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The SEC, Digital Assets, and Game Theory

Yuliya Guseva*

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The Securities and Exchange Commission (SEC) has not provided a clear rule to digital-asset market participants concerning the nature of cryptoassets, namely, how to determine whether an asset is a security subject to the federal securities laws or something else, like

* Professor of Law, Rutgers Law School, yg235@law.rutgers.edu. The author is grateful to Ian Ayres, Matthew Bruckner, Chris Brummer, Lewis Cohen, Douglas S. Eakeley, Carol Goforth, Howell E. Jackson, Arthur Laby, Merav Ozair, Alexander I. Platt, Jeff Schwartz, and David L. Yermack for their comments on the various drafts and sections of this Article. Many thanks to the participants of the following conferences for their suggestions and critiques: Corporate and Securities Law in Society Workshop; Rutgers Fintech and Blockchain Collaboratory; NYU Pollack Center for Law and Business, Corporate Governance Series; University Blockchain Research Initiative, Haas School of Business, UC Berkeley; Annual Corporate and Securities Litigation Workshop, Boston University School of Law; 30th Anniversary of SASE Meeting, Fathomless Futures: Algorithmic and Imagined; National Business Law Scholars Conference, Berkeley School of Law; Annual Meeting of the Law and Society Association; Governance of Emerging Technologies and Science, ASU, Sandra Day O'Connor College of Law; Junior Faculty Forum, University of Richmond School of Law; and Rutgers Law School Faculty Workshop. The author would like to thank Leo Choi and Katarina Gonzalez for their research assistance. Empirical research for this Article was generously supported by the University Blockchain Research Initiative, the Ripple Impact Fund, and Silicon Valley Community Foundation.

a commodity regulated outside of the purview of the securities statutes. Instead of a formal rule, the SEC has chosen a more flexible *modus operandi* of enforcement actions in reliance on the functional definition embedded in the Supreme Court *Howey* decision interpreting the term “investment contract.” This Article examines empirical data and develops a model suggesting that, despite the underlying indeterminacy associated with functional definitions and regulation by enforcement, the SEC attempted to reduce information losses and improved regulatory clarity by following a set of well-defined strategies during the first years of its crypto-enforcement efforts. Unfortunately, recent enforcement actions may upend these initially successful game strategies and undermine the efficacy of the techniques the SEC used to minimize the downsides of functional definitions and the regulation via enforcement tactics. As a result, the fabric of cooperation between the innovators and the SEC may be broken, leading to a suboptimal outcome for all market participants and the Commission itself. These problems are particularly important in the rapidly evolving world of crypto, DeFi, and fintech.

I. INTRODUCTION

In the past several years, private firms and entrepreneurs started distributing new instruments called “digital assets,” “cryptoassets,” and “cryptocurrencies”¹ using the distributed ledger technology.² Simultaneously, crypto-exchanges emerged and matured into robust platforms enabling trading in these assets,³ and various investment funds and banks entered the cryptocurrency market.⁴ Many countries, the European Union, and the United Nations fully acknowledge the importance of these innovations for the global

1. A digital asset is “an asset that is issued and transferred using distributed ledger or blockchain technology, including, but not limited to, so-called ‘virtual currencies, coins,’ and ‘tokens.’” Strategic Hub for Innovation & Fin. Tech., *Framework for “Investment Contract” Analysis of Digital Assets*, SEC. & EXCH. COMM’N 12 n.2 (Apr. 3, 2019), <https://www.sec.gov/files/dlt-framework.pdf> [<https://perma.cc/X6TL-XR5D>] [hereinafter SEC FRAMEWORK]. Cryptoassets are “an entry in a ledger that specifies that a particular user [can] exercise a discrete set of powers.” Shaanan Cohnen et al., *Coin-Operated Capitalism*, 119 COLUM. L. REV. 591, 602 (2019). Cryptoasset can also be described as a subset of digital assets, and I will use the terms interchangeably.

2. Distributed ledger technology or “DLT” is “a large, decentralized database that is maintained on a network of computers rather than a single server, and that is updated in real-time.” Hilary J. Allen, *\$=€=Bitcoin?*, 76 MD. L. REV. 877, 886 (2017). A related common term is “blockchain.” “A blockchain is a cryptographically-secured digital ledger, and a blockchain’s protocol is the software that governs rules, operations, and communications between computers interacting with the blockchain.” Simply Vital Health, Inc., Securities Act Release No. 33-10671, 2019 WL 3780055 (Aug. 12, 2019). See also Carla L. Reyes, *If Rockefeller Were a Coder*, 87 GEO. WASH. L. REV. 373, 380 (2019) [hereinafter *If Rockefeller Were a Coder*] (explaining blockchain); Carla L. Reyes, *Conceptualizing Cryptolaw*, 96 NEB. L. REV. 384, 391 (2017).

3. See, e.g., *Top Cryptocurrency Spot Exchanges*, COINMARKETCAP, <https://coinmarketcap.com/rankings/exchanges/> [<https://perma.cc/4L3J-T5Y2>] (providing a summary of the markets).

4. One germane example is the entities within Grayscale group, a large digital asset manager registered with the SEC. Grayscale Bitcoin Tr., Quarterly Report (Form 10-Q) (Nov. 6, 2020). As this article was going to print, Goldman Sachs reopened its cryptocurrency trading desk and announced its intention to work on providing services related to bitcoin and other cryptoassets to its clients. See, e.g., Tanzeel Akhtar, *Goldman Sachs to Offer Bitcoin to Wealth Management Clients*, COINDESK (Mar. 31, 2021), <https://www.coindesk.com/goldman-sachs-to-offer-bitcoin-to-wealth-management-clients> [<https://perma.cc/9ETC-MV9A>].

economy.⁵ When the Justice Department released its Cryptocurrency Enforcement Framework in October 2020, the former Attorney General even observed that “cryptocurrency is a technology that could fundamentally transform how human beings interact, and how we organize society.”⁶

One of the main applications of these technologies is in financial and capital markets. From the early days of the first transactions in 2008–2015, when Bitcoin, Ethereum, and Ripple emerged, capital markets exhibited an uneven but strong appetite for cryptoassets, particularly for high-quality projects.⁷ Bitcoin, which in January–February 2021 traded at record highs, above \$40,000, illustrates this robust but highly volatile demand for cryptoassets.⁸ Despite the volatility and other attendant risks, the institutional infrastructure of the cryptoasset market is entering a mature market phase. The fact that the leading U.S. online trading platform—Coinbase—is planning a direct listing on Nasdaq signifies that both cryptoassets as an asset class and the underlying infrastructure are becoming mainstream.⁹

These innovations have prompted a deluge of statements and initiatives from numerous regulators in the United States and abroad, including a recent warning from

5. See, e.g., UNITED NATIONS SUSTAINABLE DEV. GRP., PEOPLE’S MONEY: HARNESSING DIGITALIZATION IN FINANCING THE SUSTAINABLE DEVELOPMENT GOALS (Aug. 2020), <https://unsdg.un.org/sites/default/files/2020-08/DF-Task-Force-Full-Report-Aug-2020-1.pdf> [<https://perma.cc/C8UM-T48L>] (providing recommendations on exploring how digitalization and finance merge); Steven Peikin, Co-Director, Div. of Enf’t, SEC, Keynote Address to the UJA Federation (May 15, 2018), <https://www.sec.gov/news/speech/speech-peikin-051518> [<https://perma.cc/S2W9-CL57>] (“Given the potential of ICOs to fundamentally alter the process by which issuers raise money, they have a significance to our markets that far outweighs strict notional dollar amounts.”); *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*, EUR. COMM’N 1, 11 (Feb. 19, 2020), <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52012DC0673> [<https://perma.cc/7EC6-UKRU>] (“New decentralised digital technologies such as blockchain offer a further possibility for both individuals and companies to manage data flows and usage, based on individual free choice and self-determination. Such technologies will make dynamic data portability in real time possible for individuals and companies, along with various compensation models.” (emphasis removed)).

6. Press Release, U.S. Dep’t Just., Attorney General William P. Barr Announces Publication of Cryptocurrency Enforcement Framework (Oct. 8, 2020), <https://www.justice.gov/opa/pr/attorney-general-william-p-barr-announces-publication-cryptocurrency-enforcement-framework> [<https://perma.cc/6JAD-GUX4>].

7. See, e.g., Sabrina T. Howell et al., *Initial Coin Offerings: Financing Growth with Cryptocurrency Token Sales* 3–4, 25–33 (Nat’l Bureau Econ. Rsch, Working Paper No. 24774, 2019), <http://www.nber.org/papers/w24774> [<https://perma.cc/7BSE-HB3Q>] (examining initial coin offerings’ success, accompanying design choices, utility, transparency, and the amount raised as a positive predictor of employment). For the data on the growth of market capitalization of cryptoassets and the capital locked in DeFi (i.e., decentralized finance protocols), see *Today’s Cryptocurrency Prices by MarketCap*, COINMARKETCAP, <https://coinmarketcap.com/> [<https://perma.cc/48JN-AQVT>].

8. See *Bitcoin*, COINDESK, <https://www.coindesk.com/price/bitcoin> [<https://perma.cc/BQB5-W8AA>] (showing price trends in bitcoin’s value).

9. Robert Stevens & Stephen Graves, *Coinbase Direct Listing (Formerly IPO): Everything You Need to Know*, DECRYPT (Feb. 2, 2021), <https://decrypt.co/54639/coinbase-direct-listing-ipo-everything-you-need-to-know> [<https://perma.cc/E8JM-3EMW>].

Treasury Secretary Yellen,¹⁰ several legislative proposals in Congress,¹¹ and experimentation with regulatory sandboxes in the United States and on a global scale.¹² Within this nascent regulatory environment, the Securities and Exchange Commission (“SEC” or “Commission”) has been a uniquely active player and enforcer, willing to take on multiple targets, large and small.¹³ The SEC’s approach to digital asset markets is the focus of this Article.

The Commission has not provided a clear rule to cryptomarket participants concerning the nature of digital assets, namely, how to determine whether an asset is a security subject to the federal securities laws or something else, like a commodity regulated outside of the purview of the securities statutes. Instead of a formal rule, the SEC has opted to use a more flexible *modus operandi* of enforcement actions relying on a functional definition of securities such as investment contracts.¹⁴

This combination of *functional* definitions and *regulation via enforcement* risks increasing uncertainty for market participants and undermining regulatory clarity. Scholarship has long suggested that clarity and rule simplicity are part of the overarching set of ideal regulatory goals.¹⁵ As Brummer and Yadav postulated, in fintech and crypto, these regulatory objectives are promoting innovation, protecting market integrity, and ensuring an optimal level of clarity in the market, although the regulators are often unable to achieve all three at once.¹⁶

10. *Finance Committee Questions for the Record, Hearing on the Nomination of Dr. Janet Yellen*, U.S. SENATE COMM. ON FIN. 93 (2021), <https://www.finance.senate.gov/imo/media/doc/Dr%20Janet%20Yellen%20Senate%20Finance%20Committee%20QFRs%2001%2021%202021.pdf> [<https://perma.cc/W4DL-KXSR>]. Some regulators seem to have taken a permissive stance on cryptocurrencies, whereas others have focused on the risks. *Compare Federally Chartered Banks and Thrifts May Participate in Independent Node Verification Networks and Use Stablecoins for Payment Activities*, OFF. COMPTROLLER CURRENCY (Jan. 4, 2021), <https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-2.html> [<https://perma.cc/MZ4V-UYHD>] with FIN. ACTION TASK FORCE, VIRTUAL ASSETS RED FLAG INDICATORS OF MONEY LAUNDERING AND TERRORIST FINANCING 5–7 (2020), <https://www.fatf-gafi.org/media/fatf/documents/recommendations/Virtual-Assets-Red-Flag-Indicators.pdf> [<https://perma.cc/L45D-NVR9>].

11. For examples of these proposals see Securities Clarity Act, H.R. 8378, 116th Cong. (2020); Keep Big Tech Out of Finance Act, H.R. 4813, 116th Cong. (2019); Token Taxonomy Act of 2019, H.R. 2144, 116th Cong. (2019); Crypto-Currency Act of 2020, H.R. 6154, 116th Cong. (2020); Managed Stablecoins are Securities Act of 2019, H.R. 5197, 116th Cong. (2019).

12. See *Global Financial Innovation Network (GFIN)*, FIN. CONDUCT AUTH. (Jan. 25, 2021) <https://www.fca.org.uk/firms/innovation/global-financial-innovation-network> [<https://perma.cc/A42Y-ZF4P>] (describing the purpose of the GFIN). For state initiatives, see, for example, Allen S. Li, *Utah Passes the Third State-Run “Sandbox” for Innovative Financial Products and Services*, PROSKAUER ROSE LLP (July 31, 2019), <https://www.blockchainandthelaw.com/2019/07/utah-passes-the-third-state-run-sandbox-for-innovative-financial-products-and-services/> [<https://perma.cc/Y6FD-LYKS>]; *Welcome to Arizona’s FinTech Sandbox*, ARIZ. ATT’Y GEN. MARK BRNOVICH, <https://www.azag.gov/fintech> [<https://perma.cc/HLV9-DTW8>] (last visited Feb. 14, 2021). See also Hilary J. Allen, *Regulatory Sandboxes*, 87 GEO. WASH. L. REV. 579, 581 (2019) (presenting a cautious approach to using sandboxes); Lissa L. Broome, *Banking on Blockchain*, 21 N.C. J.L. & TECH. 169, 182 (2019) (discussing state sandboxes).

13. See *infra* Part IV (discussing the data on SEC enforcement).

14. SEC v. W. J. Howey Co., 328 U.S. 293, 298 (1946) (defining “investment contract”). On the distinctions between formal and functional rules, see Howell E. Jackson, *Regulation in a Multisectoral Financial Services Industry: An Exploratory Essay*, 77 WASH. U. L. REV. 319 *passim* (1999).

15. *Infra* Part II.

16. Chris Brummer & Yesha Yadav, *Fintech and the Innovation Trilemma*, 107 GEO. L.J. 235, 244, 264–

Building on this scholarship, this Article demonstrates that the SEC, as an independent agency in charge of U.S. capital markets and one of the most skillful expert regulators in the world, has attempted to mitigate the lack of clarity in crypto while pursuing its regulatory goals of ensuring investor protection and market integrity without inhibiting innovation. Despite its reliance on *functional definitions*, which are innately flexible to the point of uncertainty,¹⁷ the Commission built a clear and simple regulatory enforcement *strategy*.

Its strategy was shaped by a game-theoretic approach along the lines of what game theorists like Thomas Schelling would have deployed: a combination of threats, commitments, and other strategic moves,¹⁸ all bringing about an effective solution of the “game” between crypto-firms and the regulator, i.e., cooperation, coordination, and compliance.¹⁹ In pursuing determinate, clear, and predictable strategies, the SEC incentivized market participants to comply with pre-crypto securities law and encouraged cooperation with Commission staff. It created an equilibrium where to the extent that the SEC promised to cooperate with the market, the market responded with cooperation.

More recently, however, this equilibrium and the clarity of the initial strategy of the SEC gave way to tactical inconsistencies illustrated by the three legal battles of 2020–2021: *Kik*,²⁰ *Telegram*,²¹ and *Ripple*.²² The last mentioned case was filed in the closing days of Chairman Clayton’s SEC, on December 22, 2020.²³ These inconsistencies reanimate the trilemma outlined by Brummer and Yadav (i.e., the inability of a regulator to pursue all three objectives of ensuring rule clarity and simplicity, protecting market integrity, and supporting innovation)²⁴ and undermine the efficacy of the techniques the SEC used to minimize the downsides of unclear functional definitions and the regulation by enforcement tactics.

The remainder of this paper is divided into the following sections: Part II describes the use of functional definitions in crypto and fintech. Part III provides a classification of the regulatory approaches followed in other jurisdictions and contrasts them with the approach of the Commission. Part IV summarizes the empirical data on SEC enforcement activity. Part V analyzes SEC enforcement using a game-theoretic toolbox. Part VI uses this game-theoretic model to explain the motivations behind specific examples of SEC actions. It shows how the Commission aimed to improve regulatory clarity through strategy rather than by means of changing the functional definitions of securities law. Part VII warns about the dangers of dynamic inconsistency in recent cases. Part VIII points out that fast-

82 (2019).

17. Jackson, *supra* note 14, at 364 (“The hallmark of formal definitions is that they depend on relatively unambiguous legal requirements, and not the sort of precedential or analogical reasoning that characterizes functional definitions.”).

18. *Infra* Part VI.

19. THOMAS SCHELLING, *THE STRATEGY OF CONFLICT* 150–57 (Harv. Univ. Press ed., 1980). The games between the regulator and the regulated are not games of pure conflict (although they can be), but often are nonzero-sum games involving cooperation or a mix of conflict and cooperation.

20. SEC v. Kik Interactive, No. 19-cv-5244, 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sept. 30, 2020).

21. SEC v. Telegram Grp. Inc., No. 19-cv-9439, 2020 U.S. Dist. LEXIS 53846 (S.D.N.Y. Mar. 24, 2020).

22. Complaint, SEC v. Ripple Labs, Inc., No. 1:20-cv-10832 (S.D.N.Y. Dec. 22, 2020) [hereinafter *Ripple Complaint*].

23. *Id.* at 71.

24. Brummer & Yadav, *supra* note 16, at 248.

moving technological development depends on strategic clarity, predictability, and determinacy to encourage productive regulatory cooperation. Part IX concludes the Article.

II. FUNCTIONAL DEFINITIONS, ENFORCEMENT, AND RULE CLARITY

The jurisdiction of the SEC extends only over securities and securities markets, which means that the cryptoassets within its bailiwick must be securities. In analyzing if a digital asset is a security, the SEC examines it under the heading of “investment contracts.”²⁵ The “investment contract” definition is innately indeterminate and environs “a wide variety of multiparty investment relationships”²⁶ that were yet unknown when the statute was originally enacted.

In enacting the 1933 Securities Act, Congress left the term “investment contract” purposely broad,²⁷ and the Supreme Court designed the relevant functional test accordingly in order for the test to “embod[y] a flexible rather than a static principle, one that is capable of adaptation to meet the countless and variable schemes devised by those who seek the use of the money of others on the promise of profits.”²⁸

The Supreme Court defined the term “investment contract” as “a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party.”²⁹ Because the Court developed this test for investments that did not fit within the then known securities universe, such as shares of stock, the test is far-reaching in scope and captures a broad range of transactions. Consequently, even though a digital asset is expressed in a code, the attendant facts and circumstances, including the way how it is distributed, may point toward an investment contract.³⁰

Some blockchain-based digital assets are deemed commodities, may lie outside the

25. Even though “[t]he digital asset itself is simply code . . . the way it is sold . . . most often is, a security – because it evidences an investment contract.” William Hinman, Director, Div. of Corp. Fin., U.S. Sec. & Exch. Comm’n, Digital Asset Transactions: When Howey Met Gary (Plastic), Remarks at the Yahoo Finance All Markets Summit: Crypto (June 14, 2018), <https://www.sec.gov/news/speech/speech-hinman-061418> [<https://perma.cc/X3QB-W7NL>] [hereinafter Hinman Speech].

26. Jackson, *supra* note 14, at 367.

27. H.R. 5480, 73rd Cong. (1st Sess. 1933) (leaving investment contract undefined). *See also* SEC v. W.J. Howey Co., 328 U.S. 293, 299 (1946) (defining the term “investment contract” using flexible principles and underscoring the broad statutory purpose of ensuring disclosure under securities law); *Reves v. Ernst & Young*, 494 U.S. 56, 61 (1990) (“Congress . . . did not attempt precisely to cabin the scope of the Securities Acts. Rather, it enacted a definition of ‘security’ sufficiently broad to encompass virtually any instrument that might be sold as an investment.”); SEC v. Edwards, 540 U.S. 389, 393 (2004) (discussing the breadth of the definition and observing that “Congress’ purpose in enacting the securities laws was to regulate *investments*, in whatever form they are made and by whatever name they are called.”) (citing *Reves v. Ernst & Young*, 494 U.S. 56, 61, 110 S.Ct. 945, 108 L.Ed.2d 47 (1990)). “To that end, it enacted a broad definition of ‘security,’ sufficient ‘to encompass virtually any instrument that might be sold as an investment.’” *Id.*

28. *Howey*, 328 U.S. at 299. The jurisprudence is, however, clear that *Howey* is not a universal test. *See, e.g.,* Landreth Timber Co. v. Landreth, 471 U.S. 681, 697 (1985) (holding a sale of stock of a company is a sale of securities); *Reves*, 494 U.S. at 64–66 (holding the “family resemblance” test should be applied to determine whether a “note” is a “security” under securities law).

29. *Howey*, 328 U.S. at 298–99.

30. Hinman Speech, *supra* note 25. For an overview of *Howey* in the context of digital assets, *see, e.g.,* Carol R. Goforth, *Regulation of Crypto: Who is the SEC Protecting?*, AM. BUS. L.J. (forthcoming 2021), at 6–11, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3801177 [<https://perma.cc/9LA8-PXK8>].

scope of securities law, and are regulated by the Commodity Futures Trading Commission (“CFTC”). An example is cryptocurrencies that serve as a means to store and transfer value and “may fluctuate in value as any commodity would.”³¹ Yet, even when a digital asset is a commodity, “any given digital asset may or may not be subject to the securities laws,” and “many securities are commodities to which the securities laws apply.”³² The dividing line is inherently unclear and case specific. In the letter submitted in the *Telegram* case, for example, the CFTC reiterated its view that digital currencies are commodities but declined to opine on whether the assets at issue were securities.³³ The SEC in its pleadings argued that Telegram’s digital assets were securities under the *Howey* test, and the district court followed this line of analysis and agreed with the Commission.³⁴

The arguments adduced by defendants in *Kik* and *Telegram*, the major cases of 2020, are another case in point.³⁵ Both defendants argued that their digital assets were cryptocurrencies (i.e., commodities similar to Bitcoin) and not securities.³⁶ In both, the issuers raised the affirmative defense that the term “investment contract” was unconstitutionally vague and violated the Due Process Clause. The main arguments were that the statute did not provide sufficient notice whether offers and sales of digital assets would constitute investment contracts.³⁷ Nor did the term sufficiently cabin the discretion of the Commission,³⁸ thus allegedly entailing the risk of *post hoc* subjective rule construction and enforcement.

In 2018–2019, there also was a case where the SEC’s generally successful crypto-enforcement program suffered a temporary setback when a district court could not properly interpret and verify the rules of the “game,” to wit, whether the defendant had indeed offered and sold securities and not another asset class. The court initially refused to grant an injunction without full discovery and in light of disputed issues of fact.³⁹

31. SEC v. Telegram Grp. Inc., No. 19-cv-9439 (PKC), 2020 U.S. Dist. LEXIS 53846, at *3 (S.D.N.Y. Mar. 24, 2020). See also CFTC v. Gelfman Blueprint, Inc., No. 17-7181 (PKC), 2018 U.S. Dist. LEXIS 205706, at *20-21 (S.D.N.Y. Oct. 16, 2018); Lagemann v. Spence, No. 18-cv-12218 (GBD) (RWL), 2020 U.S. Dist. LEXIS 88066, at *32-33 (S.D.N.Y. May 18, 2020).

32. Letter from Robert A. Schwartz, Deputy Gen. Couns., U.S. Comm. Fut. Trading Comm’n, to the Hon. P. Kevin Castel (Feb. 18, 2020) (available at <https://www.docdroid.net/okmUUBS/cftc-letter-in-telegram-case.pdf> [<https://perma.cc/G5WR-DHN9>]).

33. *Id.*

34. *Telegram Grp. Inc.*, 2020 U.S. Dist. LEXIS 53846, at *1.

35. SEC v. Kik Interactive Inc., No. 19-cv-5244 (AKH), 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sep. 30, 2020); *Telegram Group, Inc.*, 2020 U.S. Dist. LEXIS 53846.

36. Defendants’ Answer, Defenses, and Affirmative Defenses to Plaintiff’s Complaint ¶ 50, SEC v. Telegram Inc., No. 19-cv-9439 (PKC), 2020 U.S. Dist. LEXIS 53846 (S.D.N.Y. Mar. 24, 2020) [hereinafter Telegram Defendants’ Answer]; Answer to Complaint at 119-122, SEC v. Kik Interactive Inc., No. 19-cv-5244 (AKH), 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sep. 30, 2020) [hereinafter Kik Answer].

37. Telegram Defendants’ Answer, *supra* note 36, at 32; Kik Answer, *supra* note 36, at 118-19 (both citing Vill. of Hoffman Ests. v. Flipside, Hoffman Ests., Inc., 455 U.S. 489, 498 (1982)).

38. Kik Answer, *supra* note 36, at 118-22 (citing Farid v. Ellen, 593 F.3d 233, 243 (2d Cir. 2010); FCC v. Fox Television Stations, Inc., 567 U.S. 239, 253 (2012)); Telegram Defendants’ Answer, *supra* note 36, at 16, 32.

39. SEC v. Blockvest, LLC, No. 18CV2287-GPB(BLM), 2018 U.S. Dist. LEXIS 200773, at *22, 25 (S.D. Cal. Nov. 27, 2018) (concluding that “Plaintiff has not demonstrated a prima facie showing that there has been a previous violation of the federal securities laws” and that “Plaintiff has not demonstrated the two factor test to warrant a preliminary injunction.”). The decision was partially reversed in February 2019. SEC v. Blockvest, LLC, No. 18CV2287-GPB(BLM), 2019 U.S. Dist. LEXIS 24446, at *36-37 (S.D. Cal. Feb. 14, 2019). See also

To its credit, throughout 2018 and 2019, the SEC had attempted to clarify the application of *Howey* to digital assets. Alas, it is possible that in doing so the Commission complicated the test's application. In a 2018 speech on digital assets, for instance, Mr. Hinman, Director of the Division of Corporation Finance, brought forth thirteen additional factors relevant to the already complex *Howey* test,⁴⁰ whereas the 2019 Framework for "Investment Contract" Analysis of Digital Assets presented a vast anthology of examples, some of which were clearer and more generalizable than others,⁴¹ but none of which was determinative.⁴²

Consequently, entrepreneurs and factfinders face a continual need for a case-by-case fact-intensive analysis in an open-ended interpretative environment⁴³ where there is no clear taxonomy of cryptoassets as either securities or non-securities. This lack of clarity seems evident in the Framework and the overall crypto-policy that Commissioner Peirce eloquently decried as the "Jackson Pollock approach."⁴⁴ In the same vein, Mr. Hinman even observed that "the analysis of whether something is a security is not static and does not strictly inhere to the instrument."⁴⁵

As opposed to formal definitions, functional definitions like the one enshrined in the *Howey* test are marked by several downsides: they do not establish unambiguous regulatory requirements, fail to ensure rule clarity, and, consequently, may be "overinclusive and indeterminate"⁴⁶ in nature. Rule clarity, however, has a distinct policy value. Clear and simple rules lower the risk of subjective interpretation, reduce the costs of bureaucracy and the discretionary power of the state, and promote fairness by enhancing the *ex ante* knowledge and understanding of the rules by market participants, regardless of whether they possess the resources to retain expensive experts to explain the permutations of a regulation.⁴⁷

SEC v. Blockvest, LLC, 2020 WL 7488067, at *2–6 (S.D. Cal. Dec. 15, 2020) (ordering a permanent injunction and monetary relief against the defendants).

40. Hinman Speech, *supra* note 25.

41. One clear factor, for instance, was that assets and platforms on which they circulate be operational and fully functional. SEC FRAMEWORK, *supra* note 1, at 9. Statements describing future trading and functionalities, as opposed to extant functionalities, could point toward an investment contract. *Id.* at 9–11.

42. *Id.* See also Goforth, *supra* note 30, at 9–11.

43. These uncertainties even prompted the emergence of a grassroots classification system for cryptoassets, which was unveiled by several leading cryptocurrency companies and online trading platforms in 2019. *CRC Securities Framework Asset Ratings*, CRYPTO RATING COUNCIL, <https://www.cryptoratingcouncil.com/asset-ratings> [<https://perma.cc/MD46-TCKG>].

44. Hester M. Peirce, Comm'r, U.S. Sec. & Exch. Comm'n, *How We Howey* (May 9, 2019) (available at <https://www.sec.gov/news/speech/peirce-how-we-howey-050919> [<https://perma.cc/8493-WCRQ>]).

45. Hinman Speech, *supra* note 25.

46. Jackson, *supra* note 14, at 370.

47. See, e.g., Brummer & Yadav, *supra* note 16, at 244–48; Jackson, *supra* note 14, at 371 (discussing that courts may examine transactions in light of their predominant characteristics and that this "balancing test is notoriously subjective"); Kenneth Culp Davis, *Administrative Procedure in the Regulation of Banking*, 31 LAW & CONTEMP. PROBS. 713, 717 (1966) (discussing the discretionary power of the Comptroller); Gillian E. Metzger, *Through the Looking Glass to a Shared Reflection: The Evolving Relationship Between Administrative Law and Financial Regulation*, 78 LAW & CONTEMP. PROBS. 129, 131, 140–45 (2015) (discussing the engagement between administrative law and financial regulation); Cass R. Sunstein, *Interpreting Statutes in the Regulatory State*, 103 HARV. L. REV. 405, 420–33 (1989) (exploring the costs of uncertainty); CASS R. SUNSTEIN, *SIMPLER: THE FUTURE OF GOVERNMENT* 1–10, 173–89 (2013) (arguing for simplicity in government operations); William Baude & Stephen E. Sachs, *The Law of Interpretation*, 130 HARV. L. REV. 1079, 1140–47 (2017) (arguing that

From the perspective of individuals, as the Supreme Court observed in *Dirks*, “imprecision prevents parties from ordering their actions in accord with legal requirements.”⁴⁸ This outcome is also supported by game-theoretic arguments. Namely, law is not merely a set of standards, law operates as a focal point helping individual parties to coordinate their actions⁴⁹ and sets their incentives and expectations.⁵⁰ Private parties should find it much harder to coordinate their behavior around obscure focal points, whereas inadequately clear rules would cloud their payoff calculations and incentives as the parties entered a specific regulated market.

Relatedly, as Brummer and Yadav emphasized, clear rules can “lower the barriers to entry into financial marketplaces, thereby promoting competition.”⁵¹ The resultant benefits of competition and capital formation would, naturally, dovetail with and “help many regulators achieve broad statutory mandates.”⁵² In *The Trilemma*, Brummer and Yadav also suggested that rule clarity and simplicity are part of the ternary regulatory objectives, including protecting market integrity and investors, promoting efficient financial innovation, and ensuring clarity, although the regulators usually manage to pursue only two out of the three objectives.⁵³

Theoretically, the use of functional definitions in crypto may affect the clarity of securities law, and it is for Congress to correct this mistake.⁵⁴ The other related concern is that, when functional definitions are actively enforced by a regulator in application to various novel transactions (as they are in the United States),⁵⁵ the goals of determinacy and simplicity suffer a “double hit” because both the functional definitions and their enforcement as the primary regulatory method to articulate new policies are susceptible to interpretative subjectivity.

There is an inherent procedural opaqueness and decision-making secrecy associated with the nonpublic nature of communications between the regulator and the regulated in the context of enforcement actions and settlement negotiations.⁵⁶ Yet, these decisions later

applying “Law of Interpretation” leads to complexity and indeterminacy).

48. *Dirks v. S.E.C.*, 463 U.S. 646, 658 n.17 (1983).

49. For the explanations of the focal point theory of law, see Richard H. McAdams, *Focal Point Theory of Expressive Law*, 86 VA. L. REV. 1649, 1651–53 (2000).

50. *Id.* at 1657, 1669–72.

51. Brummer & Yadav, *supra* note 16, at 248.

52. *Id.*

53. *Id.* at 244.

54. For instance, in *Reves*, the Court observes:

An approach founded on economic reality rather than on a set of *per se* rules is subject to the criticism that whether a particular note is a “security” may not be entirely clear at the time it is issued. Such an approach has the corresponding advantage, though, of permitting the SEC and the courts sufficient flexibility to ensure that those who market investments are not able to escape the coverage of the Securities Acts by creating new instruments that would not be covered by a more determinate definition. One could question whether, at the expense of the goal of clarity, Congress overvalued the goal of avoiding manipulation by the clever and dishonest. If Congress erred, however, it is for that body . . . to correct its mistake.

Reves v. Ernst & Young, 494 U.S. 56, 63 n.2 (1990).

55. *Infra* Part IV; Douglas S. Eakeley & Yuliya Guseva, with Leo Choi & Katarina Gonzalez, *Crypto-Enforcement Around the World*, S. CAL. L. REV. POSTSCRIPT (forthcoming 2021) (manuscript at 4, 9) (on file with author).

56. For an analysis of secrecy in financial regulation, SEC enforcement, and regulation via enforcement,

on become enshrined in legal precedent and shape broader policies of the regulators.⁵⁷ This has already happened in crypto-related caselaw where several key administrative decisions are routinely cited by courts.⁵⁸

The major counterargument to these concerns is that the strict condition of regulatory clarity is infeasible in evolving markets for financial innovations. Admittedly, functional definitions and their enforcement help the regulators to efficaciously respond to the emergence of risky innovations, address a potential accumulation of systemic risk, and mitigate the attendant deficiencies of formal definitions which may miss analogues of traditional securities disguised with different appellatives. In this sense, both enforcement and functional definitions become valuable regulatory tools.⁵⁹

As a result, the SEC faces not only the trilemma of regulatory objectives but also the dilemma of the tools that it has at its disposal. Unless Congress enacts a separate definition for cryptoassets, the SEC and courts will continue to construe these financial instruments within the broad “investment contract” concept developed by the Supreme Court. At the same time, the Commission needs to be mindful of the pitfalls of both the functional definitions and regulation via enforcement. Put differently, it faces this practical dilemma within the trilemma of its objectives of protecting market integrity, facilitating innovation, and providing rule clarity.

III. THE REGULATORY “MENU” IN THE U.S. AND ELSEWHERE

The above-discussed problems put the SEC in a unique position. Around the globe, regulatory responses to fintech and cryptoassets have run the gamut from (1) highly restrictive, to (2) experimental, (3) enabling, and (4) a quasi-*laissez-faire* approach embodied in light-touch regulations.⁶⁰ This variability contrasts with the regulation of

see, for example, Yuliya Guseva, *The Leviathan of Securities Law in Crypto-Offerings: A Cost-Benefit Analysis* (Feb. 1, 2021) (unpublished manuscript) (on file with author). See also Harvey Pitt & Karen L. Shapiro, *Securities Regulation by Enforcement: A Look Ahead at the Next Decade*, 7 YALE J. ON REGUL. 149, 207 (1990) (discussing insider trading enforcement); Davis, *supra* note 47, at 718 (discussing how the Comptroller often conceals opinions in denying applications).

57. Pitt & Shapiro, *supra* note 56, at 184–89; Guseva, *supra* note 56, at 12–14. See also Hester Peirce, Comm’r, U.S. Sec. & Exch. Comm’n, SECret Garden: Remarks at SEC Speaks (Apr. 8, 2019), <https://www.sec.gov/news/speech/peirce-secret-garden-sec-speaks-040819> [<https://perma.cc/VA98-JYPE>] (discussing the complexity of securities laws and the role of informal rules).

58. Guseva, *supra* note 56, at 11 n.46 and accompanying text; Paragon Order *infra* note 198 and accompanying text.

59. Jackson, *supra* note 14, at 369 (“The great advantage of functional definitions, as compared to formal ones, is that they allow jurisdictional lines to track more closely the policies that motivate our regulatory structures.”); Guseva, *supra* note 56, at 41–45 (discussing relevant arguments). See also *Basic Inc. v. Levinson*, 485 U.S. 224, 230–31, 253 (1988) (discussing the evolution of Rule 10b-5 jurisprudence, the private cause of action, and the definition of “materiality”).

60. See AM. BAR ASS’N, *DIGITAL AND DIGITIZED ASSETS: FEDERAL AND STATE JURISDICTIONAL ISSUES* ii (2020), https://www.americanbar.org/content/dam/aba/administrative/business_law/buslaw/committees/CL620000pub/digital_assets.pdf [<https://perma.cc/J76E-6W8D>] [hereinafter ABA Digital Assets Report] (providing a “comprehensive explanation of federal and state laws that may apply to the creation, offer, uses, and trading of digital assets in the United States, along with summaries of key initiatives outside the United States”); GLOBAL LEGAL INSIGHTS, *BLOCKCHAIN LAWS AND REGULATIONS 2021* (2020), <https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations> [<https://perma.cc/A6S6-PFE8>] (summarizing cryptocurrency

legacy financial markets where the relative standardization, unification, and coordination of regulations were achieved over the years through multiple international organizations, international clubs such as G20, informal cooperation among regulators, and memoranda of understanding.⁶¹

To name a few examples of the current variability in crypto, the restrictive regulations category is demonstrated by the Chinese approach that essentially interdicted digital-asset trading.⁶² An example of enabling regulations is Malta, a country that has seen a rise of digital-asset firms following its clearly identified pro-innovation strategy.⁶³ A version of modern *laissez faire*—the light-touch regulation—was pursued in Singapore with some success.⁶⁴

The United Kingdom, whose capital markets traditionally rivaled those in the United States, is an interesting comparative case study. The United Kingdom's approach may be assigned to the categories of experimental and enabling. For instance, to promote experimentation, the Financial Conduct Authority ("FCA") had championed a global sandbox, which the U.S. federal regulators later joined.⁶⁵ The FCA also warned consumers that some digital assets were unregulated, while others were classified as regulated.⁶⁶ This simplified framework contrasts with the *ad hoc* fact-intensive analysis under the *Howey* test. On the one hand, the FCA, just like the SEC, states that it employs a case-by-case

regulations over 21 jurisdictions). See also Dirk A. Zetzsche et al., *Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. & FIN. L. 31 (2017) (comparing multiple fintech regulatory initiatives); Wulf A. Kaal, *Initial Coin Offerings: The Top 25 Jurisdictions and Their Comparative Regulatory Responses (As of May 2018)*, 1 STAN. J. BLOCKCHAIN L. & POL'Y 41 (2018) (analyzing and comparing regulatory regimes in the 25 largest ICO jurisdictions by market cap); Philipp Maume & Mathias Fromberger, *Regulation of Initial Coin Offerings: Reconciling U.S. and E.U. Securities Laws*, 19 CHI. J. INT'L L. 548 (2019) (arguing that E.U. financial markets law regarding ICOs, "if applied correctly," would substantially align with the legal frameworks used by the SEC); Nareg Essaghoolian, *Initial Coin Offerings: Emerging Technology's Fundraising Innovation*, 66 UCLA L. REV. 294 (2019) (providing an overview of various regulators).

61. For discussion of international regulation and cooperation in this area, see Pierre-Hugues Verdier, *The Political Economy of International Financial Regulation*, 88 IND. L.J. 1405 (2013); Chris Brummer, *How International Financial Law Works (and How It Doesn't)*, 99 GEO. L.J. 257 (2011); Eric J. Pan, *Challenge of International Cooperation and Institutional Design in Financial Supervision: Beyond Transgovernmental Networks*, 11 CHI. J. INT'L L. 243 (2010); Mark Lang et al., *Regulatory Cooperation and Foreign Portfolio Investment*, 138 J. OF FIN. ECON. 138, 138–40 (2020) (discussing cooperation and memoranda of understanding among securities regulators); Roger Silvers, *Cross-Border Cooperation Between Securities Regulators*, 69 J. ACC. & ECON. 1, 4–7 (2019) (discussing improving regulatory cooperation and enforcement and finding a positive effect on liquidity).

62. See, e.g., ABA Digital Assets Report, *supra* note 60, at 337–39 ("Starting in 2017 . . . China significantly restricted its private cryptocurrency industry."); Dirk A. Zetzsche et al., *The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators*, 60 HARV. INT'L L.J. 267, 305–09 (2019).

63. ABA Digital Assets Report, *supra* note 60, at 321–22.

64. *Id.* at 335–36. See also Alex Gao, *Singapore Will Not Regulate Cryptocurrencies*, *Singapore Official Says*, COINTELEGRAPH (Oct. 27, 2017), <https://cointelegraph.com/news/singapore-will-not-regulate-cryptocurrencies-monetary-authority-of-singapore-official-says> [<https://perma.cc/PPN9-AMUA>].

65. *Global Financial Innovation Network (GFIN)*, *supra* note 12. See also Zetzsche et al., *supra* note 60, at 38–47 (reviewing regulatory approaches and sandboxes).

66. FIN. CONDUCT AUTH., GUIDANCE ON CRYPTOASSETS: FEEDBACK AND FINAL GUIDANCE TO CP 19/3 4, 9–18 (2019), <https://www.fca.org.uk/publication/policy/ps19-22.pdf> [<https://perma.cc/F7XL-69W5>]. See also STUART DAVIS ET AL., BLOCKCHAIN AND CRYPTOCURRENCY REGULATIONS 2021 | UNITED KINGDOM (2021), <https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regulations/united-kingdom> [<https://perma.cc/BW25-YHE7>] (reviewing the legal and political landscape for cryptocurrencies in the U.K.).

analysis. On the other hand, the pellucid simplicity of the classification of digital assets into the two buckets of regulated and unregulated is evident.

In making its determinations, the FCA does not focus on the level of decentralization, the intended and actual use, or the continuous efforts of asset promoters to develop an operational platform, *i.e.*, the mainstays of the *Howey* test relied upon by the SEC.⁶⁷ The clincher under the FCA's approach is that unregulated tokens do "not provide rights or obligations akin to specified investments (like shares, debt securities and e-money)."⁶⁸ Even when in 2020 the FCA deviated from its experimental philosophy by limiting access of retail consumers to crypto-derivatives,⁶⁹ this policy pivot did not sacrifice clarity, and the new rule was equally unambiguous.

As the crypto-industry and technology have yet to reach homeostasis, these four approximations of regulatory choices are not static but dynamic. Major jurisdictions such as South Korea lifted their previously issued bans on cryptoassets and/or passed more enabling statutes for crypto trading.⁷⁰ In 2019–2020, Singapore moved toward ensuring more regulatory certainty through licensing requirements and better consumer protection, although it mainly preserved its light-touch approach. Its new Payment Services Act⁷¹ provided "a forward looking and flexible framework for the regulation of payment systems and payment service providers"⁷² and created a licensing regime for crypto-exchanges and e-wallet providers.⁷³

The U.S. SEC does not directly fit within these four identified strategies: it is neither highly restrictive, nor experimental, enabling, or laissez-faire (*i.e.*, light-touch).⁷⁴ Compared with many of its foreign homologues and the U.S. commodity regulator, the CFTC, the SEC has proven less amenable to experimentation. For instance, it skeptically rejected or delayed registration applications filed by crypto-ETFs and crypto-exchanges.⁷⁵

67. DAVIS ET AL., *supra* note 66. The FCA stated that unregulated tokens "can be centrally issued, decentralised, primarily used as a means of exchange, or grant access to a current or prospective product or service. . . . [They can] be used in one or many networks or ecosystems They can be fully transferable or have restricted transferability." FIN. CONDUCT AUTH., *supra* note 66, at 34.

68. FIN. CONDUCT AUTH., *supra* note 66, at 34.

69. Press Release, Fin. Conduct Auth., FCA Bans the Sale of Crypto-derivatives to Retail Consumers (June 10, 2020), <https://www.fca.org.uk/news/press-releases/fca-bans-sale-crypto-derivatives-retail-consumers> [<https://perma.cc/P2YC-CWEQ>].

70. Camila Russo, *Two Large Crypto Hubs Get Regulatory Breakthroughs*, THE DEFIANT (Mar. 5, 2020), <https://thedefiant.substack.com/p/new-ey-led-protocol-provides-defi> [<https://perma.cc/9YC3-VQ5Z>].

71. *Payment Services Act*, MONETARY AUTH. SING. (Apr. 15, 2019), <https://www.mas.gov.sg/regulation/acts/payment-services-act> [<https://perma.cc/3F7K-VHT8>].

72. *Id.*

73. Chanyaporn Chanjaroen & Joanna Ossinger, *New Singapore Law Allows Global Crypto Firms to Expand Locally*, BLOOMBERG (Jan. 27, 2020, 9:59 PM), <https://www.bloomberg.com/news/articles/2020-01-27-singapore-launches-new-regime-for-cryptocurrency-payments-firms> [<https://perma.cc/NQ2J-RUL2>].

74. The United States has a comparatively fragmented system of financial regulation, which relies on separate federal securities, banking, and commodity regulators and a layer of state regulatory agencies. These agencies pursue different approaches to the industries and activities, including crypto and fintech, within their respective jurisdictions. *See, e.g.*, Essaghoolian, *supra* note 60, at 318–27 (providing an overview of various regulators); ABA Digital Assets Report, *supra* note 60, at 69–167, 276–88 (summarizing U.S. securities, commodity, and banking regulations).

75. *See Alternative Trading System ("ATS") List*, U.S. SEC. & EXCH. COMM'N., <https://www.sec.gov/foia/docs/atlist.htm> [<https://perma.cc/58MP-B9NT>] (Feb. 26, 2021) (listing only a limited number of crypto-exchanges, such as Coinbase Securities and tZERO ATS, LLC). Coinbase, for instance,

At the same time, it has not halted market experimentation but created a separate office to serve as its principal center of expertise—the Strategic Hub for Innovation and Financial Technology (“FinHub”).⁷⁶ Valerie A. Szczepanik, a highly respected expert, was appointed Senior Advisor for Digital Assets and Innovation to lead FinHub in 2018. In addition, the SEC created a separate Cyber Unit within the Enforcement Division and the Retail Strategy Task Force.⁷⁷ In December 2020, FinHub became a standalone office of the SEC, strengthening its effort to “continue to lead the agency’s work to identify and analyze emerging financial technologies . . . and engage with market participants”⁷⁸

Despite its presumably already considerable expertise, and in contrast to other countries, the SEC has yet to engage in rulemaking on crypto and fintech.⁷⁹ Instead, from mid-2017 to the present, the SEC has been demanding that parties distributing and facilitating trading in digital assets that may fall under the investment contract test comply with the existing registration and exemption regulations and engage with the staff. This applies to issuers of digital assets that can possibly be qualified as securities, as well as gatekeepers such as crypto-exchanges, i.e., online trading platforms on which coins and tokens are listed and traded.⁸⁰ In reliance on the broad and functional definition of the term “security,” the SEC brought actions in court and in administrative proceedings where it requested (and received) the highest penalties and disgorgement compared with the enforcement programs of other major regulators.⁸¹

expressed its interest in becoming an ATS as early as mid-2018, and Coinbase Securities was included on the list in August 2019. See Asiff Hirji, *Our Path to Listing SEC-Regulated Crypto Securities*, COINBASE BLOG (June 6, 2018), <https://blog.coinbase.com/our-path-to-listing-sec-regulated-crypto-securities-a1724e13bb5a> [<https://perma.cc/KB7K-NXCN>] (announcing Coinbase’s intention to acquire an ATS). The SEC consistently rejected ETF applications. See, e.g., Dean Seal, *SEC’s Latest Bitcoin ETF Rejection Draws Dissent, Frustration*, LAW360 (Feb. 28, 2020, 9:18 PM), <https://www.law360.com/articles/1247886/sec-s-latest-bitcoin-etf-rejection-draws-dissent-frustration> [<https://perma.cc/V96C-ECH3>].

76. *FinHub: Strategic Hub for Innovation and Financial Technology*, U.S. SEC. & EXCH. COMM’N., <https://www.sec.gov/finhub> [<https://perma.cc/HV8U-DRBB>] (Jan. 8, 2021).

77. See, e.g., U.S. SEC. & EXCH. COMM’N, ANNUAL REPORT DIVISION OF ENFORCEMENT 3 (2018), <https://www.sec.gov/files/enforcement-annual-report-2018.pdf> [<https://perma.cc/CN83-U744>] (discussing the creation of the new Cyber Unit and the Retail Strategy Task Force).

78. Press Release, U.S. Sec. & Exch. Comm’n, SEC Announces Office Focused on Innovation and Financial Technology, Release 2020-303 (Dec. 3, 2020), <https://www.sec.gov/news/press-release/2020-303> [<https://perma.cc/23QU-G2XG>].

79. Instead, the staff issued the Framework, for example. SEC FRAMEWORK, *supra* note 1.

80. See, e.g., *Statement on Digital Asset Securities Issuance and Trading*, U.S. SEC. & EXCH. COMM’N (Nov. 16, 2018), <https://www.sec.gov/news/public-statement/digital-asset-securities-issuance-and-trading> [<https://perma.cc/968J-J6JS>] [hereinafter *Statement*] (giving examples of online trading platforms).

As this article was going to print, the SEC’s Division of Examinations issued a separate Risk Alert for securities exchanges, investment advisers, broker-dealers, and transfer agents. *The Division of Examinations’ Continued Focus on Digital Asset Securities*, SEC DIVISION OF EXAMINATIONS: RISK ALERT (Feb. 26, 2021), <https://www.sec.gov/files/digital-assets-risk-alert.pdf> [<https://perma.cc/E24K-S8G3>]. In keeping with the longstanding crypto-policy of the SEC, the Risk Alert does not ensure definitional clarity with respect to what is and is not a “digital-asset security.” Instead, the Alert observes, *inter alia*, that “[a] particular digital asset may or may not meet the definition of ‘security’ under the federal securities laws.” *Id.* n.1.

81. Eakeley & Guseva, *supra* note 55.

IV. THE SEC ENFORCEMENT PROGRAM: AN EMPIRICAL ANALYSIS

This Part will demonstrate that the SEC's crypto-enforcement program has been extensive. I urge the reader, however, to avoid making hasty assessments and concluding that the Commission overemphasizes enforcement and investor protection in crypto and fintech. The purposes of the SEC's enforcement-heavy policy cannot be analyzed in a vacuum but must be deconstructed in light of the agency's objectives. By law, the SEC pursues the triadic mission of protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation.⁸² Recall that the SEC's statutory goals in fintech effectively translate into the interplay of protecting market integrity while supporting market innovation and proceeding through clear rules.⁸³

An all-out enforcement policy relying on the broad and functional *Howey* test may seem to prioritize market integrity and investor protection, suggesting a heavy-handed approach in pursuit of only one statutory objective. At the same time, this sweeping conclusion would be incomplete. While this Part indeed reveals that enforcement actions broadly targeted primary and secondary digital-asset markets, the following Parts will explore how the SEC's enforcement program not only strategically promoted deterrence and compliance under the "investor protection" mantra, but also ensured regulatory predictability and attempted to avoid undermining innovation.

In this Part, we begin with a detailed breakdown of SEC enforcement. To examine crypto-enforcement, my research assistants and I reviewed all actions initiated by the Commission between mid-2017 and December 31, 2020. The timeframe's starting point was the date of the DAO Report in which the SEC communicated for the first time its policy on cryptoassets as securities.⁸⁴ My research team and I surveyed the Cyber Enforcement Actions reported on the SEC's website,⁸⁵ manually searched dockets for additional data on Bloomberg Law, and reviewed SEC enforcement releases and Annual Reports using a set of search words.⁸⁶ I reviewed all complaints, orders, and final decisions.

The scope of crypto-enforcement covered multiple market actors, including issuers of digital-asset securities and various promoters, such as celebrities participating in offerings. Several actions concerned companies that did not offer digital-asset securities but acquired digital assets and/or proposed to enter crypto-related businesses ("crypto-related firms").

82. *About the SEC*, U.S. SEC. & EXCH. COMM'N (Nov. 22, 2016), <https://www.sec.gov/about.shtml#:~:text=The%20mission%20of%20the%20SEC,markets%3B%20and%20facilitate%20capital%20formation> [<https://perma.cc/B566-Z9Q9>] ("The mission of the SEC is to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. The SEC strives to promote a market environment that is worthy of the public's trust.").

83. Brummer & Yadav, *supra* note 16, at 244–46. I agree with Brummer and Yadav that "[e]mbedded in their formal mandates—capital formation, investor protection, competition, and market integrity—is also an interest in developing financial innovation." *Id.* at 246.

84. *Report of Investigation Pursuant to Section 21(a) Of The Securities Exchange Act of 1934: The DAO*, U.S. SEC. & EXCH. COMM'N (July 25, 2017), <https://www.sec.gov/litigation/investreport/34-81207.pdf> [<https://perma.cc/4WKS-MBTK>] [hereinafter *The DAO Report*]. See also *infra* Section VI.B (stating the findings of the SEC in regard to the DAO).

85. *Cyber Enforcement Actions*, U.S. SEC. & EXCH. COMM'N (March 19, 2021), <https://www.sec.gov/spotlight/cybersecurity-enforcement-actions> [<https://perma.cc/Z7QT-PY6Y>].

86. The search words included the following: ICO, Initial Coin Offering, Blockchain, Bitcoin, Crypto, Cryptocurrency, SAFT, Agreement for Future Tokens, Smart Contract, STO, Security Token, Tokens, Digital Asset, Exchange Offering, Coin, Token Offering, and Virtual Currency.

Importantly, the Commission brought actions against gatekeepers such as crypto-exchanges, broker-dealers, an attorney, and an unregistered rating agency. Most defendants and respondents were from the United States, and several were domiciled in offshore jurisdictions, such as the Cayman Islands and the British Virgin Islands, as well as in Canada and Russia.

Table 1 summarizes the data. The results suggest that the highest charges (\$1,358,492,664) were paid by non-U.S. and multijurisdictional companies. *Telegram*, however, accounted for \$1,242,500,000 of the total civil penalties, disgorgement orders, and prejudgment interest. Excluding this outlier, the total disgorgement and penalties paid by the non-U.S. and multijurisdictional firms were about 30% higher than the civil penalties and disgorgement paid by the U.S. firms in the dataset.

Most respondents and defendants were U.S. firms issuing digital-asset securities in the form of tokens and coins. Foreign-based issuers seem to have been charged only in large-scale cases, as is evident from the total amount of penalties (and disgorgement) divided by the number of the defendants and respondents: the average in the sample was \$ 2,924,400 for U.S. issuers and \$13,668,001 for non-U.S.-domiciled and multijurisdictional issuers, excluding Telegram.

Table 1: Market Actors and Charges*

Market Actors	Defendant/Respondent's Domicile			Fines and Disgorgement		
	U S	Non -US	Multi-jurisdiction al	US	Non-US	Multi-jurisdiction al
ATTORNEY	1			\$1,564,509		
BROKER-DEALER	4	2		\$1,885,027	\$185,354	
CRYPTO-EXCHANGE	2			\$543,573		
CRYPTO-RELATED FIRM	12	2	1	\$2,028,957		\$33,505,305
FUND	3	1		\$260,000	\$25,000	
ISSUER	24	5	2	\$70,185,602	\$1,294,663,810	\$29,844,197
RATING AGENCY		1			\$268,998	
PROMOTER	4			\$1,172,950		
Grand Total	50	11	3	\$77,640,618	\$1,295,143,162	\$63,349,502

* The Table includes trading suspensions and securities registration revocation orders issued against 13 crypto-related firms and one digital-asset issuer.

Table 2 provides similar information on pending cases. Just like Table 1, it emphasizes that the majority of defendants and respondents were issuers of digital-asset securities domiciled in the United States. A closer analysis of these actions suggests that the SEC continues to deal with the backlog of cases related to the Initial Coin Offerings (“ICOs”), an offering technique popular among crypto-entrepreneurs in 2017–2019.⁸⁷

Table 2: Cases Pending as of December 31, 2020

Market Actors	Defendant/Respondent's Domicile	
	US	Multijurisdictional
BROKER-DEALER	2	
CRYPTO-RELATED FIRM	1	
FUND	4	1
ISSUER	10	1
PROMOTER	1	
Grand Total	18	2

An interesting finding is that the SEC filed approximately equal numbers of crypto-actions in court and in administrative proceedings.⁸⁸ In the majority of cases, the SEC brought charges not only against the entities but also against their insiders. The SEC sued founders and other insiders mainly in *court* cases, and those cases (a) resulted in more serious *penalties* and disgorgement awards and (b) involved allegations of *fraud*.

87. “An ‘Initial Coin Offering’ . . . is a fundraising event in which an entity offers participants a unique digital asset—often described as a ‘coin’ or ‘token’—in exchange for consideration (most commonly Bitcoin, Ether, U.S. dollars, or other fiat currency). The tokens are issued and distributed on a ‘blockchain’ or cryptographically secured ledger.” Complaint at ¶ 29, SEC v. Kik Interactive Inc., 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sept. 30, 2020).

88. A detailed examination of the pros and cons of the SEC’s choice of forum—administrative proceedings versus federal courts—is outside the scope of this Article. For a sample of this rich literature, see, e.g., Stephen J. Choi & A.C. Pritchard, *The SEC’s Shift to Administrative Proceedings: An Empirical Assessment*, 34 YALE J. ON REG. 1 (2017) (examining the changes in the types of cases brought in administrative and civil proceedings and observing a shift toward administrative proceedings); John Coffee, Jr., *Hobson’s CHOICE: The Financial CHOICE Act of 2017 and the Future of SEC Administrative Enforcement* (2017) https://www.sec.gov/spotlight/investor-advisory-committee-2012/coffee-hobsons-choice-act.htm#_ednref5 [<https://perma.cc/24CA-9SNL>]; Alexander I. Platt, *SEC Administrative Proceedings: Backlash and Reform*, 71 THE BUS. LAW. 1, 20–25 (2015–2016) (summarizing the debate and suggesting that court decisions could provide more certainty); David Zaring, *Enforcement Discretion at the SEC*, 94 TEX. L. REV. 1155, 1161, 1198–63 (2016) (suggesting that administrative law judges focus on policy and procedure rather than the notions of fairness and exploring fairness and due process considerations).

Table 3: Procedural Choices of the SEC and Actions Against Insiders*

Court Cases and Administrative Actions	Category I: Allegations of Fraud ⁸⁹	Category II: Cases Involving Registration Provisions of the Exchange Act (§§ 5&15) and the Securities Act (§5) ⁹⁰	Category III: Other Cases ⁹¹	Total Civil Penalties and Disgorgement Awards
Administrative	10	20	1	\$103,389,963
No insiders involved	4	18	1	\$96,392,699
Insiders charged	6	2	0	\$6,997,264
Cases Filed in Court	14	5	0	\$1,332,047,213
No insiders involved	1	3	0	\$1,251,093,466 (Telegram accounts for 1,242,500,000)
Insiders charged	13	2	0	\$80,953,747
Grand Total	24	25	1	\$1,435,437,176

* Table 3 does not include cases pending as of December 31, 2020. It also excludes trading suspensions and an order revoking the registration of securities of an issuer.

To assess whether the strategy of the SEC was different pre- and post-*Telegram* (the case that produced the highest civil penalties and disgorgement award), I ran two two-sample t-tests with a two-tailed distribution. The results of the t-tests, reported in Appendix I,⁹² suggest that we cannot reject the null hypothesis that the total civil penalties and disgorgement are equal before and after *Telegram*. The p-values indicate that the results are not statistically significant.

89. Securities Act of 1933, Pub. L. No. 73-22, § 17, 48 Stat. 74, 84 (codified as amended at 15 U.S.C.A. § 77q); Securities Exchange Act of 1934, Pub. L. No. 73-291, § 10(b), 48 Stat. 881, 891 (codified as amended at 15 U.S.C.A. § 78j(b)); 17 CFR § 240.10b-5 (2020). If a case included charges of securities fraud under one or both of these provisions, the case was added to Category I.

90. Securities Act of 1933 § 5 (codified as amended at 15 U.S.C.A. § 77e); Securities Exchange Act of 1934 §§ 5, 15 (codified as amended at 15 U.S.C.A. §§ 78e & 78o). If a case did not involve any allegations of fraud and related to one or several of these registration provisions, the case was classified as Category II.

91. Category III consists of the cases that neither concerned fraud under the Securities Acts nor included registration violations. The only case in Category III involved Investment Advisers Act of 1940, Pub. L. No. 76-768, § 203, 54 Stat. 847 (codified as amended at 15 U.S.C.A. § 80b-3).

92. *Infra* Appendix I.

The first test examines the cases against issuers of digital-asset securities and various “gatekeepers” such as crypto-exchanges, broker-dealers, a rating agency, and investment funds (or entities functionally similar to investment funds). The data include total civil penalties and disgorgement awards for the 32 cases initiated before *Telegram* and the 11 cases brought after *Telegram*. The second test provides the results for all actions against the digital-asset issuers in the dataset (20 pre-*Telegram* cases and ten post-*Telegram* cases). Both tests omit the pending cases in the data and exclude *Telegram* itself as a large outlier. The results are not statistically significant.⁹³

By negative implication, since the null hypothesis cannot be rejected at this point, one can merely speculate that some underlying factors could have affected the direction of enforcement; that the SEC became emboldened by its enforcement successes because it had not lost a single crypto-case in court and in administrative proceedings; that the Commission detected some underlying changes in the crypto-market and its caseload; or that *Telegram* was a sizeable and unusual outlier.

Going back to descriptive analysis, the following Chart demonstrates that violations of Section 17 of the Securities Act⁹⁴ and Section 10(b) and Rule 10b-5 of the Exchange Act⁹⁵ were the main allegations. The second major category included violations of Securities Act Section 5 and Exchange Act Sections 5 and 15, i.e., various registration-related provisions.⁹⁶ The third category in the Chart consists of reporting violations,⁹⁷ trading suspensions issued by the SEC pursuant to Section 12(k) of the Exchange Act,⁹⁸ an order revoking registration of securities under Section 12(j) of the Exchange Act,⁹⁹ and violations of the Investment Advisers Act.¹⁰⁰

93. *Id.*

94. Securities Act of 1933, § 17 (codified as amended at 15 U.S.C.A. § 77q).

95. Securities Exchange Act of 1934, § 10(b) (codified as amended at 15 U.S.C.A. § 78j(b)); 17 CFR § 240.10b-5 (2020).

96. Securities Act of 1933 § 5 (codified as amended at 15 U.S.C.A. § 77e); Securities Exchange Act of 1934 §§ 5, 15 (codified as amended at 15 U.S.C.A. §§ 78e & 78o).

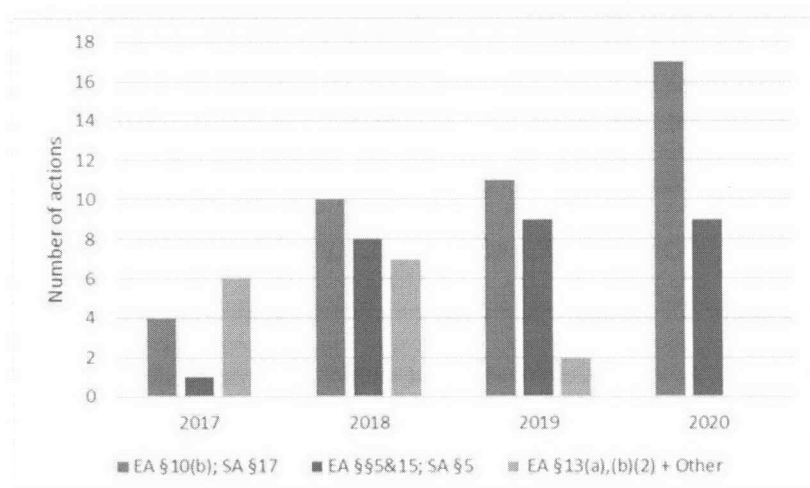
97. Securities Exchange Act of 1934 § 13(a)&(b) (codified as amended at 15 U.S.C.A. 78m).

98. Securities Exchange Act of 1934 § 12(k) (codified as amended at 15 U.S.C.A. 78l(k)). These suspensions were issued mainly in cases involving “crypto-related companies.”

99. Securities Exchange Act of 1934 § 12(j) (codified as amended at 15 U.S.C.A. 78l(j)).

100. Investment Advisers Act of 1940 § 203 (codified as amended at 15 U.S.C.A. § 80b-3).

Chart 1: Crypto-Fraud and Non-Fraudulent Cases*



* The Chart includes cases pending as of December 31, 2020. The cases are classified based on the initial dates of the actions. “EA” stands for “Exchange Act,” and “SA” means “Securities Act.”

An interesting observation is that many issuers of digital-asset securities were charged primarily with the violation of the registration provisions of Section 5 of the Securities Act, i.e., there were no allegations of fraud.¹⁰¹ Namely, out of the 42 issuer-related actions in the dataset, as many as 18 were initiated under Section 5. Insiders were charged in only two out of the 18 cases not raising allegations of fraud.

Such a high number of actions for pure registration violations dovetails with the findings of my study on securities registration and exemptions in crypto-offerings.¹⁰² Active enforcement may explain why cryptoasset issuers slowly began to move away from the ICO model and sought to comply with securities law, mainly in reliance on the exemptions from Section 5, including Regulation D¹⁰³ or, more rarely, Regulation A.¹⁰⁴

The fear of enforcement alone could be a potent incentive to comply. In the case of the SEC’s crypto-enforcement program, this fear should be magnified twofold due to the scale and scope of the Commission’s actions and the breadth of the functional *Howey* test.

V. GAME THEORY AND THE SEC

Despite its active enforcement approach, the Commission is not single-mindedly

101. It is possible that the SEC decided not to charge some defendants with securities fraud in light of various procedural and prosecutorial reasons. Self-evidently, this fact alone does not automatically imply that the firms that failed to register their securities were engaged in fraudulent activities.

102. Guseva, *supra* note 56.

103. 17 CFR § 230.500 et seq. (2021).

104. 17 CFR § 230.251 et seq. (2021). *See also* Guseva, *supra* note 56. Recently, developers found novel ways to fund and promote their projects, particularly in decentralized finance (“DeFi”), which is a development that the SEC has not yet addressed. *Infra* Part VIII.

focused on market integrity and investor protection, which are only one aspect of its ternary statutory objectives. This Part lays out a game-theoretic framework that explains how the SEC can balance innovation, clarity, and integrity, even when the underlying “game” rests on something as vague and all-encompassing as *Howey* and the enforcement approach examined in Part IV.¹⁰⁵ The next Part will support this theory with concrete examples.

Recall that the SEC made its first crypto-related policy statements in 2017 and declared that digital assets could be securities falling under the investment contract category.¹⁰⁶ After that, the interactions between the Commission and the market became a game of complete but imperfect information. The regulator and the market knew their available strategies but did not know in advance what each of them would do.¹⁰⁷

To “solve” this game, we may use the traditional game theory methods of looking at the best strategies of the participating players and the equilibrium “that will result if each player undertakes her best strategy.”¹⁰⁸ Let us review a simplified model¹⁰⁹ in which the strategies available to the Commission and the private firms, which I will call “private players,” can be summarized as follows:

First, the private players would have a binary choice of either cooperating by complying with securities law or not.¹¹⁰ The principal mode of cooperation should be compliance with the pre-sale registration and reporting requirements of the securities

105. Although the analysis in this Part may be used in the context of enforcement outside of crypto and fintech, my primary focus is only crypto- and fintech-related innovations.

106. The DAO Report, *supra* note 84.

107. See DOUGLAS G. BAIRD ET AL., *GAME THEORY AND THE LAW* 10 (Harvard Univ. Press 1994) (defining games with complete but imperfect information, games with complete and perfect information, and games with incomplete information).

108. Ian Ayres, *Playing Games with the Law*, 42 STAN. L. REV. 1291, 1297 (1990) (reviewing ERIC RASMUSEN, *GAMES AND INFORMATION: AN INTRODUCTION TO GAME THEORY* (1989)). The related equilibria concepts are Nash, dominant strategy, and iterated dominant strategy equilibria. The dominant strategy exists “if each player’s strategy is a best response to any strategies of other players. By contrast, the less demanding Nash equilibrium solution concept requires that each player’s strategy be a best response only to the other players’ Nash equilibrium strategies.” *Id.* at 1297 n.36.

109. This simplification does not present a mathematical proof and purposely focuses on “the simplest assumptions” to structure the model. See, e.g., ERIC RASMUSEN, *GAMES AND INFORMATION: AN INTRODUCTION* 14–15 (Blackwell Publishing 4th ed. 2007) (1989). It also ignores the probability with which the players choose one of the available courses of action and does not explore in great detail the factors that the SEC considers in bringing enforcement actions. These factors include, *inter alia*, whether an action has programmatic importance, the publicity and scholarship associated with a popular asset class, such as cryptoassets, the industry at issue or the firm. SECURITIES AND EXCHANGE COMMISSION DIVISION OF ENFORCEMENT, *ENFORCEMENT MANUAL* 4, 15–16 (Nov. 28, 2017), <https://www.sec.gov/divisions/enforce/enforcementmanual.pdf> [<https://perma.cc/TLC3-9C2D>]. See also Jonathan Macey, *Regulation and Scholarship: Constant Companions or Occasional Bedfellows?*, 25 YALE J. ON REGUL. 305 (2008) (comparing the influence of scholarship, mass media, and politics on capital market regulations and enforcement).

110. This theoretical model does not account for issuers who may leave and geofence the United States market and eliminate any risk of exposure to securities law liability. Indeed, a significant number of crypto-firms have attempted to exclude U.S. participants. See, e.g., Goforth, *supra* note 30, at 4 (“It is worth noting that the U.S. is already regarded by many as hostile to crypto entrepreneurs. As a result, many crypto deals are being conducted to exclude participation by or benefit to U.S. based investors. For example, it was reported that in the first quarter of 2019, 86 Initial Coin Offerings (ICOs) were specifically structured to exclude U.S.-based investors, making the U.S. the single country most likely to be excluded from crypto offerings, followed by North Korea, Iran, and Syria.”). However, eliminating the exposure to the U.S. securities law liability regime is a tall order: the SEC has brought actions against foreign crypto-firms, and its extraterritorial jurisdiction is broad. See *supra* Part IV; *infra* Part VI.D; *infra* Part VII. This suggests that the model presented here is of interest to both domestic and foreign firms.

laws,¹¹¹ although some post-sale actions, such as self-reporting to the SEC, could also indicate cooperation.¹¹²

Second, the SEC also could respond by “cooperating” or “not cooperating.” Under the option “cooperate,” the SEC, for instance, could forbear proceeding with enforcement and/or show leniency to a firm that attempted to comply. The reverse of this cooperative behavior would be pursuing a strict enforcement policy (not cooperating). A cooperating SEC would support industry innovation, whereas a tough-enforcer SEC would focus on market integrity, which are both its regulatory objectives. For simplicity, I will call these strategies available to the private players and the SEC “cooperate” and “not cooperate.”

Now, let us turn to the payoffs, i.e., the expected utility from the game,¹¹³ of these two parties. What can they gain from cooperating or not cooperating? For the private player, the payoff is X. X includes the player’s lower risk of a civil penalty, injunctive relief, and/or possible disgorgement of profits, as well as a higher chance that its business project would proceed unimpeded. X also includes a lower risk of enforcement against the founders. In addition, X incorporates a decreased probability of a private follow-on action, i.e., a situation where private plaintiffs file a lawsuit or bring a securities class action following an SEC enforcement action.¹¹⁴

These risks are real. Recall, for instance, that actions against the founders of crypto-ventures have been common.¹¹⁵ Ripple, the target of the SEC’s December 2020 complaint, demonstrates the risks of follow-on actions. Only a month after the SEC had filed its complaint, Ripple already faced redemption requests from its investors.¹¹⁶ In January 2021, the Court of Chancery of the State of Delaware issued a temporary restraining order preventing Ripple from active trading in cryptocurrency XRP and ordered Ripple to maintain a net zero position in its XRP transactions.¹¹⁷ To summarize, X consists of multiple direct and potential payoffs from cooperation. Conversely, a loss of X represents

111. For a discussion of major compliance options available to issuers, see Guseva, *supra* note 56. See also *Statement*, *supra* note 80; *infra* Part VI (providing examples of cooperative actions).

112. It is possible that specific avenues for cooperation would not be entirely clear to a market participant. Its understanding and “cooperation” options could depend on whether the firm had already started its projects and then began searching for *post facto* compliance options and/or whether that specific developer understood the law and the SEC’s policy at the time its project was originated.

113. See, e.g., Ayres, *supra* note 108, at 1296 n.31 (defining payoffs and outcomes of a game).

114. On the interaction between private and public litigation, see, for example, Jennifer Arlen, *Public Versus Private Enforcement of Securities Fraud* 44–47 (2007) (unpublished manuscript) (<https://weblaw.usc.edu/assets/docs/Arlen.pdf> [<https://perma.cc/U5RT-J4FZ>]); Amanda Rose, *Reforming Securities Litigation Reform: Restructuring the Relationship Between Public and Private Enforcement of Rule 10b-5*, 108 COLUM. L. REV. 1301, 1336–37, 1345–48 (2008); Alexander I. Platt, “Gatekeeping” in the Dark: SEC Control Over Private Securities Litigation Revisited, 72 ADMIN. L. REV. 29, 33–40, 48–50 (2020).

115. *Supra* Part IV.

116. See, e.g., Complaint at 33, Tetragon Fin. Grp. Ltd. v. Ripple Labs Inc., C.A. No. 2021-0007-MTZ (Del. Ch. Jan. 7, 2021).

117. See Tetragon Fin. Grp. Ltd. v. Ripple Labs Inc., No. 2021-0007-MTZ, 2021 Del. Ch. LEXIS 47, at *3 (Ch. Mar. 11, 2021) (discussing the temporary restraining order entered in January 2021). As this article was going to print, Ripple moved for summary judgment. The motion was granted. Tetragon Fin. Grp. Ltd. v. Ripple Labs Inc., No. 2021-0007-MTZ, 2021 Del. Ch. LEXIS 52, at *17–18 (Ch. Mar. 19, 2021) (“An enforcement action before a District Court is distinguishable from the other avenues available to the SEC, which would result in an SEC determination. These avenues all end at the same point: a final conclusion that the instrument at issue is a security now and is a security going forward. The Enforcement Action against Ripple may ultimately end in a similar place. But it will arrive there because of the District Court’s decision, not the SEC’s.”).

a cost to a firm.¹¹⁸

The option to cooperate is not free, however. When a firm calculates its cooperation payoff, it must consider that compliance with securities law is costly. Its expected payoff would be reduced by compliance costs,¹¹⁹ whereas if the private player did not comply, it would save on compliance. Let S stand for these costs (or savings in case the firm preferred to not cooperate and not comply).

In some cases, the private player who cooperated would fail to be fully compliant, and the SEC would bring an action. In that case, the private firm could still receive some reduced benefit from its cooperation, examples of which are discussed in the following Part.¹²⁰ Let us denote this reduction as " X/μ ." Since the attempted compliance was unsuccessful, it is also possible that the firm did not spend an optimal amount on compliance, i.e., it expended less than S (e.g., some " S/μ ").

For the SEC, there are the two policy payoffs of supporting innovation (let us denote it "Benefit (Innovation)") and of fiercely protecting investors and market integrity ("Benefit (Integrity)"). Note, however, that there is no direct tradeoff between Innovation and Integrity, and the choice of payoff for the SEC is not binary. For instance, the SEC might lose some Benefit (Innovation) through harsh enforcement, which would suggest an anti-innovation stance, but it could reduce this loss by awarding cooperation credit for attempted compliance to bona fide private players. Indeed, it has done that in the several cases discussed further in this Article.¹²¹ Should the SEC award cooperation credit, the loss of Benefit (Innovation) would be reduced by some factor (" β ").

Note also that the benefits from acting as the "protector" of investors and market integrity (Benefit (Integrity)) could also be reduced if the SEC initiated enforcement against bona fide private players who attempted to comply. For one thing, the potential harm to investors would be lower in those cases because there could be no fraud in the first place.

The second problem is that those bona fide innovative projects could be beneficial to the market, albeit not fully compliant with the securities laws. As the SEC has neither experience nor expertise in assessing the merits of technological innovations, it might be unable to fully grasp if a specific enforcement action would promote market integrity. To reflect this possibility, Benefit (Integrity) is reduced by some factor α . The final factor relating to the Commission's payoff is, of course, the costs of bringing enforcement actions ("Enf.").

Now, we can simplify this game in a normal form representation¹²² and the following bimatrix:

118. It also reflects the fact that the funds would be transferred back to investors and the regulator. While not being a regulatory cost *per se*, the transfer would represent a loss to a target firm. Howell E. Jackson, *Variation in the Intensity of Financial Regulation: Preliminary Evidence and Potential Implications*, 24 YALE J. ON REGUL. 253, 262 (2007) (the penalties "do not generally qualify as regulatory costs since they represent resources transferred to other parties and can be used for other purposes").

119. For a discussion of compliance costs, see Guseva, *supra* note 56.

120. *Infra* Part VI.

121. *Id.*

122. Self-evidently, this normal form game ignores that the parties move in sequence, revealing their preferences. See, e.g., Ayres, *supra* note 108, at 1300 (summarizing normal form games). We will get back to this point later in this Part.

Pic 1. Bimatrix: The Payoffs

SEC	Private Firms	
	Cooperate	Not cooperate
Cooperate	$(X-S)$; Benefit (Innovation)	$(X+S)$; – (Benefit (Innovation)+Benefit (Integrity))
Not cooperate	$(X/\mu - S/\mu)$; (Benefit (Integrity)/ α – Benefit (Innovation)/ β – Enf.)	$-(X-S)$; (Benefit (Integrity) – Enf.)

Let us begin with the upper left corner—“cooperate/cooperate”—when both the private player and the SEC cooperated. The Commission would not initiate an enforcement action in this case and/or would show leniency even if the private player’s good faith attempts at compliance were imperfect (i.e., the SEC would save on enforcement). In “cooperate/cooperate,” the Commission would build rapport with the industry, support innovation, and facilitate capital formation. It would reap Benefit (Innovation), which also should burnish the SEC’s reputation and promote innovative projects developed by bona fide private players.

In “not cooperate/not cooperate” (i.e., the private player did not cooperate/the SEC did not cooperate), the SEC would strictly enforce where the private player ignored securities law and engaged in noncompliant behavior. In this case, the SEC would pursue its objective of investor protection and market integrity generating the payoff of Benefit (Integrity). At the same time, it would also incur enforcement costs (“Enf.”).

Next is “cooperate/not cooperate”: when the firm cooperated and made a good faith attempt at compliance, but the SEC responded with an enforcement action regardless of the private player’s compliance efforts. Here, the SEC would experience a payoff reduction in relation to the costs of enforcement (Enf.). A more important issue, however, is the lower joint payoff from its regulatory objectives of Innovation and Integrity. The payoffs from each depend on the underlying social loss from prosecuting possibly valuable and non-fraudulent projects (α) and the extent to which the SEC appreciates and rewards compliance (β).

Finally, in the upper right corner, we have “not cooperate/cooperate.” Here, the Commission would not initiate enforcement (to wit, it would “cooperate”) despite the private player’s flagrant noncompliance. As a result, the SEC would fail to pursue its regulatory objectives, suffer damage to its reputation, and expose investors, who had been expecting more diligent enforcement, to risk. These negative payoffs are expressed as a reduction of both Benefits of promoting market integrity (and ensuring investor protection as part of it) and supporting legitimate innovations.

The actual payoffs of the Commission would reflect the heterogenous nature of the developers who chose “not cooperate.” For instance, some of them could aim to save on compliance but build valuable projects, while others could be swindlers.¹²³ The SEC,

123. Business actors are heterogenous. “[A]ll corporate actors are bundles of contradictory commitments to values about economic rationality, law abidingness, and business responsibility....” IAN AYRES & JOHN BRAITHWAITE, *RESPONSIVE REGULATION: TRANSCENDING THE DEREGULATION DEBATE* 19 (Oxford Univ. Press 1992). Some firms, obviously, are fraudsters. Yet, it is possible that “we should avoid a premature assumption

however, might be unable to distinguish *ex ante* between the two groups and would risk losing the joint payoff from protecting market integrity and promoting legitimate innovations.

Even though the SEC in “not cooperate/cooperate” would save on enforcement (Enf.), this cannot be a major consideration: the costs of enforcement are fixed, and the Commission enjoys economies of scale due to the considerable expertise and skill of its Enforcement Division. Enforcement costs incurred in the course of penalizing openly non-compliant crypto-firms should be less important compared with a double dent in the reputation and economic damage.

The crypto-community is constantly discussing recent news, which suggests a high publicity level for most enforcement actions and projects. SEC’s mistakes would be visible. In addition, if a firm openly preferred not to comply, it could be engaging in fraud, which would not only lead to harm to investors but also make other crypto-projects tainted by association,¹²⁴ a phenomenon that possibly happened in the ICO market.¹²⁵ The absence of enforcement could thus reduce innovation by depriving legitimate entrepreneurs of access to capital markets.

Altogether, these four payoffs of the Commission can be ranked from the highest to the lowest as follows:

1. The strategy with the highest payoff—the dominant strategy—is “cooperate/cooperate.”
2. The payoff from “cooperate/not cooperate” depends on the underlying projects’ quality and how well the Commission rewards attempts at cooperation.
3. “Not cooperate/not cooperate” generates the pure benefit of protecting market integrity.
4. The option of “not cooperate/cooperate” becomes the SEC’s strictly dominated strategy with the lowest possible payoff.

This ranking of payoffs reflects the efficacy often associated with the “tit-for-tat” strategy¹²⁶ that can be very successful given the matrix of payoffs in enforcement.¹²⁷ My model, however, is more complex than tit-for-tat to the extent that the second SEC payoff is contingent on project quality and acknowledgement of cooperation. Moreover, a private player can be wiped out by SEC enforcement, in which case a specific game is never repeated between the same player and the Commission, and the lessons from the game become more important to the industry as a whole than to the scuttled ship of the original player.

that certain offenders are incorrigible....” *Id.* at 33. All one can state with certainty is that this heterogeneity of firms and their changing nature should complicate SEC’s decision-making. These factors should not affect the underlying regulatory objectives of the Commission (i.e., promoting innovation and protecting market integrity).

124. The spillover effect of fraud and the likelihood of defaults affecting companies with similar characteristics is measurable. *See, e.g.,* Masako Darrough et al., *Spillover Effects of Fraud Allegations and Investor Sentiment*, 37 CONTEMP. ACCT. RSCH. 982, 984–85 (2019) (discussing Chinese companies).

125. *See, e.g.,* Zetzsche et al., *supra* note 62, at 269–71.

126. Tit-for-tat “means that the regulator refrains from a deterrent response as long as the firm is cooperating; but when the firm yields to the temptation to exploit the cooperative posture of the regulator and cheats on compliance, then the regulator shifts from a cooperative to a deterrent response.” AYRES & BRAITHWAITE, *supra* note 123, at 21.

127. *Id.* (“Confronted with the matrix of payoffs typical in the enforcement dilemma, the optimal strategy is for both the firm and the regulator to cooperate until the other defects from cooperation.”).

And what about that private player's expected payoffs? The private player's payoff would be higher in the upper right corner when it did not cooperate and the SEC cooperated: if there were no enforcement and the firm did not incur compliance costs, the firm's payoff would be $X+S$ (i.e., escaping enforcement plus saving on compliance). However, this is not the solution to this game.

The private player should anticipate that the SEC's strictly dominated policy is "not cooperate/cooperate." Therefore, the private firm should respond accordingly¹²⁸ by choosing to cooperate which would give it the benefit of X less the costs (S)¹²⁹ if the SEC also cooperated in turn. This may be the Nash equilibrium of this game.¹³⁰ Everyone happily cooperates, and innovations are chugging along.

The foundation of such "cooperation" is based on the identification of the Commission's strictly dominated strategy. For simplicity, I will ignore other relevant factors, such as the permanence of the SEC's status¹³¹ and its extensive extraterritorial reach,¹³² both increasing the probability of compliance. This does not change the solution of the game.

A refinement is in order, however. In this dynamic game, the players are moving in sequence.¹³³ This particular "game" is a game of cooperation *and* coordination¹³⁴ where the equilibrium, i.e., "an outcome where each individual is playing her best response to what everyone else is doing,"¹³⁵ may not be one single concept,¹³⁶ and the players develop interdependent strategies.¹³⁷

By converting this game into a dynamic, extensive-form game, we can show the parties' sequential moves in a tree diagram where every branch and every node represent different actions and decisions available to the SEC and private parties.

128. BAIRD ET AL., *supra* note 107, at 11–12.

129. An important condition is that $X > S$.

130. "A set of strategies is a Nash equilibrium if no player has an incentive to deviate from her strategy given that the other players do not deviate." Ayres, *supra* note 108, at 1297.

131. The permanence of the SEC's status affects the structure and durability of its interactions with private firms. See, e.g., ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* 182 (Basic Books 1984) (observing that "the durability of the relationship" is key to cooperation).

132. See, e.g., Richard W. Painter, *The Dodd-Frank Extraterritorial Jurisdiction Provision: Was it Effective, Needed or Sufficient?*, 1 HARV. BUS. L. REV. 195, 214–21 (2011) (discussing the broad extraterritorial authority of the SEC and the relevant provisions of the Dodd-Frank Act). Recall also that the SEC routinely initiates actions against firms domiciled outside the United States. *Supra* Part IV.

133. Scholars have observed that in these games the dominant strategy equilibrium is weak, and "the Nash solution concept is weak . . . because it does not test the stability of deviations from the equilibrium path." Ayres, *supra* note 108, at 1304. One way to deal with these problems is by using the concept of subgame perfection. *Id.* at 1305–06. These specific solutions are outside the general scope of this Article.

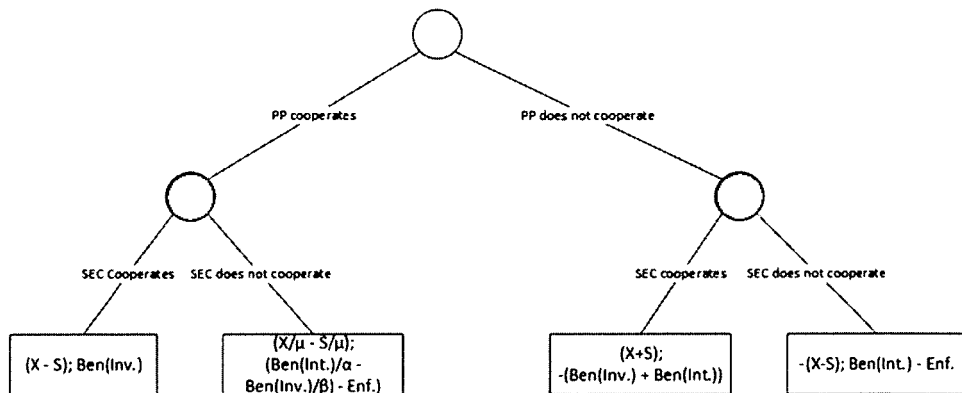
134. Richard H. McAdams, *Beyond the Prisoner's Dilemma: Coordination, Game Theory, and Law*, 82 S. CAL. L. REV. 209, 220–25 (2009) (discussing various coordination games).

135. *Id.* at 212.

136. Instead, there can be multiple equilibria. *Id.* See also Robert B. Ahdieh, *The Visible Hand: Coordination Functions of the Regulatory State*, 95 MINN. L. REV. 578, 627 (2010) ("In coordination games, there is more than one combination of strategies from which neither party is incentivized to shift, absent a parallel shift by the other"). This situation "generates distinct challenges to achieving and maintaining efficiency, both at the front and back end of the coordination process." *Id.* at 628.

137. *Id.* at 613–14.

Pic. 2: Tree Diagram



The tree diagram demonstrates how the private player makes her move anticipating the SEC's response. First, a rational private player would not expect the SEC to play its dominated strategies¹³⁸ and thus would move to cooperate (provided, of course, that its payoff from cooperation exceeded the price of compliance (i.e., $(X-S)>0$)). Second, the SEC would observe what the firm did and make the next move.¹³⁹ The solution of the game may be the same as in the bimatrix: knowing that when it cooperated, the SEC would choose to cooperate, and when it did not cooperate, the SEC would choose to enforce, the private player should choose cooperation.

This solution would also comport with the evolutionary game theory: "law can influence behavior by its labeling power."¹⁴⁰ In openly threatening to label parties as securities law violators, the SEC relies on the descriptive power of the law and affects the strategies of the private players by nudging them to cooperate.

A caveat is that the SEC would move based on its best payoff that consists of a combination of the payoffs from supporting innovation (Benefit (Innovation)) and protecting investors and market integrity (Benefit (Integrity)). True, "cooperate/cooperate" should give it the highest payoff.¹⁴¹ Yet, the SEC *may* receive some reputational, economic, and policy benefits from "cooperate/not cooperate,"¹⁴² i.e., there may be cases where the SEC would prefer to reply with enforcement to attempts to cooperate.

The outcome depends on the values the Commission assigns to Benefit (Innovation)

138. BAIRD ET AL., *supra* note 107, at 306.

139. The related assumptions are that the SEC staff has enough expertise to easily distinguish between compliance and cooperation and non-compliance/non-cooperation and that the firm's choices can be observed by the SEC.

140. McAdams, *Focal Point*, *supra* note 49, at 1691.

141. Scholarship suggests that responding to cooperation with cooperation (or non-cooperation with non-cooperation) is the simple tit-for-tat strategy, which "in maximizing the difference between the punishment payoff and the cooperation payoff, [...] makes cooperation the most economically rational response." It also "holds out the best hope of nurturing the noneconomic motivations of firms to be responsible and law abiding." AYRES & BRAITHWAITE, *supra* note 123, at 26.

142. Importantly, depending on the type of the game, it is possible for a player to pursue mixed strategies leading to a non-cooperating equilibrium. Ahdieh, *supra* note 136, at 634.

versus Benefit (Integrity) in specific circumstances. Namely, the SEC should compare its payoffs from an enforcement response to cooperation as follows: $(\text{Benefit (Integrity)} / \alpha - \text{Benefit (Innovation)} / \beta - \text{Enf.}) > \text{Benefit (Innovation)}$. These values determine whether the SEC would choose to cooperate.¹⁴³

Alas, the respective weights of Innovation and Integrity and the specific factors that tip the balance in favor of one or another may be unknown to the private players beforehand.¹⁴⁴ This incompleteness of information should lead to a number of issues. For one thing, in dynamic games, it is imperative that players have clear *ex ante* expectations¹⁴⁵ about the game. These expectations would, *inter alia*, impact their incentives to cooperate and coordinate.¹⁴⁶ Based on the players' understanding, they would estimate (1) whether the Commission would ignore their cooperation and (2) their subsequent losses in the "cooperate/not cooperate" sequence.

Private players could glimpse this information from the earlier enforcement policies¹⁴⁷ and from the circumstances of previous defendants who had attempted to cooperate.¹⁴⁸ If the SEC ignored cooperation in the past, then the private players would expect to get nothing from their own cooperation (i.e., there would be wasteful attempts at compliance followed by a total loss of X). If one expects nothing from being a good citizen, one may forgo compliance altogether, and a suboptimal equilibrium of *ab initio* non-compliance ("not cooperate") ensues.¹⁴⁹ In that scenario, a private player would aim to save on the legal costs (the value of S) and hope that the SEC would miss her non-compliant behavior.¹⁵⁰

Indeed, the SEC is not omniscient and omnipresent. While it is true that the SEC has devoted more considerable resources to crypto-enforcement than its foreign

143. In that case, the comparative payoffs from its response to a firm's cooperation may be as follows: $(\text{Benefit (Integrity)} / \alpha - \text{Benefit (Innovation)} / \beta - \text{Enf.}) > \text{Benefit (Innovation)}$.

144. In addition, the Commission itself may make mistakes and miscalculate the quality and, consequently, the benefits from specific innovations.

145. See, e.g., Ahdieh, *supra* note 136, at 618–28 (discussing a shift from incentives to expectations).

146. For an excellent overview of the literature on expectations and incentives in coordination and non-coordination games, see Julia Y. Lee, *Gaining Assurances*, 2012 WIS. L. REV. 1137, 1138–40 (2012).

147. This is an important avenue through which private players can receive information. Parties' expectations are related to knowledge and information production. See, e.g., Ahdieh, *supra* note 136, at 618–28.

148. We can also view this situation as a repeated game where multiple private players participate, and every one of them takes into account the SEC's overarching policy leading to the creation and evolution of "conventions." See, e.g., McAdams, *supra* note 49, at 1690 (observing that in repeated games conventions emerge, and "evolution occurs by players . . . learning from experience in the game and . . . switching to strategies that provide greater expected utility" (emphasis omitted)).

149. Ayres and Braithwaite postulate, for instance, that "corporate actors are not just value maximizers—of profit or of reputation. They are also often concerned to do what is right, to be faithful to their identity as a law-abiding citizen, and to sustain a self-concept of social responsibility." AYRES & BRAITHWAITE, *supra* note 123, at 22. Consequently, [t]o reject punitive regulation is naive; to be totally committed to it is to lead to a charge of the Light Brigade. The trick of successful regulation is to establish a synergy between punishment and persuasion." *Id.* at 25. Moreover, "forgiveness is advocated more for its importance in building a commitment to comply in future." *Id.* at 27.

150. In the alternative, the firms could attempt to leave the "game," i.e., the U.S. market, by geofencing U.S. investors, as some crypto-firms have done. See, e.g., Brand Voice, *Binance Finally Blocks United States Users*, YAHOO! FIN. (Nov. 17, 2020), <https://finance.yahoo.com/news/binance-finally-blocks-united-states-115803718.html> [<https://perma.cc/99XM-57VW>]; Daniel Palmer, *Ripple Eyeing Move to London Over XRP-Friendly Stance, CEO Says*, COINDESK (Oct. 23, 2020, 9:53 AM), <https://www.coindesk.com/ripple-eyeing-move-to-london-over-xrp-friendly-stance-ceo-says> [<https://perma.cc/L9T9-QU6G>].

counterparts,¹⁵¹ the probability of SEC crypto-actions must be less than unitary.¹⁵² So is the expected risk of enforcement. The individual player's perception of her liability risk could depend more on the probability of liability than the magnitude of sanctions.¹⁵³ In short, a rational player might reasonably hope to slip through the cracks in the enforcement machine.

In the alternative, the private players could fake "cooperate" by saving on compliance and, once again, hope to be pooled together with and hide among the good firms who spent more on compliance and cooperated. In either case, the private players would deviate from the securities law framework that the SEC aims to promote.¹⁵⁴ The SEC, as a result, would have to respond with more enforcement and spend more resources.

This suboptimal outcome could be avoided if the private players knew the preferences of the Commission (including the values the SEC assigned to the benefits of being perceived pro-innovation and/or pro-enforcement). Due to the uncertainties associated with the functional approach of the *Howey* test, such understanding and knowledge come mainly from SEC enforcement and interpretative statements that signal the comparative values of the Commission's policy objectives. The resulting predictability and strategic clarity may prevent multiple equilibria entailing non-coordination, higher barriers to entry¹⁵⁵ for private firms, and inadequate cooperation between the innovators and the regulator.

At the normative level, the SEC, therefore, should be expected to pay attention to the key cooperation mechanisms, which include not only imposing sanctions but also providing information and building trust.¹⁵⁶ This also suggests that the Commission's enforcement strategies, as an information device, should be consistent, amenable to rational explanation, and built on firm commitments maintaining the regulator's predictability, credibility,¹⁵⁷ and reputation.¹⁵⁸

151. Eakeley & Guseva, *supra* note 55.

152. Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 174–76 (1968).

153. STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW 481 (2004) ("[O]ne often encounters the notion that the probability of sanctions . . . matters more than their magnitude," although there is "the need for caution in interpreting what would appear to be the effect of the probability of sanctions . . .").

154. It is also possible that operating outside the law by using innovative technologies may serve as a positive accelerant of change and legal modernization. Tim Wu's and Pollman & Barry's analyses, for instance, examine these dynamics of regulatory entrepreneurship. Tim Wu, *Strategic Law Avoidance Using the Internet: A Short History*, 90 S. CAL. L. REV. POSTSCRIPT 7 (2017); Elizabeth Pollman & Jordan M. Barry, *Regulatory Entrepreneurship*, 90 S. CAL. L. REV. 383 (2017). Yet, such entrepreneurship is an expensive and enforcement-heavy accelerant that may be unnecessary if the market is prodded towards *ex ante* cooperation as a method of change.

155. Namely, due to the potential of non-coordination, "players may remain on the sidelines for fear of making the wrong choice." Ahdieh, *supra* note 136, at 629.

156. See, e.g., Lee, *supra* note 146, at 1138–39 ("The conventional paradigm assumes that (1) problems of cooperation, as represented by the Prisoner's Dilemma, are solved by changing incentives through sanctions; and (2) problems of coordination . . . are solved by changing expectations, not incentives. A substantial body of scholarship . . . argued that changing expectations—building trust and increasing the perception that others are cooperating—can be far more effective in solving the Prisoner's Dilemma."); McAdams, *supra* note 49, at 1657 ("Solving cooperation problems requires a change in payoffs. Solving coordination problems, however, just requires the right kind of expectations.").

157. Trustworthiness of public agencies does not necessarily translate into their automatic credibility. Credibility is something an agency needs to build by maintaining its reputation. See, e.g., Lee, *supra* note 146, at 1166.

158. The key benefit of the law as a coordination mechanism is the reputation of government agencies.

The following Parts demonstrate that the SEC indeed acted according to these predictions in the first two years of its crypto-enforcement program.¹⁵⁹ Between July 2017 and June 2019, the SEC pursued consistent strategic moves. Despite its reliance on the vague functional definitions, the Commission created a set of predictable “rules of the game” using enforcement as a policy device promoting clarity and balancing Benefits (Integrity) and (Innovation).

VI. EXAMPLES OF STRATEGIC MOVES

A. The SEC as a Brilliant Tactician

The specifics of the SEC’s crypto-enforcement program may be distilled into a distinct collection of several strategic moves. A strategic move is preemptive¹⁶⁰ and steers the other party toward deterrence or compliance with a desired course of action.¹⁶¹ The purpose behind many strategic actions is “to induce the others to take actions different than they would otherwise,”¹⁶² i.e., to deter a firm from making an undesirable move and compel it to comply and cooperate.

Over the past three years, the SEC has masterfully deployed several game-theoretic strategies: commitments, threats, assurances, warnings, penalties, and promises encouraging cooperation and consultations with the staff. For the most part, the SEC’s actions and policies had a high level of consistency and predictability.

B. Commitments and Threats

1. The First Strategic Move

The first action on digital assets was the Section 21(a) investigation report issued in July 2017.¹⁶³ The Report stated that “the U.S. federal securities law may apply to various activities, including [DLT] . . . without regard to the form of the organization or technology used to effectuate a particular offer or sale.”¹⁶⁴ Enforcement may follow non-compliance.

From a game-theoretic perspective, the Report is not only a legal document but also a

McAdams, *supra* note 49, at 1668–72 (discussing the comparative advantages of legal expression). Moreover, expending resources to act on commitments and threats makes them credible. This ensures cooperation in the form of compliance (and/or deterrence). This point has been emphasized in other contexts such as inter-firm behavior. Firms, for instance, “may find it worthwhile to expend considerable resources in crushing a single competitor in order to develop a reputation” and “generate greater deterrence benefits” in several markets where they operate. George A. Hay, *A Confused Lawyer’s Guide to the Predatory Pricing Literature*, in STRATEGY, PREDATION, AND ANTITRUST ANALYSIS 161 (Steven C. Salop ed., 1981).

159. Alas, more recently the regulator has switched its strategy to a possibly suboptimal equilibrium. *Infra* Parts VII & VIII.

160. AVINASH DIXIT & BARRY J. NALEBUFF, THINKING STRATEGICALLY: THE COMPETITIVE EDGE IN BUSINESS, POLITICS, AND EVERYDAY LIFE 127 (1991).

161. BAIRD ET AL., *supra* note 107, at 50–51 (describing extensive form games).

162. DIXIT & NALEBUFF, *supra* note 160, at 183.

163. The DAO Report, *supra* note 84, at 10. *See also Statement*, *supra* note 80.

164. The DAO Report, *supra* note 84, at 10.

collection of the following strategic moves. First, it is a commitment, which is an unconditional first move irreversible in the future.¹⁶⁵ Second, it contains an advance warning, which has an informational purpose and signals to market participants how the regulator will react in response to their actions.¹⁶⁶ Third, it demonstrates a threat, which represents “a promise to carry out a certain action if another player deviates from his equilibrium actions”¹⁶⁷ or “is a response rule that punishes others who fail to act as [the SEC] would like them to.”¹⁶⁸

Consider that a Section 21(a) report does not represent “an adjudication of any fact or issue . . . , nor does it make any findings of violations by any individual or entity.”¹⁶⁹ It also would not invoke the same *Chevron* deference as a formal rule would.¹⁷⁰ The 2017 Report’s major plausible purpose was precisely to make the SEC’s commitment to its objectives public, to lay out a warning, and to outline a conditional response rule, namely, what would happen to issuers of digital-asset securities who did not follow the securities law framework.

I present only a bare-bones description of this case here.¹⁷¹ The DAO operated as a decentralized autonomous organization embedded in a computer code, a smart contract.¹⁷² The decentralized governance structure permitted token-holders to vote on how to spend their capital contributed to the DAO without the involvement of third-party managers or boards of directors.¹⁷³ This organizational structure may be analogized with that of an investment fund, except that there were no asset managers to run the fund. The founders raised capital through the sale of tokens, the funds were supposed to be used for investment in other projects, and profits (“rewards”) would be shared among token-holders.¹⁷⁴

After a successful capital-raising stage, about a third of the DAO’s assets were erased in an attack. All the while, the decentralized organization was dealing with governance issues and how to vote to prevent siphoning off the assets. In fact, effective voting and

165. DIXIT & NALEBUFF, *supra* note 160, at 173–75. See also SCHELLING, *supra* note 19, at 34–39.

166. DIXIT & NALEBUFF, *supra* note 160, at 186–87.

167. RASMUSEN, *supra* note 109, at 118.

168. DIXIT & NALEBUFF, *supra* note 160, at 125.

169. The DAO Report, *supra* note 84, at 2 n.2.

170. See generally *Chevron U.S.A. Inc. v. Nat. Res. Def. Council*, 468 U.S. 1227 (1984) (setting forth the legal test for granting deference to a government agency’s interpretation of a statute).

171. For a detailed description and analysis of the facts, see, e.g., Usha R. Rodrigues, *Law and the Blockchain*, 104 IOWA L. REV. 679, 699–707 (2019).

172. See, e.g., *If Rockefeller Were a Coder*, *supra* note 2, at 379–88 (describing the functions and usage of a smart contract and a decentralized autonomous organization primer). See also Aaron Wright & Primavera De Filippi, *Decentralized Blockchain Technology and the Rise of Lex Cryptographia* 2–3 (Mar. 10, 2015) (unpublished manuscript) (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2580664) [<https://perma.cc/3WMK-4UVD>] (describing how blockchain technology enables self-executing smart contracts); Kevin Werbach & Nicolas Cornell, *Contracts Ex Machina*, 67 DUKE L.J. 313, 338–50 (2017) (examining the nature, evolution, and utilization of smart contracts). See also Rodrigues, *supra* note 171, at 681, 700–702. See also Florian Möslin, *Legal Boundaries of Blockchain Technologies: Smart Contracts as Self-Help?*, in DIGITAL REVOLUTION – NEW CHALLENGES FOR LAW 313 (Alberto De Franceschi et al. eds., 2019) (defining a self-executing complete smart contract).

173. For an overview of DAOs’ operations and structure, see Christoph Jentzsch, *Decentralized Autonomous Organization to Automate Governance* 1–2 (2016) (unpublished manuscript) (<https://lawofthelevel.lexblogplatformthree.com/wp-content/uploads/sites/187/2017/07/WhitePaper-1.pdf>) [<https://perma.cc/4GR5-K73Y>].

174. The DAO Report, *supra* note 84, at 6.

decision-making remain an issue in decentralized governance.¹⁷⁵

The founders of the DAO finally endorsed a change in the Ethereum protocol, “hard fork,” which allowed the investor contributions to be transferred to a recovery address.¹⁷⁶ The attack exhibited technological vulnerabilities of decentralized organizations and garnered considerable public attention. Most importantly, it attracted the attention of the SEC.

The SEC applied the “investment contract” definition explicated in *Howey*¹⁷⁷ to the DAO project and its digital assets. Recall that this iconic decision was delivered in the zeitgeist of the mid-20th century and has several prongs that all must be satisfied.¹⁷⁸ The DAO Report, having almost summarily disposed of several *Howey* prongs, spent several pages on the prong that is less obvious in decentralized governance—promoters’ pre-offering and post-offering efforts.¹⁷⁹ Those efforts included, *inter alia*, selecting a group of sophisticated persons to whitelist investment proposals for further submission to tokenholders for approval.¹⁸⁰ This, theoretically, implicated the collective action problem, agency costs, information asymmetry, and other typical risks conceptualized by Berle and Means almost a century ago¹⁸¹ and handled through the safety net of the federal securities laws.¹⁸² In the end, the breadth of the *Howey* interpretation of the term “investment contract” allowed the SEC to gain a foothold in crypto and firmly assert that tokens could be securities within its jurisdiction.

2. Extending the Game to New Assets

Within several months, the SEC expanded its foothold to digital assets with characteristics different from those in the DAO Report. In the next momentous case, *Munchee*, the SEC ratcheted up its procedural approach and issued a cease-and-desist order under Section 8A of the Securities Act.¹⁸³ The Commission, however, did not impose a

175. For examples of governance and voting issues, see, e.g., Grace Rebecca Rachmany, *The Good, the Bad and the DAOs Only a Founder Could Love in 2020*, COINDESK (Dec. 18, 2020, 7:00 AM), <https://www.coindesk.com/daos-2020-good-bad-ugly> [<https://perma.cc/9LMY-MGAA>]. See also Brady Dale, *Uniswap’s Retroactive Airdrop Vote Put Free Money on the Campaign Trail*, COINDESK (Nov. 4, 2020), <https://www.coindesk.com/uniswap-dharma-retroactive-uni-airdrop-defi-governance> [<https://perma.cc/PA75-GBQK>] (describing an instance of governance frictions in Uniswap).

176. The DAO Report, *supra* note 84, at 9.

177. SEC v. W.J. Howey Co., 328 U.S. 293, 298–99 (1946). See also *supra* Part II; Eric C. Chaffee, *Securities Regulation in Virtual Space*, 74 WASH. & LEE L. REV. 1387 (2017) (examining how federal securities regulation should be applied to virtual assets).

178. *Howey*, 328 U.S. at 298–99.

179. The DAO Report, *supra* note 84, at 12–15. Notably, if the code ran an organization *after* investors had contributed their capital to the organization, then the post-offering efforts of the promoters might be non-existent, and the profitability of the organization would depend on the factors outside of the control of the promoters of that organization. Moreover, the “managerial” efforts of the promoters would not be essential to the success of the enterprise. For a related discussion, see, e.g., SEC v. Glenn W. Turner Enters., 474 F.2d 476, 482 (9th Cir. 1973); SEC v. Mut. Benefits Corp., 408 F.3d 737 (11th Cir. 2005) (analyzing a combination of pre- and post-purchase managerial activities).

180. The DAO Report, *supra* note 84, at 14–15. See also Rodrigues, *supra* note 171171, at 701–04, 722–24.

181. ADOLF A. BERLE & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* 207–30 (Routledge 1991).

182. *Howey*, 328 U.S. at 301.

183. *Munchee Inc.*, Securities Act of 1933 Release No. 10445, 2017 WL 10605969, at *2 (Dec. 11, 2017)

civil penalty on the issuer in that case. Instead of describing *Munchee* as an instance of deliberate lenience, the absence of a penalty is better explained by applying game-theoretical arguments.

First, *Munchee* can be presented as a case in which the SEC made another *first* move. To be compelling, a strategic move spelling out a conditional response rule and related threats must be clear to the other party.¹⁸⁴ The DAO tokens were similar to investment company securities and differed from *Munchee*'s assets that fell within the nonuniform *utility* token category.¹⁸⁵ A strategic threat is effective if a "response rule [is] in place before others make their moves."¹⁸⁶ The DAO did not provide sufficient guidance to early digital space entrepreneurs and to their attorneys regarding the nature of utility tokens and whether or not they were securities.

From the second perspective, it is possible that the post-DAO *Munchee* moved to "cooperate." Several aspects of this case suggested that the issuer had genuinely believed that it had acted within the parameters of behavior set by the SEC. *Munchee* apparently assumed that it was selling utility tokens that would operate as a means of exchange in future transactions, such as purchases of food in restaurants,¹⁸⁷ and would not implicate the federal securities laws.¹⁸⁸

Moreover, after the SEC staff contacted the company almost immediately after the sales had commenced, *Munchee* promptly refunded the purchase price to investors,¹⁸⁹ and the SEC refrained from imposing a civil penalty. *Munchee*, thus, can be a move that clarified the rules of the "game" and signaled that those private players who cooperated would be rewarded in kind. Since there were clear signs of attempted pre-sale and active post-sale cooperation,¹⁹⁰ the SEC reciprocated by promoting the "cooperate/cooperate" option.

3. Doing Good on the Threats

Once the SEC had made its strategic commitment public through *The DAO* and

[hereinafter *Munchee* Order].

184. DIXIT & NALEBUFF, *supra* note 160, at 181–82.

185. Utility tokens mainly give rights to products or services and access to networks. For a detailed classification, see, for example, Jonathan Rohr & Aaron Wright, *Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets*, 70 HASTINGS L.J. 463, 469–77, 486–87 (2019) (summarizing classifications and providing factors to consider when applying *Howey* to utility tokens). See also *Guidance to Cryptoassets*, FIN. CONDUCT AUTH. 1, 8–11 (2019), <https://www.fca.org.uk/publication/consultation/cp19-03.pdf> [<https://perma.cc/J4S3-5LXS>] (explaining the use of utility tokens).

186. DIXIT & NALEBUFF, *supra* note 160, at 182.

187. *Munchee* Order, *supra* note 183, at *3–4.

188. SANJEEV VERMA ET AL., *MUNCHEE TOKEN: A DECENTRALIZED BLOCKCHAIN BASED FOOD REVIEW/RATING SOCIAL MEDIA PLATFORM 3* (2017), <https://www.theventurealley.com/wp-content/uploads/sites/5/2017/12/Munchee-White-Paper.pdf> [<https://perma.cc/W8UA-TU7G>] (claiming that "a *Howey* analysis has been conducted . . . [and that] the sale . . . does not pose a significant risk of implicating federal securities laws").

189. *Munchee* Order, *supra* note 183, at *6.

190. The firm, possibly bona fide, believed that its actions should not trigger the threat of enforcement communicated to the public earlier. VERMA ET AL., *supra* note 188. As *Munchee* thought it was playing a different game, outside of the compliance parameters set forth by the Commission in the DAO Report, the company did not deliberately opt to "not cooperate."

Munchee, set out a comprehensive response rule, and signaled that private parties should cooperate and comply to be rewarded with reciprocal cooperation, it needed to show that it would not condone violations. For one thing, “the threat, like the unconditional commitment . . . , works by constraining another player’s expectations through the manipulation of one’s own incentives.”¹⁹¹ In addition, the private players are more likely to cooperate when they understand which strategy the SEC will not play—i.e., its strictly dominated strategy of condoning violations.¹⁹² Consequently, the SEC had to publicize that non-cooperation would be met with enforcement and make an example of violators.

A part of this strategy is that a threat has to be believable to be perceived as credible.¹⁹³ Going back to Thomas Hobbs’s *Leviathan* and fast-forwarding three hundred years to Becker and Posner,¹⁹⁴ theory dictates that rules hold “not by the difficulty of breaking them” but by danger.¹⁹⁵ Words and actions of firms are bonds “by which men are bound and obliged: bonds that have their strength, not from their own nature (for nothing is more easily broken than a man’s word), but from fear of some evil consequence upon the rupture.”¹⁹⁶ Deterrence and compliance are achieved by actionable threats, and such threats are inefficacious if the threatening party demonstrably fails to carry them out when the time comes.¹⁹⁷

In November 2018, more than a year after laying out its precise commitment and response rules, the Commission made good on its threat—it responded to two unregistered token offerings by settling with the issuers *and* imposing first civil penalties.¹⁹⁸ In its orders, the SEC cited its “commitment” and related “threat” made in the DAO Report,¹⁹⁹ which was thereby transformed into a redoubtable precedent cited throughout administrative and court decisions in later actions.²⁰⁰

The 2018 decisions were essentially analogous in terms of doctrinal and regulatory analyses, and the following discussion only briefly summarizes them for illustrative purposes. In *AirFox*, respondent, a Boston startup, offered assets that were somewhat similar to the utility tokens in *Munchee*.²⁰¹ The respondent offered to develop the AirTokens that “could be exchanged for free airtime or data from multiple prepaid mobile telecommunications providers,” be ultimately used outside of AirFox’s applications, and

191. SCHELLING, *supra* note 19, at 158.

192. *See supra* Part V.

193. BAIRD ET AL., *supra* note 107, at 59 (discussing various methods to achieve credibility).

194. Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968); Richard A. Posner, *An Economic Theory of the Criminal Law*, 85 COLUM. L. REV. 1193, 1205–14 (1985).

195. THOMAS HOBBS, *LEVIATHAN* 130 (1651).

196. *Id.* at 81.

197. BAIRD ET AL., *supra* note 107, at 65.

198. *Carriereq, Inc., d/b/a Airfox*, Securities Act of 1933 Release No. 33-10575, 2018 WL 6017664, at *1, *6 [hereinafter *Airfox Order*]; *Paragon Coin, Inc.*, Release No. 33-10574, 2018 WL 6017663, at *2 [hereinafter *Paragon Order*].

199. *See, e.g.*, *Airfox Order*, *supra* note 198, at *1, *6.

200. *See, e.g.*, *SEC v. Kik Interactive Inc.*, 2020 WL 5819770, at *4 (S.D.N.Y. 2020); *Balestra v. ATBCOIN LLC*, 380 F. Supp. 3d 340, 356 n. 14 (S.D.N.Y. 2019); Complaint ¶ 23, *SEC v. Blockvest LLC*, No. 1:18CV02287, 2018 WL 4925667 (S.D. Cal. 2018) (suggesting that the DAO Report “put the digital-asset industry on notice that many digital assets are securities and subject to the federal securities laws”); In the Matter of Block.one, Securities Act Release No. 10714, 2019 WL 4793292, at *1 (Sept. 30, 2019) [hereinafter *Release No. 10714*].

201. *Munchee Order*, *supra* note 183, at 183.

serve as “a medium of exchange for mobile data, physical goods, and microlending.”²⁰²

The quintessence of this project was raising capital to develop new products that would ultimately belong to the capital providers and serve as a means of exchange.²⁰³ In a smart contractual move, the offering documents included a consent provision: purchasers represented that they were acquiring tokens with the intent to use them as a medium of exchange and not as investments or securities.²⁰⁴ In other words, the respondent tried to change the game and make a move outside the strategy space demarcated by the Commission, i.e., that tokens with investment contract characteristics were securities regardless of the appellations.

In the second case, Paragon Coin, Inc., the respondent, claimed that its tokens were a “product.”²⁰⁵ Paragon stated that “the ‘lion’s share’ of the offering proceeds would be spent on real-estate acquisition for the contemplated . . . co-working spaces” for cannabis-related businesses, building an ecosystem, and selling and marketing efforts.²⁰⁶ The businesses would later pay for the spaces with the tokens. Token-holders would also be able to vote on project governance decisions.²⁰⁷

In both cases, the firms submitted almost identical settlement offers and agreed to register their tokens as securities under Section 12(g) of the Exchange Act, to file periodic reports under the Exchange Act, and to distribute notices that purchasers were entitled to a remedy of rescission or rescissory damages under Securities Act Section 12(a). These small startups also paid a civil penalty in the amount of \$250,000.²⁰⁸

AirFox and *Paragon* were the first cases where non-fraudulent enterprises paid monetary penalties for failure to register digital-asset securities. The gravity of the penalty vis-à-vis the size of the respondents, as well as their broad undertakings, indicate that both orders were intended to send a policy signal to crypto-markets: the SEC made its threat credible to the other firms by penalizing these two issuers for non-compliance. Moreover, going back to the bimatrix, had the SEC not brought the enforcement actions, it would have played its strictly dominated strategy (“not cooperate/cooperate”), which no rational player would do.

C. Promises and Assurances

To nudge the private players toward *ex ante* cooperation, the SEC used the strategic moves that are the reverse of deterrence-ensuring threats, to wit, promises “offer[ing] to reward other players who act as you would like them to.”²⁰⁹ A relating move is an assurance

202. *Airfox Order*, *supra* note 198198, at *3. The ICO proceeds would fund R&D, a reserve fund, sales and marketing, promotion of the token ecosystem, etc. *Id.* at *2–5.

203. The existing App offered limited functionalities and enabled users to earn loyalty points. *Id.* at *3.

204. The SEC, self-evidently, disregarded these contractual specifics. *Id.* at *3–7. *See also* 15 U.S.C. § 78cc(a) (2019) (providing that waivers of “compliance with any provision of this chapter or of any rule or regulation thereunder, or of any rule of a self-regulatory organization, shall be void”).

205. *Paragon Order*, *supra* note 198, at *4.

206. *Id.* at *3.

207. *Id.* at *3; Cohnen et al., *supra* note 1, at 627 (describing the whitepaper and various problems with Paragon’s project).

208. *Paragon Order*, *supra* note 198, at *11; *Airfox Order*, *supra* note 198, at *9.

209. DIXIT & NALEBUFF, *supra* note 160160, at 182.

informing the other parties how the SEC would respond to their sequential actions.²¹⁰ The SEC communicated its promises and assurances through not only enforcement decisions but also statements on cryptoassets, as well as other practices.

One illustration is the Commission's assurances to provide information and continuous consultations to the market. These statements were made by SEC officials and Commissioners²¹¹ and embedded into the Framework for "Investment Contract" Analysis of Digital Assets²¹² published by FinHub in 2019. The Framework openly welcomed *ad hoc* inquiries and encouraged market participants to engage with the staff.²¹³

The SEC also relied on the tried-and-true procedures of cooperation credits and no-action letters. It has a long-standing policy of encouraging cooperation and self-reporting.²¹⁴ The SEC's impressive Cooperation Program²¹⁵ is a clear case of a strategic *promise*. Gladius, a 2019 target of an SEC enforcement action, demonstrated this promise in action.

Gladius engaged in the development of a network enabling its participants to rent the bandwidth and spare space on their servers to other participants.²¹⁶ The firm issued tokens that served a dual purpose. First, the firm needed financing to finish the work on the project and intended to use the proceeds from the token sale for this purpose. Second, the intended ultimate function of the tokens was to enable network participants to use them as a means of payment within the new autonomous and decentralized service "designed so that once it was operational, content providers would be able to organize and manage their own pools of nodes [and transactions]"²¹⁷ The tokens granted no equity rights with respect to Gladius, the developer.²¹⁸

Were it not for the enforcement action at the capital-raising stage, the tokens would have metamorphosed from the investments in a team of engineers and developers into pure utility tokens granting access to a network and services. It would be a case of asset transformation, which even the first Marxists understood. For example, as Friedrich Engels observed in his work *The Origin of the Family, Private Property, and the State*, in ancient Asia, "the principal article of exchange which the stock raising tribes offered to their neighbors was in the form of domestic animals . . . [C]attle became the commodity by

210. *Id.*

211. Hinman Speech, *supra* note 2525 ("This list [of factors] is meant to prompt thinking by promoters and their counsel, and start the dialogue with the staff"); *Oversight of the Securities and Exchange Commission: Wall Street's Cop on the Beat: Hearing Before the H. Fin. Serv. Comm.*, 116th Cong. (2019), <https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=404235#Wbcast03222017> [<https://perma.cc/K96Z-6G34>].

212. SEC FRAMEWORK, *supra* note 1.

213. *Id.* at 11.

214. The Program dates back to at least the 2001 report from the SEC. *Report of Investigation Pursuant to Section 21(a) of the Securities and Exchange Act of 1934 and Commission Statement on the Relationship of Cooperation to Agency Enforcement Decisions*, U.S. SEC. & EXCH. COMM'N (Oct. 23, 2001), <https://www.sec.gov/litigation/investreport/34-44969.htm> [<https://perma.cc/QZ7Y-L4YY>].

215. *Spotlight on Enforcement Cooperation Program*, U.S. SEC. & EXCH. COMM'N, (Sept. 20, 2016), <https://www.sec.gov/spotlight/enforcement-cooperation-initiative.shtml> [<https://perma.cc/3CU5-SBZJ>].

216. *See, e.g.*, Gladius Network LLC, Exchange Act Release No. 10608, 2019 WL 697993, at *1–4 (Feb. 20, 2019) [hereinafter *Gladius*].

217. *Id.* at *2.

218. Token "purchasers . . . warrant[ed] that ownership of [tokens] granted access to the Gladius Network, but conferred no equity or other rights . . . as to Gladius." *Id.* at *3.

which all other commodities were measured in exchange . . . in short, cattle assumed the functions of money.”²¹⁹ Cryptoassets are just like the modern cattle, except that they are expressed in computer code.

Gladius made good use of the cooperative route: it moved down the tree diagram to “cooperate” by contacting the SEC, self-reporting its possible violation, and submitting an offer of settlement.²²⁰ As predicted by the diagram, the SEC followed up by invoking cooperation credit principles and rewarding this behavior by not imposing a civil money penalty.²²¹ Gladius’ payoff, however, was reduced to the extent that it could have received the full benefit from compliance (X-S), as opposed to this partial benefit from incomplete compliance. This paradigm of partial compliance accompanied by self-reporting was repeated in more recent crypto-related cases.²²²

The next relevant technique is no-action letters.²²³ No-action letters are promises not to recommend enforcement against a requester, *i.e.*, a firm that proactively seeks feedback from the SEC before engaging in a transaction. Since firms could receive more from cooperation (X) if their compliance costs (S) were low, crypto-firms attempted to minimize the need to comply by resorting to the *ex ante* mechanism of no-action letters.

In crypto, the SEC has used this device sparingly, perhaps, because the *Howey* test sweeps broadly and brings multiple instruments within the ambit of securities law. I have found only three crypto-related letters issued as of December 2020, and all three concerned cases of commodities with currency-like features that were outside the broad reach of the functional *Howey* test. The first letter was issued concomitantly with the Framework and described a *de facto* private online club whose participants would pay for air charter services in the fiat currency, U.S. dollars, through a token as an intermediary currency.²²⁴ The second letter was issued in July 2019 to a gaming platform selling “universal gaming tokens” to be used to access games within the issuer’s ecosystem.²²⁵ The third letter, released in November 2020, was broader in scope and concerned a fully functional platform whose tokens could be exchanged on and off the platform, serve as payment for goods and services, and be converted into cash.²²⁶

219. FRIEDRICH ENGELS, THE ORIGIN OF THE FAMILY, PRIVATE PROPERTY, AND THE STATE 194 (Ernest Untermann trans., Charles H. Kerr & Co. 1908).

220. Gladius, *supra* note 216216, at *5–7.

221. Other respondent’s undertakings were similar to *Airfox* and *Paragon* discussed above. Compare Gladius, *supra* note 216216, at *5–7, with *Airfox* Order, *supra* note 198, at *7–9, and *Paragon* Order, *supra* note 198, at *9–11.

222. See, e.g., Soultech, Inc. and Nathan Pitruzzello, No. 3-20071, Securities Act Release No. 10853 (Sept. 25, 2020), <https://www.sec.gov/litigation/admin/2020/33-10853.pdf> [<https://perma.cc/7QYA-MXPJ>].

223. *No Action Letters*, U.S. SEC. & EXCH. COMM’N, <https://www.sec.gov/fast-answers/answersnoactionhtm.html> [<https://perma.cc/CF6F-LMBC>].

224. Letter from James Prescott Curry, Esquire, to Off. of Chief Coun., Div. of Corp. Fin., Sec. & Exch. Comm’n (Apr. 3, 2019), <https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm> [<https://perma.cc/WZ5Z-MSMS>].

225. The firm did not seek capital for “product” development, and the tokens were sold for consumptive and access purposes. *Pocketful of Quarters, Inc.: Response of the Division of Corporation Finance*, U.S. SEC. & EXCH. COMM’N (July 25, 2019), <https://www.sec.gov/corpfin/pocketful-quarters-inc-072519-2a1> [<https://perma.cc/6VSR-87UZ>]; Letter from Lewis Rinaudo Cohen, Esquire, to Off. of Chief Coun., Div. of Corp. Fin., Sec. & Exch. Comm’n (July 25, 2019), <https://www.sec.gov/divisions/corpfin/cf-noaction/2019/pocketful-of-quarters-inc-072519-2a1-incoming.pdf> [<https://perma.cc/9DCS-SN3K>].

226. *IMVU, Inc., SEC Response of the Division of Corporation Finance*, U.S. SEC. & EXCH. COMM’N (Nov.

D. Leniency as a Way to Maximize Payoffs

In the tree diagram, when a respondent is in the “cooperate” node and attempts to comply, the SEC is expected to respond in kind, and the solution of the game is “cooperate/cooperate.” Yet, recall that the SEC has the dual objective of promoting market integrity and supporting capital formation (Benefit (Integrity) and Benefit (Innovation)). The Commission may reply with enforcement (“not cooperate”) to emphasize Integrity even if the private player seeks to cooperate.

In that case, the SEC would not be playing its predicted dominant strategy but, instead, would be expected to minimize its possible losses in order to receive the payoff as close to the optimal as possible. A related inquiry is how the SEC would recalibrate Benefit (Integrity) and Benefit (Innovation) to reduce the losses from selecting the strategy of “cooperate/not cooperate.”²²⁷

The September 2019 *Block.one* case²²⁸ highlights this point. The facts below strongly suggest that Block.one had incorporated the SEC’s position in its offering, i.e., it attempted to cooperate.²²⁹ This Cayman Islands company sought external capital to develop and promote “the EOSIO software, an operating system designed to support public or private blockchains. The goal [was] to increase blockchain transaction speeds, reduce transaction costs, and improve scalability.”²³⁰

In June 2017, i.e., right before the DAO Report, the issuer started a year-long token offering on Ethereum and distributed ERC-20 tokens worth several billion dollars. The offering was closed on June 1, 2018, and the first EOSIO-based blockchain was launched two weeks later.²³¹ According to the SEC, about “330,690 individual wallet addresses held the . . . Tokens, with approximately 75% of all tokens held by 100 wallets.”²³² Some of the token holders were U.S. persons.

The issuer had taken into account the SEC’s stance on digital assets and provided on its website measures blocking U.S. investors from acquiring its tokens, including “blocking U.S.-based IP addresses from accessing the EOS.IO Website token sale page.”²³³ The Token Purchase Agreements also prohibited U.S. persons from purchasing the tokens and stated that such purchases would be “unlawful and render[] the purchase agreement null and void.”²³⁴

Even though the issuer patently had *attempted* to comply, there were planning errors, including the inability to ascertain that all purchasers were not U.S.-based. Together with an uncontrollable secondary market trading, the errors thwarted the issuer’s efforts to

17, 2020), <https://www.sec.gov/corpfin/imvu-111920-2a1> [<https://perma.cc/73PT-JEK5>].

227. Recall that his decision depends on whether the SEC can properly and correctly evaluate the following: $(\text{Benefit (Integrity)}\alpha - \text{Benefit (Innovation)}\beta) - \text{Enf.} > \text{Benefit (Innovation)}$. See *supra* notes 142-143 and accompanying text.

228. Release No. 10714, *supra* note 200.

229. *Id.* at *2-3 (discussing the structure of the offering and how the issuer attempted to block U.S. users).

230. *Id.* at *2. A portion of the offering proceeds were to support a blockchain consulting business, selling, general and administrative expenses, as well as to finance the development of open-source software to help the community. *Id.* at *2-3.

231. *Id.*

232. *Id.* at *2.

233. Release No. 10714, *supra* note 200, at *3.

234. *Id.*

geofence U.S. investors.²³⁵ Block.one's attempts to comply ("cooperate" in the tree diagram and the bimatrix) were thereby not nonexistent but merely insufficient.

The SEC charged the issuer with violations of Section 5(a) of the Securities Act, which requires "that unless a registration statement is in effect as to a security, it shall be unlawful for any person . . . to sell such security through the use or medium of any prospectus or otherwise[.]"²³⁶ As demonstrated in Part IV, the SEC brought many actions for Section 5 violations against companies not engaged in fraudulent activities. So, this aspect of the action was predictable and common.

A more interesting germane observation is that the settlement did not involve the disgorgement of profits from the issuer for the benefit of the investors. Instead, the SEC ordered the respondent to cease and desist from violating Section 5 and pay a civil money penalty in the amount of \$24,000,000.²³⁷ Although taken by itself the amount seems considerable, it is less significant in comparison with the several billion dollars of the proceeds from the offering.²³⁸ It is possible that in showing leniency in the action against this mass-scale project not involving any indicia of fraud, the SEC minimized the reduction in its payoff and balanced its two policy benefits as predicted in Part V.

E. Strategic Use of Uncertainties

The discussed combination of strategic interactions demonstrates that despite the SEC's reliance on the inherently indeterminate definition of "investment contract," the strategy of the SEC was relatively *predictable*. The lack of definitional clarity against this strategic predictability also served a number of adjacent purposes promoting the SEC's regulatory goals. For one, it incentivized market participants to request assurances from the SEC concerning which course of action to take to avoid violations.²³⁹ The SEC had an opportunity to influence projects before issuers launched them.²⁴⁰ By opening new lines of communication, the SEC also created opportunities to "facilitat[e] innovation . . . through direct and simple communication with market participants."²⁴¹

The second and more important outcome was that the approach could help the SEC achieve a form of a separating equilibrium, i.e., an equilibrium where the quality of the digital-asset securities and their developers would be determined *before* the time of sale.²⁴²

235. *Id.* at *3–4.

236. *Id.* at *5. "Block.one [also] violated Section 5(c) of the Securities Act, which states that it shall be unlawful for any person . . . to offer to sell or offer to buy . . . any security, unless a registration statement has been filed as to such security." *Id.*

237. *Id.*

238. Release No. 10714, *supra* note 200, at *2.

239. See *supra* notes 211–213 and accompanying text.

240. *Telegram* is a good example of this dynamic. SEC v. Telegram Grp. Inc., No. 19-cv-9439 (PKC), 2020 U.S. Dist. LEXIS 53846 (S.D.N.Y. Mar. 24, 2020); Defendants' Response in Opposition to Plaintiff's Emergency Application for Preliminary Injunction at 1–2, SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 352 (S.D.N.Y. 2020) (No. 1:19-cv-09439-PKC), 2019 WL 11553248.

241. Brummer & Yadav, *supra* note 16, at 283.

242. See JOHN CIRACE, LAW, ECONOMICS, AND GAME THEORY 270–71 (Lexington Books 2018). "In a separating equilibrium, different type players' choices of different equilibrium strategies reveal their types to the previously uninformed player. In a pooling equilibrium, the different types of informed players choose the same strategy in equilibrium, preventing the uninformed players from deducing their opponents' types." Ayres, *supra* note 108, at 1307.

Revealing *ex ante* the type of players and assets can facilitate asset pricing, help investors make informed decisions about their purchases, and reduce the need for future litigation and enforcement.²⁴³ A separating equilibrium may thus be more efficient than a pooling equilibrium,²⁴⁴ *viz.*, a condition where the quality of goods or the type of the seller cannot be determined before the purchase is made.²⁴⁵ The latter exacerbates investors' pre-purchase confusion and increases the likelihood of future lawsuits, enforcement, and class actions.

Cautious legitimate entrepreneurs seeking not to run afoul of the vaguely defined regulations should be expected to voluntarily reach out to the Commission to *signal* their "good quality,"²⁴⁶ bringing about a separating equilibrium. As such, a rational individual entrepreneur "intends only his own gain [by contacting the SEC], and he is . . . led by an invisible hand to promote an end which was no part of his intention."²⁴⁷ Entrepreneurs' signaling could help the SEC reduce uncertainty as to their quality, decide whether to cooperate or not, and move the market toward compliance with the regulatory objectives.

VII. A WARNING ABOUT DYNAMIC INCONSISTENCY

Unfortunately, the discussed logically predictable strategy is in danger of unraveling in light of the three cases of 2019-2021—*Kik*, *Telegram*, and *Ripple*.²⁴⁸ In all three, regardless of the defendants' attempts to cooperate and the quality of the defendants' business projects, the Commission moved to "not cooperate" and did not exhibit any attempts to minimize the associated payoff loss. The Commission penalized one private player that had attempted to cooperate and was working on a potentially valuable project and one project that had already enjoyed mass adoption. Simultaneously, the SEC showed leniency to a third project that seemed to show fewer attempts at cooperation and had a lower adoption rate.

All three cases were related to alleged securities offerings, unregulated ICOs, and/or Security-Token Offerings ("STOs"), which were offers and sales of digital-asset securities usually under some exemption from the registration provisions of the Securities Act.²⁴⁹

243. "[T]he emergence of pooling and separating equilibria can have profound implications for efficiency and . . . systemic stability and information acquisition. Indeed, the importance of this topic has been noted in the legal and economics literature." Ian Ayres & Joshua Mitts, *Anti-Herding Regulation*, 5 HARV. BUS. L. REV. 1, 6 (2015).

244. Pooling equilibria, of course, are not always suboptimal. For a relevant analysis, see, e.g., *id.* at 24.

245. See CIRACE, *supra* note 242 ("Separating equilibria, where prices of high or low-quality goods . . . each reflect marginal cost production, are usually more efficient than pooling equilibria, where prices reflect the average cost of high and low-quality goods . . ."). See also Ayres, *supra* note 108, at 1307; BAIRD ET AL., *supra* note 107, at 83, 156 (describing pooling and separating equilibria and observing that, even when a separating equilibrium is inefficient, it "may be an unambiguous improvement over the pooling equilibrium because one of the types of informed player is better off and the uninformed player is no worse off").

246. BAIRD ET AL., *supra* note 107, at 89–95 (discussing incentives for voluntary information disclosure).

247. ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 432 (Edwin Cannan ed., 1937) (1776).

248. For a closer look at the cases, see SEC v. Kik Interactive Inc., No. 19-cv-5244 (AKH), 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sept. 30, 2020); SEC v. Telegram Grp. Inc., No. 19-cv-9439 (PKC), 2020 U.S. Dist. LEXIS 53846 (S.D.N.Y. Mar. 24, 2020); Complaint & Demand for Jury Trial, SEC v. Ripple Labs, Inc., 20-cv-10832 (S.D.N.Y. Dec. 12, 2020).

249. See Cohnsey et al., *supra* note 1, at 645 n.259 ("STOs are ICOs in which issuers embrace the security-

Telegram and Kik both settled charges in June and October 2020, respectively, after both had lost in the Southern District of New York.²⁵⁰ Ripple, allegedly, had also attempted to settle before the SEC filed its suit in December 2020 but was unsuccessful.²⁵¹ These three cases can be examined along several analytical dimensions.

The first dimension is why the companies started the projects and whether they were successful. I will provide only indirect but relevant arguments without detailed technical analysis. Telegram's founders apparently were well-established developers²⁵² who "concluded . . . that existing networks such as the Bitcoin and Ethereum blockchains do not have the capability to replace high-volume transaction mechanisms like credit cards and fiat currency"²⁵³ and decided to develop a new blockchain that would solve these issues. The sophisticated parties who trusted Telegram with \$1.7 billion of their money should have expected some positive return on their investment, i.e., they estimated that the project had potential.

Ripple developed its project in 2012–2013 and aimed to distribute the native tokens to achieve "Network Growth" and raise "funds for Ripple Labs operations."²⁵⁴ Since then, XRP had become the third-largest cryptocurrency in the world until the SEC initiated the action that precipitated a collapse of the market price of the currency.²⁵⁵

In contrast to these two firms, as the SEC alleged, Kik was a company that had negative cash flow, did not develop a decentralized economy, the promised services, and an ecosystem until after the public distribution of its digital assets, and viewed the sale of the tokens as a "hail Mary pass" to fund the company's operations and spark the business.²⁵⁶ Its tokens were distributed on Ethereum, i.e., an existing blockchain, and the

like nature of their tokens, adhering to SEC rules governing offers and sales, while adding features of traditional instruments like cash flow or governance rights.").

250. See SEC v. Kik Interactive, No. 19-cv- 5244, 2020 U.S. Dist. LEXIS 181087 (S.D.N.Y. Sept. 30, 2020) (granting the SEC's motion for summary judgement); SEC v. Telegram Grp. Inc., No. 19-cv-9439, 2020 U.S. Dist. LEXIS 53846 (S.D.N.Y. Mar. 24, 2020) (granting the SEC's motion for a preliminary injunction). For the terms of the settlements, see generally Final Judgment as to Defendants Telegram Group Inc. and Ton Issuer Inc., SEC v. Telegram Group Inc., No. 1:19CV09439, 2020 U.S. Dist. LEXIS 112329, at *5–7 (S.D.N.Y. June 26, 2020); SEC Obtains Final Judgment Against Kik Interactive for Unregistered Offering, S.E.C. 20–262, 2020 WL 6156876 (Oct. 21, 2020).

251. Nikhilesh De, *Ripple 'Tried' to Settle With SEC Ahead of XRP Suit, CEO Says*, COINDESK (Jan. 8, 2021, 2:42 PM), <https://www.coindesk.com/ripple-tried-to-settle-with-sec-ahead-of-xrp-suit-ceo-says> [<https://perma.cc/H8JB-QGJA>].

252. This is what the TON Foundation stated in its amicus brief: "[A]ttempts to block [the previous service built by the founders] failed. This is not a bad example of a system built by Nikolai Durov that nobody managed to hack, even the state-backed intelligence agency." Brief of TON Community Foundation as Amici Curiae Supporting Defendants Telegram Group Inc. & Ton Issuer Inc., at 18, No. 1:19-cv-09439-PKC (S.D.N.Y. Feb. 14, 2020). This observation dovetails with Carla Reyes' argument that reputation is important in the developer community. Carla L. Reyes, *(Un)Corporate Crypto-Governance*, 88 FORDHAM L. REV. 1875, 1919 (2020).

253. Complaint at ¶ 37, SEC v. Telegram Grp. Inc., No. 19-cv-9439 (PKC), 2019 WL 5305462 (S.D.N.Y. Oct 11, 2019) [hereinafter Telegram Complaint].

254. Ripple Complaint, *supra* note 22, at ¶ 65.

255. See, e.g., Jeff John Roberts, *Ripple Demands Bitcoin and Ethereum Docs from SEC Amid Legal Fight*, FORTUNE (Jan. 29, 2021, 11:35 AM), <https://fortune.com/2021/01/29/ripple-bitcoin-ethereum-sec-documents/> [<https://perma.cc/8N7J-YSGV>] (describing the collapse of the market price).

256. Complaint at ¶¶ 6–7, 16, 42, 61, SEC v. Kik Interactive Inc., No. 19-cv-05244-AKH, 2019 WL 2365305 (S.D.N.Y. June 4, 2019) [hereinafter Kik Complaint]. Kik denied these allegations and argued that its products had promising existing functionalities. Kik Answer, *supra* note 36, at 16, 69–71. See also Goforth, *supra* note 30,

project had technical difficulties from the start.²⁵⁷ To sum up, the SEC initiated enforcement actions against two large-scale projects (one real and one potential) and one smaller endeavor by an allegedly less successful company.

A relevant criterion is the adoption of the cryptoassets at issue and, consequently, the harm (or benefits) to investors. The *Ripple* case, self-evidently, differs from both *Telegram* and *Kik*—as mentioned above, XRP is a global cryptocurrency traded on multiple exchanges, having the market capitalization of under \$60 billion,²⁵⁸ and integrated (at least according to Ripple) into the services of multiple financial institutions and platforms.²⁵⁹

Telegram's effect on investors was limited to the sophisticated parties who signed the investment agreements with Telegram to finance its new blockchain development project and forked over \$1.7 billion.²⁶⁰ The future adoption of Telegram's tokens remains unknown since the company was enjoined from distributing the tokens upon completion of its development project.

Kik's offering involved both retail and sophisticated purchasers of Kin (Kik's token) who invested about \$50 and \$49 million, respectively, in Kik's smaller project built on an existing blockchain, Ethereum.²⁶¹ In January 2021, three months after the resolution of the case against Kik, the market capitalization of Kin (the tokens developed by Kik) was only about \$65 million.²⁶²

Consequently, the *Ripple* case may produce the most serious financial ramifications for broad swaths of public investors.²⁶³ This point was also emphasized in the letter that was rumored to have been sent to former Chairman Clayton by Professor Grundfest, a former SEC Commissioner himself.²⁶⁴

n.148 (observing that by the time of the court decision in 2020, Kik's ecosystem grew substantially).

257. Kik Complaint ¶¶ 136–41, *supra* note 256. Kik denied these claims. *See, e.g.*, Kik Answer, *supra* note 36, at 8–10, 26–34. For present purposes, however, it is more important to underscore that in bringing the case, the SEC viewed and described Kik as a cash-strapped business seeking capital.

258. Ripple Complaint, *supra* note 22, at ¶ 257.

259. *See, e.g.*, *Q2 2020 XRP Markets Report*, RIPLE (Aug. 3, 2020), <https://ripple.com/insights/q2-2020-xrp-markets-report/> [<https://perma.cc/T3KD-ARVV>] (describing XRP's role). *But see* Ripple Complaint, *supra* note 22, at ¶¶ 332–52 (explaining XRP's application by financial institutions).

260. *See, e.g.*, Hester M. Peirce, *Not Braking and Breaking*, U.S. SEC. & EXCH. COMM'N (July 21, 2020), <https://www.sec.gov/news/speech/peirce-not-braking-and-breaking-2020-07-21> [<https://perma.cc/PH5U-T4BH>] (discussing Telegram's investment agreements).

261. Kik Complaint, *supra* note 256, ¶¶ 12–13, 136.

262. *Kin*, COINMARKETCAP, <https://coinmarketcap.com/currencies/kin/> [<https://perma.cc/XE2G-XDLQ>] (showing the historical market cap of Kin). As this article was going to print, Kin's capitalization increased dramatically. Overall, Kin's market capitalization gyrated wildly. For instance, it was about \$28,000,000 in January 2019, i.e., one and a half years after the asset distribution and several months before the SEC filed its complaint; \$4,000,000 in January 2020; and over \$300,000,000 in March 2021.

263. Self-evidently, a customary counterargument is that cases like *Ripple* may have the positive effects of generating deterrence, promoting issuer disclosure, and thus ensuring future investor protection. As I argued in other work, however, these traditional arguments supporting conventional securities law's disclosure rules and their enforcement may be less relevant in crypto. Namely, there are cases where crypto-issuers' compliance with the conventional mandatory registration and disclosure requirements may fall short of producing material information beneficial to crypto-investors while imposing unnecessary costs on crypto-firms. *See generally* Guseva, *supra* note 56.

264. As reported by *The Block*, Professor Grundfest allegedly warned even "initiating [that] action [would] impose substantial harm on innocent holders of XRP, regardless of the ultimate resolution." Frank Chaparro, *Former SEC Commissioner Says Ripple Lawsuit Will Cause 'Multi-Billion Dollar Losses to Innocent Third*

Ignoring the negative externalities of enforcement, particularly in circumstances not involving allegations of fraud, as is the case here, is out of character for the SEC. The Commission has been known for being mindful of the possible spillovers of enforcement actions onto innocent third parties,²⁶⁵ which shows that the Commission understands the importance of balancing its actions to achieve the overarching objectives of protecting investors and market integrity. *Ripple* does not seem to fully fit this paradigm.

The next set of distinctions is the timing of the actions and defendants' cooperation or noncooperation. Recall that the 2017 DAO Report is the starting point setting the rules of the game. *Ripple* had developed its project in 2012–2013 and begun asset distribution several years before the SEC outlined its position on cryptoassets. Consequently, it could not have moved to "cooperate" beforehand.²⁶⁶

By contrast, Kik's offering took place throughout the summer and fall of 2017, i.e., around the dates of the DAO Report.²⁶⁷ It is unclear from the record whether Kik attempted to thoroughly engage with the SEC in the wake of the DAO Report,²⁶⁸ although it was aware of the uncertainties surrounding the application of the *Howey* test.²⁶⁹ It did, however, contact the Ontario Securities Commission²⁷⁰ to discuss the possible application of the securities laws and thereafter "barred Canadians from purchasing Kin in the public sale."²⁷¹ In the United States, Kik sought to structure the first half of the transaction—the private placement of investment contracts sold to accredited investors—under Regulation D, i.e., an exemption from the registration provisions of the Securities Act,²⁷² while claiming that the public sale of Kin did not involve securities.²⁷³ The SEC deemed both offerings, which were, *inter alia*, very close in time, a single offering (or, in the alternative, integrated

Parties', THE BLOCK (Dec. 23, 2020, 10:14 PM), <https://www.theblockcrypto.com/linked/89164/former-sec-commissioner-says-ripple-lawsuit-will-cause-multi-billion-dollar-losses-to-innocent-third-parties> [<https://perma.cc/9H5H-TRVP>].

265. John C. Coffee, Jr., *Reforming the Securities Class Action: An Essay on Deterrence and its Implementation*, 106 COLUM. L. REV. 1534, 1537 (2006) ("This year, the Securities and Exchange Commission itself recognized this point in the related context of financial penalties, formally acknowledging in a statement of its intended future policy that large financial penalties should be avoided when they will fall inequitably on innocent shareholders.").

266. This is similar to a situation where, in the words of Howell Jackson, innovations outpace regulatory initiatives, "leaving regulators in the unenviable position of having to retrieve the horses once they are out of the barn and already lent out for hire." Howell E. Jackson, *The Nature of the Fintech Firm and its Implications for Financial Regulation* in FINTECH LAW: THE CASE STUDIES 13 (Howell E. Jackson & Margaret E. Tahyar eds., 2020). The same can be said about entrepreneurs facing belated enforcement.

267. The DAO Report, *supra* note 84.

268. Kik Complaint, *supra* note 256, ¶ 111 ("Kik did not make a similar overture with the SEC," after learning that the public sale of its digital assets would implicate securities law in Canada). Kik, however, alleged that it was "not obligated to seek permission directly from the Commission before selling a non-security." Kik Answer, *supra* note 36, at 76.

269. Kik Answer, *supra* note 36, at 66–68.

270. *Id.* at 74–76.

271. Kik Complaint, *supra* note 256, ¶ 110. According to Kik, "the securities laws statutes in each respective country are different, with different regulators, and different case law. Whether or not the TDE would have been a securities violation in Canada is totally irrelevant to whether Kik violated Section 5 of the Securities Act." Kik Answer, *supra* note 36, at 76. Kik, however, retained counsel with expertise in United States federal securities law. *Id.* at 17.

272. 17 CFR § 230.500 et seq. (2020).

273. Kik Answer, *supra* note 36, at 3–6, 12, 18, 67, 129–30.

offerings).²⁷⁴ Under these circumstances, it is likely that the Commission did not view Kik's actions as cooperative behavior.

In contrast to Ripple and Kik, Telegram started its project several months after the DAO Report and aimed to structure the transaction under Regulation D, an exemption from registration.²⁷⁵ It sought to develop its blockchain using the invested funds, which it admitted were raised under investment contracts, and later on to distribute its blockchain's native digital assets as non-securities.²⁷⁶ Telegram was enjoined from distributing the native tokens of its blockchain to the investors and other market participants.²⁷⁷

As is expected from the tree diagram in Part V, Telegram, represented by Skadden Arps, sought to cooperate with the SEC. Telegram claimed that it had been engaged with the SEC for more than a year, as was "consistent with the SEC's publicly stated desire to engage with developers of digital asset technologies."²⁷⁸ The defendant alleged to have sought feedback, produced thousands of documents and several legal memoranda, and even modified its technology in response to the regulator's concerns.²⁷⁹ According to the defendant, the SEC "never stated that it believed Telegram to have been engaged in an 'ongoing violation' of the federal securities laws," nor did it ask the defendant to reschedule the launch.²⁸⁰

Yet, on October 11, 2019, the SEC filed an emergency application for a temporary restraining order preventing Telegram from delivering Grams to investors.²⁸¹ Later on, in March 2020, the United States District Court for the Southern District of New York issued an injunction and barred Telegram from distributing the tokens in the already developed blockchain ready to be launched.²⁸²

Telegram asked the court to clarify the scope of the injunction to exclude non-U.S. parties who entered into the investment contracts "outside the United States through contracts containing foreign choice-of-law provisions."²⁸³ The court denied the application,²⁸⁴ effectively shutting down the project.²⁸⁵

To summarize, in that case, the SEC was in the "cooperate/not cooperate" corner: when the private player moved to cooperate, the SEC responded with non-cooperation.

274. Kik Complaint, *supra* note 256, ¶¶ 11, 159, 198.

275. Brief for Defendants Appellants at *1–2, SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 352 (2d Cir. 2020) (No. 20-1076-cv), 2020 WL 1502476.

276. *Id.*

277. SEC v. Telegram Grp., Inc., No. 19-cv-9439, 2020 U.S. Dist. LEXIS 53846, at *67 (S.D.N.Y. Mar. 24, 2020).

278. Defendants' Response in Opposition to Plaintiff's Emergency Application for Preliminary Injunction at 1–2, SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 352 (S.D.N.Y. 2020) (No. 1:19-cv-09439-PKC), 2019 WL 11553248.

279. *Id.*

280. Telegram Defendants' Answer, *supra* note 36, at 33.

281. See, e.g., Plaintiff Securities and Exchange Commission's Memorandum of Law in Support of its Emergency Application for an Order to Show Cause, Temporary Restraining Order, and Order Granting Expedited Discovery and Other Relief at 1–2, SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 352 (2020) (No. 1:19-cv-09439-PKC), 2019 WL 6704096.

282. SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 252, 382 (S.D.N.Y. 2020).

283. SEC v. Telegram Grp., Inc., No. 19-cv-9439, 2020 WL 1547383, at *1 (S.D.N.Y. Apr. 1, 2020).

284. *Id.* at *2.

285. "In early May 2020, Telegram's Chief Executive Officer, Pavel Durov, announced that the company was dropping the TON blockchain project as a result of the district court's ruling." Goforth, *supra* note 30, at 21.

Importantly, it also failed to maximize the payoff from both of its policy objectives, to wit, promoting market integrity without frustrating potentially productive innovations.²⁸⁶

The final comparative paradigm among the three cases is the seriousness of the charges and penalties. On the first point, all three complaints alleged violations of Section 5 of the Securities Act,²⁸⁷ i.e., there were no allegations of fraudulent conduct by the defendants. Second, the sting of an enforcement action is undoubtedly more painful when the founders and executives' fortunes are on the line. The SEC brought charges against the founders and executives in only one out of the three complaints, namely, against Ripple.²⁸⁸

A germane factor is the seriousness of the penalties requested. In all three cases, the SEC sought to enjoin the defendants from violating Section 5 of the Securities Act. In the complaints against Ripple and Kik, it also requested disgorgement of the ill-gotten gains. However, the fact that the SEC intended to merely enjoin the distribution of the native tokens in *Telegram* effectively would have had the same effect as disgorgement because under the investment agreements with the backers of its project, Telegram was obligated "to return unspent funds to the Private Placement purchasers" if its blockchain did not launch.²⁸⁹ If the blockchain failed to launch, Telegram would be contractually obligated to return the unspent offering proceeds less its costs of development.

The actual settlements with Kik and Telegram were as follows: Kik was enjoined from violating securities law and agreed to pay a civil penalty of only \$5 million, i.e., about 5% of its offering proceeds.²⁹⁰ In *Telegram*, by contrast, defendants were "jointly and severally liable for disgorgement of \$1,224,000,000" and ordered to pay a civil penalty in the amount of \$18,500,000,²⁹¹ which constituted a 73% loss vis-à-vis the total proceeds from the offering. The total penalties and disgorgement in *Ripple* are yet unknown, but in the December 2020 complaint the SEC sought both a civil penalty and disgorgement that was pegged to the full amount of the consideration received by Ripple from 2013 through the present, i.e., \$1.38 billion, and any prejudgment interest.²⁹²

To compare these case dimensions side-by-side, let us assign the following values of:

- a. 1 if a factor applies,
- b. 0 if there is no relevant information,
- c. and -1 if a factor does not apply.

Table 4 puts together project quality, cooperation with the SEC, and mass-scale adoption of the projects as a proxy for the possible harm and/or benefits to investors.

286. See *supra* note 142-143 and accompanying text.

287. Kik Complaint, *supra* note 256, at 48; Ripple Complaint, *supra* note 22, at 69-70; Telegram Complaint, *supra* note 253, ¶¶ 118-21.

288. Ripple Complaint, *supra* note 22, ¶¶ 394-404.

289. Defendants' Memorandum of Law (1) in Support of Their Motion for Summary Judgment and (2) in Opposition to Plaintiff's Application for a Preliminary Injunction at 2, SEC v. Telegram Grp., Inc., 448 F. Supp. 3d 352 (S.D.N.Y. 2020) (No. 1:19-cv-09439-PKC), 2020 WL 4282370.

290. SEC Obtains Final Judgment Against Kik Interactive for Unregistered Offering, S.E.C. 20-262, 2020 WL 6156876 (Oct. 21, 2020). "Kik did not have to return the rest of the amount raised, did not have to shut down the Kin network that was then in development, and was not required to register Kin as a condition of moving forward." Goforth, *supra* note 30, at 29.

291. Final Judgment as to Defendants Telegram Group Inc. and Ton Issuer Inc., SEC v. Telegram Group Inc., No. 1:19CV09439, 2020 U.S. Dist. LEXIS 112329, at *5-7 (S.D.N.Y. June 26, 2020).

292. Ripple Complaint, *supra* note 22, at ¶¶ 1, 12.

Table 4: Project Comparison

	Success/ Business Reputation/ Founders	Cooperation with the SEC	Mass-scale Adoption and Effect on Investors	Total
Kik*	-1	0	0	-1
Telegram	1	1	0	2
Ripple	1	0 (or 1, depending on the nonpublic negotiations in 2019-2020)	1	2 (or 3)

* Kik vigorously disputed the claims that its project was unsuccessful. The coding expresses only the opinion of the SEC in the original complaint.

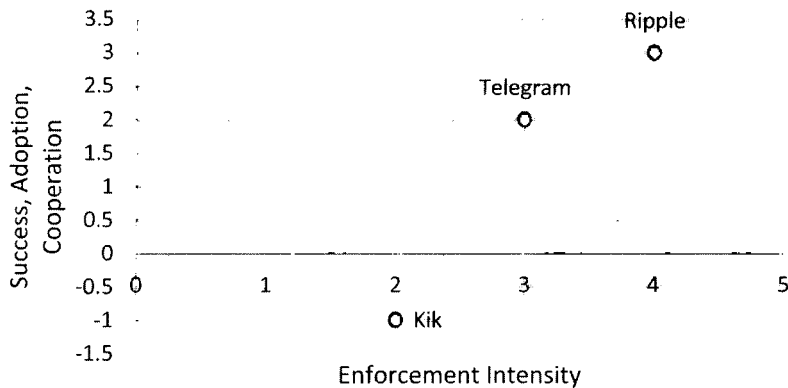
Table 5 distills the strength of the SEC enforcement actions and charges in all three cases.

Table 5: Comparative Enforcement Intensity

	Charges against Founders	Injunction	Fine	Disgorgement	Total
Kik	-1	1	1	-1	2
Telegram	-1	1	1	1	3
Ripple	1	1	1	1	4

We can now plot these factors to show, first, that Ripple, the project with the largest effect on market participants and a mass-scale adoption, may receive the highest penalties. Second, the project that attempted to cooperate and had a good reputation in the community (and could possibly have potential technological success)—Telegram—paid the second-highest penalties. And the third project that (allegedly) had the lowest positive value, was developed by an insolvent company, and lacked mass adoption received the most lenient treatment.

Pic. 3: Comparative Weights



These three enforcement actions represent a departure from the above-described coherent strategy of the Commission. The cases lie outside of the dominant strategy of “cooperate/cooperate” and do not minimize the payoff loss in “cooperate/not cooperate.” Put differently, the SEC ignored cooperation and did not show leniency in enforcement as a way to promote its objective of supporting innovations (by balancing the loss from Benefit (Integrity) and Benefit (Innovation) discussed in Part V).

At bottom, these logical inconsistencies may exacerbate regulatory uncertainty and undermine the positive effects of the SEC’s initial regulatory strategy counteracting the indeterminacy of the functional *Howey* test. For example, making a strategic move only to back off may lead to a loss of “reputation for credibility”²⁹³ and, at the same time, confuse market participants as to what to expect from the SEC and how to calculate their potential payoffs. Take Telegram. As a rational firm, it must have believed that the SEC’s strategic promise (a reward of cooperation) would be acted upon. This promise is valuable to the promisee only to the extent that it trusts that the SEC-promisor will keep it.²⁹⁴ Reneging on a promise and commitment to reward cooperation suggests that the commitment is not credible²⁹⁵ and that the SEC may always change the game or play mixed strategies,²⁹⁶ leading to a possible unraveling of the future cooperation between private firms and the SEC.

As discussed in Part V, future private players would observe SEC actions, update their beliefs, and choose their strategies consistently with the SEC’s choices (or their probability).²⁹⁷ The Commission’s missteps may change the game’s solution to a suboptimal outcome.²⁹⁸ A dynamically inconsistent regulatory approach risks creating a chaotic market,²⁹⁹ as opposed to an environment where market participants have a clear

293. DIXIT & NALEBUFF, *supra* note 160, at 211.

294. *Id.*

295. BAIRD ET AL., *supra* note 107, at 43.

296. *Id.* at 76–77 (discussing dynamic consistency).

297. *Id.* at 87. Typically, players “should take the actions that they believe lead to the highest payoffs, given the actions and beliefs of the other players.” *Id.* at 105.

298. *Supra* Part V.

299. The presumption is that to be effective, a regulatory regime played over time must be dynamically

understanding of the strategy space, incentives, payoffs, and expectations of the participating parties and where the market prefers to cooperate proactively rather than not cooperate at all or spends less on compliance, beyond an optimal level.³⁰⁰

VIII. THE LACK OF STRATEGIC CLARITY AND INNOVATIONS

The problems highlighted in Part VII assume an added importance in the fast-paced world of crypto and fintech because the SEC depends on the innovators' preference for cooperation. Without such cooperation, the SEC may be forced to play a perpetual catch-up game with the market. Recall, for instance, that many enforcement actions summarized in this Article concerned ICOs, even though fintech and crypto-firms have long moved away from the ICO model.

Another relating example is experimenting with governance tokens³⁰¹ which skyrocketed in the second half of 2020. Governance tokens are distributed, *inter alia*, to the participants in decentralized autonomous organizations ("DAOs")³⁰² or decentralized applications such as various DeFi protocols.³⁰³ These tokens provide their holders with the

consistent. BAIRD ET AL., *supra* note 107, at 76.

300. *Supra* Part V. Another argument is that "[a] strategy based mostly on punishment will undermine the good will of actors when they are motivated by a sense of responsibility." AYRES & BRAITHWAITE, *supra* note 123, at 19. By contrast, the predictability of forgiveness and proportionality may elicit a commitment to comply and cooperate in future. *Id.* at 20-27 (discussing the interaction between punishment, persuasion, trust, and the tit-for-tat strategy).

301. There are multiple classifications of tokens based on their legal and functional characteristics. Collomb et al., for instance, observe that tokens "can be used as a means to access a particular product or service (*utility tokens*), as a proxy to another physical or digital asset (*asset-backed tokens*), as a digital representation of an equity share or a stock (*investment tokens*), or even as a right of governance into the project or initiative being funded (*governance tokens*)." Alexis Collomb et al., *Blockchain Technology and Financial Regulation: A Risk-Based Approach to the Regulation of ICOs*, 10 EUR. J. RISK REGUL. 263, 263-64 (2019).

302. For a discussion of how governance tokens may operate in DAOs, enabling voting on projects and changes to the protocols, see, e.g., Yuliya Guseva, *A Conceptual Framework for Digital-Asset Securities: Tokens and Coins as Debt and Equity*, 80 MD. L. REV. 166, 201-07 (2020) [hereinafter Guseva, *A Conceptual Framework*].

303. ALAN COHN & EVAN ABRAMS, DECENTRALIZED FINANCE (DEFI): OVERVIEW (2021), Practical Law W-028-7308 ("DeFi generally refers to blockchain-based financial products and services, grounded in digital assets, decentralized applications (DApps), and smart contracts, which are offered to the public without the oversight or control of a centralized party."). "The core idea of DeFi is to take complex financial services and products traditionally offered by legacy financial institutions, codify their component rules and procedures and convert them into self-executing code, also known as 'smart contract.' These autonomous protocols share the properties of a decentralized network, utilizing Distributed Ledger Technology (DLT). The ultimate vision for DeFi is a self-sovereign financial system allowing users to engage in a broad range of financial and economic activities without the need to rely on trusted third parties." Merav Ozair, DECENTRALIZED FINANCE (DEFI): FROM CASHLESS TO TOKENIZED ECONOMY TO A SELF-SOVEREIGN FINANCIAL SYSTEM 22 (World Scientific Publishing, forthcoming 2021). Many DeFi applications achieve decentralized governance and improve liquidity "through the issuance of a governance token, an ERC-20 token which entitles token holders to participate in protocol governance via voting on and possibly propose protocol updates." Sam M. Werner et al., SoK: Decentralized Finance (DeFi) 3 (Jan. 21, 2021) (unpublished manuscript) (available at <https://arxiv.org/pdf/2101.08778.pdf> [<https://perma.cc/3XMT-SVQJ>]). An example of these assets was issued by decentralized finance protocol Uniswap in September 2020. Paddy Baker, *Uniswap's Newly Launched UNI Token Has Already Doubled in Price*, COINDESK (Sept. 18, 2020, 10:24 AM), <https://www.coindesk.com/uniswap-uni-token-price> [<https://perma.cc/AYU7-JXB2>].

right to participate in project governance.³⁰⁴

Interests in DAOs may track features of partnerships, and, as I explained in previous work, case law has well-established tests, such as the one developed in *Williamson* and subsequently adopted in other circuits,³⁰⁵ that may apply to these situations.³⁰⁶ In other circumstances, governance tokens represent less analyzable and familiar financial instruments.

In 2020, for instance, DeFi project founders actively distributed governance tokens to attract participants to their platforms.³⁰⁷ The underlying economics of these token distributions suggest that we are looking at a new way to popularize business ventures and generate profit for their founders and other participants who commit their capital to the DeFi applications.³⁰⁸ In other words, these are profit-based activities that compensate capital providers generating a return on their investments in the projects.

2020 witnessed a boom in DeFi and related governance token distributions. Important germane examples were Compound and Uniswap – financial applications that both distributed governance tokens in mid-2020.³⁰⁹ A part of their governance tokens was distributed to liquidity providers. These parties provide (stake) assets to applications (like Uniswap) to ensure that the applications have enough liquidity, i.e., sufficient assets to effect transactions, and receive a fee for their service.³¹⁰ This practice of providing liquidity for a fee is dubbed “yield farming.”

The following describes how yield farming works in a nutshell: Ms. X puts her money at the disposal of an application and receives a return in the form of more cryptocurrency. A simultaneous receipt of governance tokens gives this yield farmer (who is also called a “liquidity provider”) the right to vote on changes in the project’s protocol. Observe that if the founders of that application also own governance tokens (and, perhaps, equity in the underlying organization that developed the project), the founders benefit from the increased liquidity provided by Ms. X, the yield farmer.

304. Holders of governance tokens may earn rewards in some DeFi projects, although these rights and mechanisms differ among projects. See, e.g., *Explained: DeFi Governance*, Multi.io Research (Nov. 17, 2020), <https://medium.com/multi-io/explained-defi-governance-tokens-23a76e4df543#:~:text=Token%20holders%20can%20%E2%80%9Cgovern%E2%80%9D%20dynamic,markets%2C%20and%20protocol%20inflation%20schedules> [<https://perma.cc/LSL3-Q83B>]. Such organizations as The DAO offered tokens that entitled the holders to participate in the governance of the project and receive rewards from investments. The DAO Report, *supra* note 84.

305. *Williamson v. Tucker*, 645 F.2d 404, 423–24 (5th Cir. 1981). See also *Koch v. Hankins*, 928 F.2d 1471, 1476–78 (9th Cir. 1991); *SEC v. Merch. Cap., LLC*, 483 F.3d 747, 755–58 (11th Cir. 2007).

306. To summarize the argument, financial instruments that are similar to general partnership interests are presumed to be non-securities. Guseva, *A Conceptual Framework*, *supra* note 302, at 207–09.

307. See, e.g., Brady Dale, *What Is Yield Farming? The Rocket Fuel of DeFi*, *Explained*, COINDESK (Dec. 17, 2020), <https://www.coindesk.com/defi-yield-farming-comp-token-explained> [<https://perma.cc/E9S5-PT8Z>] (“Governance tokens enable users to vote on the future of decentralized protocols, sure, but they also present fresh ways for DeFi founders to entice assets onto their platforms.”).

308. See, e.g., *Explained: DeFi Governance*, *supra* note 304; Brady Dale, *What Is Yearn Finance? The DeFi Gateway Everyone Is Talking About*, COINDESK (Dec. 17, 2020), <https://www.coindesk.com/what-is-yearn-finance-yfi-defi-ethereum> [<https://perma.cc/NW9P-3BA5>] (“YFI only pays dividends to holders who vote their tokens in governance.”).

309. Dale, *What Is Yield Farming?*, *supra* note 296. See also *Introducing UNI*, UNISWAP (Sept. 16th, 2020), <https://uniswap.org/blog/uni/> [<https://perma.cc/A2GR-9LB3>] (providing another example).

310. Scholars such as Merav Ozair also suggest that liquidity providers can be analogized with “market makers” within the decentralized market microstructure. Ozair, *supra* note 303, at Chapter 3.

Does it look familiar? It certainly does! Yield farming and liquidity mining may be described as novel ways to popularize and finance business ventures while rewarding the venture's participants. Because the governance is (allegedly) decentralized, decentralization may militate against the conclusion that these digital assets and related transactions are securities.

Indeed, the SEC staff and former Chairman Clayton connected the level of decentralization to the determination of the nature of cryptoassets and suggested that a lack of decentralization was one of the characteristics that could be indicative of a security.³¹¹ Recall, however, that the Framework and the speeches of the staff indicate that no single factor is determinative. Decentralization is merely one of the variables that the SEC and courts examine under *Howey*, and there is no guarantee that there would not be a DeFi project where a governance token distribution triggered a *Howey* analysis (and an enforcement action), particularly if the project's founders retained a significant number of governance tokens and helped run the underlying protocol.

Rational firms will consider these obscure points, run fact-intensive inquiries under the functional definition embedded in the *Howey* test, modify their technologies, and possibly innovate around securities law. Unless the SEC elicits their *ex ante* cooperation, it will be behind the curve, reacting to these developments. As discussed in this Article, an indispensable tool incentivizing such cooperation is a clear and predictable regulatory strategy.

Unless Congress adopts a separate definition for cryptoassets (or the SEC proposes a formal rule), the enforcement program and interpretative statements of the Commission will remain the only source of clarity and an informational nexus for developers. Consequently, even though crypto and fintech remain kinetic, the Commission's strategy should not be dynamically inconsistent.

IX. CONCLUSION

Crypto-firms and developers in the United States operate within a highly uncertain environment shaped by the functional Supreme Court *Howey* decision and its progeny against the backdrop of an active SEC enforcement program. This Article develops a model suggesting that, despite the underlying indeterminacy associated with functional definitions and regulation via enforcement, the SEC attempted to reduce information losses and improve regulatory clarity by following a set of well-defined *strategies* during the first years of its crypto-enforcement efforts.

Unfortunately, recent enforcement actions may upend those successful strategies. If the SEC no longer can provide clarity through strategic predictability of a transparent enforcement approach, and if the market finds substantial inconsistencies in the regulator's moves and commitments, the fabric of cooperation between the innovators and the Commission may be broken, leading to a suboptimal outcome for the cryptoasset markets

311. See SEC FRAMEWORK, *supra* note 1, at 1–5 (discussing the efforts of others prong of the *Howey* test and decentralization); Nikhilesh De, *SEC Chair Clayton Affirms Agency's Stance Ether Is No Longer A Security*, COINDESK (Mar. 12, 2019, 10:07 PM), <https://www.coindesk.com/jay-clayton-coin-center-letter> [<https://perma.cc/32Q7-98TH>]. The following connection to the *Howey* test can be made: the more decentralized a system is, the less "control" a developer has over the assets or the platform, and the fewer expectations investors in the project have about the efforts of the promoter generating their profit from the investment.

and financial innovations.

Appendix I

1. Two-Sample T-Test and CI: Total Amount of Civil Penalties and Disgorgement Awards, Before/After *Telegram* (Digital-Asset Issuers and “Gatekeepers”)

Before/After	N	Mean	StDev	SE Mean
After	11	6373502	10615500	3200694
Before	32	2664157	5470873	967123

Difference = μ (After) - μ (Before)
Estimate for difference: 3709345
95% CI for difference: (-3649904, 11068594)
T-Test of difference = 0 (vs not =): T-Value = 1.11 P-Value = 0.291 DF = 11

2. Two-Sample T-Test and CI: Total Amount of Civil Penalties and Disgorgement Awards, Before/After *Telegram* (Digital-Asset Issuers)

Before/After	N	Mean	StDev	SE Mean
After	10	6997657	10974899	3470568
Before	20	4110852	6547962	1464169

Difference = μ (After) - μ (Before)
Estimate for difference: 2886805
95% CI for difference: (-5320303, 11093914)
T-Test of difference = 0 (vs not =): T-Value = 0.77 P-Value = 0.458 DF = 12
