The Leviathan of Securities Regulation in Cryptoasset Markets

Yuliya Guseva*

Abstract

This article contributes to the academic discourse on the regulation of cryptoassets in capital markets. The current cryptoasset policy of the Securities and Exchange Commission (“SEC”) is built on enforcement of the pre-crypto regulations without reform. This article analyzes the data on SEC enforcement, applies cost-benefit analysis to the regulation via enforcement approach, and examines manually collected issuer filings. The main conclusion is that the SEC has spent considerable resources on achieving an inefficient equilibrium in the crypto-market. The current status quo is characterized by the following antipodean trends: The SEC regulates via enforcement and ignores the significant “pure-information” component of the crypto-markets. The issuers, attempting to avoid enforcement actions, comply with the federal securities law in the most rational way by resorting to private placements. In the end, the crypto-investors, particularly the

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less sophisticated cohorts of investors, are exposed to the information asymmetry and agency costs of private placements aggravated by the unique risks of crypto-offerings. At bottom, the SEC has forced crypto-issuers to spend resources and comply with the laws that do not generate material benefits to investors, which suggests that the strategy of active enforcement is Kaldor-Hicks inefficient.
A. Introduction .................................................................................................................. 4
B. The Feasibility of the Pure-Information Model .......................................................... 8
   1. The Intersection of Pure Information and Intermediary Depictions in Crypto ........ 9
   2. Crypto-Gatekeepers and Pure-Information Model ............................................... 12
   3. Limitations of Reputational Intermediaries ......................................................... 15
C. Enforcement: Efficiency and Cost-Benefit Analysis .............................................. 21
   1. Three Years of SEC Enforcement Actions ......................................................... 21
   2. The Antecedents of Cost-Benefit Analysis of Regulation via Enforcement .......... 24
   3. Enforcement as Informal Rulemaking ................................................................. 28
D. Cui Bono? Or When Ends are Not Necessarily Related to the Means ................. 32
   1. Basic Economic Concepts ..................................................................................... 33
   2. Public and Mini-Public Offerings ......................................................................... 35
      2.1. Issuer Costs and Risks in Public Offerings ................................................. 35
      2.2. Mini-Public Offerings ................................................................................... 40
      2.3. Issuer Reporting Costs .................................................................................. 44
      2.4. The Uncertain Benefits ............................................................................... 48
      2.5. Investor Payoffs .......................................................................................... 50
   3. Regulation D ........................................................................................................... 55
      3.1. Issuers: Payoffs of Prima Facie Compliance ............................................... 55
      3.2. Investor Payoffs .......................................................................................... 59
E. Conclusion ................................................................................................................. 67

Appendix I: U.S. and Foreign Enforcement Actions .................................................. 68
Appendix II: Types of Actions per Jurisdiction ......................................................... 69
Appendix III: Total Actions by Year ......................................................................... 69
Appendix IV: Issuer Compliance and Penalties ......................................................... 69
A. Introduction

People respond to incentives and change their behavior in order to maximize the payoffs of their actions. This is a generally accepted axiom in microeconomics. Governments enact and enforce regulations that change the payoffs of the people operating within their jurisdictions. In doing so, government agencies channel people’s behavior toward what is, hopefully, productive actions beneficial to the society and its multifarious constituencies. This Article seeks to examine whether the policies of one specific government agency – the United States Securities and Exchange Commission (“SEC” or “Commission”) - in application to one particular segment of the society – cryptoasset capital markets – is beneficial to market participants and efficient.

Academics like myself must analyze these markets and the effect of government regulations on the expected behavior of their participants. Indeed, if the Lindy’s Law\(^1\) applies, the distributed ledger technology (“DLT”) and digital assets (also “cryptoassets,” including “coins” and “tokens”)\(^2\) should be expected to survive for a considerable time.\(^3\)

As any other financial innovation, cryptoassets raise numerous questions for regulators and market participants. Many foreign jurisdictions have enacted statutes or promulgated separate rules for the new cryptoindustry.\(^4\) The United States is an exception. Despite having at least four bills

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1 NASSIM NICHOLAS TALEB, ANTIFRAGILE: THINGS THAT GAIN FROM DISORDER 318 (2012) (“If a book has been in print for forty years, I can expect it to be in print for another forty years.”).


3 One may start the clock in 1997, the year of publication of Szabo’s article on smart contracts, or in 2009 when Bitcoin was rolled out. Nick Szabo, The Idea of Smart Contracts (1997), http://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_idea.html.

in the Congress\(^5\) and a thoughtful and cogent regulatory draft proposed by one of the Commissioners,\(^6\) the U.S. still does not have a regulation tailored specifically to crypto-markets.

Instead, the United States SEC and the Commodity Futures Trading Commission ("CFTC") operate within the framework of the existing pre-crypto securities and commodity regulations.\(^7\) Within this duo, the SEC is the leader in enforcement of the pre-crypto regulations.\(^8\) The Rutgers Center for Corporate Law and Governance and my research team’s recent enforcement survey suggests that in the past three years the SEC has launched more enforcement actions than major foreign regulators and the CFTC. The charges and penalties in SEC actions equally were more serious.\(^9\) Through enforcement actions, agency interpretations, no-action letters, and staff guidelines, the SEC has forced cryptoasset developers and crypto-gatekeepers, such as online trading platforms, to comply with the federal securities law.\(^10\)

While this finding may seem in line with the previous research on the intensity of securities law enforcement and its use in articulating novel legal theories,\(^11\) the SEC actions in the crypto-space present a new narrative. The Commission had affirmatively chosen to actively enforce compliance\(^12\) and apply pre-crypto rules to complex technological innovations without first

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7 See, e.g., Leo Choi, Douglas Eakeley, Katarina Gonzalez & Yuliya Guseva, International Crypto-Enforcement Survey, Rutgers Ctr. for Corp. Law and Governance (2020) (unpublished manuscript, on file with the author and the Center for Corporate Law and Governance) [hereinafter Survey].
8 Survey, supra note 7.
9 See Appendices I - III; Survey, supra note 7. See also Yuliya Guseva, The SEC, Digital Assets, and Game Theory: When Strategic Goals and Tactics Don’t Meet, J. CORP. L. (forthcoming 2020) [hereinafter Crypto-enforcement and Game Theory].
10 Crypto-enforcement and Game Theory, supra note 9; infra Part C(1).
11 Harvey Pitt & Karen Shapiro, Securities Regulation by Enforcement: A Look Ahead at the Next Decade, 7 YALE J. ON REG. 149 (1990).
12 See, e.g., Crypto-enforcement and Game Theory, supra note 9; Lewis Rinaudo Cohen, Ain’t Misbehavin’: An Examination of Broadway Tickets and Blockchain Tokens, 65 WAYNE L. REV. 81 (2019).
determining whether the rules were actually suitable for the cryptoasset market.

This Article sets out to examine whether this enforcement-heavy approach without an underlying substantive regulation or an *ex ante* analysis of the pre-existing rules is efficient. The quintessence of the argument is that the SEC’s actions and the forced compliance with the pre-crypto regulations do not withstand basic cost-benefit analysis ("CBA"). Recently, scholars suggested that compliance with securities law would benefit crypto-issuers and that it was what public investors and markets would want from cryptoasset offerings.13 This Article demonstrates that the opposite is more likely: compliance with the current securities regulations would not generate real benefits to market participants.

The existing regulatory regime does not fully address the risks faced by investors in the crypto-market for two reasons. The first hearkens back to Henri Hu’s post-financial-crisis study of complex financial instruments: the “intermediary depiction” model and the “pure information” model.14

The “intermediary” in this case is a crypto-issuer that furnishes information to investors. In doing so, the issuer “digests” the information for the investors and presents its own view of reality through the limited depiction tools of conventional disclosure regulations and within the confines of the requirement to present information in plain English.15 In contrast to this model, in a “pure information” environment, the issuer, as an informational

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15 Id. at 1608-09; 1624.
conduit, is unnecessary because “the investor may… be able to see for himself, to download the objective reality in its full, gigabyte richness.”

Professor Hu’s post-financial-crisis analysis predicted modern information disintermediation impelled by DLT. The technology ensures information transparency and immutability; the code is often open source, released through depositories such as Github, and publicly reviewable; smart contracts are designed to be self-executable, and applications and organizations built on blockchain are decentralized and autonomous. These realities suggest that the information supplied by an issuer-intermediary is redundant from the point of view of market participants who have direct access to data.

The second reason why market participants would not receive the expected benefits from intermediary-provided disclosure is that the current regime incentivizes crypto-firms to avoid public offerings and resort to private placements. Private placements are mainly built around voluntary disclosure. This Article demonstrates that crypto-issuers’ incentives to disclose information voluntarily are weak, which exacerbates information asymmetry and is antithetical to the SEC’s goals of supplying investors with

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16 Id. at 1610
17 Rohr & Wright, supra note 13.
21 Hu, supra note 14, at 1610 (“The disclosure paradigm need no longer conceive of information largely in terms of an intermediary's depictions of reality….“).
material information. The inadequate issuer depiction of reality is particularly deleterious for the less sophisticated investors. To the sophisticated, who can access and process publicly available data, issuer disclosure represents a secondary and far less salient information source.

The juxtaposition of the flaws in the intermediary-depiction model, the unsuitable regulatory regime, and the preference for private placements undermine the economic arguments for intensive enforcement of the pre-crypto laws. The digital-asset investors may simply not receive the expected benefits from issuers’ compliance with the pre-crypto regulations. The Commission’s enforcement approach thus reduces the payoffs of digital-asset issuers, who must comply with the pre-crypto regulations, without providing clear economic benefits to investors. Such outcome is inconsistent with Kaldor-Hicks efficiency criteria. Cui bono? In plain English, who benefits from the regulatory policy?

I cannot answer whether the SEC’s extant preference for regulation via enforcement is supportable from the normative or positive perspectives. There are undoubtedly benefits to regulating by enforcement in certain cases and downsides in others. The more modest premise of this Article is that if the SEC has opted to regulate cryptoassets through active enforcement of the preexisting rules, it should at least ensure these underlying regulations are net-beneficial to market participants and adjust the level of enforcement accordingly.

The Article’s roadmap is as follows: Part B asks if the pure-information model is feasible in crypto. Part C reviews the antecedents of regulatory efficiency and CBA of enforcement policies. It also reviews the data on issuer filings. Part D examines issuer and investor payoffs under various regulations on public and private offerings. Part E concludes the Article.

**B. The Feasibility of the Pure-Information Model**

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22 See infra Part D.
23 See infra Part D.
24 See infra notes 117-122 and accompanying text.
1. The Intersection of Pure Information and Intermediary Depictions in Crypto

As I argued elsewhere, many digital-asset offerings proceed in two distinct stages. An issuer, as an informational intermediary, is relevant only in the first stage during which the issuer is raising capital promising to develop and deliver future crypto-assets. Essentially, the issuer sells securities linked to a future cryptoasset delivery as a form of return.

The primary sales of cryptoassets by an issuer to investors are typically labelled Initial Coin Offerings (“ICOs”) and Security-Token Offerings (“STOs”). There are also Initial Exchange Offerings (“IEOs”).

The main distinction is that in IEOs, online trading platforms (also “crypto-exchanges”) provide a combination of investment bank (or placement agent), listing, and secondary trading services.

25 Guseva, supra note 2. This two-stage approach is similar to the SAFT. See Juan Batiz-Benet et al., The SAFT Project: Toward a Compliant Token Sale Framework (Oct. 2, 2017), https://saftproject.com/static/SAFT-Project-Whitepaper.pdf.


29 IEO Investor Alert, supra note 27, (“IEOs are being touted as an innovation on ICOs because they are offered directly by online trading platforms on behalf of companies—usually for a fee—to provide immediate trading opportunities for the digital assets.”).

Cryptoasset offerings often have economic attributes of securities issuances and are typically considered offerings of "securities" under the Supreme Court Howey test. The titles appended thereto are inessential. We may cumulatively refer to these instruments as "digital-asset securities."

The issuer often remains central to the platform and asset development, initial operation and valuation until the platform launch and asset delivery to investors. During the development stage and before investing, investors need to make an assessment if the issuer can deliver on its promises. They rely on the issuer’s depiction of the project and its capability to deliver to the extent that accurate relevant information is not available from extraneous public sources.

After this first stage, when the cryptoassets are delivered to the initial investors and the project is fully developed, the pure-information model kicks in at full tilt – there are sufficient data for investors to examine without the need for disclosure by any intermediaries. Consider as an example a decentralized, open-source and permissionless blockchain. Once built by an issuer, and after the initial investors received their promised share of native tokens, blockchain’s operation should depend on a decentralized community of developers building applications and smart contracts and

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32 SEC v. W. J. Howey Co., 328 U.S. 293 (1946). For an analysis, see Cohen, supra note 12; Rohr & Wright, supra note 13, at 470-85; Goforth, supra note 13, at 416-17.
33 United Hous. Found., Inc. v. Forman, 421 U.S. 837, 848 (1975) ("(I)n searching for the meaning and scope of the word 'security' in the Act(s), form should be disregarded for substance and the emphasis should be on economic reality." (citations omitted); SEC v. Edwards, 540 U.S. 389, 393 (2004).
35 See, e.g., Guseva, supra note 2.
validators. The code is open source and publicly viewable. In layman’s terms, the original issuer no longer has control over the end product.

Take another example – smart contracts. It is generally expected that an issuer who developed a smart contract, usually on Ethereum, would not be able to modify the code behind the contract. Another expected attribute of crypto-offerings is that after the completion of a token sale, project launch, and subsequent delivery of developed cryptoassets by the issuer to the investors, future asset prices are supposed to be determined by encoded


39 See, e.g., Shaanan Cohney et al., Coin-Operated Capitalism, 119 COLUM. L. REV. 591, 612 (2019); Shlomit Azgad-Tromer, Crypto Securities: On the Risks of Investments in Blockchain-Based Assets and the Dilemmas of Securities Regulation, AM. U. L. REV. 69, 98 (2018) (“Unlike traditional contracts that are subject to enforcement by courts, smart contracts are technically immutable: automatically enforced according to their original code with no allowance for ex post discretion”); Kyung Taeck Minn, Towards Enhanced Oversight of “Self-Governing” Decentralized Autonomous Organizations: Case Study of The Dao and its Shortcomings, 9 NYU J. INTELL. PROP. & ENT. L. 139, 152 (“The purpose of the Ethereum blockchain and The DAO, after all, was to provide an immutable transactional record and host smart contracts that would solve the principal-agent problem”); Rohr & Wright, supra note 13, at 470-85; Rodrigues, supra note 20, at 682 (“Once the code is released into the world, its programmers can no longer unilaterally alter it- unless the widely-dispersed, anonymous blockchain community can be convinced to do so. Because of the decentralized, distributed nature of the blockchain ledger, changes in the code will be rejected unless the code itself contemplates subsequent modifications.”).
formulas, independent oracle feeds,\textsuperscript{40} the network effect, market supply and demand, and other independent variables.\textsuperscript{41}

For “governance tokens” (which give the right to participate in governance of underlying business projects often structured as decentralized autonomous organizations (DAOs) without any centralized management),\textsuperscript{42} valuations may depend on the performance of the underlying businesses.\textsuperscript{43} In all these circumstances, the traditional intermediary-depiction model becomes unnecessary when the market has plenty of “pure information” about the assets, and the assets are independent and autonomous from the original issuer-developer.

2. Crypto-Gatekeepers and Pure-Information Model

Before the autonomous stage, several economic arguments appear to militate for the intermediary-depiction model in crypto-offerings. For one, during the capital-raising stage, the issuer seeking to finance new asset and/or platform development may have an informational advantage over external capital suppliers. At the same time, the cryptomarket has the potential to reduce this information asymmetry\textsuperscript{44} among the parties participating in an offering.

Building on Henri Hu’s analysis of data-driven financial instruments, it is possible that a crypto-issuer’s depiction of its project may “not embody the full range of insights of the person likely most familiar with the objective reality.”\textsuperscript{45} An issuer’s descriptive accuracy is not even necessary because the

\textsuperscript{40} Vanessa Villanueva Collao & Verity Winship, The New ICO Intermediaries, 5 ITALIAN L.J. 731, 737-38 (2019) (“An oracle is a third party (individuals or programs) capable of introducing external data into the smart contract.”).

\textsuperscript{41} Guseva, supra note 2, at 142.


\textsuperscript{44} Frank Partnoy, The Siskel and Ebert of Financial Markets?: Two Thumbs Down for the Credit Rating Agencies, 77 WASH. U. L.Q. 619, 632 (1999) (“Information asymmetry “exists in markets where sellers have superior information to buyers about product quality, yet cannot costlessly convey this information to buyers.”).

\textsuperscript{45} Hu, supra note 14, at 1610.
code is publicly available and reviewed by multiple outside parties, including investors.

The investors can also look to the vibrant network of third-party information aggregators or “gatekeepers” that operate outside (or in addition to) the issuer-disclosure paradigm. Roughly generalizing, these gatekeepers-intermediaries include crypto-exchanges, smart contract auditors, rating agencies, and the community of developers who review the publicly available code and help to improve it.

Some cryptoasset gatekeepers offer open-source protocols for token issuance, advisory services, and audits. Zeppelin is an apposite example. It audits smart contracts and reviews system architecture and codebase. Ethereum Foundation suggests multiple sources assisting in application development, debugging, and testing of smart contracts, as well as actual issuance. Through repositories, such as Github, experts and market participants can review the code and assist firms and investors with assessing

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46 Elisabeth de Fontenay, Private Equity Firms as Gatekeepers, 136 REV. BANKING & FIN. L. 115, 136 (2013) (“Gatekeepers are broadly understood to be private actors that can prevent companies' misconduct in a specific market.” (citing Reinier H. Kraakman, Gatekeepers: The Anatomy of a Third-Party Enforcement Strategy, 2 J.L. Econ. & Org. 53, 54 (1986))); Id. at 136 (“Reinier Kraakman, defines a gatekeeper as any party from whom a company needs a good or service, and who can prevent the company's misconduct simply by refusing to provide it”); See, e.g., John C. Coffee, Jr., Gatekeeper Failure and Reform: The Challenge of Fashioning Relevant Reforms, 84 B.U. L. REV. 301, 308-12 (2004) (outlining the types of gatekeepers).


the code, testing, debugging, and improving code quality.\textsuperscript{50} Predictive market mechanisms are currently being developed.\textsuperscript{51} The community not only reviews codes but also red-flags scammers.\textsuperscript{52}

A self-regulating, public, and transparent system is thus created without any formal legal intervention. Within this open system, reputation becomes an essential asset: “founder's reputation will rise or fall with the success of the public blockchain protocol he or she created,” while “core developers exist in a loop of reputational intermediaries… allowing their own reputation to rise or fall with the integrity of the protocol.”\textsuperscript{53}

The crypto-community per se is an important self-monitoring organism that aggregates and processes raw data (i.e., the code) for the

\textsuperscript{50} Collao & Winship, supra note 40, at 737-38 (“An empirical study showed that about ninety percent of ICO codes were published before the ICO…. When the code is published, more money is raised.”); \textit{Id.} at 739 (“The code may not be released in cases where the originality of the project (the know how) is considered valuable, and needs to be protected by non-disclosing it.”). \textit{See also} Ethereum Testing Tools, \textsc{Ethereum}, https://www.ethereum.org/developers/#testing-tools; Moran Ofir & Ido Sadeh, \textit{ICO vs. IPO: Empirical Findings, Information Asymmetry and the Appropriate Regulatory Framework} \textsc{VAND. J. TRANSNAT’L L.} (forthcoming 2019), at 29-30, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3338067; Christian Fisch, \textit{Initial Coin Offerings (ICOs) to Finance New Ventures}, \textsc{34 J. BUS. VENTURING} 1 (2019);


\textsuperscript{51} Collao & Winship, supra note 40, at 737-38 (discussing Augur’s token REP and observing that this altcoin helps people in the blockchain community ferret out possible frauds and report on existing state of art in the blockchain).

\textsuperscript{52} \textit{See, e.g.,} Alyssa Hertig, \textit{Bug in ’Timelocked’ Bitcoin Contracts Could Spur Miners to Steal From Each Other}, \textsc{CoinDesk} (Jun 1, 2020), https://www.coindesk.com/bug-in-timelocked-bitcoin-contracts-could-spur-miners-to-steal-from-each-other?utm_source=newletters&utm_medium=blockchainbites&utm_campaign=&clid=00Q1I00000MN3GkUAL (“In a report released in late April, pseudonymous engineer 0xb10c found more than a million of these “timelocked” transactions made between September 2019 and March 2020 were not accurately enforced by the network. This increases the risk of a hypothetical form of attack…”); Robert Stevens, \textit{Fairwin: The $125 Million Alleged Ponzi Scheme Eating Ethereum}, \textsc{YAHOO! FINANCE}, (Oct. 3, 2019), https://finance.yahoo.com/news/fairwin-125-million ponzi-scheme-143621138.html.

\textsuperscript{53} Reyes, supra note 37, at 1919.
benefit of all market participants, including investors. This creates a modified pure-information model where information (including, *inter alia*, the code that is disclosed by the issuer before the sale of digital-asset securities, transactional records, and the issuer’s reputation and track record) is examined by multiple parties. By their very design, crypto-markets thus endeavor to live up to their motto: it is a “trustless” system\(^\text{54}\) where no party needs to reposit its trust in another, including issuers and their depiction of reality.

3. Limitations of Reputational Intermediaries

Alas, the market’s self-monitoring and, consequently, self-correction are currently not frictionless as several major participants and gatekeepers exhibit conflicts of interest, reputational limitations, and capacity constraints. The community of blockchain participants, for instance, is heterogeneous enough to create potential governance conflicts within itself.\(^\text{55}\) Even if there were no conflicts, crypto-experts could fail to serve as gatekeepers in securities offerings because of their natural tendency to pay more attention to technology and cybersecurity risks than the soft information and promises that less sophisticated investors would rely on.\(^\text{56}\) Moreover, in reality, not every project is fully audited before launch and before market participants invest in it.\(^\text{57}\)

In addition, although grassroots codes of ethics are being developed, and there are already data authentication services,\(^\text{58}\) many crypto-gatekeepers and main participants are not subject to *ex ante* uniform standards of conduct.\(^\text{59}\) International entities offering legal advice on ICOs, broker-dealer, and consulting services may not be properly licensed and/or regulated by the SEC and the Financial Industry Regulatory Authority.

\(^{54}\) See, e.g., Cohney et al., *supra* note 39, at 612 (“[I]t is the immutable, transparent code that enables (and creates) a trustless but trusted market.”).


\(^{58}\) Collao & Winship, *supra* note 40, at 737-38, 740.

Since many crypto-issuers prefer private placements over public offerings, they may solicit prospective investors through entities unregistered with the SEC or FINRA.

Even when crypto-broker-dealers are regulated by FINRA and subject to the regulatory requirements governing their conduct, their presence may be cold comfort: reports suggest that crypto-brokerages are often smaller startups that lack deep balance sheets and reputation.

Another case in point is rating agencies. Although ratings are valued by the crypto-market and have been positively associated with the offering success rate, their quality and scope vary. Some agencies accept payments from cryptoasset issuers. Historical problems with the “issuer pays” practice immediately come to mind: the practice was fraught with undisclosed conflicts of interest during the financial crisis of 2007-2008.


61 See infra Part C(3).

62 Lookback Study, supra note 60, at 24-25.


65 Ofir & Sadeh, supra note 50, at 49-50, nn. 338-352.


The 2019 administrative proceeding against ICO Rating exemplifies similar risks in crypto.68

Another cohort of gatekeepers hamstrung by capacity limitations and possible conflicts of interest are online trading platforms or “crypto-exchanges.” Crypto-exchanges must register with the SEC either as exchanges or as alternative trading systems (“ATS”).69 ATS today are few and far between.70 As of the time of this writing, no crypto-exchange registered with the SEC as a national securities exchange.71 Some U.S. exchanges acquired stakes in foreign exchanges trading digital assets,72 and a joint venture of a crypto-firm and a conventional exchange filed an application with the SEC.73

While both ATS and exchanges have rules to protect investors and prevent manipulative trading schemes, securities exchanges are self-regulatory organizations whose rules are subject to SEC approval. A fully registered crypto-exchange would regulate its participants and supervise their conduct. In contrast, online trading platforms that operate as ATS and register as broker-dealers regulated by FINRA do not perform self-regulatory functions.

These differences may become paramount in light of the services that crypto-exchanges provide, namely, IEOs. In IEOs, a trading venue functions as an investment-bank-like gatekeeper and provides secondary market trading services. In January 2020, the SEC warned that “claims that IEOs are vetted by trading platforms […] can be used improperly to entice investors with the false promise of high returns.”

Crypto-exchanges may not be equipped to deal with conflicts of interest and exhibit operational vulnerabilities to hacking, manipulative trading, and fraud. There have been cases where trading platforms did not even have basic due diligence and internal compliance rules and failed to

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75 Id. at 15.
76 Id. at 15, 262-721.
77 Id. at 272.
78 IEO Investor Alert, supra note 27. See also Dmitri Boreiko et al., Blockchain Startups and Prospectus Regulation, 20 EUR. BUS. ORG. L. REV. 665 (2019) (examining the nature of tokens and the role of crypto-exchanges).

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demonstrate that they would “conduct [their] business honestly.”

External exchange rankings are equally unhelpful and may be biased when a large crypto-exchange acquires a data aggregator providing such rankings.

The SEC has brought a number of actions against crypto-gatekeepers in the past three years. My research team and I have reviewed all crypto-related enforcement actions brought by the SEC between July 2017 and April 2020. We primarily used Blomberg Law’s search engine and also reviewed the Commission’s Annual Reports, administrative action releases and litigation releases, as well as its cybersecurity enforcement actions.

Table 1 summarizes the cases against crypto-gatekeepers, including online trading platforms, funds and corporations investing in cryptoassets, broker-dealers, and rating agencies. Although many actions resulted in trading suspensions and many defendants and respondents were charged with simple violations of the various registration provisions of the Securities Act and the Exchange Act, at least seven cases were brought under the antifraud provisions of the Acts.


84 Stephanie Hurder, To Get Serious About Decentralization, We Need to Measure It, COINDESK (May 29, 2020) (“On May 15, Decrypt reported that six weeks after being acquired by Binance, the crypto data aggregator CoinMarketCap updated the method by which it ranked exchanges on its site. This update, perhaps unsurprisingly, moved Binance into the top spot.”).


86 For a detailed description of the methodology of data collection, see Crypto-enforcement and Game Theory, supra note 9. This Table was not reported in Crypto-enforcement and Game Theory.


Table 1: Enforcement Actions Against Crypto-Gatekeepers (July 2017 – April 2020)

<table>
<thead>
<tr>
<th>COMPANY NAME (COUNTRY OF Domicile, HEADQUARTERS)</th>
<th>ROLE</th>
<th>Total Penalties and Disgorgement</th>
<th>Statute and Violations</th>
<th>Year of the Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Crypto Company (USA)</td>
<td>FUND</td>
<td></td>
<td>§ 10 (b)</td>
<td>2017</td>
</tr>
<tr>
<td>Rocky Mountain Ayer, Inc. (USA)</td>
<td>FUND</td>
<td></td>
<td>§ 17</td>
<td>2017</td>
</tr>
<tr>
<td>American Security Resources Corp. (USA)</td>
<td>FUND</td>
<td></td>
<td>§ 5 (SECURITIES ACT)</td>
<td>2017</td>
</tr>
<tr>
<td>First Bitcoin Capital Corp. (USA)</td>
<td>FUND</td>
<td></td>
<td>§ 5 (EXCHANGE ACT)</td>
<td>2017</td>
</tr>
<tr>
<td>DAO Group, Inc. (USA)</td>
<td>FUND</td>
<td></td>
<td>Other: Investment Advisers Act &amp; Exchange Act</td>
<td>2017</td>
</tr>
<tr>
<td>Strategic Global Investments, Inc. (USA)</td>
<td>FUND</td>
<td></td>
<td>§ 5 (EXCHANGE ACT)</td>
<td>2017</td>
</tr>
<tr>
<td>Joseph P. Willner (USA)</td>
<td>BROKER-DEALER</td>
<td>v v</td>
<td>§ 10 (b)</td>
<td>2017</td>
</tr>
<tr>
<td>Toxelit &amp; Individual Defendants/Respondent(s)</td>
<td>BROKER-DEALER</td>
<td>$568,929</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>Spool Ltd. &amp; Individual Defendants/Respondent(s)</td>
<td>BROKER-DEALER</td>
<td>$53,393</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>Bit Blockchain &amp; Individual Defendants/Respondent(s)</td>
<td>ATTORNEY</td>
<td>$1,564,509</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>Zachary Coburn (EtherDelta) (USA)</td>
<td>CRYPTO-EXCHANGE</td>
<td>$388,000</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>Crypto Asset Management &amp; Individual Defendants/Respondent(s)</td>
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<td>$200,000</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>CoinAlph Advisors, LLC (USA)</td>
<td>FUND</td>
<td>$50,000</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>BitFunder &amp; Individual Defendants/Respondent(s)</td>
<td>CRYPTO-EXCHANGE</td>
<td>v v v v v v</td>
<td>§ 17</td>
<td>2018</td>
</tr>
<tr>
<td>American Retail Group, Inc. (USA)</td>
<td>FUND</td>
<td>$10,115,893</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Bitviock, Inc. &amp; Individual Defendants/Respondent(s)</td>
<td>CRYPTO-EXCHANGE</td>
<td>$331,952</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Maddow (USA)</td>
<td>BROKER-DEALER</td>
<td>v v</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Bit Corp. SARL D/VA First Global Credit (Switzerland)</td>
<td>CRYPTO-EXCHANGE</td>
<td>$268,998</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Daniel Levine (USA)</td>
<td>BROKER-DEALER</td>
<td>$200,000</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Nikolay Fokkino (Cayman Islands)</td>
<td>BROKER-DEALER</td>
<td>v v</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>ICO Rating (Russia)</td>
<td>RATING AGENCY</td>
<td>$206,998</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Maxwell Wealth Planning, Inc. &amp; Individual Defendants/Respondent(s)</td>
<td>BROKER-DEALER</td>
<td>$170,000</td>
<td>§ 17</td>
<td>2019</td>
</tr>
<tr>
<td>Broad Reach Capital, LP, Bristol Advisors, et al. (USA)</td>
<td>FUND</td>
<td>v v</td>
<td>§ 17</td>
<td>2019</td>
</tr>
</tbody>
</table>

Crypto-market’s self-regulatory mechanisms may have one final point of failure. In conventional markets, we often attribute some gatekeeping functions to institutional investors. Equating these institutions with large crypto-investors, however, would be a false analogy.

An ICO often involves a pre-sale and a subsequent public sale. Participants in pre-sales are larger and presumably more sophisticated crypto-investors. Admittedly, their participation in an offering may convey a positive signal to other investors and serve as a proxy for project quality. On the flipside, there may be profound conflicts of interest between the more and the less sophisticated. Instead of (or in addition to) verifying issuer...
representations, the more informed, who do not owe any fiduciary duties to other investors, may quickly cash out and dump low-quality projects onto the unsuspecting purchasers during the public sale.\textsuperscript{89} Sophisticated investors’ private material information may put the less sophisticated participants in public sales at a disadvantage.

In conclusion, crypto-gatekeepers are imperfect. In cases where public code disclosure is insufficient from an investor’s perspective, and when she cannot place her trust in third-party gatekeepers, the most likely party that can provide her with meaningful information is the issuer. Under these two conditions (\emph{i.e.}, the insufficiency of pure information and inadequacy of gatekeepers), the issuer-depiction model would generate value to the investor.

\textbf{C. Enforcement: Efficiency and Cost-Benefit Analysis}

\textbf{1. Three Years of SEC Enforcement Actions}

The SEC has ignored the discussed above functioning, albeit imperfect, elements of the pure-information model in crypto and focused strictly on the intermediary-issuer-depiction model. The federal securities law’s paramount objective has always been providing the market and investors with information. As President Roosevelt emphasized in his message to Congress:

\begin{quote}
There is… an obligation upon us to insist that every issue of new securities to be sold in interstate commerce shall be accompanied by \textit{full publicity} and \textit{information}, and that no essentially important element attending the issue shall
\end{quote}

be concealed from the buying public.\textsuperscript{90} (emphasis added).

The methods of ensuring this “full publicity” are up to the Commission. It must proceed within its triadic mission of protecting the investing public, maintaining fair and efficient markets, and facilitating capital formation.\textsuperscript{91} The way the SEC promoted better disclosure in the digital-asset market was by bringing actions for violations of the pre-crypto securities law with its mandatory disclosure rules. Figure 1 compares the three years of actions against cryptoasset issuers that spanned the registration provisions of Section 5 of the Securities Act,\textsuperscript{92} reporting violations, as well as the antifraud provisions of the Securities Act and the Exchange Act.\textsuperscript{93}

Figure 1: Summary of the Violations\textsuperscript{94}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{violations.png}
\caption{Violations and Statutory Provisions}
\end{figure}

Crypto-issuers attempted to comply with securities law after this barrage of enforcement actions entailing sizeable penalties and


\textsuperscript{91} See, e.g., Chris Brummer \& Yesha Yadav, \textit{Fintech and the Innovation Trilemma}, 107 Geo. L.J. 235 (2019) (discussing these goals and the difficulties faced by regulators attempting to encourage innovations while maintaining market integrity and providing clear rules).

\textsuperscript{92} 15 U.S.C. § 77e.


\textsuperscript{94} Crypto-enforcement and Game Theory, \textit{supra} note 9.
disgorgement.\footnote{Infra Appendix IV.} Many preferred private placements under various exemptions from the registration provisions of securities law instead of complying with the mandatory disclosure regulations applicable in registered public offerings.

I examined all forms filed under the various exemptions from registration as well as crypto-related registration statements. The data confirm that crypto-firms almost invariably prefer private placements. My research team and I have reviewed all Forms D, Forms 1-A, and Forms S-1 filed between July 2017 and June 12, 2020. The following terms were used in the course of the research: cryptocurrency, initial coin offering, coins, digital assets, tokens, and SAFT (“Simple Agreement for Future Tokens”). We searched for filings on EDGAR and Blomberg Law’s EDGAR database. After identifying the issuers, I reviewed all Forms, prospectuses, and offering circulars in the database.

Figure 2 summarizes the results for issuers that offered cryptoassets such as tokens and coins. I have found as many as 24 crypto-related firms, including developers and crypto-funds, that filed forms S-1 for shares of stock, bonds, warrants, and other conventional securities. Some were seeking capital in advance of their participation in ICOs or entered into agreements with companies developing tokens for future ICOs.\footnote{See, e.g., Gopher Protocol, Inc., (Form S-1), at F-64, (Feb. 8, 2019), https://www.sec.gov/Archives/edgar/data/1471781/000161577419002085/0001615774-19-002085-index.htm; OBITX, Inc., (S-1), at 40, (Feb. 8, 2018), https://www.sec.gov/Archives/edgar/data/1730869/000160987618000001/s-1registrationv8.htm. See also infra Tables 3 & 4.} Figure 2 does not include those companies and presents only the issuers offering cryptoassets. The data suggest that private placements overwhelmingly dominate the capital raising landscape.

Figure 2: Total Filings

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Infra Appendix IV.

This overview of the data points toward several trends. First, the enforcement of the issuer-depiction model in crypto has been strong. Second, many crypto-firms prefer to rely on various exemptions from registration to comply with securities law. With these two trends in mind, the next Section discusses how to measure the efficiency of this enforcement of the intermediary-depiction model.

2. The Antecedents of Cost-Benefit Analysis of Regulation via Enforcement

Explanations for regulatory strategies are ordinarily supplied by the public choice theory,\(^{97}\) the public interest model,\(^{98}\) the civic republican


\(^{98}\) Coates, *supra* note 97, at 560 n.102; Croley, *supra* note 97, at 65-66.
theory, and the neopluralist theory. My evaluation is closer to the traditional public interest theory that has been in existence since Adam Smith. The following analysis proceeds from the assumption that SEC enforcement programs should be deemed desirable when and if they are ipso facto efficient and net beneficial to a target market.

This efficiency determination can be aided by CBA. The SEC has on several occasions voluntarily committed itself to CBA and economic

99 The civic republican theory assumes that regulatory and enforcement decision-making, as well as the identification of regulatory priorities, should proceed through “a process of dialogue and deliberation among all interested parties.” Croley, supra note 97, at 77. See also Mark Seidenfeld, A Civic Republican Justification for the Bureaucratic State, 105 HARV. L. REV., 1511 (1992). A regulatory activity is essentially conducted “in the interest of economic productivity,” while using the processes of deliberation “oriented to the public good.” CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE 12 (1990).


analysis in rulemaking\textsuperscript{102} even though it is not subject to the relevant orders applicable to the executive branch.\textsuperscript{103} Separately, several Executive Orders have urged independent agencies to consider qualitative and quantitative costs and benefits of their rules,\textsuperscript{104} while the Administrative Procedure Act ("APA") authorizes courts to "set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."\textsuperscript{105} Courts have connected this requirement to the broad statutory mandate of the SEC to facilitate competition, capital formation, and efficiency\textsuperscript{106} and highlighted the relevance of CBA.\textsuperscript{107}

As the DC Circuit Court of Appeals observed in \textit{Chamber of Commerce}, even when the costs may be hard to quantify, this "does not excuse the Commission from its statutory obligation to determine as best it

\textsuperscript{102} M\textsc{aeve P. C}\textsc{arey}, \textsc{Cost-Benefit and Other Analysis Requirements in the Rulemaking Process}, 17-18, (2014), at https://fas.org/sgp/crs/misc/R41974.pdf; Ahdieh, \textsc{supra} note 101, at 1986, 2000-04.

\textsuperscript{103} See, \textit{e.g.}, Exec. Order No. 12866, 58 C.F.R. § 51735 (1993); \textsc{Office of Mgmt. \& Budget, Executive Office of the President, OMB Circular No. A-4, Regulatory Analysis} (2003); Exec. Order No, 13771, 82 C.F.R. § 9339 (2017).


\textsuperscript{105} Administrative Procedure Act § 10(e)(1), 5 U.S.C. § 706(2)(A). For a review of the standard, see, \textit{e.g.}, Kathryn A. Watts, \textit{Proposing a Place for Politics in Arbitrary and Capricious Review}, 119 \textsc{Yale L.J.} 2.

\textsuperscript{106} 15 U.S.C. §§ 77b(b), 78c(f), 78w(a)(2) (2019); \textsc{U.S. Sec. \& Exch. Comm’n, What We Do} (2013), https://www.sec.gov/Article/whatwedo.html. See also Brummer & Yadav, \textsc{supra} note 91, at 242-43, 246 (viewing diverse regulatory objectives as a triangular conflict).

\textsuperscript{107} American Equity Inv. Life Ins. Co. v. S.E.C., 613 F.3d 166, 177, (C.A.D.C., 2010); Business Roundtable v. S.E.C., 647 F.3d 1144, 1148–49, 396 (C.A.D.C., 2011); Investment Co. Institute v. Commodity Futures Trading Com’n, 720 F.3d 370, 378, 374 (C.A.D.C.,2013) (“CFTC explicitly listed and analyzed the five statutory factors that it must take into account when “consider[ing]” and “evalu[ate]” the costs and benefits of a rule.”); The Loan Syndications v. Sec. and Exch. Comm’n, 223 F.Supp.3d 37, 70 (D.D.C., 2016) (finding that “the SEC engaged in a lengthy and thorough analysis of the various applicable factors...”). For an analysis and critique of Business Roundtable, see, \textit{e.g.}, James D. Cox & Benjamin J.C. Baucom, \textit{The Emperor Has No Clothes: Confronting the D.C. Circuit’s Usurpation of SEC Rulemaking Authority}, 90 \textsc{Tex. L. Rev.} 1811, 1813 (2012); Ahdieh, \textsc{supra} note 101, at 1988-91, 2005-06; Nagy, \textsc{supra} note 101, at 141-44 (reviewing relevant caselaw). See also David S. Ruder, \textit{Balancing Investor Protection with Capital Formation Needs after the SEC Chamber of Commerce Case}, 26 \textsc{Pace L. Rev.} 39, 51-52 (2005).
can the economic implications of [its] rule ….”

The Commission has a “statutory obligation to do what it can to apprise itself—and hence the public and the Congress—of the economic consequences of a proposed regulation before it decides whether to adopt the measure.” Through this combination of statutory, executive, and judicial mandates and voluntary commitments, the SEC’s rulemaking (but not enforcement) has long incorporated CBA as an assessment tool.

In crypto, however, there is not a new regulation to which an economic or CBA toolbox can be applied. The SEC has extended the reach of the previously existing securities regulations to new asset classes through enforcement actions, no-action letters, and staff guidelines. These methods are not subject to either CBA or the notice and comment process applied to formal rulemaking. Courts, as a review mechanism post hoc, are often deferential to the SEC, validate its new theories articulated in litigation, and are reluctant to challenge Commission’s interpretations of its own rules.

Similarly, consent orders (which are negotiated between an individual respondent and the SEC, often in the context of nonpublic investigations), as well as investigation reports have long acquired quasi-precedential value and have been cited in future cases and settlements. This trend has endured in crypto-related actions: since mid-2017, for

110 Ruder, supra note 107, at 42-43.
112 Pitt & Shapiro, supra note 11, at 207 (discussing insider trading enforcement and observing that “the lower courts were not troubled that the validation of the SEC’s new theories required judges to embrace the inherent assumption that the SEC’s ends… somehow justified the agency's means, that is, the creation of theories of law without a proper statutory foundation or predicate, in order to meet the exigencies of specific cases and to evade the restrictions of negative precedents.”).
113 Nagy, supra note 111, at 947, 970-80, 998-1003.
114 Pitt & Shapiro, supra note 11, at 269-71 (discussing the issue and observing that “[t]he application of such a negotiated position as precedent in future proceedings effectively bypassed the notice and hearing requirements of the Administrative Procedure Act (APA) for agency rulemaking”).
instance, the SEC and federal courts have cited\textsuperscript{115} the Report of Investigation commonly known as the DAO Report.\textsuperscript{116}

3. Enforcement as Informal Rulemaking

Regulation via enforcement is a commonplace tool deployed to impose securities regulations on financial markets.\textsuperscript{117} As Frank Partnoy observed, “this kind of approach might [even] be preferable to establishing detailed rules in advance”\textsuperscript{118} in the evolving markets.\textsuperscript{119} When confronted with complex and novel issues, SEC officials naturally should find it easier to rely on enforcement rather than to design a new rule or regulation.\textsuperscript{120} These \textit{ex post} interpretations of previously existing rules serve as a


\textsuperscript{117} Nagy, \textit{supra} note 101, at 154 (“[the] SEC can... effectively impose new regulatory requirements through the process of adjudicating administrative proceedings against alleged securities law violators or through the initiation of enforcement actions in federal district court.”)


\textsuperscript{119} See also Pitt & Shapiro, \textit{supra} note 11, at 161-68 (underscoring the downsides of enforcement without formal rulemaking, but generally viewing the SEC enforcement program with approval); Nagy, \textit{supra} note 111, at 947, 957-60 (1998) (cataloguing downsides and benefits); Donald C. Langevoort, \textit{The SEC as a Bureaucracy: Public Choice, Institutional Rhetoric, and the Process of Policy Formulation}, 47 WASH. & LEE L. REV. 527 (1990).

\textsuperscript{120} Pitt & Shapiro, \textit{supra} note 11, at 156.
convenient means for redefining the applicability of the rules\textsuperscript{121} and for making immediate decisions while a final regulation is still in the works.\textsuperscript{122}

Alongside its benefits, regulation via enforcement has downsides. In addition to its lacking in CBA and public review, there is also the danger that the original rule-drafters and public commentators did not contemplate new rule applications and that the rules are not suitable for such novel circumstances.\textsuperscript{123} The SEC may extrapolate its interpretations based on assumptions “from the past rather than thoughtful deliberation in a contemporary setting.”\textsuperscript{124} When the Commission is reluctant to adapt and modernize the rules it enforces, market participants are forced to comply with unsuitable regulations. Their unnecessary expenses increase the costs of innovations and reduce the amount of welfare-maximizing financial innovation.\textsuperscript{125}

Another related risk is that regulators and their enforcement staff are human beings with their cognitive and behavioral biases.\textsuperscript{126} The desire to

\begin{itemize}
\item \textsuperscript{121} See, e.g., Eric J. Pan, supra, at 1909 (citing Louis Kaplow, Rules Versus Standards: An Economic Analysis, 42 DUKE L.J. 557, 608-10 (1992)).
\item \textsuperscript{122} Nagy, supra note 111, at 952-53.
\item \textsuperscript{123} See, e.g., Roberta S. Karmel, Regulation by Prosecution: The Securities and Exchange Commission vs Corporate America 95-96, 317-22, 336 (1982) (observing that “[o]ther regulated persons who will become subject to that regulatory policy do not have the opportunity to object or to comment upon the new interpretation or rule, as they would have in a rulemaking proceeding,” id. at 96); Nagy, supra note 111, at 921 988-89 (observing that “[a]lthough the SEC staff may in fact engage in policymaking through announcing regulatory interpretations in no-action letters, these policy choices lack the political legitimacy of those that the full Commission makes when acting under its congressionally delegated authority”); Roberta S. Karmel, Government Lawyering, Creating Law at the Securities and Exchange Commission: The Lawyer as Prosecutor, 61 LAW & COMTEMP. PROBS. 33 (1998); Pitt & Shapiro, supra note 11. For an excellent summary on the competing justifications of regulatory modi, see generally James J. Park, The Competing Paradigms of Securities Regulation, 57 DUKE L.J. 625 (2007).
\item \textsuperscript{124} Langevoort, supra note 119, at 539.
\item \textsuperscript{125} Paul G. Mahoney, Is There A Cure For “Excessive” Trading?, 81 VA. L. REV. 713, 747–48 (1995) (providing a useful example on how “the funds were required to apply to the SEC for a number of exemptions from the provisions of the ICA,” that it was costly to obtain the exemptions, and that it took the SEC more than six years to change the exemptions).
\end{itemize}
protect investors – which is the first overarching mission of the SEC, from the risks associated with a financial innovation may eclipse their willingness to assess the broader consequences of enforcement.

The SEC, for instance, may find it hard to estimate the magnitude and frequency of violations within the universe of legitimate transactions. The unclear data on failed and fraudulent ICOs illustrate this problem. New technologies essentially introduce not only potential efficiencies but also significant uncertainties for capital market regulators.

Attempting to protect investors, the SEC enforcement staff may be putting “too much weight on what is immediately available and salient [like fraudulent or under-disclosed transactions], overestimating [their] frequency within the universe of possibilities compared to what is less available… or more uncertain. CBA addresses such emotional reactions to risk and cognitive biases. It focuses on a rational assessment of several institutional alternatives and helps to reduce “the tendency of mission-oriented agencies to reach irrational results.”

Such backstops are particularly essential in enforcement, which is run by career attorneys with a litigation mentality and good advocacy skills. CBA may help evaluate if the existing rules are worth enforcing, as well as

note 101, at 2013-14 (“A related dynamic is the tendency to give greater weight to clearly visible benefits or costs (i.e., those “on-screen”) versus those that are less apparent (i.e., “off-screen”)).

127 See, e.g., Donald C. Langevoort, The SEC As a Lawmaker: Choices About Investor Protection in the Face of Uncertainty, 84 WASH. U. L. REV. 1591, 1595 & 1625 (2006); Ahdieh, supra note 101, at 2051 (In reality, “[t]he SEC's investor protection function has thus come to be thought of as directed primarily to retail investors, and to other investors only secondarily.”).

130 Brummer & Yadav, supra note 91.
131 Langevoort, supra note 127, at 1609.
134 Langevoort, supra note 127, at 1621-22.
the manner, timing, and intensity of such enforcement vis-a-vis alternative courses of action.\textsuperscript{135}

There are also doctrinal reasons for a broader cost-benefit reassessment of the current broad and active crypto-enforcement program of the SEC. As the Supreme Court observed in \textit{Chenery Corp.}:

\begin{quote}
[T]he agency must retain power to deal with the problems on a case-to-case basis…. And the choice made between proceeding by general rule or by individual, ad hoc litigation is one that lies primarily in the informed discretion of the administrative agency.\textsuperscript{136}
\end{quote}

(emphasis supplied)

A key term here is “informed discretion” - the SEC needs to apprise itself of whether the markets receive the expected benefits from the enforced compliance, and, consequently, the need to enforce said compliance with the existing rules. This consideration implies some basic analysis of efficiency.\textsuperscript{137} To paraphrase, the ends should justify the means.

An assessment of enforcement intensity and the actual benefits of the rules on the bases of available information would be a marginal improvement versus a situation where no similar analysis has been done.\textsuperscript{138} Without a thoughtful balancing of costs and benefits of a regulatory action, “speculation and conjecture” fill that void and “those inside the agency are

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{135}] This conclusion is an extension of Cass Sunstein’s analysis. \textit{See} Sunstein, \textit{supra} note 132, at 1662. On cognitive limitations and CBA, \textit{see} Hahn & Sunstein, \textit{supra} note 101, at 1502; Sunstein, \textit{supra} note 101, at 1059.
\item[\textsuperscript{136}] \textit{Sec. and Exch. Comm’n v. Chenery Corp.}, 1580, 332 U.S. 194, 203 (U.S. 1947).
\item[\textsuperscript{137}] Ahdieh, \textit{supra} note 101, at 2010 (“Whether by clarifying the net benefits of a proposed rule, encouraging the better choice among competing proposals, or perhaps even highlighting rulemaking needs that might otherwise be overlooked, cost-benefit analysis may serve to enhance efficiency.”).
\item[\textsuperscript{138}] Ahdieh, \textit{supra} note 101, at 2011. \textit{National Ass’n of Manufacturers v. S.E.C.}, 800 F.3d 518, 552, (C.A.D.C.,2015) (“The goal of this analysis is not to ensure perfectly optimal enforcement and “measure the immeasurable.” (citation omitted)). This is impossible even in formal rulemaking. \textit{See}, \textit{e.g.}, John C. Coates IV, \textit{Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications}, 124 \textit{YALE L.J.} 882, 997 (2015) (“The central conclusion of the case studies is that quantitative CBA/FR is not currently feasible with any degree of precision and reliability for representative types of financial regulation.”); Nagy, \textit{supra} note 101, at 147-48 (reviewing relevant caselaw).
\end{itemize}
\end{footnotesize}
likely to interpret this conjecture with unwarranted confidence by drawing on shared assumptions and efforts to ‘make sense’ of things.”

When setting forth its enforcement policies and determining enforcement intensity in digital-asset offerings, the SEC does not seem to have made an attempt at examining the situation from the cost-benefit perspective. Nor has it carefully evaluated other alternative considerations.

Most importantly, the Commission has not made a plausible case for the following questions: will the existing rules and exemptions result in the level of disclosure that investors value and will the mandatory disclosure regime be net beneficial to market participants? An interesting fact is that the SEC had made a strong public commitment to the policy of requiring compliance with the pre-crypto rules and regulations in the second half of 2017, which was before it even hired its excellent cohort of crypto-experts.

The following Part seeks to help the SEC and market participants to address this gap and provides a qualitative cost-benefit calculus of an average digital-asset issuer and investors. The foundational maxim here is that a regulator needs to select among available strategies, including enforcement and its intensity, in light of the respective pros and cons of the alternative policy options.

D. Cui Bono? Or When Ends are Not Necessarily Related to the Means

139 Langevoort, supra note 127, 1610.
140 I agree with Prof. Posner’s conclusion that CBA is not the only metric and other considerations may override CBA. Posner, supra note 101, at 1157.
141 The DAO Report, supra note 69.
143 In the absence of data, the analysis does not need to be solely quantitative. See, e.g., Hahn & Sunstein, supra note 101, at 1499 (“We therefore understand cost-benefit analysis to require a certain procedure: A quantitative and qualitative accounting of the effects of regulation, together with a duty to explain the grounds for action unless the benefits exceed the costs.”)
144 See, e.g., Pildes & Sunstein, supra note 101, at 52.
1. Basic Economic Concepts

The notion of efficiency has multiple meanings. The most suitable concept for this analysis is Kaldor-Hicks efficiency, which is assessed through CBA and is a useful, although by no means the sole, metric. “A change is an improvement if those who gain evaluate their gains at a higher figure than the value which the losers set upon their losses.” Even though losses suffered by some individuals or firms from a regulatory action, or inaction, can be compensated from the gains of the winners, the losers do not need to be actually paid.

By way of example, compliance with the federal securities law entails significant costs for issuers. Unless an issuer relied on an exemption from registration, it would outlay significant resources on preparing public offering documents and face the risk of liability under Sections 11 and 12(a)(2) of the Securities Act for material misstatements and omissions in its registration statement and prospectus. An SEC enforcement action or a private class action under Rule 10b-5 and Section 10(b) of the Exchange

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145 HENRY N. BUTLER ET AL., ECONOMIC ANALYSIS FOR LAWYERS 52 (Carolina Academic Press, 3d ed. 2014). It differs from the stricter Pareto efficiency criterion, which is much harder to apply in a regulatory analysis. Pareto efficiency “require[s] the losing party to be compensated so that he is at least as well off as before the change occurred,” which is often impossible within complex regulatory settings. Id. See also WILLIAM BAUMOL, ECONOMIC THEORY AND OPERATIONS ANALYSIS 400 (Prentice-Hall 3d ed. 1972).

146 Adler & Posner, supra note 101, at 176–77 (“The term “cost-benefit analysis” itself is used to refer to the Kaldor-Hicks standard, to the method of compensating or equivalent variations, and sometimes to any method that requires trading off costs and benefits rather than relying on absolute standards.”).

147 Posner, supra note 101, at 1155–56 (“Throughout this comment, when I use the term cost-benefit analysis without qualification it is in the Kaldor-Hicks sense, but it may refer to any of the three uses of cost-benefit analysis that I have identified—as pure evaluation, as an input into decision, or as the decision rule.”); Ahdieh, supra note 101, at 2010-12 (summarizing various views on efficiency and cost-benefit analysis).

148 Baumol, supra note 145, at 402.


Act also looms large in the minds of firms. Issuers also purchase insurance to cover their liability and directors and officers’ liability. After a public offering, reporting obligations apply. Issuer costs, actual and expected, thereby may be considerable. The offsetting increase in demand and the price investors would be willing to pay for the digital-asset securities accompanied by mandatory disclosure could be less than the issuer’s regulatory costs and liability risk. Consequently, compliance would be a net loss to the issuer.

At the same time, the benefits to the cryptoasset investors from better disclosure and a reduction in agency costs could exceed the issuer’s costs (and the costs of enforcement). Therefore, under the Kaldor-Hicks criterion, enforcing compliance with securities law would be deemed efficient. CBA in this example is a comparison of the costs and benefits of regulations and their enforcement.

The following Sections will not address the costs and benefits that the SEC itself incurs in bringing enforcement actions. The analysis will focus solely on investors and issuers. As rational market participants, both should “prefer outcomes with higher payoffs to those with lower payoffs.” Securities regulation helps them determine their respective payoffs.

Issuers make the opening move in this extensive form game that essentially has two major compliance options. An issuer may seek financing through a public offering and register digital-asset securities with the SEC. In the alternative, it can rely on various exemptions under Sections 4(a)(2)

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151 15 U.S.C. § 78(j); 17 C.F.R. § 240.10b-5.
152 See infra Part D(2).
154 Ruder, supra note 107, at 64 (“Despite comments made during the rule adoption process that these disclosures impose unnecessary costs on businesses, the benefits to market efficiency from the SEC’s required disclosures seem to outweigh their costs, and the effect on capital formation seems to be positive.”)
156 Baird, et al., supra note 155, at 50-51 (describing extensive form games).
157 On the dichotomy of public and private offerings, see, e.g., Usha Rodrigues, Financial Contracting with the Crowd, 69 69 EMORY L.J. 397, 405-09 (2019).
and 3(b) of the Securities Act. Typically, it would seek capital from wealthy investors and venture capital firms and/or resort to exemptions from registration under Regulations D or A. The investor, on her part, has two moves: to assess the information about the securities and, based on this assessment, to add or not to add the digital assets to her portfolio.

2. Public and Mini-Public Offerings

2.1. Issuer Costs and Risks in Public Offerings

Consider first the payoffs of an issuer in a registered public offering. Public offering documents provide wide-ranging disclosures and, by assumption, should enable investors make informed investment decisions. Firms selling securities to the public face a number of associated costs that may be grouped into drafting, marketing, approving of offering documents by the SEC, the allocation and opportunity cost of time, and the expected litigation costs.

This Section mainly examines crypto-issuers’ costs. One reason is the lack of data that makes it harder to quantify the offsetting benefits. Cryptoasset issuers rarely venture public offerings. One of the first Forms S-1 was filed by the Praetorian Group in March 2018 but withdrawn more recently.

158 15 U.S.C. §§ 77c(b); 77d(a)(2) (2019); see also H.R. REP. NO. 73-85 (1933). This discussion skips crowdfunding. For an overview of crowdfunding, see, e.g., Joan MacLeod Heminway, Selling Crowdfunded Equity: A New Frontier, 70 OKLA. L. REV. 189 (2017); David Groshoff, Alex Nguyen, Kurtis Urien, Crowdfunding 6.0: Does the SEC’s FinTech Law Failure Reveal the Agency’s True Mission to Protect— Solely Accredited— Investors?, 9 OHIO ST. ENTREPRENEURIAL BUS. L.J. 277 (2014).


161 See id. § 230.251 et seq. For a review of other, less frequently used regulations, see, e.g., Brummer et al., supra note 59, at 502-11, 520-21 (also suggesting new exemptions); Goforth, supra note 13, at 441-54.


163 The Praetorian Group, Form S-1, 25-26 (Mar. 6, 2018) https://www.sec.gov/Archives/edgar/data/1721980/000137647418000045/pr_s1.ht
than a year later. Some crypto-issuers that became registered and reporting companies per the terms of their settlement agreements with the SEC did not follow up with a Securities Act registration statement. Instead, they filed the Exchange Act Form 10.

The search of all 2017-2020 filings on EDGAR and Blomberg Law’s EDGAR database generated only a handful of S-1s for digital-asset offerings. Table 2 provides the summary.

Table 2: Forms S-1

<table>
<thead>
<tr>
<th>Company</th>
<th>Year Filed</th>
<th>Status</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monster Products, Inc.</td>
<td>2018</td>
<td>Withdraw</td>
<td>6 months after filing</td>
</tr>
<tr>
<td>Praetorian Group Inc.</td>
<td>2018</td>
<td>Withdraw</td>
<td>15 months after the filing</td>
</tr>
<tr>
<td>Dakota Coin Authority</td>
<td>2020</td>
<td>Withdraw (&quot;determined at this time to proceed confidentially&quot;)</td>
<td>2 days after the filing</td>
</tr>
</tbody>
</table>

I have reviewed Forms S-1 (not Forms S-3) because we may assume that most digital-asset issuers are unseasoned. Consequently, they would need to file a registration statement on Form S-1 containing detailed disclosures and audited financial statements.

Preparing this document is costly. Unless the issuer does a direct public offering, its costs are also increased by the need to pay the underwriter spread and by possible underpricing. Digital-asset markets reduce some of these costs because the offering process is typically more

m. See also SEC Order Declaring Registration Statement Abandoned, File No. 333-224435, (March 5, 2019).


167 Underpricing generally means that an issuer sells securities at a price lower than its real value. See, e.g., David P. Baron, A Model of the Demand for Investment Banking Advising and Distribution Services for New Issuers, 37 J. Fin. 955 (1982).
disintermediated. For instance, smart contracts would directly deliver digital assets to investors’ wallets; and global marketing and social media events would not require traditional investment bankers set up roadshows with their clientele. Underpricing in cryptoasset offerings, however, could remain substantial.

The other major cost is time. The SEC acknowledges that “[a] lengthy waiting period prior to a registered offering combined with a potentially uncertain registration process are particular concerns for smaller issuers contemplating a registered public offering…. The nature of cryptoassets further increases the opportunity cost of time and the risk of competition.

Consider that by their very nature, open-source platforms and software allow modifications and inspection by the user community, and that code disclosure through repositories such as Github is common. Markets prefer offerings where the code is disclosed, which is measured, inter alia, by successful offering completion and asset liquidity. These factors incentivize entrepreneurs to voluntarily provide information to the market.

Technological development, however, is fast-moving and interdependent. This contraposition of publicity with the speed of innovations and technological interdependency suggests that a specific technology may become obsolete quickly, that hackers may learn about weaknesses in the code and exploit them in the future, and that

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169 Ofir & Sadeh, supra note 50, at 42-43, nn.293-306 (summarizing the findings on underpricing).


172 Rodrigues, supra note 20, at 704 (“While most media outlets characterized this attack as a “hack,” an open letter purporting to be from the perpetrator of the June 17th attack, addressed ‘To the DAO and the Ethereum community,’ disagreed: I have
developer’s competitive advantages may be quickly eroded.\textsuperscript{173} These risks and considerations should reinforce the desire to raise capital fast.

A typical timeline in any public offering may be longer than in a private placement because the Division of Corporation Finance routinely provides comments to issuers\textsuperscript{174} before the SEC declares a statement effective.\textsuperscript{175} While the SEC may not examine closely registration statements of every seasoned issuer, it does tend to review registration statements filed in the course of initial public offerings.\textsuperscript{176} Most importantly, as Table 2 illustrates, getting a crypto-related registration statement to the finish line is uncommonly long and yet to be successful.

After the offering, the issuer, as well as its directors and officers, among other parties,\textsuperscript{177} would face another category of costs - the costs of enhanced private liability for material misstatements and omissions in the registration statement and prospectus. The expected liability under Securities Act Sections 11 and 12(a)(2) would force the offering “wordsmiths” to tread carefully, which, in turn, would increase the costs of drafting.\textsuperscript{178} There is also the risk of antifraud liability under Exchange Act Section 10(b) and Rule 10b-5.\textsuperscript{179} The forward-looking statements made by an issuer in an initial public offering would also not be covered by the safe harbor under the Private Securities Litigation Reform Act.\textsuperscript{180} Congress intended it this way to create incentives for issuers selling securities to provide sufficient information to public investors.\textsuperscript{181}

carefully examined the code of The DAO and decided to participate after finding the feature where splitting is rewarded with additional ether. I have made use of this feature and have rightfully claimed 3,641,694 ether, and would like to thank the DAO for this reward.”).

\textsuperscript{173} Bourveau et al., supra note 66.
\textsuperscript{174} Most issuers voluntarily waive their statutory right that the registration statement become effective automatically after 20 days. 15 U.S.C. § 77h(a); 17 CFR § 230.461.
\textsuperscript{176} See, e.g., Coates, supra note 97, at 551.
\textsuperscript{177} Hu, supra note 14, at 1624.
\textsuperscript{178} 15 U.S.C. §§ 77k, 77l(a)(2).
\textsuperscript{180} 15 U.S.C. § 77z–2(b)(2). The bespeaks caution doctrine, however, may still apply.
\textsuperscript{181} H.R. REP. No. 73-85, at 3-6, 8-10 (1933); Franklin D. Roosevelt, President, Message to Congress on Federal Supervision of Investment Securities (Mar 29, 1933) (Online by Gerhard Peters and John T. Woolley, The American Presidency Project ).
In crypto-offerings, however, this intermediary-depiction model accompanied by issuer-intermediary liability presents a dilemma. On the one hand, the code, i.e., the major firm’s asset and “hard information,” is often publicly viewable, reviewed by the community, and audited. On the other hand, whitepapers have been famously diverse and full of aspirational statements and soft information. These practices point toward the possibility of an *ex ante* expectation shared by issuers and the crypto-market - the information provided by issuers may be *incomplete* in some material respects.

The community must be equally aware that a crypto-issuer, as an information intermediary, may misunderstand multifaceted objective realities. Indeed, the community helps developers to improve their code. Building on Henri Hu’s idea, because of the sheer complexity of technology, “it can be difficult for even the most well-intentioned of [issuers] to craft good depictions of reality, especially when the reality is highly complex.”

The current securities law regime, however, mandates that issuers provide an accurate, complete and comprehensible “plain English” depiction of reality to investors at the time of their offerings. Should the depiction prove to be incomplete, should intentional or even unintentional slippage between the source code and the prospectus appear in the offering documents, should the flaws in the code be discovered and/or price of the cryptoassets fall, the issuer would be exposed to liability under the Securities Act.

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182 Third parties that examine the code, depending on their incentives, may reveal or exploit the flaws and security risks of a code. Rodrigues, *supra* note 20, at 704-705, 711-12 (discussing the letter from the alleged hacker of The DAO and, inter alia, reviewing how hackers can undermine anonymity); Cohney et al., *supra* note 39, at 627 (finding flaws in the sample codes).


184 Hu, *supra* note 14, at 1609

185 *Id.* at 1608.

186 *Id.* at 1624.

187 *Id.* at 1637.

188 See, e.g., Balestra v. ATBCOIN LLC, 380 F. Supp. 3d 340, 347 (S.D.N.Y. 2019) (“[w]hen “the blockchain [proved to be] not capable of the technological feats
2.2. Mini-Public Offerings

An issuer seeking to economize on the costs of a public offering can do a mini-public offering under Regulation A. In 2019, the total capital raised in Regulation A offerings reached the one-billion-dollar benchmark. The exemption offers two Tiers, 1 and 2, for offerings of up to $20,000,000 and $50,000,000, respectively. 2019 Tier 2 offerings comprised the majority of the offerings.

This is not surprising because Tier 1 poses practical hurdles. Not only the SEC but also state regulators are involved in the pre-offering review, and blue-sky laws apply. The challenge specific to digital-asset issuers here is that they would have to navigate different states’ regulatory landscapes and deal with the currently divergent tolerances for cryptoassets.

Tier 2 offerings are procedurally simpler because the issuer needs to file and qualify Form 1-A only with the SEC, and because Form 1-A is shorter than Form S-1. In 2020, the SEC proposed to increase the capital raising limit to $75 million, which should boost the appeal of Tier 2.

In addition, in December 2019, the SEC issued a proposing release broadening the “accredited investor” definition. Regulation A imposes an investment limit on non-accredited investors if the offered securities are not listed on an exchange. Expanding the cohort of accredited investors

Defendants advertised,” and the price of the assets at issue fell about 85%, purchasers filed a class action lawsuit under Securities Act Section 12(a).”)

189 17 C.F.R. § 230.251.
190 Release No. 33-10763, supra note 170.
191 Id. See also Lookback Study, supra note 60.
196 For a discussion on the accredited investor status, see supra notes 282-293.
would further enlarge the investor base for Tier 2 offerings. Having more potential investors should entail more competition among them, which could decrease the cost of capital for Regulation A issuers making this route more appealing to firms.

Despite these developments, Regulation A, just like the registered public offerings regime, presents multiple challenges to cryptoasset issuers. On the liability side, although Securities Act Section 11 liability is not applicable in Regulation A offerings, Section 12(a)(2) and Section 17 provisions continue to apply, and so do Section 10(b) and Rule 10b-5. More importantly, the eligible securities are conventional equity and debt, as well as convertible securities. The SEC has not proposed changes to this requirement. Cryptoasset classifications, however, are infinitely diverse and evolving. Consequently, only certain crypto-firms whose digital assets can be analogized with conventional securities will be able to rely on the Regulation.

The next challenge, just like in public offerings, is the cost of time. On the one hand, some of the amendments proposed in March 2020 would reduce this cost. One particularly relevant example is the proposed expansion of the test-the-waters provisions using general solicitation of interest, which can be done prior to determining the specific exemption for the offering. Gauging market interest ahead of raising capital can be uniquely beneficial to developers in the fast-changing world of technology.

On the other hand, the timeline of Regulation A digital-asset offerings has been anything but short, which implicates the same costs and technology-related issues as discussed above. By way of example, in the spring of 2019, practitioners complained that first Forms 1-A were filed as early as 2017; that the SEC did not qualify a single offering statement; and that when the Commission did approve one offering after an extensive

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200 Release No. 33-10763, supra note 170, at 139-40.
201 Reyes, Rockefeller, supra note 20; Rohr & Wright, supra note 13; Guseva, supra note 2.
review, that issuer had to eviscerate the offering documents by replacing the references to tokens with customary “preferred stock.” Some issuers affirmatively changed their plans and proceeded with offering shares of stock under Regulation A. Securities law thus channeled crypto-issuers toward the more familiar to the regulator equity securities, which between 2015 and 2019 represented 93% of all Regulation A offerings.

In mid-July 2019, the Commission qualified in rapid succession the first and second Regulation A digital-asset offerings. These registrants, however, both waited for about ten months before the SEC gave the green light to their token offerings. Note also that these offerings were not fully representative of the ICO market and that both issuers had either already raised capital in private placements or were backed by institutional investors and venture capital firms. They had the resources to wait. Another example is Prometheum, whose A-1 has been pending for more than two years.

The following Table presents the results of my analysis of all Regulation A crypto-offerings and shows how rare successful filings have been. It appears that the risks of Regulation A, as well as the uncertainty

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205 See, e.g., Dilendorf et al., supra note 203 (discussing the revised offering terms of StartEngine).
207 Lookback Study, supra note 60, at 14. Just like in public offerings, Regulation A securities are limited to traditional securities. See Release No. 33-10763, supra note 170, at 140.
210 See, e.g., YouNow Offering Circular, supra note 208, at 76; Blockstack Circular, supra note 38, at 12.
212 My research team and I searched EDGAR and the Blomberg Law’s EDGAR database for Forms 1-A filed between mid-2017 and May 2020. The methodology is
and issuers’ timing costs remain considerable even though the SEC has already approved some Regulation A crypto-offerings and should be more accustomed to digital-asset securities.

Table 3: Forms 1-A

<table>
<thead>
<tr>
<th>Company</th>
<th>Year Filed</th>
<th>Comments/Qualified/Withdrawn</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prometheum, Inc.</td>
<td>2017</td>
<td>Pending; Multiple amendments (Warrants Convertible into Future Tokens)</td>
<td></td>
</tr>
<tr>
<td>Buying.com LLC</td>
<td>2018</td>
<td>Abandoned</td>
<td>8 months after filing</td>
</tr>
<tr>
<td>ConnectIX, Inc.</td>
<td>2018</td>
<td>Abandoned</td>
<td>9 months after filing</td>
</tr>
<tr>
<td>Gab AI Inc.</td>
<td>2016</td>
<td>Withdrawed (&quot;decided to seek other capital raising alternatives&quot;)</td>
<td>15 months after initial filing</td>
</tr>
<tr>
<td>Item Banc</td>
<td>2018</td>
<td>Abandoned (Securities Convertible into Future Tokens)</td>
<td>10 months after filing</td>
</tr>
<tr>
<td>Knowbella Helix Inc.</td>
<td>2018</td>
<td>Withdrawn (&quot;the current market situation is not suitable for the Company&quot;)</td>
<td>3 months after initial filing</td>
</tr>
<tr>
<td>QuantumRE, Inc.</td>
<td>2018</td>
<td>Pending</td>
<td></td>
</tr>
<tr>
<td>AW Blockchain Mining, Inc.</td>
<td>2019</td>
<td>Withdrawn (Coin Series of Preferred Stock; stated that it was &quot;unable to move forward with the offering&quot;)</td>
<td>6 months after initial filing</td>
</tr>
<tr>
<td>Blockstack Inc.</td>
<td>2019</td>
<td>Qualified</td>
<td>2 days after filing</td>
</tr>
<tr>
<td>Blockstack Token LLC</td>
<td>2019</td>
<td>Withdraw (&quot;the Company’s parent, Blockstack PBC... determined to act as issuer in the Company’s place in the offering of Stacks Tokens&quot;)</td>
<td>10 months after filing</td>
</tr>
<tr>
<td>EmpireBIT, Inc.</td>
<td>2019</td>
<td>Withdraw (Securities Convertible into Future Tokens; stated that it changed the &quot;business model and will not be pursuing an offering that involves tokenized securities&quot;)</td>
<td>3 weeks after initial filing</td>
</tr>
<tr>
<td>Priza Technologies Inc.</td>
<td>2019</td>
<td>Pending; amendment filed</td>
<td></td>
</tr>
<tr>
<td>(d/b/a Prizatech)</td>
<td>2019 &amp; 2020</td>
<td>Qualification in 2019 &amp; 2020; Preliminary Offering Circular dated May 11, 2020</td>
<td>10 months after filing</td>
</tr>
</tbody>
</table>

2.3. Issuer Reporting Costs

In addition to the expected costs of time, drafting, marketing, liability, and approving offering documents, other crucial outlays would stem from the compliance with the ongoing reporting obligations. The obligations apply to issuers that have conducted public offerings and, on a reduced scale, to Tier 2 Regulation A issuers.\(^\text{213}\) Logically, the described above flaws in the intermediary-depiction model that distort initial filings should be equally applicable to periodic reports.

For one, cryptoasset issuers may find it “difficult to capture a highly complex objective reality with very rudimentary English Language and accounting, visual, and other tools on which depictions must primarily rely.”\(^\text{214}\) Some reporting regulations date back to the 1970s-1980s.\(^\text{215}\) In addition to this self-evident concern, the structure of the current securities regulations relies heavily on prescriptive line-item disclosure and rule enforcement as opposed to principles-based rules and enforcement.\(^\text{216}\) These SEC-specified data “heavily influence what data fields market participants actually use in their decision making,” triggering Heisenberg effects even when the prescriptive rules per se are either irrelevant or substantively obsolescent.\(^\text{217}\)

The SEC recently adopted and proposed amendments\(^\text{218}\) to Regulation S-K.\(^\text{219}\) The Releases address this juxtaposition of outdated rules, Heisenberg’s problem, and the uncertainty principle.\(^\text{220}\) In relevant parts, for instance, the rules acknowledge the need to tailor disclosure to the realities of new types of businesses and technology-based economy, to expand...


\(^{214}\) Hu, supra note 14, at 1652-53.

\(^{215}\) Release Nos. 33-10668, supra note 162, at 8-9, 48.


\(^{217}\) Hu, supra note 14, at 1686.


\(^{219}\) 17 C.F.R. § 229.10 et seq. (2019).

\(^{220}\) See, e.g., George Soros, Fallibility, Reflexivity, and the Human Uncertainty Principle, 20 J. OF ECON. METHODOLOGY 309 (2013) (describing Heisenberg’s problem and how established frameworks can affect the underlying subject matter).
principles-based disclosure, and to rely more on materiality analysis. The changes concern, *inter alia*, description of physical property, general development and business, human capital policies, and risk factors.\textsuperscript{221} This expanded focus on principles, however, would not solve the other discussed above problems with the intermediary-depiction model, including, *inter alia*, the “slippage” between the code and the language of issuer reports. Through the inherent limitations of plain English disclosure in application to complex financial products, ambiguities and inaccuracies in reports could ensue.\textsuperscript{222} These inaccuracies would expose crypto-issuers to such ramifications as a heightened risk of securities class action litigation and, at the same time, make their periodic reports less informative to investors.

A related set of costs would accrue from the potential application of these reporting obligations to issuers that no longer controlled the cryptoassets, their circulation, pricing, and, ultimately, investors’ return. The danger here is that cryptoassets that did not have security-like attributes after an issuer-developer had completed and deployed its project would subject the developer to the ongoing reporting obligations under securities law.\textsuperscript{223} Ether is an apropos illustration of such a project: although it is now generally considered a cryptocurrency and commodity,\textsuperscript{224} it started off as a financial instrument used for raising capital for Ethereum and its ecosystem. *Telegram* and *Kik* are the other relevant examples: in both cases, the issuers raised capital on the promise to provide return to investors in the form of cryptoassets whose future pricing, circulation, and valuation, allegedly, were independent of the issuers.\textsuperscript{225}

\textsuperscript{221} For changes concerning materiality determination in Items 102, 105, 601(b), see U.S. SEC. & EXCH. COMM’N, Release No. 33-10618 (March 20, 2019). For proposed principles-based and materiality-based reporting in Items 101(a)&(c) and 105, see Release Nos. 33-10668, supra note 162.


\textsuperscript{223} As discussed in Part B, securities law does and must apply when an issuer is raising funds by selling the right to digital assets (either native or nonnative tokens) and is often irrelevant outside the capital-raising context. Guseva, *supra* note 2.


In these and similar cases, digital-asset securities may either expire or transform into non-securities by falling outside the reach of the *Howey* test. The centerpiece of the Supreme Court’s *Howey* test is an investment of money in a central enterprise with the expectation of profit from the managerial efforts of another. If a digital asset has all these attributes, then the asset is an investment contract and a security. When one of the *Howey* prongs is inapplicable, the cryptoasset should not be deemed a security.

By way of example, after raising capital, cryptoasset values and governance may be determined by the decentralized community, not by the issuer. Blockstack, the first Regulation A issuer, indicated in its 2020 report that “Blockstack anticipates that the Blockstack network will become an independent, decentralized ecosystem, over which no one party, including Blockstack PBC or its affiliates, will have control.” Put differently, the issuer-promoter expected that it would cease to be the central enterprise from whose efforts investors had initially expected investment profit.

This finding would negate the application of the *Howey* test to the cryptoassets. The former security used for raising capital could transform into a marketable commodity, like Ether, whose prices would be determined by market forces, encoded formulas, and other mechanisms independent and autonomous from the issuer-developer. Under the current regime, however, the issuer would continue to comply with the ongoing mandatory reporting even when the nature and risks of the cryptoassets it had developed no longer warranted disclosure.

The purpose of such mandatory disclosure by the original issuer-developer may be unclear. An apropos example is Telegram: one of Telegram’s executives was puzzled in his deposition with the SEC as to why the holders of native tokens would need issuer reports after the launch of an

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228 15 U.S.C. § 77(b)

229 Blockstack PBC, Form 1-K, at 5; https://www.sec.gov/Archives/edgar/data/1693656/000119312520124379/d918967dpartii.htm

230 Blockstack PBC, Form 1-K, at 4; https://www.sec.gov/Archives/edgar/data/1693656/000119312520124379/d918967dpartii.htm

231 For a detailed discussion, see, e.g., Guseva, supra note 2.
open-source decentralized public blockchain when the issuer’s obligations to develop and deliver the project were complete.  

Arguably, issuer’s depictions of reality and pertinent disclosure would be useless to the market in these circumstances. If the issuer is unable to move the needle on asset prices, ex hypothesi, it does not have material inside information giving it an advantage over the rest of the market. Put plainly, in capital markets, information results in trading profits. An issuer without material inside information cannot cheat and, by the same token, cannot make secondary market trading more informative by filing mandatory reports. Neither would the investors benefit from such issuer disclosure. 

The public and mini-public offering regulations concerning reporting obligation suspension and termination have been designed for traditional companies. They generally include several routes, such as delisting and decreasing the number of holders of record and assets below a certain threshold. The rules do not specifically capture the moment when an asset transitions from a security into a non-security or a security ceases to exist. A suspension or termination of reporting obligations would be delayed, for instance, during the fiscal year following an offering.

A final critical cost would be the impact of these obligations on crypto-firms’ governance and corporate finance. Blockstack, as the first mini-public offering issuer and a convenient reference point, included in its offering circular a section on whether its tokens would be deemed securities in future and added that it would engage in an ongoing determination process. Its April 2020 Annual Report pursuant to Regulation A reiterated that “[t]he board of directors… will be responsible for regularly considering and… determining whether the Stacks Tokens no longer constitute securities issued by us under the federal… securities laws….”

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236 Blockstack Circular, supra note 38, at 11.
237 Blockstack PBC, Form 1-K, at 5; https://www.sec.gov/Archives/edgar/data/1693656/000119312520124379/d918967dpartii.htm
This ongoing determination hinges on the uncertainties of *Howey*, including the level of network decentralization, as well as whether “purchasers of Stacks Tokens reasonably expect Blockstack to carry out essential managerial or entrepreneurial efforts, and whether Blockstack retains a degree of power over the governance of the network such that its material non-public information may be of special relevance to the future of the Blockstack network, as compared to other network participants.”

As a result, the current securities regulations effectively require an issuer’s board of directors to constantly examine whether the firm’s assets are still securities, while its accountants need to ponder how to reclassify the firm’s cryptoassets on the balance sheet and related transactions on the statement of cash flows. These crucial analyses depend on the conclusions of the firm’s counsel grappling with the uncertainties of the *Howey* test and SEC’s interpretations of *Howey*.

Once that determination, however difficult it is, is made, the firm would look to the current rules on suspension and termination of reporting obligations that have not been designed for cryptoassets. All of this should be done with the discussed above implicit understanding that the SEC’s interpretations of its rules are not easily challenged in court and that the Commission enjoys the upper hand in negotiations and settlements with issuers.

2.4. The Uncertain Benefits

A rational issuer would balance these costs and risks against the expected benefits of public and mini-public offerings. The benefit metric is more difficult to quantify compared with the cost metric. The compliance benefits may include mitigating the risk of an SEC enforcement action for failure to register digital-asset securities under Securities Act Section 5 and a lower risk of liability under Securities Act Section 12(a)(1) for offering and selling securities in violation of Section 5.

This reduction, however, is offset by the discussed above liability under Securities Act Sections 11 and 12(a)(2) that grant security-purchasers a cause of action for material misstatements and omissions in public offering documents. The risk of antifraud liability under Exchange Act Section 10(b) and Rule 10b-5 also remains a factor.

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238 Blockstack PBC, Form 1-K, at 5; https://www.sec.gov/Archives/edgar/data/1693656/000119312520124379/d918967dpartii.htm

239 Pitt & Shapiro, *supra* note 11, at 155-60 (discussing regulation by enforcement).


One expected compliance benefit rests on the assumption that mandatory issuer disclosure may be associated with, *inter alia*, lower agency costs and information asymmetry, better access to public investors, and a lower cost of capital.\(^{242}\) Dozens of empirical articles on cryptoasset offerings, however, examine mainly voluntary disclosure by issuers, not public offerings structured under the mandatory securities law provisions.\(^{243}\) The benefits of *mandatory* disclosure *per se* are yet unknown.

Given the lack of data and only a few Regulation A registrants, there is merely anecdotal evidence, and it is not promising. Blockstack, for example, planned to raise $40,000,000 in its July 2019 Tier 2 Offering.\(^{244}\) Its first semiannual report showed, however, that the issuer had managed to raise only $15.5 million.\(^{245}\) Self-evidently, we do not have a counterfactual. Would Blockstack have raised more capital had it structured its offering abroad in an ICO-friendly jurisdiction instead of resorting to Regulation A?\(^{246}\) Would Blockstack have raised more capital if it filed an S-1 because Regulation A mini-public offerings have long been less popular distant cousins of public offerings?\(^{247}\)

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242 Merritt B. Fox, *Retaining Mandatory Securities Disclosure: Why Issuer Choice Is Not Investor Empowerment*, 85 Va. L. Rev. 1335, 1365–67 (1999) (“[W]ithout [mandatory disclosure], the market knows that managers will be subsequently tempted to switch to a lower disclosure regime and thus the market will discount the share price at the time of the IPO to reflect this possibility.”)

243 Ofir & Sadeh, supra note 50, at 44, nn. 307-315 (summarizing about a hundred empirical papers).

244 Blockstack Circular, supra note 38, at i.

245 Blockstack PBC, Form 1-SA, Semiannual Report (Sept 27, 2019), at 1, 7, 20 https://www.sec.gov/Archives/edgar/data/1693656/000110465919051845/a19-18670_11sa.htm. The total sale revenues from Regulation A and Regulation S offerings were about $23,000,000.

246 The problems may, of course, be related to the market’s concerns about Regulation A or the Blockstack’s business model. See, e.g., Lookback Study, supra note 60, at 13-15 (observing that many Regulation A issuances are “best-efforts, self-underwritten offerings with limited institutional participation,” id. 13, with low liquidity). See also Danny Nelson, *Blockstack Ran on Token Sales in 2019, Says Latest SEC Filing*, COINDESK(May 29, 2020), https://www.coindesk.com/blockstack-ran-stacks-token-sales-2019-sec-filing?utm_source=newsletters&utm_medium=blockchainbites&utm_campaign=&clid=00Q1I00000KKhLtUAL (“Blockstack’s financial operations have run almost exclusively on Stacks token sales – a revenue stream the decentralized web builder said it does not expect to tap into again”).

247 For the data on offerings, see Release No. 33-10763, supra note 170, at 9; Lookback Study, supra note 60, at 13-15, 20-24 (discussing the challenges in Regulation A offerings).
As more data accumulate, it would be feasible to quantify the benefits. Perhaps, we would also find answers to the following “bonding-hypothesis-type” questions: whether U.S. securities laws are net costly to crypto-issuers and whether crypto-investors pay a premium for digital-asset securities issued in public and mini-public offerings.

Without additional data, it is reasonable to assume that an average crypto-issuer may conclude with some certainty that its costs in a public or mini-public offering would be substantial, that it may not internalize the offsetting benefits, and that the benefits could fail to accrue. The same is true for the liability risk: the issuer’s exposure would be reduced under some securities law provisions and increased under others. On balance, it is not surprising that cryptoasset issuers seem to prefer private placements.

2.5. Investor Payoffs

Now, let us canvass investor payoff arguments. The main putative benefit of securities regulations is that digital-asset purchasers should receive information material to their transactions. After all, the integral objective of the disclosure regime is to ensure that investors receive adequate information enabling them to assess their prospective purchases, while unscrupulous issuers and other market participants face a heightened risk of liability under the securities statutes. In other words, the key objective is to mitigate information asymmetry between investors and issuers.

The SEC’s mission is built on this need for information. True to form, the SEC staff has restated these objectives in releases concerning its

249 See supra Fig. 2 & infra Appendix IV.
250 Fox, supra note 242, 1465 (“The most prominent feature of securities regulation in the United States is the mandatory disclosure system.”).
252 See, e.g., Ernst & Ernst v. Hochfelder, 425 U.S. 185, 195 (1976) (citing H.R. REP. No. 73-85, at 1-5 (1933)). See also Fox, supra note 242, at 1335 n. 63.
253 U.S. SEC. & EXCH. COMM’N, WHAT DO WE DO (Jun 10, 2013), https://www.sec.gov/Article/whatwedo.html#:~:text=The%20mission%20of%20the%20laws%20and%20rules%20that%20govern%20the%20securities%20industry%20in%20the%20United%20States%20derive%20from%20a%20simple%20and%20straightforward%20concept:%20all%20investors%20should%20have%20access%20to%20certain%20basic%20facts%20about%20an%20investment%20prior%20to%20buying%20it%2C%20and%20so%20long%20as%20they%20hold%20it.%20To%20achieve%20this%2C%20the%20SEC%20requires%20public%20companies%20to%20disclose%20meaningful%20financial%20and%20other%20information%20to%20the%20public.%20This%20provides%20a%20common%20pool%20of%20knowledge%20for%20all%20investors%20to%20use%20to%20judge%20for%20themselves%20whether%20to%20buy%2C%20sell%2C%20or%20hold%20a%20particular%20security.”)
digital-asset enforcement cases.\textsuperscript{254} In its application for a temporary restraining order against Telegram, for instance, the SEC underscored that because the issuer did not register the offering (and instead sought an exemption under Regulation D), investors were deprived of material information.\textsuperscript{255}

Empirical research suggests, however, that cryptoasset markets either react negatively to regulation or are not fully sensitive to regulation.\textsuperscript{256} These findings imply that investors do not expect a net positive change from compliance. In addition, after more than two years of active SEC enforcement, the United States is no longer the main locus of ICO activity.\textsuperscript{257} Why is that?

There are several plausible explanations. One is that cryptoasset investors are not concerned with the SEC’s focus on the intermediary-depiction model. As discussed in Part B, investors can independently access the underlying data. If most investors are sophisticated enough to rely


predominantly on this pure-information model, issuers become merely supporting sources of the data that are publicly available elsewhere.\(^\text{258}\)

Another possible reason is that issuers provide only a fraction of the \textit{material} information – the information that a reasonable investor would likely view as significantly altering the total mix of information available\(^\text{259}\) - within the total mix of information in the cryptoasset markets. This issuers’ share of information may be lower compared with that of conventional capital markets. A third conceivable explanation is that investors place a greater weight on variables that are viewable without any issuer disclosure and/or on factors that are not fully captured in disclosure regulations.

What matters to investors is not set in stone – their preferences evolve. For instance, the original disclosure was premised on the assumption that investors were more interested in “the incentive structure facing the seller, typically a corporate promoter… than… the characteristics of the company being floated.”\(^\text{260}\) The same preferences are present in crypto: investors assign considerable weight to the reputation of the promoter’s team.\(^\text{261}\) This information is publicly verifiable. Depending on the specifics of a project, the value of cryptoassets may depend on the network effect, adoption by users, developer activity, network and product functionality, decentralization, scalability, and other factors that are public information that may be ultimately outside the issuer’s control.\(^\text{262}\)

A fourth possible reason is that the mandatory disclosure requirements are not adaptable enough. The U.S. securities regime is generally perceived as somewhat prescriptive or as a combination of rules and principles.\(^\text{263}\) Rigidity and prescriptiveness limit the ability of regulations to respond to changes in evolving markets, including cryptoassets. Luckily, the SEC has introduced the principles-based and

\(^{258}\) For examples of this publicly available information, see, e.g., SEC v. Telegram Inc., \textit{supra} note 36, at 5, 20-24; McKeon Report, \textit{supra} note 37, at 17-19.
\(^{260}\) Mahoney, \textit{supra} note 125, at 740–41.
\(^{262}\) See, e.g., Ofir & Sadeh, \textit{supra} note 50; McKeon Report, \textit{supra} note 37, at 16-18 (discussing relevant studies); S.E.C. v. Telegram Inc., \textit{supra} note 36, at 6, 23-24.
\(^{263}\) See, e.g., Coffee & Sale, \textit{supra} note 216, at 749-58.
materiality-focused reforms that I have already discussed in the other Sections of this Article.264

Here, I would like to focus on one particularly relevant principles-based proposal, which is human capital. The future functionalities and risks of cryptoassets, the success of the networks on which they circulate, and, consequently, capital raising depend on the abilities (and reputation as a proxy for these abilities) of the developer’s team.265 Mandatory disclosure by developers can help verify what may be publicly known about them and their teams.

Relevant Item 401 disclosures, however, traditionally focused on directors and executive officers.266 In August 2019, the SEC proposed adjustments to potential gaps in Item 401 disclosures.267 Although the Proposing Release did not concern crypto, it put forward constructive principles-based human capital disclosure standards under Item 101268 that can supplement insufficient disclosures contained elsewhere. The proposals would enable investors to compare and contrast Items 101 and 401 and gain a valuable insight into the human capital policies and objectives that an issuer finds important in light of its unique circumstances and risk profile.269

Another proposal relevant to this discussion is risk factors. Risk factors disclosure often has been voluminous and filled with vacuous boilerplate warnings.270 The 2019 proposal includes a simplified presentation of risks and focuses on issuer-specific material risks. The term “most significant” is replaced with “material” risks.271 This is a notable shift to a pro-investor view because materiality, by its very definition, centers on investors and their investment decisions.272

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264 Supra Section D (2.2)
265 See, e.g., Howell et al., supra note 50, at 30; Bourveau et al., supra note 66; Lyandres et al., supra note 31; Momtaz, Offerings, supra note 89; Momtaz, Moral Hazard, supra note 261; Momtaz, Revolution, supra note 261.
266 Brummer et al., supra note 161, at 22; 17 C.F.R. § 229.401 (2019).
267 Release Nos. 33-10668, supra note 161, at 22.
268 Id. at 48.
269 Better disclosure of material risks are thought to reduce the information asymmetry and improve price discovery. See, e.g., William Hinman, Director, Div.
Apart from these limited principles-based proposals generating value to investors, many prescriptive standards remain unchanged. Some of them are not fully suitable for digital-asset securities. For example, a promoter designing a decentralized autonomous organization (DAO) may envision that the code and the partnership-like community would ultimately replace formal corporate governance arrangements and bylaws. The current requirements concerning corporate governance, communications between boards and token-holders, proxy rules, or voting procedures would become largely irrelevant.

Similar concerns arise in asset valuation. Young digital-asset firms do not have considerable historical financial information to share with investors. Their assets are their code, which is an intangible asset whose valuation may depend on relevant security protocols ensuring long-term asset safety and operations, the future use of the assets and/or platform, the replication of the technology by competitors, secondary market trading, and other factors.

Accounting tools and GAAP have not been designed with these analyses in mind. Valuable information may be lost because of this incongruence. In consequence, investors would discount the value and relevance of accounting-based information. Even the SEC acknowledges that some disclosure rules date “back to a time when companies relied significantly on plant, property, and equipment to drive value.” The rules were not designed for the cryptoasset market of the 21st century.

A nearly identical argument can be made with respect to the rules on securities description, which are tailored to conventional securities, such as equity and debt. Other financial instruments should be described in the manner “comparable” to these known securities species. The regulations

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273 Guseva, supra note 2.
275 See, e.g., Brummer et al., supra note 59, at 19–21; The DAO Report, supra note 69, at 4–8 (describing a DAO governance and voting structure); Reyes, Rockefeller, supra note 20, at 416–17; Guseva, supra note 2 (discussing MakerDAO).
276 Howell et al., supra note 50; Ofir & Sadeh, supra note 50.
277 Release Nos. 33-10668, 34-86614, supra note 269, at 49.
278 See, e.g., Brummer et al., supra note 59, at 17.
here ignore two crucial points. First, digital-asset classification remains an evolving area with a diverse array of assets that may not be easily analogized with traditional securities. Spending issuer resources on drawing unnecessary comparisons would not translate into tangible cost-savings for investors. Second, there is a self-selection component in financial innovations. Investors in crypto may be risk-takers, enthusiasts, professionals, or diversifiers interested in brand-new financial instruments precisely because they are not traditional bonds or equity securities.

Finally, mandatory disclosure rules purport to provide investors with the information that is reasonably uniform, amenable to comparison, and scalable. There is also the requirement to use plain English. I have already referred to the “slippage” problem associated with the discrepancies between the language tools used by attorneys and the mathematical codes developed by an issuer’s team. This slippage can be aggravated by the non-standardization and diversity of whitepapers in crypto-offerings. There are currently only unofficial guidelines on the use of common terminology in crypto-offerings.

All these arguments suggest that in assessing investment options, sophisticated cryptoasset investors may ignore or discount some issuer reports and focus instead on the available public information. Only smaller and less sophisticated retail investors may be expected to place their trust in offering documents and periodic issuer reports. To the extent that less sophisticated parties are not investing in cryptoassets, the market would not fully rely on and/or benefit from issuer compliance with the registration and mandatory reporting rules and, consequently, from their enforcement.

3. Regulation D

3.1. Issuers: Payoffs of Prima Facie Compliance

Faced with a possibility of a negative payoff in a public offering, a cryptoasset issuer may view private placements as a more appealing alternative. The main vehicle is Regulation D that has become “the most

280 Reyes & Saguato, supra note 42; Rohr & Wright, supra note 13; Guseva, supra note 2.
283 Infra notes 183-4, 217.
284 Id.
285 Supra Part D(3).
widely used transactional exemptions for securities offerings by issuers.\textsuperscript{286} As is clear from Figure 2 and Appendix IV, Regulation D placements are the vehicle of choice for crypto-firms.\textsuperscript{287}

A crypto-offering may be structured as follows: rights to future tokens (or coins) can be sold to investors in a private placement under Regulation D, perhaps, with a simultaneous Regulation S offering offshore;\textsuperscript{288} afterwards, the ultimately developed cryptoassets can circulate on secondary markets and be listed on crypto-exchanges.\textsuperscript{289} Although the March 2020 decision in Telegram called into question this two-stage process, courts are yet to pass judgment on its validity. For example, at a July 2020 hearing in Kik, Judge Hellerstein implied that Telegram was not binding and disagreed with the SEC’s position.\textsuperscript{290}

Crypto-issuers clearly benefit from the opportunity to tap private placement markets to fully develop their projects. Regulation D reduces the costs of compliance and resolves the timing issues discussed above. There is no qualification or regulatory review of placement memoranda by the SEC. An issuer merely files a very limited in substance Form D\textsuperscript{291} within 15 days after a first sale.\textsuperscript{292}

On the disclosure side, issuers face an obligation to provide non-financial and specified financial information to non-accredited investors who do not meet certain income, net worth, and asset requirements.\textsuperscript{293} In


\footnotesize{\textsuperscript{287} Supra Fig. 2 \& infra Appendix IV.}

\footnotesize{\textsuperscript{288} See, e.g., Release No. 33-10763, supra note 197, at 48 (discussing relevant amendments).}

\footnotesize{\textsuperscript{289} Infra Part B.}

\footnotesize{\textsuperscript{290} Philip Rosenstein, No ‘Binding Precedent’ In Suit Over Kik’s $100M Crypto Sale, LAW 360 (Jul. 9, 2020, 11:38 PM), https://www.law360.com/articles/1290572/no-binding-precedent-in-suit-over-kik-s-100m-crypto-sale}

\footnotesize{\textsuperscript{291} See, e.g., Jennifer S. Fan, Regulating Unicorns: Disclosure and the New Private Economy, 57 B.C. L. REV. 583, 583 (2016).}


\footnotesize{\textsuperscript{293} 17 C.F.R. § 230.502(b).}
March 2020, the SEC proposed to align these disclosure obligations with Regulation A for non-reporting issuers.\textsuperscript{294} Issuers, however, rarely sell Regulation D securities to non-accredited investors.\textsuperscript{295} In addition, digital-asset firms advertise their offerings broadly, online and through social media,\textsuperscript{296} which has been associated with better chances of offering completion and higher asset liquidity.\textsuperscript{297} These mechanisms qualify as “general solicitation.” Only accredited investors can purchase such securities under Regulation D.\textsuperscript{298} While accredited investors can demand information from an issuer, there is no corresponding \textit{ex ante} disclosure obligation.\textsuperscript{299} Central to the costs in private placements, therefore, is the definition of accredited investor and the requirement to verify that all purchasers are accredited.\textsuperscript{300} The verification process is complex and necessitates the use of intermediaries.\textsuperscript{301} Mistakes are costly, and the SEC has already brought enforcement actions against ICO issuers for non-compliance with this requirement.\textsuperscript{302}

The recently proposed amendments to Regulation D, however, alleviate these concerns. For instance, the March 2020 Release sends an

\textsuperscript{294} Release Nos. 33-10763, \textit{supra} note 170, at 17 &92-100. For instance, issuers raising up to $20,000,000 would be allowed to provide unaudited financial statements to non-accredited investors. \textit{Id.}

\textsuperscript{295} Release No. 33-10734, \textit{supra} note 197, at 105 (“in 2013-2018, only 6% of the offerings… under Rule 506(b) included non-accredited investor purchasers.”); \textit{Id.} at 113 (“Rule 506(c) offerings raised approximately $211 billion.”).

\textsuperscript{296} See, e.g., Mathieu Chanson et al., \textit{Initial Coin Offerings (ICOs): The Role of Social Media for Organizational Legitimacy and Underpricing} 6 (2018) (unpublished manuscript) https://pdfs.semanticscholar.org/6b7e/bf91cdc67d80c20d1d1f554b4801f9711c32.pdf; Lauren Rhue, \textit{Trust Is All You Need: An Empirical Exploration of Initial Coin Offers (ICOs) and ICO Reputation Scores} (May 16, 2018) (unpublished manuscript), https://ssrn.com/abstract=3179723; Howell et al., \textit{supra} note 50.

\textsuperscript{297} See, e.g., Bourveau et al., \textit{supra} note 66, at 25; Howell et al., \textit{supra} note 50; Fisch, \textit{supra} note 50.

\textsuperscript{298} 17 CFR § 230.506(c) (2019).

\textsuperscript{299} Any information shared with accredited parties should “trickle down” to non-accredited investors. 17 C.F.R. § 230.502(b)(2)(iv) (2019).


important signal by reminding the market that the verification is principles-based and that the methods listed in the Regulation are non-exclusive examples.\textsuperscript{303} This restated commitment to principles-based standards should give issuers the flexibility to control their costs by selecting specific verification methods and counteract the Heisenberg effect.

The other cost-reducing proposals include the anti-integration rules,\textsuperscript{304} amendments to Regulation S that enable issuers to run concomitant offerings to investors in the U.S. and offshore while broadly communicating with the market over the Internet;\textsuperscript{305} “demo days,” which will not be deemed general solicitation despite investor participation in those events;\textsuperscript{306} as well as the new test-the-waters exemption permitting issuers “to solicit indications of interest… prior to determining which exemption [they] would rely upon to conduct the offering[s].”\textsuperscript{307}

These 2020 reforms dovetail with the December 2019 proposals expanding the accredited investor definition.\textsuperscript{308} Having a larger cohort of accredited investors would help issuers gauge future demand for their securities. If the prospective demand is insufficient, a firm can swiftly pivot, modify its project, and look to alternate sources of capital.

The amendments are thus premised on supply-side economic arguments: firms are presumed to benefit from the opportunity to tap larger cohorts of investors, a higher likelihood of offering completion, and more competition among investors, which should lower issuers’ cost of capital.\textsuperscript{309} All of these benefits would accrue to issuers without any additional disclosure obligations or expensive compliance requirements.

The expected cost of liability in private placements is equally lower than in public offerings. Securities Act Sections 11 and 12(a)(2) are inapplicable,\textsuperscript{310} and the risk of an action for failure to comply with the Securities Act registration and gun-jumping rules is minimized, unless, of course, the issuer falls out of Regulation D and the placement does not qualify under another exemption. At bottom, the issuer only needs to take care not to employ manipulative or deceptive devices, engage in fraud, or

\textsuperscript{303} Release Nos. 33-10763, \textit{supra} note 170, at 86-90.
\textsuperscript{304} \textit{Id.} at 29 (providing an overview).
\textsuperscript{305} \textit{Id.} at 48-49.
\textsuperscript{306} \textit{Id.} at 64-66.
\textsuperscript{307} \textit{Id.} at 72.
\textsuperscript{308} Release Nos. 33-10734, \textit{supra} note 197; Release Nos. 33-10763 \textit{supra} note 170.
\textsuperscript{309} Release No. 33-10734, \textit{supra} note 197, at 107-120.
make material misstatements or omissions triggering the liability under Exchange Act Section 10(b) and Rule 10b-5.\footnote{15 U.S.C. § 78j; 17 C.F.R. § 240.10b-5. Section 17 liability is also a relevant risk. 15 U.S.C. § 77q.}

To sum up, because many securities litigation avenues are foreclosed to private-placement investors, issuers should face a lower risk of securities law liability. To the extent that this reduction correlates with a decrease in voluntary issuer disclosure,\footnote{See, e.g., Paul M. Healy & Krishna G. Palepu, Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature, 33 J. Acct. & Econ. 405, 422-23 (2001) (summarizing the debate on the association between shareholder litigation and disclosure); Jinyoung Park Wynn, Legal Liability Coverage and Voluntary Disclosure, 83 Acct. Rev. 1639 (2008).} the related costs of reporting are similarly lower.

A rational firm establishes the optimal level of disclosure weighing the private costs of reporting against the costs of nondisclosure.\footnote{Baird, et al., supra note 155, at 25, 28.} Since firms have more control over their costs and because federal courts have not yet ruled on the validity of the two-staged crypto-sales,\footnote{Supra notes 234 & 299.} it is unsurprising that private placements are a natural vehicle for raising capital among crypto-issuers.

3.2. Investor Payoffs

3.2.1. Risks and Costs

What is net beneficial to issuers may be net costly to investors. Investors axiomatically benefit from information.\footnote{Gilson & Kraakman, supra note 233.} High information asymmetry, however, is a well-known potential downside of private placements.\footnote{Release No. 33-10734, supra note 197, at 125-129.} It is superimposed on other general Regulation D concerns such as the insufficient bargaining power of outside investors, the unique risks associated with the variability of Regulation D investments, agency costs, and difficulties in monitoring the management.\footnote{Id. at 125-129.} Although Regulation D gives investors access to possibly high-growth, high-performance investments opportunities,\footnote{Id. at 101.} this access comes at a cost.

This Section shows that in digital-asset markets, these costs are even higher than in conventional private placements because issuers’ incentives for
voluntary disclosure are lower and the unravelling effect strong.\textsuperscript{319} These symbiotic trends may negatively impact even sophisticated investors who mainly rely on the publicly available information, \textit{i.e.}, the pure-information model. As SEC enforcement is \textit{de facto} funneling crypto-issuers into compliance with private placement regulations, it is legitimate to ask \textit{cui bono} because the answer is not self-evident.

\subsection{Incentives for Voluntary Disclosure}

An oft-cited rationale for the more lenient disclosure regime under Regulation D rests on the issuers’ incentives to provide information voluntarily.\textsuperscript{320} Its premises are found in game theory:

\begin{quote}
[T]he willingness of a party to agree voluntarily to a [disclosure] term in a contract may signal the party’s type. Imposing a mandatory term may prevent this signaling and thereby reduce the amount of information transferred.\textsuperscript{321}
\end{quote}

“Good” firms should prefer to disclose the information they possess, that is, regardless of the mandatory securities law requirements.\textsuperscript{322} Taking voluntary actions to reveal private information may signal profitability, transparency, the quality of management, \textit{etc.}\textsuperscript{323} Bayes’ rule dictates that this disclosure by an issuer should affect the beliefs of investors about the issuer’s quality\textsuperscript{324} (and type) and that they would act based on their updated beliefs.

\begin{flushright}
\textsuperscript{319} Baird, et al., \textit{supra} note 155, at 95 (unravelling “depends on the ability of one player to infer the other player’s information from that player’s silence”).
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\textsuperscript{320} See, \textit{e.g.}, Frank H. Easterbrook & Daniel R. Fischel, \textit{Mandatory Disclosure and the Protection of Investors}, 70 Vir. L. Rev. 669, 683 (1984). Baird, et al., \textit{supra} note 155, at 317 (“When information is verifiable and the uninformed party knows that the other party possess information, the informed party is likely to disclose the information.”).
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\textsuperscript{321} Baird, et al., \textit{supra} note 155, at 147.
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\textsuperscript{322} \textit{Id.} at 91 (“Someone with information will disclose it, rather than be subject to the inference that arises from the failure to disclose it.”).
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\textsuperscript{323} See, \textit{e.g.}, Richard Frankel et al., \textit{Discretionary Disclosure and External Financing}, 60 Acct. Rev. 135 (2011); Giancarlo Giudici & Saman Adhami, \textit{The Impact of Governance Signals on ICO Fundraising Success}, 46 J. of Ind’l & Bus. Econ. 283 (2019); Boyd D. Cohen & Thomas J. Dean, \textit{Information Asymmetry and Investor Valuation of IPOs: Top Management Team Legitimacy as a Capital Market Signal}, 26 Strategic Mgmt. J. 683 (2005); Howell et al., \textit{supra} note 50.
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\textsuperscript{324} Baird, et al., \textit{supra} note 155, at 317 (discussing voluntary disclosure and that only the players with bad news prefer to withhold this information).
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beliefs.\textsuperscript{325} Indeed, crypto-markets seem to reward more transparent issuers with a lower cost of capital, higher offering success, and better liquidity.\textsuperscript{326}

At the same time, the nature of cryptoassets may adulterate some standard incentives for accurate voluntary disclosure. As I argued elsewhere, an investment contract to develop and deliver cryptoassets is akin to bonds\textsuperscript{327} (except that there is no single agent negotiating for investor rights and thus reducing the collective action problem). It is not the bond-purchasers but the shareholders of an issuer-developer who bear the costs of disclosure.\textsuperscript{328} In cases where the developer’s shareholders cannot receive the entrepreneurial surplus, giving them “a pro rata claim on the expected positive cash flow generated by the project”\textsuperscript{329} they are working on, their incentives to disclose may be insufficient, leading to suboptimal disclosure.

In the diverse and non-uniform environment of crypto-placements, information asymmetry has been high.\textsuperscript{330} In addition, there are new types of agency costs because “the entrepreneur internalizes only part of the venture’s revenue but all of its production costs,” which leads to the risk of underproduction.\textsuperscript{331} This, in turn, should trigger the desire to be less transparent about it.

Crypto-issuers may find it best not to disclose information in other circumstances as well. For instance, disclosure may erode competitive

\textsuperscript{325} Id. at 80-87; id. at 302 (Bayes’s rule “provides a method for updating beliefs in light of new information.”).

\textsuperscript{326} Howell et al., supra note 50, at 29-30 (finding that “ICO issuers are mindful of the importance of transparency”); Bourveau et al., supra note 66 (more informative whitepapers are associated with ICO success); Lyandres et al., supra note 31 (finding an association between specific disclosure language and capital raising). See also Daniel Blaseg, Dynamics of Voluntary Disclosure in the Unregulated Market for Initial Coin Offerings (Oct. 3, 2018) (unpublished manuscript), https://ssrn.com/abstract=3207641; The ICO Gold Rush, supra note 129 (examining how developers do not disclose crucial information).

\textsuperscript{327} Guseva, supra note 2.

\textsuperscript{328} Paul G. Mahoney, The Exchange As Regulator, 83 VA. L. REV. 1453, 1458 (“Disclosures about a particular firm are useful to all investors but the cost of disclosure is borne only by the shareholders of that firm.”)

\textsuperscript{329} See, e.g., Fox, supra note 242, at 1358


\textsuperscript{331} Chod & Lyandres, supra note 330, at 3.
advantages and increase the risk of hacking. In that case, silence would neither signify low quality, nor suggest how bad a particular project is vis-à-vis similarly situated issuers. Under the conditions of imperfect signaling, investors would not distinguish between high- and low-quality firms.

Recall also that whitepapers are non-standardized. The lack of standardization is accompanied by the collective-action problem since crypto-investors are dispersed, international, and in some cases pseudonymous. Such as combination is naturally deleterious to the investor ability to bargain for and receive proper disclosure. Therein lies an opportunity to act opportunistically.

Even when detrimental to long-term project performance and asset pricing, exaggerated claims in whitepapers have been associated with ICO success. When a crypto-offering “game” is not repeated, these problems may manifest with severity, in part because the community would have fewer chances to retaliate, and developers would lack an incentive to build long-term reputation and trust. Consequently, even if an investor is sophisticated and has access to the publicly disclosed source code and information about developer reputation, she may have no meaningful

332 Collao & Verity, supra note 40, at 739 (“Moreover, the availability of the programming code source increases hacking chances,” (citing S. Adhami et al., ‘Why Do Businesses Go Crypto? An Empirical Analysis of Initial Coin Offerings 100 J. ECON. & BUS. 64 (2018)); Rodrigues, supra note 20, at 704-705 (discussing The DAO); Thomas Bourveau et al., supra note 66.
333 Fox, supra note 281, at 719
334 Supra note 192.
335 A. C. Pritchard, Revisiting "Truth in Securities" Revisited: Abolishing IPOs and Harnessing Private Markets in the Public Good, 36 SEATTLE U. L. REV. 999, 1020–21 (2013) (“Some standardization of disclosure practices would likely benefit both investors and issuers. The size of today’s private offerings also raises the possibility of a collective-action problem for investors, thereby making it difficult for them to negotiate for contractual representations and warranties.”)
337 In this case, the reputation concerns discussed infra Part B(3) may be imperfect.
338 See generally ROBERT AXELROD, THE EVOLUTION OF COOPERATION 182 (Basic Books 1984). On the relevant issues in ICOs, see, e.g., Momtaz, Moral Hazard, supra note 261 (“[T]oken issuers can tap the finance market only once, which increases the pressure on the venture to raise enough funding to be able to realize the project.”). See also Momtaz, Revolution, supra note 261; Momtaz, Offerings, supra note 89.
opportunities to determine the type of the issuer, negotiate for more information, retaliate, and/or control agency costs.

3.2.2. Unravelling and the Harm to Unsophisticated Investors

These risks reach their nadir when unsophisticated investors appear on the scene. For a voluntary disclosure approach to work, investors need to have “the ability… to infer the other player’s information from that player’s silence,” and to penalize the silent issuer-player for nondisclosure or misleading disclosure. To do so, investors must, at a minimum, know what information the issuing firm has in its possession and wishes to conceal.

Within the intermediary-depiction model of Regulation D, accredited investors also need to understand the nature of the projects and what questions to ask. This understanding should enable them to “fend for themselves” without the need for the securities law protection and to negotiate for relevant offering terms. Knowledgeable crypto-investors would not only ask the right questions but also review the code and do their own analysis.

In sum, for voluntary disclosure to be effective, investors must be sophisticated and have adequate bargaining power to equilibrate the pure-information model – i.e., the public information such as the code - and the intermediary-depiction model – viz., negotiated, voluntarily provided (or demanded) issuer information. Conversely, the lack of sophistication, if widespread and dominant, actuates the unravelling effect and undermines incentives for voluntary disclosure.

Since the early days of private placements, the SEC designed the category of accredited investors as “persons whose financial sophistication

339 Baird, et al., supra note 155, at 95.
340 Id. at 96.
341 Alan R. Palmiter, Toward Disclosure Choice In Securities Offerings, 1999 COLUM. BUS. L. REV. 1, 4 (“[T]here is strong evidence that investor informational demands often propel issuers to provide disclosure at levels beyond that mandated – as a private, contractual matter.”).
343 Rodrigues, supra note 157, at 434-38 (discussing major contractual terms in ICOs).
344 Baird, et al., supra note 155, at 317 (discussing voluntary disclosure and that only the players with bad news prefer to withhold this information); id. at 95.
and ability to sustain the risk of loss of investment or fend for themselves.\textsuperscript{345}

The ultimate proxies embedded in Regulation D, however, are limited to wealth, income, and assets.\textsuperscript{346} These metrics do not necessarily translate into investor sophistication and capacity to make appropriate inquiries of an issuer.\textsuperscript{347} Scholars have observed over the years that wealth is an imperfect yardstick for measuring sophistication.\textsuperscript{348}

The added concern in digital-asset markets is not merely financial sophistication but the complexity of the market for technological financial innovations.\textsuperscript{349} Research suggests that large swaths of investors are

\textsuperscript{345} Regulation D Revisions: Exemption for Certain Employee Benefit Plans, 52 FR 3015 (Jan. 16, 1987) (Jan. 30, 1987); Accredited Investor, supra note 286, at 88 (“The accredited investor concept… was designed to identify… a category of investors whose financial sophistication and ability to sustain the risk of loss of investment or ability to fend for themselves render the protections of registration unnecessary.”).

The SEC thought that accredited investors would have abilities to analyze the risks and rewards, allocate investments to mitigate risks, gain access to information about either an issuer or the investment, and bear the risk of loss. Release No. 33-10734, supra note 197, at 16.

\textsuperscript{346} Release No. 33-10734, supra note 197, at 18-19, 21. A limited number of entities are accredited investor because of their status.

\textsuperscript{347} See, e.g., Usha Rodrigues, Securities Law’s Dirty Little Secret, 81 FORDHAM L. REV. 3389, at 3418-25 (2013) [hereinafter Dirty Little Secret] (discussing how the SEC equates wealth and sophistication and examining relevant scholarship); Joan MacLeod Heminway, 70 Okla. L. Rev. 189, 211 (“Accredited investors have the financial capacity to bear risk but may not have the capacity to acquire, understand, and efficaciously process the information necessary to optimal investment decision making.”).

\textsuperscript{348} See, e.g., Thompson & Langevoort, supra note 286, at 1610-617; Dirty Little Secret, supra note 347, at 3418-25; Wallis K. Finger, Unsophisticated Wealth: Reconsidering the SEC’s “Accredited Investor” Definition Under the 1933 Act, 86 WASH. U. L. REV. 733 (2009); Howard M. Friedman, On Being Rich, Accredited, and Undiversified: The Lacunae in Contemporary Securities Regulation, 47 OKLA. L. REV. 291 (1994); Choi, supra note 342, at 311; Fox, supra note 281, at 721 (“[T]he restriction does little to increase the percentage of buyers that would be sophisticated enough to do effective diligence on the quality of an issuer.”). See also Fontenay, supra note 153, at 481 (discussing similar concerns in the context of privately placed shares and observing that “[t]he concept of an accredited investor was designed to be a proxy for investor sophistication, but in practice it captures investors…with financial means deemed sufficient to absorb a certain amount of losses,” id. at 467).

\textsuperscript{349} Even the SEC admits that “financial product and process innovation over the past three decades have led to more complex financial markets.” See Accredited Investor, supra note 286, at 4.

\textsuperscript{349} Release No. 33-10734, supra note 197, at 21.

64
insufficiently sophisticated and lack the required technical knowledge. An example of this risk may be built around not only the knowledge but also other points of vulnerability such as the age of investors.

Compare a sophisticated but not yet wealthy enough person completing a PhD in computer engineering with a retired musician with a net worth of $1,200,000, i.e., an “accredited investor” under Regulation D. The former is clearly better qualified to assess the underlying technology and source code but may be cut off from participating in a digital-asset transaction. At the same time, having read the dazzling whitepapers and feeling overwhelmed by information from multiple social media sources, the latter may be moved to buy low-value securities in reliance on this “soft” information and pay an unwarranted price for digital assets of low value.

Investors in crypto-projects may miss when the code does not bear out developers’ representations concerning project quality and investors’ control over the assets. Unsophisticated investors focus on the soft information disclosed by issuers and fail to assess digital financial instruments and the underlying technology. Others take into account only basic technical signals and, ultimately, are “unable to assess the true quality of the code” even when it is disclosed to the public.


353 Cohney et al., supra note 39, at 660 (highlighting that only sophisticated investors may read and understand the code, i.e., the hard information); Langevoort, supra note 168, at 759 (underscoring the tendency to rely on heuristics). See also Thompson & Langevoort, supra note 286, at 1611-19 (discussing possible abuses in Regulation D offerings and focus on the wealth metric). Fletcher, supra note 342, 1124 (in various exemptions, “the SEC assumes either that wealthy investors are always sophisticated or that they, no matter how naive, do not need the protection of the 1933 Act's registration provisions.”).

354 See, e.g., Cohney et al., supra note 39, at 627 (the flaws in Paragon’s code could “cause[e] the eventual demise of the network”); id. at 635-36 (discussing investor control promises).

355 Ofir & Sadeh, supra note 50, at 44-45, nn.307-317; see also Momtaz, supra note 87, at 6-7; Cohney et al., supra note 39, at 636, 660

356 Ofir & Sadeh, supra note 50, at 47.
These risks should affect not only individuals but also smaller institutional accredited investors.\textsuperscript{357} Under the current Regulation, many accredited institutions have to meet the outdated asset threshold of $5,000,000, which is admittedly small by 2020 standards, or have equity owners who are accredited investors. Neither of these factors is sufficient to ensure investor sophistication.

The Proposed Rules expanding the categories of accredited investors present similar issues. One relevant revision would add entities owning investments of more than $5,000,000.\textsuperscript{358} The Rule, if adopted, would not guarantee the technological sophistication of investing entities. The definition of “investment” would be based on that of the Investment Company Act and include “securities, real estate, commodity interests, physical commodities, and non-security financial contracts held for investment purposes, and cash and cash equivalents.”\textsuperscript{359} Having a $5,000,000 stake in a local shopping mall does not frictionlessly lend itself to adequate sophistication in investing in digital-asset securities, even when they are collateralized by real estate.\textsuperscript{360}

Another proposal is to add natural persons who hold professional designations or certifications enabling them to evaluate the merits and risks of investments.\textsuperscript{361} The SEC has put forward the first list of designations and exams, all of which are administered by FINRA.\textsuperscript{362} These proposals militate for amending the FINRA exams.

For example, passing an exam and having an active certification or license would suffice even if the individual did not practice in that area.\textsuperscript{363} Consequently, persons not regularly involved in investing or not associated with capital market professionals, financial institutions or crypto-firms could get access to the crypto-market.\textsuperscript{364} The safety net and redundancies of financial institutions would not protect these individuals from needless risk.

The principal variables that the SEC should consider in prescribing the categories of accredited investors center on knowledge, comprehension,
and sophistication in investing. If a prospective cryptoasset investor took an exam that did not test relevant knowledge, the exam would not help the investor assess the securities of interest, while allowing her to participate in digital-asset offerings as an accredited investor and increasing her risk exposure.

In addition, amending FINRA exams, including the exams for registered investment advisers and broker-dealers, assumes greater importance because the SEC is also seeking comment on permitting individuals and entities represented by such certified professionals to be deemed accredited. As intermediaries, these licensed professionals must fully understand the cryptomarket. Similar approaches, in fact, have been already implemented in foreign jurisdictions that use knowledgeable licensed parties to verify crypto-issuer disclosures.

To summarize, improving comprehension of relevant technological risks and applicable investment risks are precisely the factors that could prevent the unravelling result, protect smaller and less sophisticated investors, and improve price discovery. Unfortunately, without reform, the less sophisticated may remain unaware of the right questions to ask to make sure that the disclosed information is sufficient and material to their cryptoasset purchases.

Our narrative is now complete: The SEC regulates via enforcement and ignores the significant pure-information component of the cryptomarkets. The issuers, attempting to avoid enforcement actions, comply with securities law in the most rational way by resorting to private placements. In the end, the crypto-investors, particularly the less sophisticated cohorts of investors, are exposed to the information asymmetry and agency costs of private placements aggravated by the unique risks of crypto-offerings.

E. Conclusion

This Article demonstrates that the current strategy of the SEC, i.e., active enforcement of the pre-crypto regulations without reform, may fall short of providing the expected benefits to digital-asset market participants.

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366 Id. at 83. For similar arguments, see Choi, supra note 342, at 308-309.

367 Collao & Winship, supra note 40, at 740 (discussing similar approaches in Malta)
The SEC has expended considerable enforcement resources on achieving the status quo characterized by the following antipodes.

First, the expected payoffs drive rational crypto-issuers toward their most optimal strategy – private placements accompanied by fewer disclosure costs and a lower liability risk. Second, crypto-issuer disclosure does not fully benefit more sophisticated investors who can rely on the pure-information model in digital-asset markets. At the same time, smaller and less sophisticated investors are exposed to the risk of suboptimal issuer disclosure and high information asymmetry. In the end, the status quo forged by enforcement of the pre-crypto securities law may be Kaldor-Hicks inefficient.

Appendix I: U.S. and Foreign Enforcement Actions
(The units of analysis are Defendants/Respondents)

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368 Survey, supra note 7.
Appendix II: Types of Actions per Jurisdiction (The units of analysis are Defendants/Respondents)

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<th>CFTC</th>
<th>ICO Halted</th>
<th>Pending</th>
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Appendix III: Total Actions by Year

Appendix IV: Issuer Compliance and Penalties

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369 Survey, supra note 7.
370 Survey, supra note 7.
371 Crypto-enforcement and Game Theory, supra note 9.
<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>COUNTRY OF DOMICILE, HEADQUARTERS</th>
<th>SOUGHT REGISTRATION/EXEMPTION</th>
<th>BEFORE ENFORCEMENT ACTION</th>
<th>AFTER ENFORCEMENT ACTION</th>
<th>TOTAL PENALTIES AND DISGORGEMENT</th>
<th>YEAR OF THE ACTION</th>
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<td>MUNCHIE, INC.</td>
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<td></td>
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<td></td>
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<td>2017</td>
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<td>RECIN GROUP FOUNDATION, LLC, BRC WORLD INC., &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
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<td>V</td>
<td>10</td>
<td></td>
<td></td>
<td>2017</td>
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<td>AMERICAN SECURITY RESOURCES CORP.</td>
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<td>10</td>
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<td></td>
<td>2017</td>
</tr>
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<td>SUNSHINE CAPITAL</td>
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<td>10</td>
<td></td>
<td></td>
<td>2017</td>
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<td>CARIKER, INC., &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
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<td>D</td>
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<td>2018</td>
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<td>HRIBANK &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
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<td></td>
<td></td>
<td></td>
<td>2018</td>
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<td>2018</td>
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<td>D</td>
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<td></td>
<td></td>
<td></td>
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<td>NATIBAI INVESTMENT CO., ET AL.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2019</td>
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<tr>
<td>JOAN EVA, UNITECH DATA, INC. EBA SHYPN</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2019</td>
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<tr>
<td>PIKAO GROUP INC., AND TON ISSUER, INC.</td>
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<td>D</td>
<td></td>
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<td>MUTUAL COIN FUND LLC &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(CANADA)</td>
<td>V</td>
<td>D</td>
<td>$10,000</td>
<td></td>
<td>2019</td>
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<tr>
<td>ENERGY SOURCES INTS CORPORATION, XACT HOLDINGS CORP. &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(USA)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>SUBJINCOIN, BCT INC. ET INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(USA/CAYMAN)</td>
<td>V</td>
<td></td>
<td></td>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>OPPORT INTERNATIONAL, INC., CLEVER SOLUTIONS &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(USA)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
</tr>
<tr>
<td>MICHAEL W. ACKERMAN (CONTROLLED Q3 LLF)</td>
<td>(USA)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
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<tr>
<td>SIGNA</td>
<td>(USA AND ISRAEL)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
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<tr>
<td>META 1 COIN TRUST, DB/A CLEAR INTERNATIONAL TRUST &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(USA)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
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<tr>
<td>CHOFI, INC. &amp; INDIVIDUAL DEFENDANT(S)/RESPONDENT(S)</td>
<td>(USA)</td>
<td>V</td>
<td>D</td>
<td></td>
<td></td>
<td>2020</td>
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