



**Department of Economics and Finance**

**Chair of Law and Economics**

**Virtual Assets' Regulation in the United States:  
Sec v. Ripple, the cryptocurrency trial of the century**

**Supervisor:**  
Prof.  
Pierluigi Matera

**Candidate:**  
Eloisa Coiro  
234831

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## Introduction:

The art of writing secret messages exists and has been used for thousands of years: from the Julius Cesar's cipher from around 100 B.C., used to transmit confidential communications to his army generals deployed at the war front, to Enigma, the powerful machine, mother of modern computers used by German armed forces, during the Nazi period and World War II, to send undecipherable information.

The inexorable and unstoppable technical breakthrough we have experienced over the last 20 years has allowed people to experiment, create and discover new products capable of extending our lifespan and improving our habits by solving many problems. With the introduction of the internet in our society, technology has become part of our everyday actions, impacting and disrupting our lives by changing the way we communicate and relate to each other. The power of this innovation is immense as it has created a network capable of connecting billions of users worldwide by sending and receiving information at an astonishing speed. Processors that 20 years ago would barely fit an entire room are now incorporated in our hand-sized cell phones. Everything that was stored on paper 10 years ago - from photos to calendar appointments, from messages to maps - is kept in our pocket-sized "black boxes".

One of the most revolutionary inventions was digitizing the way we pay and carry out transactions. The development of digital platforms, able to connect different operators together and expose them to users through simplified and integrated interfaces (e.g., mobile apps or website) has revolutionized the way money is perceived, transforming it from a tangible asset to a virtual one. In fact, platforms provide access to contextual information not normally available to companies unless they have a direct relationship with the consumer. Therefore, the digital infrastructure (i.e., apps) is not a simple virtual window on which users choose the product or service they want, but a cooperative network in which operators can monetize the availability of information on potential matches.

Money, in a traditional sense, involves physical format money, such as coins, banknotes to which the legal tender status is assigned<sup>1</sup> (i.e., recognized by national jurisdictions as satisfactory payment for any monetary debt). Such instruments have electronic representations (e.g., bank deposits, commercial bank money and others). Digital currencies are asset that digitally represent value and are denominated into a sovereign currency. Electronic money, such as credit cards, is part of the digital asset category which has extended the possibility to conduct transactions ATWAD (i.e., anytime, anywhere, any device). In 2018, the total credit card payments in the US reached \$44.7 billion with a value of \$3,98 trillion and it is estimated that credit cards can settle 5,000 transactions per second.<sup>2</sup> Whenever such assets are not denominated in legal tender, meaning in their own units of value, they are considered virtual currencies, and their acceptance as a means of payment is voluntary. Some countries that have decided to experiment the use of virtual money under their own control (e.g., Uruguay with the

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<sup>1</sup> Bank for International Settlements (BIS), *Committee on Payments and Market Infrastructures – Digital Currencies*, November 2015, 1-5 <https://www.bis.org/cpmi/publ/d137.pdf>

<sup>2</sup> *The 2019 Federal Reserve Payments Study*, (Dec 2019), 4

<https://www.federalreserve.gov/newsevents/pressreleases/files/2019-payments-study-20191219.pdf>

See also Sandberg, Erica. "The Average Number of Credit Card Transactions per Day & Year." *CardRates.com*, 9 Nov. 2020, <https://www.cardrates.com/advice/number-of-credit-card-transactions-per-day-year/>; See also Vlastelica, Ryan. *Why Bitcoin Won't Displace Visa or Mastercard Soon*. MarketWatch, MarketWatch, (18 Dec. 2017) <https://www.marketwatch.com/story/why-bitcoin-wont-displace-visa-or-mastercard-soon-2017-12-15>.

e-peso) or have announced its use without, however, releasing more information on the matter (e.g., Venezuela with the Petro).<sup>3</sup>

Cryptocurrencies are a subset of virtual assets and have no intrinsic value. Convertible into real world goods and services, their value is only grounded on the expectation of future exchanges with other commodities or a certain amount of sovereign currency<sup>4</sup>. They are not backed by any central authority, so there is no need of government or banks to supply or make them circulate between individuals in the economy. In fact, cryptocurrency transactions (i.e., buying, selling, trading, transferring) are validated and secured using a cryptographic technology. Since the introduction of cryptocurrencies, which happened through Bitcoin's launch in 2009, the public's interest in this new digital asset has grown significantly. Bitcoin is the largest cryptocurrency and represents almost half of the total market capitalization (BTC: 41,5%).<sup>5</sup> On one hand, cryptocurrencies were viewed as the next evolution in financial services technology. In fact, they possess important characteristics that would offer many potential benefits. They increase the payment process' security, efficiency and speed. Moreover, they are completely separate from the centralized system that we currently use for our everyday payments and would promote financial inclusion of minorities. As a consequence, the technological and financial experimentation behind cryptocurrencies, such as the distributed ledger technology, could usefully lay the foundations for the creation of solutions capable of making the current economic system more efficient or even transforming it radically.

However, the aforementioned characteristic could prove to be a double-edged sword, as they mean these instruments are not subject to any institutional control. The cryptocurrency market's lack of oversight has led to it being dominated historically by speculators. In fact, this has contributed to wide-spread price volatility and value sensibility, giving rise to numerous upswings and downswings. In the absence of a clear legal framework, it is not possible to provide effective official and contractual protection for the interests of users, who may therefore be exposed to significant financial losses. In a context characterised by a lack of disclosure requirements and transparency rules, exchange platforms are also exposed to high operational and security risks. Unlike supervised financial intermediaries, they are not required to provide any service quality's guarantees, nor do they have to comply with capital requirements or internal control and risk management procedures, resulting in a high probability of fraud and exposure to cybercrime. Consequently, it is no coincidence that the financial and banking sectors look at cryptocurrencies with scepticism and reluctance. As those virtual assets mature and become more widely used and accepted, institutional investors start to take action.

During recent years, trading in asset class has brought multiple legal and tax issues to broad daylight. The development of effective regulatory responses to cryptocurrencies is still at an early stage. It is a difficult area to legislate, falling under the competence of different public actors at national level while operating on a global scale. Institutional managers around the globe have struggled to keep pace with the challenges brought by these rapid advancements in technology as many exchange systems operate outside the conventional financial system, making it difficult to monitor their operations.

Nevertheless, change is sure to come as regulators have decided to closely manage the cryptocurrencies' market. They have begun to address these challenges and the responses have

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<sup>3</sup> CONSOB. *Cryptocurrencies*, <https://www.consob.it/web/investor-education/criptovalute>

<sup>4</sup> Bank for International Settlements (BIS), *Committee on Payments and Market Infrastructures – Digital Currencies*, November 2015, 1-5 <https://www.bis.org/cpmi/publ/d137.pdf>

<sup>5</sup> Global Cryptocurrency Market Charts.” *CoinMarketCap*, <https://coinmarketcap.com/charts/>

been numerous, with a variety of approaches across countries. Some have considered including virtual currencies within the range of appropriately regulated activities. Others have issued warnings to consumers or made certain activities subject to authorization or even have prohibited financial institutions from trading virtual currencies or even banned their use and prosecuted offenders. Until today no clear and unique policy responses to the challenges posed by virtual currencies have been decided. However, it is highly likely that further developments will take place in the near future.

This work sketches digital money's brief history. In particular, it will analyse the technological functioning of cryptocurrencies and their characteristics, advantages, and differences compared to other virtual assets. Furthermore, it will deliver an overview of the United States' cryptocurrency legislation by analysing the steps that have or have not been taken so far at both federal and state levels. In addition, this paper will analyse how US federal agencies, - i.e., the Securities and Exchange Commission (SEC), Commodity Future Trading Commission (CFTC), Financial Crimes Enforcement Network (FinCEN) and Internal Revenue Service (IRS) - characterise cryptocurrencies and describe their case-by-case approach to regulating them. Finally, it will provide an explanatory case (i.e., *SEC v. Ripple*) of the SEC's attempt to regulate a cryptocurrency as a security and the implications that this action has for future cryptocurrency scenarios.

# CHAPTER 1 : THE RISE AND DEVELOPMENT OF CRYPTOCURRENCIES

## 1. A brief definition of money

Money in every shape and every form has played a substantial part of human history for more than 3,000 years.<sup>6</sup> Different forms of money appeared during time. However, it is traditionally associated with distinctive functions. There are multiple views on how money evolved during time in order to become what it is today.

The definition of money is very vast and complex. Many historians prefer to give a functional definition: “Money is what money does”<sup>7</sup>. In fact, money in every form has been characterized by 4 main functions.

The primary concept of money is the function of *unit of account*. Keynes, in the first chapter of volume 1 of *A treatise on money* entitled *The classification of money*, states that “money of account [is what] in which debts, price and general purchasing power are expressed [... It] comes into existence along with debts, which are contracts for deferred payment, and price lists, which are offers of contracts for sale or purchase [...] Money itself, namely that by delivery of which debts contracts and price contracts are *discharged*, and in the shape of which a store of general purchasing power is *held*, derives its character from its relationship to the money of account, since the debts and prices must first have been expressed in terms of the latter”<sup>8</sup>. In fact, the existence of a unit of account established by an authority inside a given community simplifies transactions and enhances the quality of the economic decisions.

The second function of money is acting as a *mean of payment*. The verb “to pay” comes from Latin *pacare*, which means to appease, to pacify, to satisfy<sup>9</sup>. In fact, payment is a unilateral transfer of something valuable from payer to payee that extinguishes the debt that the payer has vis à vis the payee. When we pay, we are at “peace” with our creditor. Payment guarantees a finality as the transaction is successfully concluded. Money as a mean of payment is defined as a legal tender: it is established by an authority that presides over a given community and can change over time. Additionally, such an authority, once having clarified what is to be used as a legal tender, enforces its use through the payment system and forbids citizens from using other forms of money. Therefore, a material means of payment embodies the immaterial unit of account function.

The third function of money is called *medium of exchange*. Money “acts as an intermediary between the buyer and the seller”<sup>10</sup>. It is that object which everybody accepts in return for selling something on the basis of the expectation that it will be possible to use it to buy goods or services in the future. This function introduces the dynamic and multilateral side of money that is essential when thinking to the idea of “exchange”. Both parties in a market transaction,

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<sup>6</sup> Beattie, Andrew, *The History of Money: From Barter to Banknotes* Investopedia, 8 Sept. 2021, [https://www.investopedia.com/articles/07/roots\\_of\\_money.asp](https://www.investopedia.com/articles/07/roots_of_money.asp)

<sup>7</sup> Walker 1878

<sup>8</sup> 1 John Maynard Keynes, *A Treatise on Money*, Chapter 1 *The Classification of Money*, §i.3 (1930)

<sup>9</sup> Pay (v.) c. 1200, *païen*, “to appease, pacify, satisfy, be to the liking of,” from Old French *paier* “to pay, pay up” (12c., Modern French *payer*), from Latin *pacare* “to please, pacify, satisfy” (in Medieval Latin especially “satisfy a creditor”), literally “make peaceful,” from *pax* (genitive *pacis*) “peace” [https://www.etymonline.com/word/pay#etymonline\\_v\\_10195](https://www.etymonline.com/word/pay#etymonline_v_10195)

<sup>10</sup> OpenStax. “27.1 Defining Money by Its Functions.” *Principles of Economics*, OpenStax, <https://opentextbc.ca/principlesofeconomics/chapter/27-1-defining-money-by-its-functions/>.

believe that they will benefit from the exchange as they are obtaining from the other party something greater or of equal value to whatever they have given up. But why choose money if barter exists? In order to exchange goods three conditions, have to be met: double coincidence of wants, endowments and timing. However, in multiparty, decentralized and anonymous transactions the criteria are difficult to be achieved all at the same time. Money, having features that fit the medium of exchange function, solves this problem. It is standardized, so its value is easily assessed. Additionally, as it is an imposition of the state, it is generally accepted by everyone. Moreover, it can be easily divided, has low carrying costs so it is easy to transport and protect while also having a slow deterioration rate compared to other materials.

The last but not least important part of the functional definition of money is the function of money as a *store of value*. Keynes, in *The General Theory*, explains his view of money kept for precautionary and speculative motives, which can be summarized as follows: a defense against market uncertainty. However, money here has many competitors as other items can store value. It competes with financial assets such as bonds, shares, equity and real assets (i.e., gold ingots, jewels or real estate). Nevertheless, money has a big advantage: liquidity. It is the relative speed with which a store of value can be converted into a medium of exchange. Less liquid assets are harder and riskier to sell. Liquidity is a feature possessed by all assets to different degrees. The most liquid asset is money as it can be easily exchange for goods and services, meanwhile the most illiquid is land. Money has an advantage because it is the only asset that retains this characteristic in any economic situation.

## 2. From commodities money to fiat currencies

In societies where markets didn't exist, there was the state of self-sufficiency. When markets started to develop, and people started to enlarge their connections, barter was the method used to carry out transactions between individuals. Bartering is a direct exchange of one good for another. The items used for barter are called *commodity money*, which are everyday items, endowed with an intrinsic value and used primarily as a medium of exchange. Historically, a great variety of physical objects that were thought of as having some special properties - like salt, shells, metal, tobacco, leather, furs, olive oil<sup>11</sup> - has served as a medium of exchange.

However, markets participants using barter, preferred metal to other items as commodity money due to its physical properties<sup>12</sup>. The latter was found to be easy to carry, to identify, to divide, and to weight. Initially, metal was used as money in the form of bars, bricks, rings... Nonetheless, around 770 B.C. the Chinese started using as a medium of exchange miniature replicas of the same item opting for a hoop-shaped object which became the first coin.<sup>13</sup> This led to coinage. Between 550 B.C and 500 B.C commerce had spread coinage to many parts of the Greek world. There was a network of different currencies that were of fine quality and steady weight from the Persian Empire, with its vast gold and silver coinage, to Magna Graecia and Sicily.<sup>14</sup> Using replicas of the same object saved trouble in measuring and weighting metal in every transaction. The first minted official currency was created in 600 B.C

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<sup>11</sup> Samuelson 1973, 274-6

<sup>12</sup> See *supra* note 6

<sup>13</sup> Liuliang Yu and Hong Yu. *Chinese Coins: Money in History and Society*, Page 3. Long River Press. 2004.

<sup>14</sup> Breen, Walter Henry , Allan, John , Stern, Samuel Miklos , Avila-Martel, Alamiro de , Sellwood, David Grenville John and Sutherland, Carol Humphrey Vivian. *Origin Of Coins*, Encyclopedia Britannica, 18 Feb. 2019, <https://www.britannica.com/topic/coin>.



in Europe, more specifically western Turkey, in the kingdom of Lydia<sup>15</sup> and it was made of electrum, a mixture of gold and silver used to pay soldiers. The choice of the metal was very important and different types of coins were used for different purposes. Gold was for large international transactions, while silver, copper and bronze were used for small and domestic payments. Minting by the government was a guarantee against forgery and counterfeiting. Greek coins (Silver Drachmas) and Roman coins (Juno Moneta) were stable for the first 150 years of the Empire but in the early Middle Ages the market almost vanished and coins with it. Feudal economies were largely autarkic and therefore did not need money. After decades of monetary disorder, Charlemagne's pecuniary reform abolished the monetary system based on the *sou* and reintroduced royal monopoly over the coinage process and the silver pennies with limited circulation became the official currency of the empire.<sup>16</sup> As the middle ages turn into modern age, commerce starts again in Europe and the need of a stable money to be used in trading transactions arises.

Contrarily to what we could think, banking originates in Ancient Mesopotamia. With the growth of private property, a temple of economies acting as a tribunal, storage center and private loans recording center, was introduced. It served as a trace of debts and prices. For example, "written orders for the withdrawal of separate lots of grain by owners whose crops [...] were] deposited [...] for safety and convenience."<sup>17</sup> Paper money first appeared in China during the 11<sup>th</sup> century.<sup>18</sup> The concept of *banknotes* was introduced in Europe by Marco Polo during the 13<sup>th</sup> century. As transactions became more international, the use of coins to pay large sums of money lost its convenience.

Banks during the 16<sup>th</sup> century, started using *bank notes* for investors, borrowers and depositors that could take them to the financial institutions "at any time in order to exchange it for their face value in silver and gold coins."<sup>19</sup> In fact, compared to coins, banknotes were found easy to carry, lighter, easier to control and safer to carry around. Today, paper money (i.e., banknotes) and coins are called *fiat currencies*. They are object with little to no intrinsic value, usually made of paper which is created by the State. It is not convertible in anything other than itself and has no fixed value in terms of objective standard.

The first permanent issue of banknotes was initiated by the bank of England. In 1883, the latter established, through in the Bank Charter Acts, that banknotes "shall be legal tender to the amount expressed in such note or notes and shall be taken to be valid as a tender to such amount for all sums above five pounds on all occasions on which any tender of money may be legally made."<sup>20</sup>

During the beginning of the 19<sup>th</sup> century after the Napoleonic wars, Great Britain decided to establish a fixed convertibility of paper money, and so of national currencies, into gold. In fact, during the years between 1816 and 1820, the Gold standard era began. Therefore, the Bank of England was able to convert banknotes into gold at the request of the contractor. Moreover, there was no limit on the import and export of gold and the British Royal Mint was obliged to

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<sup>15</sup> *Id.*

<sup>16</sup> TY - JOUR AU - Day, William PY - 2003/02/26 SP - 25 EP - 45 T1 - *The monetary reforms of Charlemagne and the circulation of money in early medieval Campania* VL - 6 DO - 10.1111/1468-0254.00002 JO - *Early Medieval Europe*

<sup>17</sup> Davies, Glyn, *A history of money from ancient times to the present day*, 3rd ed. Cardiff: University of Wales Press, 2002. <http://projects.exeter.ac.uk/RDavies/arian/origins.html>

<sup>18</sup> *Origin of Paper Money*, Texas Republic Bank, April 23, 2019 <https://texasrepublicbank.com/origin-of-paper-money/>

<sup>19</sup> *Id.*

<sup>20</sup> *Currency and Banknotes Act 1928*, UK Legislation, 18&19 geo 5. Ch.13 (1928) [https://www.legislation.gov.uk/ukpga/1928/13/pdfs/ukpga\\_19280013\\_en.pdf](https://www.legislation.gov.uk/ukpga/1928/13/pdfs/ukpga_19280013_en.pdf)

buy and sell gold at a predetermined price. In addition, the bank of England had to maintain price stability: a greater inflow of gold could cause inflation, while an outflow of the precious metal could cause the exact opposite. It was later adopted by other countries, such as Germany in 1872 and the US in 1900. In fact, 1 kg of gold was equivalent to \$664.556 that itself corresponded to £136.5695 or 3444.444 francs or lire and to 2790 marks.<sup>21</sup>

However, at the beginning of the next century, the political scenario mutated drastically: alliances changed, indebtedness of governments increased. With World War I, the gold standard lost its public appeal “demonstrating its inability to hold through both good and bad times.”<sup>22</sup> After the war, financial difficulties have continued to increase. In fact, in 1929, the stock market crashed, as “commodity prices were collapsing; and banks were overextended”<sup>23</sup>. Furthermore, in 1931, Great Britain abandoned the gold standard. <sup>24</sup> On the other hand, the United States increased amount of dollars necessary to buy an ounce of gold rising from \$20.67/oz to \$35/oz<sup>25</sup>to improve their economy.

After World War II, the Bretton Woods agreements established a new international monetary system, laying the foundations for a system of international monetary relations. It aimed to create a “cooperative international monetary arrangement that would foster exchange-rate stability but would still allow countries to pursue key domestic economic objectives, notably, full employment.”<sup>26</sup> These agreements also established that the U.S dollar would become the reference currency for trade so that all national currencies were valued in relation to it and that the U.S dollar was the only currency that could be converted into gold at an exchange rate of 35 dollars to an ounce of the precious metal<sup>27</sup>. However, the Vietnam War and the sharp rise in government debt and spending in the US, marked the end of the Bretton Woods system. On August 15, 1971, Richard Nixon suspended the convertibility of the dollar into gold because, due to increasing demands for gold conversion, US reserves were becoming increasingly low.<sup>28</sup> During December 1971, “the United States devalued the dollar against gold by approximately 8 ½ percent to \$38 per ounce”<sup>29</sup> and the G10<sup>30</sup> countries abandoned the Bretton Woods agreement. With the Smithsonian Agreement, the dollar was devalued, and exchange rate fluctuations began.<sup>31</sup>

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<sup>21</sup> Britannica, The Editors of Encyclopaedia. *Gold standard*, Encyclopedia Britannica, (11 Sep. 2019), available at <https://www.britannica.com/topic/gold-standard>

<sup>22</sup> Lioudis, Nick, *What Is the Gold Standard?*, Investopedia, (30 Dec. 2021) <https://www.investopedia.com/ask/answers/09/gold-standard.asp>.

<sup>23</sup> *Id.*

<sup>24</sup> Treasury statement for the Press on Britain leaving the Gold Standard, (20 September 1931) T 163/68/18 <https://www.nationalarchives.gov.uk/education/resources/thirties-britain/going-gold/>

<sup>25</sup> Allan L. Meltzer. *A History of the Federal Reserve, Volume 1: 1913–1951*, Page 11. University of Chicago Press, 2003

[https://books.google.it/books?id=190xVQDRtHAC&printsec=frontcover&redir\\_esc=y#v=onepage&q&f=false](https://books.google.it/books?id=190xVQDRtHAC&printsec=frontcover&redir_esc=y#v=onepage&q&f=false)

<sup>26</sup> Bordo, Michael D., and Owen F. Humpage, 2014. *Federal Reserve Policy and Bretton Woods*, Federal Reserve Bank of Cleveland working paper, no. 14-07, 2

<sup>27</sup> Meltzer, Allan H., *U.S. Policy in the Bretton Woods Era*, Federal Reserve Bank of St. Louis *Review* 73, no. 3 (May/June 1991): 53–83.

[https://files.stlouisfed.org/files/htdocs/publications/review/91/05/Bretton\\_May\\_Jun1991.pdf](https://files.stlouisfed.org/files/htdocs/publications/review/91/05/Bretton_May_Jun1991.pdf)

<sup>28</sup> *Id.*

<sup>29</sup> Bordo, Michael D., and Owen F. Humpage, 2014. *Federal Reserve Policy and Bretton Woods*, Federal Reserve Bank of Cleveland working paper no. 14-07, 20

<sup>30</sup> Germany, Belgium, Canada, the United States, France, Italy, Japan, the Netherlands, the United Kingdom and Sweden

<sup>31</sup> *See supra note 29*

### 3. Introduction of the internet and development of digital currencies

The idea of encrypting messages in order to make them incomprehensible to others (especially enemies) has existed since the development of writing.<sup>32</sup> From sending secret communications between military commanders to decrypting them in order to win wars, cryptography evolved considerably. The progress of technology but most importantly of computer really boosted the use of cryptography around the globe.

#### a. David Chaum and the Cypherpunk movement

During the 1980's the arrival of computers and the internet brought to light a number of skeptical individuals that believed in a society moving towards a state of complete surveillance similar to the one described in George Orwell's book *1984*.

David Chaum is an American data scientist and was a pioneer in the creation of digital payments. In fact, he wrote several papers including, in 1983, what can be considered the first ever idea of a digital cash system, called *Blind Signatures for Untraceable Payments*. In this paper, the author describes a computerization of the way people pay with banknotes and coins for goods and services. He proposes a new kind of payment system having the following properties:

(1) *Inability of third parties to determine payee, time or amount of payments made by an individual.*

(2) *Ability of individuals to provide proof of payment, or to determine the identity of the payee under exceptional circumstances.*

(3) *Ability to stop use of payments media reported stolen.*<sup>33</sup>

In order to introduce a blind signature network, David Chaum uses as an example the voting technique, based on the use of envelopes lined with carbon paper<sup>34</sup>. The system works in the following way:

- A voter inserts a completed anonymous ballot in a special carbon-lined envelope that has the voter's credentials pre-printed on the outside.
- A trustee verifies the credentials and signs the envelope, thus transferring such a signature to the ballot inside via carbon paper.
- Once signed, the packet is returned to the voter, who transfers the signed ballot into a new, plain, unmarked envelope.
- Then, the signer does not see the content of the message, but a third party can later verify the signature and know that the signature is valid within the limitations of the signature scheme below.

Consequently, following this idea, Chaum presents a system of untraceable payments through the use of blind signatures. In order to explain it he introduces three actors: a bank, a payer and a payee. Backed by mathematical functions, he states the following process:

1. The payer decides to pay and forms a note that he forwards to the bank
2. The bank receives the note and signs it "and debits payer's account"<sup>35</sup>
3. The payer then verifies the signature and stops the false note

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<sup>32</sup> Simmons, Gustavus J.. *History of cryptology*. Encyclopedia Britannica, (17 Aug. 2016)  
<https://www.britannica.com/topic/cryptology/History-of-cryptology>

<sup>33</sup> Chaum, David. *Blind Signatures for Untraceable Payments*, Department of Computer Science, University of California, Santa Barbara (CA)  
<https://sceweb.sce.uhcl.edu/yang/teaching/csci5234WebSecurityFall2011/Chaum-blind-signatures.PDF>

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

4. If the note is valid, the payer can use it to pay anyone
5. The payee receives the signed and verified note by the payer and forwards it to the bank
6. The bank verifies the note, adds it to the complete list of cleared notes and stops if the note is already on the list
7. Finally, the bank credits the payee's account, and informs the payee of acceptance<sup>36</sup>

In 1989 David Chaum implemented this process in his invention named DigiCash, an electronic money corporation whose goal was to make anonymous and safe transactions.

The idea of privacy and untraceable payments introduced by David Chaum can be considered the basis of nowadays' digital currencies and resulted in a movement called *Cypherpunk* during the late 1980's. In 1993, Erik Hughes published a book called "Cypherpunk Manifesto" that focused on the idea of protecting people's privacy during the digital world's birth<sup>37</sup>.

#### b. The origin of virtual currencies

After the invention of the World Wide Web in the mid 1990's, access to and use of internet increased exponentially. The global digital population in January 2021 consisted of "4.66 billion active internet users worldwide - 59.5 percent of the global population"<sup>38</sup>. The continuous technological improvements made in the last two decades, helped to rapidly spread the internet-based commerce with exchanges that became more efficient and secure.

Today, bank money is the first monetary instrument in most countries due to its convenience and properties such as low carrying costs and the storage functionalities (i.e., it doesn't get lost). It can be transferred via checks and also via electronic payments.

Electronic money is a step further in the world of digital cash. It is an electronic storage of monetary value on a technical device that may be widely used to make payments without necessarily including bank accounts in the transactions like credit cards do. It uses computer networks and digital stored value systems.

With the internet's spread and the creation of online groups and virtual communities, recent years have shown a rapid increase of individuals that interact and follow mutual interests<sup>39</sup>. Some internet platforms are used to connect with other people all around the world (social networks such as Instagram, Facebook, Twitter), some to share knowledge (like Wikipedia), others to create blogs to share their passions, to gamble, and so on. From interest to the research of new instruments, some virtual communities started to create their own form of digital currency, a type of money that they shared and exchanged for internally traded goods and services.

In 2012 the European Central Bank defined a virtual currency as a "type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community"<sup>40</sup>. Therefore, it is a "specific type of electronic money, basically used for transactions in the online world"<sup>41</sup>.

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<sup>36</sup> *Id.*

<sup>37</sup> Kenny, Joel. *Digital Currency: A Brief History, An overview of the rise of Bitcoin and digitalised value*, The Block Journal, Apr 9, 2019 <https://medium.com/block-journal/digital-currency-a-brief-history-98be6f6f0f10>

<sup>38</sup> Johnson, Joseph. Worldwide digital population as of January 2021, Statista, (Sep 10, 2021) <https://www.statista.com/statistics/617136/digital-population-worldwide/>

<sup>39</sup>Magid Igbaria, *The Virtual Driving Forces in the Virtual Society, Communications of the ACM*, 42 (Dec 99), no. 12. <https://mason.gmu.edu/~montecin/def-virt-comm.html>

<sup>40</sup> *Virtual Currency Schemes*. European Central Bank. (Oct. 2012), 13 <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>.

<sup>41</sup> *Id.*

### c. Differences between digital and virtual money

Nowadays, the term “digital currency” or “digital money” is used to refer to every kind of payment means that exist in an electronic form.<sup>42</sup> In fact, it is a wide term that embodies multiple monetary inventions. Every virtual currency is a digital currency but not every digital currency is a virtual one.

Three types of virtual currencies schemes exist. The closed virtual currency scheme in which there is no connection between the real world and the virtual economy. In such system, the virtual currency invented is only used for online goods and services and the money cannot be used to pay real commodities. Generally, this type of scheme is used in online games such as fruit ninja money. The second type is called unidirectional scheme. The connection is unilateral, meaning that the “virtual money can be purchased directly using a real currency at a specific exchange rate”<sup>43</sup> specified by the scheme owner. Finally, the third type of virtual system is called bidirectional scheme. The virtual currency can be converted into a regulated currency. Individuals can buy and sell their possession of virtual money “according to the exchange rates with their currency”<sup>44</sup>. As a consequence, virtual currency can be used to purchase real goods and services and vice versa. The difference from any other convertible virtual currency system is the connection and integration with the real world.<sup>45</sup>

In fact, virtual currencies are similar to electronic payment systems, from which they also differ on a number of points. First of all, electronic money is denominated in legal tender meaning that it is recognized within a given political jurisdiction. The link between the electronic money and the traditional money format is preserved<sup>46</sup>; the former is expressed with the same unit of account than latter (euros, pound, dollars...). In fact, the respective national currencies around the world are established as a legal tender. It is the official mean of payment which makes it easier to administrate government expenditures, to pay taxes, to regulate transactions in private sector. On the contrary, virtual currencies do not possess the legal tender status and are accepted within a specific online community. In fact, in the virtual schemes the unit of account is an invented currency. This is very important in the bidirectional systems.

In defiance of electronic money, the supply and demand of virtual currencies are not fixed. As virtual schemes depend on exchange rates that may change over short periods of time, their value is volatile. To better understand this concept, we can look at an example of electronic payments system which is not a virtual currency scheme: PayPal. Even though it is digital, so internet-based, and the accounts created are virtual, the company did not issue a PayPal currency. It operates within the banking system and “PayPal (Europe) S.à r.l. et Cie, S.C.A. is duly licenced as a Luxembourg credit institution in the sense of Article 2 of the law of 5 April 1993 on the financial sector as amended and is under the prudential supervision of the Luxembourg supervisory authority Commission de Surveillance du Secteur Financier of Luxembourg.”<sup>47</sup>

Secondly, electronic payments are regulated and issued by a legally established electronic monetary institution. They are subject to strict supervision and the possibility to redeem funds is guaranteed. Virtual currencies schemes, on the other hand, satisfy two of the functional

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<sup>42</sup> Rose, Chris. (2015). *The Evolution Of Digital Currencies: Bitcoin, A Cryptocurrency Causing A Monetary Revolution*, International Business & Economics Research Journal (IBER). 14. 617. 10.19030/iber.v14i4.9353.

<sup>43</sup> *Virtual Currency Schemes*. European Central Bank., (Oct. 2012), 14, available at <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>

<sup>44</sup> *Id.*

<sup>45</sup> *Id.*

<sup>46</sup> *Id.*

<sup>47</sup> *About Us*, PayPal, [https://www.paypal.com/be/webapps/mpp/about?locale.x=en\\_BE](https://www.paypal.com/be/webapps/mpp/about?locale.x=en_BE).

definitions of money<sup>48</sup>. They are a medium of exchange and a mean of payment. However, they diverge from the unit of account<sup>49</sup> concept because virtual currencies do not possess a physical counterpart with a legal tender status. Therefore, they are not regulated by institutional authorities and issued by a non-financial private company.<sup>50</sup> They are not subject to state supervision because the task of controlling the currency is carried out by the issuer and as a consequence, there is no guarantee of the possibility of redeeming funds.

Moreover, as the supervision and regulation are different, the risks associated with these systems are distinctive. The threats linked to electronic money are merely operational, specifically identified as potential breaks in the system. On the other hand, the risks related to virtual currencies are much more relevant. Like the electronic payments system, they are subject to operational risks. However, due to the lack of regulation and public oversight, they are exposed to fraud risks, such as scams of tokens that could not be converted into other currencies, and legal uncertainty risk as they are issued by private entities that do not offer legal protection. Additionally, they are subject to credit risk as the settlement institution cannot guarantee that it will be able to fully meet its financial obligations when funds are due. Finally, there is the risk of running into liquidity shortage. Virtual currency schemes are very illiquid assets. As a consequence, if something happens, the conversion of users' funds into real money is not direct and can easily lead to a significant loss.

Hence virtual currencies, established by an "individual" within a given virtual community, widely accepted by everyone and used with the expectation of engaging in futures transactions, act as a unit of account and as a mean of payment. However, due to their numerous risks and lack of state regulation it is difficult to imagine them as reliable, secure and easily liquidated in order to fulfil the function of a store of value.

#### d. Virtual assets' advantages

Nonetheless, virtual currency schemes have also some advantages.

Busing the latest technology and providing a reduced and more direct channel of information, they increase transaction speeds. They also remove the geographical boundaries that sometime prevent people to engage in transaction connecting everyone everywhere. As a consequence, virtual money offers "financial incentive for virtual community users to continue to participate, and [...] they can also] generate revenue for their owners, for instance float revenue."<sup>51</sup>

In addition, as the owner can control the creation of money and decide how to allocate funds, virtual currency schemes eliminate intermediaries during monetary transactions and so "provides a high level of flexibility regarding the business model and business strategy for the virtual community."<sup>52</sup>

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<sup>48</sup> Money in every form has been identified by 4 main functions: unit of account, mean of payment, medium of exchange and store of value.

<sup>49</sup> John Maynard Keynes in the first chapter of volume 1 of *A treatise on money* entitled *The classification of money* states that "money of account [is what] in which debts, price and general purchasing power are expressed [...] It] comes into existence along with debts, which are contracts for deferred payment, and price lists, which are offers of contracts for sale or purchase [...] Money itself, namely that by delivery of which debts contracts and price contracts are *discharged*, and in the shape of which a store of general purchasing power is *held*, derives its character from its relationship to the money of account, since the debts and prices must first have been expressed in terms of the latter" – (1930), 3

<sup>50</sup> *Virtual Currency Schemes*. European Central Bank. (Oct. 2012.), 5  
<https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf>

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

Finally, bidirectional virtual currency schemes can also specifically “compete with traditional currencies, such as the euro or the US dollar”<sup>53</sup> as they don’t have any physical storage costs. Inside the family of virtual currency schemes, some can operate through different models. The operation of these schemes includes three components:

1. their issuance and redeemability
2. mechanisms to implement and enforce internal rules on the use and circulation of the currency
3. the payment and settlement process<sup>54</sup>

All of these properties make them a modern interesting tool. As technology becomes more and more sophisticated, the idea of virtual currency schemes continues to evolve. In fact, people expanded this concept even further distinguishing centralized and decentralized virtual currency schemes.

#### 4. Virtual currencies schemes and cryptocurrencies

A virtual currency, even if it is a type of unregulated digital currency, can be managed in a centralized or decentralized manner among participants in the community. In fact, a subset of virtual currencies is protected by cryptography. As can be observed in figure 1, cryptocurrencies are part of the digital currencies world and more specifically are a decentralized and convertible virtual currency. Some digital currencies can include a hybrid scheme, which is the combination of the two managing functions: one performed by a central authority and the other decentralized among individuals.

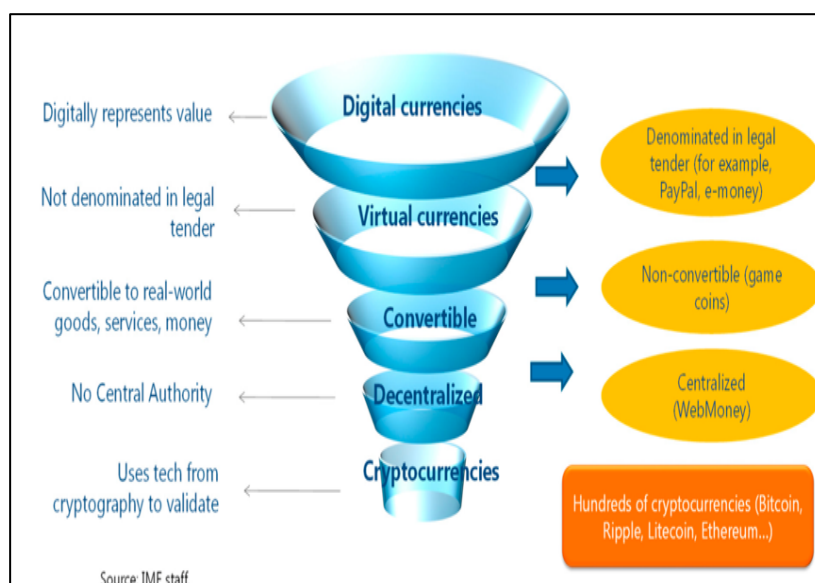


Figure 1:<sup>55</sup> Taxonomy of virtual currencies

<sup>53</sup> *Id.*

<sup>54</sup> Dong He, Karl Habermeier, Ross Leckow, Vikram Haksar, Yasmin Almeida, Mikari Kashima, Nadim Kyriakos-Saad, Hiroko Oura, Tahsin Saadi Sedik, Natalia Stetsenko, & Concepcion Verdugo-Yepe, *Virtual Currencies and Beyond: Initial Considerations*, International Monetary Fund, Monetary and Capital Markets, Legal, and Strategy and Policy Review Departments, Authorized for distribution by José Viñals, Ross Leckow, and Siddharth Tiwari, (Jan 2016), available at

[https://learn.luiss.it/pluginfile.php/1011882/mod\\_resource/content/1/IMF%202016%20virtual%20currencies.pdf](https://learn.luiss.it/pluginfile.php/1011882/mod_resource/content/1/IMF%202016%20virtual%20currencies.pdf)

<sup>55</sup> *Id.* 8

a. Centralized virtual currency schemes

In a centralized virtual currencies scheme, the unit of the currency is issued by a single administrative authority that controls the entire system.<sup>56</sup> In addition, the authority establishes rules for its use and can decide to withdraw the currency from circulation. Therefore, the central administrator's role is similar to the one of national central banks in a regulated monetary system as it helps to conduct transactions between participants. In fact, it offers security and monitoring systems by using their network to find trading partners and by doing so helps participants to complete their transactions.

Centralized virtual currencies are often stored in digital wallets that are a “software-based system that securely stores users’ payment information and passwords for numerous payment methods and websites”<sup>57</sup>. In fact, in centralized virtual schemes exchanges between cryptocurrencies and fiat currency and vice versa or even between two different cryptocurrencies can be made. One famous example of a centralized virtual currency scheme is Liberty Reserve, a company based in Costa Rica and since 2006 until 2013 has allowed people to send and receive secure payments without revealing their identity and any other information. The company had a digital currency called the *Liberty Reserve* which was not a cryptocurrency but could be converted in Euros and U.S. dollars. To use the Liberty Reserve’s online exchange service, customers had to set an account with information like date of birth and name that did not have to be verified, allowing them to carry transactions from these accounts. The company took advantage of the little oversight of international financial transactions in Costa Rica and most of these exchange of payments were unregulated but legitimate. However, in this context some smuggling of illegal money took place. In fact, Liberty Reserve shut down its operations in 2013 because the U.S authorities discovered that it was a massive multibillion dollar money laundering business. The founder of the company was found guilty of allowing cybercriminals around the world to launder the proceeds of their activities through his virtual currency.<sup>58</sup>

b. Decentralized virtual currency schemes and cryptocurrencies

On the opposite side of the spectrum, some virtual currency schemes are completely decentralized. They differ from centralized ones as no third party is involved. Therefore, they do not use a central party system that issues the currency.

Some decentralized virtual currencies implement cryptography technology to secure and authenticate currency transactions. They are called *cryptocurrencies* and are a subpart of the decentralized convertible virtual currencies. In this system, the authority can be replaced by a series of cryptographic techniques to protect networks during their operations making the necessity of an administrative authority useless. In fact, a decentralized cryptocurrency system operates via peer-to-peer (P2P) network. They use internal protocols that “govern the operation of the system and allow the verification of transactions to be performed by the system

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<sup>56</sup> Paulin, Alois & Anthopoulos, Leonidas & Reddick, Christopher. *Beyond Bureaucracy - Towards Sustainable Governance Informatisation*. 10.1007/978-3-319-54142-6, 82 (2017).

<sup>57</sup> Kagan, Julia & Khartit, Khadija, *Digital Wallet*, Investopedia, (March 29, 2021)  
<https://www.investopedia.com/terms/d/digital-wallet.asp>

<sup>58</sup> Office of Public Affairs, Founder of Liberty Reserve Pleads Guilty to Laundering More Than \$250 Million through His Digital Currency Business, U.S. Department of Justice, (January 29, 2016)  
<https://www.justice.gov/opa/pr/founder-liberty-reserve-pleads-guilty-laundering-more-250-million-through-his-digital>



participants themselves”<sup>59</sup>. It usually has a fixed supply of cryptocurrency meaning that there is a limit to the number of issued units of crypto money.

### c. Blockchain technology

Decentralized currencies using cryptography methods such as Bitcoin or Ethereum have based their payment systems on blockchain network.

Blockchain, also referred to as a Distributed Ledger Technology, was first adapted and used by Satoshi Nakamoto<sup>60</sup> during his creation of bitcoin in 2009<sup>61</sup>. Blockchain technology is “a decentralized ledger of all transactions across a peer-to-peer network”.<sup>62</sup> It is a system that is completely open to anyone; once the data has been recorded inside the blockchain, modifying it becomes an extremely difficult task.

Each block in the chain contains three information: some *data*, a *hash* and the previous block’s *hash*. The *data*, that is stored inside a block, varies depending on the type of blockchain. For example, Bitcoin’s blockchain stores the details about a transaction such as the sender, the receiver and the number of coins exchanged in the data part.<sup>63</sup> A *hash* is a cryptographic operation that generates unique and unrepeatable identifiers from a given piece of information<sup>64</sup> like a fingerprint. These functions are primarily intended to encode data with aim of forming a single string of character, regardless of the amount of data initially entered into the function. It is used to guarantee the authenticity of data, to securely store passwords and to sign electronic documents.<sup>65</sup> Once a block is created, its *hash* is calculated. Altering something inside the block will cause the *hash* to change indicating that the block is no longer the same as before. In fact, *hashes* are very useful when there is the necessity to detect modifications inside blocks. The third element inside each block is the previous block’s *hash*. It is this element that effectively creates a chain of blocks through a technique that ends up making a block chain so secure. In the bitcoin blockchain it is called a *timestamp server* where: “[t]he *timestamp* provides that the data must have existed at the time, obviously, in order to get into the *hash*. Each *timestamp* includes the previous timestamp in its *hash*, forming a chain, with each additional *timestamp* reinforcing the one before it.”<sup>66</sup>

If for example we have a chain of three blocks, each is connected to the other by means of the previous one’s hash contained in every block. So, block number 2 points to block number 1 and block number 3 to the second block. If the second block is tampered, this causes its *hash* to change. As a consequence, this action will make all the following blocks invalid as they no longer store a valid *hash* from the block that precedes them. It is through this process that it is possible to identify how and where a block has been tampered with and if information changed.

#### i. *Proof-of-work*

Sometimes using hashes is not enough to prevent tampering. Computers these days are very fast and can calculate hundreds of thousands of hashes per second. In fact, theoretically you

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<sup>59</sup> *Id.* at 54, 9

<sup>60</sup> a person whose identity is still secret, a pseudonymous person or group.

<sup>61</sup> Nakamoto, Satoshi, *Bitcoin: A Peer-to-Peer Electronic Cash System*, Bitcoin <https://bitcoin.org/bitcoin.pdf>

<sup>62</sup> PricewaterhouseCoopers, *Making Sense of Bitcoin, Cryptocurrency and Blockchain*. PwC.

<https://www.pwc.com/us/en/industries/financial-services/fintech/bitcoin-blockchain-cryptocurrency.html>

<sup>63</sup> Fiorentino, Sebastiano, & Perez Fernandez, Irene, *What Is a Hash?* Bit2Me Academy, (7 Jan. 2022)

<https://academy.bit2me.com/it/cos%2527%C3%A8-l%2527hash/>

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> *Id.* at 60 § 3

could tamper with a block and recalculate all the hashes of other blocks to make your blockchain work again.

Therefore, to mitigate this problem, blockchains have something that is called *proof-of-work*. It “involves scanning for a value that when hashed, [...] the hash begins with a number of zero bits. The average work required is exponential in the number of 0 bits required and can be verified by executing a single hash”<sup>67</sup>. In a nutshell, it is a mechanism that slows down the creation of new blocks. It takes about 10 minutes for bitcoin to calculate the required proof-of-work and add a new block to the chain.<sup>68</sup> In addition, “[...] the block cannot be changed without redoing the work. As blocks are chained after it, the work to change the block would include redoing all the blocks after it.”<sup>69</sup> This mechanism makes it very hard to tamper with the blocks because if you change information inside one block, you'll need to recalculate the proof-of-work for all the following ones. In fact, Satoshi Nakamoto explains that “[t]o modify a past block, an attacker would have to redo the proof-of-work of the block and all blocks after it and then catch up with and surpass the work of the honest nodes. [...] [T]he probability of a slower attacker catching up diminishes exponentially as subsequent blocks are added. To compensate for increasing hardware speed and varying interest in running nodes over time, the proof-of-work difficulty is determined by a moving average targeting an average number of blocks per hour. If they're generated too fast, their different difficulty increases.”<sup>70</sup>

When joining this network, each individual will have access to the entire database and to all the blocks inside the blockchain, and as a consequence, its complete history. As we know, these systems use a peer-to-peer network instead of being managed by a central entity so that no one can own or control the data inside the chain. In addition, every party verifies the data on their transaction directly without delegating this task to an intermediary. In fact, the distributed ledger is connected to the chain via some nodes which are defined as “any kind of electronic device that maintains copies of the blockchain and keeps the network functioning”.<sup>71</sup> Any new node activity, from creation to simple modification, must be approved by the network. The node's role is to store and forward information to all other nodes in the network<sup>72</sup> and it is described by Satoshi Nakamoto through the following steps:

“

- 1) New transactions are broadcast to all nodes.
- 2) Each node collects new transactions into a block.
- 3) Each node works on finding a difficult proof-of-work for its block
- 4) When a node finds a proof-of-work, it broadcasts the block to all [other] nodes.
- 5) Nodes accept the block only if all transactions in it are valid and not already spent.
- 6) Nodes express their acceptance of the block by working on creating the next block in the chain using the hash of the accepted block as the previous hash.”<sup>73</sup>

In decentralized virtual schemes using cryptography, the issuance of new units of cryptocurrencies is not done by an institutional unit. Instead, some participants, called *miners*, “voluntarily make computer processing available in order to validate a set of transactions [(i.e., blocks)] made with a decentralized virtual currency scheme and add this to the payment Ledger

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<sup>67</sup> *Id.*

<sup>68</sup> *Mastering Bitcoin*, O'Reilly Online Learning, O'Reilly Media, Inc., Chapter 8: Mining and Consensus <https://www.oreilly.com/library/view/mastering-bitcoin/9781491902639/ch08.html>.

<sup>69</sup> Nakamoto, Satoshi, *Bitcoin: A Peer-to-Peer Electronic Cash System*, Bitcoin §4 available at <https://bitcoin.org/bitcoin.pdf>

<sup>70</sup> *Id.*

<sup>71</sup> *Blockchain*, BuiltIn, available at <https://builtin.com/blockchain>.

<sup>72</sup> Iansiti, Marco, and Karim R. Lakhani. *The Truth about Blockchain.*, Harvard Business Review, (21 Aug. 2019) <https://hbr.org/2017/01/the-truth-about-blockchain>.

<sup>73</sup> *Id.* at 69 §5

[(i.e., the blockchain)]”<sup>74</sup>. Miners add units to the money supply and make the system run smoothly as they prevent double-spending and false units. Consequently, cryptocurrencies that use the proof-of-work system like Bitcoin, Ethereum and Litecoin, have individuals responsible of creating new blocks on the chain or modifying any block and, as a consequence, all blocks that come after it. When a block is successfully minted, the change is widely accepted by all the nodes in the network. In addition, the miners are rewarded with “a specific number of units”<sup>75</sup>. Therefore, with this procedure new units of virtual currency are introduced into the system.

## ii. *Proof-of-stake*

The proof-of-work is not the only scheme existing. There is another type of validating system: The proof-of-stake. This system “takes into account the number of units of virtual currency owned by each user in the network.”<sup>76</sup> In this instance, miners cover a completely different role compared to the one in the proof-of-work system. Instead of using miners to validate transactions, the proof-of-stake system operates via a process called *forging*. It consists of the following: “all active users know beforehand the point in the network that will process the next transaction and add it to the record of all transactions, the so-called blockchain”<sup>77</sup>. The *validators* are participants with a significant stake in the systems and “ ‘stake’ some of the blockchain’s native tokens to become eligible for selection as a validator node.”<sup>78</sup> When the data in a transaction block has to be confirmed, validators are selected on a pseudorandom basis to approve it. Generally, the higher the number of tokens a validator has staked the more likely it is for him to be chosen to perform this task. When the validation is terminated, the individuals acting as validators are rewarded with transaction fees.

This system works more efficiently compared to the proof-of-work as not every transaction has to be sent to the entire network in order to be confirmed. Moreover, this process eliminates “some of the vulnerabilities of the proof-of-work system, such as the possibility of manipulation through a temporary monopoly of mining and the high energy consumption”. In fact, in the proof-of-work system, participants that control 51% of the computational power in the network could manipulate transactions giving them a control similarly to the one of centralized systems (validation of certain transaction or even allowing double spent transactions...). This happened in June 2014 and Ittay Eyal, a post-doctorate researcher in Cornell's Department of Computer Science, affirmed that when participants have that much control “it becomes a monopoly. [The controller] can set arbitrarily high transaction fees, for example, or even extort someone to allow them to perform transactions. It could block or delay all transactions but its own. One of Bitcoin's goals was to be a free system, independent of anyone's control. With small pools, no one has this kind of control. With a 51 percent, there is.”<sup>79</sup> On the other hand, in order to obtain the same results in a proof-of-stake system, a participant should hold 51% of the total amount of units, which should be, theoretically, far more expensive.

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<sup>74</sup> *Virtual currency schemes- a further analysis*, European Central Bank, §1.1, 7-8 10.2866/662172, (Feb 2015) <https://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemesen.pdf>

<sup>75</sup> *Id.*

<sup>76</sup> *Id.* §1.3

<sup>77</sup> *Id.* at 76

<sup>78</sup> Cryptopedia Staff, *Types of Blockchains: PoW, PoS, and Private*, Cryptopedia, (July 22, 2021)

<https://www.gemini.com/cryptopedia/blockchain-types-pow-pos-private#section-blockchain-types>

<sup>79</sup> Goodin, Dan, *Bitcoin security guarantee shattered by anonymous miner with 51% network power*, Arstechnica, (2014) <https://arstechnica.com/information-technology/2014/06/bitcoin-security-guarantee-shattered-by-anonymous-miner-with-51-network-power/>

Finally, the proof-of-stake system can be considered as more convenient due to the greater speed of validation for transactions, as “everybody in the network knows the point in the network to which their transaction will be sent” and higher energy efficiency “as it requires less computer processor power”<sup>80</sup>. This last reason should not be underestimated. Today, most cryptocurrencies use proof-of-work systems for the mining process. The Technical University of Monaco and the Massachusetts Institute of Technology have estimated that it takes an average annual consumption of \$12,500, which is the equivalent of about 9 years of electricity consumption, to produce a single bitcoin<sup>81</sup>. This consumption of energy, about 97 terawatt-hours per year, is associated with the emission of more than 22 million tons of carbon dioxide every year. As a consequence, in addition to migrating towards proof-of-stake, several projects are taking off to install new bitcoin factories powered entirely by renewable sources. For example, Jack Dorsey who founded Twitter in 2006, will invest 5 million dollars in a mining site on US soil powered by solar energy.<sup>82</sup>

Regardless of whatever system is used to prevent tampering, it is clear that blockchains are transparent and secure. Every transaction and its associated value are registered in the ledger. They can be easily found by anyone having access to the system because every node and user has a unique alphanumeric identification number, a “unique 30-plus-character address”<sup>83</sup>. Users on a blockchain can choose to be anonymous or not, so that “the public can see that someone is sending an amount to someone else, but without information linking the transaction to anyone”<sup>84</sup>, as transactions between parties occur between the above stated blockchain addresses. In addition, these transactions can also be programmed, meaning that users set up by algorithms that “automatically trigger transactions between nodes”<sup>85</sup>.

### *iii. Smart contracts*

The term *smart contract* was first used in 1997 by Nick Szabo, a computer scientist law scholar and cryptographer<sup>86</sup>. His idea consisted in the use a distributed ledger, which is a blockchain technology, to store contracts. Smart contracts are similar to real contracts in the real world. The only difference is that they are completely digital. In fact, a smart contract is actually a tiny computer program that is stored inside a blockchain.

To fully understand this concept, let’s dive into an example. Kickstarter is an American website created to provide collective funding for creative projects. It has been used to finance a variety of businesses, including independent films, video games, music, theatre, comics, journalism and food-related businesses. Product teams can contact Kickstarter to decide to create project, set a funding goal and start collecting money from other individuals who share a belief in the

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<sup>80</sup> *Id. at 76*

<sup>81</sup> Bedwell, Helena. “The Cost of Crypto Is Turning Miners towards Green Power.” *BloombergNEF*, 5 Feb. 2018, <https://about.bnef.com/blog/the-cost-of-crypto-is-turning-miners-towards-green-power/>. *See Also*, Petrucciani, Gabriele, *Criptovaluta e futuro: ecco perché avremo presto i bitcoin «verdi»*, *Il Corriere della Sera*

<sup>82</sup> Kiderlin, Sophie. “Jack Dorsey’s Square Is Investing \$5 Million in Building a Bitcoin Mine That Runs on Solar Power.” *Business Insider*, Business Insider, 7 June 2021, <https://markets.businessinsider.com/currencies/news/jack-dorsey-sustainable-bitcoin-mining-environmental-impact-square-blocksquare-2021-6-1030498893>.

<sup>83</sup> *Id. at 72*

<sup>84</sup> *Id. at 69 §6*

<sup>85</sup> *Id. at 72*

<sup>86</sup> Szabo, Nick, *The Idea of Smart Contracts*, (1997)

<https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/idea.html>

same idea.<sup>87</sup> This platform acts as a third party that is between the people creating the product and the supporters of the project. All parties need to trust the platform with their money and its correct handling. On one hand, the project team expects the crowdfunding platform to give them their money if the project gets successfully funded. On the other hand, supporters want their money to go to the project if it is being financed or to get a refund if it doesn't reach its goals.

As the blockchain technology is typically used on decentralized ledgers and smart contracts are stored inside of a blockchain, no one controls the money. Moreover, smart contracts inherit some of the characteristics of the blockchain. Once one is created, it can never be changed. No one can tamper with it. In fact, it is immutable distributed, meaning that everyone validates the output of your contract on the network. As a consequence, no one can force the contract to release the funds because other people in the network will sport this attempt and declare it as invalid. Smart contracts are not only applied to crowdfunding but can also be used by banks to issue loans, to make automatic payments, or even by postal companies to carry out an automatic payment of a delivery.

In order to create a smart contract, *smart contract standards* have to be met. They define the rules that the contract has to comply with in order to access and use the blockchain network.<sup>88</sup> These rules (i.e., standards) are “application-level to blockchains”.<sup>89</sup> By fulfilling smart contract standards, the smart contract can perform transaction and even create tokens. These standards play an important role in the network. In fact, they can help create the blockchain system by making the communication among different smart contracts, within the same blockchain network, more efficient. The biggest blockchains that supports smart contracts is the cryptocurrency Ethereum.<sup>90</sup> In fact, Ethereum was specifically created and designed to support smart contracts. In addition, these contracts can be programmed in a special programming language called *solidity*<sup>91</sup> that was specifically created for Ethereum and uses a syntax that resembles JavaScript. Bitcoin also supports smart contracts; however, they are a lot more limited compared to Ethereum.<sup>92</sup>

Finally, theoretically, we could also build a smart-contracts-like system that doesn't require an intermediary to send money from one party to another and regulate the exchanges between individuals. Following this line of thought, we could program, for example, a smart contract such that it holds the money of the supporters of a project until the goal is reached. If the goals are met, the smart contract directly passes the money to the creator of the project. Conversely, the money automatically goes back to the supporters. So, by using smart contracts in this way we could completely eliminate the necessity of a third party (i.e., the platform).

#### d. Differences between cryptocurrencies and tokens

An important distinction has to be made between cryptocurrencies and tokens, although they share deep compatibility. As we have just described, cryptocurrencies typically present the following characteristics:

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<sup>87</sup> *About*, Kickstarter, <https://www.kickstarter.com/about?ref=global-footer>.

<sup>88</sup> CoinMarketCap, *Token Standard: CoinMarketCap*, CoinMarketCap Alexandria, (21 Aug. 2021) <https://coinmarketcap.com/alexandria/glossary/token-standard>.

<sup>89</sup> *Id.*

<sup>90</sup> Smith, Corwin, *Ethereum Development Standards*, Ethereum, (December 9, 2021) <https://ethereum.org/en/developers/docs/standards/>

<sup>91</sup> *Solidity*, Solidity 3. V08.10, <https://docs.soliditylang.org/en/v0.8.10/>

<sup>92</sup> Cavicchioli, Marco, *Esistono gli smart contract su Bitcoin?*, Cryptonomist, (15 Lug 2020) <https://cryptonomist.ch/2020/07/15/smart-contract-su-bitcoin/>

- They use cryptography to secure their network system
- Their issue doesn't rely on a central authority. In fact, they are part of the decentralized virtual schemes and rely on a code to manage its issuance and transactions.
- They are built on a blockchain or a Distributed Ledger Technology that allows participants to automatically enforce the rules of the system.
- They are not only used to pay transactions fees on the network but also to incentivize users to keep the cryptocurrency's network secure.

On the other hand, tokens, also called crypto tokens are “units of value that blockchain-based organizations or projects develop on top of existing blockchain networks.”<sup>93</sup> Even though both carry some similarities, tokens are not cryptocurrencies.

Cryptocurrencies and tokens are digital and decentralized assets. No one can control them. They are trustless, as the rules by which they are created are defined in the network protocol. Moreover, they are both used as a way to *store* and *exchange* value and require digital signatures to authorize transaction. Their storage abilities can be linked to one of the four characteristics used to describe and explain the functional definition of money: *store of value*. It refers to an asset that can be held or exchange in the future, for a fiat currency as a defense against market uncertainty. In addition, they both act as a *medium of exchange* as they are assets accepted in return for selling something on the basis of the expectation that it will be possible to use it to buy goods or services in the future.

While tokens and cryptocurrencies appear to be similar, they mainly differ in technical aspects. Cryptocurrencies are often referred to as blockchain's “native currency” as they are issued directly by the blockchain protocol on which the crypto runs. They are the “native asset of a specific blockchain protocol”<sup>94</sup>. Tokens, on the other hand, are “created by platforms that build on top of those blockchains”<sup>95</sup>.

Let's look at some examples. Bitcoin's blockchain only has cryptocurrency as it does not or only in part support smart contracts. The RSK blockchain has Smart Bitcoin<sup>96</sup> as cryptocurrency and RIF<sup>97</sup> as token. Ethereum's blockchain has Ether as native currency and there are many different tokens leaning on it. Tokens built using Ethereum include COMP, DAI, LINK, and many more... These tokens can be used for a variety of functions on the platform they are built on. In fact, they provide access to platform-specific services, and even participate in decentralized finance transactions and activities.

Crypto tokens are created by following the so-called *token standards*. A token standard is a subsidiary of the smart contract standard. It states and describes the mechanisms necessary to create, distribute and issue new crypto tokens on top of blockchains. The most common blockchain through which the majority of tokens have been built is the Ethereum. The most frequently token standard used is the Ethereum Request for Comment (ERC) with its different subparts ERC-1155, ERC-20<sup>98</sup> (the most popular), ERC-223, ERC-721<sup>99</sup>, ERC-777 and others.<sup>100</sup> In 2020, the number of different tokens in circulation created with ERC-20 and ERC-

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<sup>93</sup> Cryptopedia Staff, *Digital Assets: Cryptocurrencies vs. Tokens*, (May 18, 2021) <https://www.gemini.com/cryptopedia/cryptocurrencies-vs-tokens-difference>

<sup>94</sup> *Id.*

<sup>95</sup> *Id.*

<sup>96</sup> *RSK Smart Bitcoin*, CoinMarketCap <https://coinmarketcap.com/it/currencies/rsk-smart-bitcoin/>

<sup>97</sup> *Id.*

<sup>98</sup> This token standard allows the creation of crypto tokens that can interact within Ethereum's network system of decentralized apps

<sup>99</sup> This token standard was designed interchange non-fungible tokens, which are unique and in theory couldn't be interchanged, with other tokens

<sup>100</sup> “Crypto Glossary - Cryptopedia.” *Gemini*, <https://www.gemini.com/cryptopedia/glossary#tokenization-standard>

721 was hundreds and thousands respectively, with the number of different types of tokens expected to continuously grow.<sup>101</sup>

In addition, tokens are programmable. As previously described, they run on software protocols<sup>102</sup> made of token standards that define the functions and the features of the token and the rules for the functioning of the network, in a similar fashion to smart contract standards for cryptocurrencies. Moreover, tokens are permissionless and transparent meaning that their participation in the system is free, as there is no need of special credentials, and that the protocol's rules and transactions between parties can be viewed by anyone.

While the two digital assets, cryptos and tokens, act as a store of value and a medium of exchange, tokens are also designed to represent physical assets, like objects or even services. They can represent intangible assets like data storage space and even tangible assets like art, gaming or real estate. The process of creating tokens serving these functions is called *tokenization*.

## 5. The cryptocurrencies' market

### a. Rise of Bitcoin and of other virtual assets

The first modern cryptocurrency ever invented was Bitcoin. It made its appearance on stage at a very crucial moment. In fact, it firstly emerged in early 2008 in a paper called *Bitcoin: A Peer-to-Peer Electronic Cash System* written by Satoshi Nakamoto when the world banking system was under one of its most severe and catastrophic financial crises. Some believe that the introduction of Bitcoin in the payment system was caused by the loss of confidence of individuals in the banking system, but such a causality relation was never proved.

In normal national centralized payment systems, banks act as intermediaries behind transaction. This process is based on the trust that the parties engaging in a certain transaction have in the mediator (e.g., the bank). However, "the cost of mediation increases transaction costs, limiting the minimum practical transaction size and cutting off the possibility for small casual transactions, and there is a broader cost in the loss of ability to make non-reversible payment for non-reversible services"<sup>103</sup>. Bitcoin, being the first cryptocurrency, possesses all the characteristic stated above and, during the last years revolutionized the payments system introducing a new one "based on cryptography proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party"<sup>104</sup>. In 2009, Nakamoto released Bitcoin to the public, leading to the creation of a new era: the crypto market era.

The market capitalization measure is commonly used in order to better understand the cryptocurrencies market's size. It is a financial measure usually obtained by multiplying the share price with the total number of outstanding shares and it is typically used for public traded companies. However, cryptocurrency analysts obtain it as the multiplication between "the price of the virtual currencies [and] the number of coins in the market"<sup>105</sup>. This measure not only

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<sup>101</sup> Cuen, Leigh, *Token Sales Are Back in 2020*, CoinDesk, (August 12, 2020)

<https://www.coindesk.com/business/2020/08/12/token-sales-are-back-in-2020/>

<sup>102</sup> Cryptopedia Staff, *Digital Assets: Cryptocurrencies vs. Tokens*, (May 18, 2021)

<https://www.gemini.com/cryptopedia/cryptocurrencies-vs-tokens-difference>

<sup>103</sup> *Id.* at 66 §1

<sup>104</sup> *Id.*

<sup>105</sup> de Best, Raynor, *Weekly market cap of all cryptocurrencies combined up until January 2022*, Statista, (January 13, 2022) <https://www.statista.com/statistics/730876/cryptocurrency-market-value/>

gives investors a realistic image of the overall size of the cryptocurrency market but also informs them on how much money is “flowing in or out of each cryptocurrency.”<sup>106</sup>

Figure 2<sup>107</sup> represents the weekly cryptocurrency market capitalization in billions of U.S dollars from July 2010 up until October 2021.

We observe that between 2010 and the beginning of 2017, the market capitalization of the cryptocurrency market remained very low. This is normal, as, by the end of 2010, the first of what would eventually be dozens of similar cryptocurrencies, made its appearance. In fact, the first public exchanges of Bitcoin took place around this time. In November of 2012, WordPress declared that it would accept payment of bitcoin for upgrades and purchases on the site.<sup>108</sup> It was the first big company to start using bitcoin in transactions.

Shortly after this episode, alternatives to Bitcoin started emerging. Individuals fascinated by the innovation that Satoshi Nakamoto brought, wanted to create a better version of Bitcoin and expand beyond its limits. In 2011, Litecoin was launched; it is regarded as the ‘silver’ to bitcoin’s ‘gold’ due to its fuller and extensive total supply of 84 million units.<sup>109</sup> In June of 2012, David Schwartz, Jed McCaleb, and Arthur Britto, driven by the desire to create a more sustainable system to transport value, launched the XRP ledger which included their own currency, named XRP.<sup>110</sup> In 2014, two more important cryptocurrencies appeared: Dash, a privacy-focused cryptocurrency, and Monero, a cryptocurrency system that provides anonymous and confidential transactions.<sup>111</sup> Ethereum was invented in 2013 by Vitalik Buterin (who was 19 at the time).<sup>112</sup> Following Satoshi Nakamoto’s footsteps, Buterin a paper later that year published which described Ethereum as a the “next-generation smart contract and decentralized application platform”<sup>113</sup> and explaining its functioning. However, after multiple delays, Ethereum was officially launched in 2015.

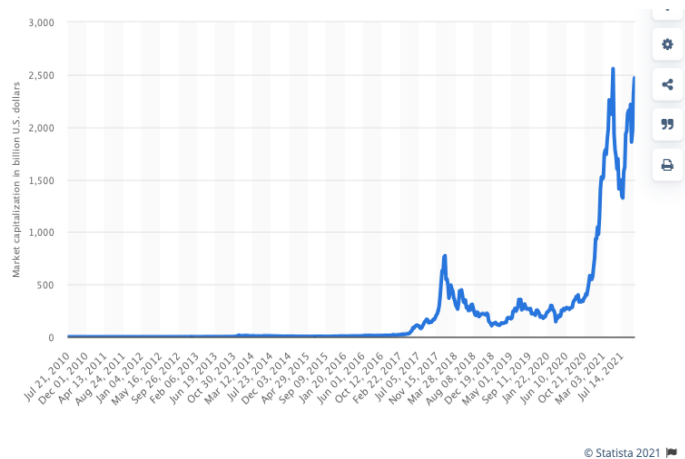


Figure 2: Overall weekly cryptocurrency market

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> Gilbertsonnov, Scott, *WordPress Brings Bitcoin to the Blogging Masses*, Wired, (Nov 16, 2012) <https://www.wired.com/2012/11/wordpress-brings-bitcoin-to-the-blogging-masses/>

<sup>109</sup> Hileman, Garrick & Rauchs, Michel, *Global Cryptocurrency Benchmarking Study*, The Cambridge Centre for Alternative Finance, (2017), 17, <https://www.crowdfundinsider.com/wp-content/uploads/2017/04/Global-Cryptocurrency-Benchmarking-Study.pdf>

<sup>110</sup> *XRPL's Origin Provide a Better Alternative to Bitcoin*, XRP site <https://xrpl.org/history.html>

<sup>111</sup> *Id. at 109*

<sup>112</sup> Wu, Jianing, *Ethereum's History: From Zero To 2.0*, WisdomTree, (July 15, 2021) <https://www.wisdomtree.com/blog/2021-07-15/ethereums-history-from-zero-to-20>

<sup>113</sup> *Ethereum Whitepaper*, Ethereum site <https://ethereum.org/en/whitepaper/>



b. Cryptocurrencies' coming into awareness

As more and more cryptocurrencies started appearing, people slowly started to get used to these new instruments. The popularity of digital assets -most of all of Bitcoin, which is also referred to as the father of cryptocurrencies - increased exponentially in 2017. In fact, as can be observed in the graph just below, Bitcoin's search volume increased drastically in that year reaching an all-time peak.

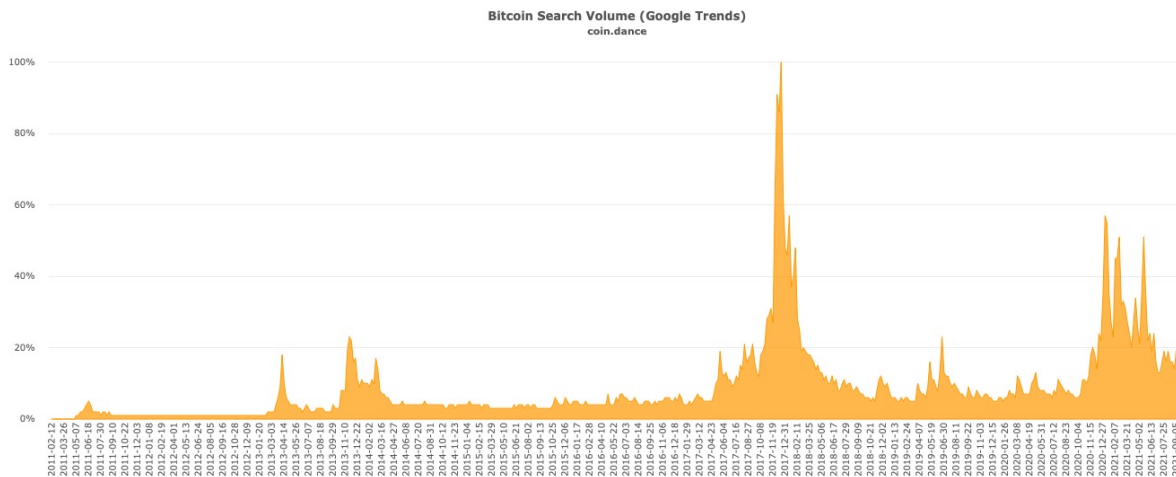


Figure 3: Bitcoin search volume from 2011 to 2021

The effect of this popularity resulted in a market capitalization growth from \$7,12 billion in January of 2016 up to 106,24\$ billion in June of 2017<sup>114</sup>. As depicted in figure 4<sup>115</sup>, the market capitalization in May 2017 is more than four times its previous year's value.

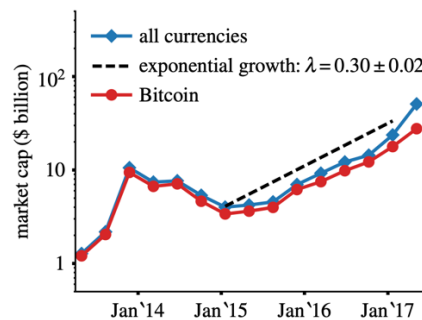


Figure 4: Bitcoin's market capitalization compared to other currencies

Moreover, while the capitalization of the cryptocurrency market increased exponentially compared to the previous years, Garrick Hileman & Michel Rauchs noted, in their paper titled *Global cryptocurrency benchmarking study* (2017), that although Bitcoin is still the dominant cryptocurrency in the market occupying 72% of the total cryptocurrency market capitalization in that year, other cryptocurrencies are starting to emerge and are continuously “cutting into

<sup>114</sup> *Id. at 105*

<sup>115</sup> ElBahrawy A, Alessandretti L, Kandler A, Pastor-Satorras R, Baronchelli A., *Evolutionary dynamics of the cryptocurrency market*. Royal Society open science, §2.2, 170623, (Oct 16, 2017), 3 <https://royalsocietypublishing.org/doi/10.1098/rsos.170623>

Bitcoin’s historically dominant market cap share”<sup>116</sup>. Through the analysis of figure 5<sup>117</sup>, we can come to the conclusion that, in March of 2015, Bitcoin had 86% of the total cryptocurrency market capitalization. It then dropped by 6% in March of 2016, reaching 80% and by 8% in March 2017 becoming 72%. On the other hand, in the diagram, we can observe the rise of other cryptocurrencies like Ripple (XRP) - that was the second cryptocurrency with 8% of the total cryptocurrency market capitalization in March 2015 - and Ethereum - that increased its market capitalization of 6% in only one year, rising from 10% in 2016 to 16% in 2017.

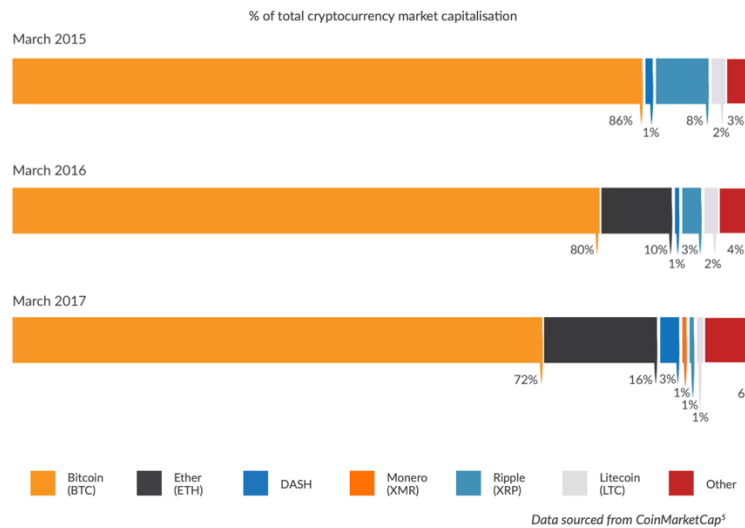


Figure 5: Market capitalization share of the cryptocurrencies market from March 2015 to March 2017

In addition, in 2017, to support this perspective researchers Abeer ElBahrawy, Laura Alessandretti, Anne Kandler, Romualdo Pastor-Satorras and Andrea Baronchelli undertook a study called the *Evolutionary dynamics of the cryptocurrency market*, in which they closely scrutinized Bitcoin market share over the past 4 years. They also showed that while on one hand Bitcoin’s market share has been “steadily decreasing”<sup>118</sup>, on the other, the top 5 other cryptocurrencies have gained significant market share, leading them to “account for more than 20% of the market”<sup>119</sup> in 2017. According to Coin Dance<sup>120</sup>’s most recent report, on November 1<sup>st</sup> 2021, 44.04% of total market share belongs to Bitcoin, while 19.30% assigned to Ethereum, 3,34% to Binance Coin and 1.99% shares to Ripple (as we see in figure 6). In addition, there is a clear representation of what the five researchers

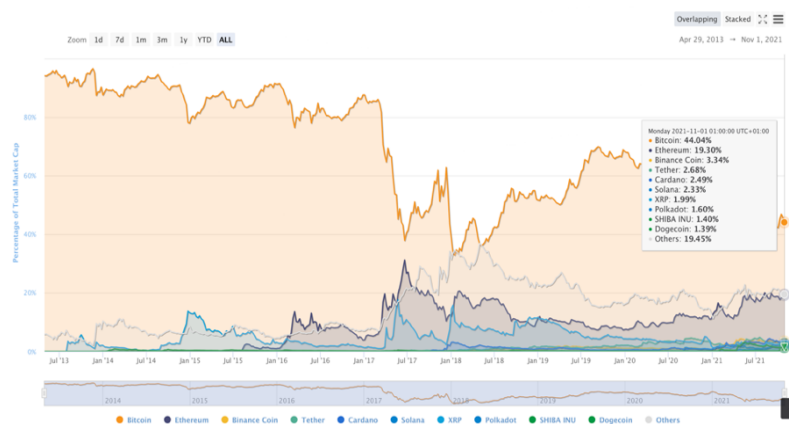


Figure 6: Major crypto assets by percentage of total market capitalization

<sup>116</sup> *Id. at 109, 18*

<sup>117</sup> *Id.*

<sup>118</sup> *Id. at 115*

<sup>119</sup> *Id.*

<sup>120</sup> Site that regularly announces up-to-date and historical report statistics of cryptocurrency markets

anticipated: a decreasing trend of Bitcoin’s market share with the progressive popularity increase of new cryptocurrencies in the market. What’s more, figure 6<sup>121</sup> shows us the enormous fluctuations that these cryptocurrencies experience over the years.

c. The continuous price swings

Popularity was not the only factor that caused the jump in market capitalization and prices. Yhlas Sobetov, in his paper called *Factor influencing cryptocurrency prices: evidence from Bitcoin, Ethereum, Dash, Litecoin, and Monero*<sup>122</sup> demonstrated that cryptocurrency prices are influenced by numerous internal and external factors. Supply and the demand of these instruments are the main internal factor. In this instance, price changes depend on transaction costs, crypto mining difficulty, reward system used and the number of coins in circulation. On the other hand, there are multiple external factors influencing cryptocurrency prices. Firstly, they can be political, like the different restrictions or degrees of autonomy decided by regulators and institutional representatives. Secondly, they can also be macro-financial, like interest rates, exchange rates, stock markets, gold price and others. The last external factor that influences the price of crypto is popularity, not intended as how well-known cryptocurrencies are but as how much the crypto market has the capacity to attract new investors and speculations. For example, in February 2017, a regulatory tightening of China’s central bank resulted in a 100\$ price drop for Bitcoin<sup>123</sup>, while, in April of the same year, Japan started using Bitcoin as a “legal means of payment”<sup>124</sup> causing the virtual currency price to soar above \$1,400, more than tripling its value in the span of a year.<sup>125</sup> This volatility is not to be underestimated, especially from a potential investor’s perspective. One can go to sleep as a rich man and wake up having nothing (or the other way around) due to such fluctuations. The following graph (figure 7<sup>126</sup>) clearly represents this phenomenon.

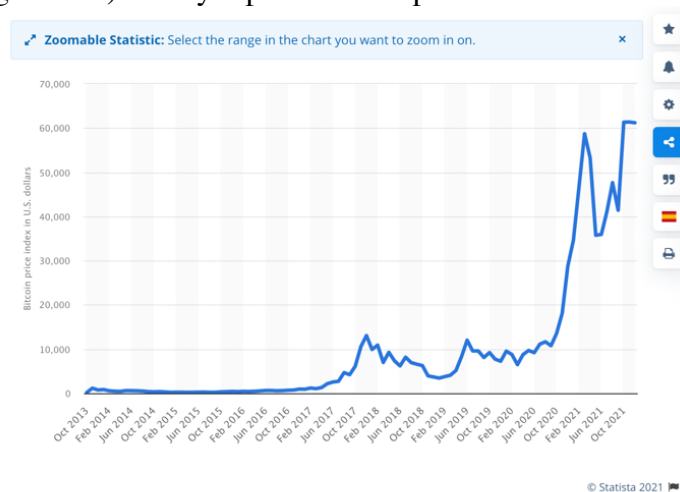


Figure 7: Bitcoin price from October 2013 to November 2021

<sup>121</sup> *Bitcoin Statistics*, CoinDance <https://coin.dance/stats>

<sup>122</sup> Sovbetov, Yhlas, *Factors Influencing Cryptocurrency Prices: Evidence from Bitcoin, Ethereum, Dash, Litecoin, and Monero*, Munich Personal RePEc Archive, London School of Commerce, page 7, 8 Jan. 2018 [https://mpra.ub.uni-muenchen.de/85036/1/MPRA\\_paper\\_85036.pdf](https://mpra.ub.uni-muenchen.de/85036/1/MPRA_paper_85036.pdf)

<sup>123</sup> Graham, Luke W. *Bitcoin Drops by \$100 as China's Central Bank Corral the Market*. CNBC, (10 Feb. 2017) <http://www.cnbc.com/2017/02/10/bitcoin-drops-by-100-as-chinas-central-bank-corrals-the-market.html>

<sup>124</sup> Kelly, Jemima. *Bitcoin Surges to Record High Because of Japan*. Time, (2 May 2017) <http://time.com/4763114/bitcoin-record-high-japan/>

<sup>125</sup> *Id.*

<sup>126</sup> De Best, Raynor, *Bitcoin price from October 2013 to November 2021*, Statista, <https://www.statista.com/statistics/326707/bitcoin-price-index/>

In March 2020 a Bitcoin was valued 6,438.74 U.S. dollars. After that, the price increased drastically until March 2021 reaching a value of 58,734.48 U.S. dollars, which represented a 90% growth rate. It then dropped to 35,749.66 U.S. dollars in May of 2021. Recently Bitcoin's price reached an all-time record as its value was registered at 61,342.6 U.S. dollars in October 2021. Bitcoin's price pattern has been and continues to be bumpy and unsteady, with other cryptocurrencies following those fluctuations.

The second most traded cryptocurrency is Ethereum (ETH). It is a “open-source software platform for blockchain applications”<sup>127</sup> meaning that Ether is the cryptocurrency used inside the network created by Ethereum. As can be seen in the graph below (i.e., figure 9) the price variations are similar to the ones characterizing Bitcoin. ETH reached an all-time peak on the 2nd of November 2021 at a value of 4,298,43 U.S. dollars. The main cause of this record is because the sale of a digital art piece was sold for 38,474.82 ETH<sup>128</sup>, which, as indicated by figure 8, became the world's most expensive Non-Fungible Token.

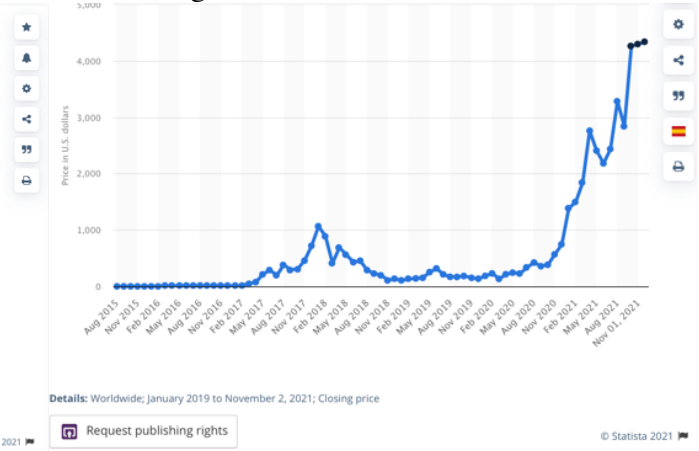
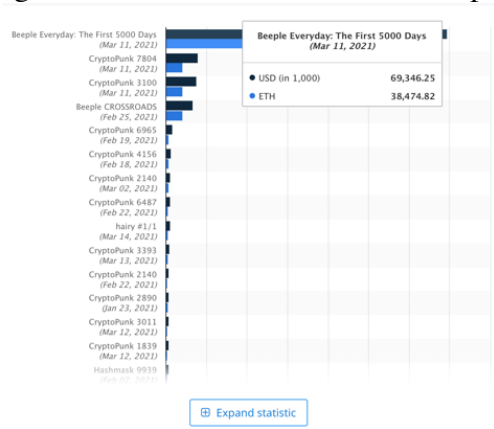


Figure 8: Most expensive non-fungible token sales worldwide

Figure 9: Daily Ethereum value from august 2015 to November 2021

As previously anticipated, Ethereum is a currency often used in the non-fungible token (NFT) transactions. NFTs are digital assets, more precisely a specific type of crypto tokens, that corresponds to a “real-world objects like art, music, in-game items and videos.”<sup>129</sup> They are built using the same kind of programming technology as cryptocurrencies. While virtual currencies are equal in value<sup>130</sup> as they can be exchanged for one another and their fungibility makes them “a trusted means”<sup>131</sup> for conducting transactions, NFTs, as their name indicates, cannot be exchanged for one another. They are bought and sold online and are generally held on the Ethereum blockchain. In addition, they function as a “unique code connected to a digital file”<sup>132</sup> and they are created from objects like sports, collectibles, gaming, art.

Both the aforementioned examples and the Bitcoin-Ethereum price development similarities depicted in various graphs (figure 7 and 9) corroborate a simple fact: cryptocurrencies' price

<sup>127</sup> De Best, Raynor, *Daily Ethereum value from august 2015 to November 2021*, Statista <https://www.statista.com/statistics/806453/price-of-ethereum/>  
<sup>128</sup> 69,346.25 million U.S. dollars  
<sup>129</sup> Conti, Robyn. *What You Need to Know about Non-Fungible Tokens (Nfts)*. Forbes, Forbes Magazine, (30 Nov. 2021) <https://www.forbes.com/advisor/investing/nft-non-fungible-token/>  
<sup>130</sup> One bitcoin always equals one bitcoin  
<sup>131</sup> *Id.*  
<sup>132</sup> de Best, Raynor. *The 50 biggest NFT sales worldwide as of March 16, 2021*, (22 Jul. 2021) <https://www.statista.com/statistics/1222113/top-nft-projects-worldwide/>

instability and unpredictability are common characteristics of every asset belonging to this class. On one hand, the volatility of the crypto markets attracts investors that hope to make a profit by buying when the price is low and selling when the price has reached its peak. On the other hand, it makes the industry seldom reliable attributes that clash with investors' profiles as not everyone is risk-taker.

As we saw with Bitcoin and Ethereum, cryptocurrency price levels and developments are very difficult to predict as they are influenced by multiple factors and, as a consequence, their value can change drastically and quickly. The world of decentralized finance, with the use of technology to remove intermediaries in financial transactions between parties, is fundamental for the constant growth of virtual currencies.

d. The investors in cryptocurrencies' market

To better understand the profile of the typical investor that trades cryptocurrencies, Coin Dance provides multiple graphs updated on a daily basis revealing additional information on this new market and how it has evolved during the last years.

Their most recent work shows that 85.77% of cryptocurrency market participants are males, while 14.23% are females. What's more, Coin Dance provide information on the age distribution of cryptocurrency users. This collection of data underlines how much the market of cryptocurrencies has the ability to attract a wide range of individuals from young to old. In fact, as it can be observed in figure 10, the statistics indicate that individuals between 25 and 34 years of age represent the larger portion of the market, followed by individuals aged from 35 to 44 years old with 20,16%, and from 18 to 24 with 16,65%. It is also interesting to notice that the share of older adults and elderly people represent a the 21,84% slice<sup>133</sup>.

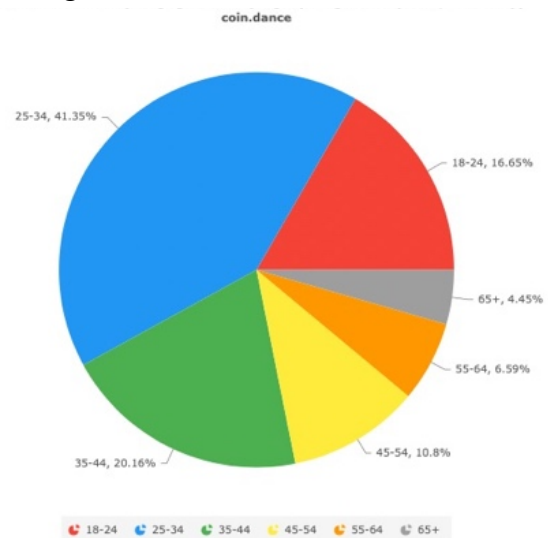


Figure 10: Bitcoin Community Engagement by Age

e. Libra and the beginning of institutional regulations

In 2019, Facebook, the most important and extensive virtual community, announced the launch of *Libra*, a global cryptocurrency. This asset was a stablecoin, a crypto asset that is supposed to have a stable value over time. In fact, it was imagined as a virtual instrument “backed by a basket of low-volatility assets like bank deposits and short-term government bonds in established fiat currencies”<sup>134</sup>. Despite the support of giant companies such as Visa and Mastercard, the project was later withdrawn due to opposition from some of the world's most important regulators. In fact, in July 2019, at Chantilly (France) the G7 Finance Ministers and

<sup>133</sup> 10,8% (45-54) + 6,59 (55-64) + 4,45 (65+)

<sup>134</sup> 55 Oliver Read & Stefan Schäfer, *Libra Project: Regulators Act on Global Stablecoins*, 6 392–398 <https://www.intereconomics.eu/contents/year/2020/number/6/article/libra-project-regulators-act-on-global-stablecoins.html>

Central Bank Governors concluded that “stablecoins raised serious regulatory and systemic concerns”<sup>135</sup>.

Nonetheless, instead of backing down, Facebook decided to change its strategy and launch a 'different' global digital currency later in 2021. The company renamed its project as *Diem*<sup>136</sup> and built it as a payments system based on blockchain technology. Although Facebook proposed the project, the Diem Association<sup>137</sup> would oversee the entire application and execution. The system will contain a stablecoin called Diem, that will not be decentralized and will run on its blockchain network<sup>138</sup>. Initially Diem will be pegged to the US dollar (it should be called Diem Dollar) and will mainly focus on transactions between individual consumers with the possibility, only for some users, to also pay for the purchase of goods and products.<sup>139</sup> As a consequence, compared to cryptocurrencies such as Bitcoin or Ethereum, stablecoins, as they are being pegged to the value of other official national currencies, are not subject to excessively volatile movements.

What raised regulators' concern were both the risks posed to the stability of the global financial system as well as doubts about issues on money laundering and user privacy due the fact that Facebook has almost three billion<sup>140</sup> users worldwide. However, the G20 regulators stated that not only stablecoins but also other similar instruments can give rise to regulatory risks that need to be addressed such as illegal transactions, illicit finance, and consumer and investor protection.<sup>141</sup> In 2019 Steven Mnuchin, the United States' former secretary of the treasury, said that Facebook's cryptocurrency “could be misused by money launderers and terrorist financiers” and that it was a “national security issue.”<sup>142</sup> He also added that “cryptocurrencies such as bitcoin have been exploited to support billions of dollars of illicit activity like cybercrime, tax evasion, extortion, ransomware, illicit drugs and human trafficking”<sup>143</sup>.

Even David Lipton, who has been acting Managing Director of the International Monetary Fund since July 2019, has put cryptocurrency under accurate observation. He believed that new instruments such as Libra “aim to do for payments what the internet has done for information: make transactions secure, instantaneous, and nearly free”<sup>144</sup>. The benefits are clear: ease of use and global reach. However, the Fund identified several risks: as the potential emergence of new monopolies, with implications for how much of our personal data is monetized, the impact on weaker currencies and the expansion of dollarization, opportunities for illicit activities, threats

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<sup>135</sup> *Chair's Summary: G7 Finance Ministers And Central Bank Governors' Meeting*, Banque De France, (18 July 2019) [https://www.banque-france.fr/sites/default/files/media/2019/08/02/g7\\_chairs\\_summary\\_vff\\_en.pdf](https://www.banque-france.fr/sites/default/files/media/2019/08/02/g7_chairs_summary_vff_en.pdf)

<sup>136</sup> *The Diem Association.*, Home Page - Diem Association <https://www.diem.com/en-us/>

<sup>137</sup> a body of companies from different sectors of the economy, including technology, fintech, telecommunications, venture capital and non-profit organizations.

<sup>138</sup> *Historical White Paper* - Diem Association. <https://www.diem.com/en-us/white-paper/#the-economic-and-the-libra-reserve>

<sup>139</sup> *Id.*

<sup>140</sup> *Facebook: number of monthly active users worldwide 2008-2021*, Statista Research Department, (4 Feb. 2022) <https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>

<sup>141</sup> *Regulatory issues of stablecoins*, Financial Stability Board, (18 October 2019)

[https://www.mof.go.jp/english/policy/international\\_policy/convention/g20/huzoku191018\\_01.pdf](https://www.mof.go.jp/english/policy/international_policy/convention/g20/huzoku191018_01.pdf)

<sup>142</sup> *Mnuchin: Very Serious Concerns about Uses of Libra*, CNBC, (15 July 2019)

<https://www.cnbc.com/video/2019/07/15/mnuchin-very-serious-concerns-about-uses-of-libra.html>

<sup>143</sup> *Mohamed, Theron, US Treasury Secretary Mnuchin warned that Facebook's Libra could be a tool for terrorists, traffickers, and drug smugglers*, Markets Insider, (Jul 16, 2019)

<https://markets.businessinsider.com/news/currencies/steven-mnuchin-terrorists-human-traffickers-may-misuse-facebooks-libra-2019-7>

<sup>144</sup> *Furber, Sophia, Cryptocurrencies may threaten financial stability, create monopolies, warns IMF*, Technology, Media & TelecomBankingFintech, S&P Global, (Jul 16, 2019)

<https://www.spglobal.com/marketintelligence/en/news-insights/trending/WRpVgfAcltxclkJbKXBVRO2>

to financial stability, and challenges for companies that issue and therefore earn a large amount of money<sup>145</sup>.

Facebook's cryptocurrency triggered the attention of regulators on the problems and on the lack of financial regulation of the market for cryptocurrencies. Technology is evolving rapidly, boosting financial innovation, pushing the world to advance more and more towards a cashless society, based on digital money. Cryptocurrencies have features and properties that hamper their ease of control. Nevertheless, in the next chapter we will see if and how federal law, jurisdictional law and US financial institutions addressed these issues.

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<sup>145</sup> *Id.*

## CHAPTER 2: FINANCIAL REGULATION OF CRYPTOCURRENCIES

As blockchain industry rapidly continues to evolve and mature, it can be easily predicted that the number of unique cryptocurrencies will grow and in the near future other technological innovations will appear to satisfy the needs of every participant in the market, including individuals and companies. Moreover, our habits are changing, and society is moving more and more quickly towards a cashless world where digital assets adopting brand new and advanced technology represent an alternative instrument that improve industries, reduce transaction costs and generate value. However, as described in chapter 1, this particular type of virtual currency has the inherent characteristic of not being controlled by a centralized authority. Consequently, the market for cryptocurrencies is poorly regulated. As a result, individuals take advantage of the lack of clear laws and guidelines to commit crimes and engage in illegal transactions.

In this chapter, we will look at the current United States jurisdiction governing the cryptocurrency market. It will be interesting to analyze the actions that lawmakers have decided to undertake, firstly at the federal level, with the recent introduction of the Infrastructure Investment and Jobs Act. Secondly, it will be intriguing to see how the individual federal agencies interpret the nature of such instrument and the guidelines they have provided. Finally, as federal regulation leaves a room for single states to adapt their jurisdiction, we will discuss the different approaches that each state has decided to adopt, and the changes brought in their legislation.

### 1. Federal law regulation

Theoretically speaking, cryptocurrencies were originally designed to be stateless entities, not bound by any law or legal structures of any state or country. Pursuant its definition the two words, cryptocurrencies and regulation, are an oxymoron.

However, reality is different. The increasing popularity of cryptocurrencies in the last years has brought an increase in government censorship and cynicism. In fact, these sentiments towards blockchain technology and virtual currencies in the United States have given way to concern and reluctant acceptance. There is a growing attention from regulators on this market. They believe that regulation would be efficient because it establishes rules and order in an otherwise lawless *jungle*<sup>146</sup> that provides free play to dubious actors and firms. It also signals the intention to engage in a dialogue with businesses in the crypto ecosystem.

Despite the large and constantly increasing number of cryptocurrencies and blockchain firms in the United States, the regulatory and legal framework around this asset class still remain unclear.

When Bitcoins were firstly introduced, few regulators believed that this industry could grow into a 3\$ trillion asset class<sup>147</sup>. Nowadays, technology is evolving at faster pace than laws are

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<sup>146</sup> Sharma, Rakesh, *More US States May Roll Out Cryptocurrency Regulations*, Investopedia, (June 25, 2019) <https://www.investopedia.com/news/majority-us-states-are-still-acknowledge-cryptocurrencies/>

<sup>147</sup> Locke, Taylor, *The cryptocurrency market is now worth over \$3 trillion. Here are 5 things that happened in the space this past week*, CNBC, Nov 8 2021 <https://www.cnbc.com/2021/11/08/crypto-news-ether-hit-an-all-time-high-nftnyc-infrastructure-bill.html>



been enacted. The rise of new cryptocurrencies such as stablecoins, that are included into the digital assets' category but are backed by fiat currencies, could destabilize the global monetary system giving rise to numerous regulatory challenges. The decline in the use of cash in recent years, the increase in the general digitisation of goods and services and the coronavirus pandemic have accelerated the implementation of digital payment technology.

As a consequence, this whole situation forced governors and regulators to address, control and manage issues that were never brought to light before. Their task is complex as they have both the assignment of creating new and clear rules to reduce the different risks brought by these digital currencies, but also, to balance it with innovation. On one hand, the cryptocurrencies' capacity to weaken the institutional monetary system's control constitute a major risk for the U.S. market. On the other hand, distributed decentralized ledger technology could be implemented in different areas bringing trust, speed, visibility and traceability, improving security and privacy while at the same time reducing costs.

#### a. The Infrastructure Investment and Jobs Act

The first federal intervention to regulate cryptocurrency occurred on the 9<sup>th</sup> March 2020, with the introduction of a federal bill known as Crypto-Currency Act of 2020. The introduction of this act in the Congress, aimed to "clarify which Federal agencies regulate digital assets, to require those agencies to notify the public of any Federal licences, certifications, or registrations required to create or trade in such assets, and for other purposes."<sup>148</sup> The bill divided digital assets into three different categories: crypto-commodity, crypto-currency and crypto-security with the Commodity Futures Trading Commission (CFTC). It advanced the Secretary of the Treasury via the Financial Crimes Enforcement Network (FinCEN) and the Securities and Exchange Commission (SEC) to oversee each category respectively.

The bill did not pass. However, it gave a clear message of the federal law's desire to intervene in cryptocurrency's industry and gave a glimpse of what a law dedicated entirely to crypto assets could look like.

Although ad hoc legislation has not yet been introduced for this type of asset, a small-scale federal intervention has instead taken place.

On November 15<sup>th</sup>, 2021, US President Joe Biden, signed a \$1.2 trillion Act called the *Infrastructure Investment and Jobs Act*<sup>149</sup>. Commonly referred to as the Infrastructure Bill, it can be divided into 2 parts: new funding and existing funding. Half of the bill is continuing funding on present projects. The other half is new spending and new laws. This new regulation has the purpose to allocate resources on the construction of water infrastructures, roads, bridges, on internet... The new spending includes<sup>150</sup>:

- Roads, bridges and major projects: \$110, billions in funding
- Railway infrastructure \$66 billions in funding
- Public transit \$39 billion in funding
- Safety and research \$10.5 billions in funding
- Airports \$25 billions in funding

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<sup>148</sup> H.R.6154, 116th Cong. (2019-2020).

<sup>149</sup> Klein, Betsy & Sullivan, Kate, *Biden signs infrastructure bill into law at rare bipartisan gathering* CNN, Nov 15, 2021 <https://edition.cnn.com/2021/11/15/politics/biden-signing-ceremony-infrastructure-bill-white-house/index.html>

<sup>150</sup> U.S. Senate. "H. R. 3684 - Infrastructure Investment and Jobs Act." [https://www.epw.senate.gov/public/\\_cache/files/e/a/ea1eb2e4-56bd-45f1-a260-9d6ee951bc96/F8A7C77D69BE09151F210EB4DFE872CD.edw21a09.pdf](https://www.epw.senate.gov/public/_cache/files/e/a/ea1eb2e4-56bd-45f1-a260-9d6ee951bc96/F8A7C77D69BE09151F210EB4DFE872CD.edw21a09.pdf)

- School buses and ferry emissions \$7,5 billions in funding
- Ports and waterways \$17 billions in funding
- Broadband internet infrastructure \$66 billions in funding
- Power and grid funding: \$73 billions
- Water infrastructure \$55 billions in funding
- Resiliency \$46 billions in funding

Cryptocurrencies are related to the Infrastructure Investment and Jobs Act because the federal administration plans to collect additional taxes from it in order to pay for a portion of the bill's expenditures. The Senate included a provision imposing reporting requirements on cryptocurrency's "brokers". They estimated that such action would allow the Internal Revenue Service (IRS) to "collect an additional \$28 billion in tax revenue over 10 years."<sup>151</sup> The act first defines digital assets as "any digital representation of value which is recorded on a cryptographically secured distributed Ledger or any similar technology."<sup>152</sup> Moreover, following this definition, at page 2433 the Infrastructure Bill, introduces new laws regarding cryptocurrencies regulations that have been to the center of many debates.

This new regulation broadly defines cryptocurrency brokers by referring to the 26 U.S. Code paragraph 6045 which states that:

"Every person doing business as a broker shall, when required by the Secretary, make a return, in accordance with such regulations as the Secretary may prescribe, showing the name and address of each customer, with such details regarding gross proceeds and such other information as the Secretary may by forms or regulations require with respect to such business."<sup>153</sup>

The code further states that

"The term "broker" includes—

(A) a dealer,

(B) a barter exchange, and

(C) any other person who (for a consideration) regularly acts as a middleman with respect to property or services."<sup>154</sup>

However, the delineation provided of a broker is very loosely defined in the case of cryptocurrencies. This lack of precision is what has triggered a significant repercussion throughout the cryptocurrency community. In fact, the definition could include many individuals working with crypto assets and having different roles; state pool operators, miners, and many other cryptocurrency services could fall into the broker's definition.

Furthermore, the Infrastructure Investment and Job Act, amend subsection B - specified security - of section 3 - covered security - of the 26 U.S. Code. This section used to state what brokers are required to report to the Internal Revenue Service (IRS). The bill modifies it by affirming that every digital asset is included in subsection B and is considered as part of specified securities. As a consequence, any individual falling into the broker's definition, has to report to the IRS their specified assets which henceforth encompasses any digital asset.

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<sup>151</sup> Boucher, Jamie L. et al., *Cryptocurrency Regulation and Enforcement at the US Federal and State Levels*, Skadden, (Sept 28, 2021) <https://www.skadden.com/insights/publications/2021/09/quarterly-insights/cryptocurrency-regulation-and-enforcement-at-the-us-federal-and-state-levels>

<sup>152</sup> *Id.* 150 - 2435

<sup>153</sup> 26 U.S. Code § 6045(a)

<sup>154</sup> 26 U.S. Code § 6045(c)(1)

Nevertheless, the bill goes even further. The new law requires the return requirement for certain transfer of digital assets that would not otherwise be subject to reporting. Therefore, any broker who processed a transfer of a digital asset in a calendar year, will not only need to report it to the IRS but will also need to consider that transfer as they would treat cash. As a consequence, the bill amends the treatment as cash for the purposes of Title 26, section 6051(d)<sup>155</sup> of the US Code. The section originally stated that any transfer of more than \$10,000 needs to be reported to the IRS<sup>156</sup> by filling in the Form 8300<sup>157</sup>. This form requires individuals to report among other things: the identity of individual from whom the cash was received such as the name, address, and TIN of the person from whom cash was received; the description of transaction and method of payment such as the amount of cash received, the date and nature of the transaction.<sup>158</sup> Through section 80603, the new Act extends traditional reporting requirements and the obligation of completing the Form 8300 for certain transactions involving over \$10,000 in physical cash to exchanges involving the newly defined category of “digital assets,” including cryptocurrencies.<sup>159</sup> Therefore, a broker will have to report any digital-asset’s transfer moved to the account of an unknown person or address providing all the information requested by Form 8300. This form has very specific requirements obliging a broker to disclose details about cryptocurrency’s users that were previously undisclosed and anonymous.

Depending on how these new laws and definitions are interpreted and implemented, businesses could be required to collect and report every detail of cryptocurrency’s transactions to the IRS and if failing to do so, face criminal and civil penalties. This new legislation not only goes against the intrinsic properties of the decentralized blockchain technology used by cryptocurrencies but also could have serious implications for millions of US companies, investors and even consumers that have traded such assets for their peculiar attributes such as: transparency, anonymity and stateless instrument.

#### b. Implications of the Infrastructure Act

The new legislation enacted will not change anything for individuals that trade cryptocurrencies and earn profits on regulated exchanges such as Coinbase. The reason is because all regulated exchanges already send a document called 1099B<sup>160</sup> to the IRS that tells the agency the gains of individuals in the current year.

However, for people that do not trade on regulated exchanges, the Job Act applies differently. Imagine individual A that uses a regulated platform to exchange fiat dollars into cryptocurrencies but also uses money to buy altcoins<sup>161</sup> on an unregulated exchange and acquires non fungible tokens. All decentralized finance services do not know their customers as they aim to ensure, among other things, anonymity. Consequently, those platforms can’t send the report of gains and losses to the IRS as they don’t exactly know the identity of the individual trading on their platforms. So, let’s imagine that individual A initially deposits into a regulated exchange, like Binance, 1000\$. He then trades and makes all kind of operations making him earn 10,000\$. He then transfers this money into his Binance account and after into his bank account. Although, these operations are completely legal, the issue is that Binance has no record of the transactions that the individual has made in order to turn the initial 1000\$ into

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<sup>155</sup> 26 U.S. Code § 6050I(d)

<sup>156</sup> *Id.*

<sup>157</sup> *IRS 8300 Report of Cash Payments over \$10,000*, FinCEN <https://www.irs.gov/pub/irs-pdf/f8300.pdf>

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* 150 – 2436

<sup>160</sup> *2022 Form 1099-B - Irs Tax Forms*, <https://www.irs.gov/forms-pubs/about-form-1099-b>

<sup>161</sup> i.e., alternative coins. Terminology used to refer to any cryptocurrency other than Bitcoin

10,000\$. With the new Act and the digital asset's traders falling into the loose definition of broker, any individual engaging in cryptocurrency exchanges, must keep meticulous record of all transactions and all fees if they want to make sure to not overpaying on tax or face any civil or criminal penalties.

As the new regulations under the Job Act requires the collection and the report of information about transactions, cryptocurrency would have disadvantages relative to other forms of traceable currency not subject to cash reporting requirements.<sup>162</sup> Indeed, privacy, decentralization and the simplicity of the secure and trusted peer-to-peer exchanges without the costs associated with centralized intermediaries, are the main features of cryptocurrencies that make them used by privacy-conscious consumers and by people that do not want to use the traditional monetary system. Therefore, these innovative and extensive requirements and reporting rules of the new regulatory US system, could drive users of these digital assets, away from the American cryptocurrency market. It could make them abandon the use of cryptocurrency's exchanges, or even lead to the invention of new alternative decentralized digital assets.

Furthermore, digital asset brokers operating with customers outside the US could run into reporting and compliance challenges that could boost the movement of users' cryptocurrencies elsewhere to non-US competitors. In addition, if broadly interpreted, the Act could bring some challenges also for the platforms supporting automatic decentralized finance transactions. In fact, in some decentralized platforms, such as DEXs, it is not possible for a company receiving a digital asset from a pool of liquidity to trace that specific asset to a particular individual or entity. Moreover, there isn't a centralized third party that could act as an information funnel as the main feature of DEXs is that those exchanges are based on automated smart contracts. If the reporting requirement apply in this case, developers would have to modify some protocols to collect the information necessary to comply with the law harming the profits of this emerging market.

Moreover, during these months the definition of digital asset broker continues to generate debate. There was an intense cryptocurrency lobbying effort that wanted to "amend the provision into explicitly exempt miners, validators, and software [and digital asset] developers"<sup>163</sup> and individuals that sell hardware. However, the amendments advanced by multiple cryptocurrency supporters did not make into the bill prior its passage in the Senate and House.<sup>164</sup>

As stated before, the Bill contains provisions for the taxation of cryptocurrencies. However, the implementation of these requirements remains unclear and undefined. Some individuals believe that regulating cryptocurrencies will repress innovation and distance users from participating in this new virtual world. Transactions below \$10,000 are not taxed but this amount is a "fairly low amount of money to have to deal with a complex tax situation"<sup>165</sup>. The

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<sup>162</sup> Beringer, Ashlie et al., *Infrastructure Bill's New Reporting Requirements May Have Sweeping Implications for Cryptocurrency Ecosystem*, Gibson Dunn, (Nov 18 2021) <https://www.gibsondunn.com/infrastructure-bills-new-reporting-requirements-may-have-sweeping-implications-for-cryptocurrency-ecosystem/>

<sup>163</sup> Goldberg, Adam & Sheridan, William & Kunihira-Davidson, Yvonne, *What the US infrastructure bill means for cryptocurrency brokers and owners*, IHS Markit, (Dec 20 2021) <https://ihsmarkit.com/research-analysis/what-the-us-infrastructure-bill-means-for-cryptocurrency-brokers-and-owners.html>

<sup>164</sup> *Id.*

<sup>165</sup> Morton, Christopher, *Congress must clarify how the infrastructure bill will impact cryptocurrency*, TechCrunch, (Nov 21, 2021) [https://techcrunch.com/2021/11/21/congress-must-clarify-how-the-infrastructure-bill-will-impact-cryptocurrency/?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2x1LmNvbS8&guce\\_referrer\\_sig=AQAAAAMrPO7tJB3AyFoMKkPU-GyoglvHYT6Hz9SFP99WuF8wJiyLh0ifqmLag1ADZ7pEbpuMLa7KUpQAPmuG9Qe5\\_Q-RzjuE7Ji\\_rhdZUsOX21O-6QNLOKj-yhtB0xau9FAc1-1HQVfwrH3vnO2heyc6J-vgWKvjdBMA5a5\\_3vzz-Nvk](https://techcrunch.com/2021/11/21/congress-must-clarify-how-the-infrastructure-bill-will-impact-cryptocurrency/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2x1LmNvbS8&guce_referrer_sig=AQAAAAMrPO7tJB3AyFoMKkPU-GyoglvHYT6Hz9SFP99WuF8wJiyLh0ifqmLag1ADZ7pEbpuMLa7KUpQAPmuG9Qe5_Q-RzjuE7Ji_rhdZUsOX21O-6QNLOKj-yhtB0xau9FAc1-1HQVfwrH3vnO2heyc6J-vgWKvjdBMA5a5_3vzz-Nvk)

act could easily determine how to tax straightforward transactions such as using bitcoin to buy a car or using fiat currency to buy cryptocurrencies such as Ether. However, if individuals engage in multiple and complex transactions transferring cryptocurrencies into smart contracts to buy or sell other digital assets like non-fungible tokens, then there is the possibility that these individuals will deal with taxes that may be as complex as those of corporate transactions. The future is uncertain as the fall of digital assets into these new legal definitions introduced by the Jobs Act will depend on their interpretation. In fact, the Treasury affirmed that it would continue to clarify guidance to provide exemptions to firms that do not actually operate as brokers even after the bill is passed.

Furthermore, the Infrastructure Act doesn't not indicate whether cryptocurrencies fall under federal commodities and securities laws. This leaves federal agencies such as the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) a vital role in competing for authority over the industry.

At the time of writing, El Salvador was the first state to approve Bitcoin as an official currency and now the country's government seems having the intent on building a real Bitcoin city<sup>166</sup>. No taxes will be applied on income, property or capital gains, there will be only VAT tax on goods and services. This initiative aims to consolidate El Salvador's role as a country at the forefront of Bitcoin adoption. As of September 2021, the digital currency is, along with the US dollar, officially recognized throughout the whole country. Nevertheless, the International Monetary Fund (IMF) is pressing the Latin American country to renounce Bitcoin as legal tender. On Tuesday, 25 January 2022, the executive directors of the IMF, representing the Fund's 190 member countries, highlighted the risks with the country's decisions on stability and integrity of the financial system as well as consumer protection and fiscal problems<sup>167</sup>.

The new US legislation was not designed to regulate cryptocurrencies. As its name indicates, the Infrastructure Investment and Jobs Act, has been enacted to address other issues. It manages to talk about cryptocurrencies only as a way to tax it in order to raise money to pay for a portion of the bill. However, this decision has done nothing but result in a lack of clarity bringing much more confusion into the virtual currency world. Given the decisions adopted by other countries and how quickly cryptocurrency businesses are evolving into a major profit-making resource, US regulators should not wait too long to enact a completely dedicated crypto legislation. They shouldn't ignore the fundamental role this technology will play in changing the financial payments system and remember that the regulations established today will set the path for the future of global finance.

## 2. Federal Government Agencies

### a. Securities and Exchange Commission

The Securities and Exchange Commission's mission is to "protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation."<sup>168</sup> The US federal agency has

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<sup>166</sup> *El Salvador Bitcoin city planned at base of Conchagua volcano*, BBC News, (NOV 21, 2021) <https://www.bbc.com/news/world-latin-america-59368483>

<sup>167</sup> *Bitcoin: Fmi esorta El Salvador a rinunciare al corso legale*, ANSA, (Jan 25, 2022) [https://www.ansa.it/sito/notizie/economia/criptoalute/2022/01/25/bitcoin-fmi-esorta-el-salvador-a-rinunciare-al-corso-legale\\_0aaa762c-2b25-4ce9-999e-3b03c33369b7.html](https://www.ansa.it/sito/notizie/economia/criptoalute/2022/01/25/bitcoin-fmi-esorta-el-salvador-a-rinunciare-al-corso-legale_0aaa762c-2b25-4ce9-999e-3b03c33369b7.html)

<sup>168</sup> *What We Do*, SEC Emblem, (19 Feb. 2020), <https://www.sec.gov/about/what-we-do>

many roles including the regulation of digital asset that are bought, sold or traded as a security and if they are offered through a collective investment fund.<sup>169</sup>

The today's digital asset market is similar to the capital markets in the 1920s during the Great Depression as it is characterized by widespread speculation, market manipulation and fraudulent transactions<sup>170</sup>. This results in investors misallocating their capital and when the bubbles burst, they find themselves losing their life savings.<sup>171</sup> To contrast the Great Depression, the SEC started regulating the securities industry defining them in the 15 U.S. Code § 77b - Definitions; promotion of efficiency, competition, and capital formation - as:

“(1)The term “security” means 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.”<sup>172</sup>

The SEC went further regulating the offering of securities<sup>173</sup> such as bonds, derivatives based on securities, investment contracts, stocks and notes; to any individual that issues them<sup>174</sup>, together with securities exchanges<sup>175</sup>, brokers and dealers<sup>176</sup> and companies that invest in securities<sup>177</sup>.

Digital assets are sometimes compared to securities. As a consequence, when investing or trading them considered a security, digital assets will be therefore subject to the federal securities laws. Section 5(a) of the 1933 Securities Act, addresses the sale or delivery after sale, of unregistered securities and states that:

“Unless a registration statement is in effect as to a security, it shall be unlawful for any person, directly or indirectly—

(1) to make use of any means or instruments of transportation or communication in interstate commerce or of the mails to sell such security through the use or medium of any prospectus or otherwise; or

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<sup>169</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev. Sept 02, 2021 <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>170</sup> *Market Manipulation in Digital Assets*, Deloitte, March 2021 <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Financial-Services/gx-design-market-manipulation-in-digital-assets-whitepaper-v2-1.pdf>

<sup>171</sup> Kaplan, Michael, *Bitcoin crash: This man lost his savings when cryptocurrencies plunged*, CNN Sept 11, 2018 <https://money.cnn.com/2018/09/11/investing/bitcoin-crash-victim/index.html>

<sup>172</sup> 15 U.S. C. § 77b(a)(1) available at <https://www.law.cornell.edu/uscode/text/15/77b>

<sup>173</sup> *Id.*

<sup>174</sup> 15 U.S.C. § 77e, Legal Information Institute, available at <https://www.law.cornell.edu/uscode/text/15/77e>

<sup>175</sup> 15 U.S.C. § 78f, Legal Information Institute, available at <https://www.law.cornell.edu/uscode/text/15/78f>

<sup>176</sup> 15 U.S.C. § 78o

<sup>177</sup> 15 U.S.C. § 80a-8

(2) to carry or cause to be carried through the mails or in interstate commerce, by any means or instruments of transportation, any such security for the purpose of sale or for delivery after sale.”<sup>178</sup>

Therefore, unless the security is registered with the SEC, this section makes it unlawful for any individual to trade and sell that instrument.

On the 25<sup>th</sup> of July 2017 the SEC issued an investigative report called the DAO Report. The Decentralized Autonomous Organization (DAO) had “offered and sold approximately 1.15 billion DAO tokens in exchange for a total of approximately 12 million Ether [...] which had a value, at the time the offering closed, of approximately US\$150 million.”<sup>179</sup> To determine if DAO tokens were considered securities, the SEC used the Howey test. This examination defines an investment contract as “(1) an investment of money (2) in a collective enterprise (3) with a reasonable expectation of profits to be derived from the entrepreneurial or managerial efforts of others.”<sup>180</sup> This definition helps the Court assessing the nature of an instrument because if it falls into one of the three characteristics stated above, then that it will be considered a security. Therefore, following the Howey test, the Court to determine the nature of the asset, focused more on the substance of the transaction rather than on the form.<sup>181</sup>

The report concluded that market participants offering and trading these particular tokens “by “virtual” organizations [known as DAO] are subject to the requirements of the federal securities laws”<sup>182</sup>. It further confirmed that “issuers of distributed ledger or blockchain technology-based securities must register offers and sales of such securities unless a valid exemption applies”<sup>183</sup> and that individuals participating in “unregistered offerings also may be liable for violations of the securities laws”<sup>184</sup>. Consequently, the DAO token was required to comply with these statements and register under the Securities Act.

Since releasing the Report of investigation on DAO organization, the SEC was driven by a desire to promote innovative and profitable ways to raise capital while at the same time ensuring that investors and the markets are protected. The agency instituted a series of enforcement actions against individuals and companies based on the Howey test concluding that they were violating Section 5 as they were conducting offerings and sales of assets considered by the SEC unregistered securities.

### *i. The Framework*

Looking at previous and current actions, it is clear for everyone that the SEC aims to regulate digital assets. The lack of security in cryptocurrency’s market enhances the SEC fear of fraud in the Initial Coin Offerings (ICO). The ICO is similar to an Initial Public Offering (IPOs). They are both used as an operation protocols in order to raise capital to fund new projects or

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<sup>178</sup> 15 U.S. C. § 77e(a)(1) & § 77e(a)(2)

<sup>179</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev. (Sept 02,2021) <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>180</sup> Sykes, Jay B., *Securities Regulation and Initial Coin Offerings: A Legal Primer*, Congressional Research Service, August 31, 2018

<sup>181</sup> *Reves v. Ernst & Young*, 494 U.S. 56 (1990) “Congress purpose in enacting the securities laws was to regulate investments, in whatever form they are made and by whatever name they are called.”

<sup>182</sup> Release No. 2017-131, *SEC Issues Investigative Report Concluding DAO Tokens, a Digital Asset, Were Securities*, US Sec. and Exch. Comm'n, (July 25, 2017) <https://www.sec.gov/news/press-release/2017-131>

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

companies' development.<sup>185</sup> In an IPO, subscribers receive stock in exchange for their investment, whereas in an ICO they receive tokens from the company, that can be redeemed in the future for products or services<sup>186</sup>. In ICOs, promoters exchange crypto tokens for cryptocurrencies or fiat currencies in order to use "the capital raised from the sales [...] to fund development of a digital platform, software, or other projects and that the virtual tokens or coins may be used to access the platform, use the software, or otherwise participate in the project."<sup>187</sup> However, the legislation applied to IPOs does not apply to ICOs as they are associated with cryptocurrencies that, as explained before, depend on a distributed and decentralized ledger which employs a blockchain technology. SEC Chairman Jay Clayton expressed fraud concern as cryptocurrency and ICOs markets are "currently operating, there is substantially less investor protection than in our traditional securities markets, with correspondingly greater opportunities for fraud and manipulation."<sup>188</sup>

Since it was and is still not clear whether federal laws apply to ICO or to the trading of digital assets, the SEC's Strategic Hub for Innovation and Financial Technology (FinHub) on April 3<sup>rd</sup>, 2019 released the Framework for 'Investment Contract' Analysis of Digital Assets that provides clarity on the agency's interpretation of the Howey test. The Framework does not create a new law and "the Commission has neither approved nor disapproved its content"<sup>189</sup>. However, it wants to "help market participants assess whether the federal securities laws apply to the offer, sale, or release of a particular digital asset"<sup>190</sup>. SEC's Strategic Hub for Innovation and Financial Technology centres its attention on the third part of the Howey test that states that securities' "profits to come solely from the efforts of others"<sup>191</sup>. It provides a list of thirty factors to help determine if an investor trading digital tokens fulfils this part of the Howey test and as a consequence should register its digital asset with the SEC. These factors focus on whether a "promoter, sponsor, or other third party (or affiliated group of third parties) (each, an "Active Participant" or "AP") provides essential managerial efforts that affect the success of the enterprise, and investors reasonably expect to derive profit from those efforts"<sup>192</sup>. Moreover, the framework provides elements that may indicate whether a "digital asset is available in increments that correlate with a consumptive intent versus an investment or speculative purpose."<sup>193</sup> It also specifies that the use of a virtual currency to directly pay goods and services without the necessity to convert it in real currency or other, makes it less likely to fall under the Howey test.<sup>194</sup>

Until today, the SEC Division of Corporation Finance has released three no-action letters establishing that the tokens addressed in those statements would not have to be registered under

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<sup>185</sup> See Popper, Nathaniel, *An Explanation of Initial Coin Offerings*, N.Y. TIMES (Oct. 27, 2017), <https://nyti.ms/2iGfts1>

<sup>186</sup> Matera, Pierluigi & Benincampi, Alessandro, *Blockchain*, DIGESTO delle Discipline Privatistiche – sezione Commerciale, §1 28

<sup>187</sup> *Investor Bulletin: Initial Coin Offerings*, INVESTOR.GOV (July 25, 2017), <https://www.investor.gov/additional-resources/news-alerts/alerts-bulletins/investor-bulletin-initial-coin-offerings>

<sup>188</sup> Public Statement, Jay Clayton, Chairman, SEC, *Statement on Cryptocurrencies and Initial Coin Offerings* (Dec. 11, 2017), <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>

<sup>189</sup> *Framework for "Investment Contract" Analysis of Digital Assets*, US Sec. and Exch. Comm'n (Apr. 3, 2019), <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>.

<sup>190</sup> *Id.*

<sup>191</sup> *S.E.C. v. Howey Co.*, 328 U.S. 293, (1946)

<sup>192</sup> *Id.* 188

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*



the Security Act of 1933. The first one was issued in April 2019<sup>195</sup> and stated that the tokens of the company TurnKey Jet were not considered securities as the tokens:

- “[...] not use any funds from Token sales to develop the TKJ Platform, Network, or App, and each of these will be fully developed and operational at the time any Tokens are sold;
- [...] will be immediately usable for their intended functionality (purchasing air charter services) at the time they are sold;
- TKJ will restrict transfers of Tokens to TKJ Wallets only, and not to wallets external to the Platform;
- TKJ will sell Tokens at a price of one USD per Token throughout the life of the Program, and each Token will represent a TKJ obligation to supply air charter services at a value of one USD per Token;
- If TKJ offers to repurchase Tokens, it will only do so at a discount to the face value of the Tokens (one USD per Token) that the holder seeks to resell to TKJ, unless a court within the United States orders TKJ to liquidate the Tokens; and
- The Token is marketed in a manner that emphasizes the functionality of the Token, and not the potential for the increase in the market value of the Token.”<sup>196</sup>

The other two no-action letters were issued one in July 2019 and the second in November 2020. They are stating the reasons similar to the first letter, of why the digital assets of these other two companies do not have to be registered as a security. Conversely, on June 2019, the SEC accused KiK Interactive Inc. of issuing, two years earlier, digital tokens *Kin* without complying with the federal security laws.<sup>197</sup> On the 30 of September 2020, the U.S. District Court, Southern District of New York, applied the Howey test and found that the company’s sales of *Kin* tokens constituted investment contracts.<sup>198</sup> It concluded that Kik had violated federal law. On June 2020, following this line of thought, the SEC settled the case with Telegram Group, agreed to return more than \$1.2 billion to its investors and to pay a civil penalty of \$18.5 million.<sup>199</sup>

Nonetheless, a case specific letter is useless in providing clarity as it is can be considered just as a mere example. What tools or guidelines do these letters give to a business issuing a cryptocurrency that is administered, sold or purchase in different manners or based on newer and more advanced blockchain technologies compared on the ones in the letters? This targeted approach only brings to the situation more and more uncertainty leaving all cryptocurrency businesses in precarious state as they may receive a lawsuit overnight accusing them of something not previously clearly established or even addressed.

Although the Framework and the no-action letters may give investors some information and help them understand the SEC’s line of thoughts, these statements are not enacted as law and so are not binding. As a consequence, these two sets of documents do not represent a clear set of rules where digital assets’ market participants could rely on in order to make their investment or create their digital currency. The SEC’s statements are *in se* ambiguous. In 2017 they released a communication intitled “SEC Issues Investigative Report Concluding DAO Tokens,

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<sup>195</sup> TurnKey Jet, Inco.; SEC No-Action Letter, *Response of the Division of Corporation Finance*, (April 3, 2019) available at <https://www.sec.gov/divisions/corpfin/cf-noaction/2019/turnkey-jet-040219-2a1.htm>

<sup>196</sup> *Id.*

<sup>197</sup> Matera, Pierluigi & Benincampi, Alessandro, *Blockchain*, DIGESTO delle Discipline Privatistiche – sezione Commerciale, §8 44

<sup>198</sup> *Id.*

<sup>199</sup> *Id.*

a Digital Asset, Were Securities - U.S. Securities Laws May Apply to Offers, Sales, and Trading of Interests in Virtual Organizations”<sup>200</sup>. As it can already be seen in the title itself, the use of terminology such as “*may*” contribute to the strengthening of an uncertain climate. Tokens can be considered securities, or they may be not. The SEC focuses on the way sales of digital assets are made by the token’s promoter and whether investors are “primed by marketing efforts to reasonably expect that their 'investments' would increase in value”<sup>201</sup>. However, the lack of regulation is what makes the question of whether all digital assets follow the Howey test a matter of interpretation.

It would be easy to state that the SEC should be issuing a specific, clear and detailed law on digital assets, defining for each sub-category of digital assets how it would like to regulate them, instead of trying to make them fit into laws on a case-by-case basis.

## ii. *The Token Taxonomy Act*

This case-by-case attempt of regulation by the SEC is not optimal.

In fact, on the 8<sup>th</sup> of March 2021, Darren Soto, Warren Davidson, Ted Budd, Josh Gottheimer, and Scott Perry introduced the Token Taxonomy Act (H.R. 1628)<sup>202</sup>. The same act was firstly introduced in December 2019 at the conclusion of the 115<sup>th</sup> Congress<sup>203</sup> but failed to become law as, a bill must be “passed by both the House and Senate in identical form and then be signed by the President”<sup>204</sup>.

The bill’s main goal is to clarify regulation around digital assets and stimulate blockchain innovation in the United States. As Representative, Davidson affirmed that “if we don’t act quickly, the United States will be left behind. Other countries have found ways to regulate blockchain projects and, in doing so, have made themselves more attractive to entrepreneurs. By establishing the appropriate regulatory environment, we can make sure that the opportunities and advancements that blockchain innovation promises will happen here in the United States, for the benefit of Americans.”<sup>205</sup>

The Token Taxonomy Act of 2021 contains the same provisions of the one in 2019 but nowadays more lawmakers are supporting it.

Firstly, the bill would exclude digital tokens from the definition of security and so amend Section 2(a) of the Security Act of 1933 by defining them as:

“(20) [...] a digital unit—

“(A) that is created—

“(i) in response to the verification or collection of proposed transactions;

“(ii) pursuant to rules for the digital unit’s creation and supply that cannot be altered by any single person or persons under common control; or

“(iii) as an initial allocation of digital units that will otherwise be created in accordance with clause (i) or (ii);

“(B) that has a transaction history that—

“(i) is recorded in a distributed, digital ledger or digital data structure in which consensus is achieved through a mathematically verifiable process; and

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<sup>200</sup> *Id.at 182*

<sup>201</sup> *Id at 169*

<sup>202</sup> H.R.1628 - 117th Congress: Token Taxonomy Act of 2021, available at <https://www.govtrack.us/congress/bills/117/hr1628>

<sup>203</sup> *The Token Taxonomy Act is back, and we need it more than ever*, Blockchain Association <https://theblockchainassociation.org/the-token-taxonomy-act-is-back-and-we-need-it-more-than-ever/>

<sup>204</sup> *Id. at 198*

<sup>205</sup> *Soto, Davidson Reinroduce Token Taxonomy Act*, Soto House Gov. March 10, 2021 <https://soto.house.gov/media/press-releases/soto-davidson-reintroduce-token-taxonomy-act>

- “(ii) after consensus is reached, resists modification or tampering by any single person or group of persons under common control;
- “(C) that is capable of being transferred between persons without an intermediate custodian; and
- “(D) that is not a representation of a financial interest in a company or partnership, including an ownership interest or revenue share.’ ”<sup>206</sup>

Therefore, the definition of a security under the federal laws and the required registration under the Securities Act of 1933 would not apply to all digital assets falling into the definition of a “digital token” under the Token Taxonomy Act. This provision may bring the today needed regulatory clarity and certainty to make this market grow. However, the bill does not address the Howey test that is the cornerstone of all Sec's arguments determine whether an asset is a security. If the Token Taxonomy Act passes, a problem arises. An asset falling under the digital token definition would not be in violation of section 5 of the Securities Act of 1933. An asset under the Howey test would violate section 5 of the Securities Act of 1933 and consequently be required to register as a security. It would therefore be necessary to determine which one to use when a digital asset falls into the two definitions.

Furthermore, the bill defines virtual assets as “a digital representation of value that is used as a medium of exchange and is not currency (within the meaning of section 988)”<sup>207</sup> and propose the following amendment of Section 1031 of the Internal Revenue Code of 1986:

- “(1) in the heading, by striking “REAL PROPERTY” and inserting “CERTAIN PROPERTY”; and
- (2) in subsection (a), by adding at the end the following new paragraph:  
“(4) EXCHANGE OF VIRTUAL CURRENCY.— An exchange of virtual currency (as defined under section 408(m)) shall be treated as if such exchange were an exchange of real property under this section.”<sup>208</sup>

This amendment has the goal of treating certain exchanges of virtual currency as non-taxable. Some believe that the bill should be approved as it would eliminate the uncertainty brought by the SEC’s Framework. The Token Taxonomy Act leaves the SEC regulate the exchanges and transactions with tokens where there is information asymmetry as one of the goals of SEC laws is to help and protect investors. If a token uses a decentralized technology, there is a small risk of information asymmetry. Therefore, following the bill’s ideas and amendments, securities laws would not apply in this case.

It is clear that some international jurisdictions are moving toward a more “crypto-friendly” regulations. Therefore, the Token Taxonomy Act could stimulate the US federal regulatory system to provide more clarification in the near future.

#### b. Commodity Future Trading Commission

The SEC is not the only administrative body that wants and could regulate digital assets. The Commodity Future Trading Commission (CFTC) is an independent federal agency that regulates Bitcoins as it considers this cryptocurrency a commodity. The CFTC has the aim of promoting the “integrity, resilience, and vibrancy of the U.S. derivatives markets through sound regulation”<sup>209</sup>.

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<sup>206</sup> *Id.* at 198

<sup>207</sup> *Id.*

<sup>208</sup> *Id.*

<sup>209</sup> *The Commission.* CFTC, <https://www.cftc.gov/About/AboutTheCommission>

Passed in 1936, the Commodity Exchange Act (CEA) regulates “the trading of commodity futures in the United States [...] and] establishes the statutory framework under which the CFTC operates.”<sup>210</sup> Under the CEA, the CFTC is empowered to regulate commodities and “transactions involving swaps or contracts of sale of a commodity for future delivery”.<sup>211</sup> *In the CFTC Docket No.15-29 Coinflip, Inc., d/b/a Derivabit, and Francisco Riordan*<sup>212</sup>, the commission applied the definition of “commodity” to Bitcoin and other virtual currencies. The CFTC specifically stated that: “the definition of a *commodity* is broad. Bitcoin and other virtual currencies are encompassed in the definition and properly defined as commodities.”<sup>213</sup>

However, if virtual currencies are considered commodities by the CFTC, the SEC does not have direct oversight as they are not commonly regarded as securities.

Therefore, the Commodity Future Trading Commission believes that it has regulatory and administrative jurisdiction over derivative transactions of the virtual currency and has “anti-fraud and manipulation authority over transactions in the virtual currency itself”<sup>214</sup>. As a consequence, the CFTC defines commodities in Section 1a (9) of the 7 U.S. Code, among other things, as: “all services, rights, and interests (except motion picture box office receipts, or any index, measure, value or data related to such receipts) in which contracts for future delivery are presently or in the future dealt in.”<sup>215</sup>

In the *Commodity Futures Trading Comm'n v. McDonnell* case, Jack B. Weinstein, Senior United States District Judge stated that some individuals believe that virtual currencies may “function as commodities” as they act as a *store of value*. In fact, “throughout history humans have used different commodities as a store of value—even cocoa beans—but, more persistently, gold”. A commodity is “any item that “accommodates” our physical wants and needs. And one of these physical wants is the need for a store of value.”<sup>216</sup> Others argue that they have to be considered commodities as they serve as a type of monetary exchange: “Bitcoin should primarily be considered a commodity because it serves the function of money in its community of users. Users exchange Bitcoins to obtain property that they desire.”<sup>217</sup> On the 6<sup>th</sup> of March 2018, in the U.S District Court for the Eastern District of New York, Judge Jack B. Weinstein, concluded on the case *CFTC v. McDonnell*, that under the CEA virtual currencies are commodities and so subject to the administration of the CFTC.<sup>218</sup>

Additionally, on October 10, 2019, the Chairman Tarbert stated that:

“We’ve been very clear on bitcoin: bitcoin is a commodity under the Commodity Exchange Act. We haven’t said anything about ether – until now. It is my view as Chairman of the CFTC that ether is a commodity, and therefore it will be regulated under the CEA. [...] It’s my

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<sup>210</sup> *Commodity Exchange Act & Regulations.*, CFTC,

<https://www.cftc.gov/LawRegulation/CommodityExchangeAct/index.htm>

<sup>211</sup> 7 U.S.C. § 2.

<sup>212</sup> Christopher J. Grkpatrick, *Coinflip, Inc., d/b/a Derivabit, and Francisco Riordan*, CFTC Docket No. 15-29 <https://www.cftc.gov/sites/default/files/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfcoinfliprorder09172015.pdf>

<sup>213</sup> *Id.*, See also, *Board of Trade of City of Chicago v. SEC*, 677 F. 2d 1137, 1142 (7th Cir. 1982).

<sup>214</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev. (Sept 02, 2021) <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>215</sup> 7 U.S. Code § 1a(9)

<sup>216</sup> *Commodity Futures Trading Comm'n v. McDonnell*, 287 F. Supp. 3d 213, 224 (E.D.N.Y. 2018)

<sup>217</sup> *Commodity Futures Trading Comm'n v. McDonnell*, 287 F. Supp. 3d 213, 224-25 (E.D.N.Y. 2018)

<sup>218</sup> *Commodity Futures Trading Comm'n v. McDonnell*, No. 1:18-cv-00361-JBW-RLM, slip op. (E.D.N.Y. Mar. 6, 2018) (mem.)

conclusion as Chairman of the CFTC that ether is a commodity and therefore would fall under our jurisdiction.”<sup>219</sup>

As a consequence, the CFTC may have an important role in regulating and managing the fraudulent activities concerning virtual currency exchanges. However, mimicking the SEC’s approach, nothing more than statements and conclusions on single cases have been released. It is possible to expect that in the recent future, the CFTC will decide to introduce multiple amendments into the CEA by providing more information and a more detailed legislation that will include other types of crypto assets under its authority.

### *i. Final Interpretive Guidance*

Another goal of the commission is to prevent entities from operating without the proper registration. The diverse enforcement actions of the CFTC can be related to failure to register as a regulated exchange or as a registered intermediary and are often linked with other frauds. One manner in which the CFTC has established its authority over virtual currency markets is in regard to “retail commodity transactions”. Section 2(c)(2)(D) of the CEA states that a retail commodity transaction is defined as “any agreement, contract, or transaction in any commodity that is—

- (I) entered into with, or offered to (even if not entered into with), a person that is not an eligible contract participant or eligible commercial entity; and
- (II) entered into, or offered (even if not entered into), on a leveraged or margined basis, or financed by the offeror, the counterparty, or a person acting in concert with the offeror or counterparty on a similar basis.”<sup>220</sup>

The section goes on explaining that if any transaction qualify as a retail commodity one, it then has to be treated as it was a future contract. Therefore, it needs to be traded on a registered exchange recorded at the CFTC. This provision states that “a contract of sale that results in actual delivery within 28 days or such other longer period as the Commission may determine by rule or regulation based upon the typical commercial practice in cash or spot markets for the commodity involved”<sup>221</sup> are not subject to the retail commodity transaction provisions.

As the Commission started identifying virtual currencies as commodities, a further clarification of section 2(c)(2)(D) and specifically of the term “actual delivery”, was needed.

Similar to the SEC’s Framework, on March 24<sup>th</sup>, 2020, the CFTC issued an explanatory support, called the Final Interpretive Guidance. Its aim is to address the meaning of “actual delivery” in retail commodity transactions involving virtual currencies. It reaffirmed that virtual currency is a “digital asset that encompasses any digital representation of value or unit of account that is or can be used as a form of currency (i.e., transferred from one party to another as a medium of exchange); may be manifested through units, tokens, or coins, among other things; and may be distributed by way of digital ‘smart contracts,’ among other structures”<sup>222</sup>. Furthermore, to determine whether an “actual delivery” has occurred in retail commodity transactions involving a virtual currency, the Final Interpretive Guidance states the two primary factors are:

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<sup>219</sup> Release Number 8051-19, CFTC, *Chairman Tarbert Comments on Cryptocurrency Regulation at Yahoo! Finance All Markets Summit*, (October 10, 2019) available at <https://www.cftc.gov/PressRoom/PressReleases/8051-19>

<sup>220</sup> 7 U.S. Code § 2(c)(2)(D)(i).

<sup>221</sup> 7 U.S. Code § 2(c)(2)(D)(ii)(III)(aa)

<sup>222</sup> *Final Interpretive Guidance: Retail Commodity Transactions Involving Certain Digital Assets*, Commodity Futures Trading Commission, RIN Number 3038-AE62, 27

“(1) a customer securing:

- (i) possession and control of the entire quantity of the commodity, whether it was purchased on margin, or using leverage, or any other financing arrangement, and
- (ii) the ability to use the entire quantity of the commodity freely in commerce (away from any particular execution venue) no later than 28 days from the date of the transaction and at all times thereafter; and

(2) the offeror and counterparty seller (including any of their respective affiliates or other persons acting in concert with the offeror or counterparty seller on a similar basis) do not retain any interest in, legal right, or control over any of the commodity purchased on margin, leverage, or other financing arrangement at the expiration of 28 days from the date of the transaction.”<sup>223</sup>

Moreover, the CFTC provide some explicative examples. The actual deliveries occurs if “within 28 days after entering into the agreement [...] there is a record of the public distributed ledger [...] of the transfer of the virtual currency”<sup>224</sup> that shows the transfer of the entire quantity. Or if “the counterparty seller or offeror has delivered the entire quantity [...] the purchaser has secured full control over the virtual currency [...] and] the commodity delivered [is not subject to any] other interests or legal rights of the offeror, counterparty seller, or persons acting in concert with the offeror or counterparty seller on a similar basis”<sup>225</sup>. CFTC subsequently affirms that transaction that are simply reflected by the seller’s book entry, or if “the commodity is rolled, offset against, netted out, or settled in cash or another virtual currency”<sup>226</sup> between the parties, then actual delivery has not occurred. Therefore, to commercially use the virtual currency freely, the purchaser has to take full possession of it within the 28 days from the date of the transaction. If individuals participating in the market are offering leveraged or margined virtual currency products to retail customers that cannot meet the CFTC’s standards for “actual delivery”, they must offer such products *as if* they were futures contracts under the CEA.

The CFTC not only issued this framework but also enforced its legislative guidelines stressing its willingness to apply its authority.

In fact, on the 1<sup>st</sup> of October 2020, the Commission filed, in U.S. District Court for the Southern District of New York, a civil enforcement action against BitMEX, the world’s largest virtual currency trading platform.<sup>227</sup> The CFTC accused the exchange platform of “illegally offered leveraged retail commodity transactions, futures, options and swaps on cryptocurrencies, including Bitcoin, Ether and Litecoin”<sup>228</sup>, receiving more than \$11 billion in Bitcoin deposits making more than \$1 billion in fees<sup>229</sup> from 2014 to 2020, without registering such platform with the agency. Later, the US Department of Justice criminally indicted the three owners and an officer of BitMEX for intentionally violated CFTC regulations by failing to implement a Customer Information Program (CIP) and Know-Your-Customer (KYC) procedures that would enable the identification of U.S. persons using the platform, and by failing to implement

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<sup>223</sup> Release No. 8139-20, CFTC, *CFTC Issues Final Interpretive Guidance on Actual Delivery for Digital Assets*, (2020) available at <https://www.cftc.gov/PressRoom/PressReleases/8139-20>, See also, Final Interpretive Guidance, 29-30

<sup>224</sup> *Id.* at 218 - 32

<sup>225</sup> *Id.* - 33

<sup>226</sup> *Id.* - 34

<sup>227</sup> *CFTC Charges BitMEX Owners with Illegally Operating a Cryptocurrency Derivatives Trading Platform and Anti-Money Laundering Violations*, 8270-20, (Oct 01, 2020)

<sup>228</sup> *Id.* at 169

<sup>229</sup> *Id.* at 223

an adequate Anti-Money Laundering (AML) program<sup>230</sup>. Therefore, federal court ordered BitMEX to pay \$100 million for illegally operating a cryptocurrency trading platform as they were violating the CEA and anti-money laundering provisions<sup>231</sup>.

One year later on October 15<sup>th</sup>, 2021 the CFTC issued an order simultaneously filing and settling charges against Bitfinex, a cryptocurrency trading platform that engaged in illegal retail commodity transactions in Bitcoin and other cryptocurrencies. This platform had to pay \$1.5 million civil monetary penalty<sup>232</sup> as it failed to register as a Future Commission Merchant<sup>233</sup> as it required by the CEA under 7 U.S. Code § 6d(a)(1).<sup>234</sup> This peer-to-peer platform allowed its customers to engage in spot and forward trades using bitcoin. Moreover, users could borrow funds from other individuals using the same platform in order to trade cryptocurrency on a leverage basis. By using the 7 U.S.C. section 2(c)(2)(D) defined above, the CFTC noted that no ‘actual delivery’ occurred, and controls were not adequate to keep U.S. customers from illegally engaging in leveraged retail commodity transactions without having such transactions occur on or comply with to the rules of a CFTC-regulated exchange.

As these instruments are recent and their new technology may not be as straightforward for everyone, some users take advantage of the confusion in the US legislation and fraudulent actions involving cryptocurrencies have become more common.

### c. Financial Crimes Enforcement Network and anti-money laundering

Financial Crimes Enforcement Network (FinCEN) is an U.S. Treasury Department’s bureau that gathers financial transactions’ information to prevent money laundering and other financial crimes.

The Bank Secrecy Act (BSA) requires that financial institution not otherwise regulated, have to register with FinCEN in order to “prevent the laundering of money and the financing of terrorism [... , ] to facilitate the tracking of money that has been sourced through criminal activity or is intended to promote criminal or terrorist activity [... , to ] assess the [...] tax evasion, and fraud risks to financial institutions, [...] and] establish appropriate frameworks for information sharing among financial institutions”<sup>235</sup>.

In the BSA, the financial institution’s definition incorporates multiple elements. It includes “an insured bank, [...] a broker or dealer in securities or commodities, [...] a currency exchange, an issuer, redeemer, or cashier of travelers' checks, checks, money orders, or similar instruments, [...] any other business designated by the Secretary whose cash transactions have

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<sup>230</sup> *Federal Court Orders BitMEX to Pay \$100 Million for Illegally Operating a Cryptocurrency Trading Platform and Anti-Money Laundering Violations*, 8412-21, (August 10, 2021)

<sup>231</sup> *Id.*

<sup>232</sup> *CFTC Orders Tether and Bitfinex to Pay Fines Totaling \$42.5 Million*, 8450-21, (Oct. 15, 2021)

<sup>233</sup> 7 USC § 1a(28)(A) In general The term “futures commission merchant” means an individual, association, partnership, corporation, or trust— (i) that— (I) is— (aa) engaged in soliciting or in accepting orders for— (AA) the purchase or sale of a commodity for future delivery; (BB) a security futures product; (CC) a swap; (DD) any agreement, contract, or transaction described in section 2(c)(2)(C)(i) of this title or section 2(c)(2)(D)(i) of this title ; (EE) any commodity option authorized under section 6c of this title ; or (FF) any leverage transaction authorized under section 23 of this title ; or (bb) acting as a counterparty in any agreement, contract, or transaction described in section 2(c)(2)(C)(i) of this title or section 2(c)(2)(D)(i) of this title ; and (II) in or in connection with the activities described in items (aa) or (bb) of subclause (I), accepts any money, securities, or property (or extends credit in lieu thereof) to margin, guarantee, or secure any trades or contracts that result or may result therefrom; or (ii) that is registered with the Commission as a futures commission merchant.

<sup>234</sup> 7 U.S. Code § 6d(a)(1)

<sup>235</sup> 31 U.S. Code § 5311(5)

a high degree of usefulness in criminal, tax, or regulatory matters.”<sup>236</sup> Under this act, wherever a person or entity is conducting a regular or non-regular activity or as an organized or licensed business in the U.S., the actions are considered Money Services Business (MSB)<sup>237</sup>.

Furthermore, MSB also includes dealers in foreign exchange, check casher, issuers and sellers of traveler’s checks or money orders, provider and sellers of prepaid access and money transmitters which is any person that provides the transmission of money services or of funds.<sup>238</sup>

Under the BSA, money services businesses have to comply to the same requirements as the other financial institutions. In fact, they are required under 31 Code of Federal Regulation (CFR) 1022.320 to file a Suspicious Activity Report (SAR)<sup>239</sup>, under 31 CFR 1010.311 a Currency Transaction Reports (CTR)<sup>240</sup>, to register with FinCEN and are subject to an Internal Revenue Service’s examination.<sup>241</sup> MSB have also to implement and maintain anti-money laundering programs<sup>242</sup> and in order to facilitate financial transparency they have to made and retain certain records.<sup>243</sup>

These definitions and requirements are important as they have laid down the basis for FinCEN to regulate entities that engaged in virtual currency activities.

Consequently, on the 7<sup>th</sup> of July 2011, FinCEN revised the regulations implementing the Bank Secrecy Act concerning the clarification of entities considered money services business.<sup>244</sup>

They expanded the money transmission services’ definition by updating it to “the acceptance of currency, funds, or other value that substitutes for currency from one person *and* the transmission of currency, funds, or other value that substitutes for currency to another location or person by any means.”<sup>245</sup> By adding ‘other value that substitutes for currency’, FinCEN made all businesses that exchange, trade or accept currencies equivalents as a funding source. Consequently, the transfer of that value, for example in virtual currency schemes, act as money transmission services. It is a crucial point as in some states, virtual currency business, falling into the definition money transmission services, are required to obtain a license to conduct their business.

Moreover, on January 1<sup>st</sup>, 2021 the Congress enacted the Anti-Money Laundering Act of 2020. In this act, it broadens once again the definition of financial institution under the Bank Secrecy Act by including in the definition “something of value that substitutes for currency”<sup>246</sup>. Therefore, all businesses that exchange or engage in cryptocurrencies transactions are considered to fall under the definition of financial institution and are therefore subject to the BSA regulation and compliance requirements.

#### *i. The 2013 FinCEN guidance*

Similarly to the SEC and the CFTC, the FinCEN on March 8<sup>th</sup> 2013 issued an interpretative guidance to help individuals in the application of its regulations when creating, administering,

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<sup>236</sup> 31 U.S. Code § 5312(2)(Z)

<sup>237</sup> 31 CFR § 1010.100

<sup>238</sup> *Id.*

<sup>239</sup> 31 CFR § 1022.320(b)(1)

<sup>240</sup> 31 CFR § 1010.311

<sup>241</sup> 31 CFR § 1010.810(b)

<sup>242</sup> 31 CFR § 1022.210

<sup>243</sup> 31 CFR § 1010.410

<sup>244</sup> 76 FR 43585, 1506-AA97, Financial Crimes Enforcement Network, 2011-18309

<sup>245</sup> 31 U.S.C. §5330(d)2)

<sup>246</sup> Anti-Money Laundering Act of 2020, Sullivan&Cromwell LLP, (December 17, 2020)

<https://www.sullcrom.com/files/upload/sc-publication-anti-money-laundering-act-2020.pdf> pag.4



distributing, exchanging or using virtual currencies.<sup>247</sup> It provides some guidelines and key definitions used by the FinCEN when considering virtual currency businesses under the BSA. At first, the guidance starts by distinguishing real currencies from virtual ones. Currency is a “coin and paper money of the United States or of any other country that

[i] is designated as legal tender and that

[ii] circulates and

[iii] is customarily used and accepted as a medium of exchange in the country of issuance”<sup>248</sup>.

Instead, this framework defines a virtual currency as a “medium of exchange that operates like a currency in some environments but does not have all the attributes of real currency [in particular the] legal tender status in any jurisdiction.”<sup>249</sup> The definition brought by the guidance is limited to convertible virtual currencies as it does not go any deeper in determining which type of convertible virtual scheme it is referring (i.e., unidirectional or bidirectional). The act does not say anything on whether they are convertible only to real money or to any other form like game money, or whether and how the virtual currency scheme is secured by cryptography. The guidance only specifies that as it addresses both centralized and decentralized virtual currency schemes.

Furthermore, it defines and distinguishes three actors participating in a virtual currency transaction. The *exchanger* who is an individual that “engaged as a business in the exchange of virtual currency for real currency, funds, or other virtual currency”<sup>250</sup>. The *administrator* that engages in a business by “issuing (putting into circulation) a virtual currency, and who has the authority to redeem (to withdraw from circulation) such virtual currency”<sup>251</sup>. The *user* that “obtains virtual currency to purchase goods or services”<sup>252</sup>. An *exchanger* and/ or an *administrator* that accepts and transfers, buys or sells virtual currencies is considered by the guidance a money transmitter unless they are identified as exemption under the BSA. Therefore, exchangers and administrators are money services business subject to anti-money laundering obligations under FinCEN supervision. Conversely, the *users* of virtual currencies, that engage in transactions only for a consumption purpose, do not fall within the money transmission service’s definition. Therefore, it does not have to comply with “FinCEN’s registration, reporting, and recordkeeping regulations for MSBs.”<sup>253</sup>

## ii. *The Interpretative Guidance of 2019*

On May 9<sup>th</sup>, 2019, the FinCEN issued another interpretative guidance on the application of their regulation to some business models involving convertible virtual currencies (CVC). This explanation “sets forth examples of how FinCEN’s money transmission regulations apply to several common business models involving transactions in CVC”<sup>254</sup>. Even though the guidance

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<sup>247</sup> Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies, FIN-2013-G001, (March 18, 2013)

[https://web.archive.org/web/20130319213642/http://fincen.gov/statutes\\_regs/guidance/html/FIN-2013-G001.html](https://web.archive.org/web/20130319213642/http://fincen.gov/statutes_regs/guidance/html/FIN-2013-G001.html)

<sup>248</sup> *Id.*

<sup>249</sup> *Id.*

<sup>250</sup> *Id.*

<sup>251</sup> *Id.*

<sup>252</sup> *Id.*

<sup>253</sup> *Id.*

<sup>254</sup> Application of FinCEN’s Regulations to Certain Business Models Involving Convertible Virtual Currencies, FIN-2019-G001, (May 9, 2019), 14 <https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf>

does not create new requirements and do not act as law, it “highlight the key facts and circumstances of a specific product or service on which FinCEN based its regulatory interpretation”<sup>255</sup>

The above stated definition of an MSB may apply to peer-to-peer (P2P) exchanges of virtual currencies as individuals engage in transactions buying and selling unit of that instrument. P2P may use different services such as “designed platform websites, online forums, other social media, and word of mouth”<sup>256</sup>. Their main advantage is that they facilitate the transfer of virtual currencies as no intermediaries are involved. P2P exchangers are identified as money transmitters and therefore must comply with BSA Regulations.

As defined in 31 CFR § 1010.100(ff)(5)(ii)(A) a person that only provides the delivery, communication or network access services used by a money transmitter to support money transmission services is exempted from the money transmitter status. Virtual currency’s trading platforms connect buyers and sellers and simplifies trades between them. If the virtual platform acts only as a meeting point from buyers and sellers, meaning that the parties settle any matched transaction independently, then the platform is not considered a money transmitter. Contrarily, if the platform act as intermediary (i.e., purchasing virtual currency from the seller and selling it to the buyer) then it is qualified as a money transmitter and falls under the AML obligations of the BSA regulations.<sup>257</sup>

Moreover, the 2019 above mentioned instruction discusses for the first time ever the FinCEN’s guidelines on decentralized applications, defining them as software packages using a blockchain technology and running on peer-to-peer exchanges without the control of central authorities. It concluded that when decentralized applications (DApp) are used to implement money transmission, “the definition of money transmitter will apply to the DApp, [its] owners-operators [...] or both”<sup>258</sup> even though it does not discuss the elements that may characterize a decentralized application’s owner or operator.

In addition, in its recommendations, FinCEN addresses the virtual wallets, such as mobile, software and hardware wallets, used as an instrument to store and transfer value. The agency states that the regulatory management of such intermediaries is not technology-specific but depends on four criteria: “(a) who owns the value; (b) where the value is stored; (c) whether the owner interacts directly with the payment system where the CVC runs; and (d) whether the person acting as intermediary has total independent control over the value.”<sup>259</sup> However, in the virtual wallets’ guidelines FinCEN does not provide an explanation on how these four factors would be addressed in different situations .

Moreover, similarly to the 2013 guidance, the suggestions released in 2019 by FinCEN reaffirms that unless a miner uses convertible virtual currencies in money transmission, then an individual acting as a user of CVC to buy goods or services is not considered MSB. It also addresses the CVC money transmission performed by mining pools and cloud miners. In order to determine whether users of virtual currency are money transmitters, FinCEN focuses more on the reason for which individuals use virtual currencies rather than on how they create or obtains it. As already described in chapter 1, in order to increase their capacity to mine and therefore their chance of being rewarded for the verification of the blocks’ authenticity, miners use computers to form mining pools. The reception of the unit of currencies earned by mining and its transfer to other groups members do not constitute money transmissions under the BSA

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<sup>255</sup> *Id.*

<sup>256</sup> *Id.*

<sup>257</sup> *Id.* 23-24

<sup>258</sup> *Id.* 18

<sup>259</sup> *Id.* 15

as these transactions are an intrinsic part of the provision of services. Instead, miners engaging in account-based money transactions fall under the definition provided by FinCEN.<sup>260</sup>

Finally, among other things in this guidance, the U.S. Treasury Department's bureau discusses two ICOs business models. In the first one, the ICO consist in a specific instantaneous or deferred offer of a sale of CVC made to a distinct set of preferred buyers or investors. Under the BSA, the seller of the CVC is a money transmitter as he is "acting in the role of administrator, because at the time of the initial offering the seller is the only person authorized to issue and redeem (permanently retire from circulation) the new units of CVC."<sup>261</sup> In the second model, in order to fund a project, the ICO earns money through the issuance of a digital token selling it as a proof of investment. At the conclusion of the project the investor can: "(a) receive new CVC in exchange for the token; (b) exchange the token for a DApp coin, which is a digital token that unlocks the use of DApps that provide various services; (c) use the original token itself as a new CVC or DApp coin; or (d) receive some other type of return on the original equity investment or debt instrument"<sup>262</sup>. Falling into section 1010.100(ff)(8) of the 31 CFR, participants engaging in this model may be exempt from MSB status as they "accept and transmits funds only integral to the sale of goods or the provision of services, other than money transmission services, by the person who is accepting and transmitting the funds"<sup>263</sup>. Finally, the initial investor may not be subject to any BSA Regulations obligations the resale of the initial digital token.<sup>264</sup>

#### d. Internal Revenue Service and virtual currencies' taxation

The Internal Revenue Service (IRS) administers and enforces U.S. federal tax laws.<sup>265</sup> On the 25<sup>th</sup> of March 2014, the IRS has issued a virtual currency guidance providing an explanation on how tax principles apply to transactions involving those particular digital assets. The agency believes that a sale or an exchange of virtual currency to buy or not goods and services has tax consequences that can result in tax liability.<sup>266</sup> In more extreme situations, if taxpayers evade taxes or fail to report income tax of virtual currency transactions to the IRS, they could be subject to criminal prosecution. The IRS sanctions taxpayers with the following penalties: "Anyone convicted of tax evasion is subject to a prison term of up to five years and a fine of up to \$250,000. Anyone convicted of filing a false return is subject to a prison term of up to three years and a fine of up to \$250,000."<sup>267</sup>

In the Notice 2014-21, the IRS has declared that virtual currencies such as Bitcoin or other cryptocurrencies will have to comply to tax principles as they are considered by the IRS a "property" and not a currency.<sup>268</sup> As a consequence, every person or business that owns cryptocurrency will have to:

"(i) keep detailed records of cryptocurrency purchases and sales,

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<sup>260</sup> *Id.* 28

<sup>261</sup> *Id.* 25

<sup>262</sup> *Id.* 25-26

<sup>263</sup> 31 CFR § 1010.100 (ff)(5)(ii)(F)

<sup>264</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev. (Sept 02, 2021) <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>265</sup> *Internal Revenue Service*.USAGov, <https://www.usa.gov/federal-agencies/internal-revenue-service>.

<sup>266</sup> Notice 2014-21, *IRS Virtual Currency Guidance* § 3 [https://www.irs.gov/irb/2014-16\\_IRB#NOT-2014-21](https://www.irs.gov/irb/2014-16_IRB#NOT-2014-21)

<sup>267</sup> IRS reminds taxpayers to report virtual currency transactions, IR-2018-71, (March 23, 2018)

<https://www.irs.gov/newsroom/irs-reminds-taxpayers-to-report-virtual-currency-transactions>

<sup>268</sup> *Id.* at 262 § 4Q-1: How is virtual currency treated for federal tax purposes?

- (ii) pay taxes on any gains that may have been made upon the sale of cryptocurrency for cash,
- (iii) pay taxes on any gains that may have been made upon the purchase of a good or service with cryptocurrency, and
- (iv) pay taxes on the fair market value of any minted cryptocurrency, as of the date of receipt.”<sup>269</sup>

In addition, as virtual currency is considered property under federal incomes tax purposes. Therefore, as it is held as “capital asset”<sup>270</sup>, owners and issuers have to report on IRS Schedule D (Form 1040) the short-term and long-term sales or exchanges of capital assets<sup>271</sup> and on IRS form 8949 the following:

1. A description of the property, so on the type of virtual currency sold
2. The date the virtual currency was acquired
3. The date that it was sold or disposed of
4. The amount of proceeds from the sale
5. The cost or other basis
6. The gain and losses<sup>272</sup>

In order to bring further details on how the IRS taxes cryptocurrencies’ transaction, the agency releases the *Frequently Asked Questions on Virtual Currency Transactions* where it provides examples and further expands the principles of the guidance in Notice 2014-21.<sup>273</sup>

Additionally, on October 9<sup>th</sup>, 2019, it issued a guidance called the Revenue Ruling where it addresses the treatment of two type of transactions:

- A *hard fork*: “when a cryptocurrency on a distributed ledger undergoes a protocol change resulting in a permanent diversion from the legacy or existing distributed ledger. A hard fork may result in the creation of a new cryptocurrency on a new distributed ledger in addition to the legacy cryptocurrency on the legacy distributed ledger.”<sup>274</sup>
- An *airdrop* that is a “means of distributing units of a cryptocurrency to the distributed ledger addresses of multiple taxpayers.”<sup>275</sup>

The Revenue Ruling states that, in situations involving these two types of transactions, a taxpayer is taxed only if he or she receives a new virtual currency acquiring its complete control. However, neither the *Frequently Asked Questions on Virtual Currency Transactions* nor the 2019 guidance bring information on how various platforms dealing with virtual currencies have to comply with the reporting requirements.

Even though the IRS tried to give deeper insight on virtual currencies’ tax regulation some interrogations and doubt remain. If a virtual currency is considered a property, then it is still uncertain how the IRS would tax direct virtual currency investments, cryptocurrency like Bitcoin, and tokens or NFTs which are not addressed by any federal agency. Or simply, we can

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<sup>269</sup> *Blockchain & Cryptocurrency Laws and Regulations 2022, USA*, Global Legal Insight

<sup>270</sup> *Publication 544 (2020), Sales and Other Dispositions of Assets*, Schedule D (Form 8949) Department of the Treasury Internal Revenue Service, available at [https://www.irs.gov/publications/p544#en\\_US\\_2020\\_publink1000299257](https://www.irs.gov/publications/p544#en_US_2020_publink1000299257)

<sup>271</sup> *Capital Gains and Losses*, Schedule D (Form 1040), Department of the Treasury Internal Revenue Service, available at <https://www.irs.gov/pub/irs-pdf/f1040sd.pdf>

<sup>272</sup> *Sales and Other Dispositions of Capital Assets*, Form 8949, Department of the Treasury Internal Revenue Service <https://www.irs.gov/pub/irs-pdf/f8949.pdf>

<sup>273</sup> *Frequently Asked Questions on Virtual Currency Transactions*, Department of the Treasury Internal Revenue Service <https://www.irs.gov/individuals/international-taxpayers/frequently-asked-questions-on-virtual-currency-transactions>

<sup>274</sup> 26 CFR 1.61-1: Gross income. (Also §§ 61, 451, 1011.) Rev. Rul. 2019-24 <https://www.irs.gov/pub/irs-drop/rr-19-24.pdf>

<sup>275</sup> *Id.*

underline the confusing environment that federal agencies have created: on one hand the SEC considers under the Howey test virtual currencies as securities and on the other the CFTC believes that they are commodities falling into its regulation. In the essay the *Virtual Currency Regulation Review: USA*<sup>276</sup> the Harvard Law Review questions that when the IRS addresses virtual currency transactions as properties, should it consider them constituting an investment in securities or in commodities when investment in virtual currencies when they fall under the Section 864 safe harbour of the Internal Revenue Code of 1986?<sup>277</sup>

The federal regulatory agencies' regulation by enforcement approach turned out to be full of structural difficulties as US virtual currencies' regulation lacks a precise and clear legislation. Many issues still need to be addressed at the federal level as many cryptocurrencies and new technological tools are emerging in recent years.

### 3. Jurisdictional law

Federal laws regulate different aspects when it comes to virtual currency even though many arguments remain unaddressed. However, it is known that the interpretation of some regulation is left to the single states as they can enact their own set of laws. They are called blue sky laws and they "impose disclosure and filing requirements to protect the public from fraud".<sup>278</sup>

In the absence of a unique federal directive completely dedicated to all cryptocurrencies, some states have taken matters into their own hands. Single states are trying to regulate this peculiar subcategory of virtual currency establishing new directives, for whether to introduce in the crypto world authorities that can oversee cryptocurrencies exchanges and address how to regulate them. Some states developed a more friendly legislation compared to others. However, the growing attention from regulators on cryptocurrencies, contributes to bring them in the spotlight and underlines the willingness to create a dialogue with this emerging business. Principally, states are concerned to regulate the uses of cryptos as money transmitters, to assess if the status of legal tender can be applied to commercial transaction as some goods and services can be paid with these new currencies. Nevertheless, some states want to address the newest blockchain technologies like smart contracts and tokens. In fact, they promote them and study a way to use them as a source of profit by constructing a regulatory paradise to attract cryptocurrency businesses.

The map below shows the overall state by state cryptocurrency regulation. It indicates in with the color pink the states that do not have any and in green the ones that have already take further steps in their legislation and have now take the lead. The shades of color between green and pink identify the states that are considering adopting it or are starting to introduce new laws on crypto regulation. The new technological innovations may be seen as a threat or as an opportunity to attract more business. The map shows that 31 states over 50 didn't addressed the issue and 8 states have no clear directives. This indicates that the vast majority of the states are still deciding which position they are willing to take. On the other hand, few states with a strong position on cryptocurrency have taken advantage of this uncertain climate and have taken over. These states are seizing this moment not only to adapt to new technologies and thus

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<sup>276</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev. Sept 02, 2021 <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>277</sup> *Id.*

<sup>278</sup> Pierluigi Matera, *Delaware's Dominance, Wyoming's Dare. New Challenges, Same Outcome?*, 27(1) Fordham Journal of Corporate & Financial Law *forthcoming* 2021, <https://ssrn.com/abstract=3763106>

innovate and enrich their jurisdictions, but also as an opportunity to overcome Delaware’s dominance.

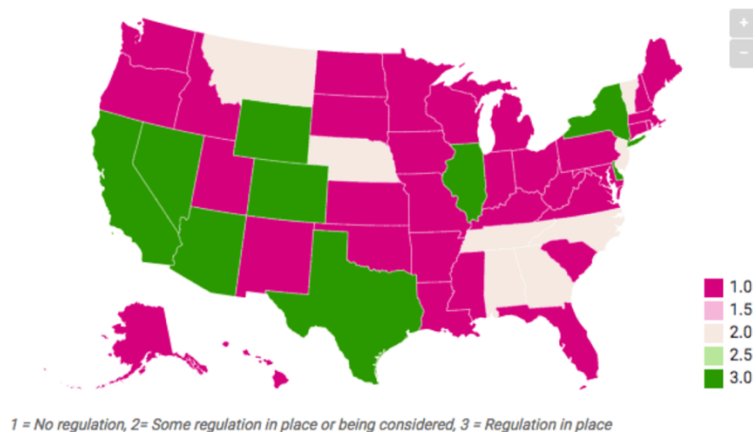


Figure 11<sup>279</sup>: United States Cryptocurrency Regulation

a. Favorable virtual currency regulations

i. *Wyoming, the Delaware of digital asset law*

Wyoming’s legislation is, so far, the most innovative and blockchain-friendly crypto jurisdiction. As a consequence, over the past years it has enacted more than a dozen customized laws aimed at attracting blockchain and cryptocurrency companies to the state. One can argue that Wyoming’s aim is to become to cryptocurrency and token-based businesses what Delaware is to corporations. The state has focused on the business opportunities arising from virtual currencies rather than the potential of blockchain for corporate governance earning a reputation as a crypt-to-haven for blockchain companies<sup>280</sup>. It’s important to stress that, on one hand, the SEC does not agree with Wyoming’s liberal approach and on the other hand, Wyoming’s bill and favorable crypto jurisdiction does not give a complete safe harbor to developers of cryptocurrencies as federal laws have a higher degree of enforceability.

On February 28<sup>th</sup>, 2019, Wyoming enacted an historic bill called H.B. 70, known also as the Utility Token Bill<sup>281</sup>. It states that cryptocurrencies and individuals who develop, sell or facilitate the exchange of such asset, are exempted from securities laws and money transmission laws as long as these instruments are considered utilities and not investments.<sup>282</sup> The bill provides the following requirements that utility tokens and its issuers have to meet in order be not subject to the state’s securities laws:

- “(i) The developer or seller of the token, or the registered agent of the developer or seller, files a notice of intent with the secretary of state, [...]
- (ii) The purpose of the token is for a consumptive purpose, which shall only be exchangeable for, or provided for the receipt of, goods, services or content, including rights of access to goods, services or content; and

<sup>279</sup> Sharma, Rakesh, More US States May Roll Out Cryptocurrency Regulations, Investopedia June 25, 2019

<sup>280</sup> Matera, Pierluigi & Benincampi, Alessandro, *Blockchain, DIGESTO delle Discipline Privatistiche – sezione Commerciale*, §9 47

<sup>281</sup> H.B. 70 2018

<sup>282</sup> *Wyoming passes bill exempting some tokens from securities laws*, Engage Hogan Lovells, March 9, 2018

(iii) The developer or seller of the token did not sell the token to the initial buyer as a financial investment.”<sup>283</sup>

The paragraph’s requirements shall only be satisfied if:

“(ii) The developer or seller did not market the token to the initial buyer as a financial investment, as defined in paragraph (g)(v) of this section; and

At least one (1) of the following subparagraphs is satisfied:

(A) The developer or seller reasonably believed that it sold the token to the initial buyer for a consumptive purpose;

(B) The token has a consumptive purpose that is available at or near the time of sale and can be used at or near the time of sale for a consumptive purpose;

(C) The initial buyer of the token is prohibited by the developer or seller of the token from reselling the token until the token is available to be used for a consumptive purpose;

(D) The developer or seller takes other reasonable precautions to prevent an initial buyer from purchasing the token as a financial investment.”<sup>284</sup>

Furthermore, Wyoming’s favourable jurisdiction did not limit itself to the Utility Token Bill. In fact, during the same year, the state passed a legislation (i.e., H.B. 101) related to the Wyoming Business Corporations Act. It authorizes “corporations to use electronic networks or databases for the creation or maintenance of corporate records; authoriz[es] the use of a data address to identify a corporation's shareholder; authoriz[es] corporations to accept shareholder votes if signed by a network signature that corresponds to a data address; [and specifies the] requirements for use of electronic networks or databases.”<sup>285</sup>

Less than one month later, the state also amended its Money Transmitter Act providing an exemption for anyone “buying, selling, issuing, or taking custody of payment instruments or stored value in the form of virtual currency”<sup>286</sup>. In addition, on the 12<sup>th</sup> of March, 2018, Wyoming, in attempting to becoming the Nation’s most favorable state, passed a bill excluded virtual currencies from property taxation.<sup>287</sup> Furthermore, on February 26<sup>th</sup>, 2019, it passed another bill establishing the legal nature of digital asset by “classifying [them ]within existing laws; specifying that [...]are property within the Uniform Commercial Code; authorizing security interests in digital assets; establishing an opt-in framework for banks to provide custodial services for digital asset property as custodians; specifying standards and procedures for custodial services under this act;[and]clarifying the jurisdiction of Wyoming courts relating to digital assets”<sup>288</sup>.

Wyoming did make “the development of blockchain business a true priority”<sup>289</sup>. Consequently, at the end of the same month, it enacted another piece of legislation focusing on open blockchain tokens: the H.B. 62<sup>290</sup>. In this new jurisdiction, the state establishes, among other things, that:

- open blockchain tokens with specified consumptive characteristics are intangible personal property and therefore not subject to a securities exemption

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<sup>283</sup> WY Stat § 17-4-206 (2018)

<sup>284</sup> HB0062 65<sup>th</sup> Leg. Wyoming Utility Token Act-property amendments, (Wyo. 2019)

<sup>285</sup> H.B. 101, 64<sup>th</sup> Leg., Budget Sess. (Wyo. 2018).

<sup>286</sup> H.B. 19, 64<sup>th</sup> Leg., Budget Sess. (Wyo. 2018).

<sup>287</sup> S.F. 111, 64<sup>th</sup> Leg., Budget Sess. (Wyo. 2018).

<sup>288</sup> S.F. 125, 65<sup>th</sup> Leg., Gen. Sess. (Wyo. 2019);

<sup>289</sup> Pierluigi Matera, *Delaware’s Dominance, Wyoming’s Dare. New Challenges, Same Outcome?*, 27(1)

Fordham Journal of Corporate & Financial Law *forthcoming* 2021, 36 <https://ssrn.com/abstract=3763106>

<sup>290</sup> H.B. 62, 65<sup>th</sup> Leg., Gen. Sess. (Wyo. 2019)

- developers and sellers of open blockchain tokens are required to file notices of intent and fees with the secretary of state, and repealing provisions granting open blockchain tokens a securities exemption.<sup>291</sup>

Moreover, Wyoming legislators believed that “the growing use of virtual currency and other digital assets, has resulted in many blockchain innovators being unable to access secure and reliable banking services, hampering development of blockchain services and products in the marketplace”<sup>292</sup>. Hence, in 2019 they passed another bill, namely H.B. 74, where the state introduced the idea of the special purpose depository institutions (SPDI). They are “new type of Wyoming financial institution that has expertise with customer identification, anti-money laundering and beneficial ownership requirements [... a]uthorizing special purpose depository institutions to be chartered in Wyoming [in order to] provide a necessary and valuable service to blockchain innovators, emphasize Wyoming’s partnership with the technology and financial industry and safely grow this state’s developing financial sector.”<sup>293</sup> These institutions can in fact “receive deposits and conduct a range of other traditional banking activities without being required to secure insurance from the Federal Deposit Insurance Corporation (FDIC) [but are] unable to obtain a FDIC insurance due to their dealings with cryptocurrencies [and] can now apply for the SPDI bank charter and offer banking services.”<sup>294</sup>

Along with it, during the same year, Wyoming created the Financial Technology Sandbox Act where it affirms that the state should offer regulatory sandbox for blockchain and financial technology innovators to develop inside the state the next generation of financial products and services.<sup>295</sup>

What’s more, in 2020 Wyoming proved once again its willingness to surpass all other states in advancing pro-crypto legislation as it enacted another bill. H.B. 27 which created a selected Committee on Blockchain, Financial Technology and Digital Innovation Technology<sup>296</sup>. The committee will have its first meeting ever on May 22, 2022 that will focus on digital property rights.<sup>297</sup>

Finally, in 2021, Wyoming became the first of US state to propose a legislation called S.B. 38 in order to regulate Decentralized Autonomous Organizations (DAOs).<sup>298</sup> And if signed into law, it would give DAOs the ability to form as a limited liability company.

## ii. Vermont

The state of Vermont also has a crypto friendly regulation. It recognizes the blockchain data authentication and admissibility in court under the Vermont Rule of Evidence 902<sup>299</sup>.

In addition, Vermont applies its money transmission laws to virtual currency. It defines them in its House Bill 182 enacted in 2017 as:

“stored value that:

- (A) Can be a medium of exchange, unit of account, or a store of value;

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<sup>291</sup> *Id.* at 279

<sup>292</sup> H.B.0074, 65<sup>th</sup> Leg. (Wyo. 2019) §1(a)(i)

<sup>293</sup> *Id.*

<sup>294</sup> *Id.* at 284

<sup>295</sup> H.B. 57, 65th Leg., Gen. Sess. (Wyo. 2019).

<sup>296</sup> H.B. 27, 65th Leg., Gen. Sess. (Wyo. 2020).

<sup>297</sup> *Wyoming Legislature Announces Creation of New Blockchain Committee*, Two Ocean Trust, May 26, 2020 <https://www.twoocean.com/post/wyoming-legislature-announces-creation-of-new-blockchain-committee>

<sup>298</sup> Deric Behar et al., *Decentralized Autonomous Organizations Find a Home in Wyoming*, Jdsupra, April 26, 2021 <https://www.jdsupra.com/legalnews/decentralized-autonomous-organizations-5960480/>

<sup>299</sup> 12 V.S.A. § 1913 (b)



- (B) Has an equivalent value in money or acts as a substitute for money
- (C) May be centralized or decentralized; and
- (D) Can be exchanged for money or other convertible virtual currency”<sup>300</sup>.

In fact, this bill amends Vermont’s money transmitter law. In particular, it brings changes to it in section 16 § 2541(a) in which it includes virtual currency owned by businesses, with the money transmitter license, as a permissible investment.<sup>301</sup> In 2019, the state passed different bills including the term virtual currency in the definition of “prepaid access”<sup>302</sup> and in the definition of “property”<sup>303</sup>.

Nevertheless, on the 30<sup>th</sup> of May 2018, Vermont introduced a new bill in its jurisdiction creating so-called “Blockchain-Based Limited Liability Companies” or BLLC. Signed into law by Governor Phil Scot, it can be considered as one of the most interesting and innovative laws that this state has enacted. It directly addresses a new type of business entity that uses blockchain technology: a blockchain-based limited liability company. In order to create a blockchain-based company, the entity must have specified in its articles of organization:

- “(A) [...] a summary description of the mission or purpose of the BLLC;
- (B) specify whether the decentralized consensus ledger or database utilized or enabled by the BLLC will be fully decentralized or partially decentralized and whether such ledger or database will be fully or partially public or private, including the extent of participants' access to information and read and write permissions with respect to protocols;
- (C) adopt voting procedures, which may include smart contracts carried out on the blockchain technology, to address:
  - (i) proposals from managers, members, or other groups of participants in the BLLC for upgrades or modifications to software systems or protocols, or both;
  - (ii) other proposed changes to the BLLC operating agreement; or
  - (iii) any other matter of governance or activities within the purpose of the BLLC;
- (D) adopt protocols to respond to system security breaches or other unauthorized actions that affect the integrity of the blockchain technology utilized by the BLLC;
- (E) provide how a person becomes a member of the BLLC with an interest, which may be denominated in the form of units, shares of capital stock, or other forms of ownership or profit interests; and
- (F) specify the rights and obligations of each group of participants within the BLLC, including which participants shall be entitled to the rights and obligations of members and managers.”<sup>304</sup>

As Vermont, Wyoming and other states wants to profit from these technologically innovative products, the bill also requested a study to be conducted by the Department of Financial Regulation on expanding the use of blockchain technology to insurance and banking industries and to “consider area of potential adoption and any necessary regulatory changes in Vermont”<sup>305</sup>. The state aims at exploring and seizing the opportunity that blockchain technology may present in different sectors. In fact, in section 5, the act requests that the Agency of Commerce and Community Development in collaboration with other institutions to hold a FinTech Summit with the aim of exploring “legal and regulatory mechanisms to promote the adoption of financial technology in state government, [...] in private sector, including in the areas of banking, insurance, retail and service businesses, and cryptocurrency providers and

<sup>300</sup> 8 V.S.A. § 2500(22) <https://legiscan.com/VT/text/H0182/id/1613511/Vermont-2017-H0182-Chaptered.pdf>

<sup>301</sup> 8 V.S.A. § 2541(a)(7) <https://legiscan.com/VT/text/H0182/id/1613511/Vermont-2017-H0182-Chaptered.pdf>

<sup>302</sup> 8 V.S.A. §2500 (12)

<sup>303</sup> Revised Uniform Unclaimed Property Act. 27 V.S.A § 1452(24)(B)(i)

<sup>304</sup> 11 V.S.A. § 4173

<sup>305</sup> 12 V.S.A. § 1913 Sec.4

proponents; and [...] into the secondary and postsecondary education”<sup>306</sup>. Moreover, the bill creates another new type of business entity that has as its primary goal to protect consumer’s personal information: this is the Personal Information Protection Company or PIPC<sup>307</sup>. The act advances that these types of company could use blockchain technology for safety purposes when adopting their information security program.

### iii. Colorado

Colorado is part of the requires a license that cryptocurrency businesses have to obtain in specific cases in order to conduct business inside the state.

In fact, on the 20<sup>th</sup> September 2018 the state’s Division of Banking issued a regulatory guidance on the interpretation of the Colorado Money Transmitters Act when considering businesses trading and transferring cryptocurrencies. The Act affirms that the Colorado Money Transmitters Act regulates the transmission of legal tender type of money and that cryptocurrencies do not possess this feature/status. Therefore, the direct exchange of cryptocurrency between two parties or transactions that involve a third party but do not transfer fiat currency, are not required to have license as they do not fall under the money transmitter definition. However, under the Act the presence of fiat currency during a transmission may be subject to licensure. The state would require it when:

“● A person is engaged in the business of selling and buying cryptocurrencies for fiat currency; and

● A Colorado customer can transfer cryptocurrency to another customer within the exchange; and

● The exchange has the ability to transfer fiat currency through the medium of cryptocurrency.”<sup>308</sup>

Therefore, the state can be defined as pro-virtual currency.

At the beginning of 2019, the Senate passed a bill concerning a deduction from federal taxable income for gains from certain transactions using virtual currency. It allows from the beginning on or after January 1, 2020, to “an individual taxpayer or corporation to claim a state income tax deduction on gains, to the extent they are included in federal taxable income, from the sale or exchange of virtual currency for others other than cash or cash equivalents, up to \$600 per sale or exchange.”<sup>309</sup>

Moreover, in March of the same year, the state passed the Colorado Digital Token Act. Contrary to other state, in this act Colorado explicitly addresses digital tokens defining them as “a digital unit that is created [secured and] recorded in a digital ledger or database [...] capable of being traded or transferred between persons without an intermediary or custodian value”<sup>310</sup>. The act concerns the exemptions of cryptocurrencies from the state’s securities laws. The bill affirms that the primary purpose of digital tokens isn’t a speculative or investment one but a consumptive purpose<sup>311</sup>. The law states that an offer or a sale of digital tokens is exempted

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<sup>306</sup> 12 V.S.A. § 1913 Sec.5

<sup>307</sup> Sec. 2. 8 V.S.A. chapter 78, available at

<https://legislature.vermont.gov/Documents/2018/Docs/ACTS/ACT205/ACT205%20As%20Enacted.pdf>

<sup>308</sup> *Interim Regulatory Guidance Cryptocurrency and the Colorado Money Transmitters Act*, Colorado Department of Regulatory Agencies, (Sept. 20, 2018)

[https://drive.google.com/file/d/1MmpksD8aAPkmvdRdW0PztGe\\_eOceq4lk/view](https://drive.google.com/file/d/1MmpksD8aAPkmvdRdW0PztGe_eOceq4lk/view)

<sup>309</sup> CO S.B. 19- 140 (NS), available at

[https://leg.colorado.gov/sites/default/files/documents/2019A/bills/2019a\\_140\\_01.pdf](https://leg.colorado.gov/sites/default/files/documents/2019A/bills/2019a_140_01.pdf)

<sup>310</sup> CO S.B. 19-023§1(4)b, available at [https://leg.colorado.gov/sites/default/files/2019a\\_023\\_signed.pdf](https://leg.colorado.gov/sites/default/files/2019a_023_signed.pdf)

<sup>311</sup> “*Consumptive purpose* means to provide or receive goods, services, or content, including access to goods, services, or content.” Colo. Rev. Stat. § 11-51-308.7

from securities registration as long as its consumptive purpose is available: “at the time of sale [, ... or] within one hundred eighty days after the time of sale or transfer”<sup>312</sup>. Additionally, anyone engaging in the transfer, sale or purchase of digital token and anyone acting on its behalf, are exempted from the broker-dealer and salesperson licensing requirements of the Colorado Securities Acts.<sup>313</sup>

Finally, Colorado state agencies are studying blockchain technology and distributed ledger technologies to apply them in multiple areas. For example, the Senate granted authority to the Colorado water institute to study potential uses of blockchain technology<sup>314</sup>. However, after 2019, the state of Colorado “has pursued no meaningful legislative innovation on blockchain and digital assets”<sup>315</sup>.

#### b. Other states’ regulations in place or being considered

Contrary to the others, Texas was the first state to declare an official legislative position on cryptocurrencies. In fact, on April 3<sup>rd</sup>, 2014, the Texas Department of Banking (DOB) issued a supervisory memorandum addressing how virtual currencies will be interpreted and regulated under its Money Service Act. In this guidance, the state defines and describes the type of virtual currency (i.e., centralized and decentralized) but most importantly it clarifies that cryptocurrencies are not “coin and paper money issued by the government of a country”<sup>316</sup> and therefore are not considered currencies under the Texas Finance Code. Consequently, it affirms that any exchange of cryptocurrency by itself, for another cryptocurrency, for a sovereign currency or through a third party, is not money transmission. Therefore, the sell any cryptocurrency do not requests a money transmitter’s license. In 2017, some lawmakers proposed a constitutional amendment to protect the right to own and use digital currencies.<sup>317</sup> Even though this hands-off approach died in committee, the state encourages the adoption of advanced technology<sup>318</sup> such as blockchain, cryptocurrency and artificial intelligence by its agencies and local government.

The state of Nebraska has not provided instructions on whether it requires a license for virtual currency activities. Nonetheless, on the 26<sup>th</sup> of May 2021 it became the second state to authorize digital asset depository institutions by passing the Financial Innovation Act or LB 649<sup>319</sup>. The act, introduced by Senator Flood, authorizes cryptocurrency banking and provides the two guidelines to offer the digital asset services: “a state-chartered bank may create a digital asset division, or a digital asset depository may be created under a new charter.”<sup>320</sup> A digital asset depository institution can “facilitate the provision of digital asset business services resulting from the interaction of customers with centralized finance or decentralized finance platforms including, but not limited to, controllable electronic record exchange, staking, controllable electronic record lending, and controllable electronic record borrowing.”<sup>321</sup> Moreover, to obtain

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<sup>312</sup> *Id. at 305 § 13 V*

<sup>313</sup> Colo. Rev. Stat. § 11-51-308.7(3)

<sup>314</sup> CO S.B. 19-184, available at <https://leg.colorado.gov/bills/sb19-184>

<sup>315</sup> Pierluigi Matera, *Delaware’s Dominance, Wyoming’s Dare. New Challenges, Same Outcome?*, 27(1) Fordham Journal of Corporate & Financial Law *forthcoming* 2021, 37 <https://ssrn.com/abstract=3763106>

<sup>316</sup> Supervisory Memorandum - 1037(Tex. 2019).

<sup>317</sup> H.J.R 89, 85th Leg., Reg. Sess. (Tex. 2017).

<sup>318</sup> H.B. 4214, S.B. 64, 86th Leg., Reg. Sess. (Tex. 2019).

<sup>319</sup> L.B. 649, 107th Leg. Reg. Sess. (Neb. 2021).

<sup>320</sup> DMcLaughlin, Jeremie M. “Nebraska’s Play for a Piece of the Digital Asset Pie.” The National Law Review, 9( Nov. 2021) <https://www.natlawreview.com/article/nebraska-s-play-piece-digital-asset-pie>

<sup>321</sup> L.B. 649, § 4 8-3005(2)(b) 107th Leg. Reg. Sess. (Neb. 2021).

a charter, a digital asset depository institution’s capital stock shall be at least \$10 million.<sup>322</sup> In addition, the institution must comply with the Know-Your-Customer (KYC) and Anti-Money Laundering (AML) regulation and “must maintain unencumbered liquid assets denominated in United States dollars valued at not less than one hundred percent of the digital assets in custody.”<sup>323</sup> The Financial Innovation Act gives Nebraska an important advantage in the banking industry by offering cryptocurrency services that are not provided in any other state, aside Wyoming<sup>324</sup>. It also helps the state to seize the opportunities brought by the advancement in technological tools to further develop its financial sector.

The state of Georgia requires a license for all money transmitters involved in virtual currency activities.<sup>325</sup> The most interesting law proposed by its Senate was bill 464 to amend Section 48-2-32 of the Official Code of Georgia Annotated relating two topics: the forms of payment of taxes and license fees. The bill requires the state revenue commissioner to accept “any cryptocurrencies including but not limited to Bitcoin, that uses an electronic peer-to-peer system”<sup>326</sup> as valid payment for taxes and license fees. Unfortunately, this bill never got a hearing in committee before the Georgia Senate adjourned for its recess<sup>327</sup>. Nevertheless, nothing precludes another bill from being reintroduced during the next legislative session. On the 25<sup>th</sup> of March 2021, the House of Kentucky state introduced a bill “relating to the taxation of the commercial mining of cryptocurrency.”<sup>328</sup> It defines the commercial mining of cryptocurrency as the “process through which blockchain technology is used to mine cryptocurrency at a colocation facility”<sup>329</sup>. The act provides that the sale or purchase of electricity used or consumed in commercial cryptocurrency mining are exempted from taxes.<sup>330</sup> At the moment of writing the house bill is not signed into law and is before the Senate.<sup>331</sup>

As you can clearly observe from these examples, many states are taking inspiration from other states’ legislations. Everyone is aware that we are entering in a new era characterized by the “virtualization” of businesses and, more broadly speaking, of our ways of living. States acknowledging this change are trying to innovate their legislation by bringing in new features. However, many states have not yet identified a clear line of thinking and provide almost the same requirements failing to introduce new ideas.

The most common requirement among states is a license that every person engaging in the business of virtual currency considered monetary transmissions has to obtain. For instance, The Alabama Monetary Transmission Act considers these digital assets as monetary value received for transmission and therefore require a license from the state<sup>332</sup>.

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<sup>322</sup> *Id.* § 12 8-3013(1)

<sup>323</sup> *Id.* § 8 8-3009(1)

<sup>324</sup> Lopez, David A. & Kidwell Casey W. *Becoming a Leader in Cryptocurrency Banking: Nebraska Adopts Financial Innovation Act*, Husch Blackwell, July 08, 2021

<sup>325</sup> Ga. Code § 7-1-690

<sup>326</sup> Ga. S.B. 464 §1(2)(A)

<sup>327</sup> Kohen, Matthew, *State Regulations on Virtual Currency and Blockchain Technologies (Updated March 2021)*, JdSupra, April 19, 2021

<sup>328</sup> H.B. 230, Gen. Assemb., Reg. Sess. (Ky. 2021).

<sup>329</sup> *Id.* §(1)(c)

<sup>330</sup> *Id.* §(2)(a)

<sup>331</sup> “The Senate had introduced and passed its own bill. It provides a tax exemption for operations involving the mining of cryptocurrencies with “the minimum capital investment [of] one million dollars” S.B. 255, Gen. Assemb., Reg. Sess. (Ky. 2021). This senate bill is now pending before the House.

<sup>332</sup> H.B. 215, 2017 Leg., Reg. Sess. (Ala. 2017) § 8-7A-2(10) available at [AL Code § 8-7A-2 \(2017\)](#)

On the 22nd of February 2019 California enacted the Uniform Regulation of Virtual Currency Business Act. This bill prohibits anyone from engaging “in virtual currency business activity, or holding itself out as such, unless licensed or registered with the Department of Business Oversight”<sup>333</sup> and violations would imply a civil penalty.<sup>334</sup> In fact, even though California has 2,473 crypto ATMs<sup>335</sup> which are more than anywhere else in the country, Coinbase, one of the most famous secure cryptocurrency trading platforms has said that it will close its San Francisco office by 2022 moving into environment that have a more crypto-friendly legislation. On October 1<sup>st</sup>, 2017, Connecticut signed into law Bill 7141. It defines virtual currency as “any type of digital unit that is used as a medium of exchange or a form of digitally stored value or that is incorporated into payment system technology”<sup>336</sup> and applies to them the state’s money transmitter requirements. The state legislature requires a license from the state in order to engage in a financial transaction. In addition, Connecticut mandates that a virtual currency transmitter that receives, stores, or transmit it to others “shall at all times hold virtual currency of the same type and amount owed or obligated to such other person”<sup>337</sup>, rather than match its liquid assets with outstanding obligations<sup>338</sup>.

The state of Hawaii, specifically the Division of Financial Institutions, also issued a guidance providing that cryptocurrency transactions require a money transmission license.<sup>339</sup>

Louisiana Office of Financial Institution issued an advisory affirming that its Money Transmitter Act applies to cryptocurrency exchanges.<sup>340</sup> Moreover, on 1<sup>st</sup> of August 2020, Louisiana signed into law the Virtual Currency Businesses Act that legislated virtual currencies including among other information the terminology definition, the necessity of a license and its applicability.<sup>341</sup>

Also the Bureau of Financial Institutions of the state of Virginia adhere to the obligation of a license to companies dealing with virtual currencies.<sup>342</sup> Finally, North Carolina has extended the requirements of its Money Transmitters Act to all activities related to Bitcoin and other virtual currencies and therefore requires a license.<sup>343</sup>

Furthermore, not every state that requires a license, includes virtual currencies under the definition of monetary transmission. In fact, few states like Kansas have chosen to exempt them from those requirements as “Kansas Banking Commission declared that existing Money Transmitter Laws need not be amended to include virtual currencies because virtual currencies cannot be defined as money”<sup>344</sup>. Along with Kansas’ idea, Tennessee has issued guidance stating that interpreting its Money Transmitter Act, virtual currencies are not considered to be money and therefore no license is required for such businesses.

The state of Utah is slightly more innovative as in the House Bill 378 provided a different definition of blockchain compared to the one the state adopts in its money transmission laws

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<sup>333</sup> A.B. 1489, Reg. Sess. (Ca. 2019)

<sup>334</sup> *Id.* § 3404(a)

<sup>335</sup> Newbery, Emma. *These 5 U.S. States Are the Best for Crypto Investors*, The Ascent Jan. 2, 2022

<https://www.fool.com/the-ascent/cryptocurrency/articles/these-5-us-states-are-the-best-for-crypto-investors/>

<sup>336</sup> H.B. No. 7141, Gen. Assemb., Reg. Sess. (Conn. 2017)

<sup>337</sup> 2017 Conn. Acts 17-233 (Reg.Sess.); CONN.GEN.STAT.ANN §36a -603 (West 2017)

<sup>338</sup> 45:3 Miller, Zachary, *The Right Side Of The Coin: State Approaches In Regulating Virtual Currencies*, 823, (2021)

<sup>339</sup> H.R. N. 94, 31<sup>st</sup> Leg. (Hawaii 2021) available at

[https://www.capitol.hawaii.gov/session2021/bills/HR94\\_HD1\\_.HTM](https://www.capitol.hawaii.gov/session2021/bills/HR94_HD1_.HTM)

<sup>340</sup> LOFI, Consumer and Investor Advisory on Virtual Currency (August 2014)

<http://www.ofi.state.la.us/SOCGuidanceVirtualCurrency.pdf>

<sup>341</sup> H.B. 701, Gen. Assemb., Reg. Sess. (LA. 2020)

<sup>342</sup> Code of Virginia § 6.2-1900.

<sup>343</sup> N.C. Gen. Stat. Ann. § 53-208.42 (West 2019).

<sup>344</sup> *Id.* at 333 818-819

including the term under the definition of “innovation”.<sup>345</sup> Moreover, the state is one of the few who has introduced a regulatory sandbox program that has the peculiarity of allowing “participants to temporarily test innovative financial products or services on a limited basis without otherwise being licensed or authorized to act under Utah State law.”<sup>346</sup>

Some states are starting to enact encouraging cryptocurrency jurisdiction. Other regulations although do not bring to the world new ideas and may be considered as following the broad lines of thought of other states as they are being afraid to take too radical decisions.

c. States with unfriendly cryptocurrency regulation

Contrary to the undecided states, some regulation, in particular New York and Washington consider this technological innovation as a threat for businesses and customers’ privacy. As a consequence, these states have undertaken a legislation that does not aim at and does not set the stage for the development of cryptocurrencies and blockchain-based businesses within their state.

i. *New York BitLicence*

Contrary to Wyoming or Vermont, New York State Department of Financial Services decided to adopt a less favorable approach to cryptocurrency businesses. In fact, on the 8<sup>th</sup> of August 2015, the state enacted a regulatory framework called the “BitLicence” or 23 NYCRR 200. It requires that all businesses involved in transactions of any kind or virtual currency such as storing, holding, buying, selling, controlling, exchanging, administrating, and issuing<sup>347</sup> have to obtain a licence from the state.<sup>348</sup> In addition, in order of being granted a licence, these virtual currency business activities have to comply with very strict requirements and procedure. For example, they are subject to anti-money laundering programs under 23 NYCRR 200.15. Among other requirements, 23 NYCRR 200.15 states that they have to “provide for a system of internal controls, policies, and procedures designed to ensure ongoing compliance with all applicable anti-money laundering laws, rules, and regulations; [...] designate a qualified individual or individuals in compliance responsible for coordinating and monitoring day-to-day compliance with the anti-money laundering program;” Furthermore, each licensee have to provide under 23 NYCRR 200.15 (e), information for all virtual currency transaction involving the

“(i) the identity and physical addresses of the party or parties to the transaction that are customers or accountholders of the licensee and, to the extent practicable, any other parties to the transaction;

(ii) the amount or value of the transaction, including in what denomination purchased, sold, or transferred;

(iii) the method of payment;

(iv) the date or dates on which the transaction was initiated and completed; and

(v) a description of the transaction”

In addition, as part of the anti-money laundering program, the BitLicence require each licensee to comply with a customer identification program. They have to provide “identification and

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<sup>345</sup> H.B. 378, 63rd Leg., Gen. Sess. (Utah 2019).

<sup>346</sup> FinTech Regulatory Sandbo, Utah Commerce administration, available at <https://admin.commerce.utah.gov/programs-we-administer/regulatory-sandbox/>

<sup>347</sup> 23 CRR-NY 200.2 (q)

<sup>348</sup> 23 CRR-NY 200.3 (a)

verification of account holders [... and each] licensee must require verification of the identity of any accountholder initiating a transaction with a value greater than \$3,000.”<sup>349</sup>

Moreover, under 23 NYCRR 200.16 virtual currency business activities are subject to cybersecurity programs addressing the following areas:

- “(1) information security;
- (2) data governance and classification;
- (3) access controls;
- (4) business continuity and disaster recovery planning and resources;
- (5) capacity and performance planning;
- (6) systems operations and availability concerns;
- (7) systems and network security;
- (8) systems and application development and quality assurance;
- (9) physical security and environmental controls;
- (10) customer data privacy;
- (11) vendor and third-party service provider management;
- (12) monitoring and implementing changes to core protocols not directly controlled by the licensee, as applicable; and
- (13) incident response.”<sup>350</sup>

Since its first enactment in 2015, this regulatory scheme has been largely debated. The legal fees and other costs are driving the total cost of the licence to more than 100,000\$<sup>351</sup>. Among other things, the time allocation, the money spent by companies, the amount of information required to technological instruments that implements a more and more decentralized organization of data, and the multiple regulatory hurdles associated with the BitLicense has resulted in an exodus of cryptocurrency businesses and start-ups leaving the state<sup>352</sup>. Consequently, on June 24<sup>th</sup>, 2020, the New York State issued a notice concerning the application procedures for the license of virtual currency business activities<sup>353</sup>. In the notice, the state updates some requirements making it easier for some companies to receive a conditional license even though the most laborious parts were not touched.

In the years to come, it is clear that the industry of cryptocurrency will experience a significant growth bringing more profit to states where these businesses are incorporated. New York’s strategy will lead these companies to leave the state and build their products elsewhere causing New York to lose, first of all, revenues but also opportunities, new innovative products, and talent.

Although the state has not a crypto-friendly legislation, it recently undertaken slightly more favorable actions. In fact, in 2018 it created a digital currency task force that has the objective of determining the impact of the state-issued cryptocurrencies on the state’s financial markets.<sup>354</sup> Moreover, the state’s legislation establishes the subjects that the task force will have to study such as:

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<sup>349</sup> 23 CRR-NY 200.15 (h)

<sup>350</sup> 23 CRR-NY 200.16 (b)

<sup>351</sup> Adelman, Alex & Strobel Aubrey, *Kill the BitLicense The state’s regulatory regime has been bad for New York and bad for crypto.*, CoinDesk Insights, (Oct 19, 2021)

<sup>352</sup> Roberts, Daniel, *Behind the “exodus” of bitcoin startups from New York*, Fortune, August 14, 2015

<sup>353</sup> *Virtual Currency Businesses: Notice of Virtual Currency Business Activity License Application Procedures.*, NY Department of Financial Services,

[https://www.dfs.ny.gov/apps\\_and\\_licensing/virtual\\_currency\\_businesses/gn/notice\\_vc\\_busact\\_lic\\_app\\_procedure](https://www.dfs.ny.gov/apps_and_licensing/virtual_currency_businesses/gn/notice_vc_busact_lic_app_procedure)

<sup>354</sup> A.B. 8783, 240th Leg., Reg. Sess. (N.Y. 2018).

“(i) the necessary steps the state of New York must take to produce and release a state-issued cryptocurrency and how such will affect the United States Securities and Exchange Commission's and the Commodities Futures Trading Commission's jurisdiction over economic transactions

(ii) the implications of issuing such cryptocurrency on monetary policy and financial stability  
(iii) how local, state, and federal taxation would be affected by such; and

(iv) the measures other jurisdictions, central banks international governing bodies, states, or countries, have taken to potentially issue cryptocurrency.”<sup>355</sup>

In addition, on the 15<sup>th</sup> of January 2019, the assembly introduced a bill that “directs the study and evaluate the use of blockchain technology to protect voter records and election results”<sup>356</sup>. During the same month another legislative change has occurred providing that “state agencies are allowed to accept cryptocurrencies such as bitcoin, ethereum, litecoin and bitcoin cash as payment.”<sup>357</sup>

## ii. Washington

Together with New York legislation, Washington is one of the most strictly regulated state for virtual currency businesses. In fact, on the 23<sup>rd</sup> of July 2017, the state passed Senate Bill 5031. It amended its money service act, including, like other states, virtual currency transaction under the money transmitter laws requiring it to comply with all the restrictions such as the adoption of the license<sup>358</sup>. In addition, in section 8 of the bill, the state creates a “nationwide licensee system”<sup>359</sup> for virtual currency businesses. Anyone in violation or failure of providing the license may face civil or criminal liabilities.<sup>360</sup>

Moreover, it’s important to notice that, instead of providing the direct definition of virtual currency, Washington’s legislation only addresses them as that they are money’s “equivalent value”.<sup>361</sup> However, not all digital asset falling into the definition of virtual currency have an equivalent value to money. For example, utility tokens are issued in exchange for a future good or service that does not have an “equivalent value to money paid, but rather an equivalent value to the good or service being offered”<sup>362</sup>. These nuances are important as many litigations party benefit from the adoption of such broad definition.

Moreover, on the 28<sup>th</sup> of July 2019, the Senate passed a bill where it defined only:

“(1) "Blockchain" [... as] a cryptographically secured, chronological, and decentralized consensus ledger or consensus database maintained via internet, peer-to-peer network, or other similar interaction.

[and]

(2) "Distributed ledger technology" [... as] any distributed ledger protocol and supporting infrastructure, including blockchain, that uses a distributed, decentralized, shared, and replicated ledger.”<sup>363</sup>

In addition, in the summer of 2019, the Washington Department of Revenue affirmed in an interim statement regarding Bitcoin that it will not accept as tax any cryptocurrency including

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<sup>355</sup> A.B. A9685, 240th Leg., (NY 2018) <https://www.nysenate.gov/legislation/bills/2017/a9685?intent=support>

<sup>356</sup> A.B. 1351, 242nd Leg. (N.Y. 2019).

<sup>357</sup> A.B. 1500, 242nd Leg., 2019 Reg. Sess. (N.Y. 2019)

<sup>358</sup> S.B. 5031§ 1 (18), 65th Leg., Reg. Sess. (Wash. 2017)

<sup>359</sup> S.B. 5031, 65th Legislature, Reg. Sess., (Washington 2017)

<sup>360</sup> *Id.*

<sup>361</sup> *Id.* At 353

<sup>362</sup> 45:3 Miller, Zachary, *The Right Side Of The Coin: State Approaches In Regulating Virtual Currencies*, 823, (2021)

<sup>363</sup> S.B. 5638, 66th Legislature, Reg. Sess., (Washington 2019)



Bitcoin. Taxpayers will have to convert their cryptocurrency into U.S. dollars. Moreover, the department gives further guidelines to its taxation process providing two examples. The first one is when Bitcoin in this case, but it applies any other cryptocurrency, is converted to U.S. dollars at the time of the sale. In this situation, taxes are computed on the converted amount. Sellers must record:

*“Time of sale:* A dated record of the bitcoin transferred from the buyer to the seller;  
*Value of sale:* A dated record of the bitcoin conversion to US dollars by the seller; and  
*Transaction documentation:* A copy of the sales invoice issued from the seller to the buyer.”<sup>364</sup>

The second example is when the cryptocurrency is not immediately converted. In this case the measure of the tax is the U.S. dollar value of Bitcoin at the date of the sale determined using a cryptocurrency pricing index.<sup>365</sup> Once again, sellers must record:

*“Time of sale:* A dated record of the bitcoin transferred from the buyer to the seller;  
*Value of sale:* A dated record of bitcoin’s value published on a reliable cryptocurrency composite index; and  
*Transaction documentation:* A copy of the sales invoice issued from the seller to the buyer.”<sup>366</sup>

Moreover, individuals (i.e., non-business) selling or purchasing Bitcoins as an instrument for investments purposes are not subject to taxes on their gains. This rule does not apply to financial businesses where stockbrokers, security houses, banks and other financial institutions realising income from bitcoin’s investments. In fact, they are subject to Business and Occupation tax as the income earned falls under the gross income of businesses<sup>367</sup>.

Finally, for bitcoin mining the tax is established at the value of the virtual currency at the time the miner obtained it. Miners are required to record:

*“Date Bitcoin is received:* A dated record of the amount of bitcoin received by the miner, and  
*Value of gross income on the date received:* A dated record of bitcoin’s value published on a reliable cryptocurrency pricing index.”<sup>368</sup>

Furthermore, supporting the SEC view, at the end of February of 2020, the State of Washington Department of Financial Institutions Securities Division concluded that the cryptographic software access tokens named RHOC(s) of the Rchain a company, not registered and issued and distributed using ERC20 protocol<sup>369</sup>, constituted “the offer and/or sale of a security”<sup>370</sup>.

Even though the state is the birthplace of Amazon, Microsoft and Boeing, three of the biggest companies, its legislative strategy concerning virtual currencies has been subject to diverse criticism from cryptocurrency supporters. As a consequence, shortly after the first regulations were signed into law, virtual currency exchanges such as Bitfinex, Bitstamp, Kraken and Poloniex<sup>371</sup> decided to take their business outside Washington due to “ the high cost of continuing to meet the regulatory compliance requirements imposed by the state.”<sup>372</sup>The cryptocurrency exchange Kraken stated “while revenue continues to grow, operating costs have

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<sup>364</sup> *Interim Statement Regarding Bitcoin: Payments, Mining, and Investment Income*, Washington Department of Revenue, (August 20, 2019) <https://dor.wa.gov/get-form-or-publication/publications-subject/tax-topics/interim-statement-regarding-bitcoin-payments-mining-and-investment-income>

<sup>365</sup> Such as the WorldCoinIndex, an online pricing index that tracks cryptocurrency values by computing their weighted average value across the world’s cryptocurrency exchanges.

<sup>366</sup> *Id.* at 359

<sup>367</sup> RCW 82.04.080 (b), *See Also*, RCW 82.04.4281

<sup>368</sup> *Id.* at 359 *See Also* WAC 458-20-254, *See Also* RCW 82.32.070

<sup>369</sup> distributed on the Ethereum Blockchain

<sup>370</sup> State of Washington Department of Financial Institutions Securities Division, Order No. S-18-2463-20-CO01 2020 WL 1166896 (Feb. 28, 2020). Available at <https://dfi.wa.gov/documents/securities-orders/S-18-2463-20-CO01.pdf>

<sup>371</sup> Atkins, Drew, New Bitcoin regulations shake up Washington state’s cryptocurrency industry, August 1 2017

<sup>372</sup> Kraken letter available at <https://i.imgur.com/oEtrVXr.png>

become prohibitive, primarily, [...] unfortunately it has become impractical for us to operate in Washington and we must discontinue service for all residents”.<sup>373</sup>

d. Delaware’s position on virtual currencies and blockchain technology

The state of Delaware has a population of 1/3 of 1% of the US population. However, it hosts 64% of corporations listed in the Fortune 500 list. By providing a company stability and predictability, Delaware’s legislature is the paradise for corporations. In fact, ¼ of its revenue is coming from the registrations of multiple businesses.

With respect to the new technological innovation such as blockchain and virtual currency, Delaware is acting more cautiously compared to other states such as Wyoming or Vermont. Its legislation focuses more on “how this technological innovation can provide a better governance and reduce intermediation costs”<sup>374</sup>. In fact, it has enacted nothing concerning virtual currency instruments.

On the 7<sup>th</sup> of July 2017 Delaware signed into law Senate Bill 69.<sup>375</sup> This legislation provides a “specific statutory authority for Delaware corporations to use networks of electronic databases (examples of which are described currently as “distributed ledgers” or a “blockchain”) for the creation and maintenance of corporate records, including the corporation’s stock ledger.”<sup>376</sup>

The law expressly defines stock ledger as “one or more records administered by or on behalf of the corporation in which the names of all of the corporation’s stockholders of record, the address and number of shares registered in the name of each such stockholder, and all issuances and transfers of stock of the corporation are recorded in accordance with § 224 of this title. The stock ledger shall be the only evidence as to who are the stockholders entitled by this section to examine the list required by this section or to vote in person or by proxy at any meeting of stockholders.”<sup>377</sup>

Moreover, the bill amends section 224 including in the records administered by or on behalf of the corporation “one or more electronic networks or databases (including one or more distributed electronic networks or databases)”<sup>378</sup>. It also allows corporations to trade corporate stock on the blockchain as long as the stock ledgers enables the corporation: to prepare the list of stockholders<sup>379</sup>, to record information<sup>380</sup>, and to record transfers of stock.<sup>381</sup>

In the following years, Delaware extended the use of blockchain technology to domestic limited liability companies<sup>382</sup> and amended the Delaware Revised Uniform Partnership Act and Delaware Limited Liability Company Act in order to promote the use of distributed ledgers technology to maintain certain records and facilitate certain electronic transmissions<sup>383</sup>.

On one hand, Wyoming sees the world of blockchain technology and cryptocurrencies as a springboard to try and steal some of Delaware’s dominance. Wyoming is aiming at earning the

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<sup>373</sup> *Id.*

<sup>374</sup> Pierluigi Matera, *Delaware’s Dominance, Wyoming’s Dare. New Challenges, Same Outcome?*, 27(1) Fordham Journal of Corporate & Financial Law *forthcoming* 2021, <https://ssrn.com/abstract=3763106>

<sup>375</sup> S.B. 69, 149th Gen. Assemb., Reg. Sess., (Delaware 2017 - 2018)

<sup>376</sup> *Id.*

<sup>377</sup> *Id.*

<sup>378</sup> *Id.* §224

<sup>379</sup> *Id.* § 219 & § 220

<sup>380</sup> *d.* § 156, § 159, § 217(a) & § 218

<sup>381</sup> as governed by Article 8 of subtitle I of Title 6.

<sup>382</sup> S.B. 194, 150th Leg, Gen. Assemb. Reg. Sess., (Delaware 2018)

<sup>383</sup> S.B.89, 90 and 91 , 150th Leg, Gen. Assemb. Reg. Sess., (Delaware 2019), *See also*

‘tech dominance’ label.<sup>384</sup> Unlike Vermont or Colorado, Delaware is not aiming at creating legislation similar to Wyoming’s one. Instead, the state is focusing on implementing a groundbreaking piece of legislation on promoting the secure blockchain technology to reduce intermediary costs as a federal intervention could occur anytime.

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<sup>384</sup> Pierluigi Matera, *Delaware’s Dominance, Wyoming’s Dare. New Challenges, Same Outcome?*, 27(1) Fordham Journal of Corporate & Financial Law *forthcoming* 2021, <https://ssrn.com/abstract=3763106>

## CHAPTER 3: EXPLANATORY CASE: *SEC v. Ripple*

One of the most recent explanatory case of the SEC's regulation by enforcement approach to regulate cryptocurrencies, is the ongoing lawsuit *SEC v. Ripple*.

### 1. Ripple Labs Inc.: the company

Ripple Labs Inc. is an American company that developed a payment system and an exchange network called Ripple. The organization was created 2012<sup>385</sup> and aims at enabling the world to move value like it moves information today. Ripple Labs Inc. believe that the current global payment system doesn't meet the constantly evolving demands of customers and businesses. The company considers blockchain and digital asset technology as having the power of improving speed, cost and security of transactions around the world. Founders believe that this innovative decentralized financial technology unifies the infrastructure underlying global payments. This will make it an open and inclusive system around the world as it will transform the way marginalized populations and small businesses, send and receive money across borders.

Having 9 global offices and 500 employees, the company is confident that the global finance is entering in a new era where the Internet of Value (IoV), analogously to the introduction of the Internet, is creating a new chapter in globalization, redefining entire industries and giving rise to new ones.

Ripple is a money transfer network for currency exchanges created to process and facilitate financial transactions around the world. It is an open-source internet protocol, where transactions are recorded on a distributed ledger, called XRP Ledger, whose integrity and reliability are guaranteed by a consensus-based verification system, and on its own digital currency, called XRP. Ripple's payments settlement system acts in a transaction between two parties as a trusted third party ensuring its security and completion. Investors in this company include globally recognized venture capital firms such as Accenture, Andreessen Horowitz and many others. As Pat White, CEO of Bitwave affirms, Ripple was designed to replace the "settlement layer between major financial institutions"<sup>386</sup>

#### a. What is XRP and how does it work

XRP is the native cryptocurrency of the XRP Ledger that runs on this network created by this open-source payment company. XRP is the third-largest cryptocurrency by market capitalization equal to \$20.7 billion.<sup>387</sup>

The company's distributed blockchain technology was built in early 2012 by Jed McCaleb, Arthur Britto and David Schwartz<sup>388</sup>. In September 2012 along with Chris Larsen, Jed McCaleb

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<sup>385</sup> *Our Story: About Ripple*. Ripple, <https://ripple.com/company>.

<sup>386</sup> Rodeck, David. *Meet Ripple & XRP, Cryptocurrency for Banks.*, Forbes Magazine, 10 June 2021, <https://www.forbes.com/uk/advisor/investing/what-is-ripple-xrp/>.

<sup>387</sup> Stevens, Robert. *SEC Files \$1.3 Billion Lawsuit against XRP Creator Ripple.*, Decrypt, 22 Dec. 2020, <https://decrypt.co/52400/sec-files-1-3-billion-lawsuit-against-xrp-creator-ripple>. The day the lawsuit was filed on the 22<sup>nd</sup> of December 2020, XRP was the third-largest cryptocurrency. Nowadays, CoinMarketCap reports the following ranking: 1. Bitcoin \$796.7 billion; 2. Ethereum \$374,8 billion; 3. Tether \$78,3 billion; 4. BNB \$77,8 billion; 5. USD Coin \$46,1 billion; 6. Cardano \$45,3 billion; 7. Solana \$42,9 billion; 8. XRP \$35,4 billion. <https://coinmarketcap.com> (visited on the 20<sup>th</sup> of January 2022)

<sup>388</sup> XRP, XRP Ledger's <https://xrpl.org/xrp.html>

and Arthur Britto, they formed Ripple<sup>389</sup> and decided to invest 80 billion units of XRP into Ripple for the development of the ledger. Since then, to strengthen XRP markets, improve network liquidity and incentivized development of the greater ecosystem, the company regularly sold XRP.

Formerly, the XRP ledger was called Ripple because this protocol allows payments to “ripple through multiple hops and currencies”<sup>390</sup>. To avoid confusions with its technology, the company chose to refer to the assets in all context using the name “XRP”. The letters RP stands for Ripple and the X prefix indicates “non-national currencies in the ISO 4217 standard”<sup>391</sup>. The company registered itself as Ripple Labs.

XRP is a virtual currency like Bitcoin and Ethereum, tailored to work on the Ripple network and at the time of writing is part of the top ten cryptocurrencies ranked by market capitalization.<sup>392</sup> An individual can buy this cryptocurrency to exchange it with different end goals: for other cryptocurrencies, as an investment holding it or trading it for stablecoins, as a way to purchase goods and services or even as a way to finance transactions on the Ripple network<sup>393</sup>.

XRP can be sent among different account that are required to hold a minimum amount of this cryptocurrency as a *reserve*. To disincentivizes users from increasing the size of the ledger carelessly or maliciously, the reserve requirement increases with the number of objects the account owns in the ledger. Ripple’s cryptocurrency is often referred to a convenient “bridge currency” as it can be sent directly from any XRP ledger address to another without the necessity of a gateway or liquidity provider. New accounts are automatically created by payment transaction. In fact, an individual could send an amount of XRP to a mathematically correct address that at the time of sending does not have an account. This action is called *funding an account* and it is the only transactions made in the ledger that can create an account out of nothing.

The core elements of an account are:

1. An identifying address: for example, rf1BiGeXwwQoi8Z2ueFYTEXSwuJYfV2Jpn.<sup>394</sup>
2. An XRP balance where a history of transaction that affected this account and its balances are shown.
3. A sequence number as to confirm a transaction the transactions sequence number and its sender’s sequence number must match. Then, as part of applying the transaction, the account's sequence number increases by 1. This system helps making sure that all accounts exchanges are correct.

Moreover, to authorize transactions an account has to include one of the following:

1. An intrinsic master key pair that cannot be changed
2. A regular key pair that can be rotated
3. A signer list for multi-signing that is stored separately from the account's core data.

Ripple defines its account in the XRP ledger as “somewhere between the financial usage (like ‘bank account’) and the computing usage (like ‘UNIX account’).”<sup>395</sup>

Moreover, whenever conducting a transaction using the Ripple’s ledger the network deducts to the individuals’ account a small amount of XRP units as a *fee*. The current minimum cost required by the Ripple network for conducting a standard transaction is 0.00001 XRP.

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<sup>389</sup> called OpenCoin Inc. at the time

<sup>390</sup> *XRP Naming*, XRP Ledger’s site <https://xrpl.org/xrp.html#naming>

<sup>391</sup> *Id.*

<sup>392</sup> *Cryptocurrency Prices, Charts and Market Capitalizations*. CoinMarketCap, <https://coinmarketcap.com>

<sup>393</sup> *What is Ripple (XRP)*, Binance <https://www.binance.com/en/buy-ripple>

<sup>394</sup> *XRP Account*, R XRP Ledger’s site <https://xrpl.org/accounts.html>

<sup>395</sup> *Id.*

Moreover, as El Lee, board member of Onchain Custodian said “[t]he standard fee to conduct transactions on Ripple [...] is minimal compared to the large fees charged by banks for conducting cross-border payments”<sup>396</sup>.



Figure 12<sup>397</sup>: XRP’s price change in a year (from Jan 2021 to Jan 2022)

Additionally, as is depicted by figure 12, XRP’s price is very volatile as is the price of other cryptocurrencies. On April 4<sup>th</sup>, 2021, the Ripple’s virtual asset reached a pick of €1,5386 per token. At the time of writing, its price is down to €0,67. However, the higher price ever reached by XRP was on the 7<sup>th</sup> of January 2018 where it valued €2,80. If we calculate the transaction fee using these three different values of XRP we find in the first case a fee of €0.00001538, in the second €0.0000067 and finally €0.0000280, which are minimal fees.

Furthermore, in order to protect the ledger from being disrupted by spam and other types of attacks, the XRP Ledger includes several types of fees. In fact, for each transaction the individuals must specify the small amount of XRP it wants to destroy pay the transaction costs<sup>398</sup> fee. The *minimum reserve requirement*<sup>399</sup> defined above and the *transaction cost* are neutral fees as they are not paid to anyone. With these methods, Ripple prevents abuses as it makes very expensive to individuals to deliberately or inadvertently overload the network. Moreover, there are some ways that XRP users can collect fees from one another. They are called *optional fees* and it includes:

- *Transfer fees* : issuers can charge optional percentage fees to transfer the currencies they issue to other addresses within the XRP Ledger<sup>400</sup>.
- *Trust line quality* : allows “an account to value balances on a trust line at higher or lower than face value. This can lead to situations that are like charging a fee. Trust line quality does not apply to XRP, which is not tied to a trust line.”<sup>401</sup>

<sup>396</sup>Rodeck, David, and John Schmidt . Meet Ripple & XRP, Cryptocurrency for Banks., Forbes Magazine, 10 June 2021, <https://www.forbes.com/uk/advisor/investing/what-is-ripple-xrp/>

<sup>397</sup> *Id.* at 398

<sup>398</sup> *XRP Transaction cost*, XRP Ledger’s site <https://xrpl.org/transaction-cost.html>

<sup>399</sup> *XRP Reserves*, XRP Ledger’s site <https://xrpl.org/reserves.html>

<sup>400</sup> *XRP transfer fees*, XRP Ledger’s site <https://xrpl.org/transfer-fees.html>

<sup>401</sup> *Id.*

Fees can be collected even outside the ledger as some financial institution charge their customers that send money into the XRP Ledger.

XRP is pre-minted and when created, the very first ledger contained 100 billion XRP. No new XRP can be created. Ripple's cryptocurrency is slightly deflationary by nature as it can be "destroyed by transaction costs or lost by sending it to addresses for which no one holds a key"<sup>402</sup>. However, Ripple reassure its investors and users because at the current rate of destruction for every transaction made, it would take at least "70,000 years to destroy all XRP, and XRP prices and fees can be adjusted as the total supply of XRP changes"<sup>403</sup>. This is a very important aspect because part of what gives any currency its value is its comparative scarcity. Therefore, if an important amount of XRP is released all at once it will dilute the value of the other XRP in circulation.

A transaction is the only way individuals can modify the XRP Ledger. It can be authorized by a digital signature and only signed transactions can be submitted to the network and included in a validated ledger. Moreover, an authorized transaction is immutable as once it is signed its contents cannot change, and the signature is not valid for any other transaction. In addition, single exchanges are identified by a unique hash provided by the server as a response of the submitted operation. The hash of a transaction is used as a proof of payment as anyone can verify a transaction's final status by simply looking up its hash.

An example of exchange could be that, rather than handling it through a bank that has high fees, an individual that wants to swap US dollars for Euros could use the Ripple's network to exchange its US dollars for an equal converted amount of XRP and use the units of XRP to buy Euros which is faster and cheaper.

#### b. Differences and advantages compared to other cryptocurrencies

Although XRP is a cryptocurrency like Ethereum or Bitcoin, the XRP blockchain does not operate like the technologies used by most other cryptocurrencies. In fact, there are some key structural differences between these same digital assets.

Contrary to Bitcoin which has its total supply limit of 21 million tokens steadily released as more and more transactions are verified<sup>404</sup>, XRP, as stated above, was pre-mined. This means that the 100 billion tokens created by the ledger were not released all at once but are issued publicly on a periodic basis. In fact, XRP cannot be mined. Ripple holds 48% of XRP in a reserve (i.e., is stored in escrow) for "regular release into the market through sales"<sup>405</sup>. The difference between the mining and pre-mining may also be one of the reasons of why the SEC believes that XRP is a security such as a stock rather than a currency. However, we will address this case shortly.

All three have different methods to validate transactions. They use three different algorithms as consensus mechanism. Bitcoin and Ethereum uses respectively as a mining process the proof-of-work and the proof-of-system described and discussed in chapter 1. Their ledgers and verification mechanism are open to anyone who can solve the complex equation rapidly. Although anyone has access to the ledger, their transactions are secure as verification must be validated by the majority of ledger holders in order to be added to the blockchain. Instead, the Ripple network uses its unique consensus protocol known as a Federated Byzantine Agreement

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<sup>402</sup> *XRP Properties*, XRP Ledger's site <https://xrpl.org/xrp.html#xrp-properties>

<sup>403</sup> *Id.*

<sup>404</sup> *Id. at 391*

<sup>405</sup> *Id.*

(FBA)<sup>406</sup>. This consensus mechanism connects each node to a small number of other ones and each group of nodes will overlap with another group, ensuring that every node is connected to one another. This mechanism does not require mining and Ripple's consensus mechanism does not require multiple confirmations for immutability. Instead, it uses designated users called validators. They connect to a network of peers, relay cryptographically signed transaction and maintain a local copy of the complete shared global ledger<sup>407</sup>. In order to add a block to the blockchain, they must reach an agreement (i.e., consensus) ensuring that that block is correct. The validators in the system, process each transaction according to the same rules. Any transaction that complies with the rules is confirmed right away. All transactions are public as anyone can download the validation software. However, backed by a strong cryptography, Ripple decides which protocols validators should follow. Moreover, it issues a recommended Unique Node List (UNL)<sup>408</sup> of trusted and verified validators which guarantees the integrity of the system. Users can select the validators in that list to verify their transactions. In fact, the Unique Node List is based on participants that users think are least likely to defraud them. However, although it is recommended by Ripple, holders in the XRP Ledger can choose to opt out of this predefined list. As a consequence, they may remove Ripple-supported validators from their transactions and instead built their own lists of trusted validators. Validators operate independently without having to check in with a central system before updating their ledgers. With this mechanism the network could continue to approve transactions without involving Ripple or even in the future when the company does no longer exist. However, the idea behind the list of trusted validators makes the XRP system somewhat centralized which is in contrast with the decentralized feature common to all cryptocurrencies. Anyone can operate as a validator. Currently, the XRP Ledger has over 150 validators that includes individuals, universities and businesses.

Moreover, one other difference between the validation mechanism used by the other cryptocurrencies and Ripple is speed. Validators on Ripple's list agree and update their ledgers on XRP transactions every 3-5 seconds at a low cost and must ensure to match the other ledgers. This mechanism makes the decentralized XRP Ledger faster, more reliable and more efficient at processing transactions than Bitcoin and other cryptocurrencies competitors. In fact, Bitcoins confirmations are associated with higher transaction cost compared to XRP as they may take many minutes or even hours. Ethereum validation mechanism process around 15 transactions every seconds meanwhile XRP's network is able to process in a second more than 10,000 different transactions.<sup>409</sup> XRP validation mechanism is also quicker compared "to the days it may take banks to complete a wire transfer"<sup>410</sup>.

In addition, as transaction confirmations are almost instant and whenever there is a mismatch of transactions, all ledgers must stop and identify the error. XRP's consensus system consumes minimal amounts of energy compared to Bitcoin which, as explained in chapter 1, uses the same amount of power as a daily American household for a single transaction<sup>411</sup>. Moreover, XRP's release is controlled by a smart contract that injects a maximum of 1 billion XRP units each month. Contrary to this organized circulation mechanism, Bitcoins' supply depends on

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<sup>406</sup> *Federated Byzantine Agreement*. Consensus, <https://tokens-economy.gitbook.io/consensus/chain-based-pbft-and-bft-based-proof-of-stake/federated-byzantine-agreement>

<sup>407</sup> Run rippled as a Validator, XRP Ledger's site <https://xrpl.org/run-rippled-as-a-validator.html#run-rippled-as-a-validator>

<sup>408</sup> *Id.*

<sup>409</sup> *Ethereum VS. Ripple: Which One Should Be In Your Portfolio?*, Trading Education, /Dec 29, 2021) <https://trading-education.com/ethereum-vs-ripple-which-one-should-be-in-your-portfolio>

<sup>410</sup> *Id.* at 391

<sup>411</sup> *Id.* at 404



the network's speed and the level of difficulty of the algorithm used as new units of bitcoin are added when miners find them.

Therefore, we could say that Ripple is 'centralized' in terms of protocols and acceptance on the network, as the company offers its Unique Node List of validators advising its customers to use it. However, Ripple does not force users to take advantage of the services the company provides, as their actions are free, anonymous and do not depend on Ripple that does not act as a central authority that oversees the ledger. Therefore, the network is decentralized in terms of how transactions are validated.

## 2. *SEC v. Ripple* case, the cryptographic trial of the century

### a. The accusations

On the 22nd of December 2020, the Securities and Exchange Commission (SEC) filed an action against Ripple Labs Inc. and two of its executives: Christian Larsen, the company's co-founder, executive chairman of its board and former CEO, and Bradley Garlinghouse, the company's current CEO<sup>412</sup>. They are accused of raising, from the beginning of 2013, over \$1.3 billion through an "unregistered, ongoing digital asset [(i.e., XRP)] securities offering"<sup>413</sup> to investors not only in the U.S but all around the world in order to finance the company's business. With their actions they "deprived potential purchasers [and investors] of adequate disclosures about XRP and Ripple's business and other important long-standing protections that are fundamental to [the] robust public market system"<sup>414</sup>, and "to which they were entitled"<sup>415</sup>. In addition, besides organizing and promoting the sale of XRP units, the two executives Larsen and Garlinghouse are accused of conducting unregistered personal sales of XRP for a total of approximately \$600 million<sup>416</sup>. With their actions, the SEC alleges that the cryptocurrency creators and administrators advertised XRP as an inadequately recorded investment to US buyers. As the SEC believes that under the *Howey* case an investment contract is a security, it then considers Ripple's digital currency to be a security under US law. Therefore, it should be treated and regulated as one. Under Section 5 of the Securities Act of 1933, all securities' issuer must register with the SEC. Subsequently, due to the unregistered trading of the 'security' XRP, the agency accuses Ripple and the two executives to be in violation of the section 5(a) and 5(c) of the 1933 Act. These sections respectively state:

"(a) Sale or delivery after sale of unregistered securities

Unless a registration statement is in effect as to a security, it shall be unlawful for any person, directly or indirectly —

(1) to make use of any means or instruments of transportation or communication in interstate commerce or of the mails to sell such security through the use or medium of any prospectus or otherwise; or

(2) to carry or cause to be carried through the mails or in interstate commerce, by any means or instruments of transportation, any such security for the purpose of sale or for delivery after sale. [...]

(c) Necessity of filing registration statement

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<sup>412</sup> Release No. 2020-338, SEC, *SEC Charges Ripple and Two Executives with Conducting \$1.3 Billion Unregistered Securities Offering*, (DEC. 22, 2020) available at <https://www.sec.gov/news/press-release/2020-338>

<sup>413</sup> *Id.*

<sup>414</sup> *Id.* Stephanie Avakian, Director of the SEC's Enforcement Division Statement

<sup>415</sup> *Id.* Marc P. Berger, Deputy Director of the SEC's Enforcement Division

<sup>416</sup> *Id.* at 407

It shall be unlawful for any person, directly or indirectly, to make use of any means or instruments of transportation or communication in interstate commerce or of the mails to offer to sell or offer to buy through the use or medium of any prospectus or otherwise any security, unless a registration statement has been filed as to such security, or while the registration statement is the subject of a refusal order or stop order or (prior to the effective date of the registration statement) any public proceeding or examination under section 77h of this title.”<sup>417</sup>

The actual registration process is laid out in Section 6 of the Securities Act. This paragraph requires the security issuer to first submit information that will form the basis of the prospectus that will be provided to prospective investors. Then, he must put forward additional information that is does not incorporated in the prospectus but is accessible to the public.<sup>418</sup> Moreover, the SEC provides the registration form that needs to be completed which differs according to the type of issuer and securities offered.<sup>419</sup> Section 7 describes the information that the SEC demands issuers to submit that would help investors and buyers create a reasoned opinion about the investment.<sup>420</sup>

Following the SEC’s line of thought, Ripple, Larsen and Garlinghouse are in violation of these sections as they failed to treat and register XRP as a “security”. The lawsuit was filed in the federal district court in Manhattan (NY) and besides accusing the defendants of violating registration provisions of the federal securities laws, it “seeks injunctive relief, disgorgement with prejudgment interest and civil penalties.”<sup>421</sup> The SEC suit does not charge them with fraud accusation.

As we can see from figure 13, immediately after the legal action was filed, the price of XRP dropped by 10,48% in less than 24 hours. It went from around 0.61 U.S. dollars in November 2020 to 0.20 U.S. dollars in December 2020 falling by 65,5% <sup>422</sup>. In addition to the drastic decrease in the price, the cryptocurrency lost \$15 billion in market capitalization.<sup>423</sup>



Figure 13<sup>424</sup>: XRP price per day from August 2013 to January 12, 2022

<sup>417</sup> 15 U.S. Code § 77e

<sup>418</sup> 15 U.S. Code § 77f

<sup>419</sup> *Forms List*, SEC, <https://www.sec.gov/forms>

<sup>420</sup> 15 U.S. Code § 77g

<sup>421</sup> *Id.* at 407

<sup>422</sup>  $[(0,21-0,61) / 0,61] \times 100 = 65,5\%$

<sup>423</sup> Deaton, John E., *The Ethereum Free Pass, Fair Notice and the Fight Ahead*, CryptoLaw, (Sept 22, 2021) <https://www.crypto-law.us/the-ethereum-free-pass-fair-notice-and-the-fight-ahead/>

<sup>424</sup> de Best, Raynor, *Ripple XRP/USD price history up until today*, Statista

The SEC aims at unspecified damages and at banning Ripple’s executives from participating in any other digital asset market trades.

This lawsuit is an explanatory example of the case-by-case approach that the SEC and other regulatory federal agencies have undertaken. In fact, Gary Gensler, the chairman of the Securities and Exchange Commission has the intention to regulate this market as it argued that cryptocurrency “field is not going to reach any of its potential if it tries to stay outside of our laws.”<sup>425</sup>

At the time of writing the court has not reached its final decision. However, the sudden willingness of the SEC to regulate cryptocurrency by including it in securities’ definition, the extensive discussions on the nature of this digital asset and the different and broad implications that could arise depending on the court’s decisions, underline that this case promises to be the cryptographic trial of the century. Although the lawsuit concerns directly Ripple and its virtual currency XRP, some views it as an exclusively a way of regulating cryptocurrencies in general. In fact, it is not good news for any market maker, crypto start-ups or trading platform such as Coinbase, etc. In this case, XRP serves as a proxy for any other altcoin. Many fears that this legal action would trigger a snowball effect where innovation and US competitiveness in this field are at risk. The final decision will set an industry-wide precedent for any company working with a digital asset.

As a matter of fact, the relevancy of this case amongst others its kind, calls upon close explanation and analysis of the decisions taken so far.

b. The million-dollar question: Is XRP a security or a virtual currency?

The SEC accuses Ripple of funding its operations through an Initial Coin Offering of XRP comparing it to an IPO and therefore making XRP a security. Specifically, the agency refers to the sales of “at least 3.9 billion XRP through Market Sales for approximately \$763 million USD [from 2014 to end of 2019 and the sales and] From 2013 through the end of the third quarter of 2020, [where] Ripple sold at least 4.9 billion XRP through Institutional Sales for approximately \$624 million USD, also to fund Ripple’s operations, for a total of at least \$1.38 billion USD in Market and Institutional Sales alone”<sup>426</sup>. Moreover, while engaging in such operation XRP price increased from “\$0.002 per XRP in 2014 to [...] \$3.84 per XRP in early 2018”<sup>427</sup>. For the SEC this increase in value of nearly 137,000% underlines Ripple’s enrichment via the ICOs. The SEC accuses the defendants of distributing an unregistered security from which they collected at least at least 4.05 billion XRP, valued at the time of the sale at least \$500 million USD.

As discussed in chapter 2, to determine if a cryptocurrency is an investment contract and so, a security the SEC uses the Howey test. This test is derived from the lawsuit *SEC v. W.J. Howey Co* where the Supreme Court held that the offers or sales of the large tracts of citrus groves in Florida, owned by William John Howey, where an investment contract.

Regarding Ripple’s case, the SEC has to prove that XRP complies with the requirement presented in the Howey test. The agency has to determine that the purchase of XRP is an investment of money in a collective enterprise. In addition to that, the SEC must show that the

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<https://www.statista.com/statistics/807266/ripple-price-monthly/>

<sup>425</sup> Kaplan, Talia, *SEC chair warns cryptocurrency industry won't reach potential staying outside our laws*, FOXBusiness, August 19 <https://www.foxbusiness.com/politics/sec-chair-warns-cryptocurrency-industry-wont-reach-potential-staying-outside-our-laws>

<sup>426</sup> Complaint, Sec. & Exch. Comm’n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020)

<sup>427</sup> *Id.*

investors in such cryptocurrency had to purchase it with the expectation of deriving profits from Ripple’s entrepreneurial or managerial efforts<sup>428</sup>.

Howey applies not only to digital assets, but it used universally on any type transaction. In *SEC v. W.J. Howey Co.*, the Court of Appeals for the Fifth Circuit affirmed that the term “security” includes “the commonly known documents traded for speculation or investment.”<sup>429</sup> Moreover, many believe that the legal issue in the Howey test should only focus on the “circumstances surrounding the digital asset and the manner in which it is offered, sold, or resold”<sup>430</sup> and not on determining the nature of the asset itself. In fact, in *SEC v. Edwards*, the Supreme Court stated that the definition brought by Howey “embodies a flexible, rather than a static, principle that is capable of adaptation to meet the countless and variable schemes devised by those seeking to use others’ money on the promise of profits.”<sup>431</sup>

In defending the nature of XRP, Ripple alleges that the SEC does not apply the Howey test on the circumstances of the sales and offers of XRP. Instead, they argue that the agency applies the test only on nature of the virtual currency and determine that XRP is a security not for the way it is sold but on its nature. To support this claim, the Defendants (i.e., Ripple, Larsen and Garlinghouse) refers to the speech made by the SEC’s Director of the Division of Corporation Finance William Hinman in June 2018 called *Digital Asset Transactions: When Howey Met Gary (Plastic)*. In this speech, Hinman provides a guidance on how the SEC interprets the Howey test in order to determine that a digital asset is offered as an investment contract. The SEC’s Director of the Division of Corporation Finance does not focus on the token itself but on the circumstances surrounding the digital assets and the how they are being issued, distributed and sold.

There are some similarities between digital currency and the orange groves in the Howey case. In his speech Hinman states that tokens or coins are “touted as assets that have a use in their own right, coupled with a promise that the assets will be cultivated in a way that will cause them to grow in value, to be sold later at a profit.”<sup>432</sup> On one hand, in Howey, the interest in the groves were sold to hotel guests not farmers. Similarly, on the other, tokens and coins are typically sold to a wide audience rather than to persons who are likely to use them on the network. In both cases investors are passive, meaning that marketing efforts are rarely narrowly targeted to token users<sup>433</sup>. Moreover, considering the Initial Coin Offering, Hinman claims that the token or coin or whatever name it has being given, all by itself is “not a security, just as the orange groves in Howey were not”<sup>434</sup>. It is “simply code”<sup>435</sup>.

However, for him the way and the approach with which the token is sold “as part of an investment; to non-users; by promoters to develop the enterprise – can be, and, in that context, most often is, a security – because it evidences an investment contract. And regulating these transactions as securities transactions makes sense”<sup>436</sup>. The Securities Act of 1933 aims at removing information asymmetry between the different parties engaging in a transaction. Consequently, these laws define and prescribe the necessary information that investors need in

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<sup>428</sup> Sykes, Jay B., Securities Regulation and Initial Coin Offerings: A Legal Primer, Congressional Research Service, August 31, 2018 <https://sgp.fas.org/crs/misc/R45301.pdf>

<sup>429</sup> *SEC v. W.J. Howey Co*

<sup>430</sup> U.S. Securities and Exchange Commission (SEC), *Framework for “Investment Contract” Analysis of Digital Assets*, SEC. & EXCH. COMM’N 2 (2019) available at <https://www.sec.gov/files/dlt-framework.pdf>

<sup>431</sup> *SEC v. Edwards*, 540 U.S. 389 (2004)

<sup>432</sup> William Hinman, *Digital Asset Transactions: When Howey Met Gary (Plastic)*, Remarks at the Yahoo Finance All Markets Summit: Crypto (June 14, 2018), available at <https://www.sec.gov/news/speech/speech-hinman-061418>

<sup>433</sup> *Id.*

<sup>434</sup> *Id.*

<sup>435</sup> *Id.*

<sup>436</sup> *Id.*

order to make an informed investment decision making the promoter liable for material misstatements in the offering materials. These are appropriate safeguards for most IPOs as they prevent fraud risks for investors.

Nevertheless, Hinman noted that if the network or the technology on which the virtual currency is functioning is “sufficiently decentralized – where purchasers would no longer reasonably expect a person or group to carry out essential managerial or entrepreneurial efforts – the assets may not represent an investment contract. Moreover, when the efforts of the third party are no longer a key factor for determining the enterprise’s success, material information asymmetries recede”<sup>437</sup>. For that reason, applying federal security laws would not be relevant. He includes as an explanatory example of this category of sufficiently decentralized digital asset two cryptocurrencies: Bitcoin and Ethereum. Both have a decentralized structure as there is no central third party whose efforts are a key determining factor in the common enterprise. Therefore, Hinman concludes that applying the federal securities laws to the offer or sale of both Ether and Bitcoin would seem to add little value. He then provides a list of non-exhaustive factors that need to be considered when considering whether a digital asset is offered as an investment contract:

“Primarily, consider whether a third party – be it a person, entity or coordinated group of actors – drives the expectation of a return [...]

1. Is there a person or group that has sponsored or promoted the creation and sale of the digital asset, the efforts of whom play a significant role in the development and maintenance of the asset and its potential increase in value?
2. Has this person or group retained a stake or other interest in the digital asset such that it would be motivated to expend efforts to cause an increase in value in the digital asset? Would purchasers reasonably believe such efforts will be undertaken and may result in a return on their investment in the digital asset?
3. Has the promoter raised an amount of funds in excess of what may be needed to establish a functional network, and, if so, has it indicated how those funds may be used to support the value of the tokens or to increase the value of the enterprise? Does the promoter continue to expend funds from proceeds or operations to enhance the functionality and/or value of the system within which the tokens operate?
4. Are purchasers “investing,” that is seeking a return? In that regard, is the instrument marketed and sold to the general public instead of to potential users of the network for a price that reasonably correlates with the market value of the good or service in the network?
5. Does application of the Securities Act protections make sense? Is there a person or entity others are relying on that plays a key role in the profit-making of the enterprise such that disclosure of their activities and plans would be important to investors? Do informational asymmetries exist between the promoters and potential purchasers/investors in the digital asset?
6. Do persons or entities other than the promoter exercise governance rights or meaningful influence?”<sup>438</sup>

Hinman emphasizes that the analysis of whether a digital asset is a security, is not static and is not strictly an inherent characteristic of the instrument. A virtual currency, such as Bitcoin, placed in a fund or trust having a utility that functions only as a mean of exchange, could be sold as an investment strategy and so could be considered a security. Accordingly, as long as the investor reasonably expects profits from the promoter’s efforts, an investment contract can

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<sup>437</sup> *Id.*

<sup>438</sup> *Id.*

be made with virtually any asset, including digital assets. Therefore, Hinman argues that simply labelling a virtual currency as a “utility token” does not turn the asset into something that is not a security. It is not the labels but the economic substance of the transaction that always determines the legal analysis<sup>439</sup>. Ripple believes that Howey is an outdated test and the nature of XRP shouldn't be put into question, as it is not a security. The company and its two executives use Hinman's speech by advancing that XRP is part of the crypto asset's category having a sufficient non centred technology described above. XRP runs on a decentralized exchange where there are no asymmetries between parties and investors no longer expect a central authority to carry out the managerial efforts.

Moreover, supporting Ripple's view, SEC Commissioner Hester M. Pierce argued, on Thinking Crypto Channel, that the SEC still considers, when applying Howey, the security as the token itself. For Commissioner Pierce this view is a shorthand. The Howey case was about orange groves and the Howey test states that a securities offering can include an investment contract. She strongly believes that the Howey case's focus was not that the orange groves themselves or that orange trees or the oranges were a security. Instead, what was argued was that the way that those pieces of the orange grove were sold, was the same as securities offering because it was an investment of money as profits were based solely on the efforts of someone else. However, she considers that what the SEC has started to affirm now, is that the orange groves are a security, so if you sell a piece of an orange grove in a security's offering then the piece of orange itself continues to be a security.

SEC Commissioner Hester Pierce suggest that it would be better if the SEC looked at the offering as a whole and didn't treat the tokens as a security: “I start to think we [(i.e., the SEC)] need to take a step back and stop thinking about the token as a security itself”<sup>440</sup>.

### c. A dispute over legal advices

Before launching, distributing and monetarizing its new currency, Ripple requested two legal advices on risk associated with federal and state laws. The law firm gave to the company two memos: one on the 8<sup>th</sup> of February 2012 and another on the 19<sup>th</sup> October 2012<sup>441</sup>. The SEC allege that these memos stated that, after analysing the way Ripple promoted its cryptocurrency to its buyers, XRP would be considered an investment contract. Moreover, this risk increased if individual purchased it “to engage in speculative investment trading, or if Ripple employees promoted XRP as potentially increasing price”<sup>442</sup> Therefore, it warned its founders that Ripple's cryptocurrency could fall under the federal securities laws. Moreover, the SEC argues that the law firm believed that XRP could not be considered a currency under the Exchange Act as “it was not backed by a central gov and was not legal tender”<sup>443</sup>. Finally, the two memos advised Larsen to ask clarification on the nature of this assets to the SEC. Despite these advices, Ripple continued in developing its view to make XRP a universal digital asset employed into transfer money by banks and other financial institutions.

Larsen didn't follow the recommendations and didn't contact the SEC before triggering a large-scale distribution. The SEC alleges that he planned the initial coin offering of XRP by “approving the timing and amount of offers and sales to:

(1) purchasers in the open market (“Market Sales”);

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<sup>439</sup> *Id.*

<sup>440</sup> Hester Peirce Interview - The SEC & US Crypto Regulations, Bitcoin ETF, Gary Gensler, Ripple, 17:00-20:43, (March 9, 2021) [https://www.youtube.com/watch?v=qihfMblk\\_g](https://www.youtube.com/watch?v=qihfMblk_g)

<sup>441</sup> Complaint, Sec. & Exch. Comm'n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020) note 53

<sup>442</sup> *Id.*

<sup>443</sup> *Id.* note 54

(2) investment funds, wealthy individuals, or other sophisticated investors (“Institutional Sales”); and

(3) others enlisted to assist Ripple’s efforts to develop an XRP market (the “Other XRP Distributions”).”<sup>444</sup>

Therefore, the SEC argues in their complaint that Ripple and Larsen “repeatedly and publicly pledged to develop uses for XRP and promote the market for trading in XRP.”<sup>445</sup>

Of course, Ripple’s interpretation of the memos is different. They affirm that the purpose of requesting these legal advices was to determine whether and under which circumstances their cryptocurrency could be *mistaken* into a security. Ripple and its executives believe that “any reasonable reader of the memos would conclude that the company’s lawyers did not believe its digital tokens were securities under federal law”<sup>446</sup>.

This debate over a simple legal assistance underlines the regulatory gap in cryptocurrency’s federal legislation. The SEC had not and still hasn’t communicated or provided a clear and effective guidance on how it intends to regulate all the various types of cryptocurrency emerging in the last decade.

Moreover, Ripple uses as part of its defence an event that brought the company clarity on the nature of XRP. However, this event underlines an even more increasingly confusing legal environment. On the 5<sup>th</sup> of May 2015, the Financial Crimes Enforcement Network (FinCEN) together with the U.S. Attorney’s Office for the Northern District of California (USAO-NDCA) sentenced Ripple and XRP II to a \$700,00 civil money fine. The company failed to register its currency as a Money Services Business (MSB) under the requirements of the Bank Secrecy Act. In its public release, FinCEN affirmed that Ripple has sold its “virtual currency, known as XRP, without registering with FinCEN, and by failing to implement and maintain an adequate anti-money laundering (AML) program designed to protect its products from use by money launderers or terrorist financiers.”<sup>447</sup> In the settlement agreement, the United States Department of Justice and FinCEN stated that “from at least March 6, 2013, through April 29, 2013, Ripple Labs sold convertible virtual currency known as “XRP”. [...] Ripple Labs was not registered with FinCEN as an MSB while engaging in these sales.” It directly addressed XRP as a virtual currency and not as a security or an investment contract making it clear for the company that there was no confusion on the nature of the asset they were selling. Furthermore, in the public release the FinCEN requested the company to comply with other regulatory constraint for the sales of XRP because from “2015, Ripple is the second-largest cryptocurrency by market capitalization, after Bitcoin.”<sup>448</sup> This clearly underlines a misalignment in the thought of regulatory entities on the nature Ripple’s cryptocurrency.

Contrary, for us readers, it seems pretty straightforward that XRP is a cryptocurrency similarly to other ones such as Bitcoin and Ethereum. This cryptocurrency is not designated as a legal tender anywhere as it is not backed by any central bank or government. It is part of the convertible virtual currency schemes as it can be converted into real money allowing users to effect cross-border transactions. That is the reason why the company’s executives consider it a

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<sup>444</sup> Complaint, Sec. & Exch. Comm’n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020) note 73

<sup>445</sup> Sackheim, Michael S. et al., *The Virtual Currency Regulation Review: USA*, Harv. L. Rev., (Sept 02, 2021) <https://thelawreviews.co.uk/title/the-virtual-currency-regulation-review/usa>

<sup>446</sup> Frank, Alison, *At the heart of the SEC’s case against Ripple, a dispute over legal advice*, Reuters, (Feb. 16, 2021) <https://www.reuters.com/article/legal-us-otc-ripple-idUSKBN2AG2MJ>

<sup>447</sup> Release, FinCEN, *FinCEN Fines Ripple Labs Inc. in First Civil Enforcement Action Against a Virtual Currency Exchange*, (2015) <https://www.fincen.gov/news/news-releases/fincen-fines-ripple-labs-inc-first-civil-enforcement-action-against-virtual>

<sup>448</sup> *Id.*

bridge currency. Even though Ripple's technology has some features that may be addressed as centralized, the company affirms that the XRP Ledger is an open decentralized technology and that Ripple does not control neither the blockchain nor the value of XRP.

It is understandable also that using the term "currency" for XRP may not be appropriate as we attribute the legal tender status to it. Although the SEC believes that XRP has been traded and exchanged as done for investment contracts, during the Initial Coin Offering, the company never "restricted offers or sales of XRP solely to purchasers who had a need for alternatives to traditional, fiat currencies, nor did Ripple promote XRP as an instrument for consumers to purchase goods or services."<sup>449</sup> However, FinCEN and the IRS made their view clear toward this virtual asset. Ripple's cryptocurrency acts a transfer of value and so as a money transmission service. It is a considered something that has the value for substituting currency. Therefore, for FinCEN, XRP, as virtual currency, is therefore subject to the Bank Secrecy Act regulation and compliance requirements.

The focus of the disagreement between the parties should not be which label to assign to XRP but rather to determine whether this asset during the ICOs or any other transaction was purchase and sold as a security. The court shall provide the final answer to this issue.

Adopting Ripple's viewpoint, the fine made by FinCEN in 2015 put an end to all past and present doubts regarding the nature of their cryptocurrency. All fears and uncertainties were gone as a federal agency regulates XRP as a currency transmission service and treats it as a virtual asset. The problem, therefore, is not Ripple's but if anything, it would be between the two federal agencies, the SEC and FinCEN, who have not identified a common guideline on how to regulate this type of asset. Moreover, since the filing of this lawsuit, confusing events were reported.

Walter Joseph Clayton is the former the chairman of the SEC<sup>450</sup>. The legal action against Ripple was filed on his last day. Two weeks before this event, Joseph Grundfest, SEC Commissioner appointed by Ronald Reagan, sent Clayton a letter affirming that the SEC shouldn't file the claim against Ripple. He argued that XRP had been traded since 2013 and during those 7 years the SEC didn't engage in any actions. Grundfest believed that "initiating the action will impose substantial harm on innocent holders of XRP, regardless of the ultimate resolution."<sup>451</sup> He predicted that investors learning about the lawsuit "will cease transacting in XRP because of the associated legal risk [...] resulting [in a] reduction in liquidity [causing] XRP's value to decline"<sup>452</sup> which, as we observed above, was exactly what happened. Moreover, Grundfest went on noticing that the SEC has never established a distinction between XRP and other cryptocurrencies by explaining why federal securities laws apply to Ripple and not to other companies operating with similar virtual instruments. Therefore, imposing XRP to comply with securities laws obligations "while leaving Ether untouched raises fundamental fairness questions about the exercise of Commission discretion."<sup>453</sup>

Contrary to Grundfest, Clayton's and Gensler's actions demonstrates that they believe the cryptocurrency industry to be a dark place. In fact, in the The Digital Asset Compliance and Market Integrity Summit the current SEC Commissioner, Gary Gensler affirmed that for him there is no distinction between individual acting in good faith and fraudsters in the

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<sup>449</sup> *Id. at 421*

<sup>450</sup> Appointed by President Donald Trump from from May 4, 2017 until December 23, 2020

<sup>451</sup> Layton, Roslyn, *Who Will Protect Investors From The SEC?*, Stanford Law School, (Dec 5, 2021)

<https://law.stanford.edu/press/who-will-protect-investors-from-the-sec/>

<sup>452</sup> Chaparro, Frank, *Former SEC Commissioner says Ripple lawsuit will cause 'multi-billion dollar losses to innocent third parties'*, The Block, (Dec 23, 2020) <https://www.theblockcrypto.com/linked/89164/former-sec-commissioner-says-ripple-lawsuit-will-cause-multi-billion-dollar-losses-to-innocent-third-parties>

<sup>453</sup> *Id. at 446*



cryptocurrency market. Neither protects its investors or purchasers as they do not have their interests at heart. He defines himself as technologically unbiased but not policy neutral. He believes that the high-tech innovation has to happen in an environment of public's trust.

For Gensler cryptocurrency's issuers do nothing but endanger its users by breaking the law because there is not enough investor protection in this trillion-dollar asset class.<sup>454</sup> He suggests to these platforms "to come in, get registered, come within the investor protection remit, ensure for the appropriate anti-manipulation, ensure for the appropriate transparencies, deal with the custody issues and the like,". However, the head of the Digital Chamber of Commerce, Perianne Boring, tweeted at the end of the conference that after Gensler's affirmation "[people] in the room [were] looking around and asking, "register as what?". Lots of questions still remain about the future regulatory path for #crypto"<sup>455</sup>. As Grundfest predicted, after the lawsuit was filed, 15 billion dollars of value was driven out of the XRP ecosystem affecting the people that the SEC is entitled to protect.

On the 20 September 2021, after all the pressure put by the SEC on the cryptocurrency market, the exchange platform Coinbase has decided to abandon the launch of its plans for its crypto lending program<sup>456</sup> because it was afraid that the SEC could consider this product to be a security. Since the US regulatory framework on cryptocurrencies and all related services will continue to be imprecise with vague and non-direct laws, many companies may consider outsourcing their businesses to places where regulation is softer and more innovation friendly.

Although it is true that the SEC's reasoning on why XRP is a security is incomplete, it cannot be denied that the cryptocurrency market is not all sunshine and rainbows. It is important to recognize the strong positive points of using blockchain technology, but we also need to see the dangerous aspects that decentralized and anonymous technologies have.

Indeed, very often, illegal trading and criminality are hidden behind cryptocurrency's transactions and exchanges. An Italian economic-political-financial newspaper, *il Sole 24 Ore* states that cryptocurrency transactions linked to criminal activity reached a new record in 2021 and increased from the previous year even though their share is shrinking in a booming market.<sup>457</sup> They report the study of an analyst firm, called Chainalysis, according to which \$14 billion passed through crypto accounts were linked to illegal activity in 2021, a number that almost doubled since 2020 where it was \$7.8 billion. However, according to the study, illegal transactions account for only 0.15 % of the total use of cryptocurrencies, which handled 15.8 trillion in transactions last year.<sup>458</sup> Supporting these findings, Sean Foley of the University of Sydney, Jonathan R. Karlsen of the University of Technology Sydney and Talis J. Putniņš of the University of Technology Sydney Stockholm School of Economics in Riga published a paper called *Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed Through Cryptocurrencies?*. They argued that "one-quarter of bitcoin users are involved in illegal activity."<sup>459</sup> The study estimates that "around \$76 billions of illegal activity per year involves bitcoin (46% of bitcoin transactions), which is close to the scale of the US and European

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<sup>454</sup> DACOM 2021 The Digital Asset Compliance & Market Integrity Summit, 5.34, CryptoCompare

<sup>455</sup> Perianne Boring's Twitter available at <https://twitter.com/PerianneDC/status/1466064710365855756>

<sup>456</sup> DiCamillo, Nate. *Coinbase Drops Planned 'Lend' Program after SEC Warning*. CoinDesk Latest Headlines RSS, CoinDesk, (Sept. 20, 2021)

<sup>457</sup> *Criptovalute: Nel 2021 Transazioni Illegali per 14 Miliardi Di Dollari, è Record.*, *Il Sole 24 ORE*, , 6 Jan. 2022,

<sup>458</sup> *Id.*

<sup>459</sup> Foley, Sean and Karlsen, Jonathan R. and Putniņš, Talis J., *Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed Through Cryptocurrencies?* (December 14, 2018). *Review of Financial Studies*, Forthcoming, Available at SSRN: <https://ssrn.com/abstract=3102645>  
Or <http://dx.doi.org/10.2139/ssrn.3102645>

markets for illegal drugs.”<sup>460</sup>They believe that cryptocurrencies have introduced novelties in the black market transforming it, by allowing “black e-commerce”. Therefore, the SEC is right in arguing that the cryptocurrency market needs to be regulated to help investors allocate their savings in a safer and easy-to-get information environment. But many questions come to mind from their actions. Why regulate only XRP and not Ethereum or Bitcoin? Why after 7 years? Why not enacting a SEC’s Cryptocurrency Act?

From the time being, SEC’s Jackson Pollock approach<sup>461</sup> of throwing paint on a blank canvas (i.e., approaching only individual company-specific assets) without a clear message leaves something to be desired.

d. The proposed safe harbour for crypto assets

On the 6<sup>th</sup> of February 2020, SEC Commissioner Hester M. Peirce gave a speech entitled *Running on Empty: A Proposal to Fill the Gap Between Regulation and Decentralization*<sup>462</sup>. The Commissioner advanced in her speech the need for clarity in the application of federal securities law on digital assets. In her speech, she proposes a safe harbour from the registration requirements described by the sections 5,6 and 7 of the Security Act of 1933. The protected shelter proposed “recognizes the need to achieve the investor protection objectives of the securities laws, as well as the need to provide the regulatory flexibility that allows innovation to flourish”<sup>463</sup>.

The safe harbour provides network developers with a “three-year grace period within which they could facilitate participation in and development of a functional or decentralized network exempt from the registration provisions of the federal securities laws”<sup>464</sup>. In order to benefit from this protection some conditions have to be met. The transactions involving tokens would not be considered securities exchanges if they comply with four safe harbour conditions:

1. It has a decentralized network for the exchange of goods and services, the network is not controlled by a single person or entity.
2. A development team is required to “update their published information to reflect any material changes”<sup>465</sup> such as regarding the economics of the token, or the functionality of the blockchain, or anything that could be useful to potential users.
3. The token must be offered and sold for the purpose of facilitating access to, participation in, or development of the network. It is necessary to clarify that the safe harbour is not appropriate for debt or equity securities disguised as tokens.
4. The development team is required to certify that it will engage in reasonable and good faith efforts to create liquidity for users, on trading platforms “that can demonstrate compliance with all applicable federal and state laws, as well as regulations relating to money transmission, money laundering, and consumer protection. The safe harbour would exempt persons engaged in certain token transactions from the definitions of "exchange," "broker" and "dealer" under the Exchange Act.”<sup>466</sup>

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<sup>460</sup> *Id.*

<sup>461</sup> U.S. Securities and Exchange Commission. How We Howey, SEC Commissioner Hester M. Pierce (2019) available at <https://www.sec.gov/news/speech/peirce-how-we-howey-050919>

<sup>462</sup> U.S. Securities and Exchange Commission. *Running on Empty: A Proposal to Fill the Gap Between Regulation and Decentralization*, SEC Commissioner Hester M. Pierce (2020) available at <https://www.sec.gov/news/speech/peirce-remarks-blockress-2020-02-06>

<sup>463</sup> *Id.*

<sup>464</sup> *Id.*

<sup>465</sup> *Id.*

<sup>466</sup> *Id.*

On the 13<sup>th</sup> of April 2021, Commissioner Pierce advanced an updated version: *The token safe harbour proposal 2.0*.<sup>467</sup> The new proposal has three changes. First of all, it requires semi-annual updates from the development team on the plan of development disclosure. To increase purchaser protection, it requires a release of a block explorer which is a web-based software similar to Google Chrome or Mozilla that specifically provides detailed information and navigation tools for blockchain-based resources. The second adjustment specifies that at the end of the three-year grace period, the team has to file an “exit report” that includes either “an analysis by outside counsel explaining why the network is decentralized or functional, or an announcement that the tokens will be registered under the Securities Exchange Act of 1934.” Finally, the third modification is that the required exit report is a guidance for outside counsel’s analysis when explaining why the network is decentralized. Among other things the exit report must: “Discuss the extent to which the Initial Development Team’s continuing activities are more limited in nature and cannot reasonably be expected uniquely to drive an increase in the value of the Tokens; [...] Describe the holders’ use of Tokens for the transmission and storage of value on the network, the participation in an application running on the network, or otherwise in a manner consistent with the utility of the network. [...] Detail how the Initial Development Team’s marketing efforts have been, and will be, focused on the Token’s consumptive use, and not on speculative activity.”<sup>468</sup>

The safe harbour advised by Commissioner Pierce indicates that someone is thinking about issuing a digital assets tailored legislation. However, is a draft proposal and for what we have witnessed until today, is not the line of thought that the SEC chair Gary Glenser is intended to follow.

e. A case whose outcomes go beyond Ripple and XRP

The SEC does not plan to adopt the safe harbour proposed by Commissioner Pierce for Ripple’s case. The reason why this lawsuit is so widely followed is because the agency is not looking only at XRP or at the circumstances and the ways that Ripple sold and offered its virtual currency, but all its allegations are general and could be applied to any cryptocurrency on the planet.

John Deaton, one of XRP lawyers, believes that the SEC complaint issued first on December 22<sup>nd</sup>, 2020 and then on the 18<sup>th</sup> of February 2021, is really broad and wide as it uses a vocabulary that can be applied to any digital asset. On January 1<sup>st</sup>, 2021, 6 days after the SEC filed the lawsuit against Ripple, John Deaton filed a complaint asking the SEC to only limit their claims against Ripple and the way the company sells XRP. He believes that the biggest misconception of the entire *SEC v. Ripple* case is that many people believe that the SEC is only alleging that XRP is a security and that the lawsuit focuses only on the way Ripple sold its cryptocurrency. Reading the complaint filed by the SEC, the XRP lawyer noticed how the claims and the arguments brought by the agency were broad and could apply to all other cryptocurrency in the world. This means that every single decision taken by the Court will set an industry life and death precedent for all other type cryptocurrency businesses.

In paragraph 89 of the First Amended Complaint, the SEC states that “With respect to all four types of distribution (Market Sales, Institutional Sales, Other XRP Distributions, and Individual Defendants’ XRP Sales), Defendants understood that XRP purchasers routinely

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<sup>467</sup> U.S. Securities and Exchange Commission., *Token Safe Harbor Proposal 2.0*, SEC Commissioner Hester M. Pierce (2020) available at <https://www.sec.gov/news/public-statement/peirce-statement-token-safe-harbor-proposal-2.0>

<sup>468</sup> *Id.*

resold XRP to other investors in the United States and other countries. These resales aligned with Defendants' own goals of achieving as widespread a distribution of XRP as possible, which was necessary to promote an aftermarket of buyers and sellers of XRP"<sup>469</sup>. In this paragraph the SEC accuses Ripple of understanding that XRP purchasers, investors and holders would sell it to other XRP investor. However, Bitcoin and Ethereum investors and holders, resale their cryptocurrency to other Bitcoin and Ethereum holders. Therefore, the allegation is very wide and if accepted could be used against any other cryptocurrency and its holders, as any crypto asset fit in the description provided by paragraph 89.

Moving to paragraph 169, the SEC argues that "At all relevant times, Garlinghouse and Larsen knew or recklessly disregarded that XRP purchasers had a reasonable expectation of deriving profits by buying and selling XRP on these digital asset trading platforms."<sup>470</sup> Deaton does not affirm if the SEC's allegation are true or not, he disputes this claim as every investor or holder of any cryptocurrency in the world such as Bitcoin, XLM, Ethereum purchases it with the final goal to derive some kind of profit: economic profit or purchasing goods or services.

Moreover, in paragraph 236<sup>471</sup>, the agency accuses Ripple by alleging that the primary use case for XRP today is speculative. XRP lawyer affirms that he could say that the primary use for Bitcoin is a store of value or that the primary use of Ethereum is smart contracts, but the SEC does not establish the differences between XRP and the other cryptocurrencies and why the ICO of XRP is speculative and the one of for example, the ICO of Ethereum, is not. Paragraph 292 says that "the price of XRP rises and falls for XRP investors together and equally for all investors."<sup>472</sup> However, this could be applied to Bitcoins and any other crypto asset around the world. All profits in the cryptocurrency industry are made due to the changing in value. As Brad Garlinghouse affirmed "The market value of XRP has not been correlated with Ripple's activities. Instead, the price of XRP is correlated to the movement of other virtual currencies. [...] XRP holders do not share in the profits of Ripple or receive dividends, nor do they have voting rights or other corporate rights. Purchasers receive nothing from their purchase of XRP except the asset. In fact, the vast majority of XRP holders have no connection or relationship with Ripple whatsoever."<sup>473</sup> The point that XRP lawyer John Deaton is making is that any virtual asset could fall into every single statement the SEC, making this case binding for all future crypto instrument.

From paragraph 279 to 282, the SEC also brings up the FinCEN settlement of 2015 where one arm of the government declared that XRP was a virtual currency. However, the SEC in these paragraphs state that because XRP is not legal tender recognized by the sovereign of the United States of America therefore it does not meet the definition of currency. However, neither Bitcoin, Ethereum, Eagle Token, REV nor any other crypto asset meet the legal tender status or are considered currency under the federal securities laws or in any other US state. Ripple's entire AML/BSA compliance program is built on the fact that XRP is a currency<sup>474</sup>. In addition, if any other country were to recognize XRP as a currency, as it has happened for Bitcoin with El Salvador, the crypto asset will still not be considered a currency as it "would result from defendants' significant entrepreneur and managerial efforts to date and likely in the future on which public investors expecting profit relied"<sup>475</sup>.

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<sup>469</sup> Complaint, Sec. & Exch. Comm'n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020)

<sup>470</sup> *Id.*

<sup>471</sup> *Id.*

<sup>472</sup> *Id.*

<sup>473</sup> Garlinghouse, Brad, *The SEC's Attack on Crypto in the United States*, Ripple, (DEC 22, 2020)

<https://ripple.com/insights/the-secs-attack-on-crypto-in-the-united-states/>

<sup>474</sup> *Id.*

<sup>475</sup> *Id.* at 464

In 2015 Joseph Grundfest former SEC Commissioner affirmed that if an individual has a partnership which buys Bitcoin then that partnership can be exactly like a partnership that buys a horse for example. In this situation Bitcoin is a security as its interest is in the partnership that owns the cryptocurrency. Nevertheless, the more interesting question that the courts and the SEC haven't yet looked at, is the challenge of whether the Bitcoin itself is a security. Grundfest affirmed in 2015 that "the answer [...] is a resounding sometimes"<sup>476</sup>. However, no law clearly defining and describing the transactions in which or not Bitcoins are considered a security or differentiating Bitcoin from other cryptocurrencies has yet been published. This is why this lawsuit is very dangerous and the outcome will have fundamental impact not only on the future of Ripple and XRP but on the crypto industry as a whole.

Finally, the SEC believes the XRP in the secondary market is a representation of an investment contract with Ripple. This means that all units of XRP no matter who you bought it from or where you bought it at, whether you purchased it on Coinbase and you never heard of Ripple, are for the SEC purchased of an unregistered security.

As we will see from Ripple's arguments, the company does not want to settle this case. If Ripple succeed in showing that the agency has been biased in how it applies the definition of security to virtual currencies it would destabilize and weaken the SEC's credibility and authority. Moreover, Ripple pointed some associations and interests linking the members of the SEC with other crypto platforms even though there is little evidence of these connections. Ethereum initially founded its operations with an ICOs, so following SEC's argument on Ripple's case, it would be considered a security. The question arises almost spontaneously: why does XRP is sued and considered a security and other cryptocurrencies such as Ethereum have a free pass? Will the SEC regulate the digital asset market by filing a lawsuit for every cryptocurrency?

The broadness and wideness of SEC statements is why this case is the most important yet, in deciding the fate of blockchain innovation, its competitiveness in the United States and the SEC's power to regulate it. John Deaton believes that if the SEC succeeds in this case, then every digital asset in existence is in danger.

To gain further understanding at the issue at hand, it is necessary to carefully analyse the Court's decisions up to the present moment and the SEC's and Ripple's arguments.

#### f. The Court's decision on the Defendants' personal records

The second accusation of the SEC is that Ripple's two executives, Larsen and Garlinghouse, have not only failed to register XRP but also conducted unregistered personal sales of XRP. Larsen is Ripple's largest equity shareholder having 68% of its voting power. Garlinghouse was, since April 2015 either the COO or the CEO of the company. They have been served with a Request for Production as the SEC seeks their personal financial records in the last 8 years which of course, they do not want to provide.

When asking the personal records, the SEC refers to Larsen's action offering and selling his XRP to investors all over the world on which the commission believes that he and his wife gained \$450,000million. More specifically, in their report, the SEC refers to an email sent to an investor on the 30<sup>th</sup> of June of 2019 in which the SEC affirms that the investor "had raised

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<sup>476</sup> Sandford Law School, *Faculty on Point Professor Joseph A. Grundfest on Bitcoin: Is it a Security?*, (2015) <https://www.youtube.com/watch?v=vLU4B8L-ROc&feature=youtu.be>

concerns about Larsen's continued personal sales of XRP"<sup>477</sup>. Moreover, on the 22<sup>nd</sup> of September 2020, Larsen publicly stated from his Twitter account that "he had transferred half a billion of his XRP, then worth approximately \$115 million, to accounts he established with a New York-registered digital asset company"<sup>478</sup>.

Concerning the accusations on Garlinghouse, the SEC believes that he used digital asset trading intermediaries, such as trading digital platforms, to sell "over 321 million of his XRP, for approximately \$150 million, to the public"<sup>479</sup>. Like Larsen, also Garlinghouse sold and offered XRP to investors around the world. In addition, the agency accuses him of knowingly pausing his sales "at the Market Maker's recommendation because XRP's market price was falling, seeking to avoid having the latter's own XRP sales further drive down XRP's market price."<sup>480</sup> As part of the civil discovery, the SEC requires the personal financial information of the two executives not only directly but also "through subpoenas served upon financial institutions with which they or their family members hold accounts"<sup>481</sup>. The SEC requests all communication regarding all offers and sales of XRP in order to prove that XRP was traded and exchanged as an investment contract, making it a security and obliging it to comply with federal securities laws.

Rule 26(b) of the Federal Rules of Civil Procedure establish the discovery's scope and limits. In fact, it is the party asking for such documents that has to prove that they are relevant for the case. Rule 26(b) confines documents in the discovery to "any nonprivileged matter that is relevant to any party's claim or defence and proportional to the needs of the case."<sup>482</sup> The same is applied to the subpoenas issued pursuant Rule 45 as they are subject to Rule 26(b)(1) relevance requirements. The SEC believes that "individual Defendants' personal financial statements would show deposits from cryptocurrency exchanges, representing the simplest and most reliable way to deanonymize [the] Individual Defendants' XRP transactions."<sup>483</sup>

However, the Defendants have already agreed with the SEC to provide all the documentation related to the sales and offering of their cryptocurrency. The federal agency's requests only highlight the willingness to broaden their research. However, United States magistrate judge Sarah Netburn believes that it would result in the disclosure of "an immense trove of private financial information with no relevance to whether the Individual Defendants offered or sold XRP into the public market or promoted its sale to potential investors."<sup>484</sup> The SEC's search of duplicative information to verify that the Defendants' records are complete, is judged by the Court as unnecessary or premature at best<sup>485</sup> as the SEC has "not shown that the records that have been promised are lacking the information necessary to support its claims in any meaningful way."<sup>486</sup>

The SEC argues that the personal banking records are on the contrary necessary to prove the defendants' violation of Section 5. The claim is that the defendants, in order not to be discovered moved their XRP sales from an "identifiable digital addresses [...] into other pseudonymous or anonymous crypto wallets."<sup>487</sup> As the proceeds from these transactions have

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<sup>477</sup> Complaint, Sec. & Exch. Comm'n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020), 27

<sup>478</sup> Complaint, Sec. & Exch. Comm'n v. Ripple Labs, Inc., Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 1 (S.D.N.Y. Dec. 22, 2020), 27-28

<sup>479</sup> *Id.* 28-29

<sup>480</sup> *Id.*

<sup>481</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT)(SN), (S.D.N.Y. Apr. 9, 2021)

<sup>482</sup> Fed. R. Civ. P. 26(b)

<sup>483</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT)(SN), 5 (S.D.N.Y. Apr. 9, 2021)

<sup>484</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT)(SN), 6 (S.D.N.Y. Apr. 9, 2021)

<sup>485</sup> *Id.*

<sup>486</sup> *Id.*

<sup>487</sup> Mar. 19, 2021 Hearing Transcript ("Tr.") 41:10-42:11

to be converted into fiat currency in order to be used, the defendants would have had to move them from “cryptocurrency exchanges into their account”. With access to defendants’ detailed transaction records such as the deposit date, the amount, the name...<sup>488</sup> the SEC could trace the proceeds back to the Defendants.

However, the Court is not convinced with SEC’s theory and find two problems. First, Larsen’s and Garlinghouse’s bank records could reveal a deposit from a cryptocurrency exchange on a certain date. However, transactions details will not be visible. There will not be any or enough information to determine whether that deposit on that specific date was the result of a sale of XRP or any other cryptocurrency. Secondly, the Court senses that SEC is acting as if the two executives have knowingly hidden their personal XRP transactions. The court is not taking anyone’s side but simply stating that the SEC has not shown any evidence to support its claim and therefore it cannot be accepted by the court<sup>489</sup>.

g. Ripple’s Fair notice defence in court

Additionally, after the Court’s unfavourable decision, the SEC is undeterred and attacks the legal advice on XRP requested by Ripple. The agency requires the Defendants all communications “constituting, transmitting, or discussing any legal advice Ripple sought or received as to whether its offers and sales of XRP were or would be subject to federal securities laws”<sup>490</sup>. However, although these documents could be interesting in supporting SEC’s view on the nature of XRP, they are protected by the attorney-client privilege.

The privilege aims at protecting on one hand, the advice that the attorney gives to the client and on the other, the “information communicated by the client that provides a basis for giving advice.”<sup>491</sup>

As United States District Court for the Western District of New York, stated *In re County of Erie*, the privilege applies to:

- “1) a communication between client and counsel that
- 2) was intended to be and was in fact kept confidential, and
- 3) was made for the purpose of obtaining legal advice.”<sup>492</sup>

The Defendants, however, do not focus on whether the information requested falls under the attorney client privilege, but they contest whether “the privilege was waived by putting Ripple’s good faith [...] that it was complying with the law into question”<sup>493</sup>

To understand if the privilege can be waived the Court reflects on two precedents. In *United States v. Bilzerian*, the defendant, accused of securities fraud, alleged that he was acting in good faith and that the conversation with his counsel were protected by the privilege. However, the Court of Appeals for the Second Circuit concluded that the privilege was implicitly waived because his good-faith claim was based on a personal opinion rather than on the advice received by his counsel. To establish fairness, the Court applied the at-issue waiver doctrine concluding that the protected “conversations with counsel regarding the legality of his schemes would have been directly relevant in determining the extent of his knowledge and, as a result, his intent”<sup>494</sup>. The second case the Court reported was *In re County of Erie*. In this case, the Court of Appeal from the United States District Court for the Western District of New York explained that when

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<sup>488</sup> *Id.* 37:18-39:08

<sup>489</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT)(SN), 7-8 (S.D.N.Y. Apr. 9, 2021)

<sup>490</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), (S.D.N.Y. May. 30, 2021)

<sup>491</sup> *United States v. Ghavami*, 882 F. Supp. 2d 532, 536

<sup>492</sup> *In re County of Erie*, 473 F.3d 413, 419 (2d Cir. 2007) (“Erie I”)” *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 1 (S.D.N.Y. May. 30, 2021)

<sup>493</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 3 (S.D.N.Y. May. 30, 2021)

<sup>494</sup> *U.S. v. Bilzerian*, 926 F.2d 1285, 1292 (2d Cir. 1991)

a party claim good-faith, and the truthfulness of that claim can only be examined by analysing the documents in questions, it then involves an “inquiry into state of mind, which typically calls forth the possibility of implied waiver of the attorney-client privilege.”<sup>495</sup> The decision to waive the privilege is based on the notion of unfairness. The court considers that the document protected by the privilege, places the Plaintiffs in an unfair position, a disadvantage that the adversary has as he need “to defend against the privilege holder’s claim without access to the pertinent privileged materials that might refute the claim”<sup>496</sup>.

In *SEC v. Ripple*, the Defendants claim good faith as they were complying with the law since there is no specific legislation characterising a cryptocurrency as investment contract. Nevertheless, are the Defendants in good faith?

As predictable, Ripple doesn’t believe that the attorney client privilege has to be waived. A good faith defence is grounded in a party’s subjective belief that “its actions were in conformity with law”<sup>497</sup>. Therefore, the only issue in dispute in Ripple’s case, is not whether the accused’s intention was proper or not<sup>498</sup>, but on the legal advice received on this matter. As a consequence, determining whether the attorney-client privilege could be waived, will depend on whether it puts at “issue questions about the defendant’s state of mind or their reliance on counsel’s advice, regardless of whether the defence is stylized as “good faith” or something else”<sup>499</sup>. In *Scott v. Chipotle* case, Chipotle’s defence called into question its subjective state of mind. Ripple’s does not.

In fact, they introduce their fourth defence<sup>500</sup>: the lack of due process and fair notice also referred to as the “fair notice” defence. The Defendants argue that their actions were in good faith and claim that the SEC failed to provide “fair notice that [...] conduct was in violation of law in contravention of Ripple’s due process rights. Due process requires that laws give a person of ordinary intelligence a reasonable opportunity to know what is prohibited.”<sup>501</sup> In fact, when introducing the Fair Notice defence, Ripple’s attorneys refer specifically to two episodes. Firstly, the fine the company had to pay in 2015 to the U.S. Department of Justice and FinCEN discussed above. The SEC was aware of that settlement and the contents that specifically characterized XRP as a convertible virtual currency. Nevertheless, for years it didn’t act up to now. Ripple claims that there was a lack of clarity<sup>502</sup> on the SEC’s interpretation on the law. Moreover, the commission is suing Ripple and its executives over an eight-year period. Since 2013, the SEC’s action or inactions have failed in providing a fair notice to Ripple, affirming that their sales of the company’s cryptocurrency “permitted by the agreement [entered in 2015 with DOJ and FinCEN] would nevertheless constitute a violation of another federal law”<sup>503</sup>.

Secondly, Ripple’s attorney focus on the speech made in June 2018, by William Hinman the SEC’s Director of the Division of Corporation Finance. Hinman, among the other important elements, affirmed that the SEC did not consider Bitcoin or Ether to be investment contracts

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<sup>495</sup> *In re County of Erie*, 546 F.3d 222, 228-29 (2d Cir. 2008)

<sup>496</sup> “Unfairness was crucial to both rulings: In the courts’ perception, it would be unfair to force the prosecutor to run the risk that the jury would accept the defendant’s claims as to the facts the defendant put in issue while allowing the defendant, by assertion of his privileges, to deny the prosecutor access to directly pertinent material that might effectively impeach the defendant’s claims.” *John Doe Co. v. U.S.*, 350 F.3d 299, 303 (2d Cir. 2003) *Sec. & Exch. Comm’n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 3-4 (S.D.N.Y. May. 30, 2021)

<sup>497</sup> *John Doe Co. v. U.S.*, 350 F.3d 299, 301 (2d Cir. 2003)

<sup>498</sup> *Sec. & Exch. Comm’n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 7 (S.D.N.Y. May. 30, 2021)

<sup>499</sup> *Sec. & Exch. Comm’n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 4 (S.D.N.Y. May. 30, 2021)

<sup>500</sup> First defense: failure to state a claim- Second defense: XRP is not a security - Third defense: no likelihood of future violations - Fifth defense: exemption from registration - Sixth defense: lack of extraterritorial authority - Seventh defense: statute of limitations

<sup>501</sup> Answer of Defendant Ripple Labs, Inc. to Plaintiff’s Complaint, *Sec. & Exch. Comm’n v. Ripple Labs, Inc.*, Bradley Garlinghouse & Christian A. Larsen, No. 1:20-cv10832, 43 (S.D.N.Y. Jan. 29, 2021)

<sup>502</sup> *Sec. & Exch. Comm’n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 5 (S.D.N.Y. May. 30, 2021)

<sup>503</sup> *Id.* at 496



and therefore not subject to compliment with the federal securities laws<sup>504</sup>. This statement brought only more confusion into the market. Accordingly, it is another clear example of the SEC's lack of fair notice to market participants, that after this speech, have sought for clarity on the factors and circumstances that distinguish the sale or offer of digital assets from a securities transaction.

Ripple's counter argument is based on the *Upton v. SEC* case in which the defendants claimed that their fair notice defence differed from the good faith one. Most importantly, the *Upton v. SEC* case is very similar to Ripple's, as Upton argued that he should not be held liable for "evading the literal proscriptions of Rule 15c3-3(e) because the Commission knew about [the activities of its firms and] yet did not publicly condemn"<sup>505</sup>. What was surprising in this case is that Upton's defence turned the tables. He didn't focus on his subjective belief that he was complying with the law but based his defence on whether the SEC provided him of a fair notice highlighting that the activities conducted violated their interpretations of laws<sup>506</sup>. The Court in *SEC v. Upton* case ruled in favour of the Defendant (i.e., Upton) "focusing its analysis on the Commission's actions, inactions, and state of mind, and the signals that the Commission's behaviours would send to market participants"<sup>507</sup>. *Upton v. SEC* is extremely similar to Ripple's situation. In fact, Ripple's defence draws inspiration from this very case. Ripple's main argument no longer becomes whether the Defendants were in good faith but focuses on the fact the signals that SEC's behaviours have sent to market participants. Specifically, they argue that the Commission did not give the necessary communications to clarify its state of mind towards the nature of XRP. This strategy reveals that the "fair notice defence was not rooted in the defendant's state of mind [...rather] it is an objective test of how a reasonable person would have interpreted the agency's conduct."<sup>508</sup>

The SEC characterizes Ripple's fair notice defence as "an "artfully pleaded" good faith defence in disguise"<sup>509</sup>. It believes that Ripple's subjective state of mind is indeed at-issue as either "(1) Ripple thought that XRP was not an investment contract under Howey; or (2) Ripple did not know that Howey provided the governing standard for whether XRP was an investment contract."<sup>510</sup> The Court ruled against Plaintiff's motion concluding that Ripple's subjective state of mind and advice of counsel are not at issue. So, as from today, Ripple is not required to produce all the communications discussing the legal advices received on XRP.

The SEC's arguments have not been going well in court since it filed the Ripple case. Therefore, one question arises: why file such a flawed case that could ultimately backfire so badly and set a broad precedent that limits the SEC's power? Despite the SEC fighting with all its forces to stop it, Ripple was granted by the Court the right to depose Hinman. Now Ripple is fighting to get the SEC documents showing who drafted, edited and saw Hinman's speech

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<sup>504</sup> U.S. Securities and Exchange Commission (SEC), *Digital Asset Transactions: When Howey Met Gary (Plastic)*, SEC. & EXCH. COMM'N (June 14, 2018), <https://www.sec.gov/news/speech/speech-hinman-061418>;

<sup>505</sup> *Upton v. S.E.C.*, 75 F.3d 92, 98 (2d Cir. 1996)

<sup>506</sup> *Id.*

<sup>507</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 6-7 (S.D.N.Y. May. 30, 2021) focusing on what "the Commission knew," "the Commission held," "the Commission's intent," "the Commission's construction," "the Commission's interpretation," "the Commission[s] . . . aware[ness]," and "the Commission [taking] no steps to advise the public"

<sup>508</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 7 (S.D.N.Y. May. 30, 2021)

<sup>509</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 5 (S.D.N.Y. May. 30, 2021)

<sup>510</sup> *Sec. & Exch. Comm'n v. Ripple Labs, Inc.*, 20-CV-10832 (AT) (SN), 6 (S.D.N.Y. May. 30, 2021) See *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946).

in advance<sup>511</sup>. Those discovery documents revealed that the speech was attached to 63 emails<sup>512</sup> at the drafting stage, but the SEC refuses to reveal who was on them.

#### h. The place of all others XRP holders in this litigation

When the SEC initiated this lawsuit, many people who were selling or buying XRP suffered losses in their investments as the cryptocurrency undergone a price and market capitalization downward variation. At the moment, the agency only argues that Ripple executives' sales and offering of XRP constitute the violation of section 5 of the Securities Act of 1933. Nevertheless, another subtle but important point needs to be considered. As Larsen and Garlinghouse engaged in personal exchanges of XRP, what would it mean for any other person that engaged in activities selling, offering or buying Ripple's cryptocurrency? Have they committed a Section 5 violation? Does the SEC consider them liable too? Since their investments will be affected by the outcome of this legal action, where is their place in this litigation?

On the 19<sup>th</sup> of April 2021, six XRP Holders (i.e., individual investors independent from Ripple) moving on behalf of all similarly situated XRP Holders, filed a motion to intervene in this legal action. They supported their claim using Rule 24 of the Federal Rules of Civil Procedure as the legal standard. This rule provides all the criteria necessary in order for an individual to intervene either as of right or permissively. The court grants an intervention as of right under Rule 24(a) if it complies with the following requirements:

“(1) the motion is timely;

(2) the applicant asserts an interest relating to the property or transaction that is the subject of the action;

(3) the applicant is so situated that without intervention, disposition of the action may, as a practical matter, impair or impede the applicant's ability to protect its interest; and

(4) the applicant's interest is not adequately represented by the other parties.”<sup>513</sup>

And grants an intervention permissively under Rule 24(b) on a timely motion to anyone who

“(A) is given a conditional right to intervene by a federal statute; or

(B) has a claim or defence that shares with the main action a common question of law or fact.”<sup>514</sup>

The decision of permissive intervention is up to the discretion of the court and it must consider whether the intervention will “unduly delay or prejudice the adjudication of the original parties' rights.”<sup>515</sup>

The SEC argues that the two Ripple's executives created a secondary market in which investors (also referred to as XRP Holders or Movants<sup>516</sup>) purchased the XRP offered by the company and resold it to others. Moreover, it alleges that when purchasing the currency, XRP holders saw it solely as an investment. Therefore, the agency believes that the Movants are statutorily prohibited to bring any claim and constitutionally precluded from intervening as defendants or

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<sup>511</sup> Deaton, John. *The Ethereum Free Pass, Fair Notice and The Fight Ahead.*, CryptoLaw, 1 Feb. 2022, <https://www.crypto-law.us/the-ethereum-free-pass-fair-notice-and-the-fight-ahead/>

<sup>512</sup> *Id.*

<sup>513</sup> *Sec. & Exch. Comm'n v. Ripple Labs*, 20 Civ. 10832 (AT), 1-2 (S.D.N.Y. Oct. 4, 2021)

See also Fed. R. Civ. P. 24 “(a) INTERVENTION OF RIGHT. On timely motion, the court must permit anyone to intervene who:(1) is given an unconditional right to intervene by a federal statute; or(2) claims an interest relating to the property or transaction that is the subject of the action, and is so situated that disposing of the action may as a practical matter impair or impede the movant's ability to protect its interest, unless existing parties adequately represent that interest.”

<sup>514</sup> Fed. R. Civ. P. 24(b)

<sup>515</sup> Fed. R. Civ. P. 24(b)(3); *Brennan*, 579 F.2d at 191.

<sup>516</sup> *Sec. & Exch. Comm'n v. Ripple Labs*, 20 Civ. 10832 (AT), 1 (S.D.N.Y. Oct. 4, 2021)

in the case they are not barred from interfering, they should not be granted by the Court to intervene as of right or permissively.<sup>517</sup>

It is clear that the Movants have an interest in this litigation. In fact, Defendants advocate for Movants' limited participation as either "amici-plus or limited intervenors"<sup>518</sup> in order not to delay the case.

The Court find itself in difficulty with such request as there is no precedent case law that addresses the specific situation in which unrelated individuals request to intervene as defendants. As ruled in *Heckler v. Chaney* by the Supreme Court, the Court cannot review the SEC's choice to take direct action against the two executives and not against other XRP sellers or users. Even if the decisions deriving from this lawsuit will have direct consequences to Movants' holding, the SEC has brought claims against Larsen, Garlinghouse and Ripple. Therefore, no direct liability can be attached to Movants. Their request does not comply with the fourth requirements of the intervention as of right test, explained above. Therefore, the Court argues that an intervention as of right under Rule 24(a) is not necessary as the Defendants can represent Movant's interest. The two parties share the same ultimate objective: XRP is not a security. There is what is called *identity of interest* between the parties and so, a "presumption of adequate representation by a party already in the action arises".<sup>519</sup> If Movants believe that the Defendants are inadequate or incompetent in representing their interests, they need to demonstrate it. In fact, XRP Holders argue that the Defendants are incompetent as they do not have access to the same information. However, it cannot be considered inadequate that Defendants do not stress "certain arguments to the extent Movants desire"<sup>520</sup>. As ruled in *St. John's Univ., New York v. Bolton*, the Defendants' representation is not inadequate simply because they have different ideas about how best to achieve [their mutual] goals."<sup>521</sup> Therefore, the Court does not grant Movants with an intervention as of right because it concludes that their interests can be adequately represented by the Defendants and does not grant a permissive intervention as it would "unduly delay or prejudice the adjudication of the rights of the SEC and Defendants."<sup>522</sup>

However, the Court decides that Movant can act as *amici curiae*. There is no governing rule or statute that defines the procedure for individuals to act as such, it all lies in the "firm discretion of the district court"<sup>523</sup>. The *amici curiae* status should be denied unless: "a party is not represented competently or is not represented at all, when the amicus has an interest in some other case that may be affected by the decision in the present case (though not enough affected to entitle the amicus to intervene and become a party in the present case), or when the amicus has unique information or perspective that can help the court beyond the help that the lawyers for the parties are able to provide."<sup>524</sup>

In *SEC v. Ripple* litigation, Movants, as XRP holders and users independent from the executives, could provide a meaningful distinctive perspective, enlarging and stretching different arguments compared to Defendants' ones. XRP Holders are not allowed to offer any

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<sup>517</sup> *Sec. & Exch. Comm'n v. Ripple Labs*, 20 Civ. 10832 (AT), 3 (S.D.N.Y. Oct. 4, 2021)

<sup>518</sup> Def. Mem. at 12, ECF No. 152. *Sec. & Exch. Comm'n v. Ripple Labs*, 20 Civ. 10832 (AT), 3 (S.D.N.Y. Oct. 4, 2021)

<sup>519</sup> *Id.*

<sup>520</sup> *Id.*

<sup>521</sup> No. 08 Civ. 5039, 2010 WL 5186823, at \*3 (quoting *United States v. City of New York*, 190 F.3d 360, 367 (2d Cir.1999))

<sup>522</sup> *Id.* at 513

<sup>523</sup> *Sec. & Exch. Comm'n v. Ripple Labs*, 20 Civ. 10832 (AT), 3 (S.D.N.Y. Oct. 4, 2021)

<sup>524</sup> *Ryan v. Commodity Futures Trading Com'n*, 125 F.3d 1062, 1063 (7th Cir. 1997)

See also See, e.g., *Miller-Wohl Co. v. Commissioner of Labor Industry*, 694 F.2d 203 (9th Cir. 1982) (per curiam).

evidence or present any witness but “Defendants have the opportunity and motive to acquire the evidence Movants would offer, and so permitting Movants to present it”<sup>525</sup>. The Court concludes that Movants cannot intervene as defendants in this case. It will allow them to act as *amici curiae* as it believes that this status reflects an accurate balance in that it enables Movants to promote their interests, while at the same time, allows the parties to maintain control of the litigation.

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<sup>525</sup> Sec. & Exch. Comm'n v. Ripple Labs, 20 Civ. 10832 (AT), 3 (S.D.N.Y. Oct. 4, 2021)

## Conclusion:

Cryptocurrencies are no longer a recent instrument. Present in our system since 2009 and becoming very popular in late 2016 and early 2017, they have grown rapidly in price, market capitalization, and mainstream adoption. Virtual currencies are evolving faster and faster, creating new digital objects (e.g., NFTs) and using increasingly advanced technologies (such as proof-of-system or smart contracts). According to CoinMarketCap, there are 17,174<sup>526</sup> cryptocurrencies with combined total market capitalizations of more than \$2 trillions at November 2021<sup>527</sup>. Such asset class is characterized by the use of blockchain technology that some believe could completely revolutionise our financial system. The system and data are highly resistant to technical errors and malicious attacks as blockchain data is often stored in thousands of devices within a distributed network of nodes. Each node in the network is able to replicate and store a copy of the database and, as a result, there is no individual point of failure. A single node going offline does not affect the availability or security of the network. Moreover, validated blocks are very difficult to tamper with. In fact, once they have been recorded on the blockchain, the data is extremely difficult to remove or change. This makes blockchain an ideal technology for storing financial records, as any change is tracked and permanently recorded on a distributed public ledger. Furthermore, in most traditional payment systems, transactions depend not only on two parties (i.e., buyer and seller) but also on an intermediary such as a bank or another financial institution. Blockchain technology uses the distributed network of nodes to verify each transaction, completely eliminating the necessity of a centralized authority's control. Often referred to as a 'trustless' system, it reduces fees and overall costs associated with intermediaries and third parties. This open and inclusive system will transform the way marginalized populations and small businesses send and receive money across borders.

However, these instruments are subject to constant changes in value, which can rise exponentially and fall dramatically within very short periods of time. The multiple variations are caused by internal factors such as transaction costs, crypto mining difficulty, reward systems used and the number of coins in circulation. Nevertheless, they are also influenced by external factors such as political reasons (e.g., the different restrictions or degrees of autonomy decided by regulators and institutional representatives), macro-financial tools (e.g., interest rates, exchange rates, stock markets, gold price), and how much the crypto market has the capacity to attract new investors and speculators. Cryptocurrencies' market is among the largest unregulated in the world. By protecting the user's identity, this asset class creates multiple challenges in information disclosure. The lack of legal and institutional supervision all around the world is a problem as multiple businesses, not having their customers' interest at heart, take advantage of it by conducting transactions connected to criminal and illegal activities. Insufficient transparency and disclosure requirements on unregulated cryptocurrency exchanges lead to high operational and security risks, and investors finding themselves with little to no information on how to best allocate their savings. Consequently, it is not a mere coincidence that nations' regulatory bodies around the world have decided to regulate this permissionless innovation as they look at this technology with cynicism and dubiousness. Few nations have voiced their position on the issue as crypto improvements advances faster than laws can be enacted. Today, El Salvador is the first country to legalise Bitcoin as a means of

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<sup>526</sup> *Cryptocurrency Prices, Charts and Market Capitalizations*. CoinMarketCap, available at <https://coinmarketcap.com/>

<sup>527</sup> *Global Cryptocurrency Market Charts*., CoinMarketCap, available at <https://coinmarketcap.com/charts/>

payment for all goods and services. Nevertheless, the International Monetary Fund leaders urged the Salvadoran authorities to narrow the scope of the law affecting Bitcoin by removing the cryptocurrency's legal tender status.

In the United States we observe the two extremes: on one hand, only a few states have decided to undertake favourable virtual currencies laws trying to exploit all the economic advantages of this new technology, while on the other hand, the remaining see this innovation as a threat and have enacted stringent laws to protect themselves from it, forcing cryptocurrency businesses to be more transparent and provide more information. Nevertheless, it is clear that there is a general climate of confusion in the country as the vast majority of the states didn't adopt new laws and are reluctant to act, while no clear federal guidance has been issued, with the possibility of it being introduced at any moment. In addition to this uncertain atmosphere, the US federal agencies have in recent years defined and characterized cryptocurrencies' nature in completely different ways with the objective of wanting to regulate them. They are considered by the Securities and Exchange Commission (SEC) as a *security*, by the Commodity Future Trading Commission (CFTC) as a *commodity*, by the Financial Crimes Enforcement Network (FinCEN) as falling into the definition of *financial institution* and by Internal Revenue Service (IRS) as *property*. In the last couple of years, these agencies have adopted a case-by-case approach by issuing interpretative guidelines or focusing on single examples. This led to two scenarios. On the one hand giving too general an explanation of their line of thinking. On the other hand, issuing statements being too specific to individual businesses, since conclusions obtained from tailor-made examples are difficult to expand and consider as encompassing laws.

One explanatory example of this case-based approach is SEC v. Ripple. Ripple, a company that developed a payment system and an exchange network, is accused of trading XRP, the native cryptocurrency of the XRP ledger, as an unregistered security. Ripple is one of the giants of the cryptocurrency industry. Its blockchain technology is an efficient, inclusive and low-cost device that some say is an alternative to traditional payment networks. The XRP payment mechanism has a ledger which is considered superior to Bitcoin's and whose transaction validation is faster and wastes less energy compared to the other cryptos. The SEC applies the Howey test to demonstrate that the companies ICOs were constituted by the unregistered sale of an investment contract. However, the agency focuses more on the nature of the asset rather than on the circumstances in which it is traded, which instead are essential to understand whether the asset is subject to federal securities laws. The SEC accuses Ripple on the basis of unclear laws. In addition, it does not establish the reason for which this company breaks the legislation and other businesses, such as Ethereum, are not under investigation. This legal case is still ongoing. However, the allegations made by the SEC and the vocabulary employed remain very general, suggesting that this suit is not just about Ripple and XRP but about all cryptocurrencies. It may become a key precedent in determining the United States' competitiveness in the virtual currencies' realm. The US Congress should not wait too long to step in and enact a proper cryptocurrency framework to clarify regulatory boundaries and communicate its position to the rest of the world.

In this scenario, cryptocurrencies' technological innovation in the world of payments could be a revolution that radically disrupts the traditional monetary system. Central banks immediately prohibited financial institutions from using them for everyday payments declaring that they did not consider cryptocurrencies to be a currency. Despite this marginalisation attempt, the innovation of this instrument has accelerated the interest of many central banks and national authorities resulting in a proposed digital version of their sovereign currencies called Central Bank Digital Currency (CBDC). It can be shaped as the digital representation of a country's fiat currency, defined as legal tender, issued and managed by a sovereign institution such as

the central bank. It is a bank liability denominated in an existing unit of account, accessible to all, serving as both a medium of exchange and a store of value. Unlike cryptocurrencies and stablecoins, a CBDC is therefore directly backed by a government. This monetary instrument was created to exploit some of the advantageous cryptocurrency peculiarities, such as programmability, speed, and accessibility in a regulated environment. The ECB's aim is to introduce a digital currency to complement cash and deposits, to create synergies with the payments industry, and to support the European economy digitalisation process. Moreover, it wishes to be inclusive by ensuring even those who do not have a current account can access the central bank's money and to avoid the use of unregulated payment instruments or to uptake foreign currencies.<sup>528</sup> According to Fabio Panetta, the ECB Board member in charge of the Digital Euro project, the eventual release of a European CBDC will take place in no less than five years from now (2026)<sup>529</sup>.

Many decisions still have to be taken. It will therefore be very interesting to see what the future holds for these technological innovations.

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<sup>528</sup> *A report on a digital euro.*, European Central Bank, (OCT. 2, 2020), available at <https://www.ecb.europa.eu/euro/html/digitaleuro-report.it.html>

<sup>529</sup> *Digital Euro, tests begin.*, Fabio Panetta, Member of the Executive Board of the ECB, Milano Finanza available at <https://video.milanofinanza.it/video/euro-digitale-al-via-i-test-b0YJFZ0WiwOf>