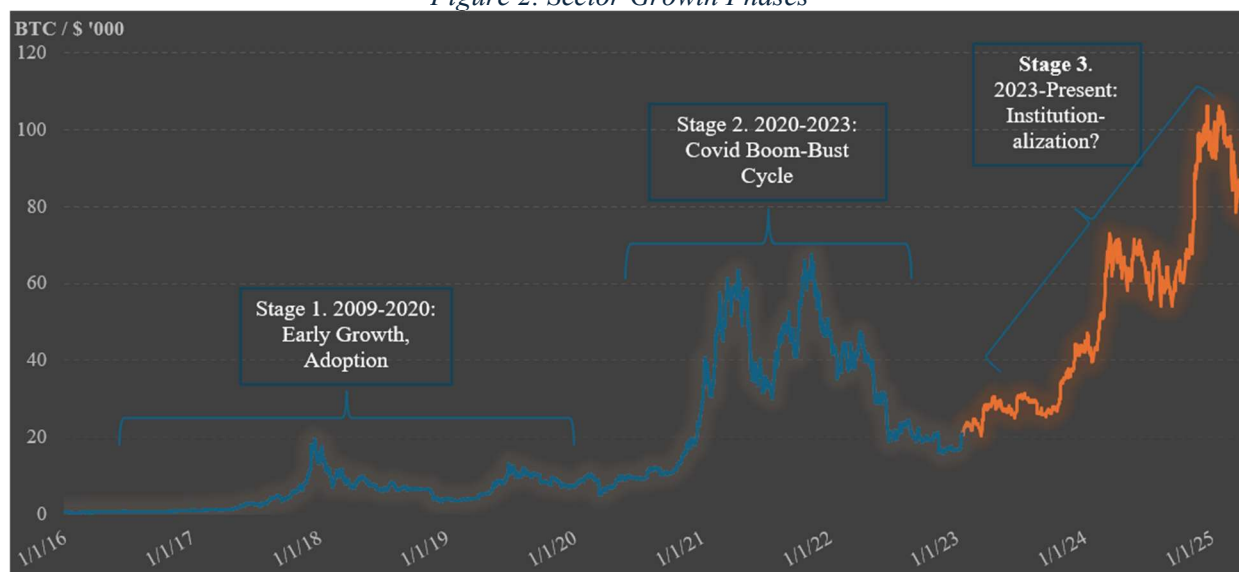
⁶⁴ See *supra* Part III. See also Lev E. Breydo, *The Broken Token Problem. Why Crypto Classification Remains Elusive*, 55 SETON HALL L. REV. 67 (2024). See also, Steve Saxon & Thorsten Spickenreuther, *Miles Ahead: How to Improve Airline Customer-Loyalty Programs*, MCKINSEY & CO. (Sep. 10, 2018), <https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/miles-ahead-how-to-improve-airline-customer-loyalty-programs>.

⁶⁵ It is difficult to appreciate the socio-cultural phenomenon around crypto generally, and Bitcoin specifically, without the 2008 financial crisis – “a moment that cleaved our country. It broke a social contract . . . a sense of trust [including] in financial institutions and [] government.” Andrew Ross Sorkin, *From Trump to Trade, The Financial Crisis Still Resonates 10 Years Later*, N.Y. TIMES (Sep. 10, 2018), <https://www.nytimes.com/2018/09/10/business/dealbook/financial-crisis-trump.html>.

C. Sector Evolution

Crypto has experienced a volatile yet rapid ascent, capturing the zeitgeist of the 2010s inter-crisis decade while benefiting from powerful tailwinds including tech-sector growth, distrust of institutions, and accommodative monetary policy.⁶⁶ For our purposes, crypto's evolution can be described through three stages, shown in Figure 2 below, which charts the price of Bitcoin from 2014 to 2025.⁶⁷ Stage 1 began in 2009 and reflects in large part an ongoing technology story. Stage 2 was a finance story, evidenced by a boom-bust cycle of historic magnitude. Stage 3, starting from mid-2023 may be a regulation-driven story, with the sector now seemingly on a glidepath towards institutionalization.

Figure 2. Sector Growth Phases



Stage 1 encompasses three partially overlapping sub-phases of technological evolution, critical to understanding the current crypto asset landscape:

- **Blockchain 1.0** (2008-2013). Bitcoin marked the introduction of the first practical blockchain implementation, though its limited functionality constrained ecosystem development and mainstream adoption.

⁶⁶ It is difficult to appreciate the socio-cultural phenomenon around crypto generally, and Bitcoin specifically, without the 2008 financial crisis – “a moment that cleaved our country. It broke a social contract . . . a sense of trust [including] in financial institutions and [] government.” Andrew Ross Sorkin, *From Trump to Trade, The Financial Crisis Still Resonates 10 Years Later*, N.Y. TIMES (Sep. 10, 2018), <https://www.nytimes.com/2018/09/10/business/dealbook/financial-crisis-trump.html>. Concerns around trust in government permeated the original Bitcoin white paper and subsequent culture of crypto adopters.

⁶⁷ The chart begins in 2014 (rather than 2009) for illustrative purposes, and to due to limited availability of reliable data before late 2014. In an earlier Article, focusing on the collapse of FTX and sector contagion, I present the 2014-2023 period as a five-phase model which is modified here to reflect a distinct orientation consistent with the focus of this Article. BTC prices are based CoinMarketCap data.

- **Blockchain 2.0** (2013-2017). The next phase expanded blockchain functionality beyond simple transactions with the 2015 introduction of Ethereum, a blockchain platform with built-in programming capabilities and newly introduced “Smart Contracts.” Ethereum⁶⁸ significantly expanded use cases⁶⁹ while providing a technological foundation that facilitated a proliferation of new crypto assets, often through so-termed “Initial Coin Offerings.”⁷⁰
- **Blockchain 3.0** (2015-present). This currently ongoing evolution of blockchain focuses on permissioned ledgers and enterprise applications, including the introduction of Corda, the Hyperledger Project and JPMorgan’s Quorum,⁷¹ as well as interoperability through cross-chain protocols like Polkadot and Cosmos.⁷²

Stage 2 was characterized by an unprecedented Covid-era bull-market, followed by sector collapse with \$2 trillion of value destruction and cascading Crypto Platform bankruptcies.⁷³ The chart below shows the proliferation of new crypto assets between 2010 and 2025. One key takeaway is that while Blockchain 2.0 and 3.0 facilitated new use cases, it was arguably the run-up in crypto prices that drove growth. Between 2020 and 2022, the number of crypto assets skyrocketed fourfold, from 2,403 to 8,714.⁷⁴

⁶⁸ Vitalik Buterin, *Ethereum: A Next-Generation Smart Contract and Decentralized Application Platform*, ETHEREUM (2014), https://ethereum.org/669c9e2e2027310b6b3cdce6e1c52962/Ethereum_Whitepaper_-_Buterin_2014.pdf.

⁶⁹ Many tokens use Ethereum’s ERC-20 technical standard. *See ERC-20 Token Standard*, ETHEREUM (May 30, 2023), <https://ethereum.org/en/developers/docs/standards/tokens/erc-20>.

⁷⁰ *See* Shaanan Cohney, et al., *Coin-Operated Capitalism*, 119 COLUM. L. REV. 591, 661-676 (2019) (detailing 50 largest ICOs of relevant period).

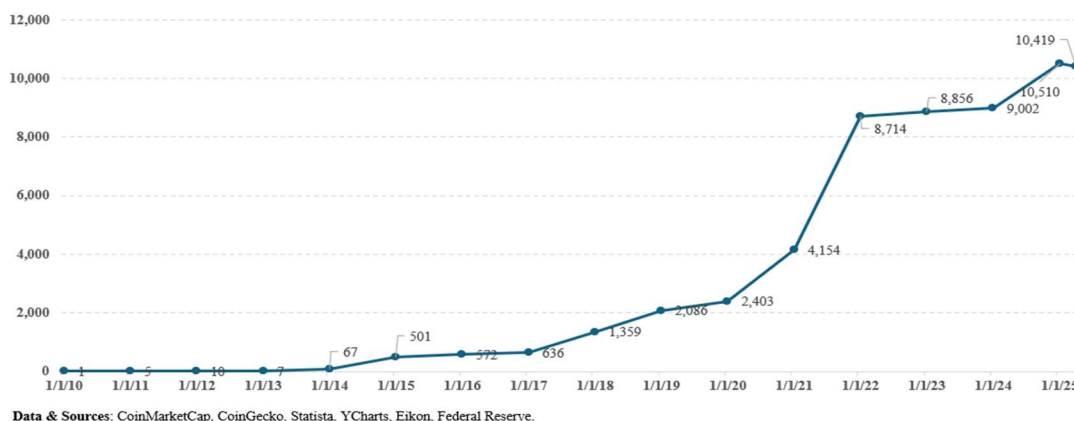
⁷¹ “These permissioned systems offer advantages in transaction throughput, privacy, and regulatory compliance compared to public blockchains, at the cost of some degree of decentralization.” *See* Vincent Gamoli, *From Blockchain Consensus Back to Byzantine Consensus*, 107 FUTUR. GENER. COMPUT. SYST. 760, 760–769 (2020).

⁷² *See infra* Part III.

⁷³ *See* Lev E. Breydo, *Contagion. FTX, A Sector’s Crisis & Crypto’s Silent Victims*, 98 AM. BANKR. L.J., 97 (2024) (detailing sector collapse, including that of FTX, Celsius, and Voyager).

⁷⁴ It is difficult to estimate the precise number of crypto assets given a lack of reliable centralized data sources as well as the propensity for ‘zombie crypto’ assets to linger in existence despite effective dormancy. (This presents a contrast to OTC stocks, for instance, given limited costs of maintaining an asset on-chain as well as potential difficulties in extinguishing it.) Some sources provide estimates in excess of 20,000 crypto assets. Methodologically, this Article’s analysis overcomes the data quality challenges by cross-checking multiple sources and using volume-based measures to ensure ongoing activity. Data based on CoinMarketCap, CoinGecko, Statista, YCharts, Eikon, Federal Reserve.

Figure 3. Assets Outstanding by Count (2010-25)



Yet, just as many left the sector for dead, crypto showed its unique resilience. Stage 3 has been marked by stabilization and record prices supported by a uniquely receptive White House. The administration now appears poised to enact sweeping legislation that may not only institutionalize crypto – but also transform global markets for decades to come.

Unfortunately, many of the proposals appear shortsighted and ill-informed, with the potential to significantly harm consumers, financial markets and broader economy. To avoid such outcomes before they become a fait accompli, this Article presents a sensible, empirically grounded and intellectually rigorous alternative path, as discussed in Parts III and IV.

D. Oversight Challenges

The challenges of crypto oversight begin with America’s notoriously balkanized financial regulatory system, which spans hundreds of limited-scope agencies across levels of government.⁷⁵ The 2022 crypto crisis and subsequent bankruptcy challenges exposed a confluence of failures, driven by supervisory fragmentation, regulatory arbitrage, and agency missteps.⁷⁶

⁷⁵ U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-09-1049T, FINANCIAL REGULATION: RECENT CRISIS REAFFIRMS THE NEED TO OVERHAUL THE U.S. REGULATORY SYSTEM 4 (2009) (“almost a dozen federal regulatory agencies, numerous self-regulatory organizations, and hundreds of state financial regulatory agencies share responsibility for overseeing the financial services industry.”).

⁷⁶ Kevin Werbach, *Demystifying Crypto: Digital Assets and the Role of Government*, JOINT ECONOMIC COMMITTEE, WRITTEN STATEMENT, (Nov. 17, 2021) [henceforth, ‘WERBACH DIGITAL ASSET TESTIMONY’] (noting “Federal digital asset regulation in the U.S. to date has involved a number of agencies and offices: the Financial Crimes Enforcement Network (FinCEN), Office of the Comptroller of the Currency (OCC), and Internal Revenue Service (IRS) in the Treasury Department,” the SEC, CFTC and FDIC the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), and the Federal Deposit Insurance Corporation (FDIC).”).

1. *Who Regulates Whom?*

Formally, the full suite of financial regulatory agencies at both the federal and state levels have varying degrees of oversight over aspects of the crypto ecosystem. In practice, the market regulators – i.e., the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) – have been most deeply involved with crypto oversight. The market regulators oversee financial products and associated entities – including issuers, intermediaries and infrastructure – with emphasis on disclosure and market conduct.⁷⁷ However, the divided purview between the SEC and CFTC has caused frictions, including perennial instrument classification questions as to whether crypto assets constitute securities.⁷⁸

As a result, nearly fifteen years after the sector’s advent, crypto lacks not only clear guiding principles but even unambiguous answers to seemingly first-order questions around assets’ legal status and relevant regulatory jurisdiction. As detailed in Figure 4 below,⁷⁹ the most glaring issues concern the Security & Utility crypto (defined in Part II). Recent SEC Staff Letters and legislative efforts have begun clarifying the treatment of certain assets,⁸⁰ but the approach may prove counterproductive, as discussed in Part IV.⁸¹

⁷⁷ CONG. RSCH. SERV., *Who Regulates Whom? An Overview of the U.S. Financial Regulatory Framework* 1 (2023).

⁷⁸ The SEC has jurisdiction over “securities” while industry preference has been CFTC oversight. See Yuliya Guseva & Irena Hutton, *Digital Assets and Regulatory Fragmentation: The SEC versus the CFTC*, 64 B.C. L. REV. 1555, 1572 (2023).

⁷⁹ “Regulators themselves cannot seem to agree as to whether cryptocurrencies are commodities that may be subject to regulation by the CFTC, or whether they are securities that are subject to securities laws, or neither, or even on what criteria should be applied in making the decision.” In re Voyager Digital Holdings, Inc., 649 B.R. 111, 119 (Bankr. S.D.N.Y. 2023); see also WERBACH DIGITAL ASSET TESTIMONY, *supra* note 76.

⁸⁰ See *infra* Part III.A.3 (discussing GENIUS Act changes to StableCoin oversight); See also Appendix III.

⁸¹ See *infra* Part IV.

Figure 4. Regulatory Architecture (Q3 2025)

Category	Legal Status	Regulator
1. 'True' Utility Tokens	Unclear	Unclear (SEC / CFTC)
2. Broken Tokens	Security / Unclear	
3. Equity Coins	Security / Unclear	
4. Meme Coins	Unclear ¹	
5. Store of Value Coins	Commodity (Bitcoin)	CFTC
6. Stable Coins		
<i>Payment StableCoins</i>	Tailored Category / Treatment	Banking Regulators ³
<i>Other StableCoin Types</i>	Unclear (SEC has argued Security) ²	Unclear ³
7. InfraCoins	Unclear / Commodity (Ether)	Unclear (CFTC / SEC)
8-10. Liability-Based Instruments ⁴	Unclear (SEC has argued Security)	Unclear / SEC

¹ February 2025 SEC Staff Statement (which lacks force of law) indicated not a security.

² April 2025 SEC Staff Statement (which lacks force of law) indicated USD-Covered not a security.

³ Per the 2025 GENIUS Act, banking regulators have oversight of Payment Stable Coins. Regulatory status of other Stable Coin types remains unclear.

⁴ Consolidated due to more limited legal clarity.

Broadly speaking, the U.S. financial regulation emphasizes constituent-driven registration.⁸² Financial groups generally self-organize legal entities circumscribed by activity and oversight agency. Similarly, financial products – and particularly securities – default to registration, barring no action relief or an applicable exemption, typically articulated in a legal opinion from reputable counsel.

Crypto short-circuited this fragile construct.⁸³ The 2017 ICO wave brought a flood of legally problematic activity, based on largely industry-conjured exemptions unrecognized by the SEC. Crypto Platforms like FTX also exacerbated jurisdictional frictions by cutting across domains, leaving multiple agencies with oversight but none clearly in charge. Further complicating matters, crypto's technological ability to bypass traditional payment systems has allowed high-risk activity to migrate beyond U.S. jurisdiction while still targeting U.S.-based customers and exacerbating AML, KYC, and sanctions challenges.⁸⁴

2. What is a Security?

A central uncertainty underlying crypto markets is the asset-specific legal classification and associated regulatory treatment—particularly, the threshold inquiry of whether crypto constitutes a security. The

⁸² Lev E. Breydo, *Structural Foundations of Financial Stability*, 17 U. PA. J. BUS. LAW 973, 1004 (2015).

⁸³ See *infra* Part II.D (detailing crypto sector organization).

⁸⁴ The CFTC has accused Binance of establishing procedures to deliberately circumvent these safeguards for U.S.-based investors. Complaint, CFTC v. Changpeng Zhao, Binance Holdings Limited, et al., No. 23-cv-01887 (N.D. Ill. Mar. 27, 2023), ECF No. 1 (arguing that “[m]uch of Binance’s reported trading volume, and its profitability, has come from its extensive solicitation of and access to customers located in the United States.”).

question is critical. If deemed securities, crypto assets fall under the SEC’s regulatory purview, requiring registration, reporting and oversight. If they are not securities, SEC registration is not required, though complex legal and jurisdictional questions would nonetheless remain.⁸⁵

The Supreme Court’s foundational *Howey* test is applied to determine whether an asset is an investment contract (and thus a security).⁸⁶ “The test is whether the scheme involves an investment of money in a common enterprise with profits to come solely from the efforts of others,”⁸⁷ with emphasis on substance and “economic reality” rather than form.⁸⁸ Subsequent appellate decisions have formalized the *Howey* test as a three-part analysis,⁸⁹ with the third prong often sub-divided into two components,⁹⁰ resulting in a four-part test for our present purposes:⁹¹ (i) the investment of money; (ii) a common enterprise; (iii) reasonable expectation of profits; (iv) derived solely from the efforts of others.⁹²

In an April 2025 Staff Statement, the SEC’s Division of Corporate Finance applied the Supreme Court’s test from *Reves* to assess whether a Stablecoin is a “note” (and thus presumptively a security).⁹³ The “family resemblance” test articulated in *Reves* considers four factors: (i) motivations of seller and buyer; (ii) plan of distribution; (iii) reasonable expectations of the investing public; and (iv) risk-reducing features.⁹⁴

⁸⁵ Such threshold questions include be whether the assets are commodities under CFTC jurisdiction, and if not, which agency would (or should) have oversight. *See generally* Part III.

⁸⁶ Some have suggested using state-law tests in this context, a suggestion worth exploring, but this Article applies the traditional *Howey* analysis given its SEC/federal focus. *See* Scott W. Maughan, Comment, *Utility Token Offerings: Can a Security Transform into a Non-Security?*, 2019 BYU L. REV. 1113, 1130–31.

⁸⁷ SEC v. W.J. Howey Co., 328 U.S. 293, 298, (1946) (“An investment contract thus came to mean a contract or scheme for ‘the placing of capital or laying out of money in a way intended to secure income or profit from its employment.’ This definition was uniformly applied by state courts to a variety of situations where individuals were led to invest money in a common enterprise with the expectation that they would earn a profit solely through the efforts of the promoter or of some one other than themselves.” (citation omitted) (quoting *State v. Gopher Tire & Rubber Co.*, 177 N.W. 937, 938 (1920)).

⁸⁸ *Tcherepnin v. Knight*, 389 U.S. 332, 336 (1967).

⁸⁹ SEC v. SG Ltd., 265 F.3d 42, 46 (1st Cir. 2001).

⁹⁰ The SEC’s Digital Asset-specific guidelines take this approach. *See Framework for “Investment Contract” Analysis of Digital Assets*, SEC [hereinafter *SEC Digital Assets Framework*], <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> (last updated July 5, 2024).

⁹¹ *See Howey*, 328 U.S. at 301.

⁹² The third prong formally refers to “an expectation of profits to be derived solely from the efforts of the promoter or a third party.” *SEC v. LBRY, Inc.*, 639 F. Supp. 3d 211, 216 (D.N.H. 2022).

⁹³ *Reves v. Ernst & Young* 328 U.S. 293 (1946). *See also* SEC DIV. OF CORP. FIN., *Statement on Stablecoins* (April 4, 2025), <https://www.sec.gov/newsroom/speeches-statements/statement-stablecoins-040425>; *but see* Caroline A. Crenshaw, “Stable” Coins or Risky Business? *Statement of SEC Commissioner* (Apr. 4, 2025) <https://www.sec.gov/newsroom/speeches-statements/crenshaw-statement-stablecoins-040425> (arguing that the Staff Statement “legal and factual errors paint a distorted picture of the USD-stablecoin market that drastically understates its risks.”).

⁹⁴ Courts generally apply *Reves* as a holistic, fact-intensive balancing test. *See, e.g., SEC v. J.T. Wallenbrock & Assocs.*, 313 F.3d 532, 537 (9th Cir. 2002) (“Failure to satisfy one of the factors is not dispositive; they are considered as a whole.”).

II. THE TAXONOMY

Crypto’s heterogeneity – and its mismatch with existing financial and regulatory frameworks – presents a threshold barrier to understanding the evolving ecosystem, compounding uncertainty for policymakers, market participants, and the public. This Article broadly posits that most crypto assets have logical analogues in traditional finance and should be regulated accordingly – based on instrument-level economic substance and legal attributes.⁹⁵ Crypto that lacks such analogues, the evidence suggests, more likely reflects legally problematic assets rather than true innovation.

The Article’s essential contribution to the literature and public discourse is a unifying taxonomy of crypto assets.⁹⁶ That framework is then used to analyze market and asset-level dynamics, enabling empirically-grounded regulatory recommendations tailored to underlying system economics and operations, as developed in Part IV.⁹⁷

This Part of the Article proceeds in four sections. First, it presents the Article’s primary taxonomy. Second, it explains how the model improves on alternative approaches, which are summarized in Appendix I. Third, leveraging the taxonomy, it offers a comprehensive analysis of crypto market dynamics, composition and evolution. Finally, building on the author’s prior work, it briefly highlights relevant features of crypto-specific industrial organization.⁹⁸

A. Model Overview

⁹⁵ *Investigating the Collapse of FTX: Hearing Before the House Fin. Serv. Comm.*, 117th Cong. (Dec. 13, 2022) (Remarks of Senator Elizabeth Warren, calling for uniform treatment of similar transactions with the “same kind of risks”).

⁹⁶ The framework builds upon and synthesizes a number of existing approaches, including those from regulators, scholars, and the private sector with express terminological differences intended to clearly label and differentiate amongst crypto assets. See Kate Goldman & Arnav Kumar, *A Taxonomy of Digital Assets*, at 11 (2021), <https://milkeninstitute.org/sites/default/files/2021-10/A%20Taxonomy%20of%20Digital%20Assets.pdf>; *Is Your Crypto Digital Gold, Gas, or Something Else?*, STEEMIT (Aug. 12, 2017), <https://steemit.com/cryptocurrency/@basiccrypto/is-your-crypto-digital-gold-gas-or-something-else>.

⁹⁷ As the IMF has observed, “no internationally agreed taxonomy exists for crypto assets” despite the fact that “A globally consistent taxonomy would help create common regulatory standards and approaches.” See PARMA BAINS ET AL., *REGULATING THE CRYPTO ECOSYSTEM, THE CASE OF UNBACKED CRYPTO ASSETS* (2022)

⁹⁸ See generally, Breydo, *Contagion* note 73; See also *The Broken Token Problem supra* note 64.

This Article’s taxonomy provides the first mutually exclusive collectively exhaustive (“MECE”)⁹⁹ mapping of the full crypto asset universe,¹⁰⁰ segmented by instrument-level economics and legal rights.¹⁰¹ The framework uses a three-tier hierarchy of increasing specificity. At Tier-1, it divides crypto assets into three core groups: (1) Infrastructure & Stored Value; (2) Security & Utility Crypto; and (3) Liability-Based Instruments. At Tier-2, each Tier-1 group is segmented into 10 asset-level categories, with examples including Stable Coins, Meme Coins, and Crypto Debt. Finally, the Tier-2 categories are further divided into 17 sub-categories (Tier-3).¹⁰²

As noted in Part I, the framework intentionally excludes certain related but distinct concepts and assets, including: (i) central bank digital currencies (CBDC), as they are not “crypto assets” under the IMF and FSB definitions adopted herein; and (ii) non-fungible tokens (NFTs) as they are best understood not as a distinct asset category, but rather representations of associated anchor assets (many of which are already encompassed within the taxonomy).¹⁰³

Figure 5 below presents a simplified two-level version of the model; Appendix III provides the full three-tier taxonomy.¹⁰⁴ The framework and subsequent analyses illustrate the demarcations at each level, helping isolate the most salient legal issues.

⁹⁹ The MECE nature of the model is methodologically important component based on the social sciences literature and consistent with business strategy applications. Robert C. Nickerson, Upkar Varshney & Jan Muntermann, *A Method for Taxonomy Development and its Application in Information Systems*, 22 EUR. J. INFO. SYS. 336 (2013), <https://doi.org/10.1057/ejis.2012.26> (defining a taxonomy as a set of n dimensions each consisting of mutually exclusive and collectively exhaustive characteristics).

¹⁰⁰ This taxonomy excludes certain digital assets, including non-fungible tokens (NFTs) and asset-backed tokens, defined as “digital token[s] based on blockchain technology [signifying] . . . representation of ownership of a physical asset.” See KRISTEN E. BUSCH, CONG. RSCH. SERV., R47189, NON-FUNGIBLE TOKENS (NFTs), at 2 (2022); see also PWC, CRYPTOGRAPHIC ASSETS AND RELATED TRANSACTIONS: ACCOUNTING CONSIDERATIONS UNDER IFRS, at 4–5 (2019), <https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-16/cryptographic-assets-related-transactions-accounting-considerations-ifrs-pwc-in-depth.pdf>. Central bank digital currencies are not part of the taxonomy herein because they are issued by governments.

¹⁰¹ See, e.g., Brad Kahn, et al., *The Need for Clarity Regarding the Classification and Valuation of Cryptocurrency in Bankruptcy Cases*, 17 PRATT’S J. BANKR. 228, 229 (2021) (“No universally accepted definition exists for ‘coins’ or ‘tokens,’ and some use the terms interchangeably; however, a ‘coin’ generally refers to a cryptocurrency created on its own native network with its own separate, standalone blockchain.”).

¹⁰² As noted below, the Liability-Based Grouping is not divided at the tier 3 level.

¹⁰³ See YULIYA GUSEVA, THE ECONOMIC REALITY OF NFT SECURITIES, CAMBRIDGE HANDBOOK ON LAW & POLICY OF NFTs at 6.

¹⁰⁴ See Appendix III; See also associated Excel and data files.

Figure 5. Two-Tier Economic & Legal Attribute Taxonomy of Crypto Assets

Crypto Assets: Economic & Legal Attribute Taxonomy (2-Tier)					
	Category	Description	Examples (Secondary)	% Market:	
				1/14/23 ¹	4/25/25
I. Infra & Store of Value	1. Store of Value				
	Coins	Early crypto, primarily BTC.*	Bitcoin	41.0%	63.4%
	2. Stable Coins.	Three sub-categories: Collateralized, Algo and Commodity.	Tether; USDC	13.0%	7.2%
	3. InfraCoins	Highly functional assets; sector 'gas,' quasi-infra	Ether (Cardano, Polygon, Solana)	21.4%	11.8%
			Sub-Total	75.4%	82.4%
II. Security & Utility	4 Equity Coins	Most equity-like; variation in rights / structure.	Iconomi; Etheroll		-
	5. Meme Coins	No utility, rights or economics. Akin to collectibles.	DogeCoin, Shiba Inu		1.2%
	6. 'True' Utility Tokens	NAL Consistent. Economics ~ loyalty program miles.	TKJ Tokens, VCOIN, PoQ ²		
	7. Broken Tokens	Most legally problematic. Two sub-types:		24.6%	16.4%
		'Pre-Utility.' Development capital. ~early stage equity, clear legal rights. Likely civil.	FTT, LBRY, Kin		
		'Non-Utility Tokens.' Platform development not intended or impractical. Potential fraudulent conduct.	BCT		
			Sub-Total	24.6%	17.6%
III. Liability Instruments	8. Yield Products⁴	Above-market rates; high-risk loans. HY BDC parallel.	Genesis/ GEM; CEL Aave, IOUBTC/	N/A	
	9. Crypto Debt	Quasi-contractual; economics ~ debt instruments.	ETH		
	10. Staking		Most staked: ETH,		
	Services	DEX rewards; yield for digital asset loans / liquidity.	SOL and ADA		

¹ Based on coinmarketcap.com data.

² TKJ Tokens, VCOIN, PoQ Quarters deemed not securities through SEC No Action Letters.

³ Listed separately to denote distinct features relative to other facets of the crypto universe.

⁴ Some earn / yield products use the capital for staking; however, this is distinct from DeFi staking due to diversified nature of exposure.

B. Advantages to Alternatives

Regulators and multilateral organizations—including the IMF, World Bank and FSB—have long recognized the need for a comprehensive crypto asset taxonomy.¹⁰⁵ Yet, despite substantial legal and financial scholarship on discrete questions (such as the Howey Test or crypto correlations), there remains no unifying framework that is both comprehensive and sufficiently flexible to analyze the full crypto universe and its broader ecosystem.

¹⁰⁵ As the IMF has observed, “no internationally agreed taxonomy exists for crypto assets” despite the fact that “A globally consistent taxonomy would help create common regulatory standards and approaches.” See PARMA BAINS ET AL., REGULATING THE CRYPTO ECOSYSTEM, THE CASE OF UNBACKED CRYPTO ASSETS (2022).

This Article fills that gap. The framework synthesizes elements of existing approaches -- from regulators,¹⁰⁶ thinktanks,¹⁰⁷ scholars,¹⁰⁸ and the private sector¹⁰⁹ -- while developing a distinctive three-dimensional taxonomy that integrates underlying technology, substantive economics, and legal rights.

The framework improves on alternatives in several respects. It is: (i) collectively exhaustive, mapping the full crypto universe; (ii) mutually exclusive with no overlap among groups, categories or sub-categories;¹¹⁰ (iii) anchored in technological and economic substance, rather than labels or marketed technical attributes;¹¹¹ (iv) attentive to legal characteristics and regulatory provisions, allowing it to map directly to the U.S. regulatory structure as it exists today and as proposed in Part IV; (v) explicit about crypto-specific ambiguities and inconsistencies (including Broken Tokens);¹¹² and (vi) deliberately scalable and adaptable to a fast-moving sector. Appendix I surveys existing frameworks and discusses points of distinction and convergence with this model.

C. Market Analyses

Leveraging the above taxonomy, the figure below details crypto sector value divided by Tier-2 categories and select Tier-3 sub-categories with available data, including ETH and Meme Coins. The analysis shows three peaks of sector growth, corresponding to the stages of sector development discussed in Part I.C., with current market value exceeding even the Covid-era peak.

¹⁰⁶ Goldmanm & Kumar, *supra* note 96 at 1.

¹⁰⁷ *Id.*

¹⁰⁸ Jens Lausen, *Regulating Initial Coin Offerings? A Taxonomy of Crypto-Assets*, *Twenty-Seventh European Conference on Information Systems* (Proceedings of the 27th European Conference on Information Systems (ECIS), Stockholm & Uppsala, Sweden, June 8-14, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3391764.

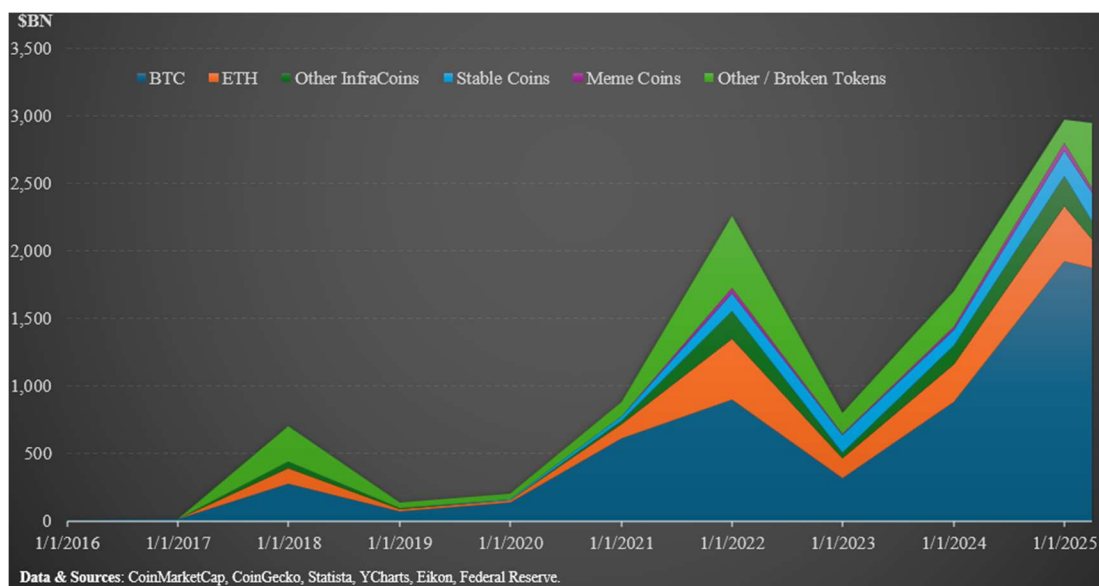
¹⁰⁹ Sabry & Franceschelli, *supra*.

¹¹⁰ The first two items reflect the MECE nature of the framework (just in reversed order). The MECE framework is based on the social sciences literature and consistent with business strategy applications. Robert C. Nickerson, Upkar Varshney & Jan Muntermann, *A Method for Taxonomy Development and its Application in Information Systems*, 22 EUR. J. INFO. SYS. 336 (2013), <https://doi.org/10.1057/ejis.2012.26> (defining a taxonomy as a set of n dimensions each consisting of mutually exclusive and collectively exhaustive characteristics).

¹¹¹ *Crypto Taxonomy*, COINDESK, <https://www.coindesk.com/dacs/> (outlining Digital Asset Taxonomy by technical features).

¹¹² Lev E. Breydo, *The Broken Token Problem. Why Crypto Classification Remains Elusive*, 55 SETON HALL L. REV. 67 (2024).

Figure 6. Category-Level Crypto Asset Values (\$Bn): 2016-2025



The next two analyses zoom in from that macro view to detail (i) the distribution of value within the sector (Figure 7); and (ii) the composition of the top 10 assets (Figure 8). Both analyses are as of March 2023 (the end of Stage 2) and April 2025 (Stage 3), capturing the post-crash recovery and incorporating the effects of the 2024 presidential election.¹¹³

While the crypto sector comprises over 10,000 unique assets, value is highly concentrated. As of April 2025, the 10, 100 and 200 largest assets respectively comprise 90.68% (about \$2.5 trillion), 98.17% (\$2.7 trillion) and 99.83% (\$2.745 trillion) of total market value. Between the end of Stage 2 in 2023 and the present, sector concentration increased—most notably among the top 10 assets, which previously comprised 84.2% of total value.¹¹⁴

Figure 7. Aggregate Market Summary Stats: 2023 & 2025

Asset Level	Mar-23		Apr-25	
	Total (\$Bn)	% of Market	Total (\$Bn)	% of Market
Top 10	999.12	84.18%	2,493.63	90.68%
Top 100	1,153.07	97.15%	2,699.61	98.17%
Top 200	1,178.97	99.33%	2,745.21	99.83%
Total (\$Bn):		\$ 1,186.9	\$ 2,750.0	

Source: Investing.com and CMC data.

¹¹³ See *supra* Part I.C.

¹¹⁴ Raynor de Best, *Number of Cryptocurrencies: 2013-2023*, STATISTA (Aug. 9, 2023), <https://www.statista.com/statistics/863917/number-crypto-coins-tokens/>.

This distribution implies that more than 9,000 crypto assets collectively represent well under one percent of sector value—a “long tail” that includes legally problematic instruments, including Broken Tokens (as defined below). Growing concentration in an already skewed sector also suggests that, notwithstanding the post-crash recovery, investors remain cautious about new or unproven assets.

Figure 8 details the category-level composition of the ten largest crypto assets with three notable takeaways. First, Bitcoin is by far the largest asset, historically averaging roughly 50% to 60% of sector value. Second, five of the ten largest crypto assets are InfraCoins, likely reflecting their broad utilization potential, notwithstanding a collective valuation far below Bitcoin alone. Third, despite significant sector disruption, the composition of the ten largest assets has remained consistent at the category level.¹¹⁵

Figure 8. Top 10 Crypto Assets by Category

Top 10 Crypto Assets by Category					
Category*	March 2023		April 2025		% Change
	Value (\$Bn)	Count	Value (\$Bn)	Count	
Store of Value	\$ 547.4	1	\$ 1,750.0	1	219.7%
InfraCoin	\$ 276.4	5	\$ 429.6	5	55.4%
StableCoin	\$ 113.0	2	\$ 205.6	2	82.0%
'Broken Token'	\$ 52.1	1	\$ 84.5	1	62.1%
Meme	\$ 10.3	1	\$ 24.0	1	133.7%
Total	\$ 999.1	10	\$ 2,493.6	10	149.6%

*Includes Ripple within InfraCoin category (per recent decision, SEC action).

Sources: Data from CMC, Investing.com.

D. Industrial Organization

As the crypto sector evolved, an associated ecosystem developed alongside it, with distinct entities providing specialized services and functions.¹¹⁶ Crypto oversight challenges therefore arise at two levels: crypto assets (the focus of this Article) and sector-specific entities. As I detail in earlier work, the 2022 crypto collapse was exacerbated by oversight mismatches, including emphasis on Crypto Projects instead of Crypto Platforms, such as FTX and Celsius—which function as sector intermediaries and often represent the natural nexus of risk. As discussed in Part IV, delineating legal considerations as between crypto entities and assets matters for regulatory and policy design. Broadly speaking, we can segment the industry into six types of market participants, which Figure 9 maps to their most closely associated crypto assets (at right):

¹¹⁵ There are shifts in the specific InfraCoins constituting the top 10. See associated excel models for further detail.

¹¹⁶ While the underlying activities largely parallel familiar functions in other sectors, crypto entities’ distinct market organization raises some unique classification challenges particularly acute for financial service-like functions performed by Crypto Platforms. See generally *Contagion*, *supra* note 73.

Figure 9. Core Sector Entities & Associated Assets
Crypto Ecosystem: Core Entities & Associated Assets

<u>Entity Type</u>	<u>Description</u>	<u>Examples</u>	<u>Associated Crypto Assets</u>
1. Crypto Projects	Multi-industry entities applying blockchain and related technologies. Common token / coin issuers.	Wireless (Helium); Electricity (Exergy); Publishing (LBRY)	Broken Token Issuers; Security & Utility Crypto
2. Infrastructure Providers	Developers of shared resources for cross-project tools and applications.	Ethereum; Polygon; Algorand	InfraCoins
3. Stablecoin Issuers	Responsible for reserve maintenance and coin stability relative to reference assets.	Circle, Tether	Stable Coins
4. Support Services	Miners (which validate blockchain transactions) and specialized providers, incl. data centers and banking.	Compute North; Core Scientific; Silvergate	Store of Value Coins
5. Investment Vehicles	Largely akin to hedge funds. Frequently employ significant leverage.	Three Arrows Capital, Alameda Research	Diversified
6. Crypto Platforms. Two primary sub-sectors, with third emerging (DEX):*			
Crypto Lenders	Lend digital assets to crypto market participants. Often offer brokerage and trading.	Celsius, BlockFi	Diversified;
Crypto Exchanges	Wide range of activities, incl. intermediary (brokerage), market infrastructure (exchange, clearing) and investment.	FTX, Binance	Broken Token Issuers

**Decentralized exchanges (DEX) are peer-to-peer crypto marketplaces, which raise considerations beyond the scope of this analysis.*

III. ASSET-LEVEL CLASSIFICATIONS

This Part of the Article builds on the crypto taxonomy introduced in Part II with (tier 2) and sub-category (tier 3) level analyses. The discussion focuses on three asset-type dimensions: (i) its substantive nature, from a technical and economic perspective; (ii) the perception and understanding by market participants; and (iii) regulatory classification and treatment. While these dimensions should be consistent, they often are not in crypto, driving many of the sector’s contemporary challenges. Part IV of the Article builds on these findings with suggestions for rationalizing the regulatory structure to address shortcomings and resolve inconsistencies.

This Part of the Article is organized in three sections, sequentially corresponding to each of the Tier-1 groups: (i) Infrastructure & Stored Value; (ii) Security & Utility Crypto, which includes Equity Coins, Meme Coins, Utility Tokens and “Broken Tokens”; and (iii) Liability-Based Instruments, composed of Crypto Debt, Yield Products and Staking Services.

A. Infrastructure & Stored Value

The Infrastructure & Stored Value grouping of assets—comprising Store of Value Coins, Stable Coins and Infrastructure Coins (“InfraCoins”)—reflects relatively mature assets with clearer economics and

more settled regulatory treatment. Collectively, these three categories constitute over 80% of crypto market value: Bitcoin alone accounts for over 60% as of April 2025. This grouping has, in many respects, driven the broader sector, with InfraCoins developed to increase blockchain functionality and Stablecoins introduced to address volatility and exchange-related limitations.

1. *Store of Value Coins*

Store of Value Coins refer to the “original” crypto assets—most notably, sector bellwether Bitcoin, the first and largest crypto asset.¹¹⁷ Analytically, this Article’s taxonomy sub-categorizes Store of Value Coins between Bitcoin and potential alternatives, such as Litecoin and Monero.¹¹⁸ The limited adoption of alternatives underscores Bitcoin’s special status, though the sub-category keeps open the possibility of future attempts proving more successful.

While not the first attempt at a “currency” outside the remit of government, Bitcoin remains revolutionary because it simultaneously solved several problems associated with prior iterations of digitally-native ‘money.’ As noted in Part I.B., currencies are understood to have three core functions, serving as: (i) a unit of account; (ii) a store of value; and (iii) a medium of exchange.¹¹⁹ For much of the history of commerce, this role was filled by gold or other precious metals, with government currencies a subsequent innovation initially tied to and backed by gold.¹²⁰

Though the “currency” label is formally inapposite, Bitcoin’s innovations provided two of the three associated functions, including solving the double-spend problem that limited prior iterations’ ability to serve as a unit of account. At the same time, prominent market participants increasingly view Bitcoin and gold as together comprising the “store of value market,” where some analysts believe Bitcoin will “continue to take market share from gold.”¹²¹ As shown in the figure below, Bitcoin has long been the

¹¹⁷ Anchalee Worrachate, *Goldman Says Bitcoin \$100,000 a Possibility by Taking on Gold*, BLOOMBERG (Jan. 4, 2022), <https://www.bloomberg.com/news/articles/2022-01-04/goldman-says-bitcoin-100-000-a-possibility-by-taking-on-gold?sref=OOpRUZ8l>.

¹¹⁸ Some close BTC derivatives including Bitcoin cash may also qualify but are not included for the sake of relative simplicity and due to residual uncertainties.

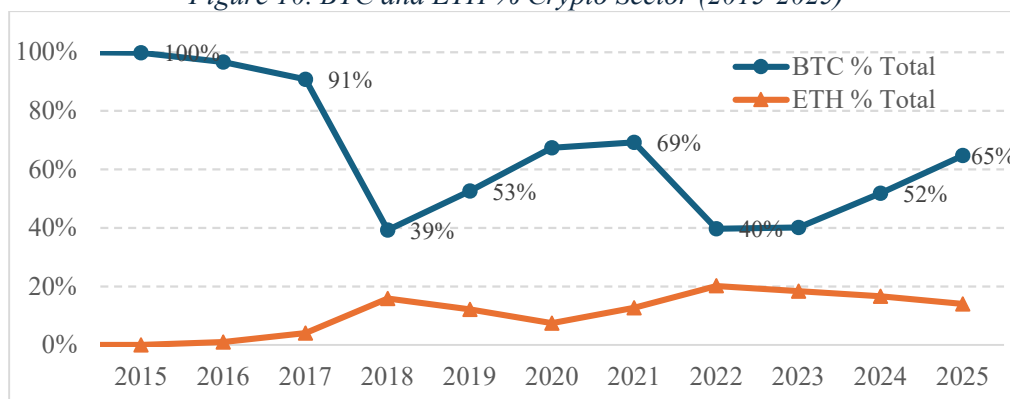
¹¹⁹ See PARMA BAINS ET AL., *REGULATING THE CRYPTO ECOSYSTEM, THE CASE OF UNBACKED CRYPTO ASSETS* (2022).

¹²⁰ See *Perry v. United States*, 294 U.S. 330 (1934); See also, Gerard Magliocca, *The Gold Clause Cases and Constitutional Necessity*, 64 FL. L. REV. 1243 (2012); SEBASTIAN EDWARDS, *AMERICAN DEFAULT: THE UNTOLD STORY OF FDR, THE SUPREME COURT, AND THE BATTLE OVER GOLD* (2018).

¹²¹ *Goldman Sachs Says Bitcoin Will Compete with Gold as “Store Of Value,”* REUTERS (Jan. 5, 2022, 12:43 PM), <https://www.reuters.com/business/finance/goldman-sachs-says-bitcoin-will-compete-with-gold-store-value-2022-01-05>; but see GOLDMAN SACHS, CONSUMER & WEALTH MGMT. DIV., INV. STRATEGY GRP., *Digital Assets: Beauty Is Not in the Eye of the Beholder—Parsing the Beauty from the Beast* (June 21, 2021) https://privatewealth.goldmansachs.com/content/dam/pwm/direct-links/isg-calls/client_call_materials_21June21.pdf (“We do not believe that Bitcoin is a long-term store of value or “digital gold.”).

sector's anchor, averaging over 60% of total value after ETH's introduction and rarely dipping below 40%.¹²² Further, Bitcoin volatility has decreased over time, while that of other assets, including the S&P 500, has gone in the opposite direction.¹²³

Figure 10. BTC and ETH % Crypto Sector (2015-2025)



The biggest challenge to Bitcoin serving as “currency” is that, not unlike gold itself, it is structurally a poor medium of exchange in a modern economy. Bitcoin transactions are highly secure, but also expensive and slow – a pace of roughly 10 per second, relative to 65,000 for Visa’s network¹²⁴ – limiting the value proposition in mature markets with many alternatives.¹²⁵ At the same time, although growing, Bitcoin acceptance (a form of network effects) remains limited, further complicating usability.¹²⁶

2. Infrastructure Coins

Infrastructure Coins (“InfraCoins”)¹²⁷ represent highly functional crypto assets – often termed digital ‘gas’ – required to utilize crypto networks, facilitating transactions, powering digital contracts and providing collateral. Conceptually, they reflect efforts to expand blockchain applications beyond Bitcoin, with the two InfraCoin sub-categories broadly corresponding to Blockchain 2.0 (Ethereum) and Blockchain 3.0 (ETH alternatives and competitors, such as Cardano and PolkaDot). Similar to the treatment of Bitcoin, the

¹²² Period prior to 2015 is not shown because BTC represented 100% of the sector. *Crypto Market Overview*, COINCODEX.COM, <https://coincodex.com/market-overview/>. See Appendix and associated financial models for further detail.

¹²³ See Appendix V, detailing volatility data and charts.

¹²⁴ See *Goldman Sachs Digital Assets Report*, *supra* note 120, at 5.

¹²⁵ This may be distinct in certain emerging markets with less developed domestic payment systems and/or currency controls.

¹²⁶ It is accepted by thousands of vendors and is legal currency in limited jurisdictions. See *El Salvador’s Bitcoin Experiment Is Not Paying Off*, THE ECONOMIST (Nov. 17, 2022), <https://www.economist.com/the-americas/2022/11/17/el-salvadors-bitcoin-experiment-is-not-paying-off>.

¹²⁷ This grouping is sometimes termed “Platform Coins” in industry parlance. See Appendix I.

taxonomy places Ethereum in a sub-category of its own (3A), with Blockchain 3.0 competitors reflected in the second sub-category (3B).

InfraCoins are issued by Infrastructure Providers – developers of shared cross-project resources, such as the Ethereum Foundation, a Swiss non-profit housing Ethereum’s organizational structure.¹²⁸ In many respects, InfraCoins are perhaps the most unique feature of the crypto ecosystem, notwithstanding certain imperfect analogs in traditional markets.¹²⁹

Ethereum – “Blockchain 2.0” – was developed as open-source software to expand “the blockchain concept [beyond] just money.”¹³⁰ Analogized to a “decentralized computer,” Ethereum allows user-uploaded code to be utilized by others as “a form of decentralized application []akin to running “apps” on a cellphone.”¹³¹ As a result, ETH serves as the sector’s quasi-infrastructure, providing a technological foundation for many crypto assets¹³² that significantly expanded use cases.¹³³

The advent of Blockchain 3.0 led to the development of new InfraCoins,¹³⁴ including Cardano¹³⁵ and Polkadot (for cross-chain functionality).¹³⁶ Ethereum nonetheless remains the quintessential InfraCoin, constituting about 14% of crypto market value as of early 2025, while other InfraCoins correspond to about

¹²⁸ ETHEREUM FOUNDATION, *Our Story*, <https://ethereum.foundation/ourstory> (last visited July 4, 2025).

¹²⁹ Potential analogs including energy commodities as well as potentially multi-platform points which derive value from embedded optionality and transferability. *See Broken Token Problem supra* note 64.

¹³⁰ VITALIK BUTERIN, ETHEREUM: A NEXT-GENERATION SMART CONTRACT AND DECENTRALIZED APPLICATION PLATFORM (2014), https://ethereum.org/669c9e2e2027310b6b3cdce6e1c52962/Ethereum_Whitepaper_-_Buterin_2014.pdf.

¹³¹ “The Ethereum blockchain is more complex than the Bitcoin blockchain and does much more than just record transfers of [ether].” *See* Report of Shoba Pillay, Examiner at 54, In re Celsius Network LLC, 649 B.R. 87 (Bankr. S.D.N.Y. 2023) (No. 22-10964), ECF No. 1956.

¹³² Many tokens use Ethereum’s ERC-20 technical standard. *See ERC-20 Token Standard*, ETHEREUM (May 30, 2023), <https://ethereum.org/en/developers/docs/standards/tokens/erc-20>.

¹³³ The contrast may be analogized to that between gold (Bitcoin) and oil (Ether); both are commodities, but serve fundamentally different ends from both financial and practical perspectives.

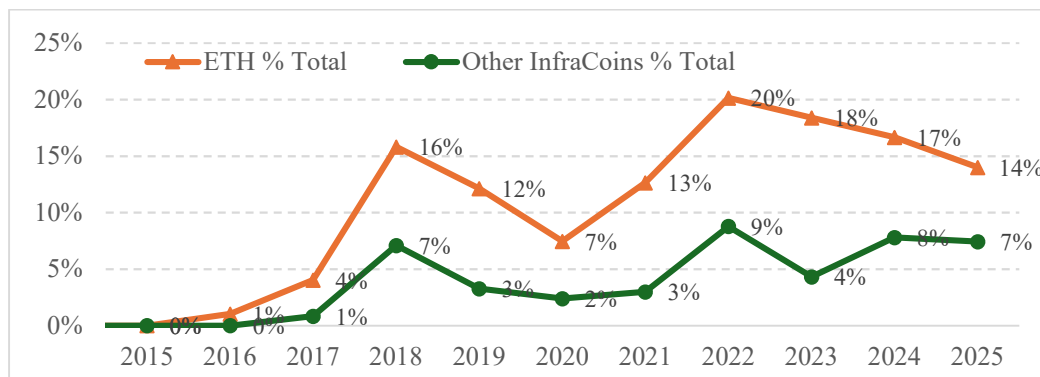
¹³⁴ It has been reported that founder disagreements regarding governance, project goals and functionalities led to a split with departing team members developing the respective competitors. *See* Andrew Fenton, *Joe Lubin: The truth about ETH founders split and ‘Crypto Google’*, MAGAZINE BY COINTELEGRAPH (May 4, 2023), <https://cointelegraph.com/magazine/joe-lubin-the-truth-about-eth-founders-split-and-crypto-google/>.

¹³⁵ Cardano is overseen by the Cardano Foundation. Angel Au-Yeung, *A Fight Over Ethereum Led A Cofounder To Even Greater Crypto Wealth*, FORBES (Feb. 7, 2018), <https://www.forbes.com/sites/angelaueyung/2018/02/07/charles-hoskinson-ethereum-iohk-blockchain-crypto-cryptocurrency/>; Gillian Tett, *How Joseph Lubin became Wall Street’s crypto whisperer*, FIN. TIMES (Sep. 9, 2021) <https://www.ft.com/content/949ee788-6630-4aac-9c4d-b6b0a45f4e25>.

¹³⁶ Mike Butcher, *Polkadot Passes the \$140M Mark for its Fund-raise to Link Private and Public Blockchains*, TECHCRUNCH MEDIA (Oct. 17, 2017, 5:34 AM PDT), <https://techcrunch.com/2017/10/17/polkadot-passes-the-140m-mark-for-its-fund-raise-to-link-private-and-public-blockchains/>.

7%, as shown below. Ethereum’s relative decline (from 20% in 2022) may be attributable to increased competition, which all things considered, is a healthy indicator for innovation.

Figure 11. ETH + InfraCoins as % Total Crypto Assets



Regulatory treatment of InfraCoins has varied considerably. Under the first Trump administration, the SEC indicated that Ethereum was a commodity, rather than a security.¹³⁷ Subsequently, the Biden SEC appeared to shift course, in direct contrast to the CFTC’s position.¹³⁸ With the second Trump administration, the SEC’s view on Ethereum appears to be shifting back; however, uncertainty remains for other InfraCoins.¹³⁹

3. Stablecoins

Stablecoins are digital assets “designed to maintain a stable value relative to a national currency or other reference assets.”¹⁴⁰ They were developed to address crypto asset volatility and medium of exchange limitations while providing a user-friendly bridge between crypto and fiat.¹⁴¹ Prominent examples include

¹³⁷ Previously, the SEC has described Bitcoin and Ether as “sufficiently decentralized” to no longer meet the requirements of securities classification at that time. See Bill Hinman & Valerie Szczepanik, *Statement on “Framework for ‘Investment Contract’ Analysis of Digital Assets,”* SEC (Apr. 3, 2019), <https://www.sec.gov/news/public-statement/statement-framework-investment-contract-analysis-digital-assets>. The SEC’s shift in position (with Ether now presumably on the agenda) is beyond the scope of this analysis, though appears consistent with a case brought by New York’s Attorney General. See Verified Petition, *supra* note 148.

¹³⁸ See Ankush Khardori, *Can Gary Gensler Survive Crypto Winter? D.C.’s Top Financial Cop on Bankman-Fried Blowback*, N.Y. MAG. (Feb. 23, 2023), <https://nymag.com/intelligencer/2023/02/gary-gensler-on-meeting-with-sbf-and-his-crypto-crackdown.html> (noting “[e]verything other than bitcoin” is a security.)

¹³⁹ Early evidence included dropping long-running litigation against Ripple. Jonathan Stempel & Niket Nishant, *Ripple Labs says US SEC ends appeal over crypto oversight*, REUTERS (Mar. 19, 2025, 12:13 PM EDT) <https://www.reuters.com/legal/ripple-ceo-says-us-sec-will-drop-appeal-against-crypto-firm-2025-03-19/>.

¹⁴⁰ PRESIDENT’S WORKING GRP. ET AL., REPORT ON STABLECOINS, at 1 (2021), https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf; see also Catherine Liston-Heyes, *Pie in the sky? Real versus Perceived Values of Air Miles*, 25 J. OF CONSUMER POL’Y 1, 1–26 (2002), <https://doi.org/10.1023/A:1014594718701> (describing characteristics of an “ideal form of money” to include seven attributes: (1) acceptability, (2) convenience, (3) durability, (4) divisibility, (5) uniformity, (6) difficulty to reproduce, and (7) stability of value).

¹⁴¹ Gary B. Gorton & Jeffrey Y. Zhang, *Taming Wildcat Stablecoins*, 90 U. CHI. L. REV. 909 (2023).

USDT (“Tether”),¹⁴² USDC (“Circle USD Coin”),¹⁴³ and BUSD (“Binance USD”),¹⁴⁴ all of which are digitally native assets redeemable on demand at a one-dollar par value. Collectively, the category represents about 7.2% of crypto sector value,¹⁴⁵ with three main sub-categories organized by stabilization mechanism:

- i. **Collateralized** (or “Covered”), the largest and most important sub-category, characterized by stabilization through reserve assets, typically fiat currency (i.e., USD, EUR);¹⁴⁶
- ii. **Algorithmic**, with the pegged value maintained through a trading strategy;¹⁴⁷ and
- iii. **Commodity**, collateralized by physical assets, including oil or gold (most common)¹⁴⁸ with limited market penetration given that underlying asset-level volatility complicates intended functionalities.¹⁴⁹

Algorithmic Stablecoins attempt to maintain their peg through self-executing code that automatically adjusts supply based on market demand as well as programmatic trading of the stablecoin and associated token.¹⁵⁰ The 2022 collapse of algorithmic Stablecoin issuer Terraform Labs – which wiped out \$50 billion of value,¹⁵¹ setting off sector-wide contagion¹⁵² – reduced market confidence in the structure, with April 2025 aggregate value down to about \$500M.

In contrast, collateralized Stablecoins maintain their value by holding currency reserves as collateral, with each token redeemable on demand into the reference currency at a 1:1 ratio. Along with responsibility for

¹⁴² TETHER, *Why use Tether?*, <https://tether.to/en/why-tether/> (last visited July 4, 2025).

¹⁴³ USDC: *Digital Dollars Backed 1:1 with USD*, CIRCLE, <https://www.circle.com/en/usdc> (last visited Aug. 12, 2023).

¹⁴⁴ *Binance USD Price*, CRYPTO.COM, <https://crypto.com/price/binance-usd> (last visited Aug. 12, 2023).

¹⁴⁵ See Figure 6.

¹⁴⁶ Recent legislation uses the term “Payment Stablecoins” to reference a largely (but not entirely) analogous set of instruments. See Guiding and Establishing National Innovation for U.S. Stablecoins Act (GENIUS Act), Pub. L. No. 119-27, 139 Stat. 419 (2025).

¹⁴⁷ See Ryan Clements, *Built to Fail: The Inherent Fragility of Algorithmic Stablecoins*, 11 WAKE FOREST L.R. 131, 131–132 (2021) (describing algorithmic stablecoins as “un-collateralized digital assets, which attempt to peg the price of a reference asset using financial engineering, algorithms, and market incentives”).

¹⁴⁸ Examples include Paxos Gold (PAXG) and Tether Gold (XAUT), where each token represents ownership rights to a specific amount of gold held in custody.

¹⁴⁹ KRAKEN, *What Are the Different Types of Stablecoins?* (Mar. 5, 2025), <https://www.kraken.com/learn/different-types-stablecoins> (“A less popular variant of collateralized stablecoins are backed by fungible commodities such as gold, silver or oil.”).

¹⁵⁰ Mechanically, these protocols typically involve contraction and expansion mechanisms where the system mints new tokens when the price exceeds target and burns tokens when price falls below it. See Robert Sams, *A Note on Cryptocurrency Stabilisation: Seigniorage Shares*, BRAVE NEW COIN (Apr. 28, 2015); Amani Moin, et al., *A Classification Framework for Stablecoin Designs*, FINANCIAL CRYPTOGRAPHY AND DATA SECURITY, at 181 (2019).

¹⁵¹ Jiageng Liu, et al., *Anatomy of a Run: The Terra Luna Crash*, MIT Sloan Research Paper No. 6847-23 (Apr. 11, 2023), <https://ssrn.com/abstract=4416677>; David Yaffe-Bellany & Erin Griffith, *How a Trash-Talking Crypto Founder Caused a \$40 Billion Crash*, N.Y. TIMES (June 22, 2023), <https://www.nytimes.com/2022/05/18/technology/terra-luna-cryptocurrencydo-kwon.html>.

¹⁵² See *Contagion*, *supra* note 73 at 130-136.

token issuance and redemption, Stablecoin Issuers play the critical asset stabilization role, including through reserve maintenance, as the stability mechanism is predicated on their promise to redeem each token for the underlying fiat.¹⁵³

Collateralized Stablecoins use a relatively straightforward issuance and redemption model where an Issuer such as Tether or Circle intermediates (often through Smart Contracts) customer fiat deposits for Stablecoins as well as redemptions back to fiat.¹⁵⁴ In this respect, Stablecoin operations and economics have many parallels to money market funds, as scholars have recognized.¹⁵⁵ For purchasers, the value proposition is that Stablecoins allow easier access to crypto markets.¹⁵⁶ For Stablecoin Issuers, the economic incentives are “bank-like” but more favorable: they collect interest income on custodied fiat, but unlike a bank do not pay interest to depositors.¹⁵⁷

Due to their payment system use cases, Stablecoins are seeing growing mainstream adoption from both established players like Fidelity as well as FinTechs like Stripe.¹⁵⁸ The potential value proposition appears particularly strong in emerging and frontier markets without robust domestic payment networks and limited dollar accessibility.

Regulators worldwide have identified several concerns regarding Stablecoins, including financial stability due to “run risk” as well as potential longer-term monetary policy transmission implications.¹⁵⁹ Because of

¹⁵³ Crypto-collateralized Stablecoins work similarly, just with crypto as the collateral typically with over-collateralization to account for the volatility of the backing assets. FIN. STABILITY BD., *Review of the FSB High-Level Recommendations of the Regulation, Supervision and Oversight of “Global Stablecoin” Arrangements: Consultative Report* at 15 (Oct. 11, 2022).

¹⁵⁴ More formally, when a user deposits collateral, the system mints new stable coins and transfers them to the user. Conversely, when a user wishes to redeem, they return the Stablecoins to the Issuer, who burns them and releases the equivalent collateral. FIN. ACTION TASK FORCE, *FATF Report to the G20 Finance Ministers & Central Bank Governors on “So-Called Stablecoins”* at 18 (June 2020).

¹⁵⁵ The structure (particularly when considering arbitrage) also shares some features with currency pegs, which are a long-standing measure used by emerging markets to tie their currency to a more stable reserve currency, such as USD or Euros. The idea is that the sovereign can gain the benefits of monetary stability as well as independence and flexibility from retaining their own currency. See RUSSELL WONG, *WHY STABLECOINS FAIL: AN ECONOMIST’S POST-MORTEM ON TERRA*, RICHMOND FED. RSRV. BANK (2022), https://www.richmondfed.org/publications/research/economic_brief/2022/eb_22-24.

¹⁵⁶ See Dan Awrey, *Bad Money*, CORNELL L. REV., at 40-45 (noting parallels to money market funds).

¹⁵⁷ Matt Levine, *Tether Keeps Lending Tethers*, BLOOMBERG (Sep. 21, 2023), <https://www.bloomberg.com/opinion/articles/2023-09-21/tether-keeps-lendingtethers?sref=OOpRUZ8l> (noting “what a good business Tether, the big stablecoin issuer, is. It is an unregulated bank that does not pay interest, rates are going up, and its depositor base is quite stable”).

¹⁵⁸ See, ALL-IN PODCAST, *The Stablecoin Future, Milei’s Memecoin, DOGE for the DoD, Grok 3, Why Stripe Stays Private*, (Feb. 21, 2025) (hereinafter ALL-IN PODCAST) (interview with John & Patrick Collision, noting stable coins as “most interesting” for cross-border payments.)

¹⁵⁹ FIN. STABILITY BD., *Addressing the Regulatory, Supervisory and Oversight Challenges Raised by ‘Global Stablecoin’ Arrangements* at 8 (Oct. 13, 2020); Markus K. Brunnermeier, et al., *The Digitalization of Money*, NAT’L BUREAU ECON. RSCH. WORKING PAPER NO. 26300 17 (Aug. 2019).

these clear financial linkages,¹⁶⁰ as well as murky governance,¹⁶¹ stablecoin reserve maintenance and monitoring represent critical market policy issues.¹⁶² Recent actions have attempted to address long-standing domestic regulatory uncertainty, with an April 2025 SEC Staff Statement¹⁶³ finding that USD-collateralized Stablecoins are generally not securities and the June 2025 GENIUS Act establishing a framework for so-termed “Payment Stablecoins.”¹⁶⁴ Nonetheless, questions remain, including treatment of Stablecoins outside of the scope of recent actions, as well as cross-border matters and enforcement – with ever-present potential for regulatory arbitrage in the event of a perceived disparity in treatment.¹⁶⁵

B. Security & Utility Crypto

The “Security and Utility Crypto” grouping includes four categories: Equity Coins, Meme Coins, Utility Tokens and Broken Tokens. The group constitutes about 18% of crypto asset value (as of April 2025), but encompasses over 90% of individual assets by count, including a vast majority of the most legally problematic instruments – largely Broken Tokens and Meme Coins.

For this grouping in particular, classification uncertainties have vastly complicated supervision, leading to misplaced focus and pervasive enforcement gaps exploited by less ethical operators. Due to high issuance volume and continued expansion – including Meme Coins issued by political figures¹⁶⁶ – Security and Utility Crypto represents the grouping in most dire need of regulatory action.

¹⁶⁰ “The composition of reserves can generate not only risks to consumers and investors but also financial contagion and instability.” PARMA BAINS ET AL., *REGULATING THE CRYPTO ECOSYSTEM, THE CASE OF UNBACKED CRYPTO ASSETS* (2022).

¹⁶¹ Tether, one of the largest stablecoin issuers, is controlled by a small group of individuals. Ben Foldy, et al., *The Unusual Crew Behind Tether, Crypto’s Pre-Eminent Stablecoin*, WALL ST. J. (Feb. 2, 2023), <https://www.wsj.com/articles/tether-ownership-and-company-weaknesses-revealed-in-documents-11675363340>.

¹⁶² Stablecoin oversight could present a productive initial step, including requiring issuers to provide audited reserves, while also potentially incorporating prudential supervision commensurate with entity size and risk profiles. See FITCH RATINGS, *Stablecoin Risks Extend Beyond Reserving Practices* (Jan. 12, 2023), <https://www.fitchratings.com/research/banks/stablecoin-risks-extend-beyond-reservingpractices-12-01-2023> (“pressure from regulators [has] driven a trend towards more conservative reserving and some improvement in transparency”). See also, Abdelaziz Fathi, *Circle Publishes a Breakdown of USDC Reserves for December*, FIN. FEEDS (Jan. 30, 2023), <https://financefeeds.com/circle-publishes-a-breakdown-of-usdc-reserves-for-december>.

¹⁶³ See *supra* note 92, discussing and applying the Reeves and Howey analyses. The SEC Staff Statement found that, with respect to Reves, collateralized (“Covered”) Stablecoins are not securities because “the offer and sale [] is to advance a commercial or consumer purpose.” For purposes of Howey, the underlying logic is that stablecoins are unlikely purchased with a profit objective.

¹⁶⁴ See *supra*, note 145 and associated text.

¹⁶⁵ For instance, given SEC oversight of money market funds as Investment Companies, there are logical reasons to treat Stablecoin Issuers similarly to avoid exacerbating financial system risks and disparate regulatory treatment.

¹⁶⁶ David Yaffe-Bellany, et al., *Trump Offers Private Dinner to Top 220 Investors in His Memecoin*, N.Y. TIMES (Apr. 23, 2025), <https://www.nytimes.com/2025/04/23/technology/trump-private-dinner-crypto-memecoin.html>

1. Equity Coins

“Equity Coins” are conceptually most analogous to digital stocks in that they confer holders legal rights and/or equity-like economic exposure.¹⁶⁷ Within Security & Utility Crypto, “Equity Coins” are the least legally ambiguous and likely smallest category. Broken Tokens are the most legally problematic; however, as discussed below, at least some Broken Tokens are in fact Equity Coins.¹⁶⁸

Equity Coins include three sub-categories: (i) Traditional, with features of both economics and governance; and (ii) Economic Share, which broadly lack governance rights, with some parallels to non-voting stock;¹⁶⁹ and (iii) Governance Tokens, which confer certain voting or governance rights but no direct economics, with some parallels to non-profit governance or so-termed “empty creditors” in the credit derivatives context.¹⁷⁰

Certain early iterations of Traditional Equity Coins were straightforwardly securities; however, relatively few crypto assets are this clear regarding their underlying nature and the associated allocations of economic rights. For instance, ICN tokens issued by ICONOMI’s represented¹⁷¹ “ownership of the ICONOMI platform, comprising of all assets and liabilities . . . including . . . intellectual property rights, branding and trademarks.”¹⁷² Similarly, Etheroll entitled token holders to earnings directly “[p]roportional to the number of tokens they hold,” as well as “voting rights” allowing “holders to vote on proposals set-forth by the Etheroll team.”¹⁷³ A more recent iteration is Decentralized Autonomous Organization (DAO)¹⁷⁴ tokens, which represent ownership and governance rights with voting power typically proportional to holdings.¹⁷⁵

¹⁶⁷ Such equity rights may be distinct from, and potentially inferior to, typical shareholders’ rights, particularly with respect to voting and control (though not wholly distinct from market practice, including dual-class and non-voting shares, à la Snap). See generally, Pedram P. Momtaz, *Initial Coin Offerings, Security Tokens, and the Democratization of Finance*. 147 J. FIN. ECON. 379-404 (2023).

¹⁶⁸ See *supra* Part III.

¹⁶⁹ As discussed below, certain instruments include features distinct from equity securities, warranting a stand-alone sub-category.

¹⁷⁰ In simplified terms, an “empty creditor” is a debtholder who, through the use of financial derivatives like credit default swaps (CDSs), has largely or entirely transferred their economic risk of a borrower’s default but still retains the legal rights and control associated with the debt. See Patrick Bolton & Martin Oehmke, *Credit Default Swaps and the Empty Creditor Problem* (Nat’l Bureau of Econ. Rsch, Working Paper No. 15999, 2010), https://www.nber.org/system/files/working_papers/w15999/w15999.pdf

¹⁷¹ The original ICN token was phased out in 2018-2019, as the company transitioned to a corporate structure with eICN representing equity shares in the company.

¹⁷² Tim M. Zagar, et al., *ICONOMI: Open Fund Management Platform to Disrupt the Investment Industry* 8 (2016).

¹⁷³ ETHEROLL, ETHEROLL DICE GAME WHITEPAPER 11 (2017). The project shut down in 2019-2020, and the DICE token is no longer actively traded on major exchanges. The team announced a voluntary wind-down of operations and distributed remaining ETH to token holders.

¹⁷⁴ DAOs are envisioned as something of a distinctive organizational form characterized by an integration of ownership and control, with direct voting and smart contract-enabled operational autonomy and typically no traditional board of directors.

¹⁷⁵ Examples include Curve’s CRV token and MakerDAO’s MKR.

Economic Share tokens are Equity Coins that allocate only economic rights, including certain revenue or profit shares, as well as more problematic “token burning” programs.¹⁷⁶ In a recent tokenization example, Overstock's blockchain subsidiary issued the TZROP token, which entitles holders to quarterly dividends from tZERO's profits. As a legal matter, the token reflects the economic equivalent of tZERO's Series-A preferred equity securities, which do not have voting rights.¹⁷⁷

Governance Tokens refer to instruments that confer certain governance rights without direct economic exposure.¹⁷⁸ A prominent example is the WLFI Governance Token issued by World Liberty Financial, an entity associated with the Trump family. LFI's “Gold Paper” unequivocally states that the token provides “no ownership, no revenue share, no equity or profit claim, and no expectation of financial return” and that its “sole function is participation in certain governance processes.”¹⁷⁹

2. Meme Coins

Meme Coins correspond to crypto assets without legal rights or clear financial value.¹⁸⁰ The quintessential example is Elon Dogecoin,¹⁸¹ an Elon Musk favorite self-described as an “accidental crypto movement that makes people smile.”¹⁸² Nonetheless, Dogecoin has consistently been one of the ten largest crypto assets, with an April 2025 market value of about \$20 billion – exceeding that of leading companies, such as the New York Times.¹⁸³ While some have touted Dogecoin's payment system

¹⁷⁶ Tokens that do not offer (or are unable to offer) traditional economic rights in the form of profit or revenue distributions often utilize so-called “buy-and-burn” programs to repurchase outstanding tokens. In a prior Article, I argue that despite much repeated analogies to stock buybacks, token burning in reality represents supply-side price machinations to artificially prop up asset prices and create the appearance of value creation. *See The Broken Token Problem*, *supra* note 64.

¹⁷⁷ See TZERO GROUP, INC. PREFERRED EQUITY TOKENS SERIES A, ARTICLE VIII, <https://www.tzrop.com/terms.html>; *see also* J.D. Alois, *tZERO Group Announces Full Tokenization of Series A Preferred Equity Security; tZROP Will Occur March 14*, CROWDFUND INSIDER (Mar. 7, 2025) <https://www.crowdfundinsider.com/2025/03/237090-tzero-group-announces-full-tokenization-of-series-a-preferred-equity-security-tzrop-will-occur-march-14/>.

¹⁷⁸ While relatively common earlier in crypto's evolution, over time many Governance Tokens transitioned to incorporate economics (thus fitting within the ‘Traditional’ category).

¹⁷⁹ WORLD LIBERTY FINANCIAL, *Gold Paper* (2024), <https://static.worldlibertyfinancial.com/docs/intl/gold-paper.pdf>.

¹⁸⁰ *Top Memes Tokens by Market Capitalization*, CRYPTO.COM, <https://crypto.com/price/categories/memes> (last visited Aug. 12, 2023).

¹⁸¹ “Dogecoin's value today isn't tied to real-world capital or the desire to make money off of the currency.” Frank Gogol, *Should I Buy Dogecoin? This is What You Need to Know*, STILT BLOG (June 19, 2023), <https://www.stilt.com/blog/2021/12/should-i-buy-dogecoin>.

¹⁸² Mike Murphy, *Dogecoin Co-Create Blasts Crypto Blasts Crypto as a Scam to Help the Rich Get Richer*, MARKETWATCH (July 14, 2021) <https://www.marketwatch.com/story/dogecoin-co-creator-blasts-crypto-as-a-scam-to-help-the-rich-get-rich-11626310808>.

¹⁸³ DOGECOIN, <https://dogecoin.com/> (Aug. 12, 2023).

potential,¹⁸⁴ its utilities are largely entertainment, community, and a low-price crypto entry point.¹⁸⁵ To put it differently, Meme Coins serve largely aesthetic purposes¹⁸⁶—“akin to collectibles” with “limited or no use or functionality.”¹⁸⁷ In that regard, Meme Coins arguably have some conceptual parallels to broader gamification of risk-based activities, from in-app investing to sports betting.¹⁸⁸

A February 2025 SEC staff statement provided a measure of regulatory clarity, indicating that Meme Coins generally are not securities. However, it also stressed that “fraudulent conduct related to the offer and sale of meme coins may be subject to enforcement action or prosecution.”¹⁸⁹ Such concerns are highly material, given the sector’s propensity for various machinations impermissible with traditional assets. For instance, in late February 2025, Argentine President Javier Milei appeared to engage in a so-called “rug-pull,” through which he allegedly promoted and quickly sold a Meme Coin pocketing profits at supporters’ expense.¹⁹⁰

Correspondingly, though the SEC statement is silent on the issue, the fact that Meme Coins are generally not securities should not mean that they are simply left unsupervised. As detailed in Part IV, the regulatory framework should instead match the nature of the asset, in this case reflecting a digital collectible with associated guidelines. In other words, from a legal and policy perspective, the critical concerns are around disclosure and representations: *are consumers buying these items expecting something closer to a stock than a trinket?*

3. Utility Tokens

Utility Tokens are crypto assets intended to provide functionality or utility within a specific ecosystem, platform, or project.¹⁹¹ As discussed below, they are subject to significant terminological and legal

¹⁸⁴ David Rodeck, *Meet Dogecoin, the Meme Cryptocurrency*, FORBES ADVISOR (last visited Apr. 3, 2023), <https://www.forbes.com/advisor/investing/cryptocurrency/what-is-dogecoin>.

¹⁸⁵ *Id.*

¹⁸⁶ Certain Broken Tokens may functionally be Meme Coins, however potential issuance conduct concerns complicate classification in this respect.

¹⁸⁷ U.S. SEC. & EXCH. COMM’N, DIV. CORP. FIN., *Staff Statement on Meme Coins* (Feb. 27, 2025), <https://www.sec.gov/newsroom/speeches-statements/staff-statement-meme-coins> [hereinafter SEC MEME COIN STATEMENT] (noting Meme Coins “typically are purchased for entertainment, social interaction, and cultural purposes, and their value is driven primarily by market demand and speculation.”).

¹⁸⁸ ALL-IN PODCAST, *supra* note 157.

¹⁸⁹ SEC SEC MEME COIN STATEMENT, *supra* note 187.

¹⁹⁰ Nicolás Misculin, *Argentina Meme Coin Scandal Dents Milei’s Hunt for Election Allies*, REUTERS (Feb. 27, 2025), <https://www.reuters.com/world/americas/argentina-meme-coin-scandal-dents-mileis-hunt-election-allies-2025-02-27/>.

¹⁹¹ Utility Tokens have some parallels to InfraCoins but are less versatile with functionality on a circumscribed system. Though some taxonomies present both as sub-categories of a broader Network Utilization Coin category, this Article does not due to significant legal differences between the assets.

uncertainty due to overlap with “Broken Tokens.” As used in this Article, “true” Utility Tokens are crypto assets consistent with prior SEC guidance (the “Utility Token NALs”), with the following attributes: (i) they are not intended as investments and do not confer potential profits; (ii) they have a fundamentally consumptive use case; and (iii) they are marketed accordingly.¹⁹²

As I detail in an earlier article, from a legal and economic perspective, Utility Tokens closely resemble a familiar construct: miles and points issued by loyalty programs such as airlines and hotels (“Miles”).¹⁹³ For consumers, both Utility Tokens and Miles reflect consumptive assets without means for profit but certain “currency-like” value for a circumscribed universe of products and services.¹⁹⁴ For issuers, Miles (like Utility Tokens) generate significant revenue – indeed, airline loyalty programs have 50% margins and valuations exceeding the operating business – but are not securities requiring registration.¹⁹⁵

Unfortunately, the SEC and crypto industry appear irreconcilably at odds regarding the nature and definition of Utility Tokens, with particular complications arising from the prevalence of Broken Tokens. Many of the challenges can be addressed by treating Utility Tokens akin to Miles, rather than a wholly new construct necessitating bespoke legal frameworks, as discussed further in Part IV.

4. Broken Tokens

A long-standing problem underlying crypto markets is that many assets labeled “utility tokens” are, in reality, what this Article terms “Broken Tokens.” Such legally problematic assets constitute the majority of individual crypto instruments by count (though not value). Broken Tokens share the following attributes:

- Use of Capital. The token sale is, for practical purposes, a capital raise for a then-unbuilt or unfinished platform (running afoul of clear SEC guidance).
- Labels. The asset is labeled a “Utility Token,” but cannot meet the Utility Token NAL standard because it offers no immediate consumptive “utility” at issuance.

¹⁹² TurnKey Jet, Inc., SEC Staff No-Action Letter, 2019 WL 1471132 (Apr. 3, 2019); Pocketful of Quarters, Inc., SEC Staff No-Action Letter, 2019 SEC No-Act. LEXIS 319, at *2 (July 25, 2019); IMVU, Inc., SEC Staff No-Action Letter 2020 SEC No-Act. LEXIS 339 (Nov. 19, 2020) (collectively, hereinafter, the “Utility Token NALs”).

¹⁹³ See, *The Broken Token Problem*, *supra* note 64, Parts III.B-C.

¹⁹⁴ As detailed in a prior article, the consumptive utility (amongst other factors) distinguishes these assets from securities. See *The Broken Token Problem*, *supra* note 64, Parts III.B-C.

¹⁹⁵ They are of course inherently intertwined businesses. Claire Bushey, *US Airlines Reveal Profitability of Frequent Flyer Programmes*, FIN. TIMES (Sep. 16, 2020), <https://www.ft.com/content/1bb94ed9-90de-4f15-ae00-3bf390b0f85e>; STIFEL, VALUING AIRLINE LOYALTY PROGRAMS—AIRLINES ARE INTRINSICALLY UNDERVALUED 1 (2017), <https://stifel2.bluematrix.com/docs/pdf/bfcbb9a0-ed7f-41de-89ea2b97d3afe082.pdf>; So Yeon Chun & Evert de Boer, *How Loyalty Programs Are Saving Airlines*, HARV. BUS. REV. (Apr. 2, 2021), <https://hbr.org/2021/04/how-loyalty-programs-are-saving-airlines>.

- Marketing. Disclosures most closely resemble that of equity securities, including references to potential profit, ownership, and alignment of interests with project management.
- Limited Legal Rights. Unlike Equity Coins or true Utility Tokens, Broken Tokens confer limited (or non-existent) legal rights, making them in effect legally closest to Meme Coins, distinguished only by the stated intention of future platform development.¹⁹⁶

Broken Tokens thus strangely straddle all Security & Utility categories, as they are labeled “Utility Tokens” (for ostensible regulatory purposes), marketed like Equity Coins but in reality substantively closest to Meme Coins. Broken Tokens are the most legally problematic crypto because, often through borderline-fraudulent marketing, they reflect the largest and most persistent delta between economic substance, market perception, and regulatory treatment. These issues underscore and exacerbate overarching apprehensions regarding crypto assets’ intrinsic value and productive uses.¹⁹⁷

Broken Tokens encompass two distinctive sub-categories: (1) “Pre-Utility Tokens,” which reflect unregistered securities offerings for purposes of funding platform development; and (2) “Non-Utility Tokens” which reflect at best bad faith, but more likely fraudulent conduct.¹⁹⁸ While both are problematic, the nature of why the token is “broken” can have regulatory and legal implications. “Pre-Utility” Tokens broadly fall within the civil line under SEC jurisdiction as unregistered offerings typically punishable by fines. “Non-Utility Tokens,” in contrast, may represent fraud, with potential for criminal charges within DOJ purview.¹⁹⁹

C. Liability-Based Instruments

The third asset grouping, Liability-Based Instruments, encompasses Crypto Debt, Yield Products and Staking Services. All three categories are economically fixed-income-adjacent structures predicated on

¹⁹⁶ Many crypto projects are unable to achieve this, resulting in a strange limbo for investors.

¹⁹⁷ FTX founder Sam Bankman-Fried posited that most crypto assets lack intrinsic value. *See Bankman-Fried on Crypto Downturn & Acquisition Landscape*, BLOOMBERG (July 19, 2022), <https://www.bloomberg.com/news/videos/2022-07-19/bankman-fried-on-crypto-downturn-acquisition-landscape>.

¹⁹⁸ The normatively hardest cases are likely to be those that begin as broadly good faith unregistered offerings, but devolve into problematic conduct. *See The Broken Token Problem*, *supra* note 64, Part IV.

¹⁹⁹ One example of the Non-Utility Token offering may be the Blockchain Terminal ICO, and associated BCT token. The BCT token was marketed as facilitating a competitor to the Bloomberg Terminal but in reality reflected closer to a ponzi scheme. *See* Indictment, United States v. Boaz Manor, No. 20-___, (D.N.J. 2020), <https://www.justice.gov/usao-nj/press-release/file/1235956/dl>; Frank Chaparro, *Two identities, one man: the story of \$800 million hedge fund fraudster Boaz Manor who led the alleged \$31 million Blockchain Terminal ICO*, THE BLOCK (Dec. 10, 2018, 5:24 PM EST), <https://www.theblock.co/post/4553/two-identities-one-man-the-story-of-800-million-hedge-fund-fraudster-boaz-manor-who-led-the-alleged-31-million-blockchain-terminal-ico>. A separate early-stage research project plans to analyze these issues and associated regulatory implications in depth.

bearing risk for a typically passive return, without equity-like features or exposure.²⁰⁰ Liability-Based Instruments are somewhat less developed relative to the other two groupings and are thus not sub-categorized below the category (tier 2) level.²⁰¹

Importantly, given their information and intermediation-heavy nature, Liability-Based Instruments appear well-suited for blockchain applications, particularly when combined with other tools, such as generative AI and Smart Contracts. Indeed, many forecast significant growth with respect to both digitally native issuance and tokenization of existing traditional market instruments, such as corporate bonds and loans.²⁰²

I. Crypto Debt

Crypto Debt refers to crypto tokens that exhibit legal and economic characteristics broadly analogous to traditional debt instruments, including varying degrees of explicit and implicit repayment obligations. The arrangements vary significantly, ranging from relatively simpler quasi corporate bonds to structured and synthetic product analogs.²⁰³

In recent years, a number of financial institutions have issued digitally native or tokenized bonds, often with automated interest payments through smart contracts.²⁰⁴ Examples include BBVA's 2019 \$40 million green bond issuance,²⁰⁵ UBS's 2022 \$370 million issuance under Swiss law,²⁰⁶ and DBS Bank's May 2021 \$11.3 million digital bond.²⁰⁷ More complex structures include protocol-related tokens explicitly structured as debt to finance operations or expansions²⁰⁸ as well as tokenized protocol lending, with lent deposits reflected by tokenized claims that also incorporate accrued interest, reducing frictions.²⁰⁹ Tranched yield tokens separate principal and yield components to create crypto analogs to

²⁰⁰ See *Gary Plastic Packaging Corp. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 756 F.2d 230, 240 (2d Cir. 1985) ("In the present case, the certificates of deposit sold through the CD Program satisfy the *Howey* test for determining what constitutes an investment contract within the meaning of the Acts.").

²⁰¹ As discussed below, certain sub-categories appear to be emerging, and the classification may be revisited in the future to reflect this.

²⁰² See *supra*, Part I.

²⁰³ For instance, Yield-Bearing Synthetic Assets are tokens that track the value of traditional assets while accruing yield from DeFi strategies. See Jiahua Xu, et al., *SoK: Decentralized Exchanges (DEX) with Automated Market Maker (AMM) Protocols*, ACM COMPUTING SURVEYS (Feb. 9, 2023).

²⁰⁴ Vijay Mohan, *Automated Market Makers and Decentralized Exchanges: a DeFi Primer*, FIN. INNOVATION, 8(1), 1–27.

²⁰⁵ Max Yakubowski, *Major Spanish Bank BBVA Issues \$40 Million Green Bond Based on Blockchain Platform*, COINTELEGRAPH (Feb. 19, 2019), <https://cointelegraph.com/news/major-spanish-bank-bbva-issues-40-million-green-bond-based-on-blockchain-platform>

²⁰⁶ The bonds represented a direct debt obligation of UBS with a 3-year maturity and were traded on both blockchain infrastructure and traditional exchanges.

²⁰⁷ The bond was issued through DBS's Digital Bond issuance platform.

²⁰⁸ Examples include Maple Finance's Pool Tokens and Ribbon Finance's rvTokens.

²⁰⁹ Examples include Compound's cTokens, which accrete in value as interest accrues on underlying assets deposited into Compound's lending pools and Alchemix's alTokens, which represent self-repaying loans where yield from

zero-coupon bonds and interest-only strips, introducing explicit DeFi term structures and creating tradable yield curves.²¹⁰

2. Yield Products

Yield Products represent financial arrangements where digital asset holders provide temporary access to their assets in exchange for interest, often at rates far above traditional markets.²¹¹ These products proliferated as the crypto ecosystem matured, creating opportunities for passive income generation while introducing novel risk factors.²¹² Typically, Yield Products are offered by centralized Crypto Platforms that intermediate between lenders (depositors) and borrowers of digital assets. Crypto Platforms often maintain custody (and sometimes legal ownership) of user deposits and manage asset allocations to generate returns in excess of depositor yields, with the goal of earning profit on the spreads.²¹³ The business model resembles aspects of traditional financial intermediation but operates in largely unregulated or only partially regulated environments.²¹⁴

The policy issue, as is common with crypto, is not the nature of the risk itself but rather frequent product mis-marketing of Yield Products as akin to bank deposits or other low-risk investments. In reality, the first-principles economics are closest to high-yield or distressed-focused Business Development Companies. Just as with traditional finance, the promise of above-market yields requires above-market risks, including exposure to speculative endeavors.

The dynamics are well illustrated by offerings from Celsius and a Gemini/Genesis collaboration, both of which were popular during the Covid-19 crypto boom, but ultimately left investors stranded in lengthy bankruptcy proceedings.²¹⁵ Celsius, a now-defunct unregulated ‘crypto bank’ operated one of the largest deposit-like Yield Products through which customers could earn rates of up to 17% on crypto deposits.²¹⁶

deposited collateral gradually pays down the debt. See Robert Leshner & Geoffrey Hayes, Compound: The Money Market Protocol, COMPOUND (Feb. 2019); ALCHEMIX, *Synthetic Token Generation Through Self-Repaying Loans. Technical Documentation* (2021).

²¹⁰ Examples include Element Finance's Principal and Yield Tokens and Pendle Finance's PT and YT tokens.

²¹¹ Joshua Oliver, *Investors warned that crypto ‘yield’ products are not bonds*, FIN. TIMES (Nov. 7, 2021) <https://www.ft.com/content/cfc4eece-df0f-479f-ad51-56300dfa3149>

²¹² Sirio Aramonte, Wenqian Huang & Andreas Schrimpf, *DeFi risks and the Decentralisation Illusion*, BIS Q. REV. (Dec. 2021).

²¹³ Steven M. Werner et al., *SoK: Decentralized Finance (DeFi)*, PROC. 3D ACM CONF. ADVANCES FIN. TECH. 1 (2022).

²¹⁴ Dirk A. Zetsche, et al., *Decentralized Finance*, 6 J. FIN. REG. 172 (2020).

²¹⁵ During the Covid-19 crypto boom, “Earn” was a common industry marketing term for what this Article classifies as “Yield Products.”

²¹⁶ Alex Mashinsky, First Day Dec’1 in Support of Chapter 11 Petitions & First Day Motions at 2, 4, 17 ¶ 47, *In re Celsius Network LLC*, No. 22-10964 (MG) (Bankr. S.D.N.Y. July 13, 2022), ECF No. 23 [hereinafter *Mashinsky First Day Decl.*]. After scrutiny from the SEC and state regulators, Celsius replaced the “Earn” program with a

This required Celsius to seek out increasingly high-risk investments, many of which quickly soured during sector's 2022 downturn.²¹⁷ Celsius filed for Chapter 11 in July 2022, resulting in a highly contentious process with extensive fraud allegations, particularly around the status and marketing of the Earn accounts. Ultimately, despite alleged misrepresentation, the court found that about 600,000 Earn Accounts with \$4.2 billion constituted property of the Celsius bankruptcy estate.²¹⁸ The Gemini/Genesis Yield Product ("Gemini Earn") operated more akin to a brokerage product, exposing customers to distinct legal issues but similar economic risk that materialized when Genesis filed for bankruptcy.²¹⁹

3. Staking Services

Staking represents a fundamentally different mechanism from Yield Products, rooted in blockchain consensus rather than financial intermediation. In proof-of-stake (PoS) blockchain networks, validators must "stake" (commit) a certain amount of the network's native cryptocurrency as collateral to participate in the consensus process.²²⁰ The primary purpose of staking is securing the network through economic incentives, with rewards compensating validators who contribute to consensus formation -- providing what are in effect network security-like services.²²¹ The mechanism also creates an alternative to proof-of-work that avoids its energy consumption issues while attempting to maintain decentralization properties.²²²

Staking services are popular because direct staking requires significant technical expertise and substantial capital.²²³ Service providers abstract away the technical complexity of staking, allowing users to delegate

hastily-established "Custody" program through which users would retain legal ownership of the assets. *See* Lev E. Breydo, *Contagion*, Part III; *See also* Sissi Cao, *Was Celsius a Massive Scam From the Start?*, OBSERVER (Jan. 4, 2023), <https://observer.com/2023/01/was-celsius-a-massive-scam-from-the-start/>.

²¹⁷ Mashinsky First Day Decl at 5.

²¹⁸ *See*, Lev E. Breydo, *Contagion*, Part III.B (detailing Celsius bankruptcy proceedings as well as the Earn account decision and its impact). *See also Interim Report of the Examiner* at 1–2, *In re Celsius Network LLC*, No. 22-10964 (MG) (Bankr. S.D.N.Y. Nov. 19, 2022), ECF No. 1153 [hereinafter CELSIUS INTERIM EXAMINER REPORT] (describing transition away from Earn Accounts).

²¹⁹ The SEC argued that starting in February 2021, Gemini (a crypto brokerage) and Genesis (a lender) raised billions through the "unregistered offer and sale of securities to U.S. retail investors" via a jointly offered debt-like product ("Gemini Earn" program) where "investors tendered crypto assets to Genesis" and, in exchange, Genesis promised to pay interest on those assets to investors. *SEC Charges Genesis and Gemini for the Unregistered Offer and Sale of Crypto Asset Securities Through the Gemini Earn Lending Program*, U.S. SEC. & EXCH. COMM'N (Jan. 12, 2023), <https://www.sec.gov/news/press-release/2023-7>.

²²⁰ Giulia Fanti et al., *Proof of Stake: A Mechanism Design Approach*, 68 MGMT. SCI. 949–968 (2022).

²²¹ BUTERIN, ETHEREUM 2.0 SPECS: INCENTIVES, ETHEREUM FOUND. (2020).

²²² Fahed Saleh, *Blockchain Without Waste: Proof-of-Stake*, 34 REV. FIN. STUD. 1156–1190 (2021).

²²³ Some have argued that this creates entry barriers that concentrate validation power. USENIX Security Symposium, Jiahua Xu, *The Anatomy of a Cryptocurrency Pump-and-Dump Scheme* 1609–1625 (2019).

their otherwise dormant assets to professional validators, with some parallels to securities lending programs.²²⁴

From a regulatory perspective, Staking Services occupy something of a gray area as they combine elements of infrastructure provision with investment-like characteristics.²²⁵ The SEC's approach thus far has largely focused on the marketing, expectations of profit, and the level of effort contributed by service providers rather than the underlying staking mechanism itself. In February 2023, the SEC reached a \$30 million settlement with Kraken regarding its staking-as-a-service program, which the SEC characterized as an unregistered securities offering.²²⁶

IV. POLICY RECOMMENDATIONS

Crypto's persistent definitional and classification confusion has proven highly value destructive for all constituencies, including consumers, honest entrepreneurs, and the broader innovation ecosystem. Effective oversight requires a clear, empirically grounded understanding of the sector and its underlying instruments. This Article provides that foundation through a comprehensive taxonomy designed to guide policymakers and market participants. The normative aim simple: comparable risks and rights should receive comparable treatment – treating “like alike” based on substance, rather than marketing or labels.

Part IV turns from diagnosis to prescription. It proceeds in two parts. First, at the regulatory architecture level, it leverages the Article's taxonomy to realign legal classification and jurisdiction to harmonize treatment with asset-specific economic substance. Second, it proposes oversight and enforcement priorities, emphasizing disclosure and consumer protection for both legacy and emerging assets.

A. Regulatory Architecture

The proliferation of crypto forms and labels has long obscured substance, paralyzing regulators. As the analysis in Parts II and III shows, most crypto assets have readily identifiable traditional market analogs that should serve as the baseline for regulatory treatment – “same activity, same risk, same

²²⁴ Staking service models include exchange-based staking, staking as a service and liquid staking protocols. See IEEE European Symposium on Security and Privacy Workshops, Lars Brünjes, et al., *Reward Sharing Schemes for Stake Pools*, 256–265 (2020); IEEE 37th Symposium on Reliable Distributed Systems, Tyler Crain, et al., *DBFT: Efficient Byzantine Consensus with a Weak Coordinator and its Application to Consortium Blockchains* (2021).

²²⁵ Carla Reyes, *Creating Cryptolaw for the Uniform Commercial Code*, 78 W&L L. REV. 1521 (Fall 2021).

²²⁶ Payward Ventures, Inc. (d/b/a Kraken), Admin. Proc. File No. 3-21288, SEC. & EXCH. COMM'N (Feb. 9, 2023). Some have argued that this action signaled increased regulatory attention to the distinction between direct and serviced staking given that the latter can exhibit characteristics of investment contracts.

regulations."²²⁷ Yet, crypto often exhibits a sharp disconnect between an asset's: (i) economic reality; (ii) its marketing and market perception; and (iii) regulatory treatment.

Closing these gaps starts with rationalizing the oversight framework. Building on the analysis from Part I, Figure 12 summarizes current regulatory treatment (middle) and the Article's proposed mapping (right). Two principles underlie the proposal. First, the regulatory treatment of each asset should track its economic substance. Second, oversight should sit with the agency best positioned to supervise the relevant risks.

Figure 12. Regulatory Architecture: Current (Q3 2025) & Proposed

Category	Current (Q3 2025)		Proposed Changes	
	Legal Status	Regulator	Legal Status	Regulator
1. Utility Tokens	Unclear*	Unclear (SEC / CFTC)	Rewards Program	CFPB
2. Broken Tokens:	Security / Unclear			
'Pre-Utility'			Security / Legal Claim ⁴	SEC
'Non-Utility'			Likely Legal Claim	SEC / DOJ
3. Equity Coins	Security / Unclear		Security	SEC
4. Meme Coins	Unclear ¹		Digital Collectible	CFPB
5. Store of Value Coins	Commodity (Bitcoin)	CFTC	Commodity	CFTC
6. Stable Coins	Payment StableCoin /	Banking Regulators	Security / MMF	SEC
	Other Types Unclear ²	/ Unclear ⁵		
7. InfraCoins	Unclear / Commodity (Ether)	Unclear (CFTC / SEC)	Commodity	CFTC
8-10. Liability-Based Instruments ³	Unclear (SEC Argues Security)	Unclear / SEC	Largely Securities	SEC

¹ February 2025 SEC Staff Statement (which lacks the force of law) indicated not a security.

² April 2025 SEC Staff Statement (which lacks the force of law) indicated USD-Covered not a security.

³ Consolidated due to more limited legal clarity.

⁴ Fact, context and disclosure-specific.

⁵ The 2025 GENIUS Act gave banking regulators oversight of Payment Stable Coins. Classification of other StableCoins remains unclear.

* While true Utility Tokens should not be considered securities, practical uncertainties limit this proposition.

Four aspects of the proposal warrant emphasis. First, recognizing that clear regulatory domains are essential – particularly given persistent SEC-CFTC frictions – the framework allocates responsibility consistent with traditional market analogs. The CFTC would be responsible for crypto assets most akin to commodities (including Store of Value and InfraCoins) while the SEC would have oversight for assets

²²⁷ Investigating the Collapse of FTX: Hearing Before the House Fin. Serv. Comm., 117th Cong. (Dec. 13, 2022) (Remarks of Senator Elizabeth Warren, calling for uniform treatment of similar transactions with the "same kind of risks"); Tobias Adrian, et al., *Crypto Needs Comprehensive Policies to Protect Economies and Investors*, IMF BLOG (July 18, 2023), <https://www.imf.org/en/Blogs/Articles/2023/07/18/crypto-needs-comprehensive-policies-to-protect-economies-and-investors> (providing principle of "same activity, same risk, same regulations").

most akin to securities. Second, given the sector’s history of misconduct – and recurring Broken Token abuses – the regime must preserve credible enforcement pathways, including both civil remedies and, where appropriate, criminal liability.²²⁸

Third, system-wide oversight is imperative, including for assets outside of SEC and CFTC jurisdiction. In other words, even if an asset is not a security, it does not follow that it should be left effectively unsupervised. To the contrary, pervasive sector abuses illustrate the importance of consumer protection. Marketing practices and disclosures for assets such as Meme Coins and Utility Tokens should therefore be supervised by an appropriately situated regulatory body under a framework tailored to the risks and representations at issue.²²⁹

Finally, to avoid past errors, the oversight architecture should be forward-looking. The framework therefore adopts a rebuttable presumption that Liability-Based Instruments are generally securities, subject to potential adjustment based on product evolution and prudential oversight maturation.

B. Oversight & Enforcement

Once regulatory architecture is recalibrated, policy emphasis can shift from jurisdictional triage to asset-level oversight: protecting consumers, supporting productive innovation and safeguarding market stability. Two priorities follow: (i) addressing legacy problem assets, including Broken Tokens; and (ii) ensuring best practices for new assets at issuance, reinforced through ongoing monitoring and periodic disclosures.

1. Legacy Assets

For regulators confronting the Broken Token problem, the guiding principle should be consumer protection—not grandfathering practices inconsistent with existing law. A sensible starting point may be a rebuttable presumption that assets in the Security and Utility Crypto group are securities requiring registration.²³⁰ Issuers could rebut that presumption – through procedures similar to “no action relief” – by demonstrating that the asset qualifies and is marketed and used as a true Utility Tokens or Meme Coin subject to alternative oversight.

²²⁸ The latter may entail a DOJ role for certain matters in its purview. For further discussion of policy proposals, *See The Broken Token Problem*, *supra* note 64, Part IV.

²²⁹ The Consumer Financial Protection Bureau (“CFPB”) is a logical candidate; however, changes to its structure suggest engaging or developing a specialized group within another regulatory agency such as the FTC.

²³⁰ This is consistent with some scholarly proposals. *See* Carol R. Goforth, *Regulation by Enforcement: Problems with the SEC’s Approach to Cryptoasset Regulation*, 82 MD. L. REV. 107, 152 (2022) (suggesting “all tokens, however classified, should to some extent be regulated as securities. . . . [to] avoid[] the lack of clarity inherent in the current system,” as well as certain registration requirements “to avoid the perils of over-regulation and concomitant stifling of innovation”).

After a transition period, noncompliance should carry clear and meaningful consequences, including enforced penalties and conduct-specific distinctions in treatment – particularly between Pre-Utility and Non-Utility Tokens.²³¹ Unambiguous delineation would improve incentives and reduce regulatory arbitrage across the crypto ecosystem, benefiting consumers and good-faith compliant projects alike.

2. *New Innovations*

Regulators should establish clear baseline disclosure and marketing standards for new crypto assets. Asset-specific requirements may logically differ – for Meme Coins relative to Utility Tokens and securities, for instance. However, all offerings should provide consumers with accurate, comprehensible, and legally sufficient information about their rights, the risks, and verifiable use cases.

For example, even if Meme Coins are neither securities nor Utility Tokens, purchasers may still approach them under mistaken investment assumptions. The law need not prohibit parties from buying Dogecoin based on their own subjective preferences. However, the key question is whether buyers are adequately informed and understand that they are purchasing digital aesthetics, not investment assets. Regulators should therefore ensure that project sponsors clearly and correctly represent the substantive nature of each asset, including through independent third-party technical audits where appropriate.

Some assets, including Utility Tokens, may also require ongoing supervision over their lifecycle. That is because an instrument can satisfy a consumptive-use standard at launch but drift toward investment-like marketing or functionality over time. Given recent history, there is little basis to assume that market discipline alone is a sufficient corrective mechanism. Regulators should be mindful of this and instead err towards ongoing monitoring where necessary.

Finally, while policy should encourage productive innovation, experience shows that it must also remain vigilant regarding the potential for unforeseen risks as well as regulatory arbitrage. Tokenization illustrates these considerations: it has the potential to meaningfully modernize legacy market infrastructure but may also create new channels for risk diffusion, systemic risk and investor harm. Accordingly, proactive oversight and industry engagement are critical to ensure that consumers and market participants are protected from undue risks while benefiting from productive innovation.

CONCLUSION

Crypto remains confusing. This is in large part because, rather than being one “thing,” it is a diverse universe of instruments that bundle radically different rights and risks under a single technological label.

²³¹ A limited, time-bound safe harbor is an option, but implicates considerations beyond the scope of this analysis.

That heterogeneity has become a policy trap: it invites exceptionalism, obscures economic reality, and encourages a regulatory perimeter defined by branding rather than substance.

This Article offers a disciplined alternative. By providing a comprehensive substance-over-form taxonomy, it supplies a common language for courts, regulators, and market participants. The framework also illuminates the sector's core pathology: persistent divergence between asset-level substance, marketing, and regulatory treatment.

The policy implications are straightforward. Regulatory treatment should follow economic reality and enforceable rights, not technical architecture. That principle supports three concrete recommendations: (i) recalibrate the regulatory architecture, including SEC–CFTC jurisdictional allocation; (ii) adopt a transition and enforcement posture for legacy assets; and (iii) ensure consumer protection-focused oversight for new products, including those outside traditional categories. Through this approach—rather than hard-coding crypto exceptionalism—Congress can modernize market structure without displacing the time-tested principles that anchor financial regulation.

APPENDIX I. SUMMARY OF EXISTING TAXONOMIES

This Article’s framework builds upon and synthesizes a number of existing approaches, including those from regulators,²³² multilateral bodies, thinktanks,²³³ scholars²³⁴ and the private sector.²³⁵

While each approach has merits, this Article’s taxonomy is distinctive because it: (i) prioritizes economic substance over technical attributes or marketing labels;²³⁶ (ii) is mutually exclusive and collectively exhaustive (MECE)²³⁷ across the full crypto-asset universe; (iii) expressly surfaces category misuse and ambiguity (including Broken Tokens and Pre-Utility Tokens); and (iv) is designed to map directly onto U.S. regulatory categories and jurisdictional allocation.

Select frameworks are summarized below to illustrate points of convergence and divergence:

- **International Monetary Fund (“IMF”).**²³⁸ The IMF groups crypto assets into six categories: NFTs, security tokens, utility tokens, unbacked crypto assets, stablecoins, and central bank digital currency. Relative to that scheme, this Article’s framework: (i) excludes NFTs and CBDCs; (ii) significantly sub-segments components of the IMF’s (analytically overly broad) “unbacked crypto assets” category; and (iii) isolates Broken Tokens as a distinct and important category that reflects the substance of many “utility token” offerings.

Legal Scholarship:²³⁹

- Professor Guseva provides a comprehensive summary of frameworks within the legal literature, with the approaches delineating crypto assets along three dimensions:²⁴⁰ (i) Native and Non-Native Tokens; (ii) Functional and regulatory classifications; and (iii) Fungible and non-fungible tokens.
 - This Article retains the intuition while tightening boundary conditions and adding the categories that drive much of the practical ambiguity (e.g., Broken Tokens).
- Professor Goforth (and others) have suggested “to divide tokens into something like the following general categories: (1) currency or payment tokens; (2) securities tokens; and (3) utility tokens.”²⁴¹

²³² Goldman & Kumar, *supra* note 96 at 1.

²³³ *Id.*

²³⁴ Jens Lausen, *Regulating Initial Coin Offerings? A Taxonomy of Crypto-Assets*, Twenty-Seventh European Conference on Information Systems, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3391764.

²³⁵ Sabry & Franceschelli, *supra*.

²³⁶ *Crypto Taxonomy*, COINDESK, <https://www.coindesk.com/dacs/> (outlining technical Digital Asset Taxonomy).

²³⁷ See *supra*, n. 98. For instance, Milken’s framework is non-MECE as it has BTC in both digital and virtual currency.

²³⁸ Parma Bains et al., *Regulating the Crypto Ecosystem: The Case of Unbacked Crypto Assets*, INT’L MON. FUND: FINTECH NOTES (2022), <https://doi.org/10.5089/9798400221361.063>.

²³⁹ The legal literature does not appear to include an attempt at a comprehensive crypto framework, though some work discusses treatment of assets generally and bitcoin in particular. See, e.g., Thomas Lee Hazen, *Tulips, Oranges, Worms, and Coins – Virtual, Digital, or Crypto Currency and the Securities Laws*, 20 N.C. J. L. & TECH. 493, 496 (2019); Ruoke Yang, *When Is Bitcoin A Security Under U.S. Securities Law?*, 18 J. TECH. L. & POL’Y 99, 111 (2013).

²⁴⁰ Yuliya Guseva, *A Conceptual Framework for Digital-Asset Securities: Tokens and Coins As Debt and Equity*, 80 MD. L. REV. 166, 175–79 (2020).

²⁴¹ Carol R. Goforth, *Regulation by Enforcement: Problems with the SEC’s Approach to Cryptoasset Regulation*, 82 MD. L. REV. 107, 151 (2022) (citing Lavnya Rathnam, *What Is the Difference Between Utility, Security and*

- Professor Ibrahim distinguishes between Bitcoin, Ether and ‘alt-coins’ as a residual category.²⁴²

Private Sector:

- **Steemit.** This widely cited framework divides crypto assets into five main types:²⁴³
 - Stores of Value (StoVa Coins) correspond to a broad “first generation” store-of-value bucket, often including assets beyond Bitcoin.
 - PlatformCoins roughly correspond to this Article’s InfraCoins, though the category boundaries (aside from Ether) do not consistently track economic substance or legal rights.
 - ProductCoins combine true Utility Tokens with “pre-utility” capital-raise tokens; this Article separates those instruments because the latter are economically and legally closer to unregistered securities offerings.
 - EquiCoins roughly correspond to Equity Coins, which this Article further subdivides based on meaningful differences in rights (economic vs. governance) across instruments.
 - Stable Coins largely align with this Article’s Tier-2 Stablecoin category; however, the absence of sub-categories in Steemit’s framework obscures material distinctions (e.g., collateralized vs. algorithmic structures).
- **Milken Institute.**²⁴⁴ The Milken Institute distinguishes between “digital currency” (typically state-backed/with legal tender status) and “virtual currency” (without state backing), and then further sub-divides by technology (e.g., blockchain vs. other DLTs), including strong stablecoin mapping.

Payment Tokens?, PLANET COMPLIANCE, <https://www.planetcompliance.com/what-is-the-difference-between-utility-security-and-payment-tokens/>).

²⁴² Darian M. Ibrahim, *A Tokenized Future: Regulatory Lessons from Crowdfunding and Standard Form Contracts*, 74 HASTINGS L.J. 45, 53 (2022), <https://doi.org/10.2139/ssrn.4053968>.

²⁴³ It is formally four, but UtiliCoins are sub-divided between PlatformCoins and ProductCoins.

²⁴⁴ See KATE GOLDMAN & ARNAV KUMAR, A TAXONOMY OF DIGITAL ASSETS, MILKEN INSTITUTE 11 (2021), <https://milkeninstitute.org/sites/default/files/2021-10/A%20Taxonomy%20of%20Digital%20Assets.pdf>.

APPENDIX II. SUMMARY OF U.S. REGULATORY PROPOSALS

The tempo of U.S. crypto legislation accelerated in 2025-26 with two principal vehicles: (i) the Guiding and Establishing National Innovation for U.S. Stablecoins Act (GENIUS Act), enacted on July 18, 2025; and (ii) the Digital Asset Market Clarity Act of 2025 (CLARITY Act), a market-structure bill that passed the House in July 2025 and remains under Senate consideration as of early 2026. While distinct in focus, both broadly attempt to resolve jurisdictional friction with classification based on technical functionality.

The GENIUS Act creates a dedicated regulatory lane for "Payment Stablecoins," explicitly removing them from the definition of securities and commodities.²⁴⁵ Per the Act, a Payment Stablecoin is a digital asset redeemable 1:1 for a fixed monetary value, backed by segregated reserves of high-quality liquid assets (such as U.S. Treasury bills), and that does not pay yield to holders.²⁴⁶ Oversight is assigned primarily to federal and state banking regulators, rather than the SEC or CFTC.²⁴⁷

The CLARITY Act seeks to delineate jurisdiction over digital assets between the SEC and CFTC.²⁴⁸ Its core mechanism is a statutory definition for "Digital Commodities," which are placed under CFTC jurisdiction, alongside a transitional regime for "Restricted Digital Assets" that remain subject to SEC oversight until they satisfy specified decentralization and maturity criteria.²⁴⁹

To qualify as a "Digital Commodity," an asset must be associated with a "Mature Blockchain System" that is sufficiently functional and decentralized (including a 20% limit on concentrated holdings or voting power).²⁵⁰ The proposal also contemplates a development pathway ("safe harbor") that allows projects to raise capital and build networks under defined conditions before transitioning to the CFTC regime.²⁵¹

This approach aligns with the Article's recommendation for jurisdictional clarity between the SEC and CFTC, though CLARITY's reliance on decentralization-based classification risks obscuring economic substance—particularly as between functional InfraCoins and non-functional "Broken Tokens."

Limitations. Even taken together, the emerging U.S. regime largely functions as a series of targeted interventions layered atop a fragmented architecture. The fundamental deficiency is a reliance on classification systems based on technological terminology which fail to account for the economic nuance of the broader asset universe. This piecemeal approach preserves vectors for regulatory arbitrage and distorts enforcement priorities. This Article's taxonomy addresses those deficiencies by prioritizing economic substance over technical topology, ensuring that regulatory outcomes align with the rights and risks borne by consumers and market participants.

²⁴⁵ *Guiding and Establishing National Innovation for U.S. Stablecoins Act (GENIUS Act)*, Pub. L. No. 119-XX, 139 Stat. XXX (2025). Signed into law by the President on July 18, 2025.

²⁴⁶ *Id.* § 3(b)

²⁴⁷ *Id.* § 5.

²⁴⁸ *Digital Asset Market Clarity Act of 2025*, H.R. 3633, 119th Cong. (2025). As of Jan 5, 2026, the CLARITY Act passed the House of Representatives on July 17, 2025, and is currently pending before the Senate Committee on Banking, Housing, and Urban Affairs.

²⁴⁹ *Id.* § 301

²⁵⁰ *Id.* § 204(a).

²⁵¹ See generally *Crypto Legislation: An Overview of H.R. 3633, the CLARITY Act*, Cong. Rsch. Serv. (Sept. 30, 2025)

APPENDIX III. THREE-TIER CRYPTO ASSET TAXONOMY

Crypto Asset Taxonomy: Comprehensive, 3-Tier Economic & Legal Attribute Framework

			% Market:		Change
			1/14/23 ¹	4/12/25	
Infra-structure & Store of Value	Category	Description	Examples (Secondary)		
	1. Store of Value				
	Coins	Early crypto, primarily BTC.*		41.0%	63.4%
		1A. Bitcoin	BTC		
		1B. Potential Alternatives	Litecoin; Monero		
	2. Stable Coins.	Three sub-categories:		13.0%	7.2%
		2A. Collateralized. Pegged value, USD/EUR reserve (or crypto)	Tether; USDC; BUSD		
		2B. Algorithmic. Pegged value through trading strategy.	TerraClassic; Frax		
		2C. Commodity. Value pegged to natural resource, such as oil.			
	3. InfraCoins	Highly functional; sector 'gas;' quasi-infrastructure.		21.4%	11.8%
Security & Utility		3A. ETH. Original Blockchain 2.0 protocol	ETH		
		3B. Blockchain 3.0 Alternatives	Cardano, Polygon, Solana		
		Sub-Total		75.4%	82.4%
					7.0%
	4 Equity Coins	Most substantively similar to equity.			
		4A. 'Traditional'	Iconomi; Etheroll DICE		
		4B. Econ Share	TZROP		
		4C. Governance Token	WLF1	24.6%	
	5. Meme Coins	No utility, rights or clear economics. Most akin to collectibles.	DogeCoin, Shiba Inu		1.2%
	6. Utility Tokens	NAL Consistent. Economics ~ loyalty program miles.	TKJ, VCOIN, PoQ ²		16.4%
Liability-Based Instruments	7. Broken Tokens	Most legally problematic. 'Pre-Utility' and 'Non-Utility' Tokens.			
		7A. 'Pre-Utility Tokens.' Development capital. ~early stage equity, unclear legal rights. Likely civil.	FTT, LBRY, Kin		
		7B. 'Non-Utility Tokens.' Platform development not intended or impractical. Potential fraudulent conduct.	BCT		
		Sub-Total		24.6%	17.6%
					-7.0%
	8. Yield Products ⁴	Above-market rates; high-risk loans. HY BDC parallels.	Genesis/ GEM; CEL		
	9. Crypto Debt	Quasi-contractual, economics ~ debt instruments.	Aave, IOUBTC/ ETH	N/A	
	10. Staking Services	DEX rewards; yield for digital asset loans / liquidity.	Most staked: ETH, SOL and ADA		

¹ Based on coinmarketcap.com data.

² TKJ Tokens, VCOIN, PoQ Quarters deemed not securities through SEC No Action Letters.

³ Listed separately to denote distinct features relative to other facets of the crypto universe.

⁴ Some earn / yield products use the capital for staking; however, this is distinct from DeFi staking due to diversified nature of exposure.

APPENDIX IV. CATEGORY-LEVEL MARKET ANALYSES

Crypto Asset Value by Category (\$Bn): 2010-2025

Date	BTC	ETH	Other InfraCoins	Stable Coins	Meme Coins	Other / Broken Tokens	Crypto Asset Total	Number of Crypto Assets
1/1/2010								1
1/1/2011	0.0						0.0	5
1/1/2012	0.1						0.1	10
1/1/2013	0.2						0.2	7
1/1/2014	11.4				0.0	0.0	11.4	67
1/1/2015	4.4				0.0	0.0	4.4	501
1/1/2016	6.9	0.1			0.0	0.2	7.2	572
1/1/2017	16.1	0.7	0.1		0.0	0.8	17.7	636
1/1/2018	276.6	111.7	50.0		2.0	265.5	705.7	1,359
1/1/2019	71.2	16.4	4.4	1.9	0.3	41.1	135.4	2,086
1/1/2020	134.5	14.9	4.8	4.1	1.0	40.4	199.6	2,403
1/1/2021	609.4	111.3	26.3	26.9	0.5	106.2	880.7	4,154
1/1/2022	895.7	455.7	198.5	135.6	41.8	532.7	2,260.0	8,714
1/1/2023	320.0	147.0	34.5	133.1	13.8	150.3	798.7	8,856
1/1/2024	880.6	283.1	132.5	121.9	19.2	262.7	1,700.0	9,002
1/1/2025	1,920.0	415.8	221.0	181.5	63.4	168.2	2,970.0	10,510
4/25/2025	1,870.0	217.1	129.8	213.8	35.7	483.7	2,950.0	10,419
Avg (2010-25)	343.1							3,055.2
Avg (2016-25)	513.1	155.7	74.7	86.4	14.2	156.8	967.5	4,829.2

Data & Sources: CoinMarketCap, CoinGecko, Statista, YCharts, Eikon, Federal Reserve.

Crypto Asset Category as % of Sector Total: 2010-2025

Date	BTC	ETH	Other InfraCoins	Stable Coins	Meme Coins	Other / Broken Tokens
1/1/2010						
1/1/2011	100.0%					
1/1/2012	100.0%					
1/1/2013	100.0%					
1/1/2014	100.0%					
1/1/2015	99.8%					
1/1/2016	96.7%	1.0%				2.3%
1/1/2017	90.7%	4.0%	0.8%		0.1%	4.3%
1/1/2018	39.2%	15.8%	7.1%		0.3%	37.6%
1/1/2019	52.6%	12.1%	3.3%	1.4%	0.2%	30.4%
1/1/2020	67.4%	7.5%	2.4%	2.1%	0.5%	20.2%
1/1/2021	69.2%	12.6%	3.0%	3.1%	0.1%	12.1%
1/1/2022	39.6%	20.2%	8.8%	6.0%	1.9%	23.6%
1/1/2023	40.1%	18.4%	4.3%	16.7%	1.7%	18.8%
1/1/2024	51.8%	16.7%	7.8%	7.2%	1.1%	15.5%
1/1/2025	64.6%	14.0%	7.4%	6.1%	2.1%	5.7%
4/25/2025	63.4%	7.4%	4.4%	7.2%	1.2%	16.4%
Avg (2010-25)	74.11%					
Avg (2016-25)	61.18%	12.24%	4.99%	6.07%	0.89%	17.04%

Data & Sources: CoinMarketCap, CoinGecko, Statista, YCharts, Eikon, Federal Reserve.

Top 10 Crypto Assets (April 2025)

	Name	Value SBn (4/22/25)	% Total
1	Bitcoin	\$ 1,750.00	63.64%
2	Ethereum	\$ 190.59	6.93%
3	Tether USDt	\$ 144.73	5.26%
4	XRP	\$ 121.60	4.42%
5	BNB	\$ 84.46	3.07%
6	Solana	\$ 72.04	2.62%
7	USDC	\$ 60.90	2.21%
8	Dogecoin	\$ 23.95	0.87%
9	TRON	\$ 23.35	0.85%
10	Cardano	\$ 22.01	0.80%
Total		\$ 2,493.63	90.7%

APPENDIX V. BTC, SPX: VOLATILITY ANALYSES

BTC / SPX Volatility (Rate & 2-Period Change): 2014-2025

<u>Bitcoin (BTC)</u>	<u>Avg Daily LN Change</u>	<u>σ</u>	<u>σ^2</u>
Full Period (2014-2025)	0.15%	3.93%	0.15%
1H (12/1/14 to 1/1/20)	0.16%	4.41%	0.19%
2H (1/1/20 to 4/25/25)	0.13%	3.41%	0.12%
1H / 2H Change	-0.03%	-1.00%	-0.08%

<u>S&P 500 (SPX)</u>	<u>Avg Daily LN Change</u>	<u>σ</u>	<u>σ^2</u>
Full Period (2014-2025)	0.04%	1.14%	0.01%
1H (12/1/14 to 1/1/20)	0.03%	0.83%	0.01%
2H (1/1/20 to 4/25/25)	0.04%	1.35%	0.02%
1H / 2H Change	0.004%	0.519%	0.011%