

Fordham Intellectual Property, Media and Entertainment Law Journal

Volume 31 XXX/
Number 1

Article 2

2020

The Regulation of Cryptocurrencies: Between a Currency and a Financial Product

Hadar Y. Jabotinsky Dr.
Hebrew University of Jerusalem, hadarjabotinsky@gmail.com

Follow this and additional works at: <https://ir.lawnet.fordham.edu/iplj>



Part of the [Banking and Finance Law Commons](#), and the [E-Commerce Commons](#)

Recommended Citation

Hadar Y. Jabotinsky Dr., *The Regulation of Cryptocurrencies: Between a Currency and a Financial Product*, 31 Fordham Intell. Prop. Media & Ent. L.J. 118 (2020).

Available at: <https://ir.lawnet.fordham.edu/iplj/vol31/iss1/2>

This Article is brought to you for free and open access by FLASH: The Fordham Law Archive of Scholarship and History. It has been accepted for inclusion in Fordham Intellectual Property, Media and Entertainment Law Journal by an authorized editor of FLASH: The Fordham Law Archive of Scholarship and History. For more information, please contact tmelnick@law.fordham.edu.

The Regulation of Cryptocurrencies: Between a Currency and a Financial Product

Hadar Y. Jabotinsky*

Cryptocurrencies are electronically generated and stored currencies by which users can trade either real or virtual objects with one another. As these digital assets gain popularity, the issue of how to regulate them becomes more pressing. Cryptocurrencies are attractive due in part to their decentralized, peer-to-peer structure. This makes them an alternative to national currencies which are controlled by central banks. Given that these cryptocurrencies are already replacing some of the “regular” national currencies and financial products, the question then arises—should they be regulated? And if so, how? This paper draws the legal distinction between cryptocurrencies which are in fact currency and those which are securities disguised as currency. It further suggests that in cases where a token is indeed a security, regular securities regulation should apply. In all other cases, anti-fraud measures should be in place to protect investors. Further regulation should only be put in place if the cryptocurrency starts increasing systemic risk in the general financial system.

* Cegla Visiting Research Fellow at Tel Aviv University Law School, Israel and Research Fellow at the Hadar Jabotinsky Center for Interdisciplinary Research of Financial Markets, Crisis and Technology. I thank Lisa Bernstein, Stijn Claessens, Jesse Fried, Rob Nicholls, Mathias Siems, Omri Ben-Zvi, Kenny Pyetranker, Dean Steinbeck and the participants of the Digital Society Conference in Berlin (2017), and the Regulation of Virtual Currencies Workshop in Jerusalem (2018) for their helpful comments. I would also like to thank the Oxford Business Law Blog (OBLB) and the Columbia Law School Blue Sky Blog for featuring a news post about this Article. Last, many thanks to Satoshi Nakamoto for making this Article possible. This research was conducted with the support of the Israeli National Cyber Directorate (INCD).

| | |
|---|-----|
| INTRODUCTION | 119 |
| I. THE NEED FOR SECURITIES REGULATION | 125 |
| II. THE EXTRATERRITORIALITY OF U.S. SECURITIES LAW..... | 130 |
| III. WHAT CONSTITUTES A SECURITY UNDER U.S. LAW? | 135 |
| IV. DIFFERENT TYPES OF CRYPTOCURRENCIES..... | 138 |
| A. <i>Bitcoin</i> | 140 |
| B. <i>Ether</i> | 142 |
| C. <i>DAO</i> | 144 |
| D. <i>Libra</i> | 146 |
| V. FINANCIAL REGULATION, CYBER REGULATION, AND THE REGULATION OF CRYPTOCURRENCIES... | 147 |
| A. <i>The Implications of Bitcoin, DAO, Ether, and Libra Being a Security</i> | 150 |
| 1. The Securities Act of 1933 | 150 |
| 2. The Securities Exchange Act of 1934 | 151 |
| 3. The Investment Company Act of 1940 ... | 152 |
| B. <i>Are Cryptocurrencies Securities?</i> | 152 |
| 1. Is DAO a Security?..... | 153 |
| 2. Is Ether a Security?..... | 154 |
| 3. Is Libra a Security?..... | 156 |
| C. <i>How Should Cryptocurrencies be Regulated?</i> | 157 |
| 1. Disclosure Requirements for Cryptocurrencies that are Securities..... | 159 |
| 2. Regulation of Cryptocurrencies that Are Not Securities | 163 |
| CONCLUSION..... | 164 |

INTRODUCTION

Facebook Inc. unveiled plans to launch a cryptocurrency in a move that could diversify its business from advertising while expanding into financial services long dominated by Wall Street. The cryptocurrency, called Libra, will be a secure blockchain-based payment system backed by hard assets and designed for ordinary users, making it among the

boldest efforts yet to bring digital currencies into the mainstream The Securities and Exchange Commission, Wall Street’s main overseer, has emerged as the most robust U.S. regulator of cryptocurrency projects¹

Bitcoin, Ether, DAO, and Facebook’s new Libra project are all types of the emerging technology of cryptocurrencies. Cryptocurrencies are electronically generated and stored currencies by which users can trade either real or virtual objects with one another, bypassing traditional central clearinghouses. This technology is driving a change in the global economy, both in business and finance.²

Widespread knowledge of cryptocurrencies is leading towards a surging number of people using the technology. The attractiveness of cryptocurrencies is due in part to their decentralized, peer-to-peer structure. This makes them an alternative to national currencies which are controlled by central banks.³ This is especially apparent in times of financial instability, when cryptocurrencies usage tends to rise upwards in the beginning of financial distress.⁴ Given that these cryptocurrencies are starting to replace some of the traditional national currencies and financial products, the question then arises—should they be regulated? And if so, how? Some countries, such as China and South Korea, prohibit Initial Coin Offerings (“ICOs”)⁵ altogether, while others strive to reach an understanding

¹ Jeff Horwitz & Parmy Olson, *Facebook Unveils Cryptocurrency Libra in Bid to Reshape Finance*, WALL ST. J. (June 18, 2019), <https://www.wsj.com/articles/facebook-unveils-crypto-wallet-based-on-currency-libra-11560850141> [https://perma.cc/X2CL-HSKC].

² DONG HE ET AL., VIRTUAL CURRENCIES AND BEYOND: INITIAL CONSIDERATIONS 5 (2016).

³ Roece Sarel, *Your Bitcoin is Mine: What Does Law and Economics Have to Say About Property Rights in Cryptocurrencies?* 9–10 (2020) (unpublished manuscript) (on file with author).

⁴ See Maureen Farrell, *Bitcoin Prices Surge Post-Cyprus Bailout*, CNN MONEY (Mar. 28, 2013), <http://money.cnn.com/2013/03/28/investing/bitcoin-cyprus/index.html> [https://perma.cc/SM5S-A55R]; see also Hadar Y. Jabotinsky & Roece Sarel, *How Crisis Affects Crypto: Coronavirus as a Test Case* 8 (2020) (unpublished manuscript) (on file with author).

⁵ An ICO is the process whereby “real” money is exchanged in return for the token.

of the currencies in order to come up with coherent regulation.⁶ In 2013, the Securities and Exchange Commission (“SEC”) brought enforcement actions against virtual currency-related investments, asserting that they were in fact securities.⁷ A year later, the SEC issued an investor alert concerning cryptocurrencies stating:

The rise of Bitcoin and other virtual and digital currencies creates new concerns for investors. A new product, technology, or innovation—such as Bitcoin—has the potential to give rise both to frauds and high-risk investment opportunities. Potential investors can be easily enticed with the promise of high returns in a new investment space and also may be less skeptical when assessing something novel, new and cutting-edge.⁸

In July 2017, the SEC issued the “DAO Report,” an investigation related to the issue of 1.15 billion DAO tokens that were meant to create a new form of corporate governance.⁹ In the report, the SEC discusses the issue of applying the federal securities laws to DAO tokens concluding that although no enforcement action should

⁶ Saheli Roy Choudhury, *China Bans Companies from Raising Money Through ICOs, Asks Local Regulators to Inspect 60 Major Platforms*, CNBC (Sept. 4, 2017), <https://www.cnbc.com/2017/09/04/chinese-icos-china-bans-fundraising-through-initial-coin-offerings-report-says.html> [<https://perma.cc/MS64-VSUT>]. The EU has recently published a proposal for regulating crypto-assets which is likely to be ratified, it makes a distinction between utility tokens, asset-reference tokens (stable coins) and payment tokens (proposal for Regulation of the European Parliament and of the Council on Markets in Crypto-Assets, and amending Directive (EU) 2019/1937 (COM 2020), sec. 9).

⁷ See *In re Voorhees*, No. 9592, 2014 SEC LEXIS 1922, at *3, *7 (June 3, 2014); *SEC v. Shavers*, No. 4:13-CV-416, 2013 U.S. Dist. LEXIS 110018, at *3–4 (E.D. Tex. Aug. 6, 2013).

⁸ *Investor Alert: Bitcoin and Other Virtual Currency-Related Investments*, SEC (May 7, 2014) (emphasis omitted), <http://www.sec.gov/oiea/investor-alerts-bulletins/investor-alertsiabitcoin.html> [<http://perma.cc/NFB3-QTUN>].

⁹ SEC, REPORT OF INVESTIGATION PURSUANT TO SECTION 21(A) OF THE SECURITIES EXCHANGE ACT OF 1934: THE DAO (July 25, 2017), <https://www.sec.gov/litigation/investreport/34-81207.pdf> [perma.cc/CMQ2-M9SQ] [hereinafter DAO REPORT]. DAO tokens are tokens which are meant to automate organizational governance and decision making. SEE CHRISTOPH JENTZSCH, DECENTRALIZED AUTONOMOUS ORGANIZATION TO AUTOMATE GOVERNANCE 1 (2016), https://archive.org/stream/DecentralizedAutonomousOrganizations/WhitePaper_djvu.txt [<https://perma.cc/2EL2-7TU2>].

be taken due to the conduct and activities known to it at the time, the DAO tokens are indeed securities under the Securities Act of 1933 (“Securities Act”)¹⁰ and the Securities Exchange Act of 1934 (“Exchange Act”).¹¹ Later on, in September 2017, the head of the SEC clarified that ICOs are one of the SEC’s top regulatory priorities.¹² In April 2019, the SEC finally issued its long-awaited framework for “investment contract” analysis of digital assets.¹³ However, the SEC guidelines are only recommendations which are not legally binding and at some points they still leave considerable ambiguity with regard to the question of what types of cryptocurrencies should be regulated by the SEC and how.

The question of how to regulate cryptocurrencies is compelling throughout the life of the coin, but is of special interest during the ICO because the value of the cryptocurrency depends not only on the value of the currency, but also on issues of security.¹⁴ As these coins exist in the virtual world, the sites on which they are traded are vulnerable to hackers.¹⁵ Thus, even if hacking the network of the coin itself is difficult, other sites such as cryptocurrency exchanges are more susceptible to theft.¹⁶

The ICO process is also vulnerable. An ICO is a process in which people buy virtual tokens from the makers of the crypto-

¹⁰ Securities Act of 1933, 15 U.S.C. § 77(a) (1933).

¹¹ DAO REPORT, *supra* note 9.

¹² John McCrank, *SEC Chief Says Cyber Crimes Risks are Substantial, Systemic*, REUTERS (Sept. 6, 2017), <https://www.reuters.com/article/us-sec-enforcement/sec-chief-says-cyber-crime-risks-are-substantial-systemic-idUSKCN1BH094> [<https://perma.cc/2ZJW-X9VZ>].

¹³ SEC, FRAMEWORK FOR “INVESTMENT CONTRACT” ANALYSIS OF DIGITAL ASSETS (April 3, 2019), <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> [<https://perma.cc/J7E4-PETZ>] [hereinafter SEC GUIDELINES]. An investment contract constitutes a security according to U.S. law, thus the SEC has the power to regulate it.

¹⁴ Lucinda Shen, *Hackers Have Stolen \$400 Million From ICOs*, FORTUNE (Jan. 23, 2018) <https://fortune.com/2018/01/22/ico-2018-coin-bitcoin-hack/> [<https://perma.cc/D8SU-8AJP>].

¹⁵ *Id.*

¹⁶ Brian Fung, *Why Bitcoin Exchanges Keep Getting Hacked – and How to Protect Yourself*, WASH. POST (June 20, 2018), <https://www.washingtonpost.com/news/the-switch/wp/2018/06/20/why-bitcoin-exchanges-keep-getting-hacked-and-how-to-protect-yourself/> [<https://perma.cc/DE8Q-UCK8>].

currency.¹⁷ As the startup issuing the tokens grows, these tokens are expected to increase in value.¹⁸ This is a method of raising investment via crowdfunding, as a means to reduce transaction costs associated with raising capital elsewhere.¹⁹ In the past, crowdfunding was not possible due to the heavy transaction costs associated with raising small amounts of money from many different investors.²⁰ Today, however, this problem is solved by using the internet, which reduces transaction costs and allows for a more efficient allocation of money.²¹ Although the makers of these tokens chose to raise money through ICOs and not through IPOs, there are similarities between buying some of these tokens and buying stock in an Initial Public Offering (IPO) of a company.²² Unlike in an IPO, potential investors in an ICO now receive little or not enough information.²³ Additionally, until 2017, ICOs have remained mostly “under the radar” of the securities authorities.²⁴ However, ICOs are frequently the target of cyberattacks and—without proper disclosure rules—investors sometimes pay for tokens but are left with nothing.²⁵ A famous, but not uncommon, example of such a cyberattack occurred on July 17, 2017 when the CoinDash website launched an ICO. The website was hacked and \$7M of the investment, all in

¹⁷ Christian Hofmann, *The Changing Concept of Money: A Threat to the Monetary System or an Opportunity for The Financial Sector?*, 21 EUR. BUS. ORG L. REV. 37, 40 n.10 (2020).

¹⁸ *Why Invest in an ICO?*, CRYPTONEWS, <https://cryptonews.com/guides/why-invest-in-an-ico.htm> [<https://perma.cc/C6TX-9GK5>].

¹⁹ Usman W. Chohan, *Are Cryptocurrencies Truly Trustless?*, in CRYPTOFINANCE AND MECHANISMS OF EXCHANGE 77, 84 (Stéphane Goutte et al. eds., 2019).

²⁰ Steven C. Bradford, *Crowdfunding and the Federal Securities Law*, 1 COLUM. BUS. L. REV. 1, 5 (2012).

²¹ *Id.*

²² In an IPO, early investors, such as large institutions, purchase some of the stocks at a discount via early agreements. Once the stocks are sold to the public, the institutional investors which invested in the stocks sell their stocks on the market and make a profit. See Othalia Doe-Bruce, *Blockchain and Alternative Sources of Financing in CRYPTOFINANCE AND MECHANISMS OF EXCHANGE* 91, 98 (Stéphane Goutte et al. eds., 2019).

²³ See generally Seth Holoweiko, *What is an ICO? Defining a Security on the Blockchain*, GEO. WASH. L. REV. (forthcoming 2020); Jabotinsky & Sarel, *supra* note 4.

²⁴ In 2017 the SEC issued the first report relating to cryptocurrencies: the DAO Report. See DAO REPORT, *supra* note 9.

²⁵ Sondes Mbarek et al., *Are Virtual Currencies Virtuous? Ethical and Environmental Issues*, in CRYPTOFINANCE AND MECHANISMS OF EXCHANGE 29, 41 (Stéphane Goutte et al. eds., 2019).

Ethereum's cryptocurrency, Ether, went to hackers and not to CoinDash in exchange for tokens.²⁶

Although the technology underlying most cryptocurrencies is very similar, the logic behind them differs. Some cryptocurrencies function as regular national currencies with traditional currency traits.²⁷ As such, they provide a medium of exchange, unit of account, and/or store of value.²⁸ Other cryptocurrencies, however, may represent other rights as well. This interesting phenomenon causes some cryptocurrencies to be viewed as closer to real national currencies while others are viewed as closer to financial products (such as securities or derivatives).²⁹

This Article explores how the “safety” of these coins relates to issues of disclosure. It seeks to answer two key questions—how should cryptocurrencies be regulated, and how much disclosure should be demanded from the corporations that issue them? The academic debate about what a cryptocurrency is—whether it is a currency or some type of different financial product—has already begun with Bitcoin.³⁰ This Article expands the current Bitcoin debate to other types of cryptocurrencies and argues that different types of cryptocurrencies require different regulatory approaches. This argument is supported by comparing different types of cryptocurrencies to various financial products (such as stocks, derivatives, forwards, and options)—a discussion that, to date, the literature has not addressed enough. It is important to note from the outset that this Article deals with regulatory questions pertaining to financial regulation and leaves aside questions regarding other types of regulation such as anti-money laundering, tax regulation, and

²⁶ John Leyden, *CoinDash Crowdfunding Hack Further Dents Trust in Crypto-Trading World*, THE REG. (July 17, 2017), https://www.theregister.co.uk/2017/07/18/coindash_hack/ [<https://perma.cc/V9JK-5XGM>]. In this specific case investors received the tokens they paid for and CoinDash was left with the loss.

²⁷ See generally CRYPTOFINANCE AND MECHANISMS OF EXCHANGE (Stéphane Goutte et al. eds., 2019).

²⁸ *Id.*

²⁹ *Id.*

³⁰ See Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS SCI. & TECH. L.J. 159, 160 (2011).

fraud, which are also relevant to the broader discussion of regulating cryptocurrencies.³¹

Parts I–III of this Article set out the theoretical background of the regulation of securities and financial products in the United States. Part I reviews the principals behind securities regulation and supervision in general, to assist in the discussion of how cryptocurrencies should be regulated. This discussion will include the theory of financial markets and why we need to supervise them. As most ICOs take place outside of the United States, Part II discusses the extraterritoriality of U.S. securities laws. Part III will then explain what constitutes a security under U.S. law. Next, Part IV analyzes the different types of cryptocurrencies. Finally, Part V presents arguments for how cryptocurrencies should be regulated.

I. THE NEED FOR SECURITIES REGULATION

As mentioned in the introduction, cryptocurrencies are either meant to replace fiat currencies or are a substitute for some of the traditional financial assets. As such, before discussing how to regulate them, we must first understand why we regulate financial markets and what financial regulation is meant to achieve. Financial markets bring together buyers and sellers of financial instruments, establishing the right price for the traded financial instrument.³² The price of the traded financial instrument is determined—like the price of any other product in regular non-financial markets—by the supply and demand curve.³³ However, financial instruments have a special trait that distinguishes them from non-financial products or goods: the benefits which they confer are largely unknown to a large extent because the product’s prospective earnings are unknown.³⁴

³¹ See, e.g., Omri Marian, *A Conceptual Framework for the Regulation of Cryptocurrencies*, 82 U. CHI. L. REV. DIALOGUE 53, 56–57 (2015–2016) (discussing how relative anonymity and an absence of regulating intermediaries make it more difficult to identify those who transact in illicit value transfers); see generally Hadar Y. Jabotinsky & Michal Lavi, *Speak Out: Verifying and Unmasking Cryptocurrency User Identity* (unpublished manuscript) (on file with author).

³² See JOHN ARMOUR, DAN AWREY, PAUL DAVIES, LUCA ENRIQUES, JEFFREY N. GORDON, COLIN MAYER & JENNIFER PAYNE, *PRINCIPLES OF FINANCIAL REGULATION* 101 (2016).

³³ See *id.*

³⁴ See *id.*

Therefore, their value is based on the buyers' predictions of potential value increase over time.³⁵

The process of predicting future value of financial instruments and subsequently pricing them is at the heart of the financial markets. Additionally, the process of predicting and pricing provides a main function to financial markets—delivering information about investors' beliefs regarding the future price of the assets sold in the market.³⁶ Therefore, the price of a financial instrument should reflect the future price at the date the investor expects to sell the instrument plus the present value of the stream of future dividend payments and interest rate.³⁷ But in order to determine the components of the price and to be able to put a price tag on the instrument, investors should have all the relevant information about the firm or the underlying asset of the financial instrument.³⁸

This is the main role of the securities regulator—providing information to the market, mainly through the vehicle of disclosure requirements which, in turn helps the market assign the correct price tag to the products sold.³⁹ For example, the price of the firm's securities is expected to include any information about the firm's management quality as long as the information is public.⁴⁰ If the information is positive, the price of the share is expected to increase as investors rush to purchase it. In other words, there is a hypothesis that as long as the market receives correct and full information about a firm, the market will be efficient.⁴¹

Some investors might occasionally gain access to private information which has not yet been disclosed. For example, a firm's management might know about a strategic change the firm is about to undertake before it is announced to the general public. Managers

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.* at 102.

³⁸ *Id.* at 108.

³⁹ Hadar Y. Jabotinsky, *Financial Regulation*, in *ENCYCLOPEDIA OF LAW AND ECONOMICS* 5 (A. Marciano & G.B. Ramello eds., 2017).

⁴⁰ ARMOUR ET AL., *supra* note 32.

⁴¹ Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, 17 J. ECON. PERSP. 59, 60 (2003). Note, however, that this hypothesis has been criticized as markets seem to over or under react to new pieces of information and to take into account irrelevant and plausible information. *See, e.g.*, ARMOUR ET AL., *supra* note 32, at 105.

who have this information are called “insiders.”⁴² As most investors are unaware of this information, it is not likely that they will trade on it and influence the price of the shares.⁴³ Therefore, in order to prevent investors from trading to their advantage by using undisclosed, privileged information, all securities markets around the world prohibit insider trading.⁴⁴ Consequently, uninformed investors can enter the market trusting that all investors have the same level of information when making a trading decision and that insiders cannot benefit from their additional knowledge at the expense of other investors.⁴⁵

As a result of financial market anomalies, securities regulation is also needed in order to ensure efficient allocation of resources. If a share is mispriced, meaning that the price does not accurately reflect all the relevant information, an incorrect investment will be allocated to that share.⁴⁶ Thus, securities regulation plays a crucial role in reducing product information asymmetries and improving the pricing mechanism of securities.⁴⁷

Securities markets, like other markets, incorporate price information which results from the activity of the traders buying and selling securities in the market. Therefore, information is needed to make the markets more efficient and to receive an accurate price for the products sold in the market.⁴⁸ The efficiency of the market is a function of how fast the market can gather, process, verify, and distribute the information among traders.⁴⁹ Information intermediaries such as underwriters, auditors, lawyers, CRAs, and analysts help the traders understand and evaluate the inherent risks of the traded products.⁵⁰ These intermediaries analyze information with respect to the following—the issuer, its business model, ownership, financial situation, earnings, and

⁴² ARMOUR ET AL., *supra* note 32, at 104.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.* at 106.

⁴⁶ Jabotinsky, *supra* note 39, at 4.

⁴⁷ ARMOUR ET AL., *supra* note 32, at 106.

⁴⁸ Ronald J. Gilson & Reinier H. Kraakman, *The Mechanism of Market Efficiency*, 70 VA. L. REV. 549, 593 (1984).

⁴⁹ *See id.*

⁵⁰ ARMOUR ET AL., *supra* note 32, at 119.

strategic plans; the issuer's market and industry, new regulations, new entrants, and the status of its competitors; past trading in the firm's securities; and other significant events, such as political changes or natural disasters which might have an effect on the issuer's business.⁵¹

In a perfect world, investors would pay for the information they receive from these intermediaries. However, information is a public good and thus it is not easily excludable; once produced and transmitted to the investors who pay for it, there is a chance that other investors will try to get a free ride by obtaining the information without paying for it.⁵² The result is a problematic funding model—instead of being paid by the investors, the intermediaries are paid by the issuer of the financial product.⁵³ This gives rise to a series of conflicts of interest and to entrenchment of the intermediaries' incentives.⁵⁴ Regulation is also necessary to decrease and manage these conflicts of interest.⁵⁵

Last but not least, regulation is also needed to reduce systemic risk—the risk that the entire market or financial system will collapse.⁵⁶ This risk is increased by links and interdependencies, where

⁵¹ *Id.* at 118. See generally Franklin Allen & Anthony M. Santomero, *What Do Financial Intermediaries Do?*, 25 J. BANKING & FIN. 271 (2001) (broadly discussing the role of financial intermediaries); George M. Giaglis, Stefan Klein & Robert M. O'Keefe, *The Role of Intermediaries in Electronic Marketplaces: Developing a Contingency Model*, 12 INFO. SYS. J. 231 (2002) (discussing the role of intermediaries in online markets).

⁵² ARMOUR ET AL., *supra* note 32, at 121.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ For example, public companies in the United States are required to provide the public with independently audited financial statements. 15 U.S.C. §§ 77(aa), 78(m)(a)(2). Credit Rating Agencies (CRA) are required to use standardized forms which enable users to compare ratings between different CRAs and to disclose their rating methodologies. Dodd-Frank Wall Street & Consumer Protection Act § 932(a)(8) (2010); Nationally Recognized Statistical Rating Organizations: Correction, 79 Fed. Reg. 61,576 (Oct. 14, 2014) (codified at 17 C.F.R. pts. 232, 240, 249, & 249b). Analysts are regulated in the United States according to the Financial Industry Regulatory Authority. FINRA Rule 2241, 80 Fed. Reg. 43,482 (July 22, 2015); FINRA Rule 2242, 81 Fed. Reg. 36,628 (June 7, 2016).

⁵⁶ Marco A. Espinosa-Vega et al., *Some Implications of Systemic Risk and the Design of Regulatory Architecture*, in MACROPRUDENTIAL REGULATORY POLICIES: THE NEW ROAD TO FINANCIAL STABILITY? 207–14 (Stijn Claessens et al. eds., 2011).

the failure of a single entity or cluster of entities can cause a cascading failure.⁵⁷ It is also related to externalities—firms taking on more risk than is economically efficient because the results of the realization of the risk will be borne by society as a whole and not solely by the entity taking the excessive risk.⁵⁸ Financial regulation is necessary to prevent or minimize this risk.

For all these reasons, securities markets should be regulated—and indeed they are. However, for obvious reasons, securities regulation applies only to instruments that are considered securities. Therefore, before we can further discuss the regulation of cryptocurrencies, we should first examine what constitutes a security under U.S. law. This is meaningful because if an instrument is considered a security, then the offering of that instrument is subject to securities regulation, which means it must be registered under the Securities Act unless it falls under one of the exemptions offered by the law.⁵⁹ Such registration increases the cost of selling the instruments. Requiring cryptocurrencies to register would significantly increase the cost of the ICO.⁶⁰ Furthermore, if cryptocurrencies are indeed considered a security, the sites which assist in the trading of tokens and in handling the ICO would face regulatory issues as they may be treated as unregistered brokers or investment advisors according to SEC rules.

All this is true with reference to U.S. regulation. However, to cover the topic fully, a preliminary discussion must be made with respect to the question of the extraterritoriality of U.S. securities law. As a vast number of ICOs occur outside the U.S. territorial borders, the relevant question is—do they fall under U.S. law? If the answer is yes—then do they constitute a security under U.S. law?

⁵⁷ *Id.*

⁵⁸ Jabotinsky, *supra* note 39, at 4.

⁵⁹ 15 U.S.C. § 77(z)(3) (establishing exceptions to the Securities Act).

⁶⁰ *ICO Law and Compliance: Is Your ICO Subject to Regulation?*, SKALEX, <https://www.skalex.io/ico-law-compliance/> [<https://perma.cc/3VAF-WCFY>].

II. THE EXTRATERRITORIALITY OF U.S. SECURITIES LAW

The United States has vast and long-standing experience in seeking to apply national securities laws extraterritorially.⁶¹ The courts have developed a few tests to justify extraterritoriality⁶²—the statutory position strengthens these tests, especially concerning anti-fraud prohibitions.⁶³

Prior to the decision in *Morrison v. National Australia Bank*,⁶⁴ the Second Circuit paved the way for the extraterritoriality of the securities regulation's anti-fraud provisions by mainly applying two tests: (1) the effects test, which examined whether the wrongful conduct had a substantial and foreseeable negative effect on the United States or its citizens;⁶⁵ and (2) the conduct test, which by contrast required the wrongful conduct to take place within the United States.⁶⁶

In *Leasco Data Processing Equip. Corp. v. Maxwell*⁶⁷ and subsequent cases, courts applied the conduct test to cover gray areas which were not addressed by the effects test.⁶⁸ The conduct test was able to bridge this gap because it does not require proof of harm but merely requires wrongful conduct.⁶⁹ Thus, the conduct test also assisted U.S. courts in obtaining jurisdiction in cases where the harmful act was conducted inside the United States but targeted

⁶¹ See Dodd-Frank Act §§ 929P(b), 929Y; see also Schoenbaum v. Firstbrook, 405 F.2d 200 (2d Cir. 1968), *abrogated by* Morrison v. Nat'l Austl. Bank Ltd., 561 U.S. 247 (2010); *Leasco Data Processing Equip. Corp. v. Maxwell*, 468 F.2d 1326 (2d Cir. 1972), *abrogated by* Morrison v. Nat'l Austl. Bank Ltd., 561 U.S. 247 (2010).

⁶² SEC v. Berger, 322 F.3d 187, 192–93 (2d Cir. 2003), *abrogated by* Morrison v. Nat'l Austl. Bank Ltd., 561 U.S. 247 (2010).

⁶³ See Dodd-Frank Act § 929P(b).

⁶⁴ 561 U.S. 247 (2010).

⁶⁵ Kun Young Chang, *Multinational Enforcement of U.S. Securities Laws: The Need for the Clear and Restrained Scope of Extraterritorial Subject-Matter Jurisdiction*, 9 FORDHAM J. CORP. & FIN. L. 89, 95 (2003); Junsun Park, *Global Expansion of National Securities Laws: Extraterritoriality and Jurisdictional Conflicts*, 12 U.N.H.L. REV. 69, 70 (2014); *Berger*, 322 F.3d at 192–93; *Morrison*, 561 U.S. at 247.

⁶⁶ Park, *supra* note 65, at 71; *Berger*, 322 F.3d at 192–93; *Morrison*, 561 U.S. at 247.

⁶⁷ *Leasco Data Processing Equip. Corp. v. Maxwell*, 468 F.2d 1326 (2d Cir. 1972).

⁶⁸ *Leasco*, 468 F.2d at 1326; J. WILLIAM HICKS, INTERNATIONAL DIMENSIONS OF U.S. SECURITIES LAW § 11:29 (2012); Park, *supra* note 65, at 71; Chang, *supra* note 65, at 96.

⁶⁹ *Leasco*, 468 F.2d at 1326; HICKS, *supra* note 68, at § 11:29; Park, *supra* note 65, at 71; Chang, *supra* note 65, at 96.

foreign investors.⁷⁰ The court held that the conduct test would be satisfied if “(1) the defendant’s activities in the United States were more than ‘merely preparatory’ to a securities fraud conducted elsewhere, and (2) these activities or culpable failures to act within the United States ‘directly caused’ the claimed losses.”⁷¹

Although these are two separate tests—each of which can be applied by itself—the courts could also combine them in order to strengthen a given case. The Second Circuit, for example, did this in *Bersch v. Drexel Firestone, Inc.*⁷² Throughout the years, these tests were adopted in a number of courts across the United States, each tweaking the form of the test to fit the decisions of the court at hand.⁷³ When applying the conduct test, for example, the DC Circuit demanded that “the American-based conduct at issue had to itself constitute a securities law violation”⁷⁴ This application of the test is much stricter than the application of the Fifth and Seventh Circuits which required that the conduct made on U.S. soil be material to the success of the fraud and that it constitutes a substantial part of it.⁷⁵ The most lenient form of the test was used by the Third, Eighth, and Ninth Circuits which required that only part of the activity of a securities fraud to be carried out on U.S. soil.⁷⁶ The different test interpretations of the courts made it difficult for individuals and the market to draw a bright line demonstrating what falls under the test and what does not.⁷⁷

⁷⁰ *IIT v. Vencap, Ltd.*, 519 F.2d 1001, 1017 (2d Cir. 1975).

⁷¹ *Itoba Ltd. v. Lep Grp. PLC*, 54 F.3d 118, 122 (2d Cir. 1995) (citing *Alfadda v. Fenn*, 935 F.2d 475, 478 (2d Cir. 1991)), *abrogated by* *Morrison v. Nat’l Austl. Bank Ltd.*, 561 U.S. 247 (2010); Park, *supra* note 65, at 71.

⁷² *Bersch v. Drexel Firestone, Inc.*, 519 F.2d 974, 989 (2d Cir. 1975).

⁷³ Stephen Choi & Andrew Guzman, *The Dangerous Extraterritoriality of American Securities Law*, 17 *NW. J. INT’L & BUS.* 207, 217 (2009); Park, *supra* note 65, at 72.

⁷⁴ Park, *supra* note 65, at 72.

⁷⁵ *Kauthar SDN BHD v. Sternberg*, 149 F.3d 659, 667 (7th Cir. 1998), *abrogated by* *Morrison v. Nat’l Austl. Bank Ltd.*, 561 U.S. 247 (2010); *see also* *Robinson v. TCI/US W. Comm., Inc.*, 117 F.3d 900, 906 (5th Cir. 1997).

⁷⁶ Park, *supra* note 65, at 72; *SEC v. Kasser*, 548 F.2d 109, 114 (3d Cir. 1977), *cert. denied*, 431 U.S. 938 (1977), *and abrogated by* *Morrison v. Nat’l Austl. Bank Ltd.*, 561 U.S. 247 (2010); *see also* *Cont’l Grain (Australia) Pty. Ltd. v. Pacific Oilseeds, Inc.*, 592 F.2d 409, 421 (8th Cir. 1979); *Grunenthal GmbH v. Hotz*, 712 F.2d 421, 425 (9th Cir. 1983).

⁷⁷ Choi & Guzman, *supra* note 73, at 217.

This ambiguity also existed with respect to the effects test. Courts disagreed regarding the degree to which the behavior in question needed to have an effect on the United States or its citizens.⁷⁸ This question of degree only became more difficult to answer with the development of the internet and other new technologies.⁷⁹ American legal scholars and practitioners felt a growing unease when considering the possibility that these tests might breach another country's sovereignty and lead to a deterioration in foreign relations.⁸⁰

In 2010, the Supreme Court cancelled both the conduct and the effect tests in *Morrison*.⁸¹ This case involved Australian shareholders who purchased stock on an Australian stock exchange and who filed suit in the United States against an Australian bank for violating U.S. securities law.⁸² The plaintiffs contended that the bank made material misstatements with regard to an expected purchase of a mortgage servicing company by the bank.⁸³ The District Court ruled that it did not have subject matter jurisdiction over the case and the Appellate Court affirmed the decision.⁸⁴ The Supreme Court agreed with the lower court's dismissal but found the lower courts' reasoning⁸⁵ for deciding whether to grant extraterritorial applicability to U.S. securities laws flawed.⁸⁶ The Court held that no explicit statutory instruction existed for the extraterritoriality conduct of U.S. securities laws.⁸⁷ However, after summing up the shortcomings of the conduct and effect tests and ruling them out, the Court introduced a new test. According to the Court, the main test that should be used in order to determine the reach of Section 10(b) of the

⁷⁸ Park, *supra* note 65, at 73.

⁷⁹ George Nnona, *International Insider Trading: Reassessing the Propriety and Feasibility of the U.S. Regulatory Approach*, 27 N.C.J. INT'L L. & COM. REG. 185, 198 (2001); Park, *supra* note 65, at 73.

⁸⁰ Park, *supra* note 65, at 73.

⁸¹ *Morrison*, 561 U.S. at 247.

⁸² *Id.* at 252–53 (specifically, the claim was that the bank violated the Securities Exchange Act of 1934 §§ 10(b), 20(a) and Securities and Exchange Commission Rule 10b-5).

⁸³ *Id.* at 252.

⁸⁴ *Id.* at 253.

⁸⁵ *Id.*

⁸⁶ *Id.* at 253–54.

⁸⁷ *See id.* at 255 (“When a statute gives no clear indication of an extraterritorial application, it has none.”).

Securities Exchange Act (“Section 10(b)”), which deals with fraudulent behavior, is the transactional test.⁸⁸ The Court held that in order to qualify for the test, the fraudulent behavior must accompany the purchase or the sale of a security, whether or not it is a registered security on a national securities exchange.⁸⁹ The Court further emphasized that one of the fundamental dimensions of the case is the fact that the plaintiffs and the defendant were foreign.⁹⁰ For the test to be applicable, the fraudulent behavior should involve “transactions in securities listed on domestic exchanges, and domestic transactions in other securities...”⁹¹

However, the new transactional test left the market confused. Some argued that foreign transactions are protected as long as the securities are listed on a U.S. exchange.⁹² Others disagreed and claimed that the language used by Justice Scalia and the majority shows that the Supreme Court believed that the extraterritoriality of Section 10(b) applies only when the security transactions occurred within the United States.⁹³ The test also severely restricted U.S. regulators’ ability to prosecute persons who violate U.S. securities laws but trade outside the United States.⁹⁴ This led to a concern that U.S. regulators would not be able to protect the market’s integrity, leading to a loss of investor confidence in the securities markets.⁹⁵ Consequently, Congress decided to intervene and restore both the effects test and the conduct test in actions brought by the SEC and the Department of Justice (“DOJ”) by enacting a new provision in the Dodd-Frank Act.⁹⁶ The new provision established a statutory basis for extraterritoriality of the anti-fraud provisions in both the Securities Exchange Act and the Securities Act which stipulates:

EXTRATERRITORIAL JURISDICTION. The district courts of the United States and the United States

⁸⁸ *Id.* at 268–70.

⁸⁹ *Id.* at 266–67.

⁹⁰ *Id.* at 268.

⁹¹ *Id.* at 267.

⁹² Park, *supra* note 65, at 76.

⁹³ *Id.*

⁹⁴ *Id.* at 76–77.

⁹⁵ *Id.*

⁹⁶ Dodd-Frank Act §§ 929P(b), 929Y.

courts of any Territory shall have jurisdiction of an action or proceeding brought or instituted by the Commission or the United States alleging a violation of the antifraud provisions of this title involving: (1) conduct within the United States that constitutes significant steps in furtherance of the violation, even if the securities transaction occurs outside the United States and involves only foreign investors; or (2) conduct occurring outside the United States that has a foreseeable substantial effect within the United States.⁹⁷

The new provision clearly provides the SEC and the DOJ with the power to prosecute in situations of offshore securities fraud.⁹⁸ This provision, combined with the *Morrison* decision, equips U.S. regulators with extraterritoriality powers with respect to the anti-fraud provisions of securities laws.⁹⁹ As discussed in *Morrison*, the Supreme Court clarified that the transactional test can be inferred directly from the anti-fraud provisions—therefore, the SEC can enforce against fraudulent extraterritorial actions connected to U.S. securities transactions, even if the fraudulent actions have an extraterritorial dimension.¹⁰⁰ Section 30 of the Exchange Act is another source of extraterritorial power, as it provides the SEC with the ability to prosecute a broker or a dealer who commits a securities fraud offshore in order to circumvent U.S. securities regulation.¹⁰¹ In order to use this provision, the SEC would need to promote rules in accordance with this provision.¹⁰² A third and perhaps most powerful basis for extraterritoriality is the new section added to Section 929P of the Dodd-Frank Act.¹⁰³ This section overcomes a situation in which a case does not meet the requirements of the transactional test. In such cases, the SEC can still bring enforcement actions

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ Park, *supra* note 65, at 78.

¹⁰⁰ *Id.*

¹⁰¹ Richard Painter, *The Dodd-Frank Extraterritorial Jurisdiction Provision: Was It Effective, Needed or Sufficient?*, 1 HARV. BUS. L. REV. 195, 215 (2011).

¹⁰² *Morrison v. Nat'l Austl. Bank Ltd.*, 561 U.S. 247, 268 (2010).

¹⁰³ Dodd-Frank Act §§ 929P(b), 929Y.

against the perpetrator by using the conduct or effects tests which were enacted into the legislation.¹⁰⁴

In the case of cryptocurrencies, a great deal of ICOs are conducted outside the United States. However, if the SEC believes that the issue or the purchase of the tokens has a “*foreseeable substantial effect within the United States*,”¹⁰⁵ it can still press charges against issuers or traders of the token that violate the U.S. securities laws. The next step of the analysis should then ask—what constitutes a security under U.S. law?

III. WHAT CONSTITUTES A SECURITY UNDER U.S. LAW?

The Securities and Exchange Commission issued an investigative report today cautioning market participants that offers and sales of digital assets by “virtual” organizations are subject to the requirements of the federal securities laws. Such offers and sales, conducted by organizations using distributed ledger or blockchain technology, have been referred to, among other things, as “Initial Coin Offerings” or “Token Sales.” Whether a particular investment transaction involves the offer or sale of a security—regardless of the terminology or technology used—will depend on the facts and circumstances, including the economic realities of the transaction.... “The innovative technology behind these virtual transactions does not exempt securities offerings and trading platforms from the regulatory framework designed to protect investors and the integrity of the markets,” said Stephanie Avakian, Co-Director of the SEC’s Enforcement Division.¹⁰⁶

¹⁰⁴ Park, *supra* note 65, at 79.

¹⁰⁵ Dodd-Frank Act § 929P(b) (emphasis added).

¹⁰⁶ Press Release, SEC, SEC Issues Investigative Report Concluding DAO Tokens, a Digital Asset, Were Securities U.S. Securities Laws May Apply to Offers, Sales, and Trading of Interests in Virtual Organizations (July 15, 2017), <https://www.sec.gov/news/press-release/2017-131> [<https://perma.cc/T2LV-A5XM>].

Section 5 of the Securities Act and the pursuant SEC rules are full of prohibitions, conditions, and exceptions with regard to the registration of securities.¹⁰⁷ However, the basic principle is clear—unless exempted by law, all securities offerings must be accompanied by registration with the SEC.¹⁰⁸ An issuer is prohibited from selling a security and entering into a contract of sale¹⁰⁹ until the registration statement with the SEC is in force.¹¹⁰ The question is then, what would be considered a “security” under U.S. federal law?

The United States regulates securities mainly under two laws: (1) the Securities Act, and (2) the Exchange Act. These two pieces of legislation were enacted by Congress following fraudulent sales and lack of information in the U.S. securities markets which led to the 1929 stock market crash and the subsequent Great Depression.¹¹¹ The definition under the Exchange Act describes a “security” as any of the following.¹¹²

[A]ny note, stock, treasury stock, security future, security based swap, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, pre-organization certificate or subscription, transferable share, *investment contract*, voting trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or other mineral rights, any put, call, straddle, option, or privilege on any security, certificate of deposit, or group or index of securities (including any interest therein or based on the value thereof), or any put, call, straddle, option, or privilege entered into on a national securities exchange relating to foreign currency, or, in general, any interest or instrument commonly known as a “security”, or any certificate of interest or participation

¹⁰⁷ 15 U.S.C. § 77e(c).

¹⁰⁸ *Id.*

¹⁰⁹ 15 U.S.C. § 77b(a)(3).

¹¹⁰ 15 U.S.C. § 77e(a)(1).

¹¹¹ See LOUIS LOSS, JOEL SELIGMAN & TROY PAREDES, *SECURITIES REGULATION* 281 (5th ed. 2014).

¹¹² The Securities Act of 1933 defines a security in similar terms. 15 U.S.C. § 77b(a)(1).

in, temporary or interim certificate for, receipt for, guarantee of, or warrant or right to subscribe to or purchase, any of the foregoing; *but shall not include currency* or any note, draft, bill of exchange, or banker's acceptance which has a maturity at the time of issuance of not exceeding nine months, exclusive of days of grace, or any renewal thereof the maturity of which is likewise limited.¹¹³

The Supreme Court observed that the definition of “security” includes “commonly known” documents which are traded for investment or speculation as well as certificates of interest or participation in profit sharing mechanisms.¹¹⁴ In another ruling, the Supreme Court further stated that when an instrument falls under what is commonly known as a security, there is no need for courts to analyze each instrument on a case-by-case basis since some instruments are clearly “securities,” in accordance with the legislator’s intention.¹¹⁵

If a financial instrument or investment does not fall under what is “commonly known” as a security, it may still be considered as such according to the definition of an “investment contract.” This term is the basket term by which many assets have been determined to be securities and is also the term which is analyzed by the SEC Guidelines from April 2019.¹¹⁶ Investment contracts were defined by the U.S. Supreme Court in *Securities and Exchange Commission v. W.J. Howey Co.*¹¹⁷ To fall under the definition, an instrument must meet three main criteria: (1) an investment of money; (2) a common enterprise; and (3) an expectation of profits which are derived *solely* from the efforts of others.¹¹⁸ Over the years, courts have maintained most of this definition, but replaced the word “solely” with the question of whether the efforts made by the managers of the firm (other than the investor) are undeniably

¹¹³ 15 U.S.C. § 78c(a)(10) (emphasis added).

¹¹⁴ SEC v. W.J. Howey Co., 328 U.S. 293, 297 (1946).

¹¹⁵ Reves v. Ernst & Young, 494 U.S. 56, 62 (1990).

¹¹⁶ SEC GUIDELINES, *supra* note 13.

¹¹⁷ 328 U.S. 293 (1946).

¹¹⁸ *Id.* at 301 (emphasis added).

significant ones.¹¹⁹ This definition alone already dictates a need for differing regulatory responses to cryptocurrencies that change value based on the efforts of others, and those that do not.

IV. DIFFERENT TYPES OF CRYPTOCURRENCIES

Most current cryptocurrencies which exist today are based on a technology called the “blockchain.”¹²⁰ This technology connects users to one another through a series of blocks, which together build a platform for digital assets.¹²¹ A blockchain is usually managed by a peer-to-peer network, in which peers collectively adhere to a protocol for validating new blocks.¹²² Once a block is formed, it is impossible to alter it without traces.¹²³ Put simply, it is like having a common Excel page shared by an entire community of users. Once something is changed on one Excel sheet, the same Excel sheets on all the computers of all of the users are updated automatically. Since it does not exist in any centralized physical location, hacking it is almost impossible.¹²⁴ In other words, the blockchain is a distributed ledger which maintains a constantly growing structure of blocks that preserve data and hold batches of separate transactions.¹²⁵ The completed blocks are added in a linear and chronological order.¹²⁶ Each block contains a timestamp and information link which points to a previous block.¹²⁷ Blockchain technology makes use of smart contracts, which are run and verified by many computers to ensure trustworthiness and allow users to instruct the computer program to transfer the currency from one to another given that certain

¹¹⁹ SEC v. Glenn W. Turner Enters., Inc., 474 F.2d 476, 482 (9th Cir. 1973); accord SEC v. Koscot Interplanetary, Inc., 497 F.2d 473, 483 (5th Cir. 1974).

¹²⁰ See generally ARVIND NARAYANAN, JOSEPH BONNEAU, EDWARD FELTEN, ANDREW MILLER & STEVEN GOLDFEDER, BITCOIN AND CRYPTOCURRENCY TECHNOLOGIES: A COMPREHENSIVE INTRODUCTION (2016).

¹²¹ *Id.* at 11.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ For the exact technological reasons why, see generally NARAYANAN ET AL., *supra* note 120.

¹²⁵ *Id.* at 11.

¹²⁶ Michael Nofer, Peter Gomber, Oliver Hinz & Dirk Schiereck, *Blockchain*, 59 BUS. INFO. SYS. ENG. 183, 184 (2017).

¹²⁷ *Id.*

conditions apply.¹²⁸ In other words, they are programs that execute “if this happens, then do that” commands.

In March 2013, the U.S. Department of Treasury’s Financial Crimes Enforcement Network (FinCEN) released its guidance on virtual currencies.¹²⁹ In these guidelines *decentralized virtual currency* is defined by FinCEN as including “virtual currency (1) that has no central repository and no single administrator, and (2) that persons may obtain by their own computing or manufacturing effort.”¹³⁰ The Financial Action Task Force (the international organization for the fight against money laundering) described it as:

A digital representation of value that can be digitally traded and functions as: (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. It is not issued or guaranteed by any jurisdiction, and fulfils the above functions only by agreement within the community of users of the virtual currency. Virtual currency is distinguished from fiat currency (a.k.a. “real currency,” “real money,” or “national currency”), which is the coin and paper money of a country that is designated as its legal tender; circulates; and is customarily used and accepted as a medium of exchange in the issuing country. It is distinct from e-money, which is a digital representation of fiat currency used to electronically transfer value denominated in fiat currency.¹³¹

¹²⁸ Jabotinsky & Lavi, *supra* note 31, at 18.

¹²⁹ U.S. DEP’T OF TREASURY, FINCEN, FIN-2013-G001, APPLICATION OF FINCEN’S REGULATIONS TO PERSONS ADMINISTERING, EXCHANGING, OR USING VIRTUAL CURRENCIES 5 (2013) [hereinafter FINCEN, VIRTUAL CURRENCY GUIDANCE], https://www.fincen.gov/statutes_regs/guidance/pdf/FIN-2013-G001.pdf [https://perma.cc/49PB-SU55].

¹³⁰ *Id.*

¹³¹ FINANCIAL ACTION TASK FORCE, FATF REPORT: VIRTUAL CURRENCIES, KEY DEFINITIONS AND POTENTIAL AML/CFT Risks 4 (June 2014), <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf> [https://perma.cc/MB2J-K36K] [hereinafter FATF REPORT].

These definitions of virtual currencies—also popularly known as cryptocurrencies—are valid definitions for all cryptocurrencies discussed in this Article.

In general, cryptocurrencies have diverse purposes. Some cryptocurrencies, such as Bitcoin, are used as regular currency and enable payments on the blockchain.¹³² Other cryptocurrencies, such as Ether, are used to execute smart contracts which replace traditional intermediaries in the financial markets.¹³³ Some cryptocurrencies exist as a platform for developing new cryptocurrencies, while others, like the KIN token by Kik, are issued as a means to raise capital for the firm issuing the ICO.¹³⁴ However, the complication does not end there, some cryptocurrencies were created to promote a social cause, such as Solar Coin,¹³⁵ which is meant to promote solar electricity generation, while others, such as Ether, are meant for traditional business purposes. These differences are crucial when trying to design a financial regulatory regime for cryptocurrencies. Next, this Article will survey some of the most common cryptocurrencies, while emphasizing the differences between them. These distinctions will then be used to design a framework for regulating different types of cryptocurrencies.

A. Bitcoin

Based on a computer science research paper by Satoshi Nakamoto, Bitcoin was created in 2009.¹³⁶ Nakamoto designed a peer-to-peer network which allowed users to transfer Bitcoins to others using their computers or smart-phones.¹³⁷ The Bitcoin system is a cloud-based decentralized currency system which does not rely on a central authority, such as a central bank or a company, to issue

¹³² Edmund Mokhtarian & Alexander B. Lindgren, Rise of the Crypto Hedge Fund: Operational Issues and Best Practices for Institutional Cryptocurrency Trading (Oct. 2017) (working paper), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3055979 [<https://perma.cc/F6XA-NPAW>].

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ See SOLARCOIN, <https://solarcoin.org/> [<https://perma.cc/9NN4-Q4FX>].

¹³⁶ See CRAIG K. EWELL ET AL., CONG. RESEARCH SERV., R43339, BITCOIN: QUESTIONS, ANSWERS, AND ANALYSIS OF LEGAL ISSUES 1 (2015).

¹³⁷ SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 1 (2008), <https://bitcoin.org/bitcoin.pdf> [<https://perma.cc/8DGC-THBR>].

Bitcoins or to verify the transactions of its users.¹³⁸ Instead, transactions are verified and processed by using principles of cryptography.¹³⁹ Individual users on the blockchain can generate new Bitcoins through a process called “mining.” They do so by contributing their computing power to perform complicated calculations that enable transactions on the blockchain network, secure the network, and keep users in sync.¹⁴⁰ If the user is the first to contribute, the system rewards her/him with a new Bitcoin. The mining process helps the blockchain to continue and to be constantly verified.¹⁴¹

Bitcoin is often referred to as the first “digital currency.”¹⁴² Indeed, Bitcoin shares certain characteristics with currency, but it is also a distributed ledger system through which property titles can be recorded and documents can be authenticated.¹⁴³ As such, in many ways, it replaces the traditional intermediaries in the financial markets. Before Bitcoin was invented, an intermediary was necessary to make an electronic transfer. Nowadays, Bitcoin makes the intermediaries redundant as the system records all transactions and all users can observe the transactions on the blockchain. Furthermore, the system ensures that once a user has sent money to another user, the money is also removed from the sender’s account.¹⁴⁴ Each new transaction on the blockchain will first check that the money intended for transfer has not already been spent.¹⁴⁵ This initial check solves the problem of “double spending,”¹⁴⁶ which occurs when a participant simultaneously sends the same single unit of currency to two different users on the net.¹⁴⁷

¹³⁸ CRAIG K. EWELL ET AL., *supra* note 136, at 2–3.

¹³⁹ *See* EWELL ET AL., *supra* note 136.

¹⁴⁰ Jeffery E. Alberts & Bertrand Fry, *Is Bitcoin a Security?*, 21 B.U.J. SCI. & TECH. L. 1, 3–4 (2015).

¹⁴¹ *Id.* at 4.

¹⁴² Francois R. Velde, *Bitcoin: A Primer*, 317 CHI. FED LETTER 1, 1 (2013).

¹⁴³ Jerry Brito, Houman Shadab & Andrea Castillo, *Bitcoin Financial Regulation: Securities, Derivatives and Gambling*, 16 COLUM. SCI. & TECH. L. REV. 144, 147–48 (2014).

¹⁴⁴ EWELL ET AL., *supra* note 136, at 2–3.

¹⁴⁵ Brito et al., *supra* note 143, at 149; EWELL ET AL., *supra* note 136, at 2.

¹⁴⁶ *Id.*

¹⁴⁷¹⁴⁰ Alberts & Fry, *supra* note 140, at 3.

Upon entering the system, users receive a private key—similar to an account code—which enables the user to access his or her account.¹⁴⁸ Additionally, a public key is issued and used by others who would like to transfer Bitcoins into this account; this number is similar to the IBAN number used by banks in order to enable international money transfers.¹⁴⁹ As users do not expose their identity on the network, anonymity is maintained.¹⁵⁰ As noted above, other users on this network are called “miners.” These “miners” allow the network to use their personal computers and to invest their resources in making the “blocks” on the blockchain faster and safer in exchange for receiving new Bitcoins which are mined from the system.¹⁵¹ Once the system reaches twenty-one million Bitcoins, mining will no longer be an option.¹⁵² Bitcoin does not have an underlying asset, thus its price does not depend on an asset price but rather on the demand for Bitcoins.¹⁵³ This demand is also a derivative of how safe the users believe Bitcoin and its blockchain technology are. In fact, the relevant uncertainty of Bitcoin holders with regards to the token is apparent in the token’s price volatility.¹⁵⁴ For example, for the period ranging from October 2016 to October 2017, the market capitalization of the Bitcoin “increased from \$10.1 to \$79.7 billion, while the price jumped from \$616 to \$4800.”¹⁵⁵

B. Ether

Ether is a cryptocurrency developed by the Ethereum Foundation.¹⁵⁶ Ethereum developed its own blockchain which enables the fast execution of smart contracts and allows users, through its open source, to create their own cryptocurrencies.¹⁵⁷ Users of the

¹⁴⁸ Ruoke Yang, *When is Bitcoin a Security Under U.S. Securities Law?*, 18 J. TECH. POL’Y 99, 102 (2013).

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ Shaen Corbet, Charles Larkin, Brian Lucey, Andrew Meegan & Larisa Yarovaya, *Exploring the Dynamic Relationships Between Cryptocurrencies and Other Financial Other Financial Assets*, 165 ECON. LETTERS 28, 29 (2018).

¹⁵⁴ See Jabotinsky & Sarel, *supra* note 4, at 21.

¹⁵⁵ Corbet et al., *supra* note 153, at 28–29.

¹⁵⁶ See ETHEREUM, <https://ethereum.org/dapps> [<https://perma.cc/4FZR-5JVX>].

¹⁵⁷ *Id.*

Ethereum blockchain are able to create an automatic supply chain which incorporates both financial and physical needs. The Foundation itself describes its Token in the following way:

Ether is a necessary element—a fuel—for operating the distributed application platform Ethereum. It is a form of payment made by the clients of the platform to the machines executing the requested operations. To put it another way, ether is the incentive ensuring that developers write quality applications (wasteful code costs more), and that the network remains healthy (people are compensated for their contributed resources).¹⁵⁸

In other words, anyone who wants to use Ethereum’s blockchain capabilities can only do so by buying the foundation’s cryptocurrency. Indeed, looking at the changes in price of Ether, it is highly affected by the decisions of large corporations to join Ethereum’s blockchain.¹⁵⁹ For example, as pictured in the graph on the next page (“Graph A”), the June 2017 surge in the value of Ether was primarily the result of large corporations such as Microsoft and Intel deciding to join the Enterprise Ethereum Alliance (EEA).¹⁶⁰

¹⁵⁸ *Id.*

¹⁵⁹ See WORLD COIN INDEX, <https://www.worldcoinindex.com/coin/ethereum> [<https://perma.cc/AH3B-898J>].

¹⁶⁰ Arjun Kharpal, *Ethereum Hits Another Record High, Marking A More Than 2,800% Rally This Year*, CNBC (June 5, 2017), <http://www.cnbc.com/2017/06/05/ethereum-price-hits-record-high.html> [<https://perma.cc/N4XJ-UP39>].



Graph A

C. DAO

DAO tokens, invented and issued by Slock.it, are intended to be an electronic way to improve corporate governance using the blockchain network and the layer of smart contracts it offers.¹⁶¹ According to the white paper of the firm, the DAO is:

The first implementation of a Decentralized Autonomous Organization (DAO) code to automate organizational governance and decision making. The code can be used by individuals working together collaboratively outside of a traditional corporate form. It can also be used by a registered corporate entity to automate formal governance rules contained in corporate bylaws or imposed by law.¹⁶²

As stated, the DAO token is intended to enable corporations using it to replace traditional corporate governance mechanisms with automated contractual terms which are enforced by using the smart contracts on the blockchain.

¹⁶¹ CHRISTOPH JENTZSCH, DECENTRALIZED AUTONOMOUS ORGANIZATION TO AUTOMATE GOVERNANCE (forthcoming), <http://lawofthelevel.lexblogplatformthree.com/wp-content/uploads/sites/187/2017/07/WhitePaper-1.pdf> [<https://perma.cc/27BV-QNBL>].

¹⁶² *Id.*

DAO tokens were issued in an ICO in 2016.¹⁶³ Over a period of less than a month—from April 30 until May 28—1.15 million DAO tokens were exchanged for approximately twelve million Ether.¹⁶⁴ At the ICO closing time, the estimated value of DAO tokens raised in Ether was \$150 million USD.¹⁶⁵ In exchange for Ether, DAO tokens were created and assigned to the blockchain address of the person or entity sending out the Ether.¹⁶⁶ The holders of the DAO tokens were given both ownership and voting rights while standing to earn profits as a return on investment from projects funded by DAO.¹⁶⁷ If these projects turned out to be successful, DAO holders would receive the right to vote on whether to reinvest in new projects or to distribute the profits to themselves.¹⁶⁸

In order to receive funding in DAO for a project, the “contractor” had to submit a proposal for a project which could provide DAO token holders with a return on their investments.¹⁶⁹ To do so, the contractor had to write a smart contract, publish it, deploy it on the Ethereum blockchain, and post details about it on the DAO website—a website formed by Slock.it in order to promote the DAO tokens.¹⁷⁰ Proposals, which include a link to the smart contract’s source code, could be viewed and voted upon in the DAO, as well as other publicly accessible websites.¹⁷¹ In order to post a proposal, the contractors needed to possess at least one DAO token and submit a deposit using Ether tokens.¹⁷² If the proposal did not receive the quorum vote of the DAO token holders, the deposit would be forfeited.¹⁷³ Before a proposal could be uploaded to the DAO website, it was examined by “curators”—a group of people chosen by Slock.it who were responsible for examining the proposals for cyber security issues.¹⁷⁴ These curators made sure the proposals originated

¹⁶³ DAO REPORT, *supra* note 9, at 2–3.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* at 5–6.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.* at 6.

¹⁷⁰ *Id.* at 6–7.

¹⁷¹ *Id.* at 7.

¹⁷² *Id.*

¹⁷³ *Id.*

¹⁷⁴ *Id.* at 7–8.

from a credible user on the blockchain and decided which of them could be submitted to the DAO website and funded by DAO.¹⁷⁵

D. Libra

The latest—and currently one of the most discussed cryptocurrencies—is the Libra project by Facebook.¹⁷⁶ The Libra token will allow users to send money to others or purchase products with almost zero fees. It is intended to be used as a global coin which will, in part, replace some of the fiat currencies.¹⁷⁷ The Libra will be held on a wallet application, such as Facebook’s planned Novi wallet (previously named Calibra) which will be built into Messenger, Whatsapp, and its own app.¹⁷⁸

So, how will Libra work? People will be able to cash in local currency, receive Libra, spend the Libra as they would any other currency, and cash out whenever they want.¹⁷⁹ To avoid the fluctuation in Libra’s value, it is tied to a basket of bank deposits and short-term government securities—in this manner it is what is known as a “stablecoin.”¹⁸⁰ The Libra Association—a Swiss based association which will oversee the development of the token, control the reserve of assets which stabilizes Libra’s value, and decide on governance rules for the blockchain—will be able to change the balance of the composition of the reserve in order to control for major price fluctuations.¹⁸¹ Every time a user will ask to sell its Libra, the Libra Association will issue a selling order for the fiat currency the user requested. To accomplish this, the Association will work with a list of authorized resellers.¹⁸²

¹⁷⁵ *Id.* at 7–8.

¹⁷⁶ See LIBRA, <https://libra.org/en-US/> [<https://perma.cc/NUJ6-GZYK>].

¹⁷⁷ *Id.*

¹⁷⁸ Josh Constine, *Facebook Announces Libra Cryptocurrency: All You Need to Know*, TECHCRUNCH (June 18, 2019), <https://techcrunch.com/2019/06/18/facebook-libra/> [<https://perma.cc/3CDB-CTBY>].

¹⁷⁹ *Id.*

¹⁸⁰ See Usman W. Chohan, *Are Stable Coins Stable?*, in NOTES ON THE 21ST CENTURY (Critical Blockchain Research Initiative) (Mar. 29, 2020), at 2, <http://ssrn.com/abstract=3326823> [<https://perma.cc/CZF3-GZJH>].

¹⁸¹ *Id.* at 3–4.

¹⁸² Romain Dillet, *Libra Currently Looks More Like a Fiat Currency than a Cryptocurrency*, TECHCRUNCH (June 18, 2019), <http://techcrunch.com/2019/06/19/libra->

The founding members of the Libra Association paid a minimum of \$10M to join—in return they received Libra Investment Tokens.¹⁸³ These Investment Tokens will allow members to receive dividends from the interest earned on assets in the reserve.¹⁸⁴ The possibility to receive dividends from the interest is in large what attracted the Libra Association Members to join, because if a large number of users start to use Libra, the reserve will grow and the interest will be significant.¹⁸⁵

Libra—unlike its fellow cryptocurrencies DAO, Bitcoin and Ether—will run on a blockchain which is not truly decentralized.¹⁸⁶ Although it is designed like other blockchains with the use of Merkle trees to guarantee the integrity and a network of nodes, only Libra's founding members—currently there are twenty of them—will be able to run a node.¹⁸⁷ Therefore, the transaction ledger will only be accessible for Libra's founding members.¹⁸⁸

As one can see, these four types of cryptocurrencies—Bitcoin, Ether, DAO and Libra—differ vastly from one another. These differences give rise to interesting questions about the regulation of cryptocurrencies. First, we ask, under what circumstances are cryptocurrencies considered securities?

V. FINANCIAL REGULATION, CYBER REGULATION, AND THE REGULATION OF CRYPTOCURRENCIES

Unlike general cyber regulation which focuses mainly on privacy issues, regulation of cryptocurrency should also focus on

currently-looks-more-like-a-fiat-currency-than-a-cryptocurrency/

[<https://perma.cc/23XW-QTHQ>].

¹⁸³ Constine, *supra* note 178.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.*

¹⁸⁶ See LIBRA ASSOCIATION MEMBERS, LIBRA WHITE PAPER V.2.0 COVER LETTER (2020), <https://libra.org/en-US/white-paper/> [<https://perma.cc/7KPU-ZT3W>].

¹⁸⁷ Dillet, *supra* note 182. Merkle/hash tree is a tree in which data blocks label every leaf node and cryptographic hashes label every non-leaf node. *Merkle Tree*, BITCOINWIKI, https://en.bitcoinwiki.org/wiki/Merkle_tree [perma.cc/BEN2-WCMC]. These non-leaf nodes are labeled with hashes which can then be used to track down its child nodes. *Id.* Merkle trees make it possible to verify the content of large data structures in a secured and verified way. *Id.*

¹⁸⁸ Dillet, *supra* note 182.

the effects it may have on investors and on financial markets. Some aspects should be regulated like any other financial product. Financial regulation is needed mainly to protect consumers and to ensure stability of financial institutions.¹⁸⁹ A financial regulator plays a crucial role in providing information to the market, mainly through disclosure requirements, which in turn helps the market assign the correct price to the products¹⁹⁰ and prevents the problem of a market for lemons—a market filled with low quality products.¹⁹¹ A market for lemons refers to the problem of quality and uncertainty in markets where good and bad products are sold and the buyers cannot tell the good from the bad.¹⁹² In the field of financial products, regulation helps set minimum standards for products, helping clear the market of lemons.¹⁹³ This is essential since, in this case, financial regulation protects the market—it helps efficiently allocate credit.¹⁹⁴ In the absence of financial regulation, some investors would be apprehensive about entering the market—this would reduce opportunities for corporations seeking to raise capital.¹⁹⁵

Another problem with financial products relates to asymmetric information and adverse selection. Adverse selection refers to the problem of hidden information.¹⁹⁶ When parties hold private, non-verifiable information they can, in theory, impose higher costs on their contracting parties who cannot tell the reliable service providers from the dangerous or more costly ones.¹⁹⁷ The parties which impose the highest costs will be disproportionately likely to enter

¹⁸⁹ See Hadar Y. Jabotinsky, *Financial Regulation*, in *ENCYCLOPEDIA OF LAW AND ECONOMICS 1* (Alain Marciano & Giovanni B. Ramello eds., 2017).

¹⁹⁰ See Friedrich Hayek, *The Use of Knowledge in Society*, 35 *AM. ECON. REV.* 519, 527 (1945).

¹⁹¹ See George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 *Q.J. ECON.* 488, 489 (1970).

¹⁹² *Id.* at 489.

¹⁹³ *See id.*

¹⁹⁴ *ARMOUR ET AL.*, *supra* note 32, at 167.

¹⁹⁵ *Id.* at 167–68. This is evident when examining disclosure obligations in the securities markets. *Id.* In most cases, private companies that decide to sell their shares are not subject to mandatory disclosure requirements. *Id.* In such cases investors that purchase a stake in the corporation are expected to collect the information themselves or demand the information from the company prior to signing the contract. *Id.*

¹⁹⁶ See Jabotinsky, *supra* note 189.

¹⁹⁷ *See id.*

into a contract at a given price as they know that they can extract more rent.¹⁹⁸ However, the contracting party knows that the more risky party will be the one drawn to the contract and will thus raise the price of the contract, ultimately driving out the “good” parties, as they know that they are not risky and will not be willing to contract at such a high price.¹⁹⁹ Here, too, regulation is needed in order to protect the market.

If we examine cryptocurrencies from the perspective of protecting the market and the financing opportunities within it, allowing those cryptocurrencies which are in fact securities to be issued in an ICO bypasses regulatory requirements and may lead to suboptimal results when it comes to financing opportunities in the financial markets. Furthermore, as previously mentioned, the problems of asymmetric information within cryptocurrencies and lack of ability to assess the financial product are heightened by the existence of cybersecurity problems.²⁰⁰ The value of the currency depends not only on its real-world value but also on its resilience to hackers. Here too, moral hazard issues may come into play causing a firm selling cryptocurrency to behave differently prior to the purchase of its tokens by investors than after the purchase. The best way to prevent this from occurring is through regulation. For this reason, regulation enforcing disclosure on cryptocurrencies, which are closer in nature to securities, is essential.

However, in the field of cryptocurrencies, disclosure requirements hardly exist. Thus, sometimes problems of asymmetric information, adverse selection, and markets for lemons can occur. Therefore, it is in the interest of “good” or “reliable” cryptocurrencies that some sort of disclosure would be required of them. The question of what should be disclosed—if anything at all—depends on the purpose of the specific token.

Bitcoin, for example, really does resemble other kinds of fiat currencies. Its price is determined by supply and demand and is not based on the “efforts of others.” Trying to regulate this token as if it were anything other than a currency would not only be wrong, but

¹⁹⁸ *See id.*

¹⁹⁹ *See id.*

²⁰⁰ Chohan, *supra* note 19, at 41; *see also supra* pp. 124-25.

also diminish its value. Other cryptocurrencies, such as DAO, Ether, and Libra do, however, bear a striking resemblance to securities. In fact, it seems very likely they are indeed securities—in this case, Ether and DAO were issued without compliance with securities laws and regulations. To illustrate these differences, the sections below examine the implications of each of these different cryptocurrencies being a security.

A. The Implications of Bitcoin, DAO, Ether, and Libra Being a Security

As previously mentioned, the United States heavily regulates the issue of securities both under state and federal law. Therefore, defining a specific cryptocurrency as a “security” under the federal or the state “blue sky”²⁰¹ laws has serious implications for producing the token, trading in the token, and analyzing its underlying technology. As mentioned earlier, some cryptocurrencies are indeed not securities while others should be considered securities under U.S. law. In order to make the distinction, the following sections will focus on three main laws: (1) the Securities Act of 1933; (2) the Securities Exchange Act of 1934; and (3) the Investment Company Act of 1940.²⁰²

1. The Securities Act of 1933

The main goal of the Securities Act is to ensure that all relevant information is disclosed to the public so that investors are able to evaluate the value of the securities in the market and make informed investment decisions.²⁰³ In order to do so, the Securities Act requires registration before the issuance of securities.²⁰⁴ The registration entails filing a registration statement with the SEC,

²⁰¹ Mark Astarita, *Introduction to State Securities (Blue Sky) Laws*, SECLAW, <https://www.seclaw.com/introduction-to-state-securities-laws/> [<https://perma.cc/U8T6-PZ7L>].

²⁰² In so doing, this paper follows in the footsteps of Jeffery E. Alberts & Bertrand Fry, *supra* note 140, at 4–8, by adopting their framework in explaining why Bitcoin is not a security but that Ether and DAO should both be considered one.

²⁰³ Henry T. C. Hu, *Too Complex to Depict? Innovation, “Pure Information”, and the SEC Disclosure Paradigm*, 90 TEX. L. REV. 1601, 1601 (2012); Alberts & Fry, *supra* note 140, at 4.

²⁰⁴ 15 U.S.C. §§ 77d(a), 77e(c).

which includes a prospectus providing all the relevant information to investors regarding the firm whose shares are about to be offered.²⁰⁵ Bitcoin was established by an anonymous person or persons, thus it is not known who would be obligated to register the issuance of the cryptocurrency.²⁰⁶ However, in the case of Ether, DAO, and Libra it is very clear who established the currencies and, thus, who has an obligation to register the token prior to the ICO. Furthermore, unlike Bitcoin—where mining provides continuous production of new tokens and raises the possibility of seeing miners as issuers²⁰⁷ which could be expected to result in dramatically reduced mining efforts—DAO and Libra cannot be mined by the general public. Thus, the question of how to define miners is irrelevant in reference to DAO and Libra.

A second issue has to do with how cryptocurrencies are traded. In the case of securities without a valid registration statement, Section 4(a)(1) of the Securities Act allows transactions that fall into certain narrow categories and follow strict requirements.²⁰⁸ Thus, if a person buys securities from an issuer in order to resell them, the buyer is considered an “underwriter” and must meet the registration requirement.²⁰⁹ Since the blockchain is a public ledger and as transactions are publicly disclosed, all users exchanging Bitcoins on the blockchain would need to meet the registration requirements.²¹⁰ The same would be true for DAO, Ether, and Libra because it is logical to demand registration from the enterprise which issued the cryptocurrency and not from the users trading it on the blockchain.

2. The Securities Exchange Act of 1934

Under the Exchange Act, any person whose business includes effecting transactions in securities—be it one’s own securities or other people’s securities—is considered a broker or a dealer.²¹¹

²⁰⁵ Alberts & Fry, *supra* note 140, at 5.

²⁰⁶ *Id.* at 5.

²⁰⁷ *Id.*

²⁰⁸ 15 U.S.C. § 77e(a); Alberts & Fry, *supra* note 140, at 5–6.

²⁰⁹ An underwriter is someone (usually a large financial institution) who evaluates the IPO and assumes part of the risk for a fee.

²¹⁰ Alberts & Fry, *supra* note 140, at 6.

²¹¹ 15 U.S.C. § 78c(a)(4)(A)–§ 78c(a)(5)(A).

This impacts stock exchanges trading cryptocurrencies. If Bitcoin, DAO, Ether, and Libra are securities, then anyone who facilitates the buying or selling of any of these cryptocurrencies must register with the SEC as a broker or a dealer, unless they are exempt from the regulation.²¹² In addition, anti-fraud obligations are in place under the Securities Exchange Act for anyone selling or buying securities.²¹³ If Bitcoin, DAO, Ether, or Libra are indeed securities, these restrictions would also regulate the statements issued by the sellers of these tokens.²¹⁴ These regulations could be a potential solution to false statements occasionally made during an ICO.²¹⁵

3. The Investment Company Act of 1940

Mutual funds and private investment funds are regulated under the Investment Company Act of 1940 (“Investment Company Act”).²¹⁶ Under the Investment Company Act, an “investment company” is defined as, among other things, “. . . any issuer which is engaged or proposes to engage in the business of investing, reinvesting, owning, holding, or trading in securities”²¹⁷ If any of the cryptocurrencies mentioned in this Article are indeed securities, then any entity which is established to invest, hold, or trade them may be subject to the requirements of the Investment Company Act.²¹⁸ These requirements include registration with the SEC—unless excluded from the regulation, usually by limiting the number of investors or by doing business only with “qualified purchasers,” considered to be more sophisticated.²¹⁹

B. *Are Cryptocurrencies Securities?*

United States securities regulations are drafted broadly so that they can cover most of the transactions in which money is raised from investors.²²⁰ The literature has already noted that under the

²¹² *Id.*

²¹³ *Id.*

²¹⁴ 17 C.F.R. § 240.10b-5.

²¹⁵ *Id.*

²¹⁶ 15 U.S.C. § 80a-3(a)(1).

²¹⁷ *Id.*

²¹⁸ *Id.*

²¹⁹ 15 U.S.C. §§ 80a-3(c)(1), 80a-3(c)(7)(A); Alberts & Fry, *supra* note 140, at 8.

²²⁰ Alberts & Fry, *supra* note 140, at 9.

regulation—based on an analysis of case law which scrutinizes and clarifies the term “security”—Bitcoin does not qualify as a security due to the fact that it does not fall under the definitions of any of the common types of securities nor under the term “investment contract.”²²¹ But what about other cryptocurrencies such as DAO, Ether, and Libra?

1. Is DAO a Security?

It seems that DAO is the clear-cut case in which a cryptocurrency is indeed a security and issuing it at an ICO was most probably meant to avoid the more costly procedure of an IPO. According to *Reves v. Ernst & Young*, the Supreme Court illustrates that “. . . some instruments . . . are by their nature investments.”²²² Indeed, the DAO easily falls under the characteristics of “stocks.”²²³ The Supreme Court defined the characteristics of a “stock” as: the capacity to appreciate in value, the right to receive dividends depending on profits made by the firm, negotiability, having voting rights which are dependent on the number of shares one owns, and the ability to be “pledged or hypothecated.”²²⁴

The DAO token meets all of the above criteria. The investors purchasing the token have the right to vote on projects in which the DAO will be invested, they are entitled to a return on their investments if such projects succeed, and their investments can increase or decrease in value. In fact—unlike Bitcoin holders—they are entitled to participate in the economic success of the entity.²²⁵

Since DAO falls into the definition of a “stock,” there is no need to further examine whether it meets other definitions of securities

²²¹ *Id.* at 21. In one case involving the shares of a digital hedge fund brought before the court, the argument that the shares of the hedge fund in Bitcoin investments sold by the hedge fund were not securities was rejected based on the fact that the court found them to be “investment contracts.” *SEC v. Shavers*, No. 4:13-CV-416, 2013 U.S. Dist. LEXIS 110018, at *4–6 (E.D. Tex. Aug. 6, 2013). However, the court did not say that the Bitcoin cryptocurrency itself is an investment contract, but rather that the shares of the hedge fund selling the Bitcoin fall under the definition. *Alberts & Fry*, *supra* note 140, at 14.

²²² *Reves v. Ernst & Young*, 494 U.S. 56, 62 (1990).

²²³ *United Hous. Found., Inc. v. Forman*, 421 U.S. 837, 851 (1975); *Landreth Timber Co. v. Landreth*, 471 U.S. 681, 686 (1985); *Alberts & Fry*, *supra* note 140, at 10.

²²⁴ *Forman*, 421 U.S. at 851.

²²⁵ *Alberts & Fry*, *supra* note 140, at 10.

such as futures, derivatives, swaps, or options. If the DAO were positioned on a scale of securities, its token would most likely be located in very close proximity to actual securities. This is not the case for Ether.

2. Is Ether a Security?

The most recent and hottest debate among SEC officials relates to the question of whether Ether is a security.²²⁶ On June 14, 2018, William Hinman, the director of the division of corporation finance at the SEC stated that “. . . in cases where there is no . . . central enterprise being invested in or where the digital asset is sold only to be used to purchase a good or service available through the network on which it was created,” that digital asset is “out of the purview of U.S. securities laws.”²²⁷ The market tends to interpret this statement as confirmation that Ether is not a security, and consequently, during the course of the hour from when the statement was issued, the price of the token jumped from \$469 to \$516 USD.²²⁸ However, this question has not yet been formally decided and thus is an interesting topic for discussion.

Unlike DAO, Ether does not fall within the classic definition of a stock. Although it can increase or decrease in value and its holders are able to exchange it, Ether does not provide token holders with dividends or voting rights—both of which are crucial to the definition of a stock.²²⁹ Additionally, similar to Bitcoin,²³⁰ it does not meet the definition of “security future”—a contractual agreement to sell securities, an index, or any interest that is based on the two.²³¹ It is also not a “securities-based swap” as it is not a put, call, floor, or any similar investment which is based on an index or a security loan,

²²⁶ Jonathan Shieber, *SEC Says Ether Isn't a Security, but Tokens Based on Ether Can Be*, TECHCRUNCH (June 14, 2018), <https://techcrunch.com/2018/06/14/sec-says-ether-isnt-a-security-but-tokens-based-on-ether-can-be/> [<https://perma.cc/N256-NNHS>].

²²⁷ *Id.*

²²⁸ *Id.*

²²⁹ Luciana Mancinelli & Aydin Ozkan, *Ownership Structure and Dividend Policy: Evidence From Italian Firms*, 12 EUR. J. FIN. 265, 265–82 (2006).

²³⁰ Alberts & Fry, *supra* note 140, at 10–14.

²³¹ 15 U.S.C. § 78c(a)(55)(A) (The adoption of the definition of “securities future” into the Securities Act).

nor is it based on the occurrence, or non-occurrence, of events.²³² However, a financial investment which does not fall into any of the categories that define “security” might still be considered one if it falls under the basket term “investment contract.”²³³

A financial instrument must satisfy three rules to be classified as an investment contract. There must be: (1) an investment of money; (2) common enterprise; and (3) expectation of profits which are derived solely from the efforts of others.²³⁴

In the case of Ether, there is indeed an investment of money. Purchasers invest money in return for the token. This falls under the broad definition of an investment of money.²³⁵ In addition, The Ethereum Foundation, the foundation behind Ether, is a Swiss non-profit organization.²³⁶ As such, it can fall under the definition of a common enterprise according to the strict vertical communality approach.²³⁷ Under this approach, courts have examined whether the assets of the investors were influenced by the success and efforts of the firm seeking the investment.²³⁸ In this case, it is clear that the marketing efforts of the foundation affect the tokens held by the investors. Last but not least, unlike Bitcoin, investors who invest in Ether do expect to gain from profits which are derived from the efforts of others. To use the Ethereum blockchain, investors are required to pay in Ether.²³⁹ Thus, the efforts of the foundation to promote extensive use of its blockchain also affects the profits of all Ether holders. Therefore, it is not farfetched to say that purchasers could have the reasonable expectation that the value of their token will rise due to the managerial efforts of the Ethereum Foundation managers. This, on its own, is enough to meet the requirements test in *Howey*.²⁴⁰

²³² Alberts & Fry, *supra* note 140202, at 11.

²³³ Marc L. Steinberg & William E. Kaulbach, *The Supreme Court and the Definition of Security: The Context Clause, Investment Contract Analysis, and Their Ramifications*, 40 VAND. L. REV. 489 (1987).

²³⁴ See, e.g., SEC v. SG Ltd., 265 F.3d 42, 46 (1st Cir. 2001).

²³⁵ Int'l Brotherhood of Teamsters v. Daniel, 439 U.S. 551, 559 (1979).

²³⁶ See ETHEREUM, *supra* note 156.

²³⁷ Alberts & Fry, *supra* note 140202, at 19.

²³⁸ *Id.*

²³⁹ See ETHEREUM, *supra* note 156.

²⁴⁰ SEC v. H.J. Howey Co., 328 U.S. 293, 298–99 (1946).

Therefore, since the Ether token meets all three criteria required of a financial instrument in order to be considered an “investment contract,” Ether is in fact a security under U.S. law and is subject to all securities requirements set by the law.

3. Is Libra a Security?

Like Ether, the Libra token also does not fit the traditional definition of “stock” as it does not provide token holders with dividends or voting rights.²⁴¹ It also does not meet the definition of “security future” which is a contractual agreement to sell securities, an index, or any interest that is based on the two.²⁴² It is also not a “securities-based swap” as it is not a put, call, floor, or any similar investment which is based on an index or a security loan, nor is it based on the occurrence, or non-occurrence, of events.²⁴³ However, similar to Ether, the interesting question is—is Libra an “investment contract”?

Recall the basics of the *Howey* test and the cases which followed, as well as the SEC’s Guidelines—in order to meet the criteria of being an “investment contract” the financial instrument must satisfy three rules.²⁴⁴ There must be: (1) an investment of money; (2) common enterprise; and (3) expectation of profits which are derived solely from the efforts of others.²⁴⁵ Examining Libra through these three requirements shows that: (1) there is an investment of money; (2) the Libra Association is a common enterprise; and (3) as Facebook plans to market and distribute Libra on Whatsapp—Facebook’s own messenger and its standalone app called Novi (a new Facebook subsidiary)—holders can definitely expect to gain profits which are derived solely from the efforts of

²⁴¹ Make note that the Libra Investment Tokens are indeed “stock” as they provide the members holding them with dividends, but as they are sold only to accredited investors the problem of securities regulation does not arise.

²⁴² 15 U.S.C. § 78c(a)(55)(A) (adopting the definition of “securities future” into the Securities Act).

²⁴³ Alberts & Fry, *supra* note 140202, at 11.

²⁴⁴ *Howey*, 328 U.S. at 298–99; *SEC v. SG Ltd.*, 265 F.3d 42, 46 (1st Cir. 2001); *Framework for “Investment Contract” Analysis of Digital Assets*, SEC (Apr. 3, 2019), <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> [<https://perma.cc/4JHR-KA96>].

²⁴⁵ *See, e.g., SG Ltd.*, 265 F.3d at 46.

others. In addition, unlike Ether, the reserve ratio of the cryptocurrency—which affects the value of the token—will be determined by the Association members.²⁴⁶ Therefore, Libra is even more susceptible to profits derived from the efforts of others than Ether.

Due to all that is mentioned above, it seems that the new Libra is indeed an investment contract, even though the idea behind it is to make it more similar to a fiat currency. Therefore, the Libra Association will be well advised to issue the token in accordance to US securities regulations.

C. *How Should Cryptocurrencies be Regulated?*

Strict anti-money laundering and anti-fraud measures should be taken with respect to all tokens. This is especially true in an area of new technology such as blockchain. Without proper measures to prevent fraud, investor confidence in the market can collapse due to a single case of fraud that becomes publicly known.²⁴⁷ This results in investors changing their perceptions about the market, and in a drop of financing opportunities for similar firms.²⁴⁸ Investor confidence is crucial in sectors which rely on uncertain future events and technological innovation. If not prevented in cryptocurrencies, repeated and well publicized fraud cases can also be detrimental to the future use of blockchain technology.

Indeed, fraudulent behavior is not scarce in the world of cryptocurrencies. On December 4, 2017, the SEC obtained an emergency order from Eastern District of New York to enjoin an allegedly fraudulent ICO scheme.²⁴⁹ The SEC alleged that Dominic Lacroix and his company PlexCorps violated the anti-fraud and registration provisions of U.S. federal securities laws.²⁵⁰ Lacroix and his company allegedly collected up to \$15 million from investors in exchange for digital tokens and promised them a thirteen-fold profit

²⁴⁶ Constine, *supra* note 178.

²⁴⁷ See William O. Brown, Jr. & Richard C. K. Burdekin, *Fraud and Financial Markets: The 1997 Collapse of the Junior Mining Stocks*, 52 J. ECON. & BUS. 277, 288 (explaining that the mining sector in Canada collapsed due to the Bre-X fraud).

²⁴⁸ *Id.*

²⁴⁹ SEC *Emergency Action Halts ICO Scam*, SEC (Dec. 4, 2017), <https://www.sec.gov/news/press-release/2017-219> [<https://perma.cc/F34A-AL52>].

²⁵⁰ *Id.*

in less than a month.²⁵¹ Following the complaint, the district court granted the SEC's request to freeze the defendant's assets.²⁵²

To prevent such fraudulent behavior and to protect the new blockchain technology, all cryptocurrencies should be subject to anti-fraud regulation. Regarding anti-money laundering regulation, all cryptocurrencies should have a Know-Your-Client procedure before allowing users to enter the blockchain.²⁵³ In addition, tokens should not be completely anonymous. Meaning, in the name of privacy, blockchain users should not be able to ascertain the identity of other blockchain users. Instead, the association or company issuing the coin should be able to answer regulatory requirements to unveil the identity of the users in order to expose money laundering and scams.

Regarding financial regulation, as previously identified in this Article, different types of cryptocurrencies require different regulatory solutions.²⁵⁴ In order to determine the most relevant regulations, we should first examine the token at hand and ask whether it falls under U.S. securities laws or whether it is more similar to a fiat currency.²⁵⁵ Unlike other financial investments, another important step in classifying a specific cryptocurrency is to examine the purpose of issuing a token. In some instances, issuing the token in an ICO is only meant to circumvent the stricter requirements of issuing a security in an IPO or raising capital by approaching a venture capital firm.²⁵⁶ But in other cases, issuing a token makes sense beyond the financing opportunities for the firm issuing the token.²⁵⁷

²⁵¹ *Id.*

²⁵² *Id.*

²⁵³ See Jabotinsky & Lavi, *supra* note 31, at 13–14. A Know-Your-Client procedure is a procedure in which the financial institution gets to know the client's financial behaviour and activity. *Id.* If then the client's account shows an irregular activity the financial institution is able to point that out by filing a report to the anti-money laundering authorities. *Id.*

²⁵⁴ See *supra* Part I.

²⁵⁵ See FATF REPORT, *supra* note 131. Fiat currency is money that a government has declared to be legal currency, but which is not backed by a commodity. For example, the U.S. Dollar and the Euro.

²⁵⁶ Such as the case of DAO discussed earlier in the paper. See *supra* Section I.C.

²⁵⁷ Sarel, *supra* note 3, at 15–16.

This question should be taken into consideration by regulators before they decide which type of regulation should apply.

After classifying the cryptocurrency, specific regulatory tools should be applied. If the cryptocurrency is determined to be a security, all regulatory demands normally required of securities should certainly be enforced. Regarding disclosure, the question would then be: what should be disclosed to investors during the ICO?

1. Disclosure Requirements for Cryptocurrencies that are Securities

Similar to IPOs, significant information asymmetries exist in ICOs between the managers of the startup issuing the token and the investors buying it.²⁵⁸ The regulators seem to think that mandatory disclosure requirements are the answer to such information asymmetries, and that retail investors would read information that is provided to them. This is evident in the requirement of the SEC to use “plain English” in the prospectus.²⁵⁹ However, it is widely known that retail investors do not read all the technical information detailed in prospectuses’ hundreds of pages, nor do they read the issuer’s mandated information in the secondary market.²⁶⁰ Rather, retail investors usually rely on the market price which embodies all the relevant information about the firm.²⁶¹

Still, requiring securities’ issuers to disclose all relevant, though partially technical, information benefits investors. While in all likelihood most retail investors do not read the disclosed information,²⁶² underwriters, analysts, and sophisticated buyers, such as institutional investors, do.²⁶³ The fact that sophisticated market players read and process information and determine the price of shares allows all other investors to “free ride” their efforts to participate in

²⁵⁸ Anne Cazavan-Jeny & Thomas Jeanjean, *Levels of Voluntary Disclosure in IPO Prospectuses: An Empirical Analysis*, 6 REV. ACCT. & FIN. 131, 131–32 (2007).

²⁵⁹ 17 C.F.R. § 230.421.

²⁶⁰ ARMOUR ET AL., *supra* note 32, at 160.

²⁶¹ *Id.*

²⁶² OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE 68 (2014).

²⁶³ ARMOUR ET AL., *supra* note 32, at 162.

the market.²⁶⁴ Furthermore, at the margins of the primary market, where intermediaries are bypassed, disclosure requirements help protect naive investors from buying overpriced securities as the regulators screen the prospectus before allowing the IPO.²⁶⁵ This way, cases of fraud are minimized and the required detailed information makes punishing fraudsters easier “*ex post*.”²⁶⁶

When issuing shares, the issuer on the primary market must disclose a vast amount of information. Such information should include its own historical background as well as a detailed and technical description of the firm, the shares issued, and all other material information that can be relevant to investors.²⁶⁷ An important distinction between different regulatory regimes relates to the question of whether only past information should be disclosed or whether forward-looking information should also be disclosed. Disclosing only past events reduces the cost of disclosure and makes it easier for investors to compare between different firms. However, forward-looking information may also be valuable for investors and might have an effect on the share’s price.²⁶⁸ The SEC has acknowledged that the prospects for future earnings are important to investors and so allows inclusion of some information of this type.²⁶⁹

When issuing a token, which is a security under the legal definition, the basic mandated disclosure should be the same for all other securities. In the words of Jay Clayton of the SEC:

I believe that initial coin offerings—whether they represent offerings of securities or not—can be effective ways for entrepreneurs and others to raise funding, including for innovative projects. However, any such activity that involves an offering of

²⁶⁴ *Id.*

²⁶⁵ *Id.*

²⁶⁶ *Id.* at 163.

²⁶⁷ *Id.* at 173–74.

²⁶⁸ *Id.* at 176.

²⁶⁹ *See* 17 C.F.R. § 229.10. The Commission also believes that investor understanding would be enhanced by disclosure of the assumptions which in management’s opinion are most significant to the projections or are the key factors upon which the financial results of the enterprise depend and encourages disclosure of assumptions in a manner that will provide a framework for analysis of the projection. 17 CFR § 229.10 (b)(3)(i).

securities must be accompanied by the important disclosures, processes and other investor protections that our securities laws require. *A change in the structure of a securities offering does not change the fundamental point that when a security is being offered, our securities laws must be followed.* Said another way, replacing a traditional corporate interest recorded in a central ledger with an enterprise interest recorded through a blockchain entry on a distributed ledger may change the form of the transaction, but it does not change the substance.²⁷⁰

Indeed, the managers of the enterprise issuing the token have detailed information about their business, their plans and initiatives, as well as their marketing capabilities—which are especially crucial in the field of cryptocurrencies. They also have relevant information regarding trends or issues that may affect their business, the value of their token, future operating results, and/or financial conditions. As mentioned in the introduction of this Article, the value of the cryptocurrency depends not only on the value of the currency, but also on issues of security.²⁷¹ These issues are present in full force during the period of the ICO. Therefore, unlike regular securities, additional information should be disclosed to investors.

As with all regular securities, upon issuing an ICO, one of the first disclosure requirements should pertain to the description of the characteristics of the enterprise (usually a startup company) issuing the token. This description should include an ecosystem in which the new token is issued, a detailed description of the startup, its incorporation and team details, and possible current and future competitors. An in-depth description of the token, what it sets out to achieve, and the reason why issuing it in an ICO is necessary to the success of the product should also be included. Another relevant question which must be addressed is—what will investors' money be used for? To what specific rights are they entitled upon the

²⁷⁰ Jay Clayton, Chairman, U.S. Sec. & Exchange Comm'n, Statement on Cryptocurrencies and Initial Coin Offerings at the Harvard Law School Forum on Corporate Governance (Dec. 11, 2017) (emphasis added), available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11> [<https://perma.cc/F8HL-K5Y9>].

²⁷¹ See, e.g., Shen, *supra* note 14.

purchase of the token? Furthermore, an explanation of how the value is created and how it enters the cryptocurrency ecosystem should be provided to the investors. Here, the disclosure would explain how the token is used and sold—that is, only in the specific app developed by the issuing startup or in other apps as well as how an investor sells his token.²⁷² Governance issues should also be addressed, including questions of: How does the startup issuing the token decide to add new features to it? How do they react to changes in computing technology? When and how do they decide to change network parameters? How would they manage crises and what mechanisms are there to detect and resolve bugs?²⁷³ In addition, a thorough description of the measures taken to secure the ICO should be provided. These details should include an explanation of the blockchain infrastructure supporting the ICO, whether it is public or private, and if the code has been publicly published.²⁷⁴ Furthermore, there should be a disclosure regarding the identity of the person who wrote the token issuance contracts and the software used should be in place. Security measures should also be disclosed—for example, was a cybersecurity audit performed prior to the ICO?²⁷⁵ And if so, what were the results?

With that said, disclosure requirements are only useful if there are information intermediaries in the market that can provide the token issuer with their reputation. It is therefore expected that as mandatory disclosure demands become a requirement for token issuers, information intermediaries will enter the arena and assist investors by processing the information and putting the right price tag on the token. This will assist in stabilizing the market and allowing capital to flow in an efficient way.

²⁷² William Mougayar, *How to Evaluate an Initial Cryptocurrency Offering*, BLOCKCHAIN MEDIA (Nov. 24, 2016), <https://medium.com/blockchain-media/how-to-evaluate-an-initial-cryptocurrency-offering-ico-1bc238cff0ae> [<https://perma.cc/SS7Y-KEGF>]; see generally Clayton, *supra* note 270.

²⁷³ ELI DOURADO & JERRY BRITO, CRYPTOCURRENCY IN THE NEW PALGRAVE DICTIONARY OF ECONOMICS 4–6 (2014).

²⁷⁴ Clayton, *supra* note 270; Mougayar, *supra* note 272, at 6.

²⁷⁵ *Id.*

But, what about cryptocurrencies that are not securities—should we regulate them beyond the general anti-fraud regulation? If so, how?

2. Regulation of Cryptocurrencies that Are Not Securities

The question of regulation is more complex when it comes to cryptocurrencies that are closer to a real currency. In such cases, we generally do not need to protect the market, as these tokens are not taking away resources from the securities market. Therefore, at first glance, there is no need for regulatory intervention, apart from anti-fraud regulatory measures which can prevent token issuers from promising to issue a token, collecting the money, and then disappearing. To clarify this point—as we do not prevent investors from buying shares in private firms without mandated disclosure, or from taking all their money and buying a trip around the world—regulatory intervention is not needed in places where there is no market failure which prevents the market from being efficient. Therefore, the question should be: is there a market failure related to the sale of cryptocurrencies that are currencies and not securities or other financial products? The answer to that is, in some cases, yes.

Market failures may become apparent as a result of cryptocurrencies that are not securities when these tokens become systemically important and affect financial institutions. As mentioned previously, systemic risk results from the interconnectedness of firms on the financial markets.²⁷⁶ Interconnectedness results from the fact that the value of one firm in the market is dependent on the payoffs it receives from its claims on other firms. The value of these claims depends, in turn, on the stability of other firms and so on.²⁷⁷ When firms are interconnected, the failure of one financial institution might have a cascading effect and bring down other large financial institutions in a chain reaction.

If financial institutions, such as banks and insurance companies, start getting involved with cryptocurrencies such as Bitcoin, then the fluctuation in the price of the token might affect the stability of the

²⁷⁶ Jabotinsky, *supra* note 39.

²⁷⁷ Larry Eisenberg & Thomas H. Noe, *Systemic Risk in Financial Systems*, 47 *MGM'T SCI.* 236, 236 (2001).

financial institutions. This in turn may cause an increase in systemic risk in the “real world” financial system. For example, even though the insurance industry has responded slowly to the surge of cryptocurrencies and ICOs, some insurance companies, such as the Great American Insurance Group, have added protection against cryptocurrency theft to their existing business crime policy.²⁷⁸ Banks were also keen to join in on the trend.²⁷⁹ Barclays has become the first bank to accept Bitcoin.²⁸⁰ The bank began by allowing people to make donations in Bitcoins.²⁸¹ It then started allowing a U.S. mobile payment startup—backed by Goldman Sachs, which uses Bitcoin to transfer central bank currencies—to use its infrastructure.²⁸²

All of the above mentioned traits give rise to concerns involving increased systemic risk in the financial system and require regulatory intervention. Here, regulators should find a way to regulate the token or, if not, it would be advised to prohibit financial institutions from joining and engaging in activities that may expose them to fluctuations in cryptocurrency prices, therefore increasing systemic risk in the financial system.

CONCLUSION

In summary, different types of cryptocurrencies behave differently from one another. Although the technology underpinning most cryptocurrencies is quite similar, the logic behind them differs. Some cryptocurrencies function as regular national currencies and possess traits of traditional currency. As such, they provide a medium of exchange, unit of account, and/or store of value. However,

²⁷⁸ Duke Williams, *What You Need to Know About Insuring Bitcoin*, INDEP. INS. AGENTS & BROKERS OF AM., INC. (May 24, 2017), <https://www.iamagazine.com/strategies/read/2017/05/24/what-you-need-to-know-about-insuring-bitcoin> [https://perma.cc/7MES-494K].

²⁷⁹ See Aime Williams, *Barclays Partners with Goldman- Backed Bitcoin Payments App*, FIN. TIMES (Apr. 6, 2016), <https://www.ft.com/content/edf0652e-fb3c-11e5-b3f6-11d5706b613b> [https://perma.cc/6MP4-WE3F].

²⁸⁰ NexChange, *Barclays Becomes First Bank to Accept Bitcoin*, NEXCHANGE NOW (Sept. 3, 2015), <https://www.nexchangenow.com/news/15588/barclays-becomes-the-first-bank-to-accept-bitcoin/> [https://perma.cc/8FZT-SB6H].

²⁸¹ *Id.*

²⁸² Williams, *supra* note 278.

other cryptocurrencies may represent different rights as well. This fascinating phenomenon essentially leads to some cryptocurrencies being viewed more closely to real national currencies while others appear more akin to financial products—such as securities or derivatives.

The cryptocurrency phenomenon requires regulatory authorities to investigate each new ICO and to determine the token's classification. Some tokens, such as Bitcoin, actually do resemble currency and should therefore only be regulated to ensure that fraudulent behavior is prevented. These types of cryptocurrencies should be more carefully regulated in case they increase systemic risk in the general financial system. Other tokens—such as DAO, Ether, and Libra—resemble securities and should be regulated accordingly. The main distinction between the two types of cryptocurrencies relates to the question of whether or not their value is dependent on the efforts of others.

For cryptocurrencies that are in fact securities, additional mandatory disclosure should be required with respect to security issues surrounding the ICO. Investors should be informed about what kind of blockchain technology is being used, who developed the code, and whether it was published publicly. In addition, information about what kind of cyber audits were conducted prior to the issuance of the coin is essential.

The steps and solutions suggested by this Article should support regulatory authorities in their ability to protect financial markets while still allowing room for innovation.