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A Ripple-Turned-Tidal Wave: *SEC v. Ripple Labs* as an Inflection Point in the Regulatory Approach to Innovation in Complex Systems

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A Ripple-Turned-Tidal Wave: *SEC v. Ripple Labs* as an Inflection Point in the Regulatory Approach to Innovation in Complex Systems

ABSTRACT

This Comment makes both an observation and an argument about the SEC v. Ripple Labs, Inc. *litigation. First, this Comment observes that the facts of the case constitute a challenge to the lack of clarity surrounding the current regulatory regime governing blockchains and initial coin offerings (ICOs). Second, this Comment argues that the* Ripple *case provides regulators an opportunity to, if they choose, use complexity theory to address technological innovation—such as blockchain—as an emergent phenomenon in a complex system rather than as a binary policy choice to be either encouraged or discouraged.*

Ripple, the U.S. company behind one of the world's largest crypto assets by capitalization, deployed a blockchain network designed to remove the traditional friction points of intermediation and settlement from money transfer systems. To obtain widespread adoption of its crypto asset, XRP, both Ripple and its executives sold XRP to speculators and professional investors, but more than five years later—and following a rash of enforcement actions against other blockchain companies—the U.S. Security and Exchange Commission (SEC) brought Ripple and its executives into federal court for allegedly violating U.S. securities laws. The lawsuit is unique because it was not only brought against the company and personnel behind one of the most successful iterations of a novel technology, but effectively, it was brought against a widely held cryptocurrency at a time when pandemic-driven economic and social pressure and billions of dollars in main-street investment in new blockchain technologies was occurring in the wider U.S. economy.

But as important as the result of the case is, this Comment suggests that the long view of the case's impact should be understood through the lens of complexity theory: regulators should, in cases of innovative technology, use this discipline to see the case as both an emergent phenomenon and a point in the trajectory of the larger U.S. economy where innovation and consumer protection are not binary, opposed considerations. To flesh this out, this Comment offers a broad, high-level overview informed by complexity science of the basic operation and recent history of blockchain

technology and ICOs as well as the economic forces at work in the U.S. and an explanation of Ripple's use case. This Comment then will turn to the regulatory history between the SEC and Ripple and analyze the merits of the investment contract approach necessary for SEC jurisdiction. Understanding the history, the parties, and the litigation as parts of a complex system, this Comment concludes by listing several expert suggestions regarding blockchain technologies consistent with obtaining short term stability that the court can take up in dealing with the facts of the case in the light of existing precedent.

INTRODUCTION

Nearly obscured by the architectural mélange that composes the Federal Triangle is a statue of a man of impossible proportions attempting to control an equally outsized horse. The intended message of the statue becomes obvious either by recognizing where one is when one sees it—outside the Federal Trade Commission building—or by simply knowing the statue's name: "Man Controlling Trade."[1]

With its exaggerated proportions and sense of motion—hallmarks of the Art Deco period—the statue vividly and confidently illustrates the struggle between the undulations of the market and the restraining hand of the government.[2] The statue suggests that upon sufficient exertions of strength and concentration, the market may perhaps be tamed;[3] it also reminds the observer that the struggle to control is not a new phenomenon,[4] and that everyone, regulators[5] and artists[6] included, must grapple with exogenous

1. *Man Controlling Trade (Model, Federal Trade Commission Building)*, SMITHSONIAN AM. ART MUSEUM, https://americanart.si.edu/artwork/man-controlling-trade-model-federal-trade-commission-building-14289 [https://perma.cc/62W7-HAEB]. This statue was sculpted by a New York artist named Michael Lantz for the Federal Trade Commission Building in 1942. *Id.*

2. *See* Chris Hoofnagle, *Sidebar: On Man Controlling Trade* (Aug. 12, 2014), https://hoofnagle.berkeley.edu/2014/08/12/sidebar-man-controlling-trade/ [https://perma.cc/N7KZ-VTGM] ("The muscular man stripped to the waist standing beside the horse and gripping its reins symbolizes the federal government, which through intelligence and restraint forces the horse to submit its power to a useful purpose.")

3. Today's rendition of the theme of unconquerable forces underlies much many of the superhero movies of recent interest. *See, e.g.*, AVENGERS: INFINITY WAR (Marvel Studios 2018); AVENGERS: ENDGAME (Walt Disney Studios Motion Pictures 2019).

4. *See Deuteronomy* 12:1–26:19 (outlining the Deuteronomic Code as told by Moses to the Israelites). Some well-known examples are the ancient tales of the Greeks in which gods and heroes vie for supremacy against one another. *See generally* THOMAS BULFINCH, *The Age of Fable, in* THE COMPLETE AND UNABRIDGED BULFINCH'S MYTHOLOGY, 196, 200–10 (1998 ed.) (detailing the account given by Homer in *The Iliad*).

5. For example, in the SEC's 2022 Congressional Budgetary request, the SEC asked for $1.99 billion dollars to "effectively carry out its mission and make a meaningful difference in meeting the challenges of today's global, interconnected, and technologically-sophisticated markets." U.S. SEC. & EXCH. COMM'N, FISCAL YEAR 2022 CONGRESSIONAL BUDGET JUSTIFICATION 2–3 (2021).

6. To stick with the movie example, new technologies are often created in response to unmet needs in visual effects production. Much of the *Avengers* films' success, for example, was the result of filmmakers' innovative computer-generated graphics techniques that brought a mid-twentieth century comic book to life. *See* Chris McGowan, *How the Avengers Movies Impacted, & United, the World of Visual Effects*, VFX VOICE, (Dec. 10, 2019), https://www.vfxvoice.com/how-the-avengers-movies-impacted-and-united-the-world-of-visual-effects/ [https://perma.cc/G6SP-BCB4].

forces of innovation. But the breadth and scale of data describing today's marketplace urges reconsideration of the analogy proffered by the statue: whatever a "successful" interaction between innovation and regulator may be, defining that interaction in easily understandable reductionist rules may be inadequate because the interaction it seeks to control is, if anything, more complex and nonlinear than ever before.

Today's private sector technology firms have successfully developed blockchain technologies including ICOs,[7] distributed finance systems, cryptocurrencies and crypto assets,[8] autonomous organizations and processes, and others, such that their sheer ubiquity has forced the highest levels of government to face these technologies on their own terms.[9] That is to say, not only as networks, but also as tools of alternate governance of human relationships.[10] Because blockchains generally operate on a limited-trust basis,[11] and because their adoption is driven by the demand for private law[12] outside of the control of a single entity or institution,[13] the very operation

7. Jake Frankenfield, *Initial Coin Offering (ICO)*, INVESTOPEDIA (Nov. 3, 2020), https://www.investopedia.com/terms/i/initial-coin-offering-ico.asp [https://perma.cc/59TY-6ZMA]. An ICO is an "equivalent to an initial public offering" that is done by a cryptocurrency firm, where investors "buy into [the] offering to receive a new cryptocurrency token issued by the company." *Id.*

8. Crypto-assets are digital representations of value that exist on a blockchain, often called "tokens," and they "rest[] on three established foundations: cryptography, digital cash, and distributed systems." KEVIN WERBACH, THE BLOCKCHAIN AND THE NEW ARCHITECTURE OF TRUST 40 (2018). However, the neutral term "crypto-assets" does not denote whether the asset under discussion is in fact a legal *currency*. *See also* Justin Henning, Note, *The Howey Test: Are Crypto-Assets Investment Contracts?*, 27 U. Mia. Bus. L. Rev. 51, 53 (2018). Throughout this Comment, when a token or asset is under general discussion, the terms "asset" and "currency" may be used interchangeably.

9. Ensuring Responsible Development of Digital Assets, Exec. Order No. 14067, 87 Fed. Reg. 14143, 14143 (Mar. 9, 2022).

10. Vili Lehdonvirta, *The Blockchain Paradox: Why Distributed Ledger Technologies May Do Little to Transform the Economy*, OXFORD INTERNET INST. (Nov. 21, 2016), https://www.oii.ox.ac.uk/news-events/news/the-blockchain-paradox-why-distributed-ledger-technologies-may-do-little-to-transform-the-economy/ [https://perma.cc/UZF8-G5WT] ("Who makes the rules matters at least as much as who enforces them. Blockchain technology may provide for completely impartial rule-enforcement, but that is of little comfort if the rules themselves are changed.").

11. WERBACH, *supra* note 8, at 29.

12. *See* GILLIAN K. HADFIELD, RULES FOR A FLAT WORLD: WHY HUMANS INVENTED LAW AND HOW TO REINVENT IT FOR A COMPLEX GLOBAL ECONOMY 91 (2016) (arguing that regulations are driven by economic forces) ("A large part of what has driven the development of the legal structures we take for granted is the *economic demand for law*. Even the basic interest in fairness in law is in significant measure an economic demand." (emphasis added)).

13. *See* WERBACH, *supra* note 8, at 30.

and purpose of blockchains is generally counterintuitive to traditional regulatory structures. In one sense, this is a "governance paradox," because the idea that no person controls the blockchain is—at least partially—an illusion.[14] The implications of blockchain as a tool for managing "trustless" relationships is not fully understood, and how the technology is to be guided is not obvious. It is not clear that self-contained computer code that automatically executes a contract is to be enforced by exterior actors rather than by code,[15] nor is it "metaphysical[ly]" obvious that the direct sale of a digital asset that purports to allow participation in a network should or should not be considered a security, or anything else, for that matter.[16] Regulatory involvement and intervention is required,[17] for example, to address issues such as the use of crypto assets to circumvent the law, determination of the way in which existing legal structures are to recognize distributed ledgers, and how the use of blockchains in already recognized transactions are to operate.[18] These and other tensions simmer below the case *SEC v. Ripple Labs, Inc.* (*Ripple* Litigation or the Litigation).[19]

This Comment observes, often using historical comparisons, that the *Ripple* Litigation is an important case for courts, Congress, and the U.S. regulatory apparatus generally, because it shows that the shoehorn approach taken by regulators today is likely unworkable in cases where, like here, the law is dangerously close to being tone-deaf not only to the technology and

14. *Id.* at 133–35.

15. *See* WERBACH, *supra* note 8, at 214.

16. Laura Shin, *Are ICOs for Utility Tokens Selling Securities? Prominent Crypto Players Say Yes,* FORBES (Oct. 2, 2017, 9:15 AM), https://www.forbes.com/sites/laurashin/2017/10/02/are-icos-for-utility-tokens-selling-securities-prominent-crypto-players-say-yes/?sh=3a16b68334fa [https://perma.cc/9XA6-VYZ6] ("There is no existential metaphysical continuum where [a] pdf file become [sic] an entry on a decentralized ledger."); *see also* JUAN BATIZ-BENET ET AL., PROTOCOL LABS & COOLEY, THE SAFT FRAMEWORK: TOWARD A COMPLIANT TOKEN SALE FRAMEWORK 3 (2017) ("[Utility tokens] offer intrinsic utility that powers a decentralized, distributed network that delivers to the users of the network a consumptive good or service.").

17. *See* Cathy Mulligan, *Blockchain and Sustainable Growth*, U.N. CHRON., https://www.un.org/en/un-chronicle/blockchain-and-sustainable-growth [https://perma.cc/STJ7-5FGT].

18. WERBACH, *supra* note 8, at 178–81. Also important is the need for continued maintenance of the United States' strategic position in a shrinking global economy. *See* Rosie Rios (@RosieRios), TWITTER (Sept. 26, 2021, 3:35 PM), https://twitter.com/RosieRios/status/1442211127123845127 [https://perma.cc/DHN3-3VG5] ("XRP's primary purpose is facilitating cross border payments while other [crypto assets] find their value in speculation. China's latest move brings this point home.").

19. Complaint, SEC v. Ripple Labs, Inc., No. 20 Civ. 10832, 2021 WL 1814771 (S.D.N.Y. Dec. 22, 2020) [hereinafter Ripple Labs Complaint].

to the facts, but to the promotion of resiliency of the complex system *that gave rise to both*. The Comment's argument lies here. Therefore, it is predictable that this case will, in one way or another, tend towards a system trajectory of short-term stability by advancing the law's treatment of blockchain and crypto assets by either (1) spurring the courts to develop a new "*Ripple* test," or otherwise limiting existing caselaw,[20] (2) spurring Congress to action, or (3) providing clarity on treatment of crypto assets like XRP even if a settlement occurs. Part II discusses the circumstances at play behind the lawsuit as well as introducing the main players. Part III provides a basic discussion of the salient mechanics of blockchain and crypto assets as they exist in a broader context, turning then to *Ripple* as a contextualized use case. With this foundation laid, Part IV describes the approach taken by the judiciary to enable the SEC to regulate companies like Ripple. Part V completes this discussion and further contextualizes it by undertaking a brief analysis of the posture of the case. With all of this in hand, Part VI claims that in any of the three most likely outcomes, this case should be important not only to the future of blockchain innovation in the U.S., but also to regulators who are willing to consider it as an example of that emergent phenomenon and consider it and its underlying causes as an irreducible part of the U.S. economy.

I. BACKGROUND

After a failed attempt to settle on December 22, 2020—the last day in office for Chairman Jay Clayton—the SEC filed a complaint in the United States District Court for the Southern District of New York against Ripple[21] and two of its executives for alleged violations of the U.S. Securities Act of

20. Particularly, it is possible that the *Howey* framework and its progeny may generate a re-definition of an "investment contract." This is hardly a novel claim. *See generally* Henning, *supra* note 8, at 73 ("The heavy uncertainty around crypto-assets seems to suggest we are heading towards some sort of clarity.").

21. *See also What is Ripple? A Beginner's Guide for Understanding Ripple*, COINTELEGRAPH, https://cointelegraph.com/blockchain-for-beginners/what-is-ripple-a-beginners-guide-for-understanding-ripple [https://perma.cc/AR6Z-NDKR] [hereinafter *What is Ripple?*]; Kevin Reynolds, *SEC Chairman Clayton Says Wednesday Is His Last Day in Office*, COINDESK (Sept. 14, 2021, 6:47 AM) https://www.coindesk.com/policy/2020/12/23/sec-chairman-clayton-says-wednesday-is-his-last-day-in-office/ [https://perma.cc/X5ZW-TZT9].

1933,[22] and as to the executives, for aiding and abetting such violations.[23] The SEC alleged that Ripple and the executives participated in, and still participate in, an unregistered securities offering for the sale of XRP, Ripple's native crypto asset, beginning in 2013.[24] The filing was unusual[25]—Clayton was one of the three-commissioner majority voting to bring the lawsuit, and he did so only "hours before resigning."[26] Also unusual, though not unforeseen, was the effect of the enforcement action: in the twenty-four-hour period following the lawsuit's filing, approximately fifty billion dollars was obliterated as XRP's value tumbled in the wake of the report of the lawsuit.[27] XRP was valued as the seventh-largest crypto currency by market capitalization at the time of the lawsuit.[28] Much of the loss was borne by main street investors who were unable to sell off their XRP as it was de-listed from secondary cryptocurrency exchanges following the declaration by the SEC that Ripple had engaged in illegal conduct.[29]

The *Ripple* Litigation is a snapshot of the current regulatory landscape in the crypto asset space.[30] By virtue of its assertion of jurisdiction, the SEC has turned the threshold matter into a fact-intensive—and therefore

22. *See* Reynolds, *supra* note 21 ("Clayton certainly knows how to leave on a high note. His last day comes 24 hours after the SEC filed suit against fintech firm Ripple . . . sending shockwaves throughout the crypto[-asset] industry.").

23. Ripple Labs Complaint, *supra* note 19 at 3.

24. *Id.* at 1–2.

25. And this may be putting it mildly. *See* Roslyn Layton, *In the Ripple Case, the SEC Is Now on Trial—and Knows It*, FORBES (Apr. 8, 2021, 9:46 AM), https://www.forbes.com/sites/roslynlayton/2021/04/08/in-the-ripple-case-the-sec-is-now-on-trial—and-knows-it/amp/?__twitter_impression=true [https://perma.cc/8PJ6-DSSC] [hereinafter *The SEC Is Now on Trial*]; *see also* Carol Goforth, *It Is Time for the U.S. to Create a 'Ripple Test' for Crypto,* COINTELEGRAPH (July 21, 2021), https://cointelegraph.com/news/it-is-time-for-the-us-to-create-a-ripple-test-for-crypto [https://perma.cc/V6YN-EYC4] [hereinafter *Time for a Ripple Test*].

26. Eleanor Terrett & Charlie Gasparino, *Regulatory Riddle: An Investigation into the* SEC v. Ripple *Case and its Consequences for Crypto,* FOX BUS. (Nov. 24, 2021), https://www.foxbusiness.com/features/sec-ripple-crypto-future-blockchain [https://perma.cc/59FX-9CJ4].

27. Bilal Jafar, *Jay Clayton's Last Day at SEC Resulted in $50 Billion Cryptocurrency Crash*, FINANCE MAGNATES (Dec. 24, 2020, 7:26 AM), https://www.financemagnates.com/cryptocurrency/news/jay-claytons-last-day-at-sec-resulted-in-50-billion-cryptocurrency-crash/ [https://perma.cc/WNW3-3PB4].

28. *All Cryptocurrencies*, COINMARKETCAP, https://coinmarketcap.com/all/views/all/ [https://perma.cc/3WFH-MBVE] (listing XRP with a market capitalization of over more than $51 billion dollars).

29. Terrett & Gasparino, *supra* note 26.

30. *See generally* WERBACH, *supra* note 8, at 177–200 (discussing the transition from New York's trail-blazing Bitlicense regulation to the current state of crypto regulation).

expensive—analysis of the asset, or "token," native to the blockchain network in issue to determine whether it is, or was offered as, a "security" within the meaning of the law. Although the SEC concluded that Ripple participated in a securities offering, the agency has also signaled that, at least some cases, tokens sold during an ICO were securities at *that* time, but not at others.[31] At the very least, the facts in Ripple's case—particularly the SEC's delay in bringing the action while knowing that during the delay more sales and decentralization were taking place—seem to call for a clear explanation for the basis of delineation.[32]

Recognizing this, both in the Litigation and in the court of public opinion, a key component of Ripple's overarching strategy has been to highlight the inconsistency of the SEC's "decentralization" rationale.[33] This has largely been in response to public behavior by SEC officials; over several years, former chairpersons of the SEC have pointed to both Ethereum and Bitcoin,[34] suggesting[35] that sufficient decentralization of computing resources[36] may defeat a "security" classification of a crypto asset because the "purchasers [of the crypto asset] would no longer reasonably expect a person or group to carry out essential managerial or entrepreneurial efforts[.]"[37] As far as it goes, Ripple's argument is probably consistent with the commonsense understanding of a general market participant, or "main street investor," of what a security is: "[a] share of ownership in a company—giving

31. *See, e.g.*, William Hinman, Dir. of Div. of Corp. Fin., SEC, Remarks at the Yahoo Finance All Markets Summit: Crypto (June 14, 2018) (transcript available at https://www.sec.gov/news/speech/speech-hinman-061418 [https://perma.cc/G57V-3C96]); Joseph Hall, *Ripple Token Case Highlights Need for SEC Clarity on Crypto*, LAW360 (Jan. 25, 2021, 4:56 PM), https://www.law360.com/articles/1346432 [https://perma.cc/L67L-35KB].

32. *See* Yuliya Guseva, *The SEC, Digital Assets, and Game Theory*, 46 J. CORP. L. 629, 649–50 (2021).

33. Terrett & Gasparino, *supra* note 26.

34. These are the two most well-known cryptocurrencies and the two largest cryptocurrencies by market capitalization. John Divine, *Bitcoin v. Ethereum: Which Is a Better Buy?*, US NEWS & WORLD REP. (Jan. 18, 2022 12:19 PM), https://money.usnews.com/investing/cryptocurrency/articles/bitcoin-vs-ethereum-which-is-a-better-buy [https://perma.cc/8PAR-49XV].

35. Hinman, *supra* note 31.

36. Sufficient decentralization in a disintermediated system like blockchain means that "it is the users themselves and their vast combined computing power that record[s] transactions directly between peers, rather than through banks[.]" Carol Goforth, *The Lawyer's Cryptionary: A Resource for Talking to Clients about Crypto-transactions*, 41 CAMPBELL L. REV. 47, 54 (2019).

37. Hinman, *supra* note 31; *see also* Neeraj Agrawal, *SEC Chairman Clayton: Bitcoin Is Not a Security*, COIN CENTER (Apr. 27, 2018), https://www.coincenter.org/sec-chairman-clayton-bitcoin-is-not-a-security/ [https://perma.cc/S5UD-S9J5].

the shareholder a stake in the business and an interest in its profits."[38] It is the efforts of the company's board of directors or other management that is the primary driving force behind changes in the value of the investment. In the cases of the Bitcoin and Ethereum blockchains, widespread adoption of a crypto asset has already occurred.[39] Ripple strenuously argues that this temporal distinction is the *only* meaningful difference between XRP and these other two acknowledged non-security crypto assets.[40] However persuasive this argument may be publicly, the *legal* question under the current regulatory framework will boil down to whether the court understands the facts of this case to show that the SEC's or Ripple's understanding of *what XRP is* as a matter of classification is the correct one.

Like a large and increasing number of entrepreneurial-minded businesses,[41] Ripple has used blockchain technology as part of a solution to a longstanding problem: the inefficiencies in international finance. The firm was successful in the five years leading up to the lawsuit: XRP was adopted by some of the largest banks in the world as a payments rail,[42] and, at the

38. J. Carl Cecere, *Cryptocurrency's Future in the U.S. Is Threatened by SEC Action Against Ripple*, BLOOMBERG LAW (Apr. 19, 2021, 4:00 AM), https://news.bloomberglaw.com/securities-law/cryptocurrencys-future-in-the-u-s-is-threatened-by-sec-action-against-ripple [https://perma.cc/B3SR-Q5ZQ]. Of course, this definition does *not* legally control. *See* 15 U.S.C. § 77b(a)(1) (alternatively cited as Securities Act §2(1)) (defining security).

39. *See* Carol Goforth, *Cinderella's Slipper: A Better Approach to Regulating Cryptoassets as Securities*, 17 HASTINGS BUS. L.J. 271, 285 (2021) [hereinafter *Cinderella's Slipper*].

40. *See, e.g.*, Chris Giancarlo & Conrad Bahlke, *Cryptocurrencies and U.S. Securities Laws: Beyond Bitcoin and Ether*, IFLR (June 17, 2020), https://www.iflr.com/article/b1m2pm9g4n65mk/cryptocurrencies-and-us-securities-laws-beyond-bitcoin-and-ether [https://perma.cc/5ER9-9FUA] ("The mere fact that an individual holds XRP does not create any relationship, rights or privileges with respect to Ripple any more than owning Ether would create a contract with the Ethereum Foundation[.]").

41. To give an idea of the size of blockchain, one research company suggests that blockchain is going to expand "from USD [$]4.9 billion in 2021 to USD [$]67.4 billion by 2026, at a Compound Annual Growth Rate (CAGR) of 68.4% during the forecast period." *Blockchain Market with COVID-19 Impact Analysis, by Component (Platforms and Services), Provider (Application, Middleware, and Infrastructure), Type (Private, Public, and Hybrid), Organization Size, Application Area, and Region-Global Forecast to 2026*, MARKETS & MARKETS, https://www.marketsandmarkets.com/Market-Reports/blockchain-technology-market-90100890.html [https://perma.cc/PD29-PKWA].

42. For a list of the financial institutions using RippleNet, see *AWS Partner Profile: Ripple*, AMAZON, https://aws.amazon.com/partners/success/ripple/ [https://perma.cc/T8W3-SYCM]; *see also* Eric Grant, *6 Biggest Banks Using Ripple (XRP) Products*, USETHEBITCOIN, https://usethebitcoin.com/6-biggest-banks-using-ripple-products/ [https://perma.cc/CQB9-DM4K]. *But see* Leo Jakobson, *Citing SEC Suit MoneyGram Suspends Use of Ripple ODL*, MOD. CONSENSUS (Feb. 22, 2021), https://modernconsensus.com/

time of the Litigation, Ripple was the third-largest crypto asset by capitalization in the U.S.[43] Even after the lawsuit, the company has experienced year-over-year growth with XRP use in international markets.[44] Therefore, Ripple is recognized as a tangible illustration of how the non-intermediated trust of blockchain is expected to be a major player in social and business problems in the coming years.[45]

And while businesses could simply not conduct ICOs—certainly the distribution of crypto assets need not be in exchange for money or in anticipation of future money[46]—this is an understandably less attractive option to for-profit businesses.[47] Similarly understandable considering the uncertainty[48] of new technologies is the SEC's mandate to protect investors. But in the *Ripple* Litigation, the facts urge careful consideration by the court of the unique underlying regulatory challenges of crypto assets, namely, distinguishing between degrees of decentralization,[49] properly classifying the crypto assets, and consistent enforcement. While the judiciary has another clear bite at the apple to make a clarifying change that could limit the SEC's long reach[50]—which as Ripple's current international success suggests is in

cryptocurrencies/ripple/citing-sec-suit-moneygram-suspends-use-of-ripplenet/ [https://perma.cc/4T97-T46Y].

43. *See* Guseva, *supra* note 32, at 668.

44. *See* Craig DeWitt, *ODL Sees Record Growth and Traction in 2021*, RIPPLE INSIGHTS (Oct. 29, 2021), https://ripple.com/insights/record-growth-and-traction-odl-in-2021/ [https://perma.cc/N9FA-KUGH].

45. For example, the metaverse, which is at the center of Web3, is expected to have significant blockchain involvement as the foundation of its operation. *See* Joseph Raczynski, *The Metaverse is Coming: Is the Legal Market Prepared?*, THOMSON REUTERS (Oct. 11, 2021), https://www.thomsonreuters.com/en-us/posts/legal/legal-metaverse/ [https://perma.cc/R557-2Q3A] (suggesting that blockchain's ability to transparently store data will drive the expansion of the metaverse).

46. *See* WERBACH, *supra* note 8, at 183.

47. And, it may not account for the potential of blockchains to democratize startups.

48. *See* WERBACH, *supra* note 8, at 198–99.

49. *See generally* Ben Jessel, *Can Hester Peirce's Safe Harbor Proposal Save Cryptocurrency? Experts Weigh In*, FORBES (Apr. 1, 2020, 1:36 PM), https://www.forbes.com/sites/benjessel/2020/04/01/hester-peirces-safe-harbor-proposallegal-and-regulatory-experts-weigh-in-on-the-catch-22/#23d99d24665a [https://perma.cc/XL6E-X2JB] ("[A] token distribution (which is a necessary part of launching a public network) might be deemed by the SEC to be a securities offering which would place significant restrictions around the ability for tokens to be transferred without friction. These restrictions would place a barrier on a network being able to achieve decentralization and adoption. A decentralized network with no-adoption would in-turn likely mean that its native token would be classed as a security.").

50. Ripple's executives argue that these sales are outside of Congress's jurisdiction. *See* Memorandum of Law in Support of Defendant Bradley Garlinghouse's Motion to Dismiss

the best economic and strategic interests of the U.S.[51]—a more complex understanding of regulators and innovators is needed than that suggested by Man Controlling Trade.

A. The U.S. Economy as a Complex System

Whether judicial or congressional, the legal decisions made in response to the *Ripple* Litigation and cases certain to follow it will be difficult. To capture the complexity of the free-willed agents and institutions, decision-making will require a data-driven framework capable of modeling these non-linear concepts.[52] To see this, consider that the *Ripple* Litigation, like the U.S. economy or society itself, obviously did not develop in a vacuum; it developed over time into a system exhibiting features of complexity[53] that "emerg[e] from the actions and interactions of . . . actors in a networked relationship, but with different characteristics from those . . . actors."[54] Complexity theory is the study of these "systems effects, . . . [meaning the] inter-agent connections and the system-wide effects they produce,"[55] and it predicts that a system that experiences introduction of new conditions—such as the dynamic interaction between individuals and institutions that compose it—will behave nonlinearly because that system is *more* than the aggregate sum of its parts.[56] This is profound not only philosophically, but practically, because it suggests that understanding large systems full of simple rules take on a predictive life separate from their inputs and composite parts.

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the Amended Complaint at 20, SEC v. Ripple Labs, Inc., No. 20 Civ. 10832, 2021 WL 1814771 (S.D.N.Y. Apr. 12, 2021).

51. *See* DeWitt, *supra* note 44.

52. J.B. Ruhl advocates that the first step is "withdrawing from the reductionist-bred molds that have predominated in American legal theory and institutions and have led to stasis through over-regulation, so that we can begin to see dynamical behavior in the law-and-society system for what it is." J.B. Ruhl, *Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake-Up Call for Legal Reductionism and the Modern Administrative State*, 45 DUKE L.J. 849, 927 (1996).

53. This Comment will not discuss complexity theory in detail. For a primer on the subject, see MELANIE MITCHELL, COMPLEXITY: A GUIDED TOUR (2009).

54. Jamie Murray et al., *Encountering Law's Complexity*, *in* COMPLEXITY THEORY AND LAW: MAPPING AN EMERGENT JURISPRUDENCE 3, 6 (Jamie Murray et al. eds., 2019).

55. J.B. Ruhl & Daniel M. Katz, *Mapping Law's Complexity with "Legal Maps," in* COMPLEXITY THEORY AND LAW: MAPPING AN EMERGENT JURISPRUDENCE 23, 26 (Jamie Murray et al. eds., 2019).

56. MITCHELL, *supra* note 53, at 23 (referring to this idea using the term "sensitive dependence on initial conditions").

Analogizing a real complex system, like the U.S. economy and those who compose it, to a model capable of prediction requires a cursory understanding of two concepts from the sub-discipline of dynamical systems theory[57] and the roles they play in the system: the concepts of "trajectory" and a system's "attractors."[58] Simply put, a trajectory is a path a system takes in an *n* dimensional space in which the system exists.[59] An attractor is a description of a system's behavior that the attractor describes.[60] These terms are simply lexicon for describing interactions at scale. For example, to predict how a flock of birds may behave, one may try to reduce the behavior of the flock into the behavior of each of the individual birds and extrapolate to the whole.[61] However, this seemingly logical approach—informed by the commonsense notion that the flock behaves according to simple rules such as follow the bird ahead, turn left when that bird turns left, turn right when that bird turns right, and so on—cannot predict what the flock *as an emergent entity* or as a "system" will do. This is precisely because the birds—which are "agents" in the system—interact with and affect each other in a constant feedback loop. While one can say the flock will respond to attractors, such as seeking food and avoiding predators, or that the flock's trajectory can be described as trending toward or away from these attractors, prediction requires treating the flock as *more* than the sum of its parts. It is for this reason that the rules governing each of the birds are insufficient at scale to understand—much less control—the trajectory of the emergent phenomenon. It is with this understanding that the *Ripple* Litigation should be considered: instead of focusing only on whether legal interpretations of a securities regime built for a different time are appropriate for a new class of technology, regulators should consider identifying the attractors and trajectory of the entire system of which the *Ripple* Litigation is an emergent phenomenon and develop models that quantify attractors and that measure and test possible regulation for effectiveness in charting a course towards desirable system states and away from collapse.

Using traditional reductionist thinking, modeling is probably difficult or even impossible. As a complex system, the U.S. economy is "always evolving" and is "highly dependent" on persons and institutions involved

57. *See* Ruhl, *supra* note 52, at 862 n.19.

58. *Id.* at 862–63.

59. *Id.* at 863 n.22.

60. *Id.* at 863 n.24.

61. *See id.* at 893–916 (explaining the rise of, and ultimate failure of, reductionism in American law to account for full prediction of what courts would do under a certain set of facts).

with it.[62] Thus, complexity theory suggests that not only will this Litigation probably have a nonlinear effect on everything from blockchain adoption to consumer choice to use crypto currencies,[63] but inasmuch as the Litigation *itself* is a complex system composed of agents the background socio-economic situation will itself impart change within the Litigation as agents and institutions are forced to respond personally and professionally. But society still requires the law to "promote stability or resilience to systemic threats."[64] And there are many such threats: the U.S. is faced with economic and health-related woes from inflation and COVID-19, as well as challenges to the rule of law and the fair administration of justice in the light of racial and social unrest. In terms of market growth, there is also the next phase of the internet, known as Web3, which will largely be driven by underlying blockchain technology.[65] These kinds of emergent phenomenon may be the results of "strange attractors," which have a unique role in a complex system:[66] the creation of difficult-to-predict outcomes, or "chaotic system states."[67] The weather and its effects on agents within the system is a concrete example.[68] Accounting for and building systemic resiliency against these states is part of the job of prudent regulation. Applying these principles to ICOs, for example, which are often the preferred method of gaining adoption for blockchain systems in verticals ranging from decentralized finance to "data validation, data access, and identity protection,"[69] means recognizing that ICOs are emergent phenomena arising from the actions and reactions of agents as they respond to attractors and influence the trajectory of the system as it is shaped by the harmful effects of the pandemic and other chaotic attractors.

62. Mark A. Chinen, *Governing Complexity*, *in* COMPLEXITY THEORY AND LAW: MAPPING AN EMERGENT JURISPRUDENCE 151, 152 (Jamie Murray et al. eds., 2019).

63. *See* Ruhl, *supra* note 52, at 852–53.

64. Chinen, *supra* note 62, at 152.

65. Charles Silver, *What is Web 3.0?*, FORBES (Jan. 6, 2020, 1:00 PM), https://www.forbes.com/sites/forbestechcouncil/2020/01/06/what-is-web-3-0/?sh=3dbc756058df [https://perma.cc/C5E4-NMA8].

66. *See* Ruhl, *supra* note 52, at 864.

67. *Id.*

68. *Id.* at 865 n.31.

69. Statista Rsch. Dep't, *Worldwide Spending on Blockchain Solutions from 2017 to 2014*, STATISTA (Jan. 19, 2022), https://www.statista.com/statistics/800426/worldwide-blockchain-solutions-spending/ [https://perma.cc/PP4T-2YMG].

Complexity theory counsels that management of ICOs requires considering the trajectory of the U.S. economy and the attractors describing it[70] rather than solely focusing on the discrete rules of agent behavior. This perspective, while admittedly still developing as a discipline, is likely a better view of the *Ripple* Litigation, and cases following it for regulators, because it avoids the reductionism of casting a regulator's choices as binary, consisting of either neutering regulator's ability to deal with consumer abuse and throttling innovation or allowing free reign to market forces and self-interest at risk to consumers. Instead, complexity theory operates as a broader conceptual tool for policymakers to understand, at scale, the systemic relationships inherent in agent behavior that considers, but is not reduced to, traditional metrics such as compliance costs and "inefficiencies and uncertainties" of new business models.[71] To illustrate the complexity of blockchains in the U.S. economy, Figure 1 compares three sets of data over the last eight years: the worldwide market capitalization of crypto assets in millions of dollars, the average yearly rate of inflation in the United States as measured by the Federal Reserve Bank of Minneapolis, and the number of SEC enforcement actions taken against blockchain-based firms conducting ICOs. This dataset is admittedly limited temporally and inferentially;[72] however, it is included here because the comparison suggests an interesting correlation between inflation and cryptocurrency investment, and the nonlinear, exponential growth that all three exhibit is a hallmark of complex systems.[73]

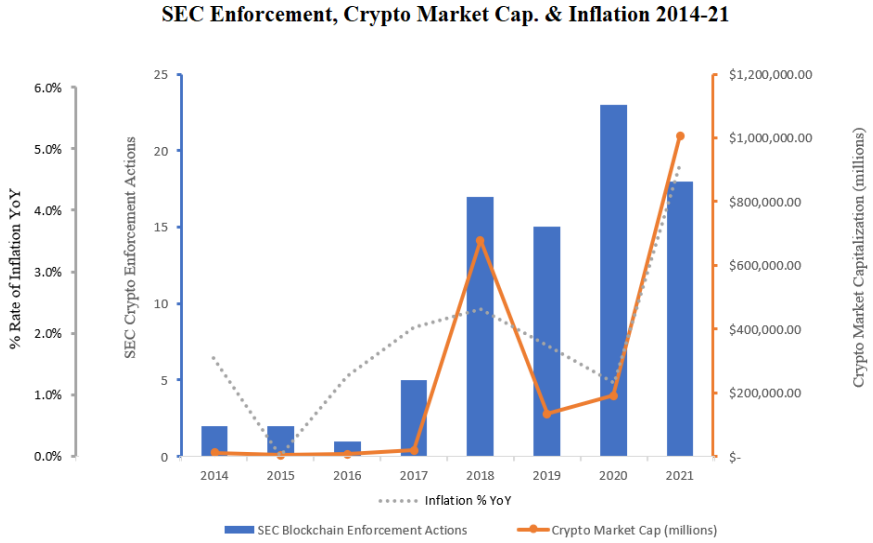
70. *See* Ruhl, *supra* note 52, at 873 ("[M]anage[ment of] a particular manifestation of human free will can be expressed as a point on a trajectory that meanders among the attractors of freedoms, rights, and regulations.").

71. *Cinderella's Slipper*, *supra* note 39, at 332.

72. This small dataset does not intend to prove—nor could it—whether the sudden and substantial investment in blockchain technologies is anything more than a speculative bubble. A common criticism made by advocates of this position equates the investment in cryptocurrencies like Bitcoin or speculative ICOs with what investors did with mortgage-backed securities in the years prior to the Great Recession. *C.f.*, WERBACH, *supra* note 8, at 6, 73–74. But this is a straw man: speculative or even outright scam ICOs are a far cry from the value-creating systems that leverage blockchain technologies, such as the supply chain management systems used by large corporations today or even Ripple itself. *See, e.g.*, Statista Rsch. Dep't, *supra* note 69 (suggesting that in 2021, $6 billion dollars was spent on blockchain-related technology worldwide). And quite apart from legitimate questions about big picture governance and regulation, blockchain has only begun to deliver on some of its promises of security and transparency and has been adopted largely for that reason.

73. *See* MITCHELL, *supra* note 53, at 33–35.

Fig. 1[74]



Year	Rate of Inflation †	Crypto Market Cap (in Millions) ††	Date Measurement Taken	Number of SEC enforcement actions †††
2014	1.60%	$ 11,967.70	4-Jan	2
2015	0.01%	$ 4,642.78	4-Jan	2
2016	1.30%	$ 7,144.34	4-Jan	1
2017	2.10%	$ 18,883.60	2-Jan	5
2018	2.40%	$ 679,126.76	2-Jan	17
2019	1.80%	$ 133,628.15	2-Jan	15
2020	1.20%	$ 191,218.97	1-Jan	23
2021	4.80%	$ 1,006,263.24	6-Jan	18

There are several forces at work that are shaping the trajectory of the U.S. economy. The erosion of wealth caused by record inflation[75] and

74. † *Consumer Price Index, 1913–*, FED. RESERVE BANK OF MINNEAPOLIS, https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1913- [https://perma.cc/8599-KYAC].

†† *Total Cryptocurrency Market Cap*, COINMARKETCAP, https://coinmarketcap.com/charts/ [https://perma.cc/8P6A-32RJ].

††† *Cyber Enforcement Actions*, U.S. SEC. & EXCH. COMM'N., https://www.sec.gov/spotlight/cybersecurity-enforcement-actions [https://perma.cc/9QPW-HE4K] (listing around 150 actions taken against crypto-asset companies).

75. In Europe, inflation is at a ten-year high. *See* Annette Weisbach, *ECB to Kick Off its Tapering Debate as Inflation Surges to a 10-year High*, CNBC (Sept. 8, 2021, 7:56 AM), https://www.cnbc.com/2021/09/08/ecb-to-kick-off-its-tapering-debate-as-inflation-

exacerbated by the pandemic[76] has created a need for investments which generate a return sufficient to beat the market, outpace the velocity of loss, and effectively preserve spending power.[77] Institutional investors traditionally accomplished this by "hedging" against inflation with real estate or gold—now, they are turning to crypto assets.[78] Particularly in the United States, the pandemic triggered monetary policy over the five-month period ending in September of 2021 that will have resulted in $2.7 trillion dollars paid to U.S. citizens for COVID relief.[79] From December 2020 to December 2021 the U.S. Bureau of Labor Statistics shows a six percent increase in inflation.[80] As a matter of basic economics, the federal government's desired outcome—indeed, the very purpose of the aid money—was to increase consumer spending. But today's spending has had a much different outcome than spending in the previous Great Recession in 2008. There, the federal aid money given to banks was *not* accompanied by increased consumer lending, so inflation was not rampant, despite staggering sums of money spent. Today, however, in addition to direct payments by the federal

surges.html [https://perma.cc/9HK3-9YGC]. *See generally* Ceyda Oner, *Inflation: Prices on the Rise*, FIN. & DEV. MAG., May 31, 2018, at 30, 30 ("[I]nflation represents how much more expensive the relevant set of goods and/or services has become over a certain period, most commonly a year."). There is concern that this record inflation will injure consumers even further. *See* Gwynn Guilford, *Broader Inflation Pressures Begin to Show*, WALL ST. J. (Oct. 4, 2021, 5:30 AM), https://www.wsj.com/articles/broader-inflation-pressures-begin-to-show-11633339800 [https://perma.cc/GA94-L629]; *see also* Stephanie Landsman, *Market is Unprepared for the Inflation Fallout, Wharton's Jeremy Siegel Warns*, CNBC (Oct. 3, 2021 5:00 PM), https://www.cnbc.com/2021/10/03/market-is-unprepared-for-inflation-fallout-whartons-jeremy-siegel.html [https://perma.cc/L3MY-BYH7].

76. *See Everyone Included: Social Impact of COVID-19*, UNITED NATIONS: DEP'T OF ECON. & SOC. AFFS., https://www.un.org/development/desa/dspd/everyone-included-covid-19.html [https://perma.cc/57DU-HZKT].

77. *See, e.g.*, Rajesh Cheruvu, *How Inflation Will Impact Investing in Different Asset Classes*, ECON. TIMES (Aug. 8, 2021, 5:59 PM), https://economictimes.indiatimes.com/markets/stocks/news/how-inflation-will-impact-investing-in-different-asset-classes/articleshow/85151244.cms?from=mdr [https://perma.cc/S3H7-X4TL].

78. Marco Quiroz-Gutierrez, *Bitcoin—Not Gold—Is the New Inflation Hedge, Says JPMorgan,* FORTUNE (Oct. 8, 2021, 2:16 PM), https://fortune.com/2021/10/08/bitcoin-not-gold-is-the-new-inflation-hedge-says-jp-morgan/ [https://perma.cc/SW2Z-L65E].

79. CONG. BUDGET OFF., THE BUDGETARY EFFECTS OF MAJOR LAWS ENACTED IN RESPONSE TO THE 2020–2021 CORONAVIRUS PANDEMIC, DECEMBER 2020 AND MARCH 2021 1 (2021) (indicating that P.L. 116-260, enacted in December of 2020, increased the deficit by $868 billion, and that P.L. 117-2, enacted in March of 2021, increased the deficit by $1.8 trillion dollars).

80. *The Economics Daily Consumer Price Index: 2021 In Review*, U.S. BUREAU OF LAB. STATS. (Jan 14, 2022) https://www.bls.gov/opub/ted/2022/consumer-price-index-2021-in-review.htm [https://perma.cc/4YD4-LEK5].

government, U.S. banks *are* lending to consumers and therefore, consumer spending is creating real inflation.[81]

Inflation by pandemic is hardly unprecedented. As long ago as 200 A.D.,[82] a plague of what was probably smallpox decimated the Roman Empire during the reign of Diocletian.[83] This "result[ed] [in] a drastic increase on the prices of goods that had never before been witnessed in Rome[;] inflation was only one percent in the first two centuries AD, but prices doubled after the plague."[84] Although the exact cause of the inflation is believed by historians to be the loss of life—and the loss in productive labor and a subsequent increase in wages[85]—rather than reactionary injection of money into the economy, in both cases inflation has been ascribed to a health crisis, and in both cases systemic weaknesses have been exposed. Unlike the limited technological options available to the Roman Empire, today systemic problems may present new use cases for blockchain, which can function as a "regulatory modality in its own right."[86] Blockchain may or may not be able provide a solution to some of the underlying social issues involving access to modern healthcare; but if it could, that social benefit is not generally considered under the current approach to regulation of blockchain startups.

Given these facts, it is no coincidence that crypto asset markets have made recent, rapid advancements in the mainstream,[87] and that technology

81. *See, e.g.*, Steve Slifer, *GDP, Inflation, and Interest Rate Forecasts*, NUMBERNOMICS (Jan. 28, 2022), https://numbernomics.com/forecasts/ [https://perma.cc/Q4RX-XWA5].

82. 1 EDWARD GIBBON, THE DECLINE AND FALL OF THE ROMAN EMPIRE 425 n.1 (Alfred A. Knopf, 1993) ("The depreciation in the value of money or the rise in price of commodities had been so great during the last century [from approximately 200–300 A.D.] that butcher's meat, which in the second century was two denarii a pound, was now fixed at a maximum of eight"); *see also Diocletian's "Edict of Maximum Prices" Issued in 301 AD*, ARMSTRONG ECONOMICS, https://www.armstrongeconomics.com/research/monetary-history-of-the-world/roman-empire/chronology_-by_-emperor/tetrachy/diocletian-284-305-ad/diocletians-edict-of-maximum-prices-issued-in-301-ad/ [https://perma.cc/X9ZD-EPWP].

83. *What Role did Inflation Play in the Collapse of the Roman Empire*, DAILYHISTORY.ORG, https://dailyhistory.org/What_Role_Did_Inflation_Play_in_the_Collapse_of_the_Roman_Empire [https://perma.cc/N4HQ-JE95] (discussing how the Antonin plague drastically increased the price of goods).

84. *Id.*

85. *Id.*

86. WERBACH, *supra* note 8, at 153.

87. *See, e.g.*, Benjamin Pimentel, *Ripple's Top Lawyer Says the SEC Has Declared War on Crypto,* PROTOCOL (Nov. 16, 2021), https://www.protocol.com/fintech/ripple-sec-regulations-crypto-alderoty [https://perma.cc/DQ78-3P2L] (noting that Ripple's general counsel estimated the size of the crypto space as "over $3 trillion").

associated with the phenomenon has as well.[88] In April of 2021, the largest crypto exchange platform in the United States, Coinbase.com, was directly listed on the NASDAQ.[89] Exchanges like Coinbase increase the opportunity for late-moving investors to capture part of the substantial gains which crypto assets offer.[90] Indeed, crypto assets and the technology supporting them have reached an inflection point, with some estimates of the total crypto capitalization. But blockchain as a vehicle for inflationary protection is only one possible use case. There are many other protective vehicles, including, but not limited to supply chain management, chain of custody applications, land titling, and occupational licensing. All are driven by technological sophistication,[91] social need, and market complexity.[92]

Although regulators "can[no]t ever reach absolute system predictability for a nonlinear dynamical system," it is possible to manage the effects of complexity through even-handed guidance.[93] From a systemic perspective, the disruption to certain segments of the economy caused by innovation is the same whether it is driven by noble belief in progress or untrammeled greed. For example, in the nineteenth century, "[r]ailroads transformed culture and the human perception of time and space" through the infrastructure necessary for their operation.[94] The creation of railroad connections from town-to-town spurred innovation in timekeeping and communication; at the same time, it enabled the graft and greed of the

88. Kevin Helms, *SEC Chairman Says Satoshi Nakamoto's Innovation Is Real, Crypto Rules Are Clear*, BITCOIN.COM (Aug. 8, 2021), https://news.bitcoin.com/sec-chairman-satoshi-nakamotos-innovation-real-crypto-rules-clear/ [https://perma.cc/6PQH-E3XS] (noting SEC Chairman Gary Gensler stated blockchain technology is worth "about $1.83 trillion").

89. *See* Mark DeCambre, *Coinbase IPO: Everything You Need to Know About the "Watershed Moment" in Crypto*, MARKETWATCH (Apr. 14, 2021, 3:50 PM), https://www.marketwatch.com/story/coinbase-ipo-everything-you-need-to-know-about-the-watershed-moment-in-crypto-11618350086 [https://perma.cc/35Y3-8C8X] ("[C]oinbase is a foundational piece of the crypto ecosystem and is a *barometer* for the growing mainstream adoption of bitcoin and crypto for the coming years[.]" (emphasis added)).

90. Throughout 2020 and 2021, cryptocurrency index returns have been substantial. *See, e.g.*, PRICEWATERHOUSECOOPERS ET AL., THIRD ANNUAL GLOBAL CRYPTO HEDGE FUND REPORT 2021, at 3 (2021) ("The median crypto hedge fund returned +128% in 2020 (vs +30% in 2019).").

91. At a certain level of technological sophistication, the pressure for market participants to cut costs becomes a paramount concern. *See* CHRISTOPHER LASCELLES, A SHORT HISTORY OF THE WORLD, 167 (2019).

92. Mulligan, *supra* note 17.

93. Ruhl, *supra* note 52, at 861.

94. JACOB SOLL, THE RECKONING: FINANCIAL ACCOUNTABILITY AND THE RISE AND FALL OF NATIONS 168 (2014).

railroad operators.[95] This certainly diluted the social benefits of the technology; at scale, the railroad magnates ensured that the very few became wealthy at the expense of the many, largely through opaque financial reporting.[96] Blockchain technology and, specifically, ICOs, are analogous to both examples in the sense that the power of computational infrastructure that enabled these technologies has already altered the way in which people interact. For example, along with the salutary "democratization" of funding start-ups, pre-functional crypto asset sales carry the risk of "pump-and-dump" schemes as well as simple fraud.[97] More generally, while pseudonymity is blockchain's strength through the creation of self-sovereign identity as a state-based alternative to the internet, it also creates "extreme[] difficult[y]" in identifying and apprehending bad actors.[98]

This is precisely why regulators are needed. This Comment does not claim that blockchain or ICOs are an unalloyed good or a libertarian ambrosia of some kind, or that courts or Congress should abdicate responsibility to thoughtfully protect investors. Ultimately, it is still an open question whether blockchain's widespread adoption will result in "consolidat[ion]" much as Web1 and Web2 did, becoming nothing more than another centralized network.[99] But what is suggested here is that the current open-ended approach by all regulatory agencies, particularly the SEC, should be carefully reviewed by courts considering the entirety of the complex system and the need for regulatory consistency. The goal of a regulator, of course, "is actually not to [merely] regulate. It is to achieve *societal objectives*."[100] The SEC's mission, for example, explicitly provides that in addition to market goals, is to "protect investors."[101] Crypto assets—like all other technologies—have indeed experienced a period of rampant speculation and risky behavior through unscrupulous crypto asset "offerings,"[102] often to the detriment of unsophisticated investors. Furthermore, there is widespread acknowledgment that bad actors do exist in the crypto space and create

95. *Id.*

96. *Id.* at 170–71 (referencing a Mark Twain quote) ("A railroad is like a lie—you have to keep building it to make it stand.").

97. WERBACH, *supra* note 8, at 188.

98. Nate Crosser, Article, *Initial Coin Offerings as Investment Contracts: Are Blockchain Utility Tokens Securities?*, 67 Kan. L. Rev. 379, 388 (2018).

99. Moxie Marlinspike, *My First Impression of Web3*, MOXIE.ORG: BLOG (Jan. 7, 2022), https://moxie.org/2022/01/07/web3-first-impressions.html [https://perma.cc/BD4V-7MZU].

100. WERBACH, *supra* note 8, at 196 (emphasis added).

101. *About the SEC*, U.S. SEC. & EXCH. COMM'N, https://www.sec.gov/about.shtml [https://perma.cc/PX3T-AAKX].

102. *Cinderella's Slipper*, *supra* note 39, at 326.

"significant" social costs.[103] But the mantle must be taken up by the U.S. regulatory apparatus to answer the hard question: at what point should a largely case-by-case analysis and regulation by enforcement be prohibited in the light of countervailing concerns? This Comment suggests that the Litigation provides a good vehicle to invite a consideration of these policy issues and moreover, the role of the law to manage complexity by considering attractors at work in the U.S. economy.

B. Crypto Asset Classification & Regulation

Although at a theoretical level the U. S. regulatory apparatus is still grappling with so-called first principles regarding the regulation of blockchain technology and ICOs,[104] practically speaking, a real problem for many businesses seeking to enter the blockchain space is the lack of clear jurisdiction. In a suggestively titled blog post, Professor Carol Goforth notes that crypto assets are "Money, Property, a Commodity, and a Security, all at the Same Time."[105] Indeed, the rise in prominence of crypto assets has led to uncertainty about where they fit in the existing regulatory schema and under whose jurisdiction they rest.[106] For example, prior to the SEC's assertion of jurisdiction on the basis that XRP is a security, Ripple entered a binding agreement with the Justice Department detailing that XRP was in fact a *currency*.[107] This was substantial for three largely practical reasons. First, the alleged violations included failure to validate identity of those using XRP as a currency, and failure to ensure that individuals were not blacklisted;[108] together, these requirements constituted a substantial expense in what was previously a nascent and largely unregulated business operation.

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103. *Id.* at 321.

104. As background, ICOs have changed the playing field, irrevocably decentralizing business capitalization. "One of the effects of the rise of the token network is that a Silicon Valley presence is no longer required, or even beneficial, to raising investment capital or generating a dedicated community." BATIZ-BENET ET AL., *supra* note 16, at 3.

105. *See* Carol Goforth, *US Law: Crypto is Money, Property, a Commodity, and a Security, all at the Same Time*, OXFORD BUS. L. BLOG (Dec. 7, 2018), https://www.law.ox.ac.uk/business-law-blog/blog/2018/12/us-law-crypto-money-property-commodity-and-security-all-same-time [https://perma.cc/J4RS-YFNY].

106. *Cinderella's Slipper*, *supra* note 39, at 320 (naming the federal level agencies that have stepped into the lacuna to regulate crypto assets: the IRS, the Commodities Futures Trading Commissions (CFTC), the Financial Crimes Enforcement Network (FinCEN), and of course, the SEC).

107. Office of Public Affairs, *Ripple Labs Inc. Resolves Criminal Investigation*, U.S. DEP'T OF JUSTICE (May 5, 2015) https://www.justice.gov/opa/pr/ripple-labs-inc-resolves-criminal-investigation [https://perma.cc/7LUN-JFRH].

108. WERBACH, *supra* note 8, at 191.

Second, other companies with similar strategic goals perceived this regulatory threat as a "signal" that the United States was inhospitable to cryptocurrency.[109] Third, and possibly most importantly, it demonstrated that classifications by different agencies of the same crypto asset could overlap.

As a practical matter, the problem of jurisdiction over a crypto asset will often come down to how it is classified. This raises several questions. The first is simply that in the absence of a standardized definition of a "crypto asset" or "token," to what regulator is a business accountable to?[110] If a regulator can arbitrarily claim jurisdiction over a single asset with their preferred label of "currency" or "security" though the labels represent things that are, in reality, very different from one another,[111] how can regulatory exposure be mitigated? The answer the law has given turns on the nature of the crypto asset. Broadly speaking, and subject to substantial overlap—such as in XRP's case—a crypto asset is, one or more of a (1) cryptocurrency, (2) "tokenized" security, and/or a (3) "utility" token.[112] Whatever the label, the object to be regulated is a crypto asset existing on a blockchain, or, technically speaking, a cryptographically-secured ledger entry that is distributed across network nodes and subject to certain network protocols.[113] The distinction is primarily driven by the perceived *purpose* of the crypto asset,[114] although fierce debate rages over how to innovate around the classifications and their implications.[115]

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109. *Id.*

110. The source of this definitional discrepancy is twofold: partly because of the overlapping jurisdiction of different agencies and partly because of the fact-specific inquiry which must be undertaken by regulators. *See* JURISDICTION WORKING GRP., AM. BAR. ASS'N, DIGITAL AND DIGITIZED ASSETS: FEDERAL & STATE JURISDICTIONAL ISSUES 2 (2020) [hereinafter ABA REPORT].

111. Perhaps the most substantial difference is the fact that securities "confer [benefits that] are largely unknown . . . because the product's prospective earnings are unknown." Hadar Y. Jabotinsky, *The Regulation of Cryptocurrencies: Between a Currency and a Financial Product*, 31 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 118, 125 (2020). Currencies, on the other hand, provide "a medium of exchange, a unit of account, and/or a store of value." *Id.* at 124.

112. Crosser, *supra* note 98, at 384. This discussion omits stablecoins, a fourth category of digital asset. *See also* ABA REPORT, *supra* note 110, at 34.

113. *See also* SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 4 (2020).

114. In 2018, SEC Chair Bill Hinman listed several elements that constituted "contractual or technical ways to structure digital assets so they function more like a consumer item and less like a security[,]" and noted that the SEC "would look to the economic substance of the transaction[.]" Hinman, *supra* note 31.

115. *See* Shin, *supra* note 16; *see also* BATIZ-BENET ET AL., *supra* note 16, at 14–15.

Of the three, the easiest to understand are probably cryptocurrencies. These are simply "peer-to-peer digital currency networks" that operate on the blockchain[116] and are "designed to act as an external currency."[117] Cryptocurrencies have been subject to overlapping jurisdiction of regulatory agencies.[118] But the rub comes in when distinguishing the other two types of tokens. Utility tokens are created to help fund an initial coin offering and create an internal, and often decentralized, economy of users within a blockchain. Their value "results from a mix of speculation in the asset and the demand for their use in that network."[119] Ether, which is used to power smart contracts on the Ethereum blockchain, is an example. Another example would be a token that acts as "cryptographic 'coupons' redeemable for mundane goods and services like bags of ground coffee or boxes of razor blades."[120] Such crypto assets, if resold on secondary markets, would carry value, but their value would mostly exist in their usage on the network. On the other hand, security tokens are created as an investment and are tied directly to the value of the company *issuing* the token.[121] This would be a genuine IPO conducted by blockchain where the only value of the token would be the receipt of a return from the investment.[122] And, of course, securities laws would apply to such a token.

Within the context of securities, a further concern is that crypto assets fall within the scope of both federal and state "blue sky" securities laws.[123] Traditionally, and with some exceptions, a security that is sold intrastate only is only subject to that state's securities laws.[124] It is when that security falls into a category of federally regulated securities or is sold to investors outside that state's borders that the federal regulatory apparatus is triggered,

116. Crosser, *supra* note 98, at 388.

117. *Id.* at 389.

118. *Id.* at 390.

119. Shin, *supra* note 16.

120. BATIZ-BENET ET AL., *supra* note 16, at 3–4.

121. Milko Trajcevski, *A Deep Dive Into Tokenization*, COINMARKETCAP: ALEXANDRIA, https://coinmarketcap.com/alexandria/article/a-deep-dive-into-tokenization [https://perma.cc/XS83-WVPM].

122. Crosser, *supra* note 98, at 391–92.

123. "[A]ll states can assert jurisdiction over securities transactions involving crypto-related subject matter because there is *no blanket federal jurisdictional preemption* in securities regulation." Bryan K. Prosek & John R. Chadd, *State Securities Regulators Are Increasing Actions Against Cryptocurrency Issuers and Exchanges*, STEPTOE & JOHNSON PLLC (Nov. 28, 2018), https://www.steptoe-johnson.com/content/state-securities-regulators-are-increasing-actions-against-cryptocurrency-issuers-and [https://perma.cc/N6D2-WA2C] (emphasis added).

124. *See* SECURITIES PRACTICE GUIDE § 1.04 (2021).

and the federal government's preemptive authority under the Supremacy Clause is triggered.[125] There is, therefore, a patchwork of rules regarding crypto assets as securities in the United States.

The SEC was not the first regulator of crypto assets,[126] but it has taken an outsized role in blockchain and in ICOs in recent years. Its mission is to "protect[] investors and maintain[] fair, orderly and efficient markets,"[127] while maintaining "[p]rimary jurisdiction for the implementation, interpretation and enforcement of" securities laws such as the Securities Act of 1933 and the Securities Exchange Act of 1944.[128] Speaking broadly, the "fundamental principle" of securities regulation is disclosure.[129] As such, the basis for SEC enforcement actions against companies making use of ICOs is often failure to register or disclose facts about the company of which the putative "security" represents a fraction of ownership.

The SEC's authority is statutory, meaning a statutory basis must exist for it to regulate. The broad drafting of the Securities Act of 1933 captures a wide array of activity,[130] and the SEC has elected to leverage its enforcement authority in the crypto asset space by using a "regulation via enforcement" approach in contrast to other comparable jurisdictions, such as the UK.[131] The SEC's regulatory strategy deploys broad definitions[132] and selective, predictable enforcement.[133] The strength of such an approach is that a regulator's hands are not tied when wrongdoers utilize a novel approach to facilitate otherwise sanctionable conduct;[134] this is valuable in an

125. *Id.*

126. *Cinderella's Slipper*, *supra* note 39, at 275 n.21.

127. *About the SEC*, *supra* note 101.

128. *See* 15 U.S.C. § 77a–bbbb (alternatively cited as Securities Act); § 78a. Enacted following the market crash in 1929, "[t]he Securities Act and the Exchange Act and the rules and regulations promulgated under these statutes by the SEC are the two primary [federal] statutes pertaining to the offering and sale of securities, and the continuing information disclosure reporting [requirements of] operating companies." SECURITIES PRACTICE GUIDE, *supra* note 124, § 1.01.

129. WERBACH, *supra* note 8, at 182.

130. *See Researching the Federal Securities Laws Through the SEC Website*, INVESTOR.GOV, https://www.investor.gov/introduction-investing/investing-basics/role-sec/researching-federal-securities-laws-through-sec [https://perma.cc/YZN3-68XC].

131. Guseva, *supra* note 32, at 630, 638–40.

132. *Id.* at 666 (noting that the "inherently indeterminate definition of 'investment contract'" was manageable because of the SEC's predictable strategy of enforcement).

133. *Id.* at 635–37.

134. *See* M. Todd Henderson & Max Raskin, *A Regulatory Classification of Digital Assets: Toward an Operational* Howey *Test for Cryptocurrencies, ICOs, and Other Digital Assets*, 2019 COLUM. BUS. L. REV. 443, 478 (2019) ("[T]he trouble with multi-factor analyses is that they create legal uncertainty—their virtue is flexibility to the regulatory.").

unstructured and rapidly evolving area of technology such as blockchain. Yet consistency on the part of the regulator is required to avoid creating unnecessary regulatory exposure that repulses investment; the regulator must ensure that the market is aware in advance of violative conduct so as to avoid it.

Because this approach to crypto assets requires a case-by-case analysis by the SEC, there is great risk of uncertainty in the market and its regulation.[135] For example, a company seeking to achieve widespread use of its crypto asset, which actually has utility on its platform, seeks to sell the token to fund the company's operations. This strategy would require an intensive analysis that would seem to cut both ways. On one hand, the crypto asset has utility. On the other hand, it is sold by the company to fund the company's operation. Aside from the decentralization which would immunize the crypto asset from a "security" classification—and which seems to turn partly on the spirit of the securities laws—questions such as whether the company or a third party drives the value of the token[136] or whether the blockchain was "fully functioning or in early stages of development" at the time of sale[137] must be answered. Certainly, a "prefunctional token cannot have utility[.]"[138] In sum, this crypto asset may or may not be treated as a pure "utility" token by the SEC, especially if it was convertible to fiat currency in secondary markets or otherwise.[139] Such uncertainty surrounding crypto assets has been amplified[140] by the risk that if a crypto asset *is* found to be a security, then the SEC will bring "the entire securities regulatory scaffolding crashing down on it," which is extraordinarily costly.[141]

Regulation by enforcement was not first seen in the *Ripple* litigation.[142] Previous SEC enforcement actions against blockchain firms used a

135. Jonathan Rohr & Aaron Wright, *Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets*, 70 HASTINGS L.J. 463, 514 (2019).

136. Hinman, *supra* note 31.

137. *Id.* "Functional" and "prefunctional" refer to the fact that the blockchain network to which the token is native may or may not be operational at the time of the token's distribution. BATIZ-BENET ET AL., *supra* note 16, at 4–5.

138. WERBACH, *supra* note 8, at 188.

139. *Cinderella's Slipper*, *supra* note 39, at 320.

140. Hall, *supra* note 31.

141. *Id.*

142. In 2017, the SEC published an important report detailing its position on crypto assets and signaling its position approach to the market. In the report summary, the SEC stated: "This Report reiterates . . . [the] fundamental principles of the U.S. federal securities laws and describes their applicability to a new paradigm—virtual organizations or capital raising entities that use distributed ledger or blockchain technology to facilitate capital raising and/or investment and the related offer and sale of securities . . . [The new paradigm] *does not*

paradigm of "dynamic inconsistency" to regulate using strategic assurances,[143] an open-door policy,[144] no-action letters,[145] and cooperation letters in addition to enforcement. Troubling, however, is the fact that the *Ripple* Litigation is the third recent case to demonstrate that "regardless of the defendants' attempts to cooperate and the quality of [their] business projects" the SEC did not attempt to meaningfully cooperate.[146] In the face of criticism, the SEC argues its regulations have "clarity."[147] But many academics and commentators—including some high-ranking former SEC personnel[148]—have deemed this approach to blockchain technology to be inadequate.[149] Acknowledging the fraud and its risks that exist in the ICO space, failure to consider overreach or the availability of alternatives to the SEC's current approach, such as simply amending the disclosure requirements to make them less costly or pursuing another course of regulation, could be

remove conduct from the purview of the U.S. federal securities laws. . . . This Report also serves to stress the obligation to comply with the registration provisions of the federal securities laws . . . ." SEC. & EXCH. COMM'N, REPORT OF INVESTIGATION PURSUANT TO SECTION 21(A) OF THE SECURITIES EXCHANGE ACT OF 1934: THE DAO 2 (2017) (emphasis added); *see also* Guseva, *supra* note 32, at 657.

143. Guseva, *supra* note 32, at 662, 667–74.

144. *Id.* at 665–66.

145. *Id.* at 664.

146. *Id.* at 667, 658–61.

147. Isabelle Lee, *Cryptocurrencies Should Not Be Viewed as Their Own Asset Class and Should Be Evaluated Individually, an SEC Director Says*, MKTS. INSIDER (Nov. 4, 2021, 4:45 PM), https://www.businessinsider.com/cryptocurrencies-asset-class-regulation-sec-director-securities-bitcoin-gensler-cftc-2021-11?amp [https://perma.cc/33UE-67FA].

148. Commissioner Hester Peirce, former commissioner Mary Jo White, and former Commodity Futures Trading Commission chair Chris Giancarlo are outspoken critics of the SEC's approach. *See* Hester M. Peirce, *Token Safe Harbor Proposal 2.0*, U.S. SEC. & EXCH. COMM'N (Apr. 13, 2021), https://www.sec.gov/news/public-statement/peirce-statement-token-safe-harbor-proposal-2.0 [https://perma.cc/BR6A-LL73]; Jeff John Roberts, *SEC is "Dead Wrong": Former Chair Mary Jo White Defends Ripple in Pivotal Crypto Case*, FORTUNE (Feb. 19, 2021, 10:00 AM), https://fortune.com/2021/02/19/ripple-sec-lawsuit-mary-jo-white-crypto-unlicensed-securities-xrp/ [https://perma.cc/B9YY-HKV2]; Leo Jakobson, *"Crypto Dad" Chris Giancarlo: XRP is Not a Security*, MODERN CONSENSUS (June 18, 2020), https://modernconsensus.com/cryptocurrencies/xrp/crypto-dad-chris-giancarlo-xrp-is-not-a-security/ [https://perma.cc/RG5S-Z9DE] [hereinafter *Crypto Dad*]. One SEC alumnus stated: "Outside the venture capital community, corporations, major investors and banks are understandably skittish about risking serious sums of money on technologies their lawyers can't assure them comply with law—even when a technology holds the potential to improve the efficiency of managing vast amounts of data across countless industries, or the potential for frictionless, inexpensive transfers of value over smartphones and other widespread consumer tools." Hall, *supra* note 31.

149. *See Cinderella's Slipper*, *supra* note 39, at 301–10 (listing problems with SEC application of securities laws to crypto assets).

costly.[150] Aside from this, the time and money spent by taxpayers and defendants alike in litigation to determine whether a crypto asset distributed by an ICO is a security is substantial.[151] And the SEC has not limited itself to ICOs: Coinbase, the largest U.S.-based cryptocurrency exchange, was targeted by the SEC over its secondary-market lending products[152] in spite of claimed attempts to cooperate.[153] Some argue that the SEC's actions really amount to arbitrary decision making[154] by a billion dollar regulatory adversary, while other commentators go further, arguing that constitutional due process rights may be violated.[155] From a game theory perspective, this latter litigation is relevant because it further signals that working with the SEC to become compliant may no longer be an optimal strategy for firms in the crypto space, a strategy that the SEC initially sought to cultivate[156] and a key pillar of a successful regulation by enforcement strategy in a rapidly innovating market.

The theme that begins to emerge is that, as an immature technology, crypto assets represent novel emergent responses to attractors in the U.S. economy. It is understandable that the regulatory framework has focused on a case-by-case analysis. And again, the mere fact that a framework is open-ended is not necessarily problematic. But today, when innovation is accelerating and "entrepreneurs and factfinders face a continual need for a case-by-case, fact-intensive analysis in an open-ended interpretative

150. *Id.* at 304–307.

151. *Cf. id.* at 331 ("The most important benefit of these changes from the SEC's perspective is that it would no longer need to spend resources litigating what is a security.").

152. *See* Paul Grewal, *The SEC Has Told Us It Wants to Sue Us Over Lend. We Don't Know Why*, COINBASE BLOG (Sept. 7, 2021), https://blog.coinbase.com/the-sec-has-told-us-it-wants-to-sue-us-over-lend-we-have-no-idea-why-a3a1b6507009 [https://perma.cc/2WKF-TPSY]; *see also* Adam Levy, *Does the SEC Have a Case Against Coinbase?*, MOTLEY FOOL (Sept. 15, 2021, 8:16 AM), https://www.fool.com/investing/2021/09/15/does-the-sec-have-a-case-against-coinbase/ [https://perma.cc/7QQU-M47C]; Zack Guzman, *Why the SEC Cracking Down on Coinbase Could Level the Crypto Playing Field*, YAHOO! FINANCE (Sept. 9, 2021), https://finance.yahoo.com/news/why-the-sec-cracking-down-on-coinbase-could-level-the-crypto-playing-field-105128348.html [https://perma.cc/F5CZ-62E6].

153. *See* Grewal, *supra* note 152.

154. *See* Guseva, *supra* note 32, at 656; *see also* Hester M. Peirce & Elad Roisman, *In the Matter of Coinschedule*, U.S. SEC. & EXCH. COMM'N (July 14, 2021), https://www.sec.gov/news/public-statement/peirce-roisman-coinschedule [https://perma.cc/5PVN-9MM3].

155. *See, e.g.*, Roslyn Layton, *SEC Assault on Ripple Provokes Wider Debate*, FORBES (June 30, 2021, 4:56 PM), https://www.forbes.com/sites/roslynlayton/2021/06/30/sec-assault-on-ripple-provokes-wider-debate/?sh=704b89c029e1 [https://perma.cc/4NA8-XH6Y] [hereinafter *SEC Assault on Ripple*].

156. *See* Guseva, *supra* note 32, at 640–41.

environment where there is no clear taxonomy of crypto assets as either securities or non-securities," it is time to re-examine regulatory practice.[157] To be sure, a "shortage of regulatory certainty is . . . a feature of digital assets."[158] There is lively debate on different approaches toward regulation of blockchains assets, but in context, its growth as a response to the economic demand for law can be explained by the inadequacy of the current regulatory response.[159] Regulating to effectively discourage investment in a tool that supplies the regulation needed is not an optimal response. Of course, it does not help matters that the complexity of the economy and the rapidly increasing technological innovation that blockchain represents largely defies traditional regulation. An example *not* to follow is that of some large economies who responded to the evidence of a demand for regulation by outright bans of currency iterations of crypto assets[160] and a malign use of soft power.[161] Government behavior like this suggests that there are global, strategic reasons for a change in U.S. regulation of crypto assets.[162] Whether the complexity of the U.S. economy has necessitated a completely new approach to the regulatory apparatus of blockchain, or merely demonstrates the desperate need for definitional clarity, may not necessarily be a disjunctive proposition: both may be equally necessary.

In sum, in the span of one year, $8.7 trillion dollars have been pumped into the economy by governments around the world.[163] Despite a Keynesian approach to spending that has recently enjoyed popularity with U.S.

157. *Id.* at 636.

158. Henderson & Raskin, *supra* note 134, at 445.

159. *See, e.g.*, Nareg Essaghoolian, *Initial Coin Offerings: Emerging Technology's Fundraising Innovation*, 66 UCLA L. REV. 294 (2019).

160. China has cracked down on all bitcoin mining in the country. This action was so substantial that Bitcoin tumbled 6% following the announcement. *See, e.g.*, Alun John et al., *China's Top Regulators Ban Crypto Trading & Mining, Sending Bitcoin Tumbling*, REUTERS (Sept. 24, 2021, 1:49 PM), https://www.reuters.com/world/china/china-central-bank-vows-crackdown-cryptocurrency-trading-2021-09-24/ [https://perma.cc/2X2N-7GTQ].

161. WERBACH, *supra* note 8, at 123.

162. *Id.*

163. Jeanna Smialek, *Inflation is Popping from Sydney to San Francisco. It May Be a Good Sign*, N.Y. TIMES (Oct. 14, 2021), https://www.nytimes.com/2021/09/07/business/economy/inflation-coronavirus-economy.html [https://perma.cc/B3RU-6APF] ("[G]overnment spending . . . has pumped some $8.7 trillion into the advanced Group of 20 markets since January 2020[.]").

voters,[164] there is strong evidence of an uneven recovery.[165] In addition to high unemployment, the erosion of spending power of inflation complicates the already fragile view of government and big banks, as seen in the rush to invest in crypto assets.[166] Essentially, in the words of one technologist, "[t]he current era is one in which trust in corporations and governments is deeply shaken, while faith in technology as a force for change remains intact."[167] These are all elements of the complex system of the U.S. markets, which, although

> complexity theory . . . says we cannot predict . . . [it] [does not] advise[] us to throw up our hands and take whatever comes. Rather, the concept of tuning the coupled nature of the system's structure suggests that we can adjust the degree to which the system exhibits complexity and thus the ability to adapt.[168]

Regulation must address this reality by encouraging private innovation to help counteract these effects, and it cannot do this with a shoehorned approach that fails to appreciate the totality of the system.

II. RIPPLE & CRYPTO ASSETS IN GENERAL

To help underscore the importance of blockchain, crypto assets, and the Litigation, a somewhat conversational sketch of the use case of blockchain technology leveraged by Ripple is necessary. One leading academic describes blockchain as a "*backend* revolution";[169] an apt description in the sense that it implies the most significant obstacle to understanding it is the

164. PEW RSCH. CTR., BROAD PUBLIC SUPPORT FOR CORONAVIRUS AID PACKAGE; JUST A THIRD SAYS IT SPENDS TOO MUCH 4 (2021).

165. This is the case both globally and domestically. *See* Eswar Prasad, *The Global Economy's Uneven Recovery*, BROOKINGS (Apr. 7, 2021), https://www.brookings.edu/opinions/the-global-economys-uneven-recovery/ [https://perma.cc/2LX6-PWPC]; Ronnie Walker, *US Daily: An Uneven Recovery*, GOLDMAN SACHS (Aug. 27, 2021, 9:38 AM), https://www.gspublishing.com/content/research/en/reports/2021/08/27/8a3f565c-ec9f-4b2c-bc6b-600f2d01c658.html [https://perma.cc/SDW8-VSEZ].

166. This harkens to the financial woes that contributed to the creation of Bitcoin. *See* WERBACH, *supra* note 8, at 35.

167. *Id.* at 30–31.

168. Ruhl, *supra* note 52, at 927–28.

169. SHERMIN VOSHMGIR, TOKEN ECONOMY: HOW BLOCKCHAINS AND SMART CONTRACTS REVOLUTIONIZE THE ECONOMY 28 (2019) (emphasis added).

fact that it is technical.[170] But numerous explanations of the technology exist,[171] and this Comment does not seek to add to the number, purposely eschewing much technical detail and jargon in favor of simply illustrating (1) the importance of the underlying technology as used by Ripple Labs, and (2) the regulatory dilemmas the technology raises for regulators, as expressed in the SEC's approach.

A. Ripple's Use of XRP

In the millions of international transactions that compose the world's financial markets, there are formerly-accepted points of failure that drive cost and inefficiency. Those "fail points" may be location- or human-based; they could be jurisdictional limitations or even the human susceptibility to phishing or other system failures attributable to the parties themselves or their agents.[172] A crypto asset running on a permissioned network that is trusted by all participants, regardless of sovereignty, could obviate the exposure from these risks and reduce potential loss. It is in this way that a blockchain's "logically centralized . . . but organizationally decentralized" architecture could implement a scaled, decentralized payment rail where one was not possible before.[173]

This is what Ripple does. Ripple is a payment company that deploys an ecosystem of functions on a blockchain to facilitate efficient cross-border payments by lowering transaction fees, shortening processing times, and removing the need for third-party intermediaries.[174] This payment system leverages a native token, XRP, to "replace the settlement layer between

170. *See also* Scott Rosenberg, *Bitcoin Makes Even Smart People Feel Dumb*, WIRED (Aug. 9, 2017, 6:48 AM), https://www.wired.com/story/bitcoin-makes-even-smart-people-feel-dumb/ [https://perma.cc/35DU-2EBV]; Jameson Lopp, *Nobody Understands Bitcoin (and That's OK)*, CYPHERPUNK COGITATIONS (Mar. 11, 2017), https://blog.lopp.net/nobody-understands-bitcoin-and-that's-ok/ [https://perma.cc/W7WN-LRVF]; Nik Custodio, *Explain Bitcoin Like I'm Five*, MEDIUM (Dec. 12, 2013), https://medium.com/free-code-camp/explain-bitcoin-like-im-five-73b4257ac833 [https://perma.cc/6SCD-KXP9] (offering an amusing but apt analogy between the gift of a physical apple to a person and the same gift of a digital apple; explaining how the unique problems raised by virtual currency are addressed by nodes, proof of work, and miners).

171. *See, e.g.*, Crosser, *supra* note 98, at 388; JOSS COLCHESTER, BLOCKCHAIN: AN OVERVIEW 6–11 (2018); SHAWN S. AMUIAL ET AL., THE BLOCKCHAIN: A GUIDE FOR LEGAL & BUSINESS PROFESSIONALS (2016); *Time for a Ripple Test*, *supra* note 25.

172. *See* WERBACH, *supra* note 8, at 77–78. A "fail point" is any point in a system that cannot fail without disrupting the entire operation of that system. *Id.* at 76. In other words, it is necessary for the system to operate.

173. *Id.* at 7.

174. Giancarlo & Bahlke, *supra* note 40.

major financial institutions."[175] Ripple also uses a network of exchange to assist with liquidity and drive down intermediary cost between international financial institutions.

B. Blockchain Background

As noted in other work, the crowdfunding movement started the financial world on a path of disintermediation.[176] Since then, it has been proclaimed that blockchain-based systems and the crypto assets native to them operate "without relying on trust," or in other words, without relying on any intermediary institutions.[177] This is certainly an overstatement; instead, blockchain *strategically limits* the need to trust by using a unique assemblage of techniques designed to *reorient* trust in the blockchain system, rather than any single person or institution.[178]

This reorientation was largely in response to the utter failure of American financial markets—and the army of underwriters, lawyers, brokers, investment bankers, auditors, regulators and consumers composing it—to understand the complexity of the risky financial instruments which ultimately led to the loss of $9.8 trillion dollars in U.S. wealth, which is about $70,000 in lost lifetime income for every American.[179] Despite paying fines, not even the most reckless of those principals involved were prosecuted.[180] In other words, the impunity of Wall Street investment banks was perceived as the Scylla to the Charybdis of the U.S. Government's big bank bailouts.[181] The power of these "intermediaries" to make decisions about the financials of regular people with little to no blowback left a bad taste in

175. David Rodeck & John Schmidt, *Meet Ripple & XRP, Cryptocurrency For Banks,* FORBES (May 6, 2021, 9:59 PM), https://www.forbes.com/advisor/investing/what-is-ripple-xrp/ [https://perma.cc/3JEX-NVPP].

176. *See* Ajay Agrawal et al., *Some Simple Economics of Crowdfunding*, 14 INNOVATION POL'Y & ECON. 63, 63 (2014) (discussing the inflection point in finance that crowdfunding precipitated).

177. NAKAMOTO, *supra* note 113, at 22.

178. WERBACH, *supra* note 8, at 116–17.

179. Renae Merle, *A Guide to the Financial Crisis—10 Years Later*, WASH. POST (Sept. 10, 2018), https://www.washingtonpost.com/business/economy/a-guide-to-the-financial-crisis—10-years-later/2018/09/10/114b76ba-af10-11e8-a20b-5f4f84429666_story.html [https://perma.cc/KM2X-AUC9].

180. SOLL, *supra* note 94, at 203.

181. *See* BULFINCH, *supra* note 4, at 227. This allusion refers to "proverbial . . . opposite dangers which beset one's course[]" in ancient Grecian myth. They are famously described in Homer's *Odyssey.*

many people's mouths.[182] Blockchain was seen as a way to make a change with new technology.

To describe what a blockchain is and how it works, a rudimentary comparison may be made with a referent network, such as the internet. While the internet and the blockchain have some differences in connectivity and deployment,[183] at a conceptual level, the comparison attempts to highlight the difference in intermediation, which is the hallmark of blockchain as a tool for innovation. Generally, the internet works by connecting computers called "clients" with computers called "servers" over an agreed-upon network architecture and data framework.[184] The clients, which are the devices by which users access the internet, seek data from servers by sending their identifying information over the network to the servers which host the information the clients want access to. These servers are generally owned and maintained by large corporations,[185] and the protocols by which the servers operate are not generally available to clients. But through these client-server relationships, the internet connects people across the world so that they can interact with each other with little delay.

As an example, when a person wishes to buy something from an online retailer (such as Amazon), that person accesses the retailer's website from their phone or computer (the client). The website itself, and all its contents—including all the items which sellers offer for sale—are stored on servers owned or leased by the retailer.[186] Importantly, because the retailer controls this stored client data, there is an unavoidable element of *trust* on the part of all users, whether they be buyers or sellers, in the way the online retailer protects them.[187] The retailer does this by collecting account information.[188] Using this data, and by standing between buyers and sellers, the online retailer acts as a trusted intermediary by facilitating legitimate purchases and by preventing bad actors from harming innocent users.

182. *See* WERBACH, *supra* note 8, at 28.

183. *See, e.g.*, Lucas Wiesflecker, *Comparison of Blockchain Versus the Internet*, MEDIUM (Apr. 29, 2020), https://medium.datadriveninvestor.com/comparison-of-blockchain-verus-the-internet-fad9cdc32487 [https://perma.cc/JXK2-GY36].

184. *See, e.g.*, *35.100 Open Systems Interconnection (OSI),* ISO, https://www.iso.org/ics/35.100/x/ [https://perma.cc/5NAD-G2NX].

185. *See* Marshall Brain, *How Web Servers Work*, HOW STUFF WORKS, https://computer.howstuffworks.com/web-server4.htm [https://perma.cc/2CJ6-JTNT].

186. *See id.*

187. *See* WERBACH, *supra* note 8, at 28.

188. *Id.*; *see also* VOSHMGIR, *supra* note 169, at 88 (showing that traditional "internet platform providers . . . not only manage the identities of their users, but also control all of their user-related data.").

The insight here is twofold. First, this idea of the "statelessness"[189] of the internet necessitates that the party with the server controls not only the infrastructure used in the interaction, but also that it must store the identifying information of the client for them to interact. In other words, at scale, transacting on the internet of today *always* requires an intermediary to maintain identifying data. In our example, it is the retailer itself. But it could be anyone, including government actors.

Second, the need for an intermediary suggests trust is necessary. But the current state of aggregated resources, such as computing power, is partially because of the way the internet evolved.[190] There was not an intuitively viable way for users of a network to be identified and thus trust each other that did not require consolidation of data by the holders of the servers. And intermediation has a long and storied tradition in human history;[191] as such, the concept of data storage was not obviously discordant with practice. Although it seems obvious today that intermediation brings a host of potential problems,[192] only recently has an alternative become widely available.

C. Blockchain Framework

Blockchain is an information technology that requires a network of computers that each run a particular software application, much like the internet. However, blockchains use a unique combination of cryptography and distributed computing to allow each of the computers to maintain a shared and secured source of data—think of an accounting ledger—that preserves the autonomy of that computer's data.[193] This autonomy largely obviates the need for intermediaries to manage interactions between parties on the network.

While the problems briefly sketched above regarding intermediaries in the legacy internet can be largely circumvented under this completely

189. VOSHMGIR, *supra* note 169, at 40 (A "state layer" is "a universal data set across the whole network . . . [i]t serves as a digital notary and a publicly verifiable timestamp.") This trust layer is missing on the internet; hence, the requirement that all clients' information must be stored on someone's servers.

190. *Id.* at 29–32.

191. *See* Lindsay Martin, *Ripple Effects: How* In Re Ripple Labs Inc. *Litigation Could Signal the Beginning of the End of the Payment Platform,* 19 DUKE L. & TECH. REV. 1, 4–5 (2021).

192. VOSHMGIR, *supra* note 169, at 87–88.

193. COLCHESTER, *supra* note 171, at 3–4 (2018).

peer-to-peer (P2P) system,[194] how can parties trust that the system *controls* dishonest behavior as effectively as an online retailer? The answer lies in the fact that instead of a client-server network relationship, a blockchain network is composed of a single distributed ledger, nodes, and unique protocols.[195] In this framework, "nodes" are network participants, "protocols" control the rules of participation in the network for the nodes,[196] and the "distributed ledger" is the single point of reference kept by (and for) all nodes as the history of all network interaction on the blockchain.[197]

The distributed ledger[198] is the record of all transactions on the blockchain between nodes, which are jointly and separately represented by a hash function output.[199] Although there are hundreds of conceivable iterations of a blockchain, but a common function in all of them is that storage of data in a sequence called "blocks" is required.[200] Each block is composed of a quantity of information established by the protocol—including the timestamps of and hash pointers to previous blocks—that is itself encrypted by a hashing function. Thus, cryptographic hashes "chain" the blocks together by chaining transactions together,[201] as seen in Fig. 2.[202]

194. VOSHMGIR, *supra* note 169, at 67 ("The ideal is that people and institutions who do not know or trust each other, reside in different countries, are subject to different jurisdictions, and who have no legally binding agreement with each other, can now interact over the Internet without the need for trusted third parties like banks, internet platforms, or other types of clearing institutions.").

195. *See id.* at 64–65.

196. *Id.* at 40.

197. *Id.* at 39.

198. Somewhat confusingly, the distributed ledger itself is *also* called the blockchain, because it contains the records the so-called "chain" of transactions hashed together into blocks. *Id.*

199. *Id.* at 74. A "hash" is a mathematical algorithm that takes any input whatever (i.e., of any *variable* length) and produces a fixed-length output that uniquely represents that input. *See* COLCHESTER, *supra* note 171, at 3. Critically, hash values have an "avalanche" effect such that in a document of several hundred pages if even one comma is added, the hash value of that document will be altogether different. VOSHMGIR, *supra* note 169, at 74–75. Thus, the only way to "recreate" an original file from the hash going backwards is to attempt all possible inputs. *Id.* at 75.

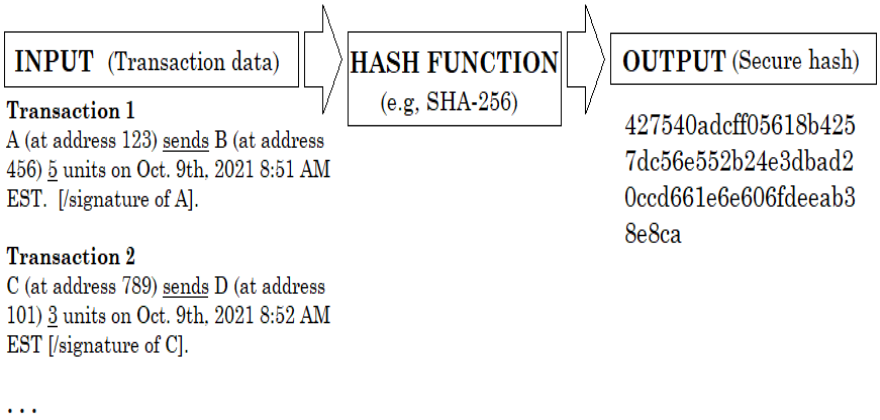
200. COLCHESTER, *supra* note 171, at 6.

201. *See id.* at 3.

202. The hash value represented in the figure was calculated by inputting the transactions as shown in the figure into an online SHA-256 calculator. *SHA256 Online Hash Function*, ONLINE TOOLS, https://emn178.github.io/online-tools/sha256.html [https://perma.cc/FH3E-X36T].

Fig. 2

Fig. 2



The output hash cannot be reversed without substantial cost in computing because each "block" includes within its hash the "headers" of *all past transactions*. At the risk of oversimplification, this is how the blockchain sustains trust in place of an intermediary: because to falsify a communication between nodes requires that a bad actor work backwards to find the identifying hash faster than new blocks are added to the blockchain.[203] This takes an immense amount of computational power, which effectively acts as "friction" in the system to disincentivize bad actors. Traditionally, whoever held access to all the data containing transactions made by a certain client—an online retailer in our example above—would be able to track double-spending and prevent a bad actor from making double payments. Here, the idea is that the same problem of trust can be solved by transparency in the ledger enforced by computation.

Nodes are computers whose transactions form the basis of the data recorded in the blockchain. Each computer has a unique address on the

203. *Cf.* NAKAMOTO, *supra* note 113, at 6–7.

blockchain network.[204] Depending on the protocol, nodes may serve different roles,[205] but in all cases they have several general purposes. First, nodes interact with one another in whatever "transactions" the application software permits.[206] Second, as established by the protocol's consensus mechanism, nodes validate these transactions. Third, nodes record valid transactions on the ledger, updating each copy. The key insight here is that the nodes operate in two modes: (1) client—initiating new transactions with other nodes and (2) server—by maintaining the ledger of all transactions, thus sharing benefits and responsibility of maintaining the system.

The protocol of the blockchain include the method of consensus, the node types, and other critical matters for the network. "Consensus" refers to how control of the network is effectively distributed by defining how multiple nodes can reach agreement on the true state of the network.[207] The revolution of P2P systems, alongside blockchain systems, indicate that consensus is achieved through leveraging economic incentives along with cryptography.[208] As stated above, these incentives often—but not always[209]—use tokens. Importantly, while there are many protocols which may be deployed to implement blockchain,[210] an essential scalability question is the acceptable tradeoff between efficiency and trust; where fewer nodes validate, the trust of those validating nodes must increase.[211] Thus, a blockchain is a distributed, secure database.[212] Unlike the traditional model used in networks like the internet that require centrally owned servers, a blockchain-based model allows a network of computers to work together to

204. VOSHMGIR, *supra* note 169, at 46.

205. *Id.* at 46–48 (noting that in the Bitcoin blockchain there are "full nodes," "mining nodes," "mining pools," and "light client" nodes).

206. This includes recording deeds, monitoring the chain of custody of a particular object, transferring currency, or any situation where "a digital record and signature . . . could be identified, validated, stored, and shared." VOSHMGIR, *supra* note 169, at 62; *see also* COLCHESTER, *supra* note 171, at 6.

207. *See, e.g.,* VOSHMGIR, *supra* note 169, at 64.

208. Cryptography is the study of secure communications in the presence of third parties. VOSHMGIR, *supra* note 169, at 68.

209. Stephanie Perez, *Does a Blockchain Need a Token?*, MEDIUM (Dec. 8, 2017), https://medium.com/swlh/does-a-blockchain-need-a-token-66c894d566fb [https://perma.cc/8XLD-5RFP].

210. While Bitcoin deploys a consensus mechanism called "Proof of Work," Ripple deploys "The Ripple Protocol Consensus Algorithm." AMUIAL ET AL., *supra* note 171, § 3:5 (2016). The purpose of these protocols is basically the same: to ensure trustworthiness of the network and to ensure that the tradeoffs in between centralization and efficiency are in within acceptable parameters according to the use case of the network. *See id.* § 1:2.

211. VOSHMGIR, *supra* note 169, at 74–76.

212. *See* COLCHESTER, *supra* note 171, at 6.

securely record data within a shared, open database. In this sense, every computer operates as both a server and a client.[213]

D. Ripple's Payment System

Ripple—formerly Ripple Labs—has created a payment system that is a combination of a digital currency and a payments protocol.[214] The cornerstone of this solution is RippleNet, which is a way for individuals and financial institutions to transact using a worldwide network that leverages the shared trust of a blockchain.[215] XRP is Ripple's native token that functions as a form of "on-demand liquidity" (ODL) that eliminates the need for pre-funding and allows "money [to] move[] like information" between any two parties anywhere in the world, so long as they are connected to RippleNet.[216] Like in any market, when two people do not trust each other, yet desire to do business, a necessary step has historically been to include an intermediary to verify, settle, and disperse money. And, again, this works to the detriment of speed, efficiency, and cost in the system.[217] Crypto assets, like XRP, solve the challenge of needing some way to record electronic money transfers so that people cannot simply make transactions up and create cash for themselves:

> Normally, that central place is the Federal Reserve Bank—which records and processes every credit card transaction. Cryptocurrencies eliminate that regulatory intermediary by providing a decentralized, computerized "ledger," allowing for direct transfers between buyers and sellers with no regulatory intermediaries.[218]

An example of the current money transfer system is helpful to illustrate what Ripple has done. Assume users x1 and x2 are individuals in Country X, and that x1 wishes to transfer money to x2. Assume further x1 and x2 hold their money in different banks: x1's bank is Alpha Bank and x2's bank is Beta Bank. Like all banks, Alpha and Beta both maintain a ledger of

213. *See id.*

214. *See RippleNet*, RIPPLE, https://ripple.com/ripplenet [https://perma.cc/ENK7-4BRQ].

215. *Id.*

216. *Our Story*, RIPPLE, https://ripple.com/company/# [https://perma.cc/T9HM-LPCK].

217. *What is Ripple?*, *supra* note 21; *see also* Marcel T. Rosner & Andrew Kang, Note, *Understanding and Regulating Twenty-First Century Payment Systems: The* Ripple *Case Study,* 114 MICH. L. REV. 649, 654 (2016) (noting that interbank transfers in the same country take "one to two days to settle").

218. Cecere, *supra* note 38.

transactions of all their customers. When x1 orders Alpha to send money to x2 at Beta, the two ledgers they maintain must be settled:[219] x1's account at Alpha must be debited and x2's account at Beta must be credited.

This is where a trusted intermediary—the Federal Reserve—comes in. The Federal Reserve maintains deposit accounts for banks like Alpha and Beta.[220] Thus, Alpha orders the Federal Reserve to debit its deposit account and credit Beta's deposit account in the amount of x1's transfer to x2. The transaction is complete, and Alpha and Beta update their ledgers, with the Federal Reserve's deposit balance acting as a source of truth. So much for domestic money transactions. But across international borders, the fundamental issue is that "there is no single global-payments rail[;]"[221] there is no international "Federal Reserve" equivalent. Internationally, the traditional solution was correspondent banking[222] and SWIFT.[223] These legacy solutions operate according to principles of pre-funding and coordination through messaging.[224] But, importantly, they are still subject to intermediation and, worse yet, increased fees.[225]

Ripple changes the domestic and international payments paradigm through blockchain technology by changing settlement, originally requiring an intermediary such as the Federal Reserve, by deploying a distributed ledger with its native cryptocurrency, XRP. Every node on the network can view the ledger, and through the protocol of the network, certain nodes validate each transaction.[226] Like any blockchain, the viability turns on the

219. A settlement is the adjustment of deposit balances between banks. Rosner & Kang, *supra* note 217, at 653. Any deposit into a bank account is a financial asset for the depositor "because it reflects the depositor's claim on the bank that the depositor can redeem from the bank." *Id.* at 652.

220. *Id.* at 654–55.

221. *Id.* at 657.

222. Correspondent banking is "a contractual arrangement under which a bank in one jurisdiction (a correspondent) holds deposits, denominated in its native currency, but owned by a bank in an-other jurisdiction (a respondent)." Rosner & Kang, *supra* note 217, at 656.

223. SWIFT is a "centralised [sic] pre-Internet correspondent banking messaging network." Antony Lewis, *Ripple Explained: Medieval Banking with a Digital Twist*, CoinDesk (Sept. 11, 2021 6:45 AM), https://www.coindesk.com/markets/2014/05/11/ripple-explained-medieval-banking-with-a-digital-twist/ [https://perma.cc/SD5H-4KH4].

224. *See id.*; Rosner & Kang, *supra* note 217, at 656–67.

225. Banks that do not have a correspondent relationship must chain up with other banks in order to reach a bank with the necessary relationship. This process increases cost because the banks without relationships must pay broker's fees in addition to absorbing the costs of international risk. Rosner & Kang, *supra* note 217, at 656–57.

226. As suggested above, there are numerous distinct blockchain protocols. For example, there are various methods of mining and various methods used to validate transactions on the system. *See* Rosner & Kang, *supra* note 217, at 658.

protocol's mitigation of the risks of trust disintermediation.[227] Ripple's network does not use mining; it is "pre-mined" and essentially, most XRP is in escrow and is sold at preprogrammed times. Today, Ripple *itself* owns approximately six percent of all XRP.[228]

Ripple has two methods of facilitating international payments. First, it can match users through the chain of trust (formerly called "xCurrent"). Second, it can use XRP as a go-between (formerly called "xRapid"). A simple example of how the latter operates in an intercountry transaction works is as follows. Assume now that x1 and x2 are both participants on Ripple's network, which is composed of $x1 + x2 + x3 + \ldots + xn$ people. Assume further that x1 wishes to send x2 an arbitrary amount of currency X. Now x1, using Ripple's network, combines his unique network identifier with x2's address, along with the amount of currency, X, he wishes to send. This transaction is hashed, and then via the Ripple Protocol Consensus Algorithm,[229] it is sent to an agreed-upon quantum of the *n* nodes who must validate the transaction.[230] When that quantum of nodes validates the transaction, it is added to the blockchain using cryptography that is functionally similar to the simplified SHA-256 one demonstrated in Fig. 2. False transactions—which means falsified ledger entries, whatever interaction between nodes that they contain—are prevented from accumulating in the system. Thus, parties on the blockchain can rely on the system's protocols, rather than on a central server framework, to prevent fraud. The system is trusted by both parties, rather than an intermediary holder of each party's data.

Now, when x1 wishes to send money to y1, who lives in country Y and which uses currency Y, the issue of currency exchange arises. There are two solutions: first, Ripple obviates the need for "chaining" settlement institutions together by using a system of "market makers." Fig. 3 illustrates the way in which "market makers" in the RippleNet system fulfill the

227. *See id.* at 658–59. Ripple distributes XRP through periodic sales; in this sense, it is pre-mined. *See* Rodeck & Schmidt, *supra* note 175; *Meet Ripple & XRP, Cryptocurrency For Banks,* Forbes (May 6, 2021, 9:59 PM), https://www.forbes.com/advisor/investing/what-is-ripple-xrp/ [https://perma.cc/3JEX-NVPP].

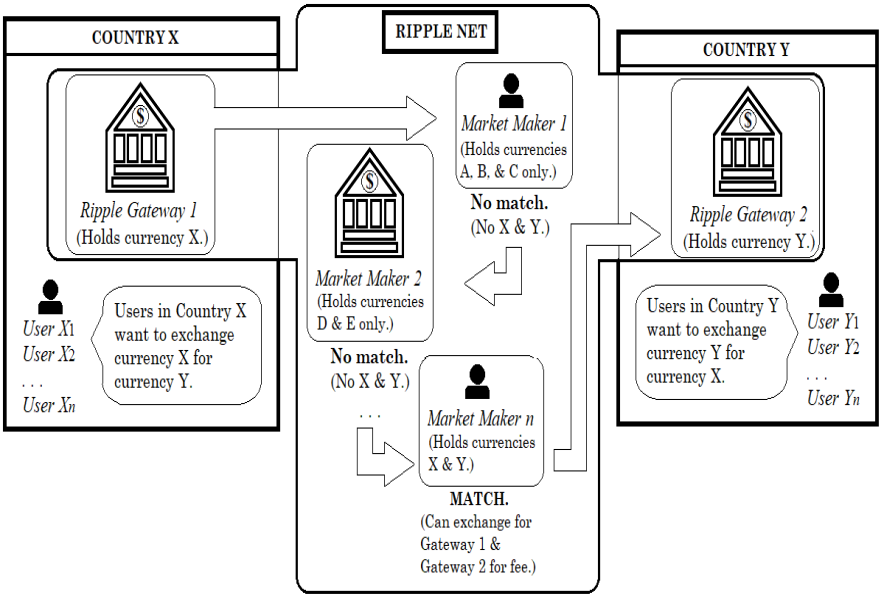
228. Rodeck & Schmidt, *supra* note 175. It is important to distinguish ownership from control. Ripple has, in escrow, approximately 48% of the 100 billion XRP tokens created at the inception of the blockchain. The uniqueness of the classification can be clearly seen: Ripple does not release XRP without following a programmed protocol. *Id.*

229. AMUIAL ET AL., *supra* note 171, at § 3:5.

230. Validation refers to the process of nodes verifying the hashed identifiers of the parties to the transaction. VOSHMGIR, *supra* note 169, at 46–49. And, as a reward for validating, a native token (or portion thereof) is issued to the nodes that validate. *Id.* However, Ripple does not distribute tokens in this way. Rodeck & Schmidt, *supra* note 175.

function of trust. In essence, the system turns on whether any market maker in the system has both the payer's and the payee's currencies on hand. Using an algorithm that only matches the lowest "bidding" market maker with the two transacting parties, the system forces market makers to compete for the lowest spread.

Fig. 3



Alternatively, XRP is a "go-to between two different fiat types, [such that] RippleNet's [on demand liquidity] can facilitate transactions with each side sending and receiving their native currency."[231] The result is that when no chain of trust exists between two institutions, within three seconds the sending-gateway's currency is converted to XRP and then the XRP is converted again to the receiving-gateway's currency.[232] The viability of such a system is borne out by the fact that Ripple's XRP is the eighth-largest crypto asset in the world.[233] Indeed, N.Y.U. Professor David Yermack suggests there is "desperate need" in the market for technology to "reduce the cost of financial intermediation, probably by orders of magnitude."[234] Another scholar further argues that the change itself must be "fundamental" and

231. *What is Ripple?*, *supra* note 21.

232. *Free Working Capital with On-Demand Liquidity*, RIPPLE, https://ripple.com/ripple net/on-demand-liquidity/ [https://perma.cc/S33Z-BGST].

233. *All Cryptocurrencies*, *supra* note 28.

234. WERBACH, *supra* note 8, at 114.

structural to achieve the necessary change in the economics of financial services, such as through tokenization.[235] This is exactly what Ripple had done: by operating through trust, with currency as a backstop, the Ripple approach is estimated to save $15–20 billion per year in settlement costs.[236] In February of 2021, citing the *Ripple* Litigation, Ripple suffered cancellations from large users, including MoneyGram, which suspended its use of the Ripple's ODL.[237] While other writers have predicted that the fate of the platform may turn on the result of the Litigation, the fact is that today, Ripple's "XRP-powered . . . ODL transactions are up 25 times" over 2020 Q3, before the Litigation was commenced.[238]

E. Implications of Blockchain

Ripple's use case is one of hundreds of possible ways in which the blockchain's growth is revolutionizing the economy.[239] Indeed, the P2P interaction that it promises is considered part of the fourth industrial revolution[240] and a critical part of Web3. A change of this magnitude requires infrastructure certainly, but it also requires answers to important fundamental questions about who should be making decisions and how.[241] The illustration of the struggle in Man Controlling Trade is suggestive.

Since 2017, when smart contracts[242] were added to the ledgers on blockchain systems, the potential for entire decentralized businesses

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235. *Id.* at 115.

236. Rosner & Kang, *supra* note 217, at 662.

237. *See, e.g.*, Jakobson, *supra* note 42.

238. Michael Lavere, *Ripple CEO Says 2021 Was His Firm's Strongest Year Despite SEC Lawsuit*, CRYPTOGLOBE (Dec. 29, 2021), https://www.cryptoglobe.com/latest/2021/12/ripple-ceo-says-2021-was-his-firms-strongest-year-despite-sec-lawsuit/ [https://perma.cc/5A7S-98GY].

239. By 2023, blockchain is expected to play a critical role in managing and tracking the movement of $2 trillion in goods and services annually. *See Blockchain Technology: What's Ahead?*, GARTNER, https://www.gartner.com/en/information-technology/insights/blockchain [https://perma.cc/7VX9-PVRK].

240. *Cf.* Klaus Schwab, *The Fourth Industrial Revolution: What it Means, How to Respond*, WORLD ECON. F. (Jan. 14, 2016), https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/ [https://perma.cc/VR2R-WAK4] (describing the current digital revolution that is occurring at an exponential pace) ("[The Fourth Revolution] is disrupting almost every industry in every country.").

241. *See generally* Mulligan, *supra* note 17 (discussing multilateral regulation in coding decisions—an important question regarding the wider social adoption of blockchains).

242. SEC. & EXCH. COMM'N, *supra* note 142, at 2 n.3 ("Computer scientist Nick Szabo described a 'smart contract' as: a computerized transaction protocol that executes terms of a contract.")

became possible. To the extent self-executing contracts can be written into computer code, businesses as "a nexus of contracts" can be built entirely on software running on the blockchain.[243] Mundane functions (such as issuing stocks and establishing shareholder permissions and voting rights) as well as supporting functions (like accounting and payroll) can be entirely managed through this code.[244] This is novel and emergent. As one commentor put it, "[i]t has never before been arguable that a set of individuals could be a legally cognizable group because an automated software process 'acts' as their organ."[245] But that is what blockchain does when smart contracts are deployed on the system.

Even more fundamentally, there are questions about applying the existing securities framework's application to crypto assets. Even assuming that most ICOs are securities, the first requirement is registration unless an exemption applies.[246] But whether an exemption applies is unclear in the context of crypto assets. For example, in a distributed network, what is an "issuer"? How about an "underwriter" or "dealer"? Given that computers are not legal persons, this is a problem.[247] As suggested above, the larger theoretical challenges of regulating blockchain have been largely avoided in the rush to protect purchasers of crypto assets. The way in which an exterior source of law acts on a system requires answers to questions about who and what constitutes the system subject to that law.[248] Given the novelty of blockchain technology and the pressure to respond to fraud in time, many agencies have stepped in before answering this question comprehensively.[249] A full-blown regulatory scheme, while desirable, is not what is needed today as a resolution to the Litigation. Before we turn to a new approach sufficient to resolve the Litigation, the current approach will be briefly discussed.

243. *See* WERBACH, *supra* note 8, at 110.

244. *Id.*

245. J.G. Allen, *Bodies Without Organs: Law, Economics, and Decentralised Governance*, 4 STAN. J. BLOCKCHAIN L. & POL. 53, 63 (2020).

246. *See* 15 U.S.C § 77e (alternatively cited as Securities Act § 5).

247. *See Cinderella's Slipper*, *supra* note 39, at 294–300.

248. These questions are essential because, in theory, blockchain operates on the principle of "[t]rust[ing] a system without necessarily trusting any of its components." WERBACH, *supra* note 8, at 3.

249. *Cinderella's Slipper*, *supra* note 39, at 275 (noting involvement by the IRS, CFTC, FinCEN, and SEC).

III. THE SEC AND REGULATION BY ENFORCEMENT

The SEC has been engaged with crypto asset regulation for years, beginning with both the DAO Report announcement it made to the market in 2017 and the subsequent enforcement actions undertaken against blockchain-based firms.[250] In the context of ICOs, the current SEC Chairman, Gary Gensler, has said that registration and disclosure operates to protect investors from the "[w]ild [w]est" of fraud[251] replete in speculative ICOs. The history of how the SEC came to regulate distributed systems is instructive as to the claims of this Comment and requires brief explication.

A. SEC v. Howey

The genesis of the SEC's authority to grasp Ripple's XRP began in 1946 when the Supreme Court handed down a landmark decision interpreting section 2(1) of the Securities Act of 1933[252] (the Act): *SEC v. Howey.*[253] Section 2(1) defines the term "security."[254] *Howey* and its progeny are still good law to this day,[255] and the application of its principles determines the threshold question of whether a particular "investment contract" is, in fact, a security, and therefore whether the registration provisions of section 5(a) of the Act apply.[256]

The facts in *Howey* involved an agreement between W. J. Howey Co. (Howey Co.) and certain investors, whereby investors paid both Howey Co. and a service company for citrus land and the "cultivation . . . and marketing" of produce therefrom.[257] The question before the Court was whether the agreement, which included a "land sales contract, the warranty deed and service contract taken together, constitute[d] an 'investment contract' within the meaning of section 2(1)."[258] Refusing to allow the scheme to evade the disclosure requirements of the Act, the Court announced a

250. *See* Cyber Enforcement Actions, *supra* note 74 (listing about 150 actions taken against crypto asset companies); *see also* SEC. & EXCH. COMM'N, *supra* note 142, at 2 n.3.

251. *See* Katanga Johnson, *U.S. SEC Chair Gary Gensler Calls on Congress to Help Rein in Crypto "Wild West,"* REUTERS (Aug. 3, 2021), https://www.reuters.com/technology/us-sec-chair-gensler-calls-congress-help-rein-crypto-wild-west-2021-08-03/ [https://perma.cc/6KL2-57XT].

252. 15 U.S.C. § 77a–bbbb (alternatively cited as Securities Act).

253. SEC v. W.J. Howey Co., 328 U.S. 293 (1946).

254. § 77b(a)(1) (alternatively cited as Securities Act § 2(1)).

255. *See, e.g.*, SEC v. Edwards, 540 U.S. 389, 393 (2004) (upholding the *Howey* test).

256. Henning, *supra* note 8, at 60.

257. *Howey*, 328 U.S. at 296.

258. *Id.* at 297.

two-factor test to determine whether the arrangement at issue was an investment contract: (1) "whether the scheme involves an investment of money in a common enterprise[,]" and (2) "whether the profits of such investment came solely from the efforts of others."[259] The Court found that the first factor was satisfied because the "opportunity to contribute money and to share in the profits of a large citrus fruit enterprise managed and partly owned by respondents" was an investment contract.[260] The Court also determined the second factor was satisfied because investors were drawn to the scheme "solely by the prospects of a return on their investment." These findings lead the Court to conclude that Howey Co. offered a security subject to registration requirements.[261]

Howey has been applied to different schemes and has been expanded. For example, the first prong of the test has been interpreted to include investments that "[o]ffer[] a contractual entitlement to a fixed, rather than variable, return" as an investment contract.[262] Today, it does not matter what form an investment takes.[263] Additionally, the word "money" in *Howey* is not strictly limited: other assets may be within the scope of the term.[264] Finally, courts have created various tests to determine what a "common enterprise" is[265] with the upshot that it is plausible for even decentralized cryptocurrencies to satisfy this prong.

The second prong of the test—requiring that profits must "[c]ome solely from the efforts of others"—has also been judicially modified such that "solely" does not retain its ordinary meaning;[266] rather, it means "[t]hat the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise."[267] Terms like "significant" and causal relationships defined by "effects" are subsistence not for certainty, but rather for litigation; and as such, unless disputes are settled, lengthy judicial explication on the merits is required.

259. Henning, *supra* note 8, at 61.

260. *Howey*, 328 U.S. at 299.

261. *Id.* at 300–01.

262. Henning, *supra* note 8, at 61–62.

263. *Id.* at 62.

264. *Id.*

265. A distinction exists between "horizontal commonality" and "vertical commonality." The distinction turns on whether the court focuses on the relationship between the promotor and investor, or among the investors themselves. *Id.* at 62–67 (explaining this distinction and listing cases).

266. *Id.* at 68.

267. *Id.*

Today, what is referred to as the *Howey* test is the proposition that an investment contract is a security if (1) "there is an investment of money (or something else of value)[,]" (2) "in a common enterprise[,]" (3) "where the purchase expects to receive profits[,] and" (4) "the expectations of profits is from the essential entrepreneurial efforts of others."[268] This threshold question is "neither simple nor straightforward" and until 2017, no SEC guidance on crypto assets' place in this schema was forthcoming.[269]

B. Considerations When Applying Howey

Fifty years on from *Howey* and one financial crisis later, the SEC provided an announcement of its position on crypto assets: the DAO Report (the Report). The DAO was a crowdfunding platform that was formed on the Ethereum blockchain that allowed holders of utility tokens purchased with fiat money to vote on crypto projects.[270] The SEC's position was that the sale of the utility tokens from April to May of 2016 may have been an unregistered securities offering, and possibly a violation of the Securities Act of 1933.[271] What is important about the SEC's conclusion that the tokens issued by the DAO were "investment contracts" under *Howey*[272] is that it partly set a precedent for dealing with ICOs, but also that the Report contained the SEC's reasoning that "the essential managerial efforts" element of the test was met.[273] Essentially, it was "the combination of the important role of the curators and the practical barriers to effective communication and concentration of control" amongst the token holders that compelled the SEC's conclusion.[274] The DAO Report put the U.S. market on notice of the SEC's position that tokens could in fact be securities, and thus subject to the SEC's jurisdiction, but it did so without any enforcement action, since the DAO was already nonfunctional at the time of the Report.

Beginning with the DAO Report, through the first quarter of 2019, the SEC's regulatory position on crypto was hopeful.[275] During this period, key SEC personnel issued statements regarding their views on the scope of their

268. *Cinderella's Slipper*, *supra* note 39, at 278.

269. *Cinderella's Slipper*, *supra* note 39, at 278–80.

270. *Id.* at 280–81.

271. SEC. & EXCH. COMM'N, *supra* note 142, at 1. Ultimately, the SEC decided not to pursue enforcement. *Id.*

272. *Id.* at 11–15.

273. *Id.* at 12–13.

274. *Cinderella's Slipper*, *supra* note 39, at 283.

275. The SEC's stance has been characterized as treating everything as a security except for the two most popular and most decentralized crypto-assets in the world—Bitcoin and Ether. *Id.* at 284–85.

jurisdiction with respect to crypto assets,[276] effectively communicating to the market that leniency would be shown in response to cooperation.[277] This period culminated in April of 2019, where in response to mounting requests by the crypto asset community, the SEC issued an expansive and complex framework to determine whether a particular crypto asset was or was not a security.[278] Composed of various characteristics that the SEC considers in classifying an investment contract as a security under *Howey*,[279] the crypto market's reception has been mixed.[280] Some suggest that because it was issued close in time to a no-action letter applying it, that it was helpful in indicating "how the SEC might approach" classification of digital assets.[281] Oppositely, others point to the complexity and flatly state that the only certainty it provides is that of uncertainty.[282] The SEC structured its approach in an attempt to deter the "clever and dishonest" by ensuring that securities camouflaged with "different appellatives" would not wreak havoc on consumers.[283] This effectively changed the trajectory of the system towards the "regulation" attractor, while also exposing it to potential domination by the "innovation" attractor.

To the extent that a hope of clarity and predictability was stymied by the SEC framework, companies have increasingly scrutinized the SEC's subsequent litigation to "counteract[] the indeterminacy of the functional *Howey* test."[284] Recent litigation, however, has resulted in a less than clear

276. *Id.* at 284–87.

277. Muchnee, a blockchain-based company, cooperated with the SEC and refunded money to purchasers of its utility token after the SEC contacted the company. *See* Guseva, *supra* note 32, at 659–60.

278. Bill Hinman & Valerie Szczepanik, *Statement on "Framework for 'Investment Contract' Analysis of Digital Assets,"* U.S. SEC. & EXCH. COMM'N (Apr. 3, 2019), https://www.sec.gov/news/public-statement/statement-framework-investment-contract-analysis-digital-assets [https://perma.cc/5YQN-Z7HN].

279. *Id.*

280. Jonathan A. Ingram, *Response of the Division of Corporation Finance Re: Turnkey Jet, Inc.*, U.S. SEC. & EXCH. COMM'N (Apr. 3, 2019), https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm [https://perma.cc/8U4F-Q2G2].

281. ALEXANDER R. MCCLEAN & MICHELLE L. BOUTON, HARTER SECREST & EMORY LLP, SEC RELEASES FRAMEWORK FOR ANALYSIS OF WHETHER DIGITAL ASSETS ARE REGULATED AS SECURITIES AND ISSUES A NO-ACTION LETTER APPLYING THE FRAMEWORK (2019).

282. *FinHUB's Framework for Analyzing Digital Assets: The Only Certainty It Provides Is Uncertainty*, WINSTON & STRAWN LLP (Apr. 17, 2019), https://www.winston.com/en/crypto-law-corner/finhubs-framework-for-analyzing-digital-assets-the-only-certainty-it-provides-is-uncertainty.html [https://perma.cc/JC63-FQNZ].

283. Guseva, *supra* note 32, at 637 n.54, 638.

284. *Id*. at 674.

picture of the SEC's strategy. After covering much ground, this Comment turns now to two instructive examples of ICOs litigated in the United States District Court for the Southern District of New York in the years preceding the *Ripple* Litigation.

C. Kik & Telegram—A Framework Demonstration

Two months after the SEC framework was issued, the SEC sued a Canadian company called Kik Interactive, Inc. (Kik), for, among other things, conducting an unregistered securities offering in violation of the Act through the sale of its token, Kin, in 2017.[285] Of the two sales conducted—a private sale of $50 million to accredited investors and, a day later, a public sale of $49.2 million[286]—both were conducted to fund a nascent network running on the established Ethereum blockchain for the company's messenger app.[287] There is some question as to whether Kik was aware of the DAO Report and the SEC's position. However, the SEC alleged,[288] and Kik affirmed,[289] that it did *not* attempt to engage with the SEC prior to selling its tokens, instead attempting to exempt itself from U.S. registration requirements. This case settled in October 2020[290] for about five percent of the offering proceeds.[291] Furthermore, Kik was *not* enjoined from continuing to operate its blockchain.[292]

Second, roughly parallel in time to its lawsuit against Kik, the SEC filed charges against Telegram Group Inc. and another company called Ton Issuer Inc. (collectively, Telegram) for violations of the Act[293] by issuance of its token (called Grams) which occurred in January of 2018, raising $1.7 billion.[294] Telegram, unlike Kik, was helmed by "well-established developers" who attempted to create an entirely *new* blockchain to solve the

285. *See* Complaint at 7–8, SEC v. Kik Interactive Inc., 492 F. Supp. 3d 169 (S.D.N.Y. 2020) (No. 19-cv-05244). [hereinafter Kik Complaint].

286. *Kik*, 492 F. Supp. 3d at 175–76.

287. Carol Goforth, SEC vs. Kik Interactive: *A Status Update on the Kin Ecosystem and Kin Tokens*, COINTELEGRAPH (Jan. 24, 2021) https://cointelegraph.com/news/sec-vs-kik-interactive-a-status-update-on-the-kin-ecosystem-and-kin-tokens [https://perma.cc/R9FE-3GS7] [hereinafter *Kik Status Update*].

288. *See* Kik Complaint, *supra* note 285, at 29.

289. Guseva, *supra* note 32, at 670 n.268.

290. *Id.* at 668.

291. *Id.* at 672.

292. *Kik Status Update*, *supra* note 287.

293. SEC v. Telegram Grp. Inc., 448 F. Supp. 3d 352, 358 (S.D.N.Y. 2020).

294. *Id.*

business problem of blockchain's inability to handle high transaction volume.[295] They structured the sale of Grams around the DAO Report's guidance by exempting themselves from the registration requirements.[296] Importantly, the DAO allegedly cooperated with the SEC.[297] Nevertheless, in settling with the SEC after being enjoined from selling Grams in the United States, Telegram was ordered to pay a $1.2 billion disgorgement and an $18.5 million penalty, in addition to being later barred from selling its token worldwide.[298] The future of Telegram remains uncertain.

In both cases—in an order for preliminary injunction against Telegram and in an order for summary judgment against Kik—the district court applied the *Howey* test.[299] The first prong of *Howey* was concededly satisfied by both companies, and in both cases the court did not analyze that element.[300] The "commonality" prong was satisfied through the establishment of horizontal commonality, which is "commonality that involves the pooling of assets from multiple investors so that all share in the profits and risks of the enterprise."[301] Kik was found to have "pooled proceeds . . . in an effort to create an infrastructure" to increase the value of Kin by depositing all the funds raised by the initial private placement and the subsequent public sale into a single bank account to fund its network development operations.[302]

In *Telegram*, the court held that horizontal commonality was satisfied both pre-and post-launch: the funds from the initial sale to accredited investors were used to finance development of blockchain and messenger programs, and once completed, "the fortunes of the Initial Purchasers . . . remain tied to each other[] . . . as well as to the fortunes of the TON

295. Guseva, *supra* note 32, at 668; *Telegram Grp. Inc.*, 448 F. Supp. 3d at 360.

296. Page Proof Brief for Defendant-Appellants at 1–2, SEC v. Telegram Grp. Inc., No. 20-1076-cv, 2020 WL 1502476 (2d Cir. Mar. 27, 2020).

297. *See* Defendants' Response in Opposition to Plaintiff's Emergency Application for Preliminary Injunction at 1–2, SEC v. Telegram Grp. Inc., No. 19-cv-9439, 2019 WL 11553248 (2d Cir. Oct. 16, 2019). Telegram allegedly "modified its technology" to allay the SEC's concerns. Guseva, *supra* note 32, at 671.

298. Guseva, *supra* note 32, at 672.

299. *Telegram Grp. Inc.*, 448 F. Supp. 3d at 367–79; *Kik*, 492 F. Supp. 3d at 177–83.

300. *See Telegram Grp. Inc.*, 448 F. Supp. 3d at 368–69; *see also Kik*, 492 F. Supp. 3d at 177–78.

301. *Telegram Grp. Inc.*, 448 F. Supp. 3d at 369 (quoting SEC v. SG Ltd., 265 F.3d 42, 49 (1st Cir. 2001)); *see also Kik*, 492 F. Supp. 3d at 178.

302. *Kik*, 492 F. Supp. 3d at 179.

Blockchain."[303] Thus, the court reasoned, the timing of the sales were immaterial, and the sales were analyzed together.[304]

For the third prong, the court found that the prime value of paying for both Kin and Grams laid chiefly in the resale in the secondary markets.[305] The court thus disregarded the claims advanced by both companies that the tokens were instead "utility" tokens and intended for consumptive purposes. Instead, in Telegram's case, the discount offered in the initial sale, the lockup period contained in the terms of purchase, the nature of the marketing materials, the fact that only venture capitalists accustomed to buying for investment purposes were marketed to, and testimony of purchasers that together disproved the consumptive purposes argument.[306] In Kik's case, the court simply noted that at the time of the sale, there was no functional blockchain for the tokens to be used on.[307]

The fourth and final prong—blended with the third in Kik's case[308]—was easily satisfied because the tokens purchased did not exist until after the purchases. Representative of both cases, the *Telegram* court stated that the "[p]urchasers were entirely reliant on Telegram's efforts to develop, launch, and provide ongoing support for the TON Blockchain and Grams."[309]

Some of the particular takeaways are clear enough. For example, in both cases, the court focused its analysis on the third and fourth prongs of *Howey*. Also, the court found pre-launch sales to be integrated and ultimately constitute the same offering. How these two decisions affect the *Ripple* Litigation is unclear,[310] but it is a safe bet that the Southern District of New York will analyze Ripple's sales of XRP to investors in the same way. What is troubling, however, is the dissonance between the facts and the resulting enforcement: in a project with nearly no widespread adoption and little to no cooperation with the SEC, that agency decided to merely fine Kik what amounted to five percent of the proceeds from its sale.[311] In

303. *Telegram Grp. Inc.*, 448 F. Supp. 3d at 369.

304. *See Id.*

305. *Id.* at 371–72; *Kik*, 492 F. Supp. 3d at 179–80.

306. *See Telegram Grp. Inc.*, 448 F. Supp. 3d at 371–75.

307. *Kik*, 492 F. Supp. 3d at 180.

308. The blended prongs were reflected in the *Kik* court's statement that "none of th[e] 'consumptive use' [alleged by Kik] was available at the time of the distribution. It would materialize only if the enterprise advertised by Kik turned out to be successful." *Id.* Thus, Kik's action to develop the blockchain was necessary.

309. *Telegram Grp. Inc.*, 448 F. Supp. 3d at 375.

310. *Cinderella's Slipper*, *supra* note 39, at 293–94.

311. Guseva, *supra* note 32, at 672.

a much higher value project that attempted to comply with the SEC's framework and to cooperate with the agency, the SEC's demand amounted to a seventy-three percent loss.[312] The SEC thus has signaled that cooperation is met with heavier fines.

IV. THE *RIPPLE* LITIGATION ITSELF

In 2012, Ripple—then known as Ripple Labs—completed its proprietary blockchain.[313] After several rounds of angel investment beginning in 2013,[314] the SEC alleged that Ripple had sold XRP in the amount of $1.38 billion to fund its operations, continuing through the present.[315] In its complaint, the SEC alleged that all such XRP sales were violations of the Act.[316] Furthermore—and unlike in *Kik* or *Telegram*—the SEC also involved executives of the company in the complaint.[317] Christian Larsen and Bradley Garlinghouse are alleged to have been personally responsible for "unregistered sales" of XRP in the amount of $600 million.[318] As of the date of publication, the case has passed the motion to dismiss stage and is still in discovery.[319]

There is good reason to believe that XRP will be considered a security under current precedent. This is because XRP has many of the hallmarks of other tokens that were ultimately deemed "securities" under *Howey*.[320] The Crypto Rating Council (CRC), a group of crypto-related businesses, including Coinbase, offers a rating system for crypto assets.[321] The system analyzes the likelihood that the crypto asset in question is a security using a

312. *Id.*

313. *See* Ripple Labs Complaint, *supra* note 19, at 9.

314. Rip Empson, *Now Backed by Andreessen & More, OpenCoin Looks to Build a Better Bitcoin—and a Universal Payment Ecosystem*, TECHCRUNCH (Apr. 11, 2013, 10:42 AM) https://techcrunch.com/2013/04/11/now-backed-by-andreessen-more-opencoin-looks-to-build-a-better-bitcoin-and-a-universal-payment-ecosystem/ [https://perma.cc/6TAG-76LR].

315. Ripple Labs Complaint, *supra* note 19, at 1.

316. *Id.* at 3.

317. *See id.* at 4–5.

318. *Id.* at 2; *see also* Press Release, U.S. Sec. & Exch. Comm'n, SEC Charges Ripple and Two Executives with Conducting $1.3 Billion Unregistered Securities Offering (Dec. 22, 2020), https://www.sec.gov/news/press-release/2020-338 [https://perma.cc/5HAL-79AP].

319. *See generally* Order at 1, No. 20-cv-10832, 2021 WL 1814771 (S.D.N.Y. Mar. 12, 2022) (denying defendants Garlinghouse and Larsen's Motions to Dismiss).

320. *See, e.g.*, Martin, *supra* note 191, at 18.

321. *About Us,* CRYPTO RATING COUNCIL, https://www.cryptoratingcouncil.com/#about-us [https://perma.cc/Z9JV-6U63].

one to five scale, with a five meaning the crypto asset is most likely to be a security.[322] The CRC has rated XRP as a four.[323] In the CRC's view, XRP shares "many characteristics that are consistent with the *Howey*-test factors," though true to the open-ended factor-balancing of the inquiry, the CRC notes that a four "does not mean that four prongs of the Howey test are met."[324] The CRC states that its methodology involves the "objective" use of factors considered under *Howey* that include "the design of the digital asset, facts, and circumstances of the asset's issuance, governance features, third-party contributions to the project, and use of the asset."[325] Lastly, to the extent it matters, both *Kik* and *Telegram* were litigated in the same forum in which Ripple's case is being litigated.

There are other approaches to regulation that are at least as well-informed as to the facts and the social impacts of blockchain technology, for good and for ill, as the current approach. Professor Werbach offers a summary of a regulatory approach that avoids the difficult "decentralization" rationale discussed above, yet includes the explicit and nonexplicit *Howey* considerations of ICOs, such as whether users or investors were intended, and whether the crypto asset was functional or pre-functional at the time of the offering.[326] Werbach's approach consists of three questions that a regulator should ask before a regulatory act should be taken:[327] (1) "[w]as the system created for a legitimate purpose?";[328] (2) "[is] there [an] alternative means to achieve public policy goals?";[329] and (3) "[w]hat are the costs and benefits of regulatory action?"[330]

Considering these questions, the legally correct answer as to whether XRP should be considered a security may be different than what a superficial analysis may suggest. First, as has been urged throughout this Comment, RippleNet was created for a legitimate purpose: facilitating international payments. Second, the alternative approach—less onerous

322. *Frequently Asked Questions*, CRYPTO RATING COUNCIL, https://www.cryptoratingcouncil.com/faq [https://perma.cc/RE2S-U8RZ] (in response to the question "What Does the Rating Mean?").

323. *CRC Securities Framework Asset Ratings,* CRYPTO RATING COUNCIL, https://www.cryptoratingcouncil.com/asset-ratings [https://perma.cc/Z9JV-6U63].

324. *Frequently Asked Questions*, *supra* note 322 (in response to "What Does the Rating Mean?").

325. *Id.* (in response to "What is the Council's Rating Framework?")

326. WERBACH, *supra* note 8, at 187–88.

327. *Id.* at 194.

328. *Id.* at 195.

329. *Id.* at 196.

330. *Id.* at 198.

registration and disclosure requirements, or foregoing enforcement altogether—should be a live option. There is legitimate concern about the cost-benefit ratio of traditional securities disclosures in context of crypto assets.[331] However, the SEC has taken a hardline position that disclosures are beneficial, and that in Ripple's case, all unregistered XRP sales "deprived potential purchasers of adequate disclosures about XRP and Ripple's business" as well as "other important long-standing protections."[332]

As to Garlinghouse and Larsen, the SEC has argued that they were "warned that XRP was unlikely to be considered 'currency'" and that, therefore, they should have preemptively registered XRP because they were on notice of their conduct being potentially violative.[333] Strengthening the SEC's argument is the fact that during the litigation, ongoing sales of XRP have occurred. But Garlinghouse and Larson point out that the bigger issue here is that the DAO Report was only released in 2017. And, as stated above, the SEC's statements about Ether and Bitcoin were made shortly thereafter. Therefore, neither Ripple, Garlinghouse, nor Larsen could have had "fair notice" about the SEC's position on crypto assets under a regulation by enforcement regime. This argument has produced legal fruit for Ripple.[334]

In considering the costs of the regulatory action, the SEC's delay has been widely noted. One commentator stated that the SEC appears to be saying that XRP "has been an unregistered security since 2013 . . . and the SEC . . . [has] just [gotten] around to saying so on the last day of [former Chairman Jay] Clayton's tenure . . . ."[335] Although reading the tea leaves is risky, it has been suggested that this last-minute lawsuit may indicate a "rift" between the five SEC commissioners in bringing action against Ripple.[336] The implication is that not all five commissioners believed suing Ripple would "avert looming investor harm" or that perhaps an action against Ripple created too substantial a risk to investors.[337] Indeed, investors did lose substantial sums after the lawsuit was announced. Holders of XRP were not silent; in response to these holder's concerns, the judge presiding over

331. *See* Hall, *supra* note 31.

332. Press Release, *supra* note 318.

333. Ripple Labs Complaint, *supra* note 19, at 10.

334. *See* Order at 1, SEC v. Ripple Labs, Inc., No. 20-cv-10832, 2021 WL 1814771 (S.D.N.Y. Mar. 11, 2022) (denying the SEC's Motion to Strike Ripple's affirmative defense regarding fair notice).

335. *The SEC Is Now on Trial*, *supra* note 25.

336. Hall, *supra* note 31.

337. *Id.*

the Litigation opened "thousands" of phone lines to listen to arguments.[338] Furthermore, an unsuccessful intervenor motion was filed by 18,000 XRP holders, the six largest of which were, for now, granted amici status.[339] This is clearly a cost to the perception of the SEC.

Moreover, since the DAO Report, the SEC's position on crypto assets has become much more pessimistic. Following Jay Clayton's departure, Gary Gensler became Chairman of the SEC in April of 2017.[340] Despite having taught at MIT on crypto assets and blockchain, and generally being perceived as pro-crypto, Gensler has gone on record claiming that all ICOs are unregistered securities offerings.[341] Further, under his watch the SEC increased its enforcement actions by seven percent in 2021,[342] including an action against Coinbase, as noted above. Gurbir Grewal took the helm of enforcement on July 26, 2021, and the prediction that he would continue the SEC's regulation by enforcement approach has been disproven,[343] raising the issue of the lack of predictability foreshadowed in *Kik* and *Telegram*. Recall that Ripple settled with the Department of Justice on the express term that "Ripple Labs sold virtual currency known as 'XRP'"[344] whereas in its complaint, the SEC asserted that "XRP is not 'currency' under the federal securities laws."[345] Securities registration requirements are expensive enough, laying aside the questionable efficacy for purchasers of blockchain tokens on a mass scale, but to compound this problem with currency registration seems "redundan[t] and inefficien[t]."[346]

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338. Roslyn Layton, *The Crypto Uprising the SEC Didn't See Coming*, FORBES (Aug. 30, 2021, 11:24 AM) https://www.forbes.com/sites/roslynlayton/2021/08/30/the-crypto-uprising-the-sec-didnt-see-coming/?sh=45d7c513143e/ [https://perma.cc/HSN4-YEYW].

339. *See* SEC v. Ripple Labs, Inc., No. 20-cv-10832, 2021 WL 1814771 (S.D.N.Y. Oct. 4, 2021) (order denying Motion to Intervene).

340. Christopher Conniff et al., *What to Expect Under SEC Enforcement Director Grewal,* LAW360 (Jul. 30, 2021, 12:24 PM), https://www.law360.com/articles/1407259/what-to-expect-under-new-sec-enforcement-director-grewal [https://perma.cc/U4KL-53R2].

341. *See* Kia Kokalitcheva, *SEC Chair Gary Gensler Turns His Eyes on Crypto,* AXIOS (Aug. 4, 2021), https://www.axios.com/sec-chair-gary-gensler-crypto-e5d7d8af-c5d0-4176-9437-2d4b211a33a6.html [https://perma.cc/WQC4-WFP2].

342. Press Release, U.S. Sec. & Exch. Comm'n, SEC Announces Enforcement Results for FY 2021 (Nov. 18, 2021), https://www.sec.gov/news/press-release/2021-238 [https://perma.cc/9UKE-4X3W].

343. Coniff et al., *supra* note 340.

344. Office of Public Affairs, *supra* note 107

345. Ripple Labs Complaint, *supra* note 19, at 60.

346. *See, e.g.*, Roslyn Layton, *Former Financial Regulator on* SEC v. Ripple: *Forget the Fanfare. Focus on Evaluation*, FORBES (Aug. 13, 2021, 10:12 AM) https://www.forbes.com/sites/roslynlayton/2021/08/13/former-financial-regulator-on-sec-v-ripple-forget-the-fanfare-focus-on-evaluation/?sh=110e748962f0 [https://perma.cc/97T2-R7TV].

While the reasons behind the SEC's series of enforcement actions over the past five years are less than clear, the impact of the *Kik*, *Telegram*, and now *Ripple* litigation as precedent cannot be understated. In game theory terms, these cases can be considered along the dimensions of (1) the purpose of the ICO and the level of success thereof,[347] (2) the timing of the litigation and the companies' level of cooperation with the SEC,[348] and (3) the seriousness of the charges and penalties.[349] In this light, Professor Guseva suggests a rational business owner should conclude that "the SEC ignored cooperation and did not show leniency in enforcement as a way to promote its objective of supporting innovations."[350] The problem is that future innovators in the blockchain space will "observe . . . [and] update their beliefs[] and choose their strategies consistently with the SEC's choices (or their probability)."[351] While it is at least arguable that these actions may have protected some investors, entrepreneurs and venture capitalists have less than clear guidance on regulatory exposure in the rapidly developing area.

Ultimately, barring congressional intervention, or unless the facts of *Ripple*—particularly fair notice—hold sway, it is probable that the case will end similarly to *Kik* and *Telegram* at the district court. As stated above, courts have had no difficulty in combining the sales in those cases and finding horizontal commonality and expectation of profits. Many believe that the court will have little difficulty implying the broad application of the third and fourth prongs of *Howey* to *Ripple*.[352] On the other hand, the court has authority to consider the underlying policy behind the law and could commit itself to following a textual interpretation informed by the policies implicated, as professor Werbach has advocated for. Turning from the mechanical application of *Howey*, several alternatives will now be explored.

347. Guseva, *supra* note 32, at 668–70.

348. *Id.* at 670–72.

349. *Id.* at 672–73.

350. *Id.* at 674.

351. *Id*.

352. *See* Martin, *supra* note 191, at 14–18 (concluding that XRP will almost certainly be a security under *Howey*). One interesting article applied the *Howey* test to Ripple and concluded that "the [district] court is going to determine the best way to prohibit what the SEC believes is the sales of an unregistered security offering. As such, this case may not bring as much regulatory clarity to the crypto industry as many initially thought. . . . We anticipate Ripple will fight aggressively against the SEC, but may ultimately pay a fine." Andrew Bull & Tyler Harttraft, *Cryptocurrency and Blockchain Law: SEC's Heightened Enforcement Against Digital Assets*, 27 RICH. J.L. & TECH. 1, 33 (2021).

V. IMPLICATIONS AND OUTCOMES

The Litigation is an important point in the trajectory of blockchain innovation in the U.S. economy. Whatever merits regulation by enforcement possesses, the facts demonstrate its potential for abuse, and this case should provide an impetus to reconsider the way in which blockchain and ICOs are regulated.[353] Whatever happens, it must be remembered that "ill-considered regulatory actions could push blockchain activity to other countries, send it underground, and stop valuable innovation in its tracks."[354] This is particularly ill-advised given the new development of the metaverse and its trustless architecture that will require a vast increase in blockchain adoption.[355]

Establishing an environment amendable to regulation means equalizing the tradeoff of capital formation to harm through loss of stability.[356] Suggestions along this line have been made,[357] and one seemingly compelling solution that seems to meet crypto assets and blockchain on its terms is the inclusion of certain agreed-upon blockchain protocols that when deployed could provide regulatory exemptions to the tokens on the system.[358] While the above solutions and others cannot be ruled out as an emergent result, the most direct outcomes of litigation that has passed the dismissal stage[359] are the subjects of this section, followed by a proposed legislative amendment which would totally exempt *Howey*.

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353. One prominent commentator noted that "[t]he demand for a Ripple Test is evolving whether the SEC wins its case or not. The conversation has moved beyond the SEC, not only because its credibility has been shaken by its startlingly bad arguments in the pre-trial phase. There is a growing recognition that the treatment of XRP by the SEC has come to symbolize the U.S. government's fundamental misunderstanding of cryptocurrencies, decentralized ledgers and blockchain technology, and what they mean to the global economy." *SEC Assault on Ripple*, *supra* note 155.

354. WERBACH, *supra* note 8, at 11.

355. Raczynski, *supra* note 45; *see also* Yaël Bizouati-Kennedy, *Understanding the Metaverse and How It Relates to Cryptocurrency*, YAHOO! (Nov. 18, 2021, 2:22 PM), https://www.yahoo.com/now/understanding-metaverse-relates-cryptocurrency-192229918.html [https://perma.cc/75T2-USFK].

356. Henning, *supra* note 8, at 71.

357. *See, e.g.*, *Cinderella's Slipper*, *supra* note 39, at 310–17 (collecting approaches and sources); Jabotinsky, *supra* note 111.

358. *Cinderella's Slipper*, *supra* note 39, at 315–16.

359. *See, e.g.*, Martin Young, *Ripple Granted Access to Binance's Records in SEC Securities Case*, COINTELEGRAPH (Aug. 5, 2021), https://cointelegraph.com/news/ripple-granted-access-to-binance-s-records-in-sec-securities-case [https://perma.cc/5KZE-UGQF].

A. Cleaning Up Howey

The court could shape the *Howey* test itself. The court could restrict *Howey* to only non-utility tokens. The entire purpose of *Howey* is to discover what digital currency offerings are in fact securities vis-à-vis the "investment contract" framework.[360] In holding that the scheme by Howey Co. was an investment contract, the Court did not rule on whether the oranges *themselves* were a security.[361] Instead, as discussed in Part II(A), the Court looked to the circumstances *surrounding* the sale of the orange groves. The distinction here is that the oranges themselves would be the subject of the securities regulation, which when analogized to tokens would effectively create discrete boundaries around certain crypto asset types and their sale.[362] If feasible, this application would allow businesses and investors to know beforehand whether a particular crypto asset—i.e., token—is a security, or when "distribution and . . . sale of th[at] asset under certain circumstances" requires security disclosures.[363] If modeled according to a dynamical systems theory, this may create a countervailing "right" attractor in the system. Businesses would operate under some certainty that their tokens will fall under known regulatory strictures. Although this alone would not preempt multiple regulators' jurisdiction, it would at least allow strategic development to sidestep the SEC's jurisdiction.

However, such a narrow construction of *Howey* would require a solid judicial understanding of utility tokens and blockchain operation. Where the difficulty lies is in identifying a pure utility token *and* separating the token from the network. The SEC errs on the side of finding a security rather than a fiat currency[364]—as it is currently entitled to do[365]—but of course the court has the authority to apply precedent where, in its judgment, the precedent controls. Indeed, the courts in *Kik* and in *Telegram* accepted the SEC's focus on the utility as a function of the underlying network. However, neither of those cases had the facts or the stakes of the *Ripple* Litigation. It may also be that the recent scholarship on crypto assets is

360. SEC v. W.J. Howey Co., 328 U.S. 293, 297 (1946).

361. *Id.* at 300.

362. *See* Crosser, *supra* note 98, at 409.

363. *Cf.* Pimentel *supra* note 87.

364. *See* Pimentel *supra* note 87.

365. *See* Auer v. Robbins, 519 U.S. 452 (1997) (establishing a general policy of deference to administrative agencies, known as the *Auer* doctrine); Kisor v. Shulkin, 869 F.3d 1360 (Fed. Cir. 2017) *reh'g denied*, 880 F.3d 1378 (Fed. Cir. 2018) (upholding the *Auer* doctrine).

persuasive,[366] such as legislative enactments deeming utility tokens exempt from security laws, to help the court make an informed decision about the nature of the token under a narrow application of *Howey.*

The second approach the court could take would be to clarify the third and fourth prongs of *Howey.* As stated in Part II(C), prongs (1) and (2) are not often at issue. The greatest opportunity for clarity, then, rests here. One proposal has largely mirrored the utility approach suggested above by focusing on "good faith, substantial steps towards completion of a project that [the promotors of the project] believe will have use to some users of the token beyond resale value or economic income."[367] The Article which proposed this test was cited by the district court in *Telegram*,[368] though not for this element of the test, but rather for support of the proposition that the "essential efforts" of Telegram were still needed to complete the blockchain under prong (4) of *Howey.*[369] What is proposed here is that in determining whether the token is a security, the court should scrutinize the relationship for an agreement between the purchasers of the token and the business selling it for the completion of an underlying technology.[370] In other words, the court should ask whether "an explicit or implicit contract to build and manage software [i.e., a blockchain, actually exists] such that if there were a breach of that contract, the project would fail[.]"[371] The concept attempts to contour the commonsense difference in purchasing a share of *ownership*, and purchasing a "utility" token *designed for use* on a new software. This element is not particularly revolutionary, but it may make a difference in a close inquiry like Ripple's, where the blockchain was completed and operational early on.

A common law court's "jurisprudential discipline of rule-making and rule enforcement" is more critical than ever.[372] The approaches discussed above operate within the existing *Howey* framework and do not require any immense leaps of the court, but the results would likely be impactful and allow the facts of the case their appropriate effect in the context of the law's larger goals.

366. "It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." New State Ice Co. v. Leibmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

367. Henderson & Raskin *supra* note 134, at 488.

368. SEC v. Telegram Grp. Inc., 448 F. Supp. 3d 352, 375 (S.D.N.Y. 2020).

369. *Id.* at 375–76.

370. *Id.* at 361–77.

371. Henderson & Raskin *supra* note 134, at 461.

372. WERBACH, *supra* note 8, at 11.

B. Congressional Action

To borrow Dr. Pangloss' quip from Voltaire's *Candide*, the "best-of-all-possible-worlds" solution would be congressional preemption. There are at least two solutions which scholars have proffered: first, amending the underlying rule defining securities and creating a new class thereof, subject to plenary SEC jurisdiction,[373] and second, creating a safe harbor within the investment contract framework, as proposed by Commissioner Peirce.[374]

As proffered in detail by Professor Goforth, Congress could give the SEC plenary authority over crypto assets.[375] The primary justification offered for this approach is twofold. First, it is more realistic than expecting the SEC to change its previous approach developed in *Howey*. This is a practical consideration that has been borne out in *Kik* and *Telegram*, discussed in Part IV(C). Second, it would benefit the market by removing *Howey* and the "uncertainty and complexity" of deeming crypto assets "securities" or not.[376] It would also clarify jurisdictional concerns by limiting jurisdiction over crypto assets based on an explicit definition and on use of secondary markets.[377] The road to this solution is suggested as a four-step-process:

> First, Congress should amend the definition of security in the federal securities laws to explicitly recognize crypto assets as a new class of security. Second, Congress should give the SEC exclusive authority over this asset class, although the CFTC would retain jurisdiction over derivatives of such assets and the exchanges upon which such derivatives are traded. Third, Congress should give the SEC preemptive authority in order to ensure that conflicting state regulations will not overly complicate the regulatory response. Fourth, the SEC should be given explicit authority and direction to create exemptions for this new class of security.[378]

373. *Cinderella's Slipper*, *supra* note 39, at 316–21.

374. *See* Peirce, *supra* note 148 ("The safe harbor seeks to provide network developers with a three-year grace period within which, under certain conditions, they can facilitate participation in and the development of a functional or decentralized network, exempted from the registration provisions of the federal securities laws.").

375. *Cinderella's Slipper*, *supra* note 39, at 318–19.

376. *Id.* at 320.

377. *Id.* at 321–25.

378. *Id*. at 318

Importantly, the SEC's institutional knowledge is utilized while avoiding the downside of potentially unclear, and therefore, oppressive regulation.[379] This approach will also disarm the arguments made to the public about the SEC as grasping and overreaching, claims aggressively made since the *Ripple* and Coinbase lawsuits. Another suggestion is a "safe-harbor"[380] that would conditionally shield a crypto asset from claims by the SEC "presumably because market forces, rather than the efforts of any identifiable persons would dictate pricing."[381] This solution merits discussion because it both benefits the market and it may be quickly adopted; however, it is likely a short-term fix because it fails to address the underlying problems of delineating what a "security" is.

Of course, aside from the friction inherent in congressional action, there is also substantial partisan deadlock. But, as discussed in Parts I, II, and III, there is likely sufficient economic, political, and strategic incentive for Congress to act. Being perceived as pro-crypto could have attractive political benefits. For one thing, crypto assets are roughly analogous to the internet and its benefits of democratization of information. Indeed, the crypto asset lobby has, and is, engaging with Congress.[382] Already, congressmen battle across the country to lure tech dollars to their state in the wake of continued growth in computing power, predicted by Moore's Law and the advent of Web3.

C. Potential for Settlement in Ripple

Last, settlement and payment of a fine is likely. Obviously, in common law systems, for precedential purposes, settlement after summary judgment would be best. Needless to say, the result of litigation with the SEC is often settlement—to be sure, both Kik and Telegram settled[383]—because for a business, litigation is tantamount to a cost-benefit analysis of each motion multiplied by its chance of success. The effect of the inclusion of allegations against the executives of Ripple and their failure to obtain dismissal may be the cause of more aggressive litigation or it could bear fruit as an incentive for additional cooperation in negotiation. Also, in looking to the

379. *Id.* at 324.

380. *See* Peirce, *supra* note 148.

381. *Cinderella's Slipper*, *supra* note 39, at 316.

382. Rebecca Klar, *Crypto Industry Seeks to Build Momentum After Losing Senate Fight*, THE HILL (Aug. 11, 2021, 5:39 PM), https://thehillcom.cdn.ampproject.org/c/s/thehill.com/policy/technology/567460-crypto-industry-seeks-to-build-momentum-after-losing-senate-fight?amp [https://perma.cc/49D4-67D8].

383. Guseva, *supra* note 32, at 672.

cumulative weight of public perception, the arguments made by Ripple in conjunction with the fact that the SEC has been checked by the discovery ordered against it[384] may mean that it feels unusual pressure to end the lawsuit early. Perhaps sensing this, Ripple's executives have expressed interest in settlement conditioned on obtaining "clarity" from the SEC on XRP's status.[385] Other commentators have suggested that no such thing is on the horizon,[386] and the settlement theory is belied by the fact that the SEC and Ripple have been engaged in an escalated war of words in the media.[387]

Again, in game theory terms, society's "lowest possible payoff" occurs when no cooperation is forthcoming between the regulator or the private actor against whom a regulatory action is brought.[388] Ultimately, the import of the parties' external actions on settlement is not entirely clear given the limited information on the substance of possible negotiations. However, so long as there is the possibility of settlement, it cannot be ruled out as a likely possibility.[389]

CONCLUSION

Today, like after World War II, the United States stands at a burgeoning of a new paradigm in the complexity of society. A likely component of this complexity is blockchain technology, which has potential similar to the internet in redefining how people interact at scale, democratizing fundraising and innovation, and solving previously intractable business and social problems through its unique use of trust. As they have slowly begun, the courts must think about the SEC's regulation by enforcement strategy with respect to the sale of crypto assets, which are integral to the operation of many blockchain solutions. This Comment has observed the history of the *Ripple* case, and argued both that the proper analytical framework for

384. *See The SEC Is Now on Trial*, *supra* note 25.

385. Daily Hodl Staff, *Ripple CEO Brad Garlinghouse Says He's Open to Settling Landmark XRP Case with SEC*, DAILYHODL (Sept. 26, 2021), https://dailyhodl.com/2021/09/26/ripple-ceo-brad-garlinghouse-says-hes-open-to-settling-landmark-xrp-case-with-sec/ [https://perma.cc/WZA4-P3HF].

386. *E.g.*, Tanzeel Akhtar, *Ripple, SEC Say Settlement Unlikely Before Trial Over Alleged Securities Violations*, COINDESK (Feb. 16, 2021, 4:51 AM), https://www.coindesk.com/ripple-sec-say-settlement-unlikely-before-trial-over-alleged-securities-violations [https://perma.cc/BSC4-K633].

387. *See* Pimentel, *supra* note 87.

388. Guseva, *supra* note 32, at 652.

389. *See* Rick Steves, SEC v. Ripple: *"Strange Things" Hint That Settlement Is in the Works*, FINANCE FEEDS (July 30, 2021, 7:36 AM), https://financefeeds.com/sec-v-ripple-strange-things-hint-that-settlement-is-in-the-works/ [https://perma.cc/9NVW-UZJ8].

considering blockchain innovation is complexity theory and that the facts in the *Ripple* Litigation make it an apt illustration of complexity theory's key principles.

Given the effects of strange attractors, such as the pandemic and inflation on agents and institutions in the U.S. economy, it is difficult to predict the trajectory of innovation. However, in the context of the *Ripple* Litigation, three results are likely. Aside from settlement, this Comment has suggested two solutions proffered by leading academics and scholars, including curbing arbitrary classification and regulation by narrowing *Howey* to only non-utility tokens, or by providing additional clarification to the most litigated "prongs" of the inquiry it commands. Otherwise, or perhaps consequently, this Comment suggests that congressional action that either secures the SEC's jurisdiction and defines what constitutes a security and who has plenary power to regulate it, or that creates a short-term safe harbor for crypto assets, would be a logical course.

These outcomes, while desirable, are a temporary panacea. Ideally, the *Ripple* litigation will prove to be an opportunity taken by regulators to consider innovations like blockchain as an emergent phenomenon that depends on trust. By doing this, regulators can hopefully avoid reductionist, binary decisions about policy that fail to capture the full complexity of the system and thus promote greater resilience in the U.S. economy against dangers foreseen and unforeseen. Under such an approach, consumers and innovators will both win. Faced with new forms of the challenges that have existed throughout history, the U.S. government's regulatory apparatus must answer the call and use new methods made available by complexity theory. At what cost it does this—and how quickly—will surely color the remembrance of this era when future generations gaze upon Man Controlling Trade.

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