

The Regulation of Cryptocurrencies in the United States of America

by

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I. INTRODUCTION

Many experiments with any new technology will fail, but failures can help point the way to future successes, so broad room for experimentation – with appropriate protective measures to reduce and mitigate harm – is paramount.

Experimentation can teach both regulators and market participants important lessons.

Hester Peirce, Commissioner of the Securities and Exchange Commission (SEC)¹

Whenever a new technology emerges and provides new opportunities for business and potentially new and different solutions for real-world problems, developers of the technology, developers of its business applications, and investors supporting the developers, are looking for guidance from regulators. Ideally, the guidance will be more than a snapshot of what is currently allowed, and include also reliable information on what will be allowed, and on what conditions, in the foreseeable future. This is all the more important if development of marketable applications using the new technology is time-consuming and expensive, and if the technology is not just providing incremental improvements to existing solutions and business models but seems to be promising revolutionary changes that may well upend entire industries and make at least some of the existing solutions and business models – and therefore some of the existing businesses – obsolete.

Examples where such regulatory guidance is needed include the conflict between privacy and data protection on the one side and the highly personalized marketing of goods and services based on mining of huge data pools accumulated by companies like Facebook on the other. The paradigm shift from gasoline and diesel powered cars and trucks to electric vehicles, with the need for a dense and world-wide system of fast charging stations and the potential of obliterating the entire network of gas stations as we know them, is another example. So is the idea of self-driving vehicles.

Blockchain or distributed ledger technology (DLT) is another example since it promises an upgrade to anything and everything we have been doing on the internet that may well be more profound than the introduction of smart phones that put the internet – and hundreds of thousands

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1 SEC Commissioner Hester Peirce, *Paper, Plastic, Peer-to-Peer*, Remarks at the British Blockchain Association's Conference "Success Through Synergy: Next Generation Leadership for Extraordinary Times", 15 March 2021, <https://www.sec.gov/news/speech/peirce-paper-plastic-peer-to-peer-031521>.

of apps – at everyone’s fingertips, everywhere and all the time. While we have been able to do a number of financial transactions on our smart phones, such as checking our bank balances, making payments via Paypal or Venmo, and ordering stuff on Amazon and Doordash, those were evolutionary or incremental improvements to existing technologies and business models. As evidence for the limited impact of those innovations, we may take the fact that they largely did not require new and special regulation. The risks presented by those innovations – occasional fraud on the side of mis-representing “vendors” and occasional fraud by misrepresenting “buyers” – was largely absorbed within the existing systems of customer protection in the credit card market, i.e. by banks and other centralized institutions acting as trusted intermediaries.

The emerging applications of Blockchain and DLT will be very different, however. The technology is creating a trustless environment, i.e. a financial system without the need for trusted intermediaries. In the brave new world of cryptocurrencies, there is no need for commercial banks to facilitate funds transfers, nor for central banks to issue currency and control interest- and exchange rates. There were no authorities with clearly defined supervisory powers, no guarantees by institutions or insurers, and not even rules of the road enacted by legislators or courts, when this study was started in the fall of 2021. Yet, the equivalent of US\$ 3 Trillion² were held by millions of individuals in the form of more than 10,000 new digital currencies in more than 200 million cryptocurrency wallets, completely disconnected from traditional bank accounts and credit cards. This sum is all the more astonishing, given the fact that every one of those “virtual currencies”³ was privately created and managed, and not a single one of those wallets was protected by the *Federal Deposit Insurance Corporation (FDIC)* or any equivalent mechanisms in other countries. Furthermore, besides holding value and transferring value from one wallet to another, there was really not much that could be done with all the crypto money since there were not a lot of goods or services that could be bought with crypto and, more importantly, there were

2 For comparison, overall U.S. GDP in 2021 was around US\$ 23.2 Trillion, “only” about 10 times the value of the cryptomarket. On the other hand, once single company, Apple, was valued at US\$ 3 Trillion in January 2022.

3 The *Financial Action Task Force (FATF)*, an intergovernmental organization “combating money laundering, terrorist financing and other related threats to the integrity of the international financial system”, has defined “virtual assets” as “any digital representation of value that can be digitally traded, transferred or used for payment. It does not include the digital representation of fiat currencies.” See [http://www.fatf-gafi.org/publications/virtualassets/documents/virtual-assets.html?hf=10&b=0&s=desc\(fatf_releasedate\)](http://www.fatf-gafi.org/publications/virtualassets/documents/virtual-assets.html?hf=10&b=0&s=desc(fatf_releasedate)). “Virtual currencies” are defined 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.” See FATF Report, *Virtual Currencies, Key Definitions and Potential AML/CFT Risks*, Financial Action Task Force (June 2014), <http://www.fatf-gafi.org/media/fatf/documents/reports/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf>.

hardly any smart contract applications⁴ on the market that could reliably deliver innovative and sophisticated business solutions.⁵ Last but not least, the entire market was characterized by extreme volatility where a single coin – and to some extent the entire market cap – could jump up or down by 10% or more in a single day.

It is safe to say that a significant percentage of the digital coins and tokens were held by speculators lured in by rags-to-riches stories of investors who had bought Bitcoin at a fraction of a penny and were now traveling the world in private jets.⁶ Yet, there are just as many tech savvy investors who created and purchased coins or tokens to support start-ups with promising business ideas, much like more traditional investors used to buy shares of Apple when most people still thought of it as a fruit company. Indeed, the perspective of being part of something new and exciting, something entirely outside of the control of traditional state authorities, unburdened by mind-numbing bureaucracies and ever-more partisan and corrupt politics, was just as much a motivator for younger people, in particular, as the dream of easy money.

Economists, the global financial community, and government entities have taken notice of the disruptive power of this technology to recast centralized commercial relationships with systems designed to validate transactions using math and economics, rather than relying on trusted third parties [like banks or stock exchanges]. Cryptocurrencies have created politically independent payment systems. Blockchain technology offers the promise of significant improvements to the cost and speed of maintaining data. Tokenization created lucrative and controversial

4 A smart contract is a piece of software running on a Blockchain that automatically executes a function like a funds transfer if and when certain conditions are met. The fact that the smart contract is stored on a Blockchain makes it immutable. As an example, a buyer and a seller could agree on a sale of goods where the buyer locks the funds into a smart contract and the program automatically releases the purchase price to the seller the moment a third party like a customs office or carrier confirms the shipment of the goods. If the goods are not shipped by a certain date, the contract can be programmed to automatically return the funds to the buyer.

5 Buying and selling goods and services alone would not be enough to justify the creation of digital money. We can already do that with our existing structures, i.e. online banking, credit and debit cards, etc. Unless DLT would offer *very significant efficiencies*, i.e. offer the same services *much faster* or *much cheaper* or *much safer*, there is no reason for switching from fiat to crypto, at least if we disregard the speculative elements of purchasing and holding cryptocurrencies. As we all know, at least for the time being, Blockchain-based trading is struggling with scaling up and certainly *not* delivering solutions for simple purchasing transactions that are faster, cheaper and/or safer than traditional methods. However, if we can create a number of *entirely new use cases* with cryptocurrencies, real and useful (business) solutions that are not achievable with fiat money and traditional financial services, the entire frame of reference changes.

6 Bitcoin, the most widely known digital currency, was launched in January 2009, and started trading in July 2010 at US\$ 0.0008. In November 2021, it traded at more than US\$ 68,000, at least for a while. An investor who put US\$1,000 into Bitcoin at the start and cashed out at the peak would have turned US\$ 1,000 into a fortune of US\$ 8.5 Billion.

fundraising techniques. The seismic shocks of these new systems, products, and techniques are still being felt around the globe.⁷

Although much of the promise of DLT remains to be demonstrated in practice, and the technology is currently struggling with scaling up,⁸ what ensures that Blockchain and DLT will not become bubbles that are bound to burst and be forgotten is the sustained investment into actual business solutions via the development of smart contract applications running on a Blockchain. In 2021, this sustained investment exceeded 1 billion US dollars in every single month. By 2022, the technology itself is also celebrating its 13th birthday and we may safely say that the investors who continue to pour ever more money into the development of actual business models and solutions – “use cases” for cryptocurrencies – have a pretty good understanding what the technology can and cannot achieve and what they are buying with all this money.⁹

What is far less clear, however, is the guidance provided by the regulators in different jurisdictions. The inventors of digital money were partly motivated by a rejection of traditional government control over money and money supply. When Satoshi Nakamoto published his famous white paper in 2009,¹⁰ the world was trying to climb out of the 2007/08 Financial Crisis¹¹ and the U.S. Federal Government had just bailed out the financial sector with over US\$ 1 Trillion in funds that were essentially newly printed money, diluting the existing money supply and, therefore, the value of assets and savings in the hands of corporations and private citizens.¹² The

7 Daniel Stabile, Kimberly Prior & Andrew Hinkes, *Digital Assets and Blockchain Technology – US Law and Regulation*, Edward Elgar 2020, at 7.

8 On the Ethereum Blockchain, in particular, the wait times for the confirmation of a transaction have recently been in the range of tens of minutes and the processing or gas fees have often been tens of dollars. Obviously, this won't work for someone who just wants to pay for a coffee at Starbucks or check out with a shopping cart at the mall.

9 To give just a few examples of use cases that are actually in the works or already available:
– *international funds transfers* in competition with banks or financial service providers like WesternUnion (e.g. <https://stellar.org/>);
– *secure long-term data storage*, for example to document authorship or copyright of artists (see, e.g. <https://www.artory.com/>);
– *tracking of sensitive and valuable information* to protect against falsification or abuse (see, e.g. DeBeers Tracr for the provenance and ownership of diamonds <https://www.debeersgroup.com/sustainability-and-ethics/leading-ethical-practices-across-the-industry/tracr/>), or Trustgrid's management of personal medical records <https://trustgrid.com/personal-medical-records/>).

For more information see Sam Daley, *34 Blockchain Applications and Real-World Use Cases Disrupting the Status Quo*, 16 December 2021, <https://builtin.com/blockchain/blockchain-applications>.

10 Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, <https://bitcoin.org/bitcoin.pdf>.

11 A detailed historic analysis of the causes of the crisis is provided by Barrie Wigmore, *The Financial Crisis of 2008 – A History of US Financial Markets 2000-2012*, Cambridge Univ. Press 2021. See also Timothy Geithner, *Stress Test – Reflections on Financial Crises*, Broadway Books 2014.

12 Much of the funds were used to purchase troubled assets. Since at least some of those were later recovered or sold, the total cost of the bailout to the taxpayer has been estimated at around US\$ 498 Billion or 3.5% of U.S. GDP. Most of that money went to “large, unsecured creditors of large financial institutions [... in particular] banks, pension and mutual funds, insurance companies”. See Deborah Lucas, *Here's How Much*

lobbying power of the financial sector not only secured this largest ever bailout, it also made sure that the funds were transferred literally without any strings attached. As a consequence, the wall street institutions used much of the bailout money to bolster their balance sheets – and pay significant bonuses to their executives – rather than keeping main street businesses going and preventing struggling home owners and families from becoming homeless.¹³

Traditional fiat currencies are controlled by central banks who are overseen, whether they are nominally independent or not, by governments and legislators, and subject to political pressures and exigencies.¹⁴ Politicians, in turn, are beholden to powerful corporate interests and donors, much more than the diffuse and malleable general electorate. Cryptocurrencies, by contrast, are either controlled by pre-determined mathematical algorithms (for example, the cap on total supply of Bitcoin) or by consensus mechanisms potentially involving all those who use and own the currency (miners, app developers, exchanges, wallet providers, node operators, end users...). The decentralization of control, wresting the currency out of the hands of politicians seeking re-election, and giving it to stake holders seeking preservation of value, is one of the key features of cryptocurrencies. Unsurprisingly, however, the political establishment and the established financial industry is not willing to give up control over currencies without a fight.¹⁵ In this regard,

the 2008 Bailouts Really Cost, MIT Sloan School of Management, <https://mitsloan.mit.edu/ideas-made-to-matter/heres-how-much-2008-bailouts-really-cost>. In the EU, similar amounts of money were committed, although recovery was more successful in some countries than in others.

- 13 Instead of many, see Paul Krugman, *The Return of Depression Economics and the Crisis of 2008*, Norton & Co. 2009; Robert Reich, *The System - Who Rigged It, How We Fix It*, Alfred Knopf 2020; Joseph Stiglitz, *Freefall – America, Free Markets, and the Sinking of the World Economy*, Norton & Co. 2010; Joseph Stiglitz, *Rewriting the Rules of the American Economy: An Agenda for Growth and Shared Prosperity*, Norton & Co. 2015; as well as Martin Wolf, *The Shifts and the Shocks: What We've Learned – and Have Still to Learn – from the Financial Crisis*, Penguin 2014.
- 14 Even “independent” central banks like the U.S. Federal Reserve or the European Central Bank are subject to political mandates, e.g. to promote maximum employment, price stability and/or moderate long-term interest rates, and to indirect oversight via the appointment of officers and board members. In particular, when choices have to be made, for example whether to prioritize full employment at the expense of price stability or the other way around, personalities matter. It is no coincidence, therefore, that U.S. Presidents (and politicians in other countries around the world) are keenly aware of the importance of getting individuals into key positions at their respective central banks that are going to help them in the pursuit of their respective political agendas. For further analysis see, for example, Caitlin Ainsley, *The Politics of Central Bank Appointments*, *The Journal of Politics* 2017, Vol. 79 No. 4, at 1205-1219. The distinction between de jure independence and de facto independence of central banks is nicely elaborated in Jasmine Fouad, Mona Fayed, Heba Talla & A. Eman, *A New Insight into the Measurement of Central Bank Independence*, *Journal of Central Banking Theory and Practice* 2019, Vol. 8 No. 1, at 67-96.
- 15 In this context it is little known – and certainly has not featured prominently in recent debates – that the idea of privately created currencies is not new at all. In fact, prior to the creation of the first central banks with special and, eventually, monopoly rights granted by their respective sovereigns in the 17th and 18th centuries, the majority of “money” was privately created. From ancient Babylonian clay tablets to more recent promissory notes, and the most complex and highly leveraged derivatives (futures contracts, forward contracts, options, swaps), traders and financial service providers have been creating liquidity in financial markets merely by making promises that the bearer or named beneficiary will be paid at a certain time or if and when certain conditions are met. And since ancient Babylonian times, the bearer or named beneficiary

it did not help that a variety of less benevolent uses of cryptocurrencies were also introduced, such as entrepreneurs with impressive websites and not so impressive business models absconding with the money of retail investors, wealthy people avoiding income taxes by relying on the anonymity offered by cryptocurrencies, as well as willing and unwilling parties making financial transfers to and from organized crime and terrorist organizations.¹⁶ However, there is reason to believe that illegal activity involving cryptocurrencies is in reality no more prevalent than illegal activity involving fiat currencies.¹⁷ In fact, since all cryptocurrency transactions can be tracked by anyone and forever on their respective Blockchains, this technology is more transparent and ultimately safer than traditional financial transactions that can be routed quickly through banks in offshore financial centers, let alone traditional cash transactions that cannot be tracked at all.¹⁸

This report will provide an overview of official responses, regulatory guidance, and legislative mandates created for DLT and cryptocurrencies at the level of the U.S. Federal Government and at the level of the Governments of the Several States in the Union. After the overview, the report will conclude with an assessment of the extent sensible regulatory guidance is currently being provided in the U.S. and how this guidance might be improved in future.

not only had to bear the risk that the promisor might default but also the risk that the promised amount might change in value by the time payment is due. Arguably, cryptocurrencies are no different at all. For more detailed analysis see Niall Ferguson, *The Ascent of Money - a Financial History of the World*, Penguin 2008; as well as John Smithin (ed.), *What Is Money?*, Routledge 2000.

- 16 To give but one example, on 13 January 2022, BBC News reported that the “[l]argest darknet stolen credit card site closes”. A company or website called “UniCC” that could be found only on the Tor or Dark Web, a secretive part of the internet or WorldWideWeb that can only be accessed with special software and is almost exclusively used for illegal activities, was no longer offering stolen credit card details for millions of individuals because the owners were retiring. According to the BBC, the administrators of this illegal marketplace had earned “an estimated \$358 [Million]”, in cryptocurrency payments from 2013 to 2021. See <https://www.bbc.com/news/technology-59983950>. Additional examples are provided in Neel Mehta, Aditya Agashe & Parth Detroja, *Bubble or Revolution? The Present and Future of Blockchain and Cryptocurrencies*, Paravane Ventures 2020, at 70-75.
- 17 Various sources now estimate that *the percentage of illicit activity on Blockchains is no greater than the percentage of illicit activities being conducted in the traditional banking system*. Thibault Schrepel recently referred to an estimate of 0.15% (Schrepel, *Blockchain + The Law*, conference presentation, Amsterdam 3 February 2022). SEC Commissioner Peirce quoted a study putting the criminal activity at 0.34% of crypto transactions, with a total volume of US\$ 10 Billion. This sounds like a lot until we remind ourselves that the overall size of illegal activity is estimated at US\$ 2.25 to 2.5 Trillion per year or between 11 and 12% of global GDP (Hester Peirce, *supra* note 1). US\$ 10 Billion in crypto-related illegal activity would be a tiny 0.5% slice of that pie.
- 18 A good example is the 2016 hack of Bitfinex. The hackers stole what was US\$ 71 Million worth of Bitcoin at the time. However, the BTC were traceable and sitting in a wallet under observation by the U.S. authorities. Since 2016, the value of the loot had increased to almost US\$ 4 Billion, while “the loot sat in plain sight online [...] as if a robber’s getaway car were permanently parked outside the bank, locked tight, money still inside” (Ali Watkins & Benjamin Weiser, *Modern Crime, a Tech Couple And a Trail of Syphoned Crypto*, New York Times 13 February 2022, at A1 and A18). When the hackers finally tried to remove the loot, they were identified, arrested, and are now facing up to 25 years in prison (*id.*).

II. THE UNITED STATES FEDERAL GOVERNMENT

1. U.S. Federal Laws

The United States Constitution provides for a federal structure of government, and grants to the Federal Government only the powers enumerated in the Constitution itself. All remaining powers are reserved to the Several States. Neither the Constitution of 1787, nor any of the subsequent amendments to it, mention regulation of the internet, distributed ledger technology, or digital currencies, as a power of the Federal Government. Furthermore, within the Federal Congress and the U.S. Supreme Court, the dominant views oppose pretty much any expansion of Federal powers at the expense of the Several States.¹⁹ Nevertheless, it is equally obvious that the Federal Government would have the power to regulate cryptocurrencies on the basis of the interstate commerce clause, which grants to the Federal Government the power “[t]o regulate Commerce with foreign Nations, and among the several States...”.²⁰ So far it has not done so and, not least because of the highly partisan environment in Congress, it is highly unlikely that specific legislation will be developed at the Federal level in the foreseeable future.

However, this does not mean that there is no Federal law, let alone that the Federal level is of no concern to developers, traders, and users of cryptocurrencies.

First, there are Federal laws of relevance, even if they were not designed for and do not explicitly mention DLT technology or digital money. Second, there are regulatory agencies like the Securities and Exchange Commission (SEC) issuing rules and opinions within their respective areas of responsibility.

Among the Federal laws of relevance are banking- and money services business laws and regulations,²¹ as well as a variety of consumer protection laws.²² The financial and securities industry is specifically governed by the following Federal laws:

- Securities Act of 1933

19 See, e.g. *United States v. Lopez*, 514 U.S. 549, and commentary by Steven Calabresi, “A Government of Limited and Enumerated Powers”: *In Defense of United States v. Lopez*, Michigan Law Rev. Vol. 94, No. 3 (Dec., 1995), at 752-831.

20 U.S. Constitution, Article 1, Section 8, Clause 3. For detailed analysis see Erwin Chemerinsky, *Constitutional Law*, Wolters Kluwer, 6th ed. 2019, in particular Chapter 2.C., as well as William Eskridge & John Ferejohn, *The Elastic Commerce Clause: A Political Theory of American Federalism*, Vand. L. Rev. 1994, Vol. 47, at 1355-1400.

21 For a complete list of and links to Federal banking laws (U.S. Code Title 12) see <https://www.law.cornell.edu/uscode/text/12>. For links to the specific laws see <https://www.investor.gov/introduction-investing/investing-basics/role-sec/laws-govern-securities-industry#secexact1934>. For a list of and links to the respective Federal rules and regulations provided by the SEC see <https://www.sec.gov/about/laws/secrulesregs.htm>.

22 For a list of the main consumer protection laws of relevance in the financial services sector see <https://www.consumerfinance.gov/rules-policy/regulations/>. The most important of these laws and regulations, and the powers of the Consumer Financial Protection Bureau (CFPB), are discussed *infra*, notes 58-59 and accompanying text.

- Securities Exchange Act of 1934
- Commodity Exchange Act (CEA) of 1936
- Trust Indenture Act of 1939
- Investment Company Act of 1940
- Investment Advisers Act of 1940
- Sarbanes-Oxley Act of 2002
- Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010
- Jumpstart Our Business Startups (JOBS) Act of 2012, as well as
- a number of Federal Rules and Regulations

Prior to 2002, the two main Federal laws providing minimum standards of investor protection in their relations with publicly listed corporations were the Securities Act of 1933 (as amended) and the Securities Exchange Act of 1934 (as amended).²³ Those laws will be discussed below in the context of the approach taken by the Securities and Exchange Commission (SEC) toward cryptocurrencies and businesses using them. Another set of laws and regulations aimed less at retail investors and more at manipulation in established markets is the Commodity Exchange Act and the regulations adopted by the Commodities Futures Trading Commission (CFTC).²⁴ This will also be discussed below in the context of the agency's regulations and opinions.

The *Sarbanes-Oxley Act of 2002*²⁵ was adopted in response to a series of spectacular corporate scandals, including *Enron*, *WorldCom*, and others.²⁶ The common features were manipulations of corporate financial statements, for example moving liabilities and losses into “special purpose vehicles”, which were signed-off by corporate auditors like Arthur Anderson, unwilling to risk lucrative business relations. To counter these problems, Sarbanes-Oxley (SOX) provided a reform of the audit profession (Title I), requirements for auditor independence (Title II), stricter rules for corporate and management accountability (Title III), requirements for disclosure of off-balance sheet transactions and loans (Title IV), stronger protections for whistleblowers (Title VIII), as well as stricter penalties for managers and external auditors, including prison for up to 20 years (Titles IX and XI).²⁷ The SOX Act applies to all publicly trade companies in the U.S., as well as foreign companies if they are publicly traded and doing business in the U.S. This includes cryptocurrency businesses if the shares are traded on public exchanges. However, what has not yet been definitively resolved is the question whether the SOX Act applies to companies merely because *their proprietary coins or tokens* are publicly traded *on crypto exchanges*. On the one

23 The 1933 Act is focused on initial offerings or sales of securities; the 1934 Act is focused on subsequent trading of securities on exchanges.

24 <https://www.law.cornell.edu/uscode/text/7/chapter-1>.

25 Public Law 107-204, 15 U.S. Code 7201 et seq. <https://www.govinfo.gov/content/pkg/PLAW-107publ204/html/PLAW-107publ204.htm>.

26 For discussion see, e.g., James Marmerchant, *Sarbanes Oxley-Act Completed Guide: Risk Management Personnel, Auditors and Senior Managers*, 2018.

27 For more information see, e.g., Sanjay Anand, *Sarbanes-Oxley Guide for Finance and Information Technology Professionals*, Wiley, 2nd ed. 2006; and Stephen Bainbridge, *The Complete Guide to Sarbanes-Oxley – Understanding How Sarbanes-Oxley Affects Your Business*, Adams Business 2007.

hand, this was clearly not envisaged by the legislature when the Act was first conceived. On the other hand, the SOX Act refers to “issuers” of securities (15 U.S. Code 7201, Sec. 2(7)) and is applied and enforced by the SEC which has classified most cryptocurrencies to be securities.²⁸ Bitcoin (BTC) and Ether (ETH) are exceptions in this regard since they have never been offered by an original *issuer* in anything that could resemble an investment contract. Nevertheless, businesses *trading* in BTC or ETH may be offering “investment contracts.”²⁹

Since some of the requirements of the SOX Act were perceived as unduly onerous and discouraging smaller companies from going public, the *JOBS Act of 2012* provides some relief for smaller companies and extends the period when newly listed companies have to start with full reporting from two to five years.³⁰ The best known part of the JOBS Act, however, is Title III, commonly known as the *Crowdfund Act*.³¹ This Title amended the Securities Act of 1933 and created exceptions for small scale crowdfunding efforts. These are defined as not exceeding US\$1 Million in total funds raised and not exceeding

(i) the greater of \$2,000 or 5 percent of the annual income or net worth of [raised from any one individual] investor, as applicable, if either the annual income or the net worth of the investor is less than \$100,000; and (ii) 10 percent of the annual income or net worth of such investor, as applicable, not to exceed a maximum aggregate amount sold of \$100,000, if either the annual income or net worth of the investor is equal to or more than \$100,000.³²

However, even small scale crowdfunding efforts have to be “conducted through a broker or funding portal” that is registered with the SEC and meets no fewer than eleven additional conditions.³³ Furthermore, the issuer itself has to comply with a half dozen conditions, including making a complex filing with the SEC.³⁴ Last but not least, the Crowdfund Act provides far reaching civil liability for issuers who do not (fully) comply with the requirements of the act,³⁵

28 This seems to be the preference of Chairmen Jay Clayton (2017-2020) and Gary Gensler (since 2020), see discussion *infra*, note 103 and accompanying text. However, the 2019 SEC Framework for “Investment Contract” Analysis of Digital Assets at least tries to provide criteria when a digital asset is and is not a security; see <https://www.sec.gov/files/dlt-framework.pdf>.

29 See the example of Bitcoin Savings and Trust (BTCST), *infra* notes 93-96 and accompanying text.

30 <https://www.govinfo.gov/content/pkg/BILLS-112hr3606enr/pdf/BILLS-112hr3606enr.pdf>.

31 The full name of this Title is “Capital Raising Online While Deterring Fraud and Unethical Non-Disclosure Act of 2012”. See Sec. 301 of the Act.

32 *Id.*, Sec. 302(a).

33 See Sec. 4A(a) of the Securities Act of 1933, as amended (15 U.S.C. 77a et seq.).

34 *Id.*, Sec. 4A(b).

35 Sec. 12(a)(2) of the Securities Act of 1933 now provides not only that investors can sue *the issuer* for damages but also provides a cause of action *directly and personally* against any “officers and directors for false or misleading statements or omissions in any written or oral communication. A plaintiff need only prove that an untrue statement or misleading omission occurred and that the defendant did not exercise reasonable care, even if loss causation, reliance, and scienter are not shown.” See David Mashburn, *The Anti-Crowd Pleaser: Fixing the Crowdfund Act’s Hidden Risks and Inadequate Remedies*, 63 Emory L. J.

and even for brokers and funding portals that previously did not have to fact-check the information provided by prospective issuers. The SEC fleshed out the requirements with a set of regulations that entered into force in 2016.³⁶ Unsurprisingly, the practical allure of the Crowdfund Act has been limited, and the stated goal of facilitating access to capital for start-ups was largely missed.³⁷

The *Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010*³⁸ was created in response to the financial crisis of 2007/08. By contrast to the situation in 2002, when corporate scandals triggered legislation, this time it was misbehavior in the financial sector.

The financial crisis of 2007-2008 was one of the worst economic disasters in modern U.S. history, and it was in large part caused by bad behavior at banks. The Dodd-Frank Act was created in an attempt to keep anything similar from happening again.

In the 25 years leading up to the financial crisis of 2007-2008, financial industry deregulation permitted – some might even say encouraged – U.S. financial services firms to take bigger and bigger gambles, and lend in riskier ways than ever before. The result was an epic bubble in the U.S. housing sector that wrecked the banking industry and crashed stock markets at home and abroad, driving the worst global recession seen in generations.³⁹

One reason why the Act took two years to draft and pass into law is the sheer scale of the venture, 848 pages of small print.⁴⁰ Even after it was adopted, much of the Dodd Frank Act required implementation via Federal regulations and/or agency restructuring, another time consuming venture. Furthermore, many elements of the Act have been controversial and, among others, President Trump tried to roll-back a number of its provisions. That being said, although it is complex and not exactly a model of high quality legislative drafting, the Act pursues three clear and important objectives, and does so reasonably well.⁴¹

127 (2013), at 127.

36 17 C.F.R. pt. 200, 227, 232, 239, 240 and 249.

37 See, e.g. Patricia Lee, *Access To Capital or Just More Blues? Issuer Decision-Making Post SEC Crowdfunding Regulation*, 18 Tenn. J. Bus. L. (2016).

38 For the full text see https://www.cftc.gov/sites/default/files/idc/groups/public/@swaps/documents/file/hr4173_enrolledbill.pdf.

39 Kelly Anne Smith, *How the Dodd-Frank Act Protects Your Money*, Forbes Advisor, 20 July 2020, <https://www.forbes.com/advisor/investing/dodd-frank-act/>.

40 *Supra*, note 38.

41 Although he may not be entirely neutral when it comes to an assessment of the strengths and weaknesses of the Act, Senator Dodd commented in 2020, when reviewing the Act in light of the Coronavirus crisis, that “we would be in a far deeper mess today if we had not done what we did in 2010”; see <https://www.brookings.edu/events/a-decade-of-dodd-frank/>.

The first goal of Dodd Frank is to reign in the riskiest activities of banks and financial service providers. The *Volcker Rule* prevents banks from proprietary speculative trading in securities, futures, options, and other derivatives.⁴² The Securities and Exchange Commission powers were extended and it is now charged with regulating derivative trading⁴³ as part of a broader push to better manage the risks emanating from the shadow banking system⁴⁴ and its creation of ever more artificial money in the form of derivatives. This goal is pursued, inter alia, by a requirement that derivatives be cleared and traded on exchanges, effectively guaranteeing the performance of both sides via clearinghouses.⁴⁵ This is relevant in the present context. If a smart contract “incorporates software code to automate aspects of the derivative transaction and operates on a distributed ledger, such as a blockchain”,⁴⁶ it is called a “smart derivatives contract” and subject to the provisions of Dodd Frank. This explains why Coinbase, the largest U.S.-based crypto

42 Section 619 of the Dodd Frank Act. For a detailed description see David Carpenter & Maureen Murphy, *The Volcker Rule: A Legal Analysis*, Congressional Research Service 2014, https://ecommons.cornell.edu/xmlui/bitstream/handle/1813/78975/CRS_The_Volcker_Rule.pdf?sequence=1. Critical reviews are provided, inter alia, by John Coates, *The Volcker Rule as Structural Law: Implications for Cost-Benefit Analysis and Administrative Law*, European Corporate Governance Institute Working Paper No. 299/2015, and Charles Whitehead, *The Volcker Rule and Evolving Financial Markets*, 1 Harv. Bus. L. Rev. 39 (2011).

43 Titles VI, VII and IX of the Act.

44 Investopedia defines the shadow banking system as “the group of financial intermediaries facilitating the creation of credit across the global financial system but whose members are not subject to regulatory oversight. The shadow banking system also refers to unregulated activities by regulated institutions. Examples of intermediaries not subject to regulation include hedge funds, unlisted derivatives, and other unlisted instruments, while examples of unregulated activities by regulated institutions include credit default swaps.” See <https://www.investopedia.com/terms/s/shadow-banking-system.asp>.

45 Title VIII of the Act. David Skeel explains the effects using the example of the hedging strategy used by Southwest Airlines to reduce the impact of rising oil prices: “An airline may buy an oil derivative—a contract under which it will be paid if the price of oil has risen at the end of the contract term—to hedge against changes in oil prices. Southwest Air’s judicious use of these derivatives was one of the keys to its early success. [...] To clear a derivative (or anything else, for that matter), the parties arrange for a clearinghouse to backstop both parties’ performance on the contract. If the bank that had sold Southwest an oil derivative failed, for instance, the clearinghouse would pay Southwest the difference between the current and original oil price or would pay for Southwest to buy a substitute contract. If the same derivative were exchange traded, it would have standardized terms and would be purchased on an organized exchange, rather than negotiated privately by Southwest and the bank. Clearing reduces the risk to each of the parties directly, while exchange trading reduces risk to them and to the financial system indirectly by making the derivatives market more transparent.” See David Skeel, *The New Financial Deal: Understanding the Dodd-Frank Act and its (Unintended) Consequences*, Wiley 2010, p. 5.

46 Quoted from the *Derivatives & Repo Report* of Perkins Coie LLP, 21 December 2020, <https://www.derivativesandrepo.com/2020/12/isda-continues-guidelines-for-smart-derivatives-contracts-series-with-credit-and-fx-guidelines/>.

exchange, announced recently that it will acquire the crypto futures exchange FairX in order to be able to offer crypto derivatives in the U.S.⁴⁷

Second, the Dodd Frank Act creates a system to oversee financial institutions and limit the damage caused by potential failure of one or more large financial institutions. In essence, this part of the Dodd Frank Act is intended to keep banks and other financial service providers from overly risky business conduct and from becoming *too big to fail*.⁴⁸ This section is increasingly relevant for the DLT financial service industry since some providers are already meeting the thresholds or could be deemed *systemically important* companies.⁴⁹

47 Reuters, *Coinbase Buys Crypto Futures Exchanges, Plans to Sell Derivatives in U.S.*, 13 January 2022, see <https://www.reuters.com/technology/coinbase-buys-crypto-futures-exchanges-plans-sell-derivatives-us-2022-01-13/>.

48 There are several components of the Act in pursuit of this goal. The *Federal Reserve* now has to conduct annual stress tests for the largest banks and financial institutions (Title I). Title II provides rules and authorities for the *Securities Investor Corporation (SPIC)* for the orderly liquidation of troubled financial companies. The insurance industry is being supervised by the *Federal Insurance Office (FIO)* at the Treasury Department (Title V). Hedge Funds have to register with the SEC and provide information about their trades and portfolios (Title IV).

Title I Section 112 of the Act on the authority of the *Financial Stability Oversight Council (FSOC)* includes the goal “to promote market discipline, by eliminating expectations on the part of shareholders, creditors, and counterparties of [large, interconnected bank holding companies or nonbank financial companies] that the Government will shield them from losses in the event of failure”, the so-called moral hazard. For additional analysis see, e.g. Charles Goodhart, *The Regulatory Response to the Financial Crisis*, Edward Elgar Publishing 2009; Elisa Kao, *Moral Hazard during the Savings and Loan Crisis and the Financial Crisis of 2008-09: Implications for Reform and the Regulation of Systemic Risk through Disincentive Structures to Manage Firm Size and Interconnectedness*, 67 N.Y.U. Ann. Surv. Am. L. (2011-2012), at 817-860; Jack Knott, *The President, Congress, and the Financial Crisis: Ideology and Moral Hazard in Economic Governance*, Presidential Studies Quarterly 2012, Vol. 42, No. 1, at 81-100; Karl S. Okamoto, *After the Bailout: Regulating Systemic Moral Hazard*, 57 UCLA L. Rev. 183 (2009-2010), at 183-236; as well as Noel Murray, Ajay K. Manrai, and Lalita Ajay Manrai, *The Financial Services Industry and Society: the Role of Incentives/Punishments, Moral Hazard, and Conflicts of Interests in the 2008 Financial Crisis*, Journal of Economics, Finance and Administrative Science 2017, Vol 22, No. 43, at 168-190.

49 The Dodd Frank Act focuses on bank holding companies with more than US\$ 50 Billion in assets, as well as “nonbank financial institutions such as investment banks or insurance holding companies that a new Financial Stability Oversight Council deems to be systemically important.” See David Skeel, *The New Financial Deal: Understanding the Dodd-Frank Act and its (Unintended) Consequences*, Wiley 2010, p. 5. BlockFi, a large Decentralized Finance (DeFi) service provider based in Jersey City, NJ, is currently valued somewhere between US\$ 5 and 10 Billion. Since it advertises its services as intended to “Redefine Banking” and provides interest bearing accounts, as well as loans, BlockFi is probably a bank (Investopedia calls it a “crypto bank”, whatever that means, see <https://www.investopedia.com/blockfi-vs-coinbase-5188425#:~:text=While%20BlockFi%20is%20privately%20owned,services%20and%20interest%2Dbearing%20accounts>) and, therefore, still too small to meet the threshold of Dodd Frank. By contrast, Coinbase, founded in San Francisco in 2012 and today the largest crypto exchange based in the U.S., soared to a market valuation of US\$ 85 Billion after it started trading on Nasdaq, putting it easily within reach of the Dodd Frank mechanisms. Importantly, the Dodd Frank Act also covers foreign banks if they maintain “a branch or agency in a State” or control “a commercial lending company organized under State law” (Sec. 102(a)(1) in combination with 12 U.S.C. 3106(a)), as well as “foreign nonbank financial

The *third* central goal of the Dodd Frank Act is being pursued with the creation of the *Consumer Financial Protection Bureau (CFPB)*. The CFPB is a powerful new Federal agency “that makes sure banks, lenders, and other financial companies treat [consumers] fairly.”⁵⁰ The CFPB has the power to order “restitution, disgorgement, injunctive relief, and significant civil penalties for violations of the 19 federal statutes under its purview.”⁵¹ The potential overlap and need for delimitation of powers between the SEC and the CFPB is obvious, even if at least some of the established consumer protection laws and regulations do not easily apply to transactions involving DLT and cryptocurrencies. For example, in 1987 the Federal Congress passed the *Expedited Funds Availability Act (EFAA)*,⁵² “establishing maximum permissible hold periods for checks and other deposits.”⁵³ This was supplemented in 2003 by the *Check Clearing for the 21st Century Act (Check 21)*.⁵⁴ Both pieces of legislation are implemented in Regulation CC, adopted by the Board of Governors of the Federal Reserve System.⁵⁵ The ongoing tectonic shift of payment transactions away from traditional banks to online financial service providers is already making these rules look a lot less “21st Century”. Instant clearing as part of a smart contract on a Blockchain will make them outright obsolete.

That being said, not all Federal laws and regulations dealing with consumer protection in the financial sector will lose their purpose when financial transactions shift to DLT and cryptocurrencies. For example, the *Consumer Credit Protection Act*, and in particular its Subchapters I (*Truth in Lending Act TILA*), II (*Restrictions on Garnishments*), IV (*Equal Credit Opportunity Act*),⁵⁶ V (*Fair Debt Collection Practices Act FDCPA*), and VI (*Electronic Funds*

compan[ies]” with regard to their operations in the U.S. Although it is somewhat hard to predict which nonbanks will be considered systemically important, larger DeFi operators need to be aware of and comply with the requirements under Dodd Frank.

50 See <https://www.consumerfinance.gov/>.

51 See <https://www.consumerfinance.gov/rules-policy/final-rules/code-federal-regulations/>. The broad powers of the CFPB have been confirmed as constitutional, although there are questions about the governance by a single director. See, *Seila Law LLC v. Consumer Financial Protection Bureau*, 140 S.Ct. 2183.

52 U.S. Code 2010, Title 12, Chapter 41. <https://www.govinfo.gov/content/pkg/US-CODE-2010-title12/pdf/USCODE-2010-title12-chap41.pdf>.

53 <https://www.federalreserve.gov/paymentsystems/regcc-about.htm>.

54 Public Law 108-100, 117 Stat. 1177. Available at <https://www.govinfo.gov/content/pkg/PLAW-108publ100/pdf/PLAW-108publ100.pdf>.

55 Regulation CC – Availability of Funds and Collection of Checks, 12 CFR 229. Available at <https://www.federalreserve.gov/supervisionreg/reglisting.htm>,

56 The act makes it unlawful for “any creditor to discriminate against any applicant, with respect to any aspect of a credit transaction– (1) on the basis of race, color, religion, national origin, sex or marital status, or age [...]” (15 U.S. Code § 1691(a)). The Civil Rights Act of 1964 provides for equal employment opportunities regardless of “race, color, religion, sex, or national origin” (42 U.S. Code § 2000e-2(a)(1), and prohibits discrimination by service providers like hotels, restaurants, cinemas, and certain other businesses (42 U.S. Code § 2000a). To fill a gap that appeared in practice, the U.S. Senate Banking Committee proposed the *Fair Access to Financial Services Act* in October 2020. The Act would have prohibited discrimination by “any financial institution” as defined in the *Payment, Clearing, and Settlement Supervision Act of 2010* (12 U.S. Code 5462); see <https://www.govtrack.us/congress/bills/116/s4801/text>. While the proposed Act did

Transfer Act EFTA) are broadly construed and cover any natural or legal persons regularly extending credit to consumers “in connection with loans, sales of property or services, or otherwise”, including credit card issuers.⁵⁷ Without question, these rules are not limited to conventional banks but also applicable to any form of consumer credit provided by technology companies in the area of Decentralized Finance or DeFi, utilizing digital wallets and smart contracts instead of banks, bank accounts, and wire transfers.⁵⁸ In particular, it does not matter in this regard whether or not the technology company or financial service provider has a bank charter⁵⁹ and/or a securities license,⁶⁰ although it is increasingly unlikely that a larger financial services company can operate without.⁶¹ Whether some of the technology companies providing financial services will become banks – albeit not of the brick-and-mortar kind – or not, consumer

not become law, *The Office of the Comptroller of the Currency (OCC)* drew up a rule prohibiting discrimination by large banks with US\$ 1 Billion or more in total assets (<https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-8.html>). Because of the transition from the Trump to the Biden administration, this rule is still on hold. It is unclear at the present time whether the OCC will publish the rule and/or whether the U.S. Congress will pick up a broader measure that would apply to more and smaller financial service providers, potentially including crypto businesses.

57 See Consumer Credit Protection Act, 15 U.S. Code 1602(g). For a full list of Federal Regulations applied by the CFPB in its implementation of Federal consumer protection laws see <https://www.consumer-finance.gov/rules-policy/final-rules/code-federal-regulations/>.

58 For more information on DeFi see, *inter alia*, Campbell Harvey, Ashwin Ramachandran & Joey Santoro, *DeFi and the Future of Finance*, Wiley 2021.

59 *The Office of the Comptroller of the Currency (OCC)*, an independent bureau within the U.S. Department of the Treasury, is handling applications for new charters by national banks and federal savings associations. Local and regional banks can be chartered at the State level.

60 *The Financial Industry Regulatory Authority (FINRA)* is in charge of examining and licensing of securities dealers and brokers. For more information see <https://www.finra.org/#/>.

61 To give but one example, effective 20 July 2021, the New Jersey Bureau of Securities ordered one of the largest DeFi operators, the company BlockFi, to discontinue offering interest-bearing cryptocurrency accounts. BlockFi had been accepting a variety of cryptocurrencies into wallets held by BlockFi in return for attractive interest rates, paid monthly in cryptocurrency. In this way, BlockFi had collected deposits in excess of US\$ 14 Billion and paid interest at rates around 9% per annum. The interest was earned via proprietary trading and, according to the Bureau, “at least in part through the sale of unregistered securities in violation of the Securities Law” (<https://www.njoag.gov/new-jersey-bureau-of-securities-orders-cryptocurrency-company-blockfi-to-stop-offering-interest-bearing-accounts/>); the order is State of New Jersey Bureau of Securities, *Summary Cease and Desist Order in the Matter of BlockFi Inc., BlockFi Lending LLC, and BlockFi Trading LLC*, Newark 19 July 2021, available at <https://www.nj.gov/oag/news-releases21/BlockFi-Cease-and-Desist-Order.pdf>.)

In plain English, BlockFi had sold cryptocurrencies, which the SEC classifies as securities, without the requisite securities trading license. The cease-and-desist order was certainly harsh for the customers, in particular in times when a regular savings account with a chartered bank typically bears about 0.25% interest per annum. However, it is likely that not all customers were fully aware of the fact that their deposits were not secured in any way and it is at least possible that BlockFi may have been running a Ponzi scheme. The latter, however, remains to be seen. At least for now, BlockFi is not only continuing with its operations but expanding into credit card and other financial services. See <https://blockfi.com/>.

protection laws apply to them.⁶² Similarly, while protection by the *Federal Deposit Insurance Corporation (FDIC)* is traditionally insuring only bank deposits against losses up to US\$ 250,000, there is no reason, in principle, why a DeFi corporation could not become a member of the FDIC and obtain deposit insurance.

Along the same lines, other Federal consumer protection laws on matters such as data protection and privacy,⁶³ as well as deceptive advertising,⁶⁴ are fully applicable to financial service providers in the Blockchain space. Additional consumer protection provisions exist at the State level, in particular State laws on *Unfair or Deceptive Acts or Practices (UDAP)*.⁶⁵

2. Regulations, Rules and Opinions of Federal Regulatory Agencies

At the Federal level, a multitude of agencies and authorities are currently involved in oversight of cryptocurrency businesses:

- the Securities and Exchange Commission (SEC) has oversight of securities issuers and traders;
- the Commodities Futures Trading Commission (CFTC) has oversight of traders and trading places (exchanges) dealing with commodities futures;⁶⁶

62 For international comparative analysis see Tsai-Jyh Chen, *An International Comparison of Financial Consumer Protection*, Springer 2018.

63 At the Federal level, “financial institutions”, defined as “any institution the business of which is engaging in financial activities”, are subject to the privacy rules of 15 U.S.C. §§6801-6827 and, in particular, the *Gramm-Leach-Bliley Act on Disclosure of Nonpublic Personal Information* (§§6801-6809), <https://www.law.cornell.edu/uscode/text/15/chapter-94/subchapter-I>.

64 At the Federal level, individuals and corporations are subject to the *Federal Trade Commission Act* (15 U.S.C. §§41-58, <https://www.law.cornell.edu/uscode/text/15/chapter-2/subchapter-I>).

65 For example, under Sec. 1780 of the *California Consumer Legal Remedies Act*, “[a]ny consumer who suffers a damage as a result of the use or employment by any person of a method, act, or practice declared to be unlawful by Section 1770 may bring an action against that person to recover or obtain any of the following:

- (1) Actual damages, [...]
- (2) An order enjoining the methods, acts, or practices.
- (3) Restitution of property.
- (4) Punitive damages.
- (5) Any other relief that the court deems proper.

Sec. 1770 prohibits, inter alia, “(5) Representing that goods or services have sponsorship, approval, characteristics, ingredients, uses, benefits, or quantities that they do not have or that a person has a sponsorship, approval, status, affiliation, or connection that the person does not have.” I am surprised that to the best of my knowledge, nobody has yet tried to recover damages from persons who sold unregistered coins or tokens in an ICO and then did not deliver a successful business model that caused the coins or tokens to go up in value, in particular since class actions are possible under these kind of statutes.

66 Cryptocurrency businesses may need licenses or registration as Derivatives Clearing Organization (DCO), Designated Contract Market (DCM), Swap Execution Facility (SEF), Swap Data Repository (SDR), Commodity Pool Operator (CPO), Commodity Trading Advisor (CTA), Futures Commission Merchant (FCM), Introducing Broker (IB), Swap Dealer (SD), and/or Foreign Boards of Trade.

- the Department of Justice is charged with fraud prevention, for example in the form of Ponzi schemes;
- the Federal Reserve, i.e. the central bank of the U.S., has oversight of banks and financial institutions to ensure their safety and soundness;
- the Financial Crimes Enforcement Network (FinCEN) at the Treasury Department is charged with combatting money laundering, terrorist financing, and other large scale financial crimes; cryptocurrency business may have to obtain licenses as “money services businesses;”
- the Office of Foreign Assets Control (OFAC) at the Treasury Department administers and enforces trade sanctions against particular countries, individuals, and companies;
- the Consumer Financial Protection Bureau (CFPB) protects consumers against unfair treatment by banks, lenders, and other financial companies;
- the Internal Revenue Service (IRS) at the Treasury Department is responsible for assessment and collection of taxes on income and assets;
- the Federal Trade Commission and the Commerce Department, together with the Department of Justice, are charged with the enforcement of antitrust legislation;
- the Environmental Protection Agency (EPA) may yet get involved if the current expansion of Bitcoin and other energy intensive mining operations in Texas and other places continues;
- several Self-Regulatory Organizations (SROs) like the Financial Industry Regulatory Authority (FINRA) or the National Futures Association (NFA) set industry standards and regulations;
- Federal courts oversee the rulemaking by and activities of the Federal agencies.

In addition, there may be registration or licensing requirements at the State level. State legislative branches have created laws and licensing requirements for issuers of securities (“blue sky laws”), money transmitters, sellers of payment instruments and checks, etc. State legislative branches are also in charge of the adoption of contract and commercial laws like the UCC. Regulatory agencies at the State level have a variety of names, e.g.

- District of Columbia Department of Insurance, Securities and Banking,
- Florida Office of Financial Regulation,
- Illinois Division of Banking,
- Maryland Commissioner of Financial Regulation, or
- Washington Division of Consumer Services.

State attorney generals are responsible for the enforcement of consumer laws such as Unfair or Deceptive Acts and Practices (UDAP) laws. Last but not least, State courts oversee the State

regulatory agencies, apply the UCC and other State laws, and develop the common law of contract.

The most important Federal agencies will be analyzed in this section. Some examples of State legislation and regulation will be provided in the subsequent section.

Beyond the provisions of the Dodd Frank Act, all financial services providers have to comply with transparency rules regarding their customer base. The provision of “money transmission services” is only one example among the ways a “money services business” is defined in by the *Financial Crimes Enforcement Network (FinCEN)*, a bureau of the U.S. Department of the Treasury charged with combating money laundering, terrorism financing, and other major financial crimes.⁶⁷ Banks, money services businesses, casinos, brokers or dealers in securities, loan or finance companies, and a number of similar enterprises, are subject to registration and reporting requirements, as well as implementation of Know Your Customer (KYC) and Anti-Money Laundering (AML) procedures.⁶⁸ Even those technology companies that do not as such provide money transmission services are considered “virtual asset service providers” by the *Financial Action Task Force (FATF)*⁶⁹ and, therefore, “have the same full set of obligations as financial institutions and [certain] designated non-financial businesses and professions.”⁷⁰ Based on the *Bank Secrecy Act (BSA)*,⁷¹ 18 U.S. Code 95,⁷² respectively 31 U.S. Code 53 §§5320 to

67 For more information see <https://www.fincen.gov/> and, in particular, FinCEN, *Application of FinCEN's Regulations to Certain Business Models Involving Convertible Virtual Currencies*, FIN-2019-G001, 9 May 2019 (<https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-certain-business-models>).

68 31 CFR Chapter X Parts 1000-1060, <https://www.law.cornell.edu/cfr/text/31/chapter-X>. On 18 March 2013, FinCEN issued an “interpretive guidance to clarify the applicability of the regulations implementing the Bank Secrecy Act (‘BSA’) to persons creating, obtaining, distributing, exchanging, accepting, or transmitting virtual currencies. [...] A *user* is a person that obtains virtual currency to purchase goods or services. An *exchanger* is a person engaged as a business in the exchange of virtual currency for real currency, funds, or other virtual currency. An *administrator* is a person engaged as a business in issuing (putting into circulation) a virtual currency, and who has the authority to redeem (to withdraw from circulation) such virtual currency. [...] A user who obtains convertible virtual currency and uses it to purchase real or virtual goods or services is not an MSB under FinCEN’s regulations. Such activity, in and of itself, does not fit within the definition of ‘money transmission services’ and therefore is not subject to FinCEN’s registration, reporting, and recordkeeping regulations for MSBs. [...] An administrator or exchanger that (1) accepts and transmits a convertible virtual currency or (2) buys or sells convertible virtual currency for any reason is a money transmitter under FinCEN’s regulations [...]” See FinCEN, *Application of FinCEN's Regulations to Persons Administering, Exchanging, or Using Virtual Currencies*, available at <https://www.fincen.gov/resources/statutes-regulations/guidance/application-fincens-regulations-persons-administering>, emphasis in original, footnotes omitted.

69 **Supra**, note 3.

70 See Financial Action Task Force (FATF), *Virtual Assets and Virtual Asset Service Providers – Updated Guidance for a Risk-Based Approach*, Paris 2021, at 4.

71 12 U.S. Code Chapter 21, Financial Recordkeeping, <https://www.law.cornell.edu/uscode/text/12/chapter-21>.

72 <https://www.law.cornell.edu/uscode/text/18/part-I/chapter-95>.

5322,⁷³ FinCEN has the power to issue injunctions and temporary restraining orders for ongoing violations, and to sanction those violations with civil and criminal penalties, including imprisonment.⁷⁴

The *Environmental Protection Agency (EPA)* has the power to require a company or even an entire industry to reduce its environmental impact by changing its products or upgrading its production processes. We usually only think of the EPA in such a context when it issues fuel efficiency standards for automakers.⁷⁵ However, at a time when more and more Bitcoin mining activity is moving to the U.S. from China, where the government is cracking down on miners, and countries like Kazakhstan, where the political situation has become unstable, it is not only possible but quite likely that the EPA will take an interest.⁷⁶

Actual rules and regulations for the crypto industry have been produced for years by the *Commodities Futures Trading Commission (CFTC)*. Originally created to supervise futures contracts for agricultural commodities, the mission of the CFTC is “to promote the integrity, resilience, and vibrancy of the U.S. derivatives markets through sound regulation.”⁷⁷ Pursuant to the *Commodity Exchange Act of 1936*, the CFTC

73 <https://www.law.cornell.edu/uscode/text/31/subtitle-IV/chapter-53/subchapter-II>.

74 An example where FinCEN made use of these powers is Decision No. 2017-03 of 26 July 2017 *In the Matter of BTC-e a/k/a Canton Business Corp. & Alexander Vinnik*. BTC-e was one of the largest crypto exchanges by volume in the world, operated by Mr. Vinnik out of Russia. It exchanged fiat into crypto and facilitated transactions between various cryptocurrencies, including Bitcoin, Ether, Litecoin, Dash, and others, including tens of thousands of transactions involving customers in the U.S. FinCEN “determined that [...] : (a) BTC-e and Alexander Vinnik willfully violated MSB registration requirements; (b) BTC-e willfully violated the requirement to implement an effective anti-money laundering (AML) program, the requirement to detect suspicious transactions and file suspicious activity reports (SARs), and the requirement to obtain and retain records relating to transmittals of funds in amounts of \$3,000 or more; and (c) Alexander Vinnik willfully participated in violations of AML program and SAR requirements” and imposed a civil penalty in the amount of US\$ 110 Million on BTC-e and a civil penalty of US\$ 12 Million on Mr. Vinnik (https://www.fincen.gov/sites/default/files/enforcement_action/2020-05-21/Assessment%20for%20BTCeVinnik%20FINAL2.pdf).

75 See <https://www.epa.gov/fueleconomy>.

76 The energy consumption of Bitcoin mining goes up with the value of the coin because more miners will be competing to validate the next block on the chain if the value of their reward is going up. In 2009, one Bitcoin could be mined with a standard desktop computer in a few minutes. The electricity consumption was negligible. So was the value of the coin. By 2021, mining of Bitcoin requires an entire room full of highly specialized servers and each successful block validation costs about US\$ 12,500 in electricity (New York Times, 3 September 2021, <https://www.nytimes.com/interactive/2021/09/03/climate/bitcoin-carbon-footprint-electricity.html>). However, the winner of the guessing game currently receives 6.25 Bitcoin for a new block, equivalent to about US\$ 250,000. This explains why there are many mining operations around the world and why the total energy consumption is so high. It also means that Bitcoin mining has a carbon footprint comparable to medium size countries. For more information on the energy consumption of other cryptocurrencies see, e.g. Jingming Li, Nianping Li, Jinqing Peng, Haijiao Cui & Zhibin Wu, *Energy Consumption of Cryptocurrency Mining: a Study of Electricity Consumption in Mining Cryptocurrencies*, Energy, Vol. 168, February 2019, at 160-168.

77 <https://www.cftc.gov/About/AboutTheCommission>.

shall have exclusive jurisdiction [...] with respect to accounts, agreements (including any transaction which is of the character of, or is commonly known to the trade as, an “option”, “privilege”, “indemnity”, “bid”, “offer”, “put”, “call”, “advance guaranty”, or “decline guaranty”), and transactions involving swaps or contracts of sale of a commodity for future delivery (including significant price discovery contracts), traded or executed on a contract market [...] or a swap execution facility [...] or any other board of trade, exchange, or market, and transactions subject to regulation by the Commission [...].⁷⁸

With few exceptions, the Commodities Exchange Act makes it unlawful to enter into or execute a transaction “for the purchase or sale of a commodity for future delivery”, unless the transaction is conducted on a registered exchange and “evidenced by a record in writing which shows the date, the parties to such contract and their addresses, the property covered and its price, and the terms of delivery”.⁷⁹ The supervisory powers of the CFTC extend even to foreign boards of trade if they provide access to traders located in the U.S.

In order to assert its authority to regulate cryptocurrencies, the CFTC announced that “virtual currencies, such as Bitcoin, have been determined to be commodities under the Commodity Exchange Act.”⁸⁰ This approach was confirmed in *CFTC v. McDonnell and CabbageTech, Corp. d/b/a Coin Drop Market*.⁸¹ The *McDonnell* court held that

Congress has yet to authorize a system to regulate virtual currency. [...] Until Congress acts to regulate vi

1. No regulation. [...]
2. Partial regulation through criminal law prosecutions of Ponzi-like schemes by the Department of Justice, or state criminal agencies, or civil substantive suits based on allegations of fraud. [...]
3. Regulation by the Commodity Futures Trading Commission (“CFTC”). [...]
4. Regulation by the Securities and Exchange Commission (“SEC”) as securities. [...]

78 7 U.S. Code § 2(a)(1)(A).

79 *Id.*, § 6(a), as well as 7 U.S. Code § 6d. For the link to all implementing regulations adopted by the CFTC see <https://www.cftc.gov/LawRegulation/CommodityExchangeAct/index.htm>.

80 https://www.cftc.gov/sites/default/files/2019-12/oceo_bitcoinbasics0218.pdf. Commodities are normally “defined broadly to include not only ‘physical commodities,’ such as cotton or gold, but also currencies or interest rates. The definition also includes ‘all services, rights, and interests ... in which contracts for future delivery are presently or in the future dealt in.’ 7 U.S.C. § 1(a)(9). As a general matter, the CFTC has oversight over futures, options, and derivatives contracts. [It] also has jurisdiction where there is fraud or manipulation involving commodities trade in interstate commerce”. See Stabile, Prior & Hinkes, *supra* note 7, at 68. For a discussion of smart contracts as derivatives see Primavera de Filippi & Aaron Wright, *Blockchain and the Law - The Rule of Code*, Harvard 2018, at 89-104.

81 *CFTC v. McDonnell et al.*, U.S. District Court, E.D. New York, 5 March 2018, 287 F.Supp.3d 213.

5. Regulation by the Treasury Department's Financial Enforcement Network ("FinCEN"). [...]

6. Regulation by the Internal Revenue Service ("IRS"). [...]

7. [Self-]Regulation by private exchanges. [...]

8. State regulations. [...]

9. A combination of any of the above.

The CFTC is one of the federal administrative bodies currently exercising partial supervision of virtual currencies. [...] Administrative and civil action has been utilized by the CFTC to expand its control [...]. The SEC, IRS, DOJ, Treasury Department, and state agencies have increased their regulatory action in the field of virtual currencies without displacing CFTC's concurrent authority.⁸²

The application of the Commodity Exchange Act to cryptocurrencies means that any person found in violation of the Act is subject to civil liability for actual damages and/or enforcement of the respective contract (specific performance) pursuant to 7 U.S. Code § 25 - Private Rights of Action. If a registered entity is violating the provisions of the Act, it can be suspended from trading.⁸³ Furthermore, the CFTC can impose monetary penalties of up to US\$1 Million or "triple the monetary gain to the person for each such violation", whichever is greater, as well as "restitution to customers of damages proximately caused by violations of the person."⁸⁴

Much better known than the CFTC and even more powerful is the *Securities and Exchange Commission (SEC)*. The SEC was created by the Securities Exchange Act of 1934 in response to the stock market crash of 1929. It is charged with the application of the *Securities Act of 1933*, the *Securities Exchange Act of 1934*, and a number of other U.S. Federal investment and investor protection laws.⁸⁵ It has the power of adopting rules that have the force of Federal law. The Securities Act of 1933 requires that corporations must provide "adequate, thorough and accurate financial information about securities being offered for sale to the public."⁸⁶ Corporations have to go through a registration process and publish a prospectus before they can offer *securities* for sale

82 *Id.*, at 220-222. Future generations may well refer to this situation as the textbook example of the proverb according to which too many cooks spoil the broth.

83 7 U.S. Code § 7b.

84 7 U.S. Code §9(10).

85 These include, in particular, the Trust Indenture Act of 1939, the Investment Company Act of 1940, the Investment Advisers Act of 1940, the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, and the Jumpstart Our Business Startups Act of 2012 (the list and the relevant links are available at <https://www.investor.gov/introduction-investing/investing-basics/role-sec/laws-govern-securities-industry#secexact1934>). Furthermore, there are a number of Federal Rules and Regulations of relevance (see <https://www.sec.gov/about/laws/secrulesregs.htm>).

86 James Marmermerchant, *Sarbanes Oxley Act Completed Guide*, *supra*, note 26, at 4.

to the public.⁸⁷ Securities *exchanges* can seek registration with the SEC pursuant to Section 6 to obtain exemption from certain requirements of the Securities Exchange Act.⁸⁸ While such registration is not mandatory, “[i]t shall be unlawful for any person to effect transactions in security futures products that are not listed on a national securities exchange or a national securities association registered pursuant to section 78o–3(a) of [the Securities Exchange Act].”⁸⁹ This creates a potential conflict between the regulatory authority of the SEC and the CFTC. In a nutshell, the CFTC is focused on *futures*, i.e. contracts for delivery of a commodity at a set price at some time in the future, usually between professional traders on registered exchanges.⁹⁰ By contrast, the SEC is focused on *securities*, i.e. contracts for immediate delivery of a security at a set price, usually between an issuer and members of the public. The distinction gets murky because contracts can also be for *securities futures*. These are futures contracts for the delivery of a security at a set price and some time in the future. Firms trading in securities futures have to comply with *both* the Securities Exchange Act and the Commodity Exchange Act and be registered with *both* the SEC and the CFTC.⁹¹

87 “[S]ecurities sold in the U.S. must be registered. The registration forms companies file provide essential facts while minimizing the burden and expense of complying with the law. In general, registration forms call for:

- a description of the company’s properties and business;
- a description of the security to be offered for sale;
- information about the management of the company; and
- financial statements certified by independent accountants.

Registration statements and prospectuses become public shortly after filing with the SEC. [...] Registration statements are subject to examination for compliance with disclosure requirements. [It is unlawful to sell securities to the public before the SEC has declared a registration statement ‘effective’.]

Not all offerings of securities must be registered with the Commission. Some exemptions from the registration requirement include:

- private offerings to a limited number of persons or institutions;
- offerings of limited size;
- intrastate offerings; and
- securities of municipal, state, and federal governments.”

See <https://www.investor.gov/introduction-investing/investing-basics/role-sec/laws-govern-securities-industry>. For additional detail see *infra*, notes 128-132 and accompanying text.

88 For a list of registered National Securities Exchanges in the U.S. see <https://www.sec.gov/fast-answers/divisionsmarketregmrexchangesshtml.html>.

89 15 U.S. Code § 78f(h)(1).

90 Futures in and of themselves are a category of derivatives. The latter also include options, forwards, and swaps, and all fall under the regulatory authority of the CFTC. For details see, e.g. Aron Gottesman, *Derivatives Essentials*, Wiley 2016; or Robert Jarrow & Arkadev Chatterjea, *An Introduction to Derivative Securities, Financial Markets, and Risk Management*, World Scientific, 2nd ed. 2019.

91 In December 2020, the American Bar Association (ABA) published a White Paper on *Digital and Digitized Assets: Federal and State Jurisdictional Issues* (available at https://www.americanbar.org/content/dam/aba/administrative/business_law/idpps_whitepaper.pdf). The regulatory conflict between the CFTC and the SEC is outlined at 47-275. Section 5 is specifically dedicated to “The Need for a Better CFTC and SEC Regulatory Scheme for Digital Assets”, at 243-275.

For businesses in the cryptocurrency markets, the situation is particularly complicated because the CFTC decided that cryptocurrencies are *commodities* and subject to CFTC regulatory oversight, and the SEC decided that cryptocurrencies, for the most part, are *securities* and subject to SEC regulatory oversight. Trying to bring some clarity to the situation is slightly easier on the CFTC side. First, while all cryptocurrencies have been qualified as commodities, an exchange of fiat for crypto or crypto for (other) crypto is not a futures contract if it is executed immediately. Second, a purchase of goods or services paid with crypto is not a commodities transaction, at least if it is executed immediately. On the SEC side, almost everything depends on the classification of the digital asset, whether or not it is a *security*. As we will see, almost anyone who is offering digital coins or tokens in exchange for fiat or other digital coins or tokens could be an *issuer* subject to SEC regulation – and that includes not just a company in an ICO or a crypto exchange but potentially any business offering goods or services in the crypto markets if it accepts fiat or crypto and returns not just goods or services but also (other) crypto. Moreover, if a business offers *smart contracts* that lock crypto in while the contract is pending and pay it to the seller or return it to the buyer in the future, once the transaction is complete (or abandoned), this could very well *also* qualify as a futures trade and be subject to CFTC regulation.

For the SEC, the definition of “security” is crucial. Unfortunately, the large body of opinions, adjudicative orders, as well as administrative law judge orders and initial decisions of the SEC⁹² is neither transparent nor consistent.

15 U.S.C § 77b(a)(1), the Securities Act, as amended, defines “security” as

any 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, preorganization 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 in, temporary or interim certificate for, receipt for, guarantee of, or warrant or right to subscribe to or purchase, any of the foregoing.⁹³

An early official statement of the SEC about cryptocurrency markets came in 2013, when it launched a securities fraud civil enforcement action against *Bitcoin Savings and Trust (BTCST)*,

92 For the gateway to these opinions and decisions see <https://www.sec.gov/page/enforcement-section-landing>.

93 <https://www.law.cornell.edu/uscode/text/15/77b>.

an unincorporated Texas venture, and its owner/operator, Mr. Trendon Shavers.⁹⁴ From February 2011 to August 2012, Shavers solicited investments in BTCST over the internet and promised returns of up to 1% per day or 7% weekly, based on Shaver's success at trading Bitcoin. Shavers accepted funds from anybody providing an internet username, an e-mail address, and the keys to a Bitcoin wallet. He held the private keys to the wallets of each investor and effectively controlled the Bitcoin in those wallets. Shavers used the majority of the funds to build a Bitcoin mining operation and held only a smaller portion in a "reserve fund" for investors seeking to cash out. After Shavers reduced the interest payments on the common accounts from 7% to 3.9% per week, too many investors claimed their money back and Shavers had to shut down since he could not honor all demands. The SEC determined that Shavers was operating a Ponzi scheme. The investigation showed that he had taken in "at least 732,050 bitcoins" from investors and ultimately returned only about 551,231 BTC to the investors in interest and principal. He used at least 150,000 BTC for personal expenses and the Court eventually found that "[d]efendants' illicit gains obtained as a result of their fraud (bitcoins received from BTCST investors less bitcoins returned to them) total 180,819 bitcoins, or more than \$101 million based on currently available bitcoin exchange rates. The collective loss to BTCST investors who suffered net losses (there were also net winners) was 265,678 bitcoins, or more than \$149 million at current exchange rates."⁹⁵ Shavers admitted that he had met most of his investors in chat rooms on the Tor Network (Dark Web) and had not conducted any KYC or AML procedures. He also admitted that neither his trading nor his mining activities would have supported the interest payments he promised to the investors. Although Shavers claimed that securities laws simply did not apply to cryptocurrency investments and, therefore, that the Federal Court lacked jurisdiction, the Court entered an order regarding its subject-matter jurisdiction holding that "BTCST investments in this cases were investment contracts, and, thus, securities".⁹⁶ Since

Section 10(b) of the Exchange Act [15 U.S.C. § 78j(b)] and Rule 10b-5 [17 C.F.R. § 240.10b-5] make it unlawful for any person, in connection with the purchase or sale of a security, directly or indirectly, to (a) "employ any device, scheme, or artifice to defraud"; (b) "make an untrue statement of a material fact" or a material omission; or (c) "engage in any act, practice, or course of business which operates ... as a fraud or deceit upon any person,

the Court found that "Shavers knowingly and intentionally operated BTCST as a sham and a Ponzi scheme, repeatedly making misrepresentations to BTCST investors and potential investors concerning the use of their bitcoins; how he would generate the promised returns; and the safety

94 The facts are summarized in the 18 September 2014 Memorandum Opinion and Order of Judge Mazzant in Case 4:13-CV-416, *Securities and Exchange Commission v. Trendon T. Shavers and Bitcoin Savings and Trust*, U.S. District Court for the Eastern District of Texas.

95 *Id.*, at 9-10. At the peak of the market in September 2021, the 180,819 BTC in "illicit gains" realized by Shavers and BTCST would have amounted to a staggering US\$ 12,296,957,733 or 12.3 Billion!

96 *Id.*, at 12.

of the investments”.⁹⁷ The Court issued a permanent injunction against Shavers and BTCST from violating the Securities Exchange Act, ordered disgorgement of US\$ 40.4 Million in illicit profits, and issued civil penalties of US\$ 150,000 each against Shavers and BTCST. In all this, the Court did not question the classification of cryptocurrency sales as an issue of “securities”.

The SEC based its assessment on the so-called *Howey Test*. In a 1946 decision, the U.S. Supreme Court held that

“an investment contract for purposes of the Securities Act means a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party, it being immaterial whether the shares in the enterprise are evidenced by formal certificates or by nominal interests in the physical assets employed in the enterprise.”⁹⁸

While Shavers operated BTCST as something that could be considered a common enterprise and, indeed, the investors gave him their “money” – in the form of Bitcoin – and expected profits solely from his efforts at trading or investing or mining, these features are not necessarily found in every sale of cryptocurrency by a creator or developer.

In another case, the SEC ruled in July 2017 that the creators of *The DAO* tokens were in violation of the Securities and Exchange Act 1934 when they were using “a Decentralized Autonomous Organization (‘DAO Entity’), or other distributed ledger or blockchain-enabled means for capital raising”.⁹⁹ From April to May 2016, the creators of The DAO, based in Germany, sold over 1 Billion DAO Tokens for a total of around 12 Million Ether, equivalent at the time to about US\$ 150 Million. Among more than 11,000 buyers were several hundred individuals in the United States. The White Paper published by the creators described a “crowdfunding contract” for the creation of a new type of company entirely in the crypto space, i.e. without a physical address or incorporation, created to invest in other Blockchain projects. Among the innovative elements was a promise that the governance of The DAO would be fully decentralized and automated, without any corporate officers, instead giving all token holders proposal and voting rights in the selection of projects for investment. Furthermore, “the constitution” of The DAO would be a smart contract on the Ethereum Blockchain and, therefore, immutable. Token holders would earn profits from the return on their investments,¹⁰⁰ and benefit from increases in value of the DAO Token, as it was going to be trading on several major exchanges. The SEC, however, primarily

97 *Id.*, at 15.

98 328 U.S. 293 (1946), *Securities and Exchange Commission v. W. J. Howey Co. et al.*, at 298-299. Howey had sold fractional ownership in a citrus plantation. The investors partook in the revenue generated from Howey’s management of the plantation.

99 See SEC, *Report of Investigation Pursuant to Section 21(A) of the Securities and Exchange Act of 1934: The DAO*, SEC Release No. 81207, 25 July 2017, at 2.

100 In a YouTube video, one of the creators explicitly compared investment in The DAO to “buying shares in a company and getting ... dividends.” See Slockit, *Slock.it DAO demo at Devcon1: IoT + Blockchain*, YOUTUBE (Nov. 13, 2015), <https://www.youtube.com/watch?v=49wHQoJxYPo>.

saw an ICO for fundraising purposes in violation of Section 5 of the Securities Act since The DAO had neither registered with the SEC, nor delivered “a statutory prospectus containing information necessary to enable prospective purchasers to make an informed investment decision”.¹⁰¹ However, since The DAO had already been delisted by major exchanges after a security vulnerability, the SEC did not see it necessary to go further and pursue an actual enforcement action.

The first time the SEC investigated a crypto exchange resulted in the cease and desist order No. 84553 of 8 November 2018 against Zachary Coburn, founder and owner of the *EtherDelta* online platform and resident of Chicago, Illinois. EtherDelta was launched in July 2016 and enabled users to buy and sell Ethererum, as well as ERC20 tokens, i.e. cryptocurrencies secured on the Ethereum Blockchain. The SEC investigation concluded that “EtherDelta meets the criteria of an ‘exchange’ as defined by Section 3(a)(1) of the Exchange Act and Rule 3b-16 thereunder”, yet was neither registered with the SEC nor beneficiary of an exemption from registration.¹⁰² The SEC concluded that EtherDelta was in violation of Section 5 of the Securities Exchange Act “as a market place for bringing together the orders of multiple buyers and sellers in tokens that included securities as defined by Section 3(a)(10) of the Exchange Act.”¹⁰³ The SEC ordered Coburn to cease and desist from further violations of the Exchange Act, to pay disgorgement of profits and interest in the amount of US\$ 313,000, and to pay a civil penalty of US\$ 75,000. The penalty was relatively low “based upon [Coburn’s] cooperation in a Commission investigation and his agreement to testify in any related enforcement action.”¹⁰⁴ Coburn saved EtherDelta by selling it to a foreign buyer, rather than seeking SEC registration for it.

There are several enforcement actions of the SEC against crypto exchanges and many against companies and individuals involved in unregistered initial coin offerings (ICOs).¹⁰⁵ One of the high profile ICO cases was the SEC’s emergency action against *Telegram*’s pre-sale of Grams. The case was brought in Federal court in New York, although Telegram is incorporated in the UK and operates out of Dubai.¹⁰⁶ Another example involving an non-U.S. entity is the

101 SEC Release No. 81207, *supra* note 99, at 10.

102 SEC Release No. 84553 of 8 November 2018, at 3.

103 *Id.*, at 9.

104 *Id.*, at 11.

105 A comprehensive list, with links to the relevant decisions, can be found at <https://www.sec.gov/spotlight/cybersecurity-enforcement-actions>. The former SEC Chairman actually testified before the U.S. Senate that “I believe every ICO I’ve seen is a security.” See Jay Clayton, *Virtual Currencies: The Oversight Role of the U.S. Securities and Exchange Commission and the U.S. Commodity Futures Trading Commission*, U.S. Senate Committee on Banking, Housing, and Urban Affairs, 6 February 2018, <https://www.banking.senate.gov/hearings/virtual-currencies-the-oversight-role-of-the-us-securities-and-exchange-commission-and-the-us-commodity-futures-trading-commission>.

106 The Telegram pre-sale had already raised about US\$ 1.7 Billion. The complaint sought to stop Telegram from distributing the token already sold and from continuing the ICO. The SEC also asked the Court to rule “that the Commission may take expedited discovery;” to restrain the company “from destroying, altering, concealing or otherwise interfering with the access of the Commission to relevant documents;” and to enter

enforcement actions against UK-based Bloties Ltd. f/d/b/a *Coinschedule Ltd.* for publicizing current and upcoming ICOs by third parties on a website that was accessible in the United States.¹⁰⁷ Even registered companies can get in trouble if the SEC finds that their public disclosures about the development of their cryptocurrency platforms are inaccurate.¹⁰⁸

Although many SEC actions involve ICOs classified as unregistered securities offerings, there are numerous cases not connected to coin or token sales or fundraising. While the current and the former chairman of the SEC seem to agree “that cryptocurrency tokens [and coins?!] are ‘largely’ used to raise money for entrepreneurs and, *as such*, meet ‘the time-tested definitions of an investment contract and are thus under the securities laws’”,¹⁰⁹ the more interesting question is to what extent entrepreneurs can do *other* business with cryptocurrencies without falling foul of the securities laws and regulations. The SEC’s own 2019 guidance document *Framework for “Investment Contract” Analysis of Digital Assets*¹¹⁰ is of limited help in this regard. In this document the SEC purports to “provide a framework for analyzing whether a digital asset is an investment contract and whether offers and sales of a digital asset are securities transactions.” Yet, the Commission really does not go beyond the *Howey* criteria of investment of money, common enterprise, and reasonable expectation of profits derived from efforts of others. Beyond that, “[w]hether a particular digital asset at the time of its offer or sale satisfies the *Howey* test depends on the specific facts and circumstances.” The only useful section of the guidance document lists some characteristics that make it *unlikely* that the *Howey* test is met:

- The distributed ledger network and digital asset are *fully developed and operational*.

a final judgment for disgorgement of all ill-gotten gains, payment of civil money penalties, as well as “prohibiting Defendants from participating in any offering of digital asset securities pursuant to Section 21(d)(5) of the Exchange Act [15 U.S.C. § 78u(d)(5)]”. See *Securities and Exchange Commission v. Telegram Group Inc. et al.*, Complaint 19 Civ. 9439 of 11 October 2019, United States District Court Southern District of New York.

107 SEC Release No. 10956 of 14 July 2021. In a materially similar case, John McAfee was charged with recommending at least seven initial coin offerings of third parties to his hundreds of thousands of followers on Twitter without disclosing that he was being paid to promote these ICOs; see *Securities and Exchange Commission v. John David McAfee et al.*, Complaint 20 Civ. 8281 of 5 October 2020, United States District Court Southern District of New York. In other promotion cases, the actor Steven Seagal (SEC Release No. 10760 of 27 February 2020), the boxer Floyd Mayweather (SEC Release No. 10578 of 29 November 2018), and the music producer DJ Khaled (SEC Release 10579 of 29 November 2018) received a cease-and-desist orders. See also the cease-and-desist order against ICO Rating, SEC Release No. 10673 of 20 August 2019. The relevant provision is Sec. 17(b) of the Securities Act which makes it unlawful for any person to accept payment in exchange for the promotion of a security without disclosing the payment to the target audience.

108 As an example, an order pursuant to Sec. 12(k) of the Securities Exchange Act of 1934 was entered against IBITX Software Inc., see SEC Release No. 83084 of 20 April 2018.

109 Ephrat Livni, *S.E.C. Chiefs From Left and Right Agree: Regulate Crypto*, New York Times, Friday 3 December 2021, at B3, emphasis added.

110 <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>.

- Holders of the digital asset are *immediately able to use it* for its intended functionality on the network, particularly where there are built-in incentives to encourage such use.
- The digital assets' creation and structure is designed and implemented to meet the needs of its users, rather than to feed speculation as to its value or development of its network. For example, the digital asset can only be used on the network and generally can be held or transferred only in amounts that correspond to a purchaser's expected use.
- Prospects for appreciation in the value of the digital asset are limited. For example, the design of the digital asset provides that its value will remain constant or even degrade over time, and, therefore, a reasonable purchaser would not be expected to hold the digital asset for extended periods *as an investment*.
- With respect to a digital asset referred to as a *virtual currency*, it can immediately be used to make payments in a wide variety of contexts, or acts as a substitute for real (or fiat) currency.
- This means that it is possible *to pay for goods or services* with the digital asset without first having to convert it to another digital asset or real currency.
- If it is characterized as a virtual currency, the digital asset actually operates as a *store of value* that can be saved, retrieved, and exchanged for something of value at a later time.
- With respect to a digital asset that represents *rights to a good or service*, it *currently can be redeemed within a developed network or platform* to acquire or otherwise use those goods or services. Relevant factors may include:
 - There is a correlation between the purchase price of the digital asset and a market price of the particular good or service for which it may be redeemed or exchanged.
 - The digital asset is available in increments that correlate with a consumptive intent versus an investment or speculative purpose.
 - An intent to consume the digital asset may also be more evident if the good or service underlying the digital asset can *only* be acquired, or more efficiently acquired, through the use of the digital asset on the network.
- Any economic benefit that may be derived from appreciation in the value of the digital asset is incidental to obtaining the right to use it for its intended functionality.
- The digital asset is marketed in a manner that emphasizes the functionality of the digital asset, and not the potential for the increase in market value of the digital asset.
- Potential purchasers have the ability to use the network and use (or have used) the digital asset for its intended functionality.
- Restrictions on the transferability of the digital asset are consistent with the asset's use and not facilitating a speculative market.

- If the AP facilitates the creation of a secondary market, transfers of the digital asset may only be made by and among users of the platform.¹¹¹

The SEC continues that “[d]igital assets with these types of use or consumption characteristics are *less likely* to be investment contracts.”¹¹² This will hardly be comforting for anyone seeking to develop a DLT or cryptocurrency business with activities in the United States. A good example is the SEC’s cease and desist order against *TokenLot*. The SEC did not make a distinction between coins or tokens that are securities and others that are not and ordered all coins and all tokens in all wallets of the corporation to be destroyed.¹¹³ Similarly, when *Munchee Inc.* announced an ICO for MUN utility tokens, the white paper stated that the company had done a “Howey analysis” pursuant to the SEC’s DAO report and that “as currently designed, the sale of MUN utility tokens does not pose a significant risk of implicating federal securities laws.”¹¹⁴ Since the token supply was limited and an increase in value was expected, the SEC disagreed with Munchee’s analysis and stated that even if the tokens “had a practical use at the time of the offering, it would not preclude the token from being a security.”¹¹⁵ In the 2021 case of the DeFi company *Blockchain Credit Partners*, the SEC treated interest bearing asset tokens and governance tokens equally as unregistered securities, forced the business to shut down and return the funds raised in the sale, and fined the owners.¹¹⁶ The list goes on.

The status quo may be summarized as follows: Digital coins offered for fundraising purposes or likely to increase in value because of limited supply and broadening use options can be referred to as *investment coins*. At present, an ICO or any other sale of such coins is likely to be qualified as an investment contract by the SEC and needs to be registered. An issue of *utility tokens* not

111 SEC, *Framework for “Investment Contract” Analysis of Digital Assets*, <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>; emphasis added.

112 *Id.*

113 It is not entirely clear, however, whether the SEC *demand*ed that all coins and tokens are to be treated equally or whether the unregistered broker-dealer was poorly advised and voluntarily agreed to go beyond what might have been required by law. The SEC accepted the following “undertakings” from the respondents:

A. Retain at their own expense a qualified independent intermediary (the ‘Independent Intermediary’) not unacceptable to the Commission staff and require the Independent Intermediary to:

1. Take possession of all remaining digital tokens in TokenLot’s inventory (‘Current Inventory’);

2. Take possession of all digital tokens that TokenLot has paid for but not yet received (‘Pending Inventory’);

3. Destroy the digital tokens in the Current Inventory within 30 days of the date of this Order and Pending Inventory within 30 days of receipt by TokenLot; and

4. Provide the Commission staff with written documentation that demonstrates the completion of the steps of Paragraphs 16.A.1 – 3 above. [...]” <https://www.sec.gov/litigation/admin/2018/33-10543.pdf>, at p. 6.

114 SEC Release No. 10445 of 11 December 2017, at 3-4.

115 *Id.*, at 9.

116 <https://www.sec.gov/news/press-release/2021-145>.

intended as currency¹¹⁷ is still likely to be qualified as an investment contract by the SEC if the token supply is limited and the tokens are traded on exchanges and there may be an expectation of increase in value. The same may be true for *non-fungible tokens (NFTs)*, if they are easily traded and there is an expectation of increasing value.¹¹⁸ The situation is different mainly for coins or tokens that cannot increase in value, making them unsuitable for speculative investments. The main examples are *stable coins*, as well as coins or tokens with unlimited supply or fixed prices that function more like gift cards or prepaid vouchers.

Entrepreneurs planning to sell goods or services for cryptocurrency and unsure whether they need to register with the SEC can ask for a “No-Action Letter” from the Commission.¹¹⁹ The applicants need to provide a detailed description of their business model and arguments why it would not be in violation of the securities laws and regulations. However, “[t]he no-action process can be time consuming, and the SEC staff has no obligation to consider every no-action

117 Different definitions have been offered for coins and tokens. Some definitions rely on differences in technology, namely that a coin is running on its own Blockchain (Bitcoin, Ether, etc.), while a token is running on another Blockchain, e.g. ERC-20 tokens running on the Ethereum Blockchain. Other definitions look at the functionality, where coins are intended to have much of the functionality of a currency, i.e. a widely accepted medium of exchange and store of value, while tokens are application-specific for a particular business and can be traded only for goods and services of that business. However, the terminology has not been consistently used and many of the buyers of cryptocurrencies are either unaware of or indifferent to these distinctions.

118 To the best of my knowledge, the SEC has not expressed an opinion yet about the sale of non-fungible tokens or NFTs, whether or not a trading platform for NFTs would need to be registered with the SEC. However, at least Forbes is speculating that “[w]here financial innovation goes, the SEC is bound to follow”, in an article entitled “Digital Art May Be Next in the SEC’s Crosshairs” (<https://www.forbes.com/sites/insider/2021/07/15/digital-art-may-be-next-in-the-secs-crosshairs/?sh=698f690a32df>).

119 <https://www.investor.gov/introduction-investing/investing-basics/glossary/no-action-letters>. For a practical example see the no-action letter issued to *Turnkey Jet Inc.* of Palm Beach, Florida on 2 April 2019. Turnkey “propose[d] to offer and sell blockchain-based digital assets in the form of ‘tokenized’ jet cards (‘Tokens’). [...] Turnkey] propose[d] to launch a Token membership program [...] and develop a Token platform [...] to facilitate Token sales for air charter services via a private blockchain network [...]. [...] There will be three types of users of the Platform [...]. Users who buy Tokens to consume air charter services are consumers [...]. Users who take part on the Platform by brokering charter flights between Consumers and carriers are brokers [...]. Users who deliver charter flights directly to Consumers via the Platform with their own fleet of planes are carriers [...]. All Members will be required to pay membership subscription fees to take part in the Program and purchase Tokens. [...]”; see <https://www.sec.gov/divisions/corpfm/cf-noaction/2019/turnkey-jet-040219-2a1-incoming.pdf>. Although other businesses of similar features and complexity have come under less friendly scrutiny of the SEC, a no-action letter was issued in the present case. The most likely explanation is the fact that Turnkey promised to always only sell and redeem the tokens at the price of US\$ 1. This really just made them analogous to pre-paid vouchers or gift cards. The open question is whether the SEC (and the CFTC?) would remain disinterested if Turnkey at some point offered discounted cards for future travel, for example sell US\$10,000 tokens for US\$5,000, provided they would not be used during busy blackout times or not before a certain waiting time, let alone if a secondary market were to develop on which the discounted tokens would be tradeable at market rates. Without those kind of evolutionary changes, however, the real question is whether Turnkey’s tokens should even have qualified as securities; to that effect see Commissioner Hester Peirce, *How We Howey*, 9 May 2019, <https://www.sec.gov/news/speech/peirce-how-we-howey-050919>.

request. The no-action relief [if any] is provided only to the requester [and only] based on the specific facts and circumstances detailed in the request letter.”¹²⁰ If the business model evolves during the implementation, the letter is worthless. Furthermore, “the SEC staff reserves the right to change the positions reflected in prior no-action letters.”¹²¹

One could of course ask whether the SEC’s lack of clarity on what is and what is not a security and a business in need of registration, and by implication the notion that anything in the crypto space might be, is caused more by the difficulties of understanding the technology and figuring out how to regulate it,¹²² or by a desire to assert current influence and power and to project influence and power into a future where the financial markets will inevitably be shared with, if not dominated by digital money businesses.¹²³

While we probably want the SEC to exercise *some oversight* of the crypto markets, the current approach makes it *almost impossible* to develop any kind of legitimate business dealing with cryptocurrency and smart contracts and soliciting partners and investors in the U.S. for anyone without massive financial resources. I will argue that the legal basis for this approach is at best shaky, that the Howey Test gives poor guidance for the sale of cryptocurrencies, and that there are better ways of protecting consumers and markets.

Traditionally, the market primarily distinguished three types of securities: equity and equity interests (shares) providing ownership rights to investors, debt (notes, bonds), and combinations thereof. According to the SEC, a Blockchain enterprise engaging in an initial coin offering (ICO) for fundraising purposes is to be equated with a traditional enterprise engaging in an initial public offering (IPO) and listing its shares on one or more public exchanges. However, the Blockchain enterprise is selling neither ownership rights, nor rights to dividends or profit shares, nor promises of future repurchase or repayment. In many ways, the Blockchain enterprise more closely resembles a budding artist whose early masterworks are snatched up by investors hoping they will be sellable years later at great profit. In both cases, the current value of the coins or artworks is highly subjective and untethered from any objective standards or measures. In both cases, after the transaction is complete, the parties go their separate ways with one side keeping the fiat money and the other side the crypto coins or the artworks, and the complete freedom to do with their respective property as they please. In both cases, the buyer of the coins or artworks

120 See Stabile, Prior & Hinkes, *supra* note 7, at 175.

121 *Id.*

122 However, Gary Gensler, the current chair of the SEC, used to teach *Blockchain Basics & Cryptography* at the Massachusetts Institute of Technology (MIT) Sloan School of Management and, from 2009 to 2014, served as chairman of the Commodity Futures Trading Commission. He clearly knows what is talking about. More importantly, the SEC created a special Cyber Unit in 2017 focusing inter alia on “[m]arket manipulation schemes involving false information spread through electronic and social media [...and] [v]iolations involving distributed ledger technology and initial coin offerings”; see <https://www.sec.gov/news/press-release/2017-176>

123 For very interesting reflections on strategies and power games at Federal agencies see Brigham Daniels, *When Agencies Go Nuclear: A Game Theoretic Approach to the Biggest Sticks in an Agency’s Arsenal*, 80 Geo. Wash. L. Rev. 442 (2012).

has no claims whatsoever against the creator of those coins or artworks for any further goods or services or shares or profits, let alone compensation of any losses. Nevertheless, in both cases, subsequent professional success or failure of the creator can have a decisive impact on the valuation of the coins or artworks. As a result, both purchases are highly risky and should certainly not be made with borrowed money. The only difference between the two transactions is the fact that the buyer of the art usually obtains a tangible object that she can enjoy while waiting for the value to go up. However, even that difference has been obliterated by art collectors who keep their collection packed away in offshore vaults. To give but one example, the Free Port of Geneva is said to hold about 1.2 million artworks with a combined value in excess of US\$ 100 Billion – including about a thousand Picassos – in a “museum with no visitors”.¹²⁴ Although the owners of these treasures never actually get to see them and primarily keep them for speculative purposes,¹²⁵ no one in their right mind would say that the artists need to register their individual works as securities before they can sell their creations to the public or that such a sale would qualify as an “investment contract.” And for anyone thinking that artworks are unique while crypto coins are fungible, let us throw limited editions of art prints or photographs into the conversation on the one side and non-fungible tokens (NFTs) on the other.

The case is only marginally different for Blockchain companies selling tokens instead of coins. If the Blockchain company promises to redeem the tokens at a later date with a specific, or at least identifiable amount of goods or services, the definition of a security would be met because the tokens would in effect be notes, or bonds, or other evidence of indebtedness. By contrast, if the Blockchain company is selling tokens and merely promises to accept those tokens at a later date in exchange for an amount of goods or services determined by the token’s market value, this cannot seriously be considered a loan agreement or sale of an ownership interest. By contrast to a security future, such a token sale does not contain a specific quantity or value. And by contrast to an options contract, such a token sale does not specify a strike price or other specific value, nor an expiration date or even a specific promise that any goods or services will be available at any specific time or price. In reality, the buyer of a digital token is in the same shoes as the buyer of a digital coin, or the buyer of a work of art, namely hoping that the acquisition will be tradeable – preferably at a higher value – at a future time and place that is quite unspecified and even unforeseeable.

The distinction between coins and tokens was emphasized by Blockchain companies only after authorities like the SEC announced that they would treat ICOs much like IPOs and coins like securities. In response, some technology companies called their cryptocurrencies “utility tokens,” suggesting that they would not be tradeable like currency but only redeemable with the issuer, similar to gift cards or prepaid vouchers. However, the difference between coins and tokens is largely an artificial distinction that the market has not taken up. Once they are traded on major

124 See Marie-Madeleine Renaud, *Geneva Free Port: The World’s Most Secretive Art Warehouse*, THE COLLECTOR, 1 May 2021, available at <https://www.thecollector.com/geneva-free-port-the-worlds-most-secretive-art-warehouse/>.

125 Alternatively, the owners are engaged in tax evasion or money laundering. Since those, however, are illegal purposes, they will all agree that they are merely interested in value appreciation.

exchanges, there is little difference between cryptocurrencies that originally emerged as coins and others that originally emerged as tokens, and both may go up or down in value, meeting the SEC definition of an “investment contract.”

The fact that issuers of coins and tokens usually publish some kind of “white paper” describing their human- and other resources and their business plan, does not impact this analysis either. Although one could argue that the white papers are supposed to convince investors of the commercial potential of the venture and therefore are a kind of prospectus, they neither fulfill the requirements of a prospectus, nor do they pursue exactly the same goals.¹²⁶ More importantly, the rule is that issuers of any kind of securities in the U.S. necessarily have to file a prospectus. The rule is not that issuers of any kind of prospectus necessarily become issuers of securities.

What is so bad, we may ask, if a Blockchain business needs to register with the SEC? After all, there have been quite a few cases of fraud and/or spectacular failures of business ventures in the crypto space. There are two problems however. First, the SEC registration process is complex, time consuming, and expensive. Second, the outcome may very well not justify the expenditure.

Prospective issuers of securities generally have to register with the SEC pursuant to Sections 6 to 8 of the Securities Act,¹²⁷ using form S-1,¹²⁸ unless they fall under one of the exemptions. Form S-1 has to be accompanied by a prospectus that meets the requirements outlined in Sec. 10 of the Act and the Form itself.¹²⁹ Extensive annexes with exhibits pursuant to 17 CFR § 229.601¹³⁰ and financial statements pursuant to 17 CFR Part 210¹³¹ are also required, which makes the registration so complex and costly. Once Form S-1 is filed, the SEC engages in a complex review procedure, typically involving a back-and-forth of questions and clarifications with the applicant. Pursuant to Sec. 5, securities can only be issued after the SEC has declared the registration “effective.” Once an IPO is completed, there are various disclosure and regular filing requirements for as long as the company remains in business.¹³²

126 A prospectus pursuant to the Securities Act is a required step in the registration process for securities to be publicly sold in the U.S. By contrast, a white paper is providing less formalized information to potential investors in many countries and is not a part of any formal procedure of approval or registration in any jurisdiction.

127 <https://www.govinfo.gov/content/pkg/COMPS-1884/pdf/COMPS-1884.pdf>. For details, see Marc Steinberg, *Understanding Securities Law*, Carolina Academic, 7th ed. 2018, at 125-152 and 51-124.

128 <https://www.sec.gov/files/forms-1.pdf>.

129 “In the prospectus, the ‘issuer’ of the securities must describe in the prospectus important facts about its business operations, financial condition, results of operations, risk factors, and management. It must also include audited financial statements.” See American Bar Association (ABA), *What Constitutes a Security and Requirements Relating to the Offer and Sales of Securities and Exemptions From Registration Associated Therewith*, 27 April 2017, https://www.americanbar.org/groups/business_law/publications/blt/2017/04/06_loev/.

130 <https://www.law.cornell.edu/cfr/text/17/229.601>.

131 <https://www.law.cornell.edu/cfr/text/17/part-210>.

132 For additional details, see Steinberg, *supra* note 127, at 153 et seq.

Somewhat different procedures apply to broker-dealers¹³³ and exchanges.¹³⁴ The threshold for national securities exchanges pursuant to Section 6 of the Securities Exchange Act of 1934 is particularly high and to date, no crypto exchange has successfully registered.

Several exemptions for issuers of securities can be of interest in the context of cryptocurrency businesses and ICOs. *Rule 506 of Regulation D* – the Exemption for Limited Offers and Sales Without Regard to Dollar Amount of Offering¹³⁵ – provides two exemptions that can be used by issuers of securities. The first option is Rule 506(b). A company relying on this exemption can sell an unlimited number of securities to “accredited investors”¹³⁶ and to up to thirty-five non-accredited investors.¹³⁷ Under this Rule, however, the company is not allowed to market or advertise an ICO to the public. The second option is Rule 506(c). A company relying on this exemption can market and advertise an ICO but sell only to accredited investors. The company has to verify the status of the investors; for example, by reviewing bank and brokerage statements. Under both options, the securities are restricted. They cannot be sold for six months or a year unless they are being registered. Moreover, a company wanting to avail itself of Rule 506 needs to file a Form D with the SEC after selling securities. In this form it must disclose details about the company. Last but not least, the offering for sale of the securities might have to be filed with State regulators.

Regulation A+ was created by the SEC based on a mandate in the *Jumpstart Our Business Startups (JOBS) Act of 2012* to make it easier for startup companies to conduct crowdfunding and certain limited public offerings, as an alternative to a full-scale IPO.¹³⁸ Regulation A predated the JOBS Act but was limited, after the most recent amendment in 1992, to a maximum of US\$ 5 Million. On the basis of the JOBS Act, the limit was initially raised to US\$ 50 million in

133 See Form BD, <https://www.sec.gov/files/formbd.pdf>; and see <https://www.sec.gov/reportspubs/investor-publications/divisionsmarketregbdguidehtm.html>.

134 See Form 1, <https://www.sec.gov/files/form1.pdf>. Under certain conditions, “alternative trading systems” with a broker-dealer registration can be exempt from registering as exchanges and need only notify the SEC with form ATS when beginning trading operations.

135 <https://www.law.cornell.edu/cfr/text/17/230.506>.

136 Accredited investors are natural persons with “earned income that exceeded \$200,000 (or \$300,000 together with a spouse or spousal equivalent) in each of the prior two years, and reasonably expects the same for the current year, OR has a net worth over \$1 million, either alone or together with a spouse or spousal equivalent (excluding the value of the person’s primary residence), OR holds in good standing a Series 7, 65 or 82 license” (<https://www.investor.gov/introduction-investing/general-resources/news-alerts/alerts-bulletins/investor-bulletins/updated-3>). The respective licenses are financial professional licenses obtained after an examination by FINRA (Series 7 and 82) or the North American Securities Administrators Association (NASAA) (Series 65). A trust with assets in excess of US\$ 5 Million and certain other legal persons can also be accredited investors.

137 Even the non-accredited investors have to be “financially sophisticated”; for more information see SEC Investor Bulletin: Private Placements Under Regulation D, 24 September 2014, https://www.sec.gov/oiea/investor-alerts-bulletins/ib_privateplacements.html.

138 For detailed analysis see David Feldman, *Regulation A+ and Other Alternatives to a Traditional IPO*, Wiley 2018.

2015. Since 2021, small and medium sized businesses and entrepreneurs have a choice between Tier 1 (offerings up to US\$ 20 Million) and Tier 2 (offerings up to US\$ 75 Million). Only companies incorporated in the United States or Canada can avail themselves of this exemption. Both Tiers allow public solicitations. In a Tier 2 offering, securities can only be sold to accredited investors or to natural or legal persons who meet certain income criteria.¹³⁹ For both types of offerings, the issuer has to file Form 1-A.¹⁴⁰ For Tier 2, the requirements of the filing are stricter. Another important detail is that a Tier 1 offering does not preempt State registration and qualification requirements. By contrast, an offering filed with the SEC under Tier 2 does preempt State restrictions or requirements.¹⁴¹

The Tier 2 exemption in Regulation A+ is an attractive alternative to a regular filing with use of Form S-1, in particular since the issuer need not concern herself with parallel requirements at the State level. However, even under Regulation A+, the procedure is complicated, time consuming, and costly. As a result, it will rarely be worthwhile for a company to go through this procedure unless the issuer is planning – and confident – to sell securities for at least US\$ 5 Million. Unsurprisingly, even the exemptions to a full SEC registration have seen little use by cryptocurrency businesses. Cointelegraph commented in 2020: “The Death of the ICO: Has the US SEC Closed the Global Window on New Tokens?”¹⁴²

Highly restrictive and costly procedures may well be worthwhile if they actually accomplish significant benefits for investors and markets. However, this is questionable. Registration with the SEC secures a high level of transparency and a certain level of standardization of information provided to the public. It does not provide any kind of quality seal of approval for the proposed business model because the SEC does not evaluate a prospectus on the merits.¹⁴³ As a consequence, issuers with deep pockets can register almost any business for an IPO or ICO, including hare brained investments. By contrast, startups with viable use cases for cryptocurrencies but limited funding are largely excluded from the capital markets and/or pushed into offshore

139 §230.251(d)(2)(i)(C) provides that “the aggregate purchase price to be paid by the purchaser for the securities (including the actual or maximum estimated conversion, exercise, or exchange price for any underlying securities that have been qualified) is no more than ten percent (10%) of the greater of such purchaser’s: (1) Annual income or net worth if a natural person (with annual income and net worth for such natural person purchasers determined as provided in Rule 501 (§ 230.501)); or (2) Revenue or net assets for such purchaser’s most recently completed fiscal year end if a non-natural person.” (<https://www.law.cornell.edu/cfr/text/17/230.251>)

140 <https://www.sec.gov/files/form1-a.pdf>.

141 <https://www.federalregister.gov/documents/2021/01/14/2020-24749/facilitating-capital-formation-and-expanding-investment-opportunities-by-improving-access-to-capital>.

142 <https://cointelegraph.com/news/the-death-of-the-ico-has-the-us-sec-closed-the-global-window-on-new-tokens>. Technology writer Brian Schuster recently added that “[m]ost ICOs do their best to avoid being seen as a security. If they have to register as a security, most of the incentives to do an ICO vanish”; see <https://www.quora.com/Must-an-ICO-be-registered-with-the-SEC-before-the-ICO-begins-or-can-it-register-during-the-ICO>.

143 See Stabile, Prior & Hinkes, *supra* note 7, at 191. SEC Commissioner Peirce used the very apt term “disclosure regulator” for the SEC, see Hester Peirce, *supra* note 1 (emphasis in original).

jurisdictions.¹⁴⁴ We only need to look at the treatment of SPACs by the SEC to see that big money rules and usually gets whatever it wants. Special Purpose Acquisition Companies (SPACs) are empty shell companies with no operations. They are created to collect investor funding and to subsequently acquire a target that will supposedly produce significant profits for the investors. Since SPACs are typically backed by deep-pocketed interests, they register with the SEC without problems, although there is literally no useful information available for potential investors since the companies have no operations to date and do not know – or at least do not disclose at the time of the IPO – any investment targets they may go after. Indeed, in many cases, a SPAC may be deliberately used to reduce disclosure of information and potential liabilities of the operators and targets.¹⁴⁵ At least in the opinion of this reviewer, an ICO by a real company with real officers, employees, and a white paper that meets basic standards of transparency and disclosure for an actual business idea is *per se* safer for investors than a SPAC.¹⁴⁶ Nevertheless,

144 Under SEC Regulation S (17 CFR § 230.901-905), offshore offers and sales of securities do not have to be registered under the Securities Act. To benefit from this exemption many Blockchain businesses exclude customers domiciled in the U.S. from purchasing their cryptocurrencies. The exclusion has to be comprehensive, however, and include indirect distributions and resales into the United States; *see* SEC Release No. 33-7505; 34-39668; File No. S7-8-97 International Series Release No. 1118; RIN 3235-AG34 Offshore Offers and Sales. Concrete examples of crypto exchanges and other Blockchain businesses trying to avoid the U.S. regulatory mess can be found via links on the Ethereum website. For example dYdX excludes any and all customers from the United States; Loopring DEX does not serve residents of New York State, while residents of other States of the U.S. seem to be okay. Yet others include terms with complicated disclaimers that the average customer will not be able to assess appropriately to ensure compliance. Uniswap, although based in New York City, discloses that “We are not registered with the U.S. Securities and Exchange Commission as a national securities exchange or in any other capacity. You understand and acknowledge that we do not broker trading orders on your behalf nor do we collect or earn fees from your trades on the Protocol. We also do not facilitate the execution or settlement of your trades, which occur entirely on the public distributed Ethereum blockchain.” Whether this will insulate the exchange or its users from SEC interventions remains to be seen. However, the fact that an exchange like Uniswap, with an average daily trading volume of more than US\$ 200 Million and a current market valuation of Billions of dollars does not get an SEC registration and prefers to operate with a considerable measure of legal uncertainty should be ample evidence that full compliance is too hard and expensive. *See also* manifold registrations and licenses maintained by FTX US, *infra* note 218 and accompanying text.

145 *See* John Coates, *SPACs, IPOs and Liability Risk under the Securities Laws*, SEC News, 8 April 2021; <https://www.sec.gov/news/public-statement/spacs-ipos-liability-risk-under-securities-laws>.

146 For example, *Digital World Acquisition Corp.* was created to raise money from investors “for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization, or similar business combination with one or more businesses.” (https://www.sec.gov/Archives/edgar/data/000184-9635/000110465921071982/tm2117087d1_s1.htm). In its original filing with the SEC, the company declared that it had “not selected any specific business combination target” and that it would “focus [...] on middle-market emerging growth technology-focused companies in the Americas, in the SaaS and Technology or Fintech and Financial Services sector.” (*Id.*) In the filing, the company put in bold characters the following warning: “We are an ‘emerging growth company’ under applicable federal securities laws and will be subject to reduced public company reporting requirements. Investing in our securities involves a high degree of risk. [...] Investors will not be entitled to protections normally afforded to investors in Rule 419 blank check offerings. Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or

the SEC is playing a game of whack-a-mole with every technology company that is trying to start a business involving the sale of cryptocurrency while it is happily registering SPACs and other business ideas coming out of the traditional banking and finance industry.

The argument that the SEC would not be able to conduct an assessment of the merits and, therefore, has to limit oversight to formal criteria, is undermined by the fact that multiple State regulators are actually conducting merit review to ensure that an offering has merit, although they have far more limited resources than the SEC.¹⁴⁷

Finally, although the registration process costs plenty of time and money, the SEC does not even review whether the disclosures are true. The review is a formal procedure and the main sanction for incorrect claims are ex post facto sanctions that may or may not restore losses incurred by investors. For example, while the SEC ordered disgorgement of profits of more than US\$ 40 Million in the BTCST/Shavers case,¹⁴⁸ Mr. Shavers was basically bankrupt by then and the

complete. Any representation to the contrary is a criminal offense.” (*Id.*) After successfully raising over US\$ 300 Million, it merged with Trump Media and is now focusing on the development of Trump’s *Truth Social* media platform. The SEC is investigating “whether Digital World Acquisitions flouted securities regulations in planning its merger with Trump Media.” See, Matthew Goldstein & Ryan Mac, *Trump’s Truth Social Platform Is Poised to Join a Crowded Field*, New York Times 22 February 2022, at B2.

147 Philip Feigin has pointed out in this regard, “[a]t least one ‘elephant in the room’ in the Reg. A+ debate was ‘merit review,’ the ‘M’ word. [...] Merit review was the heart and soul of the original ‘blue sky’ laws, the authority of state securities administrators to deny securities registration to an offering that, in the administrator’s view, was ‘unfair, unjust or inequitable’ to, or [by promising the blue sky] would ‘tend to work a fraud’ on investors. At its height in the ’70s and ’80s, about 36 states applied merit review standards to new offerings already reviewed for disclosure by the SEC. [...] The goals of merit review are among the most misunderstood in American finance, by critics and perhaps state regulators both. Detractors scoff at the idea that some state examiner in ‘East Dakota’ can predict whether a company will be a good or bad investment, whether the investor will make or lose money. But that is not the idea. Merit standards are intended to make an investment ‘fair’ to the investor. It is not intended to be a predictor of profitability (although one can argue it makes an offering more attractive). Two classic (and often the most nettlesome for issuers) examples of merit guidelines relate to repayment of principal loans and ‘cheap stock.’ Merit states place tight restrictions on issuers using investors’ money, offering proceeds, to pay off prior loans made to the company by its principals. Instead, offering proceeds must be applied to the company’s operations, to generation of revenue and, with luck, profits. Also under merit review, company insiders are required to place some or all of their promoters’ shares aka ‘cheap stock’ (shares they received from the company for nothing or at a price much lower than the price investors will pay for the registered shares) in escrow until such time as the overall value of the company has increased in an amount proportional to that ‘cheap stock’/public price differential.” See Philip Feigin, *SEC’s New Regulation A+ and the States’ M Word (Merit Review)*, The National Law Review 2015, <https://www.natlawreview.com/article/sec-s-new-regulation-and-states-m-word-merit-review>.

While repayment of “loans” after an ICO may not always be present, founders receiving a percentage of the total supply as vested coins or tokens is pretty much standard operating procedure.

However, as Steinberg explains, the SEC does not even have the authority to prevent an offering from going to market just because it would be a highly speculative investment unlikely to succeed; see Steinberg, *supra* note 127, at 125.

148 *Supra* notes 94-98 and accompanying text.

victims received little or nothing. The fact that Shavers went to prison had to be sufficient consolation.

In the end, the SEC's oversight of the crypto markets has mainly achieved one thing: The respective businesses are largely unable to operate legally in U.S. markets. Instead, they move offshore or into the shadows. Some do and some don't exclude U.S. buyers from coin sales and other transactions.¹⁴⁹ However, in pretty much all the cases, the U.S. has lost the ability of providing actual oversight and meaningful investor protection. Any companies remaining in the U.S. and trying to be in full compliance struggle under the weight of overlapping regulation of limited usefulness.¹⁵⁰

Next, we will look at taxation. Things are not much clearer there.

After the CFTC classified cryptocurrencies as *commodities*, and the SEC classified them as *securities*, the Treasury Department, more specifically its Financial Crimes Enforcement Network (FinCEN), classified them as *currency*.¹⁵¹ By contrast, the United States Internal Revenue Service (IRS), also part of the Treasury Department, decided that cryptocurrencies are *not currency* for taxation purposes but are *property* instead.¹⁵² This has significant consequences for the tax treatment of cryptocurrencies and Blockchain businesses. First, anybody buying and selling crypto, is liable for capital gains taxes on an increase in value at the time the crypto is sold. For example, if a person buys Bitcoin at US\$ 20,000 and sells it at US\$ 30,000, she has realized a capital gain of US\$ 10,000 per coin. The tax rate depends whether the crypto was held for over a year or not. The long-term capital gains rate is generally more favorable. While the IRS would have been very happy with its classification during the time when most cryptocurrencies experienced strong appreciation in value, the corollary to the classification as property is that a decline in value between the acquisition and the sale can also be deducted from taxes as a loss and can be used to offset gains in other crypto transactions during the same tax year.¹⁵³

149 *Supra* note 144.

150 *Infra*, note 244 and accompanying text.

151 The *Anti-Money Laundering Act of 2020* (Division F of Pub. L. 116-283) entered into force on 1 January 2021. It defines "monetary instruments" as used in the *Bank Secrecy Act (BSA)*, as United States coins and currency. However, the Secretary of the Treasury "may prescribe by regulation, coins and currency of a foreign country, travelers' checks, bearer negotiable instruments, bearer investment securities, bearer securities, stock on which title is passed on delivery, and similar material" to also be monetary instruments. FinCEN proposed by regulation that convertible virtual currencies (CVCs) and digital assets with legal tender status (LTDA) are "similar material". FinCEN elaborated that "pursuant to 31 U.S.C. 5312(a)(3)(D), CVC and LTDA are both value that substitute for currency and are therefore 'monetary instruments' under the BSA." (<https://www.federalregister.gov/documents/2021/01/15/2021-01016/requirements-for-certain-transactions-involving-convertible-virtual-currency-or-digital-assets>).

152 See <https://www.irs.gov/businesses/small-businesses-self-employed/virtual-currencies>, in particular the IRS Virtual Currency Guidance in IRS Notice 2014-21 (https://www.irs.gov/irb/2014-16_IRB#NOT-2014-21).

153 The IRS also confirmed that a wallet owner who purchased different amounts of a particular coin at different times for different prices can determine which of those are sold at a subsequent sales transaction. For example, if a wallet owner purchased 10 Bitcoin at US\$ 5,000, another 10 at US\$ 10,000 and another

Furthermore, direct cost related to the transactions, in particular gas fees and potentially fees related to the wallet and registration on an exchange, are also deductible expenses.

The acquisition of crypto currency may also be taxable as income. If a wallet owner acquires digital assets for free, for example in an airdrop, after a hard fork, or as a gift, she has to report the transaction as income. If an employee is partially paid in crypto, she has to report this as income and the employer may have withheld Federal income tax and report the income on Form W2. If an individual or a company are selling goods or services in exchange for crypto, they have to account for the income and can deduct their expenses. The same is true for miners, who have to report the fair market value of the income at the time when the mining is successful and the crypto is credited. Of course, the miner can also deduct her expenses, in particular the cost of acquiring and operating the computers used in the mining efforts.

Last but not least, the funds raised in an ICO are subject to income tax as long as the sale is considered a sale of property. This is not the case for the sale of shares in a traditional IPO, although it is not clear why the two transactions should be treated differently for purposes of taxation other than the fact that the IRS says so. Furthermore, we have yet to figure out to what extent – if at all – operating expenses incurred prior to the ICO can be offset against the income from the ICO.

The value of the digital assets has to be reported at the time when the capital gains were realized or when the income was credited and they have to be reported in US dollars. This can cause a variety of challenges. First, the value of a particular coin or token can vary significantly in the course of a single day. A declaration is relatively straightforward if a transaction involves the purchase or sale of crypto in exchange for fiat, in particular US dollars. Ether purchased at US\$ 3,500 is entered at that price into the tax payer's records. Things are less clear if there is no direct fiat transaction, for example if the digital asset is acquired by mining or in an airdrop, or if the transaction involves the exchange of one coin for another (e.g., the purchase of ADA with ETH). The IRS speaks of "fair market value" but I doubt that it can expect the tax payer to account for the exact time when the decisive block is confirmed on the particular day for the determination of the value of the cryptocurrency. Second, there are plenty of digital assets for which there is no generally accepted "exchange rate" determined by major exchanges.

The IRS enforcement action against Coinbase may provide some direction for the approach that will likely be taken by the IRS in the foreseeable future. Coinbase is incorporated in San Francisco and, at least at the relevant time, was the largest cryptocurrency exchange serving U.S.

10 at US\$ 20,000, and then sells 10 at US\$ 30,000, the wallet owner can report US\$ 25,000, 20,000 or 10,000 as capital gain per coin by designating which lot was sold. See the answer to Question 39 in the Frequently Asked Questions on Virtual Currency Transactions, <https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions>. This can be of interest if at least one of the transactions would still fall under the short term capital gains tax rate. Furthermore, the tax payer can defer higher tax payments to later years or see whether the coins will still be as valuable when sold at a later time. What is less clear is the possibility of a tax payer to offset losses in crypto transactions against gains in other property transactions, for example in real estate or art sales.

customers. In 2017, it was active in 33 countries and had 5.9 Million customers with transactions of over US\$ 6 Billion. In 2016, the IRS

filed an ex parte petition pursuant to 26 U.S.C. § 7609(h)(2) for an order permitting the IRS to serve a ‘John Doe’ administrative summons on Coinbase [...] The Initial Summons sought ‘information regarding United States persons who at any time during the period January 1, 2013 through December 31, 2015 conducted transactions in a convertible virtual currency as defined in IRS Notice 2014-21.’ [...] It requested nine categories of documents including: complete user profiles, know-your-customer due diligence, documents regarding third-party access, transaction logs, records of payments processed, correspondence between Coinbase and Coinbase users, account or invoice statements, records of payments, and exception records produced by Coinbase’s AML system.¹⁵⁴

Coinbase refused to comply with the summons and the IRS agreed to narrow the request to

accounts ‘with at least the equivalent of \$20,000 in any one transaction type (buy, sell, send, or receive) in any one year during the 2013-2015 period.’ [...] The Narrowed Summons ‘do[es] not include users: (a) who only bought and held bitcoin during the 2013-15 period; or (b) for which Coinbase filed Forms 1099-K during the 2013-15 period.’¹⁵⁵

Nevertheless, even the narrowed summons, according to Coinbase, covered about 8.9 million transactions of some 14,355 account holders. Since Coinbase continued to refuse the broad request by the IRS, the court had to decide, *inter alia*, which pieces of information would have to be disclosed as “relevant” for the legitimate purpose of “ascertaining the correctness of any return, making a return where none has been made, determining the liability of any person for any internal revenue tax or ... collecting any such liability....”¹⁵⁶ In the end, the court agreed that Coinbase had to disclose some but not all of the requested information. Specifically, Coinbase was ordered to disclose,

for accounts with at least the equivalent of \$20,000 in any one transaction type (buy, sell, send, or receive) in any one year during the 2013 to 2015 period: (1) the taxpayer ID number, (2) name, (3) birth date, (3) address, (4) records of account activity including transaction logs or other records identifying the date, amount, and type of transaction (purchase/sale/exchange), the post transaction balance, and the names of counterparties to the transaction, and (5) all periodic statements of account or invoices (or the equivalent).¹⁵⁷

154 *United States v. Coinbase Inc. et al.*, Case No. 17-cv-01431-JSC, U.S. District Court, N.D. California.

155 *Id.*

156 *Id.*, the court referred to 26 U.S.C.A. § 7602, I.R.C. § 7602.

157 *Id.*

By contrast, the court found that “account opening records, copies of passports and driver’s licenses, all wallet addresses, all public keys for all accounts/wallets/vaults”, as well as “records of know-your-customer diligence, agreements or instructions granting a third-party access, control, or transaction approval authority, and correspondence between Coinbase and the user or any third party with access to the account/wallet/vault pertaining to the account/wallet/vault opening, closing, or transaction activity” were not relevant at the preliminary stage of the investigation. However, the court did not rule out IRS access to this information at later stages of an investigation into particular account holders.¹⁵⁸

What we can learn from the Coinbase case is the difficulty of anyone – whether it is a large crypto exchange or the IRS – to police millions of small transactions. In theory, “[u]nder Notice 2014-21, every time a US taxpayer buys a cup of coffee with virtual currency, that act constitutes a ‘selling of property’ that causes a gain or loss for tax purposes.”¹⁵⁹ In practice, the IRS will have to focus on larger transactions. However, the inability of our tax authorities to apply their own definitions consistently and their inevitable focus on major tax cheaters is just another example of the failure of our legislators and regulators to provide clear, comprehensive, consistent, and practical guidance for businesses in the Blockchain space, their users, and all tax payers.

By contrast to the SEC, the CFTC, and several other Federal agencies practically competing to regulate the crypto space, dynamic antitrust oversight by the *Federal Trade Commission (FTC)* and the *Commerce Department* is hardly to be expected in the foreseeable future, although one could certainly argue that market participants like the Ethereum Foundation already have the size and impact that could be relevant in this regard.¹⁶⁰ However, as is widely known, U.S. antitrust enforcement was essentially defanged under the influence of the Chicago School of Antitrust Law,¹⁶¹ a movement that was institutionalized during the Reagan administration.¹⁶² Since the

158 *Id.*

159 See Stabile, Prior & Hinkes, *supra* note 7, at 268.

160 For detailed analysis see, *inter alia*, Thibault Schrepel, *Blockchain + Antitrust – The Decentralization Formula*, Edward Elgar Publishing 2021. The specific argument that there is already a problematic concentration of market power in the DeFi space see Tom Barbereau, Reilly Smethurst, Orestis Papa-georgiou, Johannes Sedlmeir & Gilbert Fridgen, *Decentralised Finance’s Unregulated Governance: Minority Rule in the Digital Wild West*, 5 January 2022, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4001891. For international comparative analysis see Jay Modrall, *Blockchain and Antitrust*, in Matthias Artzt & Thomas Richter (eds.), *Handbook of Blockchain Law - a Guide to Understanding and Resolving the Legal Challenges of Blockchain Technology*, Wolters Kluwer 2020, at 415-443.

161 A good introduction to the Chicago School is provided by Richard Posner, *The Chicago School of Antitrust Analysis*, UPenn Law Review 1979, Vol. 127, at 925-948. The ideas found their way into Supreme Court doctrine beginning with *Brunswick v. Pueblo Bowl-O-Mat*, 429 U.S. 477 (1977); and *Continental T.V. v. GTE Sylvania*, 433 U.S. 36 (1977).

162 Under the influence of Robert Bork and his book *The Antitrust Paradox*, Reagan appointed William Baxter, an avowed critic of vigorous antitrust enforcement to head the antitrust division at the Justice Department and later even tried to get Bork onto the Supreme Court. For more information see Amy Klobuchar, *Antitrust – Taking on Monopoly Power from the Gilded Age to the Digital Age*, Alfred Knopf 2021. For a

1980s, antitrust oversight has been limping along in the U.S. with almost negligible impact. However, by now inefficiency and concentration of power in many key markets, as well as concentration of wealth and inequality in society at large,¹⁶³ has reached unprecedented and uncomfortable levels in the U.S. As a consequence, there have been calls for a renaissance of U.S. antitrust enforcement.¹⁶⁴ It remains to be seen where this will go.

III. THE GOVERNMENTS OF THE SEVERAL STATES OF THE UNION

Contrary to the United States Federal Government, quite many of the Several States have actually adopted specific legislation dealing with DLT technology and cryptocurrencies, and any individuals or corporations developing and distributing them.

Whenever new regulatory challenges are addressed by the Several States, two logical approaches are in competition. On the one hand, the States can adopt quite different approaches independent of each other and serve as *laboratories* of democracy as U.S. Supreme Court Justice Louis Brandeis put it as early as 1932.¹⁶⁵ The idea is that the best approach may be hard to predict in advance and it may be worthwhile trying out a number of different approaches to figure out what works (better) and what does not (so much). On the other hand, the States can seek to avoid conflicting rules and requirements that would create confusion and barriers to trade by developing a uniform approach. To that end, the *Uniform Law Commission* (ULC, also known as the National Conference of Commissioners on Uniform State Laws) was established in 1892 as a non-profit charged with the development of “non-partisan, well-conceived and well-drafted legislation”¹⁶⁶ in areas of State legislative powers where a high level of coordination between the States is desirable. ULC members are lawyers, judges, legislators, and academics appointed by State governments. Importantly, neither the ULC itself nor its members are endowed with any legislative powers. Instead, the uniform laws developed by the ULC are merely recommended for enactment by the Several States. The most widely known and most successful project of the ULC

de-politicized analysis see, e.g. Germán Gutiérrez and Thomas Philippon, *How EU Markets Became More Competitive Than US Markets: A Study of Institutional Drift*, No. w24700, National Bureau of Economic Research, New York 2018.

163 For an analysis how the Chicago School has favored capital at the expense of labor, in line with political intent of the policy authors, see Sandeep Vaheesan, *Accommodating Capital and Policing Labor: Antitrust in the Two Gilded Ages*, 78 Md.L. Rev. 766 (2019).

164 See, e.g., Maurice E. Stucke and Ariel Ezrachi, *The Rise, Fall, and Rebirth of the U.S. Antitrust Movement*, Harvard Business Review 2017 (<https://hbr.org/2017/12/the-rise-fall-and-rebirth-of-the-u-s-anti-trust-movement>); and Tim Wu, *After Consumer Welfare, Now What? The “Protection of Competition Standard in Practice*, Competition Policy International, 2018; Columbia Public Law Research Paper No. 14-608 (2018). An example for antitrust revival, albeit a problematic one, is provided by the draft *American Innovation and Choice Online Act* currently before the U.S. Congress. The act specifically targets a number of “covered platforms”, in particular Alphabet (Google), Apple, Meta (Facebook) and Amazon. For critical review see Richard Gilbert, *The American Innovation and Choice Online Act: Lessons from the 1950 Celler-Kevaufer Amendment*, Concurrentialiste, 27 January 2022.

165 See *New State Ice Co. v. Liebmann*, 285 U.S. 262 (1932), at 387.

166 <https://www.uniformlaws.org/aboutulc/overview>.

is the *Uniform Commercial Code (UCC)*, which has been adopted – with few exceptions – by all 50 States, the District of Columbia, and the U.S. Virgin Islands.

With regard to DLT and cryptocurrencies, the ULC has so far only had a limited impact. The *2017 Uniform Regulation of Virtual-Currency Business Act (URVCBA)*¹⁶⁷ was designed to provide a uniform statutory framework “for the regulation of companies engaging in ‘virtual-currency business activity,’ such as exchanging, transferring, or storing virtual currency; holding electronic precious metals or certificates of electronic precious metals; or exchanging digital representations of value within online games for virtual currency or legal tender.”¹⁶⁸ Depending on the type of services offered, individuals or companies are either exempt from the act, have to register, or have to obtain a license. The act was developed at the request of various stakeholders, including non-bank financial service providers interested in DLT and digital money, seeking legal certainty for their business models. Several provisions for the protection of consumers were included.¹⁶⁹ The act does not define virtual currency and is intended to cover all forms of digital assets. It has seven Articles¹⁷⁰ and takes up about twenty-five pages in print, single spaced and without prefatory note and comments. Although approved by the ULC and supported by the American Bar Association (ABA), only Rhode Island enacted it.¹⁷¹ The ULC’s *2018 Supplemental Commercial Law for the Uniform Regulation of Virtual-Currency Businesses Act* (“Supplemental Act”)¹⁷² was designed to incorporate UCC Article 8 on Investment Securities¹⁷³ into agreements made between virtual currency businesses and the users of their services,¹⁷⁴ and to avoid State legislation of cryptocurrencies that would be incompatible with UCC Article 9 on Secured Transactions.¹⁷⁵ It too was adopted only by Rhode Island.¹⁷⁶

167 <https://www.uniformlaws.org/viewdocument/final-act-with-comments-72?CommunityKey=e104aaa8-c10f-45a7-a34a-0423c2106778&tab=librarydocuments>.

168 <https://www.uniformlaws.org/committees/community-home?communitykey=e104aaa8-c10f-45a7-a34a-0423c2106778&tab=groupdetails>.

169 *Id.*

170 Article 1 General Provisions; Article 2 Licensure; Article 3 Examination; Examination Fees; Disclosure of Information Obtained During Examination; Article 4 Enforcement; Article 5 Disclosures and Other Protections for Residents; Article 6 Policies and Procedures; Article 7 Miscellaneous Provisions.

171 *See* Rhode Island Bill HB 5847/SB 753 of 2019.

172 <https://www.uniformlaws.org/viewdocument/final-act-with-comments-86?CommunityKey=fc398fb5-2885-4efb-a3bb-508650106f95&tab=librarydocuments>.

173 <https://www.law.cornell.edu/ucc/8>.

174 *See* Anita Ramasastry, President of the Uniform Law Commission, in her 29 January 2019 letter to Representative Tyler Lindholm, expressing the ULC’s concerns about Wyoming’s draft law SF 125. The letter is available at <https://www.uniformlaws.org/viewdocument/communications-with-wyoming-1?CommunityKey=e104aaa8-c10f-45a7-a34a-0423c2106778&tab=librarydocuments>.

175 <https://www.law.cornell.edu/ucc/9>.

176 *See* Rhode Island Bill HB 5847/SB 753 of 2019.

By contrast to the URVCBA, the ULC's 2019 *Revised Fiduciary Access to Digital Assets Act* (RUFADAA) was adopted widely by the Several States.¹⁷⁷ However, its scope and coverage is extremely limited. The act

governs access to a person's online accounts when the account owner dies or loses the ability to manage the account. A fiduciary is a person appointed to manage the property of another person, subject to strict duties to act in the other person's best interest. [...] The act allows fiduciaries to manage digital property like computer files, web domains, and virtual currency....¹⁷⁸

Beyond these model laws, the ULC has created a *Joint Study Committee on the Uniform Commercial Code and Emerging Technologies*. The UCC, while centrally developed by the ULC, is a model code that needs to be decentrally adopted and applied by the Several States. The question whether the UCC applies to Smart Contracts and other business transactions made electronically and secured on a Blockchain and/or involving a transfer of cryptocurrency is a question of State law. If such a question comes before a court in the U.S., a State court will apply its own State law and a Federal court will follow the Erie doctrine¹⁷⁹ and also apply State law. There is no such thing as a uniform Federal commercial law or law of contract. As a consequence, the answer whether and how the UCC applies to these kind of transactions could receive quite different answers depending on the State and the court where the question is litigated. In a way, the creation of the Committee is a preventive measure. The ULC is trying to prevent or at least reduce non-uniformity in the application of the UCC to the "emerging technologies" we are talking about.

The Committee has been discussing the desirability and/or necessity of an explicit expansion of *UCC Article 2 on Sales*¹⁸⁰ to cover contract formation through electronic agents/autonomous algorithms, sales of digital assets, transfer of digital currency, integration of the *Uniform Electronic Transactions Act (UETA)* and the *Electronic Signatures in Global and National Commerce Act (E-SIGN)*, as well as ownership and transfer of goods subject to Blockchain or DLT registration or identification.¹⁸¹ With regard to *UCC Article 2a on Leases*,¹⁸² the Committee

177 As of 1 January 2022, the RUFADAA was enacted by 47 States and territories, excluding only California, Louisiana, Oklahoma, and Puerto Rico.

178 <https://www.uniformlaws.org/committees/community-home?communitykey=f7237fc4-74c2-4728-81c6-b39a91ecdf22&tab=groupdetails>.

179 *Erie Railroad Co. v. Tompkins*, 304 U.S. 64 (1938).

180 <https://www.law.cornell.edu/ucc/2>.

181 ULC Joint Study Committee on the Uniform Commercial Code and Emerging Technologies – Suggested Approach to the Study Committee's Work Significant Issues that the Study Committee Might Consider, at pp. 1-2. <https://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=0bac4fae-3e0f-c7de-93e6-4a621e3608f1&forceDialog=0>. To get a better understanding of the issues see Larry di Matteo, Michael Cannarsa & Cristina Poncibò (eds.), *The Cambridge Handbook of Smart Contracts, Blockchain Technology and Digital Platforms*, Cambridge 2020, in particular Part II Contract Law and Smart Contracts, at 59-140.

182 <https://www.law.cornell.edu/ucc/2A>.

is largely looking at the same issues, as well as the question “whether a lessor should have the right to track, disable, and recover leased goods electronically and, if so, how.”¹⁸³ The fact that the ULC has assigned contract formation to the Study Committee should be seen as an indication that the application of the UCC is at least not beyond question.

The Committee is also examining whether *UCC Article 3 on Negotiable Instruments*¹⁸⁴ should be updated for “an environment in which treatment of written instruments is increasingly automated”, whether concepts of transfer, negotiation, holder in due course, note, and draft, can apply without modification to electronically recorded instruments, and whether Article 3 needs to be explicitly extended to cover payment in private currency.¹⁸⁵ Similar questions are raised with regard to *UCC Article 4 on Bank Deposits and Collections*.¹⁸⁶ Specifically, the Committee is looking at collection by non-bank payment-service providers, collection of electronically created items, and to what extent Article 4 should be “pruned back ... [to cover] only those matters not covered by federal law”.¹⁸⁷ Arguably, most cryptocurrency exchanges, and certainly the providers of DeFi services, are “non-bank payment service providers”, if they don’t qualify directly as banks. With regard to *UCC Article 4A on Funds Transfers*,¹⁸⁸ the Committee is examining “whether the provisions of Article 4A are satisfactory given new and emerging AI/processing applications” and, specifically, whether these provisions “can accommodate the use of distributed-ledger-based token transactions to clear and settle funds transfers”.¹⁸⁹ What may be of specific interest is the question “whether the security-procedure and loss-allocation provisions (§§ 4A-201 through 4A-203) are satisfactory given cybersecurity and increasing interloper fraud risks.” Under § 4A-201, banks can establish a “security procedure” to verify “that a payment order [...] is that of the customer”. If a payment order did not originate from the purported sender and was not sent by a third person authorized by the purported sender, the bank is protected if it followed the agreed upon security procedure and made the transfer in good faith, i.e. before it was notified of a data breach or that the payment order was otherwise made by an unauthorized third party. The only way the customer could overcome this rule is by providing positive evidence that the payment order was neither made by a person who had previously been granted power of attorney to act on behalf of the customer or access information to the security procedure, nor by a person who had gained such power or access in any other way from the customer, with or without the customer’s knowledge or fault. It should be quite easy to see that

183 ULC Joint Study Committee on the Uniform Commercial Code and Emerging Technologies, *supra* note 181, at 2.

184 <https://www.law.cornell.edu/ucc/3>.

185 ULC Joint Study Committee on the Uniform Commercial Code and Emerging Technologies, *supra* note 181, at 2-3.

186 <https://www.law.cornell.edu/ucc/4>.

187 ULC Joint Study Committee on the Uniform Commercial Code and Emerging Technologies, *supra* note 181, at 3.

188 <https://www.law.cornell.edu/ucc/4A>.

189 ULC Joint Study Committee on the Uniform Commercial Code and Emerging Technologies, *supra* note 181, at 3.

the customer will rarely, if ever, be able to prove that misappropriated passwords or access codes were not stolen from him or her but acquired elsewhere. We may just as safely assume that DLT financial service providers should be quite agreeable to the same level of protection. However, §4A-105 defines “bank” as “a person engaged in the business of banking and includes a savings bank, savings and loan association, credit union, and trust company.” This definition would not cover enterprises merely selling goods or services in exchange for cryptocurrency, nor the majority of currently existing exchanges. It would only cover those DeFi operators that are actually engaged in “the business of banking”.

The charge of the ULC Committee with regard to *UCC Article 5 on Letters of Credit*¹⁹⁰ is limited to questions of presentation of electronic drafts and other electronic documents and relevant in the context of Smart Contracts on a Blockchain that may be used in ways analogous to letters of credit. Similar considerations apply for *UCC Article 7 on Documents of Title*.¹⁹¹

The work of the Committee is most interesting and most difficult with regard to the remaining provisions of the UCC. *UCC Article 8 on Investment Securities*¹⁹² governs the ownership and transfer of securities. UCC § 8-103 stipulates that “(a) [a] share or similar equity interest issued by a corporation, business trust, joint stock company, or similar entity is a security. [...] (c) [an] interest in a partnership or limited liability company is not a security unless it is dealt in or traded on securities exchanges or in securities markets, its terms expressly provide that it is a security governed by this Article, [...]. However, an interest in a partnership or limited liability company is a financial asset if it is held in a securities account.” This definition is sufficiently flexible to accommodate the SEC approach that the sale of pretty much all cryptocurrencies, with the possible exception of stablecoins, is an issue of securities.¹⁹³ However, cryptocurrencies are typically held and transferred differently from traditional securities and the Committee is examining whether changes need to be made to UCC Article 8 to accommodate crypto transactions.

*UCC Article 9 on Secured Transactions*¹⁹⁴ deals with transactions in which one party extends credit, in particular for the purchase of goods or services, and obtains a security interest in collateral owned by the other party. The concept is attractive in the crypto space because it allows holders of coins or tokens to monetize their assets by borrowing against them, while continuing to benefit from increases in value. By contrast to a sale of the crypto assets, the loan is also not subject to capital gains tax. Article 9 provides for a two-step procedure. First, the parties enter into a loan agreement that provides for security and is called a “security agreement”. The debtor has to own the collateral and the creditor has to make the loan. This step is the *attachment* of the security interest to the collateral. Second, the security interests has to be *perfected* to be

190 <https://www.law.cornell.edu/ucc/5>.

191 <https://www.law.cornell.edu/ucc/7>.

192 <https://www.law.cornell.edu/ucc/8>.

193 *Supra* notes 28 and 105, and accompanying text.

194 <https://www.law.cornell.edu/ucc/9>.

enforceable against third parties. For example, if the debtor falls into insolvency or pledges the same collateral again, in exchange for another loan from another creditor, the first secured creditor will only prevail if the security interest was perfected. Depending on the type of collateral and security interest, perfection may be achieved by taking physical possession or control of the collateral, or by filing a financing statement with a designated State authority maintaining a public record of security interests outstanding for a named debtor.¹⁹⁵

Article 9 specifies the types of collateral that can be used for a secured transaction. In addition to tangible goods, these include “(A) proceeds to which a security interest attaches; (B) accounts, chattel paper, payment intangibles, and promissory notes that have been sold [...]”¹⁹⁶ Securities and commodities, including futures contracts, are frequently used as collateral for secured transactions. Since the SEC defines most cryptocurrencies as securities and the CFTC has declared all of them to be commodities, Article 9 should be applicable to transactions using cryptocurrencies as collateral. Alternatively, cryptocurrencies could be relied upon as (intangible) property based on the definition of the IRS. Once Article 9 applies, a lender secured by crypto would benefit from a variety of protections.¹⁹⁷ However, the question is how a security interest in crypto should be perfected. An obvious solution could be the use of so-called multi-signature wallets restricting the debtor from disposing of the crypto without the consent of the creditor. However, in the absence of such an arrangement, and if the controlling private key has not been transferred to the creditor, perfection may not have been achieved.¹⁹⁸

If the ULC deems it necessary to study these questions in depth, one can at least argue that the answers are not self-evident. This, for now, adds to the uncertainty for businesses and users in the crypto and DLT sectors in the U.S.

The Committee has presented a draft in January 2022 with proposals for amendments across the UCC and an entirely new *UCC Article 12 on Controllable Electronic Records*.¹⁹⁹ The most important proposals can be summarized as follows:

195 See § 9-308-316. For further information see James White & Robert Summers, *Uniform Commercial Code*, West Publishing, 6th ed. 2010, at 1148 et seq.; as well as Gerard Comizio, *Virtual Currency Law*, Wolters Kluwer 2022, at 153 et seq.

196 See § 9-102(a)(12).

197 This is not undisputed, however. Comizio writes, “[i]f digital assets are not explicitly included in an existing defined term in Article 9, secured lenders may find that financing arrangements that list virtual currency as collateral lack the U.C.C.’s well-established enforcement protections. Uncertainty regarding collateral casts a shadow over digital asset transactions that increases transaction costs, reduces efficiencies, and leaves market participants vulnerable.” Comizio, *supra* note 195, at 157.

198 For further analysis see Kristen Johnson, Sarah Hsu Wilbur & Stanley Sater, *(Im)Perfect Regulation: Virtual Currency and Other Digital Assets as Collateral*, 21 SMU Sci. & Tech. L. Rev. 115 (2018).

199 <https://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=c7232d9c-6f39-0576-935e-8ad76333240f>. Controllable electronic records are to be understood as a sub-category of digital assets, at 89.

- The definition of “money” in § 1-201 is expanded to include “a medium of exchange that is currently authorized or adopted by a domestic or foreign government, by an intergovernmental organization, or pursuant to an agreement between two or more governments.” This would include Bitcoin since its adoption as legal tender in El Salvador. However, it would currently exclude all other cryptocurrencies.
- The criteria for a “security procedure” under § 4A-201 are clarified to exclude merely “[r]equiring that a payment order be sent from a known e-mail, IP address or phone number” since it has become too easy “to make a payment order from a different origin appear to have been sent from such an address of phone number.”
- Authorized and verified payment orders according to § 4A-202 have to be based on a *recorded* agreement with the client, not necessarily a *written* agreement.
- Payment orders for the purposes of §§ 4A-207 and 208 can be authenticated by “attachment to or logical association with the record of an electronic symbol, sound, or process with the present intent to adopt or accept the record.” This will be equally valid as a signature.
- The same concept is introduced for “signing” of letters of credit in § 5-102.
- In § 7-106, control over a document of title is expanded from a single authoritative copy to “one or more authoritative electronic copies,” as long as it is possible to distinguish authoritative and non-authoritative copies, for example with a cryptographic key.
- § 8-102 introduces the concept and definition of “controllable account” and “controllable electronic record” (§ 9-102(27A), “controllable payment intangible” (§ 9-102(27B), and “electronic money” (§ 9-102(31A). The Official Comment specifies that “financial assets” are not only securities “but also a broader category of obligations, shares, participations, and interests.”²⁰⁰ Moreover,

The term financial asset is used to refer both to the underlying asset and the particular means by which ownership of that asset is evidenced. Thus, with respect to a certificated security, the term financial asset may, as context requires, refer either to the interest or obligation of the issuer or to the security certificate representing that interest or obligation. Similarly, if a person holds a security or other financial asset through a securities account, the term financial asset may, as context requires, refer either to the underlying asset or to the person’s security entitlement.

If the parties agree to treat a digital asset as a financial asset under Article 8 and the digital asset is in fact held in a securities account for an entitlement holder, the rules applicable to “controllable electronic records” under Article 12 would not apply to the entitlement holder’s security entitlement

200 *Id.*, at 39.

related to the financial asset. If the financial asset itself is a controllable electronic record, however, then the rules in Article 12 would apply to the securities intermediary's rights with respect to the controllable electronic record.²⁰¹

Unsurprisingly, a number of amendments are proposed for UCC Article 9 to ensure compatibility with the new technology and the new UCC Article 12.

- The definition of “chattel paper” is revised from “a record evidencing a right to payment” to simply “a right to payment”. However, record evidencing the right to payment are still needed for perfection of the security. Perfection can be achieved in the traditional way by filing a financing statement with the respective State authority, or by obtaining control of the controllable electronic record, for example the private key to a crypto wallet.²⁰²
- “A security interest in a controllable electronic record, controllable account, or controllable payment intangible that is perfected by control has priority over a conflicting security interest that is perfected by another method.”²⁰³
- § 9-203 on attachment and enforceability of security interests is expanded to clarify that “a security interest is enforceable against the debtor and third parties with respect to the collateral” if the following conditions are met:

(1) value has been given;

201 *Id.*, at 39-40.

202 *Id.*, at 53, and *see* Draft §§ 9-312(a); 9-314(a); 9-107A(b). “Control” is further defined in Draft § 9-105(b). “A purchaser has control of an electronic copy of a record evidencing chattel paper if:

- (1) the electronic copy, a record attached to or logically associated with the electronic copy, or a system in which the electronic copy is recorded:
 - (A) enables the purchaser readily to identify each electronic copy as an authoritative copy or nonauthoritative copy;
 - (B) enables the purchaser readily to identify itself in any way, including by name, identifying number, cryptographic key, office, or account number, as the assignee of each authoritative electronic copy; and
 - (C) gives the purchaser exclusive power, subject to subsections (c) and (d), to:
 - (i) prevent others from [adding to or changing] [altering] an identified assignee of each authoritative electronic copy; and
 - (ii) transfer control of the authoritative electronic copy; or
- (2) another person, other than the debtor:
 - (A) has control of the electronic copy and acknowledges that it has control on behalf of the purchaser; or
 - (B) obtains control of the electronic copy after having acknowledged that it will obtain control of the electronic copy on behalf of the purchaser.”

“Exclusive power” is further defined to exist “even if (1) the electronic copy or a system in which the electronic copy is recorded limits the use of the electronic record or has a protocol programmed to transfer control; or (2) the secured party has agreed to share the power with another person” (Draft § 9-105(d)). This accommodates smart contracts with conditionalities, as well as multi-signature wallets.

203 Draft § 9-326A.

- (2) the debtor has rights in the collateral or the power to transfer rights in the collateral to a secured party; and
- (3) one of the following conditions is met:
- (C) the collateral is a certificated security in registered form and the security certificate has been delivered to the secured party under Section 8-301 pursuant to the debtor's security agreement; or
 - (D) the collateral is controllable accounts, controllable electronic records, controllable payment intangibles, deposit accounts, electronic documents, electronic money, investment property, or letter-of-credit rights, and the secured party has control under Section 7-106, 9-104, 9-105A, 9-106, 9-107, or 9-107A pursuant to the debtor's security agreement; or
 - (E) the collateral is chattel paper and the secured party has possession and control under Section 9-314A pursuant to the debtor's security agreement.
- Nevertheless, pursuant to § 9-332, a transferee of tangible money acting in good faith takes the money free of a security interest when receiving delivery, and a transferee of electronic money acting in good faith takes the money free of a security interest when obtaining control of the money.

The introduction of the new UCC Article 12 is intended not only to provide rules for DLT and Blockchain technology but also for “electronic assets that may be created using technologies that have yet to be developed, or even imagined.”²⁰⁴ The Committee explains the purpose of Article 12 as follows:

The adoption of DLT has underscored two important trends in electronic commerce. First, people have begun to assign economic value to some electronic records that bear no relationship to extrinsic rights and interests. For example, without any law or binding agreement, people around the world have agreed to treat virtual currencies such as bitcoin [...] as a medium of exchange and store of value. Second, people are using the creation or transfer of electronic records to transfer rights to receive payment, rights to receive performance of other obligations (e.g., services or delivery of goods), and other interests in personal and real property.

These trends will inevitably result in disputes among claimants to electronic records and their related rights and other benefits. Uncertainty as to the criteria for resolving these claims creates commercial risk. [...]

[...D]raft Article 12 is designed to reduce these risks by providing the legal rules governing the transfer – both outright and for security – of interests in [...controll-

204 <https://www.uniformlaws.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=c7232d9c-6f39-0576-935e-8ad76333240f>, at 87.

able electronic records]. These rules specify the rights in a controllable electronic record that a purchaser would acquire. Many systems for transferring controllable electronic records are pseudonymous, so that the transferee of a controllable electronic record is unable to verify the identity of the transferor or the source of the transferor's title. Accordingly, the Article 12 rules would make controllable electronic records negotiable, in the sense that a good faith purchaser for value would take a controllable electronic record free of third-party claims of a property interest in the controllable electronic record.²⁰⁵

Once the current drafts are finalized and approved by the ULC, it remains to be seen whether they will be swiftly implemented by the Several States. If and when that happens, the revised UCC will be well prepared to handle a variety of transactions involving digital assets, including various forms of smart contracts for the transfer of rights and value. Until then, however, the situation is less clear and the courts of the Several States will have to fill the gaps in the current UCC. They may or may not refer to the work of the Joint Committee in their quest to find equitable rules and solutions for disputes.

Beyond the efforts of the ULC, legislative and regulatory activity at the level of the Several States has been dynamic and diverse, with regard to cryptocurrencies. Fortunately, the *National Conference of State Legislatures (NCSL)* maintains a website with links to all cryptocurrency-related legislation adopted by any of the 50 States, as well as the District of Columbia, Guam, the Mariana Islands, Puerto Rico, and the U.S. Virgin Islands.²⁰⁶ Even that website is somewhat of a challenge to navigate, however. It is organized by year and by State or Territory, which means that a comprehensive review would have to look at about 7 years x 55 = about 385 entries. The numbers swell with the fact that the tables include not only laws in force but also drafts and their various iterations as they meander through the legislative procedures. To give but one example, in the legislative session of 2021 alone, thirty-three States and Puerto Rico had legislative drafts pending.

It would go beyond the scope of the present report to try to provide information, let alone detail, about every significant law in force in any of the 55 States and Territories. Therefore, some examples have to suffice. They will show that the States and Territories can essentially be categorized into four groups. The first group consists of States and Territories like Arizona, Delaware, Tennessee, Vermont, and Wyoming, actively encouraging or at least facilitating the development of Blockchain-based businesses. These States have pretty much concluded that the technology is here to stay and can be harnessed for good. States in the first group are seeking

205 *Id.*, at 87-88. The draft provides the specific example of a sale of Bitcoin. If seller S is the lawful owner, Article 12 provides that buyer B acquires “whatever rights S had or had power to transfer” (*Id.*, at 90). However, even if S is a hacker who acquired the Bitcoin illegally from the real owner O, if “B obtains control of the bitcoin for value, in good faith, and without notice of any claim of a property interest, B would be a *qualifying purchaser*” and protected against claims by O (*Id.*, at 91, emphasis in original). This is commonly referred to as the “take-free rule.”

206 <https://www.ncsl.org/research/financial-services-and-commerce/cryptocurrency-2021-legislation.aspx#Resources>.

advantages as welcoming jurisdictions attracting investment and jobs. At the opposite end of the spectrum are States that either have not enacted any legislation or have merely created some kind of exploratory committee to examine the matter further. Alabama, Arkansas, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, North Dakota, South Carolina, Utah, and West Virginia are examples of States in this group. Next are States like California, Kentucky, Louisiana, Montana, Nevada,²⁰⁷ New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, and Texas,²⁰⁸ that have adopted some guidance and some limits, essentially trying to find a middle ground based on the idea that Blockchain can be a legitimate and valuable industry as long as it complies with a number of restrictive rules and regulations. Last but not least, a number of States have adopted or at least debated what essentially has to be deemed Blockchain-hostile legislation. This includes Connecticut,²⁰⁹ and Washington State.²¹⁰

A superficial look at the distribution of States into the four groups would suggest that their relative openness, indifference, or hostility to cryptocurrencies is independent of their geographic location, geographic and population size, and political orientation. However, a closer look reveals that some States may not have enacted detailed legislation but not for lack of trying. New York and South Carolina, for example, have drafted and debated several pieces of legislation,

207 Nevada has exempted Blockchain transactions and smart contracts from State taxes and has prohibited local governments from restricting the use of the technology. *See* SB 398 (2017) amending Chapter 719 of NRS.

208 The only law in force in Texas mentioning digital currencies is SB 207, which adds them to the penal code for the offense of money laundering. Several draft pieces of legislation have been discussed during the 2021 legislative session, including restrictions on sports wagering (HB 2070, SB 736), and a clarification that UCC Article 9 will require “control” by the creditor for the perfection of a security interest in virtual currencies (HB 4474). Nevertheless, Texas is considered crypto friendly because its low electricity prices and absence of State income tax are increasingly attracting Bitcoin mining operations.

209 *Public Act No. 17-233 on Secured and Unsecured Lending* expands and tightens licensing requirements including for virtual currency transactions. *Public Act No. 15-53 Concerning Mortgage Corresponding Lenders, the Small Loan Act, Virtual Currencies and Security Freezes on Consumer Credit Reports* clarifies that licensing requirements apply to “money transmission businesses” dealing in virtual currency and gives the State commissioner the power to “deny any application of a person who will or may engage in the business of transmitting monetary value in the form of virtual currency if, in the commissioner’s discretion, the issuance of such a license would represent undue risk of financial loss to consumers, considering the applicant’s proposed business model” (Sec. 7(c) of section 36a-600). Furthermore, “[t]he commissioner may, in the commissioner’s discretion, place additional requirements, restrictions or conditions upon the license of any applicant who will or may engage in the business of transmitting monetary value in the form of virtual currency, including the amount of surety bond required by section 36a-602, as amended by this act” (Sec. 7(d) of section 36a-600). Last but not least, the commissioner is instructed to determine the amount for the surety bond to be deposited “to address the current and prospective volatility of the market in such currency or currencies” (Sec. 8(a) of section 36a-602).

210 Senate Bill 5031 of 2017 provides highly restrictive rules for “virtual currency online exchangers” who are not banks, including a State licensing requirement, a requirement of a third-party security audit of the platform, maintenance of a surety bond equal to the previous year’s money transmission dollar volume, as well as annual assessment fees. In 2021, legislation was introduced to impose a 1% wealth tax on worldwide assets of Washington residents – including crypto assets – exceeding US\$ 1 Billion (HB 1406, SB 5426).

even if the necessary majorities for their adoption have so far not been found. Rhode Island has reviewed a very progressive *Economic Growth Blockchain Act*²¹¹ in the 2021 legislative session that may yet be approved in the foreseeable future.

In the interest of time and space, only the laws and regulations in force in New York and Wyoming shall now be analyzed in some detail.

On the basis of the New York Financial Services Law, the Department of Financial Services issued virtual currency regulation 23 NYCRR Part 200, commonly known as “the BitLicense”.²¹² On the basis of this regulation, the Department has granted a number of virtual currency licenses and charters and claims that “New Yorkers have a well-regulated way to access the virtual currency marketplace and that New York remains at the center of technological innovation and forward-looking regulation.”²¹³ A BitLicense is required for anyone engaging in virtual currency business activity “involving New York or a New York Resident”,²¹⁴ i.e. not just for businesses based in New York. Virtual currency business activity includes

- (1) receiving or transmitting virtual currency,
- (2) storing, holding, or maintaining custody or control of virtual currency on behalf of others;
- (3) buying and selling virtual currency as a customer business;
- (4) performing exchange services as a customer business; or
- (5) controlling, administering, or issuing a virtual currency.²¹⁵

The only natural or legal persons involved with virtual currencies exempt from the licensing requirement are

- (1) persons that are chartered under the New York Banking Law and are approved by the superintendent to engage in virtual currency business activity; and
- (2) merchants and consumers that utilize virtual currency solely for the purchase or sale of goods or services or for investment purposes.²¹⁶

211 <http://webserver.rilin.state.ri.us/BillText/BillText21/HouseText21/H5425.pdf>.

212 For the full text of the regulation see [https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYork-CodesRulesandRegulations?guid=I7444ce80169611e594630000845b8d3e&originationContext=documentoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/nycrr/Browse/Home/NewYork/NewYork-CodesRulesandRegulations?guid=I7444ce80169611e594630000845b8d3e&originationContext=documentoc&transitionType=Default&contextData=(sc.Default)).

213 https://www.dfs.ny.gov/apps_and_licensing/virtual_currency_businesses.

214 § 200.2(q).

215 *Id.* An exemption applies for “digital units” used exclusively within online gaming platforms and have no market or application otherwise, digital units that can only be redeemed as part of a customer loyalty program, as well as digital units used like prepaid cards; § 200.2(p).

216 § 200.3(c).

Anyone else engaged in virtual currency business requires a license from the New York State Department of Financial Services. Applicants have to use the prescribed forms and include the following information:

- (1) the exact name of the applicant, including any doing business as name, the form of organization, the date of organization, and the jurisdiction where organized or incorporated;
- (2) a list of all of the applicant's affiliates and an organization chart illustrating the relationship among the applicant and such affiliates;
- (3) a list of, and detailed biographical information for, each individual applicant and each director, principal officer, principal stockholder, and principal beneficiary of the applicant, as applicable, including such individual's name, physical and mailing addresses, and information and documentation regarding such individual's personal history, experience, and qualification, which shall be accompanied by a form of authority, executed by such individual, to release information to the department;
- (4) a background report prepared by an independent investigatory agency acceptable to the superintendent for each individual applicant, and each principal officer, principal stockholder, and principal beneficiary of the applicant, as applicable;
- (5) for each individual applicant; for each principal officer, principal stockholder, and principal beneficiary of the applicant, as applicable; and for all individuals to be employed by the applicant who have access to any customer funds, whether denominated in fiat currency or virtual currency:
 - (i) a set of completed fingerprints, or a receipt indicating the vendor (which vendor must be acceptable to the superintendent) at which, and the date when, the fingerprints were taken, for submission to the State Division of Criminal Justice Services and the Federal Bureau of Investigation;
 - (ii) if applicable, such processing fees as prescribed by the superintendent; and
 - (iii) two portrait-style photographs of the individuals measuring not more than two inches by two inches;
- (6) an organization chart of the applicant and its management structure, including its principal officers or senior management, indicating lines of authority and the allocation of duties among its principal officers or senior management;
- (7) a current financial statement for the applicant and each principal officer, principal stockholder, and principal beneficiary of the applicant, as applicable, and a projected balance sheet and income statement for the following year of the applicant's operation;

- (8) a description of the proposed, current, and historical business of the applicant, including detail on the products and services provided and to be provided, all associated website addresses, the jurisdictions in which the applicant is engaged in business, the principal place of business, the primary market of operation, the projected customer base, any specific marketing targets, and the physical address of any operation in New York;
- (9) details of all banking arrangements;
- (10) all written policies and procedures required by, or related to, the requirements of this Part;
- (11) an affidavit describing any pending or threatened administrative, civil, or criminal action, litigation, or proceeding before any governmental agency, court, or arbitration tribunal against the applicant or any of its directors, principal officers, principal stockholders, and principal beneficiaries, as applicable, including the names of the parties, the nature of the proceeding, and the current status of the proceeding;
- (12) verification from the New York State Department of Taxation and Finance that the applicant is compliant with all New York State tax obligations in a form acceptable to the superintendent;
- (13) if applicable, a copy of any insurance policies maintained for the benefit of the applicant, its directors or officers, or its customers;
- (14) an explanation of the methodology used to calculate the value of virtual currency in fiat currency; and
- (15) such other additional information as the superintendent may require.²¹⁷

The superintendent generally has 90 days after a filing and payment of the US\$ 5,000 application fee to

investigate the financial condition and responsibility, financial and business experience, and character and general fitness of the applicant. If the superintendent finds these qualities are such as to warrant the belief that the applicant's business will be conducted honestly, fairly, equitably, carefully, and efficiently within the purposes and intent of this Part, and in a manner commanding the confidence and trust of the community, the superintendent shall advise the applicant in writing of his or her approval of the application, and shall issue to the applicant a license to conduct virtual currency business activity, subject to the provisions of this Part and such other conditions as the

217 § 200.4(a).

superintendent shall deem appropriate; or the superintendent may deny the application.²¹⁸

Once approved, a license is generally not limited in time and remains valid unless it is surrendered by the licensee.²¹⁹ However, any license can be suspended or revoked by the superintendent at any time

on any ground on which the superintendent might refuse to issue an original license, for a violation of any provision of this [regulation], for good cause shown, or for failure of the licensee to pay a judgment, recovered in any court, within or without this State [...]. ‘Good cause’ shall exist when a licensee has defaulted or is likely to default in performing its obligations or financial engagements or engages in unlawful, dishonest, wrongful, or inequitable conduct or practices that may cause harm to the public.²²⁰

In order to avoid violation of any provisions of the regulation, licensees need to

maintain and enforce written compliance policies, including policies with respect to anti-fraud, anti-money laundering, cyber security, privacy and information security, and any other policy required under this [regulation], which must be reviewed and approved by the licensee’s board of directors or an equivalent governing body [...and] designate a qualified individual or individuals responsible for coordinating and monitoring compliance with this Part and all other applicable Federal and State laws, rules, and regulations.²²¹

New York BitLicense holders need to “maintain at all times such capital in an amount and form as the superintendent determines is sufficient to ensure the financial integrity of the licensee and its ongoing operations based on an assessment of the specific risks applicable to each licensee”²²² and to “maintain a surety bond or trust account in United States dollars for the benefit of its customers in such form and amount as is acceptable to the superintendent for the protection of the licensee’s customers.”²²³ Furthermore,

(b) To the extent a licensee stores, holds, or maintains custody or control of virtual currency on behalf of another person, such licensee shall hold virtual currency of the same type and amount as that which is owed or obligated to such other person.

(c) Each licensee is prohibited from selling, transferring, assigning, lending, hypothecating, pledging, or otherwise using or encumbering assets, including

218 § 200.6(a).

219 § 200.6(b).

220 § 200.6(c).

221 § 200.7.

222 § 200.8(a).

223 § 200.9(a).

virtual currency, stored, held, or maintained by, or under the custody or control of, such licensee on behalf of another person except for the sale, transfer, or assignment of such assets at the direction of such other person.²²⁴

There are also extensive recordkeeping requirements (§ 200.12), required reports and financial disclosures (§ 200.14), as well as disclosure requirements for consumer protection (§ 200.19). For the most part, these requirements are comparable to those applying to publicly traded companies. The superintendent also has expansive examination powers (§ 200.13), and there are the usual anti-money laundering obligations, in particular for larger transactions over US\$ 3,000 (§ 200.15).

To its credit, it must be said that the BitLicense regulation is one of the most clearly written pieces of legislation or regulation applicable to cryptocurrency businesses in the United States. By contrast to pretty much any rules and regulations emanating from the SEC, issuers of coins and tokens, exchanges, and other cryptocurrency businesses do not need specialized lawyers to understand their rights and obligations under New York law. That being said, the BitLicense regulation “is generally regarded as the most onerous regulation of virtual currency businesses in the United States.”²²⁵ Alex Adelman and Aubrey Strobel have complained that

New York, generally regarded as the financial capital of the world, has clung to regulations that make it immensely difficult for crypto companies, especially smaller startups, to operate in the state. [...] The [BitLicense] has staved off grassroots innovation in the city by ensuring that only companies with abundant disposable capital can shoulder its notoriously time and capital-intensive application and compliance measures.²²⁶

According to their information, “the time allocation, legal fees and other costs drive the total cost of pursuing a BitLicense to more than \$100,000, surpassing the means of most early stage startups.”²²⁷ Adelman and Strobel continue to point out that

companies applying for a BitLicense are already beholden to both the stringent regulatory oversight and reporting requirements of federal agencies such as the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), the Financial Crimes Enforcement Network (FinCEN), the IRS and the Department of Justice (DOJ).²²⁸

Last but not least, Adelman and Strobel are asking why New York clings to the BitLicense in spite of clear evidence that it has pushed many startups either into more welcoming States like

224 § 200.9.

225 See Stabile, Prior & Hinkes, *supra* note 7, at 108.

226 <https://www.coindesk.com/policy/2021/10/19/kill-the-bitlicense/>.

227 *Id.*; for comparison, an SEC registration for an ICO will usually cost between US\$ 1 and 3 Million. Of course, the SEC registration is also valid for all 50 States.

228 *Id.*

Wyoming or entirely offshore, with the result that the intended protections of consumers and business partners are not achieved, and high value jobs and dynamic growth opportunities are lost for New York. In their opinion, the fact that the primary source of revenue of the New York Department of Financial Services are the established financial service providers and institutional banks may have something to do with that. “[O]ne can easily see why the department would beat back companies disrupting traditional finance.”²²⁹

After this analysis of a highly restrictive legal regime, we shall now look into the other direction and explore the much more welcoming regulatory environment in Wyoming. Long-dominated by mining and agriculture, Wyoming was looking for opportunities to grow and diversify its economy and found them in the crypto space. Already in 2016, Wyoming declared digital currencies to be permissible investments (HB 0026) and explicitly exempted “the transmission of monetary value and digital currency from the Wyoming Money Transmitter Act licensure requirements” (HB 0062). In 2018, Wyoming made it clear that “a developer or seller of an open blockchain token shall not be deemed the issuer of a security”, i.e., “a person who develops, sells or facilitates the exchange of an open blockchain token is not subject to specified securities and money transmission laws”, as long as the token is for consumptive purposes – i.e. a utility token – and not marketed as an investment (HB 0070). Going further, Wyoming also exempted virtual currencies from State property taxes (SF 0111).²³⁰ In 2019, Wyoming clarified that digital assets are property for the purposes of the UCC and provided a welcoming framework for custodial services for digital assets (SF 0125).²³¹ Issuers of utility tokens can do so in Wyoming by filing a “notice of intent”. The fees for the notice amount to US\$ 1,000 (HB 0062). In 2020, the State further clarified how UCC Article 9 would apply to virtual currencies used as collateral in secured transactions (SF 0047). In many ways, Wyoming already did what the ULC *Joint Study Committee on the Uniform Commercial Code and Emerging Technologies* yet has to do, namely to define “control” and “possession” for purposes of perfecting a security interest and determining priority among several perfected interests.²³² The Wyoming State budget for 2021 allocated US\$ 4 Million

to the University of Wyoming to operate and maintain nodes and staking pools for not less than three (3) publicly tradeable cryptocurrencies. [...] The university shall provide public access to the staking pools and nodes and facilitate operation of the blockchains. [...] All fees and revenues generated in excess of the costs of operation and administration shall be deposited in the strategic investments and projects account up to four million dollars (\$4,000,000.00) and thereafter shall be expended to support blockchain programs and activities at the university and community colleges throughout the state.²³³

229 *Id.*

230 The State anyways does not have State income taxes.

231 For a high level summary see <https://wyoleg.gov/2019/Summaries/SF0125.pdf>.

232 <https://wyoleg.gov/2020/Summaries/SF0047.pdf>. See also HB 0043.

233 HB 0001, §340; <https://wyoleg.gov/2021/Enroll/HB0001.pdf>, at 71.

With its open-for-crypto-businesses attitude, Wyoming not only attracted unicorns like the crypto exchange *Kraken*, the Blockchain platform *Cardano*, and the payment protocol company *Ripple Labs* to move to the State capital Cheyenne. Thousands of DLT startups have incorporated in the State. In 2020, Wyoming created the *Special Purpose Depository Institution Bank Charter (SPDI)*, specifically for banks seeking to deal both in fiat and cryptocurrencies.²³⁴ Since then, *Kraken Bank*,²³⁵ as well as Caitlin Long's *Avanti Bank and Trust*²³⁶ have obtain crypto banking charters. Most recently, the State went another step further. In July 2021, the *Wyoming Decentralized Autonomous Organization Supplement* entered into force creating "a supplement to the Wyoming Limited Liability Company Act to provide law controlling the creation and management of a DAO."²³⁷ The bill explains that "[a] decentralized autonomous organization (DAO) is a limited liability company with special provisions allowing the company to be algorithmically run or managed (in whole or in part) through smart contracts executed by computers."²³⁸ As the high level summary explains, the bill also "establishes baseline requirements for member managed or algorithmically managed DAO's and provides definitions and regulations for DAO formation, articles of organization, operating agreements, smart contracts, management, standards of conduct, membership interests, voting rights, the withdrawal of members and dissolution."²³⁹ With this new law, Wyoming has absolutely broken new ground. It not only makes it the first jurisdiction anywhere in the world explicitly providing a legal basis for a DAO; it also provides the details that make the operation of such an organization predictable and transparent. Although it is too soon to tell how many DAOs will be created in Wyoming on the basis of this legislation, in particular since SEC and CFTC regulations are also still applicable, a quick online search brings up dozens of law firms offering their services for the incorporation of such an organization and we may safely assume that some very interesting experimentation is already ongoing.

IV. Conclusions on the Current Legal Regime Provided for Cryptocurrencies in the U.S. and Opportunities for Future Improvement

American public authorities have simultaneously called cryptocurrencies (digital) assets, money, not money, currency, not currency or at least not legal tender, commodities, securities, not securities,²⁴⁰ property, and a couple of other more or less clearly defined categories. Transactions

234 <https://wyomingbankingdivision.wyo.gov/banks-and-trust-companies/special-purpose-depository-institutions>.

235 <https://www.kraken.com/en-us/bank>.

236 <https://fortune.com/2021/07/29/caitlin-long-wyoming-crypto/>.

237 SF0038, <https://wyoleg.gov/2021/Enroll/SF0038.pdf>.

238 <https://wyoleg.gov/2021/Summaries/SF0038.pdf>.

239 *Id.*

240 Even the securities regulators don't see eye-to-eye. It is at least possible for the SEC to decide, on the basis of the *Howey Test*, that a particular crypto sale is not an investment contract, hence not a security, while a State regulator applying the *Risk Capital Test* comes to the opposite conclusion. For further discussion see Steinberg, *supra* note 128, at 42-43.

with cryptocurrencies are being taxed, not taxed, allowed, and not allowed, unless previously authorized on the basis of complicated registration and licensing procedures. The more intricate legal consequences of those transactions are being recognized or not recognized, depending on which authority you ask. Furthermore, the assessments have changed over time and pretty much every authority has reserved the right to change its assessment again in the future.

While it is true that there are differences between different kind of cryptocurrencies that may justify differences in analysis, for example the difference between investment coins, utility tokens, non-fungible tokens (NFTs), and stable coins, the authorities have not really relied on these differences to justify their different assessments, at least not consistently. In the end, the statement, as used by the SEC when deciding on the legality of almost any crypto activity, that “it depends” and requires a “case-by-case analysis”, comes closest to the truth for all our regulators and regulatory agencies. Unfortunately, few have even tried to explain unambiguously what it depends upon.

If we return to our original premise, namely that new technologies, in particular those with disruptive potential, need regulatory guidance, preferably of the clear and understandable kind, and need stability in the regulatory environment to make investment decisions that will not bear fruit for years to come, the grade that I have to give as a law professor to U.S. regulators can only be “F” for fail.

The entire report is full of examples of conflicting answers and unduly burdensome requirements imposed by different regulators. Others have already suggested that the New York Department of Financial Services is beholden to conventional Wall Street financial institutions and unlikely to enable technology startups with the express mission of *disrupting precisely those financial institutions*.²⁴¹ I will add my own suspicion that a similar approach can be found at the SEC. This agency has 4,500 employees and a very substantial operating budget. Why does it not seem to be able to provide clearer guidance on how to file registrations using Form S-1, let alone registrations under Regulation A+, to bring down the cost of those registrations? Why does it not even provide straightforward links on its website to all those regulations?²⁴² *Honi soit quit mal y pense* and suggests a level of collusion between high level regulators and high powered law firms, happily connected by revolving doors, and even more happily profiting from keeping their specialized knowledge of the process from the rest of the world...

I will close with three questions and some food for thought about the way they should be answered.

First, what would be the ideal regulatory environment for Blockchain and DLT technology that encourages the development of legitimate use cases of the technology while providing a high level of protection for investors, developers, users, consumers, and the environment?

241 *Supra* note 229 and corresponding text.

242 The collection by Thomas Hazen, *Securities Regulation – Selected Statutes, Rules, and Forms*, West Academic 2021, has 1900 pages of documents. Hazen’s *Treatise on the Law of Securities Regulation*, in its 7th ed. of 2016, is a seven volume collection for practitioners and costs over US\$ 1,000.

Blockchain and DLT is governed by code and markets. The very consensus mechanisms encrypted for the confirmation of transactions removes the technology from traditional and centralized authorities. By definition, this makes the technology international. Anyone with access to the internet can participate as a user, miner, developer, or even issuer of digital assets. The only truly sensible level for regulation of this technology, therefore, is the international level. Ideally, we should have one single international convention, developed by an agency such as the *United Nations Commission on International Trade Law (UNCITRAL)*, and ratified and applied by the large majority of nation states around the world. Such a convention should provide a list of requirements to be met by anyone wanting to issue coins or tokens, wanting to provide a marketplace for trading them, or wanting to develop business solutions for investors, commercial transactions, or consumer contracts. The convention should also provide for a variety of oversight mechanisms calibrated to the potential risks created by the different uses of the technology, as well as one centralized agency per country with meaningful resources and investigative powers. Importantly, the convention should provide a passport system, namely that a crypto business lawfully operating in one signatory state can lawfully enter the markets in all other signatory states. The latter should only be allowed to interfere if they can show that a particular actor either obtained its licenses fraudulently from the home country or, for reasons that may be specific to the host country, poses a real and substantial danger to non-economic or public interests of the host country – e.g. the health and safety of its people, the protection of consumer financial interests, or the environment – and that those interests cannot be adequately protected by less severe restrictions or measures. Last but not least, the convention should provide for a dispute settlement system that is accessible for the crypto businesses and effective, ideally along the lines of investor-state-dispute settlement via international arbitration.

Second, as long we don't have a widely recognized and applied global convention, what can the U.S. do to provide the best possible solution to the goals outlined in the first question at the national level?

Drafting international conventions with the participation of delegations from some 200 countries with very diverse economies and political preferences is always a difficult and lengthy effort. Even if it succeeds and produces a convention that seems to address all important aspects and provides answers for all important issues, it is not at all a given that it will be ratified reasonably swiftly by the most important countries where the technology is being developed and/or widely used. The process should be infinitely easier and faster at the national level where it would take only one single legislature, the United States Congress, on the basis of the powers conferred to the Federal government via the interstate commerce clause, to produce a single, elegant, and effective solution to the problem. However, we live in an age where too many of our lawmakers are too busy with self-preservation and political posturing and don't have time for actual law making. Academics, attorneys, and other legal professionals in the U.S. have a hard time remembering the last time that our Congress did adopt any "single, elegant, and effective solution" to any problem facing the nation. Instead, we are limping along with executive orders from one President that are likely going to be repealed by the next President, and with a diverse and at least partly contradictory mess of decisions, rules, and regulations of more or less independent Federal agencies. This does not have to be the case, however. The challenges

presented by Blockchain and DLT are not partisan issues. As the responses by the Federal agencies and their administrators, and even more so the responses by the Several States can show, the approach to be taken in the interest of our economy, citizens, and environment is not determined by political affiliations or ideologies. Although the welcoming approach taken by Wyoming has been labeled “libertarian-leaning”, one of the most high profile promoters is Wyoming State Senator Chris Rothfuss, a Democrat. Another is U.S. Senator Cynthia Lummins, a Wyoming Republican. Therefore, I would like to call on any and all lawmakers in Washington who actually want to see the United States at the forefront of technological development and economic growth, while also being serious about the protection of investors, developers, users, consumers, and the environment, to launch a bi-partisan effort, defy the naysayers, and come up with a single, elegant, and effective piece of legislation that clears the air and provides a one-stop-shop for all crypto businesses in the U.S.²⁴³ Beyond the domestic impacts, high quality regulation could very well set the global standard that others are waiting to follow. The alternative, continuing failure to provide good regulatory guidance, mainly drives DLT businesses elsewhere, depriving the United States not only of technological development and economic growth but also of effective oversight.

Third, while we are waiting for this clear legislative guidance from the Congress of the United States, i.e. in our current real-world situation, what can and what should the different actors do, i.e. the Federal agencies with direct powers, and the governments of the Several States?

In the present regulatory environment, doing business above board in the crypto markets is simply a nightmare. For example, the large and well-reputed crypto trading platform FTX US is registered by FinCEN as a Money Services Business. It has successfully received a US GAAP financial audit. It continuously relies on the services of a specialized law firm, Fenwick & West, for its various documentation and compliance assessment and reports. Its derivatives unit is a Federally regulated and licensed commodity derivatives exchange and clearinghouse and holds three licenses with the CFTC. It is audited annually by Grant Thornton LLP, and uses various outside vendors to conduct annual or even more frequent cyber security tests and simulations. Internal decision-making and supervisory procedures are audited by Friedman LLP (SOC I Type II Audits, and a SANS CSC Top 20 audit). System safeguards, market surveillance and/or financial controls are examined annually by the CFTC. Although this is already a lot, FTX US is has also sought and obtained Money Transmitter licenses at the State level from Alabama, Alaska, Arizona, Arkansas, the District of Columbia, Florida, Georgia, Illinois, Iowa, Maine, Maryland, Michigan, Mississippi, Missouri, New Hampshire, New Mexico, Oregon, Pennsylvania, Puerto Rico, South Dakota, Washington, and West Virginia.²⁴⁴ Does anybody seriously want to argue that all of these licenses and registrations are really necessary and provide any actual nutritional benefit for investors or consumers? That they are not just creating barriers to

243 In the preparation of such an act, more attention should be given to the ABA White Paper ([supra note 91](#)), and a similar study by *The Law Society of England and Wales* (<https://www.lawsociety.org.uk/topics/research/blockchain-legal-and-regulatory-guidance-second-edition>), than to the rules and decisions adopted to date by the SEC, let alone the bulky and already outdated regulations of the EU.

244 <https://help.ftx.us/hc/en-us/articles/360046877253-Regulation-and-Licensure-Information>.

entry against disruptive technology companies? And provide fat benefits for an army of lawyers that is needed to get and maintain all these registrations and licenses? What happened to the idea at the foundation of the full-faith-and-credit clause in the United States Constitution, i.e. that the authorities in one State have to respect “public acts, records, and judicial proceedings of every other state.”?²⁴⁵ After all, I can drive with my Indiana driver’s license all across the nation and do not need to pass yet another test for the same driving skills every time I cross a State border.

Even in the messy environment we have in the absence of clear legislative guidance from the U.S. Congress, the different actors could coordinate their efforts, talk to each other, maybe in a kind of *joint task force*, and come up with some mutually acceptable standards for the different commercial activities (issuers of digital assets, trading places and exchanges, commercial users, etc.). Most importantly, if our Federal- and State-level authorities really care about the interests of the nation, the economy, and the people, they will have to get rid of the current inefficiencies and agree that any registration or license obtained from any one authority, and following those mutually acceptable standards, shall be good enough for all authorities and jurisdictions in the United States.²⁴⁶ As a wise human once said,

*You may say I’m a dreamer
But I’m not the only one
I hope someday you’ll join us
And the world will be as one
John Lennon, Imagine*

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- 245 Article IV, Sec. 1. For further analysis *see*, for example, James Sumner, *The Full-Faith-and-Credit Clause – Its History and Purpose*, 34 Or. L. Rev. 224 (1954-1955). Of course, the U.S. Supreme Court has seen it fit to decide that in spite of the full faith and credit clause, each State can apply its own laws and regulations, as long as that State has “a significant contact or significant aggregation of contacts, creating state interests, such that choice of its law is neither arbitrary nor fundamentally unfair”; *Allstate Ins. Co. v. Hague*, 449 U.S. 302 (1981), at 313; *see also Phillips Petroleum Co. v. Shutts*, 472 U.S. 797 (1985), at 818.
- 246 The SEC recently did just the opposite, when it responded to Wyoming’s determination that a particular Wyoming-chartered public trust company qualified as a custodian under the *Investment Advisers Act*. In a public staff letter, the SEC declared that it was not bound by Wyoming’s determination, making sure that legal uncertainty prevails. *See* Public Statement, SEC, Div. of Inv. Mgmt. Staff in Consultation with FinHub Staff, *Staff Statement on WY Division of Banking’s “NAL on Custody of Digital Assets and Qualified Custodian Status”*, 9 November 2020, <https://www.sec.gov/news/public-statement/statement-im-fin-hub-wyoming-nal-custody-digital-assets>.