INITIAL COIN OFFERINGS: WHEN ARE TOKENS SECURITIES IN THE EU AND US?

A comparative analysis on the application of US and EU securities laws to initial coin offerings (ICOs)

Abstract:

This article presents a comparative analysis of the application of US and EU securities laws to initial coin offerings (ICOs), or token sales. An extensive token taxonomy framework is proposed to categorize digital assets in order to advance a more precise discussion on the legal classification and regulation of tokens. For the US, a full analysis of the application of the Howey test to different types of tokens gives insight into classification of tokens as a security ("investment contract") under Section 2(a)(1) of the US Securities Act of 1933 and 3(a)(10) of the Securities Exchange Act of 1934. The analysis shows that most, if not all, so-called utility tokens can be classified as a security. A possible 'sufficiency-of-decentralization-test' is also explored, while taking prior case law and the multiple dimensions of decentralization of blockchain projects into account.

For EU financial law, the analysis in this paper focuses on the classification of tokens as 'transferable securities' under Art. 4(1)(44) of MIFiD II. The analysis shows that, in contrast to the US, pure utility tokens might not be deemed transferable securities under the EU securities regime. Across EU Member States however, large differences exist in terms of the legal classification of most tokens, which result from the freedom provided to EU Member States in transposing the MIFiD II definition of transferable securities into national law. The analysis in this paper provides insight into the two main approaches adhered to by EU Member States in the implementation of this definition, as well as their consequences for the legal classification of tokens. Conclusions are subsequently drawn on possible offering strategies adopted by issuers for future token sales and regulatory developments in the US and EU.

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I. INTRODUCTION

Over the last three years, a new avenue for fundraising has emerged. Going by the name of Initial Coin Offerings (ICOs), token sales or even Token Generation Events (TGEs), this route to startup financing has allowed almost 1500 startups to raise over 28 billion USD in funding.[1] The success of early ICOs such as Ethereum, which managed to provide a return on investment of about 868750% at the height of its market capitalization in January 2018[2], sparked an investment craze not too dissimilar to, for example, the Dotcom bubble. Whereas projects initially aimed to raise small amounts of money from technical-minded early adopters, companies like EOS were able to raise over four billion USD in its year long token sale, while not having any revenues or traction at the time. Token issuers were generally faced with substantial amounts of legal uncertainty, as the heterogeneous nature of tokens generally does not allow for easy application of financial regulation. Initially, national regulators adopted a 'wait-and-see' approach, so as to not unnecessarily disturb innovation. Throughout 2017, the ICO craze really took off, sparking a bubble that subsequently burst in 2018, resulting in a market decline of about 90% (or about 500 billion USD) in the altcoin market (i.e. the entire token market, without Bitcoin) at the time of writing.[3] During and after this market cycle regulators started forming their initial regulatory responses: from an outright ban of ICOs in the case of China[4] and South Korea[5], to more supportive approaches in other jurisdictions, such as Switzerland[6] and Malta[7]. Other regulators, such as most of the European Member States and the US issued warning notices to investors and provided (varying amounts of) guidance in stating that their respective securities laws could well apply.[8]

The main question thus faced by ICO issuers is whether their token sale is regulated under the financial registration and disclosure regimes applicable to the sale of securities. This question is of great relevance in terms of compliance strategies adopted by token issuers and therefore requires thoughtful comparative analysis. After all, token sales are a global phenomenon: investors from all around the world can participate. This potentially results in the applicability of the securities regimes of a great multitude of jurisdictions per token sale. It also means that an in-depth analysis of all relevant jurisdictions is not feasible for the purposes of this article, which is why I have limited the scope of this article to two jurisdictions: the United States and the European Union. The choice to include US securities laws is only natural, as the US has proven to be the most popular jurisdiction for token issuers,

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[1] Based on data from Coinschedule from January 2019 <www.coinschedule.com/stats.html> accessed 15 January 2019

[2] Calculated using data from Coinmarketcap, https://coinmarketcap.com/charts/ accurate as of 6 February 2019

[3] Based on data from Coinmarketcap https://coinmarketcap.com/charts/ accessed 15 January 2019

[4] China Banking Regulatory Commission, 'Announcement on prevention of risks of issuances' (People's Bank of China, April 2019) <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3374222/index.html> accessed 11 December 2019

[5] Electronic Finance Department of South Korea's Financial Services Commission (FSC), 'Joint TF for virtual currency-related institutions' (FSC, 29 September 2017). [] <http://www.fsc.go.kr/info/ntc_news_view.jsp?bbsid=BBS0030&page=1&sch1=&sword=&r_url=&menu=7210100&no=32085> accessed 11 December 2019

[6] Swiss Financial Market Supervisory Authority (FINMA), 'Guidelines for enquiries regarding the regulatory framework for initial coin offerings (ICOs)' (FINMA, 16 February 2018) <https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/wegleitung-ico.pdf?la=en&hash=9CBB35972F3ABCB146FBF7F09C8E88E453CE600C> accessed 11 December 2019

[7] Malta Virtual Financial Assets Act 2018

[8] Wulf Kaal, 'Initial Coin Offerings: The top 25 jurisdictions and their comparative regulatory responses' (Semada Research, 2018) https://medium.com/semadaresearch/initial-coin-offerings-the-top-25-jurisdictions-and-their-comparative-regulatory-responses-4b8c9ae7e8e8 accessed 11 December 2019

with over 14% of all ICOs being held from the US.[9] The EU's applicable financial laws meanwhile are harmonized to a large degree, allowing for effective legal analysis of a large amount of jurisdictions at the same time.

The applicability of the securities laws of these jurisdictions to ICOs and token sales is likely to impact the strategic choices adopted by token issuers in the future. After all, companies that undertake an ICO are generally startups that (in terms of incorporation) are not strongly tied to a single location as they are not as reliant on local assets, resources or even talent. Their assets are mostly intangible and they will naturally move to whatever jurisdiction is most attractive in an economic sense. Meanwhile, awareness of the potential applicability of securities laws has grown amongst issuers. Legal certainty in terms of the legal consequences and the related compliance costs as such play a large factor in their decision making processes, even impacting their choice of incorporation. From the results of the analysis below, I will therefore try to draw conclusions on the possible consequences of the applicability of securities regimes. Based thereon, recommendations will be made for future regulatory efforts in both the US and the EU. The research question addressed in this article can thus be formulated as follows:

To what extent is securities laws in the US and the EU applicable to initial coin offerings and what implications does it have for the compliance strategies of issuers and the regulatory framework?

To address the research question at hand, it is important that the reader has a broad understanding of cryptographic tokens and the wide variety of tokens that has emerged in the last four years. In Section II of this article, I will therefore provide a short primer on the history of distributed ledger technology. The section will cover the basic technical concepts, explain how the space has developed over time and detail the market conditions that have allowed ICOs to thrive. Section III will discuss ICOs by providing a theoretical overview of the advantages of token sales for issuers, investors and users over other methods of fundraising, while also discussing the issues that have plagued the crypto-market in the absence of clear legal protections for investors. Before going on to analyze the application of the securities regimes of the US and the EU to token sales, a general overview of token-classifications will be provided in Section IV as a system of general nomenclature is vital to discuss the application of the law. While Section V provides some preliminary observations as to the application of securities laws to token sales, Section VI and VII consist of the main legal analysis of token sales under US and EU securities laws respectively. For the purposes of this analysis, emphasis will be put on the focal point of securities laws in both jurisdictions: the legal classification of the instrument that is being sold. As such, Section VI provides a detailed analysis of whether tokens can be classified as 'investment contracts' (and thus securities) under the US '*Howey test*', as developed in *Securities and Exchange Commission v W. J. Howey Co*[10] and later case law, while Part VII mainly focuses on examining the classification of tokens as 'transferable securities' under the EU's Prospectus Directive[11], the EU Prospectus Regulation[12] (which is still to enter into force in full) and the EU's Markets in Financial Instruments Directive II[13]. Considering the broad heterogeneous nature of cryptographic tokens and methods of issuances, the approach adopted in these sections does not aim to provide bright-line rules

[9] ICO Bench, 'ICO Market Quarterly Analysis Q4 2018' (31 January 2019) https://icobench.com/reports/ICO_Market_Quarterly_Analysis_Q4_2018.pdf p.19, accessed 6 February 2019

[10] *Securities and Exchange Commission v. W. J. Howey Co*. [1946] 328 U.S. 293

[11] Council Directive (EC) 2003/71 on the prospectus to be published when securities are offered to the public or admitted to trading [2003] OJ L 345

[12] Council Regulation (EC) 2017/1129 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market [2017] OJ L 168

[13] Council Directive (EC) 2014/65 on markets in financial instruments OJ L 173

on the applicability of US and EU securities laws to token sales. Instead, the focus is on the impact that varying characteristics of tokens (and token sales) can have on the legal classification of tokens and the applicability of securities laws. Admittedly, this approach has its shortcomings. The issue of applicability is the mere starting point of securities regimes, the implementation of which varies substantially across the examined jurisdictions, leaving the potential compliance requirements, liabilities and remedies under securities laws largely unexplored. At the same time however, the question of applicability of securities legislation is the most relevant area of exploration, as the actual application of securities laws, when applicable to token sales, will be the same as for any other sale of securities. As such, an abundance of literature is already available on these topics. In Section VIII, the attractiveness of the respective legal systems for token issuers will be assessed in light of the comparative analysis performed in Sections VI and VII, in an attempt to draw conclusions as to the future compliance strategies that will be adopted by token issuers. Based on these conclusions, recommendations will be made as to possible future regulatory developments in both jurisdictions.

II. A SHORT HISTORICAL OVERVIEW

The very first blockchain-based token was Satoshi Nakamoto's Bitcoin: a secure, peer-to-peer, digital cash, created, governed and transferred on a distributed ledger, created in 2008.[14] In Bitcoin, transactional data are stored in time-stamped virtual 'blocks', which are linked together using cryptographic hashing and timestamps to form a virtual chain. Once added to the chain, a block is immutable. This immutability makes the blockchain viable as a ledger to keep track of accounts and balances. A peer-to-peer architecture decentralizes the network, to ensure that the 'state' of the blockchain (the most updated version of the chain) is permanently stored on a large number of computers worldwide, as to eliminate any central points of failure. This peer-to-peer network allows for the use of a consensus algorithm, "the purpose of which is to allow for secure updating of the state of the blockchain according to some specific state transition rules, where the right to perform the state transitions is distributed among a collective set of users", as defined later by Vitalik Buterin.[15] In other words, the consensus algorithm states the rules about how blocks are to be added to the chain, and thus about how transactions are executed, as every block states what transactions have occurred. The consensus algorithm solves the 'byzantine generals problem'[16] by allowing individuals, who don't know or trust each other to work together, to maintain and trust the network instead, by using a clever combination of cryptography and game theoretic incentives.

Consensus algorithms give distributed ledgers their most important properties: it makes them resilient, secure and 'trustless'. The concept of 'trustlessness' refers to the idea that an individual does not have to trust in (central) banks, governments, payment providers or even in other participants in the network for his or her tokens to be securely maintained and transferred globally on the blockchain. Bitcoin was the first blockchain-based decentralized application (dApp): an open-source application, the data of which is stored cryptographically in a public, decentralized blockchain, which requires a cryptographic

[14] Satoshi Nakamoto, 'Bitcoin: A Peer-to-Peer Electronic Cash System' (31 October 2008) https://bitcoin.org/bitcoin.pdf accessed 22 November 2018
[15] Vitalik Buterin, 'A next-generation smart contract and decentralized application platform' (28 March 2015) https://github.com/ethereum/wiki/wiki/White-Paper accessed 22 November 2018
[16] Leslie Lamport, Robert Shostak and Marshall Pease, 'The Byzantine Generals Problem' (1989) 4-3 TOPLAS 382,398

token, generated by a consensus mechanism or created on top of another decentralized protocol, for access to its utility.[17]

We fast forward to 2010, when a token called Namecoin was created. Namecoin was seen as a new 'cryptocurrency', for, at the time, no better nomenclature yet existed. It was the first time that a decentralized project attempted to replace the services of a central, non-financial, intermediary. Namecoin's ledger was based on Bitcoin's codebase, but instead of merely allowing its users to send and receive Namecoins, it also permitted the storing of non-transactional data within Namecoin's blockchain. In fact, it functioned as a decentralized domain name registration service, allowing users to buy domain names ending with '.bit', such as www.blockchain.bit, without these domain names being sanctioned by the Internet Corporation for Assigned Names and Numbers (ICANN). The ownership of these domain names would then be recorded in, and transferred on, Namecoin's blockchain. Although the Namecoin project was never really a gigantic success, it was important for the blockchain's short history for two main reasons.

First, Namecoin's domain name system showed that distributed ledger technologies (DLTs) are suitable for secure registries that interact with real-world systems or assets, due to their immutability, worldwide availability, and, perhaps most importantly, because entry and verification of data can be cheaper than coordination through a central party. These characteristics make blockchain-based registries suitable for many use cases. They can be used tracking ownership of high value assets, such as land[18], real estate[19], art[20] and diamonds[21]. In the medical field, sensitive patient records can be secured on the blockchain[22], while applications in the realm of business are more far reaching, including the efficient tracking and transfer of ownership of shares[23], shareholder voting[24], supply chain management[25] and possibly even registries for information on companies, such as incorporation, ownership of intellectual property rights, inspection records and obtained licenses.[26] If businesses were to adopt blockchain-based payment systems, then the field of accounting might see a major evolution as well, as blockchains are by nature accounting systems. Some argue that DLT is the technology to

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[17] David Johnston, 'The General Theory of Decentralized Applications, Dapps' 2015 https://github.com/DavidJohnstonCEO/DecentralizedApplications accessed 22 November 2018

[18] Marcell Nimfuehr, Blockchain application land register: Georgia and Sweden leading.' (Bicoin-Blase, 3 December 2017) https://medium.com/bitcoinblase/blockchain-application-land-register-georgia-and-sweden-leading-e7fa9800170c accessed 22 November 2018

[19] Sina Habibian, 'The Tokenization of Real Estate' (26 November 2018) https://sinahab.com/2018/11/real-estate-tokenization/ accessed 22 November 2018

[20] Marcelo Garcia Casil, 'Maecenas, the decentralised art gallery' www.maecenas.co/Maecenas-WhitePaper.pdf accessed 22 November 2018

[21] Alex Norta, 'Transforming diamonds into a new financial asset class' (Cedex) https://storage.googleapis.com/tf-wordpress-media/media/2018/11/Whitepaper.pdf accessed 22 November 2018

[22] Asaph Azaria, Ariel Ekblaw, Thiago Vieira and Andrew Lippman, 'MedRec: Using Blockchain for Medical Data Access and Permission Management' (Massachusetts Institute of Technology, November 2016) http://kddlab.zjgsu.edu.cn:7200/research/blockchain/huyiyang-reference/MedRec%20Using%20Blockchain%20for%20Medical%20Data%20Access%20and%20Permission%20Management.pdf accessed 22 November 2018

[23] European Securities and Markets Authority (ESMA), 'Report on the Distributed Ledger Technology Applied to Securities Markets' (ESMA, 7 February 2017) https://www.esma.europa.eu/sites/default/files/library/dlt_report_-_esma50-1121423017-285.pdf p.5 accessed 22 November 2018

[24] David Yermarck, 'Corporate Governance and Blockchains' (2015) 21 RF 7, 31

[25] Kapri Korpela, Jukka Hallikas, Tomi Dahlberg, 'Digital Supply Chain Transformation toward Blockchain Integration' (Proceedings of the 50th Hawaii International Conference on System Sciences, 2017) https://scholarspace.manoa.hawaii.edu/bitstream/10125/41666/paper0517.pdf accessed 22 November 2018

[26] Don Tapscott, Alex Tapscott, 'How Blockchain Will Change Organizations' (2017) 58-2 MITSMR 10-13

finally enable what is coined as 'triple-entry bookkeeping'[27], in which a company's transactional data is a matter of public record. This real-time, transparent accounting on the blockchain could potentially be used for real-time financial reporting, auditing[28] and eventually even real-time taxation.[29] In the public sector, record-keeping use cases of blockchain could include identity management[30], voting[31] and possibly even state-issued cryptocurrencies[32]. DLT could also bring reductions in term of government bureaucracy while improving their data management and transparency.[33] The blockchain's immutability also means it is inherently resistant to censorship by governments, giving it use cases for anything that is 'censorship sensitive', such as payments or media.[34]

The second reason why Namecoin was important for the crypto-industry is that Namecoin arguably was the first 'utility-token'. Namecoins could be sent to a piece of code, which in turn executed, providing the payer with a '.bit-domain'. As such, the coin was bought for its native utility. In a way, one could argue that you could unlock Namecoin's utility by sending the coin to an early version of the modern 'smart contract', a concept that had been first coined in the late '90s by prominent cypherpunk Nick Szabo.[35] A smart contract is a self-executing piece of code, stored for others to interact with, in a protocol that can be fully trusted to be immutable, allowing the smart contract to execute as designed. It consists of lines of code that specify how it should behave when it receives certain input in an '*if-then'* fashion. For example: *If* 'user' sends X Namecoin with *'requestedwebsitename'* as data in the data-field, *then* register *'requestedwebsitename.bit*' to 'user' in the blockchain database.[36] By storing and executing smart contracts on a blockchain, they are automatically enforced when their parameters are fulfilled. As such, no third-party or legal system is needed for the enforcement of the 'contract'. As many economic transactions consist of data-based logic, smart contracts are arguably an evolution in the way humans, or even objects, interact economically with each other. Although widely heralded for their potential to reduce transactions and intermediaries in many industries, smart contracts have their weaknesses as well. Like any writing, a piece of code is only as good as the person who writes it, leading to vulnerabilities in terms of security.[37]

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[27] Ian Grigg, Felipe de Oliveira Simoyama, Ricardo Luiz Pereira Bueno, Ludmila Cavarzere de Oliveira 'Triple entry ledgers with blockchain for auditing' (2017) Self-published http://iang.org/papers/TripleEntryLedgersWithBlockchain2017.pdf accessed 22 November 2018

[28] Ibid.

[29] Richard Thompson Ainsworth, Andrew Shact, 'Blockchain (Distributed Ledger Technology) Solves VAT Fraud' (17 October 2016). Boston Univ. School of Law, Law and Economics Research Paper No. 16-41. https://ssrn.com/abstract=2853428 accessed 22 November 2018

[30] Guy Zyskind, Oz Nathan, Alex Pentland, 'Decentralizing Privacy: Using Blockchain to Protect Personal Data' (2015) SPW 180, 184 https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7163223 accessed 22 November 2018

[31] Kartik Hegadekatti, 'Analysis of Present Day Election Processes vis-à-vis Elections Through Blockchain Technology' (January 2017) https://ssrn.com/abstract=2904868 accessed 22 November 2018

[32] Aleanddra Ulmer, Deisy Buitrago, 'Enter the 'petro': Venezuela to launch oil-backedReuters, cryptocurrency' (3 December 2017) www.reuters.com/article/us-venezuela-economy/enter-the-petro-venezuela-to-launch-oil-backed-cryptocurrency-idUSKBN1DX0SQ accessed 22 November 2018

[33] MyungSan Jun, 'Blockchain government - a next form of infrastructure for the twenty-first century' 4(1) JOltmC 4, 7

[34] Melanie Swan, 'Blockchain: Blueprint for a New Economy' (O'Reilly, 2015) p.30

[35] Nick Szabo, 'Smart Contracts: Building Blocks for Digital Markets (Extropy. 1996) www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html accessed 22 November 2018

[36] While smart contracts are not necessarily limited to simple conditional statements, taking inputs and applying functions to derive outputs is the basis of how Computers work in general. See John McCarthy, 'Recursive Functions of Symbolic Expressions and Their Computation by Machine' (1960) 3 COMM. ACM 184

[37] This is best exemplified by the many hacks in the space, including the famous DAO-hack and the Parity-Multi Signature Bug.

While traditional contracts can be interpreted and corrected, smart contracts are often immutable and will execute automatically, and, when the code contains mistakes, wrongfully. Smart contracts also ignore the social context in which legal contracts operate.[38] Finally, most contractual provisions are simply too complex to code, with the real bottleneck being the availability and reliability of input data.

Smart contracts are currently mostly used for very simple transactions that can be defined in easy variables of input and output, such as derivatives, gambling and other financial products. Still, their 'trustless' nature has enabled individuals and companies from all over the world to exchange value online without a third-party that acts as intermediary. In fact, new online peer-to-peer markets have started to emerge, at first for cloud storage[39] and cloud computing[40], but increasingly also for more traditional markets, such as peer-to-peer lending[41], insurance[42] and exchange of energy.[43] New markets are also emerging, such as the market for data[44] and 'prediction markets'[45]. So far however, the most important application of smart contracts has arguably been the initial coin offering.

Taking a step back, Bitcoin and Namecoin would not be able to function securely without a token. However, both projects have emerged without raising any funds. All coins are and have been distributed through their 'Proof of Work'-based (PoW) consensus mechanism in a process called mining, in which network participants try to add a block to the chain by solving an extremely difficult cryptographic puzzle. Mining a block takes immense computational work performed by General Processing Units (GPUs) or Application Specific Integrated Circuits (ASICs) and requires a lot of electricity. The process is expensive and 'wasteful' on purpose, as it is what makes the blockchain secure. The idea behind PoW is that if you would want to alter any transaction in any block, you would have to 're-do' all the computational 'work' done by the entire network since that block. To make sure network participants participate as miners, anyone that is able to successfully mine a block is rewarded with newly created coins. Only when the work is done to successfully mine a block, conform to the rules, and consensus is reached by the network on this conformity, the state of the blockchain is updated.

In 2013, the developers behind a project called Mastercoin realized that they could also 'pre-mine' a set amount of coins on their own blockchain (or more accurately in this case, on the programmable layer on top of Bitcoin called Mastercoin) and sell these to early adopters and investors to raise funds for further development. Doing so, the project raised 4700 BTC (at the time, 5 million USD) and as such, on July 2013, the initial coin offering was born. Mastercoin was the first ever second-generation protocol on top of the Bitcoin blockchain. Without going into too much detail, the most interesting thing about Mastercoin (aside from the invention of the ICO) was that anyone could create their own token on the Mastercoin network. [46] Mastercoin moreover set the precedent for using a real-world legal entity - often a foundation- for the management of the issuer's funds and the proliferation of the

[38] Karen Levy, 'Book-Smart, Not Street-Smart: Blockchain-Based Smart Contracts and The Social Workings of Law' (2017) 3 ESTSJ https://cdecker.github.io/btcresearch/2017/levy2017book.html accessed 22 November 2018
[39] E.g. Filecoin, Storjcoin, Siacoin and Swarm
[40] E.g. Golem, Sonm and Elastic
[41] E.g. Ledoit, Salt Leding, WeTrust and Ethlend
[42] E,g Dynamis, Somish and Unity
[43] E.g. WePower, Powerledger and Grid+
[44] E.g. Iota, Datum and DataBroker DAO
[45] E.g Gnosis, Augur. Prediction markets enable individuals to gamble upon the likelihood of future events by staking tokens.
[46] For a good overview of the history of Mastercoin, a project now going by the name of Omni, see Dominik Zynis, 'A Brief History of Mastercoin' (29 November 2013) <https://blog.omni.foundation/2013/11/29/a-brief-history-of-mastercoin/> accessed 9 December 2018

technology (partially) independently from the founders of a project. A developer contributing to Mastercoin by the name of Vitalik Buterin wanted the project to make the 'protocol more generalized and support more types of contracts (…)'[47]. When the Mastercoin team indicated it would rather not change its direction substantially, Vitalik started working on a new project called Ethereum instead. After being joined by prominent Bitcoin developer Gavin Wood, Jeffrey Wilke and Canadian entrepreneur Joseph Lubin, Ethereum held the largest ICO at the time in early 2014. A total of 3700 BTC (at the time, 16 million USD) was raised in 12 hours. Aside from the realization that allowing developers to deploy their own tokens on another blockchain was a good idea,[48] they foresaw that the concept of smart contracts, could finally be realized. As such, instead of providing users the ability to use a few predefined operations (e.g. the Namecoin web-domain order or a regular bitcoin transaction), Ethereum allowed developers to store and process virtually any smart contract code on the 'Ethereum Virtual Machine', a decentralized runtime environment, for others to interact with. In other words, developers would no longer have to set up a whole network of nodes, create a consensus mechanism and create a whole new blockchain to create a new decentralized application and token. Instead, they could now quickly code a smart contract and deploy it on Ethereum. This made it vastly easier to build decentralized applications. Ethereum's ICO was an incredible success, and the return on investments for participants exceeded 460128% at the height of its market capitalization.[49] Ethereum made it incredibly easy for other developers to build a dApp and create a token. Most importantly, they made it incredibly easy for those developers to sell their tokens in an ICO.[50] As such, Ethereum quickly became the technical infrastructure for subsequent ICOs, with about an 88% market share.[51] Tokens issued on Ethereum generally opt to use the ERC-20 smart contracting standard, which allows for easy deployment and interoperability of tokens on the Ethereum network. Of course, this has led to an increased amount of such dApps emerging over the last years, such as applications that keep track of what songs someone listens to and automatically distributes royalties to the artists[52], or a browser that awards users with tokens for not running an adblocker, while allowing users to automatically distribute their tokens to content-creators based on the amount of time they have spent consuming their content.[53] To date, over 4676 ICOs have been held on Ethereum.[54] The ICOs held on Ethereum dramatically increased the demand for Ethereum itself. After all, to buy the tokens sold in any ICO that used the ERC-20 standard, one would (generally) only be able to pay in Ethereum. Issuers often only sold this ETH to cover their expenses, and as such, the value of Ethereum rose immensely, along with the ROI of its ICO. The so-called 'altcoin market', or market for all tokens that are not Bitcoin, was for a long time heavily correlated with the price movement of Ethereum, and as Ether's price kept increasing, it

[47] As described by Buterin in 'A prehistory of the Ethereum Protocol' (14 September 2017) https://vitalik.ca/general/2017/09/14/prehistory.html accessed 29 December 2018. See also Buterin's original proposal to Mastercoin https://web.archive.org/web/20150627031414/http://vbuterin.com/ultimatescripting.html accessed 29 December 2018

[48] Vitalik Buterin 'Mastercoin: A Second-Generation Protocol on the Bitcoin Blockchain' (11 April 2013) https://bitcoinmagazine.com/articles/mastercoin-a-second-generation-protocol-on-the-bitcoin-blockchain-1383603310/ accessed 9 December 2018

[49] Calculation based on the ICO price of 0.311 and ETH's highest valuation of $1431.77. Data from https://coinmarketcap.com/currencies/ethereum/ accessed 6 February 2019

[50] Ethereum's official website teaches people to code in Solidity, a programming language specially designed for the Ethereum Virtual Machine. The first thing one learns is how to create and sell a token.

[51] ICOBench ICO Market Analysis (October 2018) https://icobench.com/reports/ICO_Market_Analysis_October_2018.pdf accessed 9 December 2018

[52] E.g. Vezt and Tunetoken

[53] As is the function of the Basic Attention Token in the Brave Browser

[54] Data from ICO Bench. The amount reflects the amount of ICOs listed on ICOBench and might not be an accurate representation of the actual number of successful ICOs. https://icobench.com/stats accurate as of 6 February 2019

dragged the entire market up. This subsequently gave more legitimacy to ICOs in the eyes of the investors, leading to more availability of funds, which in turn attracted more companies to do an ICO. This self-enforcing circle likely played a substantial role in the forming of the ICO bubble which finally deflated in the beginning of 2018.

III. THE ICO MARKET

Since the first use of the Initial Coin Offering as an avenue for early startup financing by the Mastercoin project in 2013, the ICO has seen explosive growth, funding an entirely new industry defined by both potential and hype. From 2016 on, the ICO craze really took off, allowing over 1450 startups to succesfully raise over 28 billion USD in combined funding.[55] One study shows that ICOs on average provide returns of 179% from the ICO price to the first day's opening market price, over a holding period that averages just 16 days. After trading begins, tokens continue to appreciate in price, generating average buy-and-hold abnormal returns of 48% in the first 30 trading days[56] , which can be explained by the dominance of buy–and-hold strategies (also called 'HODLing' in the space).[57] In 2018, the bubble that had formed subsequently burst, resulting in a market decline of about 90% (or 500 billion USD) in the altcoin market at the time of writing.[58] The average funds raised by issuers per (successful) ICO during the third quarter of 2018 was 8.9 million USD and about 6.8 million USD in the fourth quarter, compared to an all-time average of 15.7 million USD.[59] As such, the market for new ICOs seems to have taken smaller hit than the market for existing tokens. This would suggest that the ICO market is, at least for now, not disappearing yet. In this section I will therefore dive into the reasons why token sales are popular under issuers, investors and users alike. I will also provide an overview of the problems that have surfaced in the crypto-market in general (and investors in particular) in the light of regulatory uncertainty and action.

A. BENEFITS

The average amount raised in an ICO is surprisingly high, especially when considering that the vast majority of projects had no revenues, no minimum viable product and no proof of concept at the time of their ICO. To a degree, these valuations can be ascribed to the fact that cryptographic tokens represent an emerging asset-class, to which traditional valuation models cannot easily be applied.[60] However, these valuations might just as convincingly be ascribed to the enormous hype around blockchain technology and the emergence of a very active secondary market for the trade in tokens. After all, one of the traditional drawbacks for investors engaging in the financing of startups in early

[55] Data from Coinschedule https://www.coinschedule.com/stats.html accurate as of 6 February 2019
[56] Hugo Benedetti 'Digital Tulips? Returns to Investors in Initial Coin Offerings' (20 May 2018) https://ssrn.com/abstract=3182169 accessed 9 December 2018
[57] 'HODLING' is a term used in the crypto industry that originated after the (drunk) usage of the term by a Bitcoin investor to indicate his unwillingness to sell his Bitcoin during the Bitcoin crash in 2013. See Gamekyuubi, 'I AM HODLING' (18 December 2013) https://bitcointalk.org/index.php?topic=375643.0 accessed 9 December 2018
[58] Calculated using data from Coinmarketcap, https://coinmarketcap.com/charts/ accurate as of 6 February 2019
[59] ICO Bench ICO Market Quarterly Analysis Q4 2018 (31 January 2019) https://icobench.com/reports/ICO_Market_Quarterly_Analysis_Q4_2018.pdf accessed 6 February 2019
[60] For an overview of token-specific valuation models and explorations of variables to be used in new models, see Karey Bheemaiah and Alexis Collomb, 'Cryptoasset Valuation – Identifying the variables of analysis' (Blockchain Perspectives Joint Research Initiative, October 2018) https://www.louisbachelier.org/wp-content/uploads/2018/10/cryptovaluationreport-v20181016-fv.pdf accessed 9 December 2018

stages, is the lack of liquidity on secondary markets. Indeed, liquidity in convertible instruments and shares sold through private placements is relatively small, as there is only limited marketplaces or exchanges for shares in private companies[61], resulting in investments by angel investors and venture capitalists being largely locked up until a startup is acquired or goes public. Tokens sold in an ICO on the other hand are usually listed on online crypto-token exchanges as soon as the tokens are distributed to investors.

From a startup's perspective, an ICO brings even more significant advantages. For the first time, developers can access global liquidity without having to overcome the many hurdles in the traditional early financing ecosystem. Indeed, the ICO allows developers to bypass the current venture-capital dominated early-finance market by, to some degree, tapping into the crowdfunding market instead. The participation-grade of retail investors in ICOs is extremely high, with recent research suggesting that up to 82% of investors were non-professional investors, investing on their own behalf, without any professional investing background.[62] In the traditional venture route, ticket sizes in early stage financing are too high for retail investors to participate. However, in ICOs one can generally participate in an offering with as much or little money as desired. Entrepreneurs no longer have to go through a highly inefficient process, facing a large amount of obstacles on the way to find investors[63]. The role of intermediaries and the time needed to raise funds is reduced dramatically, which is interesting when taking the perspective of a Coasian economist. Depending on a startup's token design, it is also possible for founders to retain all the equity in their company, leading to tokens being an additional avenue of fundraising that isn't mutually exclusive with equity financing.

While it is easy to solely look at ICOs from a financing perspective, it is important to understand that a token is not meant to be solely used as an investment in the company. Tokens generally give rights to the services, platform or product developed by the issuer. For example, the computational power needed to run Ethereum's Virtual Machine (which allows for the decentralized execution of smart contracts) can only be paid with Ether. Therefore, to do anything on Ethereum, you need to acquire the token. The investment component generally arises due to the limited quantity of tokens that will ever be created. As there is a limited amount of Ether, the value of the token should generally go up as the demand for Ethereum's Virtual Machine increases. As such, investors participating in an ICO are motivated by both the early utility provided by the token and the potential financial upside of the token if/when the demand for the token's underlying utility increases. There is 'dual-motivation' for investors to participate in token sales. This dual motivation is of great importance to provide an additional boost to network effects in the growth of blockchain-based platforms, marketplaces, networks and protocols. Tokens, when properly designed, have the inherent ability to bootstrap the adoption of products, platforms and services.

Widely accepted theories on network effects state that a network's value or utility to a user is positively affected when another user joins and enlarges the network.[64] As such, startups wishing to build products that are dependent on network effects therefore have to overcome a 'chicken-and-egg problem'. There is no utility for a seller on Ebay if the marketplace does not attract a decent amount of

[61] Over the last years, online platforms like SecondMarket (now Nasdaq Private Market), Sharespost and Tsxprivatemakrets have increasingly been providing markets for pre-IPO shares.
[62] Ivona Skultétyová, 'Initial Coin Offerings: Crypto Extravaganza or a Paradigm Shift in Startup Financing?' (2019) Forthcoming
[63] For more on the obstacles and challenges faced by entrepreneurs in getting venture deals, see B Feld and J Mendelson, Venture Deals (3rd edition, Wiley, 2016,) p.31 and further
[64] For more on the amount by which networks increase in value as they grow, see B. Briscoa, A. Odlyzko and B. Tilly 'Metcalfe's law is wrong - communications networks increase in value as they add members-but by how much?' (2006) 43 (7) IEEE J-SAC

buyers, while a marketplace is not attractive to buyers if there aren't many products available. There is little to no value in a network like LinkedIn or Facebook if only a small amount of people use it, and a platform like Wikipedia is useless without contributors.

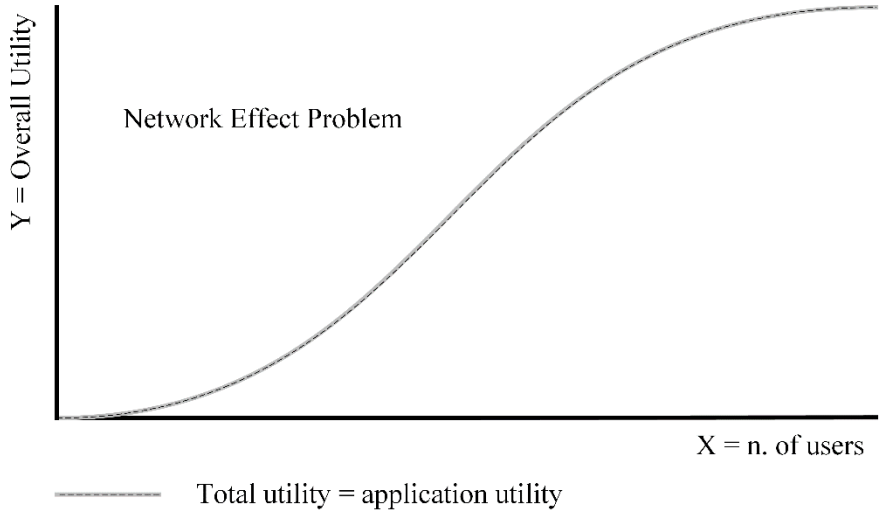

Figure 1: The Network Effect Problem

Similarly, a protocol like Ethereum has no value if it is not broadly used and supported, or does not have any complementary products built on top of it. Whereas the challenges of early network growth are traditionally tackled by various growth hacks and marketing strategies aiming at optimization of visibility and adoption[65], token sales inherently position a business to deal with the challenges presented by network effects. After all, the lack of utility faced by early adopters of token-based marketplaces and networks is compensated by an increased potential of financial upside through the appreciation of the value of tokens. If users are involved very early, there is still a lot of potential for appreciation of their tokens, which compensates for the smaller amount of provided utility.

[65] Geoffrey Moore, 'Crossing the Chasm' (3rd edition, Harper Business Essentials, 2014) 105-129

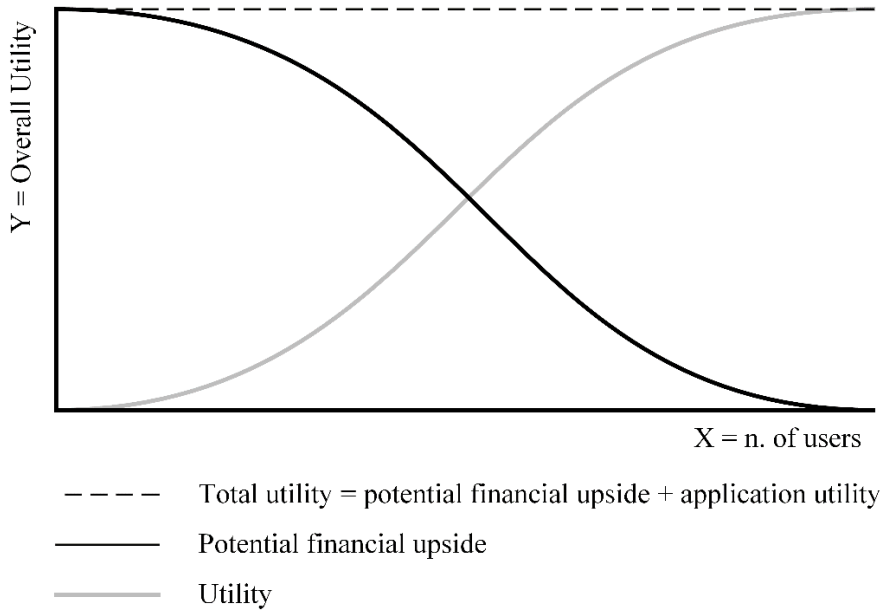

Figure 2: The Token Network Effect

Perhaps the most common strategy by which startups traditionally try to attract a critical mass of users and overcome the chicken-and-egg problem posed by network effects is by continuously operating on losing margins while focusing on user acquisition. Current Silicon-Valley-dominated venture capital wisdom states that, as long as a network's user base keeps growing fast enough, it is okay to lose money for years on end, as more money can be raised. Taken to the extreme, this has resulted in companies going public without ever having made any profits, resulting in difficulties in valuations, and companies potentially running into problems when they finally prove unable to become profitable, despite having a large user base.[66] Even though it is still questionable whether this is a healthy approach from a business perspective, ICOs employ largely the same strategy in a shorter time-frame: crypto-startups raise large amounts of funding, while boosting user growth. In a sense, they go 'public' instantly and, in the process, we see similar difficulties in determining reasonable valuations. Invariably, most of these companies will end up with the same problems that are emerging in the venture capital scene, if not worse.

Even if we would look at the ICO from both a financial and utilitarian perspective, it could be argued that we would still be missing the point. In fact, tokens could be seen as a new business model altogether. In this business model, the incentives of all stakeholders are aligned and the profit motive is flipped upside down as profits are extracted through the appreciation of tokens, instead of by charging users or customers. Any well-designed token network carefully manages the distribution of tokens across all network participants. Issuers, their employees, advisers, users, third-party developers and investors all have perfectly aligned incentives: they want the network to succeed, as it will result in appreciation of the token's value.[67] Indeed, tokens could be an effective, 'stakeholder-centered' solution to the Principal-Agent problem that has proved to be one of the main challenges of traditional corporate governance. By providing all stakeholders with 'skin in the game', as opposed to solely letting founders, investors and early employees participate in the upside of ownership, well-designed

[66] As is the case with, for example, Twitter, Tesla, Netflix and Etsy
[67] Chriss Dixon, 'Crypto Tokens: A Breakthrough in Open Network Design' (1 June 2017) https://medium.com/@cdixon/crypto-tokens-a-breakthrough-in-open-network-design-e600975be2ef accessed 12 December 2018

token distribution models turn all stakeholders, including customers, into principles to some extent. After all, the ICO in its purest form is about the creation of an entirely new business model in which ownership, governance and financial upside is distributed between all stakeholders, who, with aligned interests, work together in pursuit of a common goal: creating value. Although promising, there is a definite lack of research on the fundamental desirability and implications of this newly appearing 'decentralized' business model and its relation to agency problems in corporate governance.

B. DRAWBACKS AND RISKS

While the advantages of ICOs as a new avenue for fundraising as described above have led to substantial growth in ICO funding over 2017, it also sparked an investing frenzy. Valuations of tokens skyrocketed across the board, ICO advisory and marketing firms started hiring celebrity promoters, such as Paris Hilton (LydianCoin), Jamie Foxx (Cobinhood), Floyd Mayweather (Centra), DJ Khaled (Centra)[68] and Snoop Dogg (Ripple) to 'shill' their coins. Due to the ICO hype, it was possible for projects to raise substantial funds, based only on a whitepaper, a website and marketing through social media channels. No actual revenues, working prototypes or even proof of concepts seemed necessary. Most projects in 2017 attracted investors by introducing 'blockchain' in new markets, without a reasonable justification for blockchain use[69] and indeed, 84% of companies doing an ICO in 2017 had no working product, blockchain or even prototype.[70] Of course, where investing frenzies emerge, so do risks for investors, and where bubbles emerge, so do crashes. The ICO frenzy, which appeared in a time of substantial legal uncertainty about the nature of tokens under securities legislation, imposed substantial risks on participating investors. These risks generally result from a lack of access to adequate information, from fraudulent activity, and from the immaturity or failings of market infrastructure and services. While over 70% of ICO funding (by $ volume) to-date went to higher quality projects, one study suggest that some 80% of all ICO projects (by # share) were identified as scams.[71] Meanwhile, exchanges for the exchange of tokens were (and arguably still are) unreliable and prone to hacks[72], pump and dump schemes are rampant[73] and the industry is plagued by other issues, such as phishing[74]. The lack of transparency and regulatory oversight of exchanges raises further concerns about order spoofing, flash trading and other unsavory practices. Moreover, many multi-level-marketing and Ponzi schemes have emerged, the most famous of which was Bitconnect, a project that,

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[68] Class actions have been filed against Floyd Maywheather and DJ Khaled for their role in promoting Centra Tech's tokens. *Centra Tech*. A magistrate judge of the District Court of the Southern District of Florida in a class action suit filed against the founders of Centra Tech found that the tokens issued by Centra constituted an unregistered offer and sale of securities. See the Report and Recommendation on plaintiff's motion for temporary restraining order, asset freeze, document preservationorder, and order to make accounting and other ancillary relief in *Jacob Zowie Thomas Rensel v. Centra Tech* [2018] F.4d No. 17-CV-24500

[69] --, 'EY Research: initial coin offerings (ICOs) (December 2017) https://www.ey.com/Publication/vwLUAssets/ey-research-initial-coin-offerings-icos/$File/ey-research-initial-coin-offerings-icos.pdf accessed 12 December 2018 11

[70] ibid 15-16

[71] Sherwin Dowlat and Michael Hodapp, 'Crypto Market Coverage Initiation: Network Creation' (Satis Group Crypto Research, 11 July 2018) 1 https://research.bloomberg.com/pub/res/d28giW28tf6G7T_Wr77aU0gDgFQ accessed 12 December 2018

[72] As exemplified by the hacks of, for example, Mt. Gox, BTC-E, Bitfinex, Cryptopia, Youbit, Bithump, Coinrail, Zaif and Coincheck.

[73] Pump and Dump groups often organize themselves around chats on popular chat application Telegram. One study analysed no less than 220 pump-and-dump activities in 4 months organised in such chats. See Jiahua Xu, Benjamin Livshits, 'The Anatomy of a Cryptocurrency Pump-and-Dump Scheme' (2018) q-fin.TR https://arxiv.org/abs/1811.10109 accessed 12 December 2018

[74] For a constantly overview updated overview of active scams, see https://etherscamdb.info/scams/ 5

although it promised an impossible 1% daily compounded interest, still had a total market capitalization of over a billion dollar, before prices crashed by 92% on January 17, 2018.[75]

Although it would seem that these risks are obvious in the eyes of an informed investor, the space nevertheless attracted large amounts of retail investors, who were willing to assume the aforementioned risks. This can be explained by a number of factors. Participating investors were attracted by abnormally high returns, best exemplified by projects like Ethereum, while lacking the financial sophistication, knowledge and experience required to evaluate investment opportunities.[76] Indeed, results from qualitative consumer research by the UK's Financial Conduct Authority (FCA) suggest that many respondents cited FOMO, or the fear of missing out, and the influence from social media as reasons for investing, while participants often overestimated their knowledge of crypto-assets.[77] In this light, ICOs can be seen as a realization of fears expressed by some regulators and academics that entrepreneurs may take advantage of the less sophisticated crowd, by strategically avoiding to raise capital from sophisticated investors.[78] The novelty of blockchain and tokens, as well as the complexity of the underlying distributed ledger technology and the lack of suitable information disclosures about tokens and their risks moreover magnify the information asymmetries between issuers and investors. One study found that almost 83% of ICO issuers provided no information at all as to the regulatory status of the ICO.[79] The fact that investors were unfazed by the risks mentioned and the lack of regulatory clarity is less surprising than it would seem at first glance. After all, the crypto-space is rooted in a foundation of cypherpunk philosophy[80]. Bitcoin itself was, at least in part, founded as a response to regulatory intervention to save banks in the wake of the 2008 crisis.[81] It was designed in order to be resilient to government censorship and to escape the influence of central banks, politics and regulators on fiat currencies.[82] The crypto-space has always been dominated by libertarian ideals and ICOs were for a period seen by the industry as a way to raise money outside of the constraints of the legal system. Of course, such idealistic ideas do not discharge issuers from their responsibilities under

[75] Data from Coinmarketcap https://coinmarketcap.com/currencies/bitconnect/ accessed 12 December 2018

[76] John Freear, Jeffrey E. Sohl and William Wetzel, 'Angels and non-angels: Are there differences?' [2018] 9 (2) J. Bus. Ventur. 109-123

[77] FCA Cryptoassets Taskforce: Final Report (October 2018) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf accessed 12 December 2018

[78] See e.g. Thomas Lee Hazen 'Crowdfunding or fraudfunding? Social networks and the securities laws—why the specially tailored exemption must be conditioned on meaningful disclosure' [2011] 90 N.C. L. Rev. 1735; or 1735–1770 or Zachory Griffin, 'Crowdfunding: fleecing the American masses.' [2013] 4 Case W. Res. J.L. Tech. & Internet 375

[79] Dirk Zetsche, Ross Buckley, Douglas Arner and Linus Föhr, 'The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators' 63 (2) Harv. Int. Law J. Available at SSRN: https://ssrn.com/abstract=3072298

[80] Cypherpunk's were/are activists advocating for the widespread usage of cryptography and privacy-enhancing technologies, which were originally organized around the cypherpunk's electronic mailing list. The cypherpunk community has played a vital role in both advancements in cryptography and electronic currencies, including Bitcoin and its precursors Hashcash, Bitgold and b-money. See for Wei Dao, 'B-money' (1998) http://www.weidai.com/bmoney.txt, Adam Back, 'Hashcash - A Denial of Service Counter-Measure' (1 August 2002) http://www.hashcash.org/papers/hashcash.pdf, Nick Szabo, 'Secure Property Titles with Owner Authority' (1998) https://nakamotoinstitute.org/secure-property-titles/ and Nick Szabo, 'Bit Gold' https://nakamotoinstitute.org/bit-gold/ all accessed 12 December 2018

[81] Although not mentioned as underlying ratio for Bitcoin in the whitepaper, Bitcoin's first, or 'genesis' block, has the text '03/Jan/2009 Chancellor on brink of second bailout for banks' hidden in the 'coinbase parameter', which corresponds with the overall cypherpunk philosophy that state intervention should be minimalized.

[82] Satoshi Nakamoto's philosophy on government censorship, politics and central banking can, in part, be deduced from early interactions between him and other Bitcoin developers. For a 'full' archive on Nakamoto's writings, see https://satoshi.nakamotoinstitute.org/

the law. However, the idealistic roots of the industry was reflected in the attitude of investors, who were not scared off by the range of information asymmetries, dependence on irrationality, lack of legal recourse and possible systemic risks.[83] One inquiry reveals that many ICOs failed even to promise that they would protect investors against insider self-dealing.[84]

Since the beginning of 2018, when the market hit its peak, the total market capitalization of all crypto-tokens took a major hit, with the total market capitalization of altcoins declining over 90% from the peak of the ICO bubble.[85] Meanwhile, only 13% of 2017's ICOs have delivered any meaningful progress towards development of their working products[86], while 46% of ICOs issued in 2017 have already failed.[87] Of those projects that do have working products, many are effectively abandoning their ICO investors by de-emphasizing the role of their tokens.[88] Increasingly, issuers of both scam-coins and other projects are getting sued for the losses assumed by investors in the form of class actions and regulatory enforcement actions.[89] None of this should be much of a surprise. Securities laws initially emerged in the US as a response from regulators to the rampant financial fraud at what was still a mostly unregulated Wall Street.[90] In response, the Securities Act and the Securities Exchange act were adopted, imposing regulatory requirements, such as the approval and registration of information disclosures, annual financial reporting requirements and other disclosure requirements regarding insider trading to prevent fraud. These laws were enacted to prevent the rampant fraud that emerged when markets were seen as a 'wild west'. Over the last years, history seems to have been repeating itself, as crypto-markets and ICOs were often seen by those of a more idealistic, naive or libertarian nature as a new financial wild west - making the (re)emergence of the issues that have surfaced in the crypto markets, and the related risks for investors described above, only too logical. However, whereas early ICOs sought largely to avoid legal and regulatory considerations, there has been an increasing involvement of major legal and advisory firms in the area in recent months, including banks involved in traditional capital raising and asset management.[91]

IV. TOKEN TAXONOMY

The usage of the term ICO for almost all token sales might suggest that the instruments offered, and the process through which they are offered are highly standardized. However, the nature of cryptographic tokens is nowhere near homogeneous. So far, I have used the term 'token' as an umbrella

[83] Zetsche (n. 79) 15-19
[84] Shaanan Cohney, David Hoffman, Jeremy Sklaroff, David Wishnick, 'Coin-Operated Capitalism' (1019) Colum. L. Rev (forthcoming) available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3215345
[85] Calculated using data from Coinmarketcap, https://coinmarketcap.com/charts/ accurate as of 6 February 2019
[86] EY Research (n. 69) 6
[87] Data originally from 'TokenData', 2018, https://www.tokendata.io/ printed in Kai Sedgwick 'ICOs are even riskier than you think' (Bitcoin News, 2018) https://news.bitcoin.com/46-last-years-icos-failed-already accessed 13 December 2018
[88] EY Research (n. 69) 7
[89] See, for example Paycoin, RECoin, Centra Tech, DRCcoin, Tezos and Onecoin. For an overview of SEC enforcement actions, see https://www.sec.gov/spotlight/cybersecurity-enforcement-actions accessed 13 December 2018
[90] The former chief accountant of the S.E.C., Lynn Turner, told the New York Times that fraud helped cause the Great Depression: "The amount of gimmickry and outright fraud dwarfs any period since the early 1970's, when major accounting scams like Equity Funding surfaced, and the 1920's, when rampant fraud helped cause the crash of 1929 and led to the creation of the S.E.C." See Alex Berenson, 'ENRON'S COLLAPSE: THE ACCOUNTANTS; Watching The Firms That Watch The Books' (5 December 2001) https://www.nytimes.com/2001/12/05/business/enron-s-collapse-the-accountants-watching-the-firms-that-watch-the-books.html accessed 13 December 2018
[91] Zetsche (n. 79) 2

term for any digital representation of an interest, which may be of perceived or inherent value, or a representation of rights to receive a benefit or perform specific functions, which is reliant on cryptography and distributed ledger technology for its accounting and security. Of course, this term is extremely broad. For example, a token could merely give a right to use the underlying blockchain for transactions and play a role in the facilitation of consensus of a blockchain, like is the case with cryptocurrencies. However, a token could also be used for access to an application, much like an API-key. Tokens can give their holders the right to vote on changes to the protocol or on how funds by the issuer after an ICO, but they can also give the right to a proportional share of the equity or revenues of the issuing company. In fact, a token could be structured to resemble a currency, a membership, a coupon or ticket, a prepayment for services, a poker chip, a share, a bond, an option or pretty much anything in between. Currently, we are witnessing the emergence of a new trend referred to as 'tokenization', in which tokens represent a partial stake of ownership of traditional assets or other economic rights. Due to the heterogeneous nature of tokens, it makes sense to try to further categorize tokens. Terminology relating to cryptographic tokens can be confusing. While some terminology is often (wrongfully) used interchangeably, other terms are interpreted differently across jurisdictions, academia and the industry itself. A shared understanding of the applicable nomenclature is required to facilitate the discussion on and analysis of the legal nature of tokens in this article. In this section I will therefore provide a token taxonomy framework, broadly based on the token's characteristics, that aims to encompass the wide variety of tokens that has emerged so far.

There are different ways to approach token categorization based on a token's characteristics. One approach would be to put emphasis on the technological aspects of tokens, while another would be to focus on the rights the token represents. If the emphasis is on the technological aspects of tokens, it makes sense to examine the way in which exercise of rights are provided by the token. Using such an approach, Wright and Rohr, in their influential paper 'Blockchain-based Token Sales' make a distinction between 'protocol tokens' and 'app tokens'.[92] In relation to blockchains, the term protocol is typically used to refer to the set of rules that enables effective communication between nodes on for example the formation of consensus and the way transactions occur. In this sense of the term, there is one protocol per blockchain and one native token per protocol.[93] In short, protocol tokens are tokens which play a role in the consensus mechanism of their own blockchain and unlock the blockchain's utility through payments to agents which participate in consensus making. App tokens on the other hand are tokens which are used to unlock the utility of an application which is often built on top of another blockchain protocol. Using this distinction, tokens like Bitcoin and Ethereum are protocol tokens, as the utility of both protocols is unlocked through payments to miners, while all tokens of applications built on top of blockchain protocols such as Ethereum are considered app tokens, which the authors interchangeably refer to as utility tokens. While this distinction is helpful in some contexts, and will occasionally be used throughout this article, it presents its own problems. Bitcoin's utility is

[92] Aaron Wright, Jonathan Rohr, 'Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets' (Cardozo Legal Studies Research Paper No. 527, 2017) available at SSNR: https://ssrn.com/abstract=3048104

[93] An interesting aspect of protocol tokens is that they allow for monetization of protocols. Historically, protocols have mainly emerged out of the efforts of small groups of individuals or research projects that simply tried something, which subsequently caught on. Even though these protocols have created immense value for our economy, it has never been possible for researchers to monetize protocols. Currently, almost all digital value is therefore currently captured on the level above the protocol: the application layer (i.e. FAANG stocks). This has resulted in our data being captured in the layer of applications spawned on top of the internet's protocols. Cryptographic protocol tokens have the potential to change this dynamic, as profits can now originate out of the use of a protocol, through appreciation of the protocol's token.

defined by its functioning as a means of exchange, as it enables (mostly) regular transactions from A to B, while Ethereum's functionality extends far further through Turing-complete smart contracts. Because the utility of both of these systems is unlocked at the protocol level, and because both tokens play a role in their system's consensus mechanisms, both are considered protocol tokens. However, this distinction ignores the major differences between the two protocols in terms of utility. Another difficulty arises as a result of how protocols are layered on top of each other. The '0x' and 'Aragon' tokens are issued on top of Ethereum, but function as protocols for other dApps and DAO's. As such, they could be classified as both an app coin or utility token on top of Ethereum and a protocol for other tokens, depending on your interpretation of these terms. A dApp built on Ethereum, requiring usage of its own token to unlock the dApp's utility could also be built on its own (native) blockchain protocol. Two tokens with exactly the same utility would thus be considered to fall under two different categories, depending on the form in which the utility is unlocked. A mere distinction between protocol tokens and app coins furthermore falls short of being able to cover all the different token designs that are emerging.

Therefore, a more precise categorization framework is required for the purposes of legal discussion and analysis. Such a nomenclature framework should approach categorization of tokens based on what the token represents, what it is used for and what rights the token gives to its user - not on the technological 'form' of the token. After all, legal analysis into the nature of a financial instrument is in most jurisdictions based on the economic reality of the instrument, regardless of its form. The token taxonomy framework suggested below puts more emphasis on the rights and utility granted by the token itself, borrowing heavily from the overall terminology that has appeared in the industry, as well as nomenclature frameworks put forth by others[94], with some minor variations. It includes the three main groups of tokens that are often distinguished under varying names: payment tokens, utility tokens and security tokens. For each, a concise definition will be provided, and an attempt will be made to categorize them into subsections.

A. PAYMENT TOKENS

A first category group of tokens consists of tokens that are largely often interchangeably referred to as 'payment tokens', 'exchange tokens', 'coins' , 'protocol tokens' or 'cryptocurrencies'. The general understanding is that this type of token is intended to function primarily as a means of payment, which can be freely transferred in a peer-to-peer fashion on a distributed ledger technology or related

[94] See for example, the frameworks of Finma, the European Securities and Markets Authority, 'Own Initiative Report on Initial Coin Offerings and Crypto-Assets' (19 October 2018) https://www.esma.europa.eu/sites/default/files/library/esma22-106-1338_smsg_advice_-_report_on_icos_and_crypto-assets.pdf, Zetsche (n. 79), European Banking Authority, 'Report with advice for the European Commission' (9 January 2019) https://eba.europa.eu/documents/10180/2545547/EBA+Report+on+crypto+assets.pdf, Thomas Euler, 'The Token Classification Framework: A multi-dimensional tool for understanding and classifying crypto tokens.' (18 January 2018) http://www.untitled-inc.com/the-token-classification-framework-a-multi-dimensional-tool-for-understanding-and-classifying-crypto-tokens/ Monetary Authority of Singapore, 'A guide to Digital Token Offerings' http://www.mas.gov.sg/~/media/MAS/News%20and%20Publications/Monographs%20and%20Information%20Papers/Guide%20to%20Digital%20Token%20Offerings%20last%20updated%20on%2030%20Nov.pdf FINMA, 'Guidelines for enquiries regarding the regulatory framework for initial coin offerings (ICOs) https://www.finma.ch/en/~/media/finma/dokumente/dokumentencenter/myfinma/1bewilligung/fintech/wegleitung-ico.pdf?la=en Philipp Hacker and Dr. Chris Thomale, LL.M. 'Crypto-Securities Regulation: ICOs, Token Sales and Cryptocurrencies under EU Financial Law' (2017) eCFR (forthcoming) available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3075820

technology, without usage of an intermediary or geographic limitation. This category of tokens aims to resemble money in its functions, as a means of exchange, a unit of account and as a store of value.

I adhere to the term 'payment tokens', as it is the most precise terminology. As the name implies the distinguishing characteristic of this category of tokens is the functioning of the token as a means of exchange - the most crucial component of this category of tokens.[95] Of course, it should be noted that a token's mere functioning as a means of payment does not make it a payment token. Instead, the medium of exchange element should be the token's primary or sole function, while the token should also always function as a reliable unit of account. To fall under this category, it is not required that the token is able to perfectly maintain purchasing power for a future date, as volatility is inherent to (almost) any token. Nor is it always required that the token is mostly used as a medium of exchange; if a payment token is, by transaction volume primarily used for speculative purposes instead of as a means of payment, the categorization of the token does not necessarily change. After all, it is fairly safe to assume that all cryptocurrencies, including Bitcoin, are currently mostly used for their trading and investment aspects, although quantitative research as to the truthfulness of this statement presents its difficulties.[96] It is also not required that the functioning of the token as a unit of account and medium of exchange are a payment token's only technical purpose: the usage of a payment token in its underlying distributed ledger's consensus mechanism or governance system does not result in a different categorization. What is required is the functioning of the token as a digital representation of value with its primary aim being its functioning as a medium of exchange and unit of account, being accepted by natural or legal persons as a means of payment, and being able to be transferred, stored or traded electronically. Payment tokens can in turn be further divided into two subcategories: cryptocurrencies and stable coins.

1. Cryptocurrencies

Cryptocurrencies are payment tokens which, like all payment tokens, function primarily as a means of payment, which can be freely transferred in a peer-to-peer fashion on a distributed ledger technology, without usage of an intermediary or geographic limitation. Cryptocurrencies are usually made scarce or have a deflationary nature. To be considered a cryptocurrency, the token cannot be issued by a central bank or a public authority, which excludes state-issued digital currencies, such as the (proposed) Venezuelan Petromoneda.[6] Cryptocurrencies are the first token design to emerge, with Satoshi Nakamoto's Bitcoin as a front-runner. Other famous tokens like Decred, Litecoin, Monero and Zcash also fall in this category. Each of these tokens has as its primary aim to be able to function as a reliable means of exchange and unit of account. Monero and Zcash further distinguish themselves by their focus on private transactions. Such cryptocurrencies are also often referred to as 'privacy coins'. At the same time, all of the examples given have a secondary function which has to do with the role of the token in the distributed ledger itself. All of them function as the 'carrot and stick' of the consensus mechanism: 'miners' in Proof-of-Work, or 'stakers' in Proof-of-Stake based algorithms are provided

[95] The terms 'cryptocurrency' and 'protocol token' don't do this category justice, as there are tokens that function primarily as a means of payment which can't be classified under either of these terms. The term coin is often interpreted to mean the same as cryptocurrency. Meanwhile, the term 'exchange token' is confusing as this might also be interpreted as a token with the capability to be listed on an exchange, or a token which can be freely transferred, which would include far more tokens than the category tries to encompass.

[96] It is fairly impossible to do quantitative analysis on this without a representative dataset of exchanges who keep track of the amount of investors who qualify as 'accredited' or 'qualified investors' in the US and EU respectively.

with economic incentives to add blocks to the network, thus updating the state of the network (i.e. executing transactions) and providing for its security at the same time. Decred utilizes both PoW and PoS and additionally implemented a form of on-chain token-based governance, in which token holders can stake their tokens to vote on new protocol developments. As this element of governance is clearly a feature that merely provides for future direction and the primary intended utility of Decred is its functioning as a means of exchange, this does not alter its classification as a cryptocurrency.

2. Stable coins

A different type of payment tokens can be found in a more recently developed concept called stable coins. As its name suggests, these tokens are designed to maintain a stable value. This is usually achieved by backing the token up with other assets. The archetype design of such 'collateralized' stable coins is a basic cryptographic representation of a real-world, stable currency. The Tether and Gemini Coin are examples of coins that aim to maintain a 1-to-1 peg with the dollar. In both cases, the issuer of the stable coin sells one stable coin per dollar, while maintaining a full reserve of the funds used to acquire the coin. Such 'fully-backed' stable coins are in essence an IOU on the issuer. A second subcategory of collateralized stable coin projects, aims to disintermediate the issuance of stable coins by introducing complex collateralization systems and crypto-economic incentives to stabilize their token. The biggest disintermediated collateralized stable coin is MakerDAO's successful DAI token. Instead of being centrally issued and 100% collaterlized, smart contracts take care of the issuance and re-sale of DAI tokens, relying on crypto-economic incentives, collateralization with ETH, price feeds and a separate token for the governance of collateral and a 'last-resort' stabilization mechanism for when the price of ETH tanks. Other 'collateralized' stable coin projects aim to stabilize against of a broader basket of assets, commodities, currencies and bonds through broad collateralization. A final category of stable coins consists of non-collateralized stable coins, such as Basis or CarbonUSD. Projects falling in this category try to stabilize the value of their token to a fiat currency through (automatic) fiscal or monetary purpose, by for example inflating and deflating the coin's supply. Whether such methods will prove economically feasible is questionable.

B. UTILITY TOKENS

A second category of tokens is the 'utility token'. A utility token is a token that is often used as a (or as the only) means of (discounted) payment for, or access to, a specific application that is built on top of an existing blockchain protocol. In other words, utility tokens provide their acquirers with some sort of 'utility' or consumption rights, e.g., the ability to use the token to access or buy some of the services/products that the ecosystem for which the token is built, offers or aims to offer. Utility tokens are usually sold in a token sale, often based on Ethereum. They are generally based on the ERC-20 standard, which is a set of technical standards that defines a number of standardized functions and events that a token's underlying smart contract should have to ensure a large degree of interoperability with tools, wallets and applications across the Ethereum ecosystem. The (bundle of) smart contract(s) which implement these functions mainly keep(s) track of the ownership of tokens, sets the total supply of tokens to be created and contain(s) some rules under which they can be transferred.

In the space of utility tokens, many variations in terms of design exist. One could argue that the purest form of utility token is a token which can *only* be used to unlock the utility of its related application, without being transferable. In practice however, such a limited 'coupon-like' design rarely occurs. Still, depending on the design of the token, a utility token can sometimes be compared to, for example, (tradeable) API keys, memberships or poker chips. In some cases, utility tokens (additionally) provide their holders with governance rights. When utility tokens are sold before the launch of any actual

utility-providing platform or service, they are referred to as 'pre-utility' tokens. As explained earlier, the lack of early utility is compensated by the increased potential for financial upside in case a utility token is successful. High-profile examples of utility tokens are Filecoin, Golem, 0x, Civic, Basic Attention Token (BAT), Augur, Golem, Status and Factom.

For most utility tokens, a predefined amount of tokens is created during the ICO. Moreover, the only way to access the utility (or pay for the goods or services) of the blockchain network or decentralized application, is through the issuer's own token. If that is the case, and the price is quoted in that token instead of in an amount of fiat currency, then whoever supplies the utility, goods or services on the issuer's network (which is not always necessarily the issuer itself) can dynamically price his utility, goods or services. After all, an increased demand for the supplied utility of the entire network should lead to an increased demand for the issuer's token. In essence, each issuer is creating their own form of money to be used within its system. Whether this is desirable from a consumer perspective is highly questionable. Because of the artificially created scarcity of tokens using the ERC-20 standard, the value of a utility token is however not limited to a function of the network's total economic value in terms of utility and the amount by the amount of tokens. Aside from the current utility, any expected utility of, and demand for, the token in the future will be priced into a token's valuation.

During the ICO, utility tokens issuers retain an allocation of tokens for future funding possibilities and the extraction of profits through appreciation of the token's value. Meanwhile, all stakeholders, usually including the issuers' employees, all benefit from value appreciation as well. A utility token issuer's optimal strategy (in the short term) is therefore to aim for appreciation of its token's value, as the issuer and connected employees, investors and even customers all retain tokens and maximization of their holdings is in everyone's economic self-interest. This could of course be achieved by building great utility in order to increase the demand for the token. However, when a large number of speculators enters the market due to the promise or possibility of extraordinary financial gains, the optimal strategy for utility token issuers is to create the appearance of a successful network, instead of actually creating a successful network. After all, the future demand for any expected utility is priced into a token's valuation due to the scarcity of the token. The issuer's emphasis therefore quickly shifts to marketing and the generation of positive news, by forming and announcing new partnerships, overpromising features and getting tokens listed on as many exchanges as possible. In a market where a majority of tokens is based on this model, the market naturally evolves into a race to give the illusion of success. For speculators and users, the information asymmetries that are in play due to the lack of applicability of - or compliance to - securities regimes, make it difficult to make a distinction between a successful network and the illusion thereof. Moreover, by holding allocations of a certain token these speculators and users are themselves incentivized to magnify the semblance of success of that token, whether they are aware of the illusionary nature thereof or not, to attract new speculators. As such, a market emerges that very much resembles one gigantic multi-level-marketing scheme, which helps explain why the market capitalization of the tokens of a company like Augur reached almost 1.4 billion USD at the height of the bubble, while not even having launched any utility yet. At the moment of writing, Augur has an average of about 30 users a day[97], while still having a market cap of 143 million USD.[98] It should be mentioned that the analogy to multi-level-marketing schemes is not only confined to utility tokens, but can also be applied to cryptocurrencies and some security tokens, albeit to a lesser degree.

In the long run, such a market is not sustainable. As we have seen, a bubble emerges. When not enough new speculators can be attracted anymore, this bubble inevitably pops, as has happened in 2018.

[97] Data from Dappradar, https://dappradar.com/app/673/augur accurate as of 7 February 2019
[98] Data from Coinmarketcap, https://coinmarketcap.com/currencies/augur/ accurate as of 7 February 2019

Through proper token design and implementing a number of measures, it is of course possible to create utility tokens which do not fall into the multi-level-marketing trap. An issuer wishing to do so should focus on maximizing the utility of the token, while downplaying the token's investment aspects. Aside from ensuring that the issuer's token-based system has enough utility upon launch of the ICO, it could for example include lock-up periods for investors that participated in the private sale. Private sales are usually held before an ICO to allow early investors to buy larger proportions of (future) tokens with a discount, provided in return for the increased risk assumed by these investors. Vesting periods or performance based compensation in the form of tokens could also be used to incentivize employees and founders to focus on long-term goals. If an issuer really wanted to create a token that is bought for its utility instead of creating it to raise as much money as possible, he could additionally require the token to be used on the underlying system before becoming tradeable. Another measure that could be introduced is the implementation of a defined maximum allocation of tokens per investor during the ICO, which does not surpass the amount of tokens that the average user would realistically use. To do so, strong know-your-customer processes should be in place to reduce the risk of Sybil attacks.[99] An issuer could also require the user to stake a certain amount of tokens, thereby locking them up, in order to continuously make use of the system. A more extreme measure would be to require the token to be used within a certain time-frame, failure of which resulting in the token being destroyed or automatically sold. Finally, an issuer could make it impossible for peer-to-peer transfers to occur outside of the functionality of its own system and not listing the token on the secondary market.

C. SECURITY TOKENS

Security tokens, or investment tokens, differ from utility tokens and payment tokens in that they provide holders with economic rights. Such economic rights could for example take the shape of partial equity-ownership in the issuing entity, dividend rights, revenue rights or rights to a part of the transaction costs on the network or (fractional) ownership of real-world assets. As such, security tokens can provide the same sort of utility as cryptocurrencies or utility, with additional economic rights provided to the token holder.

Using the definition of security tokens adhered to in this nomenclature framework, we can observe that there are a number of self-proclaimed utility tokens, such as NEO and the Binance Coin, that would actually be characterized as security tokens. Respectively, these tokens are used to unlock and pay for the utility of NEO's smart contracting virtual machine and to use them in order to get discounts on trading fees on the Binance exchange. However, these, and many other self-proclaimed utility tokens, sometimes provide some form of economic interest to token holders. Indeed, NEO provides its token holders dividends in the form of another token by the name of GAS, while Binance uses a percentage of the transaction costs paid in BNB to buy back coins and 'burn' or destroy them. Although Binance's model is more comparable to a share repurchase than a dividend, the economic reality is de-facto quite similar, as a decrease in supply should lead to an increase in the value of BNB tokens. As the burning of tokens has been promised since Binance's ICO and has been built into the tokens and programmed into the systems underlying smart contracts, we cannot speak of an incidental buy-back by the issuer, but rather as a built-in functionality of the token. In such a model, a token falls under the definition of security tokens maintained in the framework detailed in this section.

[99] A sybil attack is an attack where the attacker forges multiple identities in peer-to-peer networks, usually to fool some kind of reputation system. See John Douceur, 'The Sybil Attack' (Microsoft Research, 2002). https://www.freehaven.net/anonbib/cache/sybil.pdf accessed 13 December 2018

Why many token issuers have opted to self-classify their token as a utility token (even when, aside from the provided utility, economic rights are provided to the token holder) can be explained by the systemic misunderstanding of applicable securities laws in the eyes of issuers. For some reason, many token issuers seem to have been under the impression that mere classification as a utility token would protect them from the grasp of securities regimes. However, with an increasing amount of litigation and guidance by legislators worldwide, this seems to be changing. More recently, issuers are increasingly opting to self-classify as a security token, while focusing their efforts on compliance with securities regimes, either through the issuance of a prospectus or, more commonly, by usage of exemptions under the applicable securities regimes.

There are many variations in terms of the design of security tokens. The overarching identifying characteristic of all these designs is that a security token provides some sort of economic rights to the investor. Broadly speaking, we can distinguish four different types of security tokens: profit/revenue sharing tokens, utility-security hybrids, tokenized traditional assets and investment vehicle tokens.

1. Profit/revenue sharing tokens

The first category of tokens encompasses all tokens that solely exist to distribute revenues or profits across token holders. As such, these tokens can best be seen as contractual IOUs that are capable of being traded. The bearer of the tokens is automatically the recipient of whatever share of revenue or profits is distributed by the issuer. Such distributions often occur in the same token. The issuer either retains a portion of tokens to be able to do so easily, or alternatively buys the tokens required on the secondary market. An alternative form of distribution exists where the issuer, instead of rewarding token holders with tokens, burns (destroys) portions of its own holdings.

2. Utility/payment/security token hybrids

Utility-security hybrids are tokens such as NEO and BNB, which are designed to have elements of both utility tokens and security tokens. At the time of writing, the utility-security token is the most common form of security tokens. They are interesting as they combine elements of more traditional financial instruments with characteristics of utility tokens. By doing so, one can benefit from the advantages of ICOs as described in section III of this article, such as broad stakeholder incentive alignment and the bootstrapping of network effects, while putting more emphasis on long-term success, instead of the short-term appearance thereof. Broadly speaking, security tokens are increasingly seen as a better alternative to utility tokens. Whereas the value of utility tokens is, as described above, often driven by the appearance of success, a security token provides a form of economic rights which is dependent on the actual success of the issuer or of the token's utility. As a result, the focus of issuers is more geared towards long-term success instead of a short term illusion thereof, as the value of security tokens is additionally defined by the in-built expected return on investment based on the long-term success of the company. Another factor which enhances this long-term view emerges as a result of the security token issuer's compliance to securities regimes and the usage of exemptions to prospectus requirements. Some of these exemptions, for example, impose 'lock-up' periods during which tokens cannot be sold by investors, while others require the disclosure of material financial information, allowing investors to make more informed decisions. An additional interesting aspect of utility-security hybrids is the programmability that can be introduced to tokenized traditional assets. Indeed, elements of utility can be given to, for example, shares or bonds. One could imagine the usage of a share to gain access to a certain service only available for shareholders, or in-built discounts on services for shareholders. Of course, there are complexities involved with designing such tokens as the restrictions imposed by corporate laws of some jurisdictions are likely to make such innovations difficult.

Payment-security token hybrids are tokens which borrow elements of both payment tokens and security tokens. One could for example imagine a cryptocurrency which pays out transaction fees across all token holders. With hybrid tokens, many variations in design are possible. After all, one could even create utility-payment-security tokens with characteristics of all three main categories. As will become apparent during the legal analysis of the nature of tokens under securities laws of the EU and US, it is more appropriate to hybrid tokens under the umbrella of security tokens than under any of the other main categories of tokens. After all, the term 'security' is in many jurisdictions pivotal for the application of securities laws, possibly resulting in substantial legal burdens for issuers in terms of imposed compliance requirements. Opting to classify the utility-security hybrid under the umbrella of security tokens better reflects the possibility that such tokens can fall within the grasp of securities regimes, especially when considering the common misconception that utility tokens are somehow excluded hereof. Of course, classification as a (subcategory of) security tokens under the token taxonomy framework proposed in this section does not necessarily mean that a token is a security under securities laws.

3. Traditional asset tokens

Security tokens could also be designed to literally represent bearer bonds, shares, assets or derivatives. This is often referred to as 'tokenization': the process of registering and administering traditional assets on a distributed ledger technology. Doing so can potentially improve the ease of administration and bring efficiencies in terms of the clearing and settlement process of traditional securities. Clearing, settlement and custody is all handled by the blockchain, potentially eliminating intermediaries. In this area we can distinguish between traditional asset tokens issued on permissioned ledgers used by the traditional finance ecosystem and the security tokens issued on public, permissionless blockchains. In permissioned blockchains, read and write permissions are only provided to a handful of parties, whereas permissionless blockchains allow everyone to freely join the network, and create their own token. A number of financial institutions and consortia are currently experimenting with implementations of permissioned distributed ledger technologies for the administration, clearance and settlement of traditional assets, such as equities, bonds and derivatives.[100] To encourage innovation in this area and allow the usage of such implementations, a number of jurisdictions have changed laws to make them possible.[101]

On the permissionless end, we can observe that platforms like Ethereum are well-suited for deployment of tokenized traditional assets, although, at the time of writing, the security token industry is still in its infancy. The infrastructure is still being created, as an increasing amount of security token issuance platforms[102] and security token exchanges[103]is emerging. An increasing amount of security token offerings (STOs) of traditional asset tokens are being held on this infrastructure.[104] Tokens are often designed to represent ownership of equity or depository receipts. An advantage of such equity tokens

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[100] Examples of consortia of financial institutions experimenting with the use of DLT for securities clearance and settlement include Corda, the Ethereum Enterprise and R3, to which a substantial amount of big banks are members.

[101] The state of Delaware has, for example, passed a bill allowing for the use of DLT as securities administration infrastructure. See Senate Bill 69, Act to amend Title 8 of the Delaware Code relating to the general corporation law, Signed 7/21/17. Available at: https://legis.delaware.gov/BillDetail?legislationId=25730

[102] Examples include Tokeny, Tokensoft, Polymath, Harbor, Securitize, Swarm and Securrency.

[103] Examples include Openfinance, tZero, Bancor and recent efforts by Coinbase, the Gibraltar Stock Exchange, Australian Securities Exchange, the Malta Stock Exchange and the SIX Swiss Exchange and Coinbase to set up token-specific exchanges.

[104] For a list of STOs, see e.g. https://stoscope.com/ accessed 9 December 2019

is that certain compliance elements can be automated.[105] In the tokens' underlying smart contracts, one can for example automate necessary permissions to transfer or buy a security token based on information by trusted KYC-providers. Another often mentioned advantage of the tokenization of traditional assets is the supposed increase in liquidity due to easier access for investors globally. While there is as of yet no evidence that this is indeed the case, the argument is based on the relatively high liquidity in the secondary market for utility tokens. As security token offerings (or STOs) usually provide investors with the required information to make more informed decisions, regulatory certainty and more investor protection, they are seen by many as a good development when compared to ICOs. The additional information provided to investors could, in the aftermath of the ICO bubble, also lead to a situation where only companies with a decent financial track record are able to raise money. After all, security tokens enable the application of more precise valuation models as they closer resemble traditional securities. An argument can even be made that Security Token Offerings are not very different from traditional securities at all, with the main difference being the underlying issuance, trading and settlement infrastructure. Of course, there is truth to this. However, the STO market does inherit some characteristics of the ICO market that precedes it: they are usually used as a form of fundraising by very innovative companies, trying to raise more money than they would get from angle investors or venture capital firms.

Interesting progress in this area is also made by platforms such as SingularDTV. This 'blockchain entertainment studio' recently launched Tokit, a crowdfunding platform which lets content creators tokenize and sell intellectual property or (related) royalty streams to investors.[106] Another interesting example is Maecenas, which has tokenized an original Andy Warhol painting by creating a special purpose vehicle with the painting as its only asset and subsequently tokenizing its shares.[107] Other startups, like Nivaura[108] allow for the tokenization and deployment of bonds on permissionless ledgers. Other traditional asset tokens represent full ownership of a single real-world asset. These assets can be unique, e.g. tokenized valuables, claims or land, or fungible, such as tokenized commodities.[109] Interesting questions arise in the area of property law when considering the nature of traditional asset tokens, as in some jurisdictions ownership of the token might merely represent a claim on the asset against the counterparty which holds the asset, while, in others, the ownership of the token might be deemed equal to the legal ownership of the underlying asset.

4. Investment fund tokens

A final subcategory of security tokens is the 'investment fund token'. This term encompasses all scenarios where a fund or venture capital is tokenized. Practically speaking, an issuer sells a defined number of tokens and uses the funds to make investments. The return on these investments is

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[105] A number of competing security token smart contract standards have been created, such as ERC-1400, ERC 1404, the R-Token Standard, the ST-20 standard, DS tokens and the SRC-20 token standard. These standards are generally compatible with the ERC-20 standard.
[106] See https://tokit.io/
[107] Marc Garriga, 'Maecenas successfully tokenises first multi-million dollar artwork on the blockchain' (6 September 2018) https://blog.maecenas.co/blockchain-art-auction-andy-warhol accessed 13 December 2018
[108] Michael del Castillo, 'Who Needs a CSD? Nivaura to Issue First Regulated Ether Bond' (22 November 2017) https://www.coindesk.com/who-needs-a-csd-nivaura-to-issue-first-regulated-bond-in-ethereum accessed 13 December 2018
[109] DigixDAO has, for example, tokenized gold, with one DGX token representing 1 gram of gold. See Anthony C. Eufemio, Kai C. Chng and Shaun Djie, 'Digix's Whitepaper: The Gold Standard in Crypto-Assets' (July 2018) https://github.com/DigixGlobal/dgx.io3/blob/master/digix-whitepaper.pdf?raw=true accessed 13 December 2018

subsequently distributed across all token holders. Such a tokenized venture capital fund, hedge fund or mutual fund allows for a vast increase in the liquidity of the fund for investors, as the tokens which represent a stake in the fund can be freely traded. When a tokenized fund's investment thesis dictates that the fund invests in tokens only, there is the added benefit of increased transparency into the holdings, trades and returns of the fund. Examples of such investment vehicle tokens are 'The DAO'[110], Blockchain Capital's BCap token and SPiCE VC.[111]

D. THE PITFALLS OF TOKEN-CLASSIFICATION FRAMEWORKS

The above classification-framework for tokens will prove useful as a tool to think about tokens and refer to the different types imaginable. For the purposes of legal analysis however, it has its shortcomings. First, as mentioned before, there is no consensus on the exact terminology of token classifications. Second, there are more hybrid forms of token design than the ones mentioned in this framework. One could for example create a cryptocurrency that gives token holders some kind of revenue-share based on the total amount of transactions on the network. More difficulties emerge when a hybrid token is created that mainly functions as a cryptocurrency but has additional utility outside from its payment aspects. How much utility is required before a payment token becomes a utility token? The lines between the different categories are not as clear as they might seem. To illustrate the difficulties in classifying tokens further, let's consider a project called Syscoin. The project has created its own native blockchain and is created as a cryptocurrency, as it is mainly intended as a medium of exchange between peer-to-peer users. However, Syscoin has far more in-built functionality than just regular transactions, including on-chain governance through staking, a decentralized marketplace for goods, coin-mixing and an escrow and arbitration service, all of which can only be accessed with Syscoin. Moreover, 'masternodes' (nodes that consist of high-powered servers) receive a yearly 3-27% ROI, by holding 100.000 Syscoin. Is this a cryptocurrency, utility token or security token? Again, it should be noted that classification as a security token under the framework set out above does not necessarily mean that a token is a security in the legal sense of the word. The inverse is of course also true: classification as a utility or payment token does not necessarily mean that the token is not a security in the legal sense. Even in scenarios where a cryptocurrency or utility token does not borrow any characteristics of a security token, it might still be deemed a security in some jurisdictions, due to, for example the marketing and/or monetary and fiscal policy of the issuer and the method of issuance. Of course, one could argue that if a token would be deemed a security token due to factors not relating to the design of the token itself, it should have been classified as a security tokens to begin with. This, however, would not be of any practical use when considering that different jurisdictions put weight on different aspects of the token and its issuer's policy. A token might be considered a security in one jurisdiction, but not the other. As such, to classify a token in the legal sense, an in-depth analysis is required for each token in every jurisdiction. In the next section I will attempt to provide guidance in doing so for the US and EU, by giving a comprehensive analysis of securities laws in both jurisdictions as relating to token offerings.

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[110] The DAO was a 'fully autonomous' tokenized investment fund. The investment fund tokens (or DAO tokens) paid out dividends and allowed token-holders to decide on investment opportunities. However, the DAO was hacked within its first month of operation. To recover the funds, a hard fork was executed on the Ethereum blockchain, resulting in a split between Ethereum Classic and Ethereum. See Henry Kim, Marek Laskowski and students, 'Understanding a Revolutionary and Flawed Grand Experiment in Blockchain: The DAO Attack' (August 7, 2017) Available at SSRN: https://ssrn.com/abstract=3014782

[111] See https://blockchain.capital/ and https://spicevc.com/

V. INITIAL COIN OFFERINGS AND SECURITIES LAWS – PRELIMINARY OBSERVATIONS

Securities law is the field of law that covers transactions and other dealings in securities with the goal of the establishment and maintenance of a fair market for securities to protect investors. The laws to implement these goals can generally be divided into three broad categories: disclosure duties, restrictions on fraud and manipulation and restrictions on insider trading. Globally, virtually all securities regulations concern themselves with these issues. Disclosure duties are non-voluntary compliance regimes during the offering of a security, restrictions on fraud and manipulation introduce accountability for issuers and restrictions on insider trading further protects investors from information asymmetries. The existence of private and public enforcement of these laws is of vital importance.[112]

In this section, I will explore the application of securities legislation on ICOs and, more generally, cryptographic tokens. For the purposes of this article, the scope of the following comparative analysis is restricted to a single aspect of securities regulations; namely, the question whether securities laws are applicable to tokens. I will address this matter through a comparative analysis of the financial and securities regulations of the European Union and the United States. Admittedly, this approach has its shortcomings, as the question of applicability is the mere starting point for securities legislation, the implementation of which varies substantially across these jurisdictions and the potential liabilities and remedies under securities laws will not be looked into at all. However, the question of applicability of securities legislation on cryptographic tokens is the most relevant area of exploration, as the actual application of securities laws, when deemed applicable, will be the same as for any other instrument of securitization, on which an abundance of literature has been written. Another consequence of this approach is that this analysis will limit itself to analysis of the nature of tokens, while the more practical aspects of token issuances in terms of industry best-practices concerning usage of the relevant exemptions from US prospectus requirements are ignored. At the same time, this analysis will not include legislation on the (member)state-level, nor will it include crowdfunding regulations. Before going on to analyze the applicability of security regulations to tokens in the United States and the European Union, I will provide some brief preliminary insights into the question of applicability that generally apply across jurisdictions. These insights concern the design of tokens, the structure of the ICO and the issuer's fiscal and monetary policy.

First of all, it should be noted that if a token's price is not subject to any kind of price-volatility, it is very unlikely to raise concerns regarding securities regulations in any jurisdiction. After all, let's not forget that tokens are a mere form for digital assets, and they can be structured as gift cards, identity-confined memberships, poker chips etc. Moreover, if a token has an unlimited supply, if it is unique or if it is non-transferable it is unlikely to raise any issues. For all other tokens it is best to first look at the specific rights provided by the token.

At first glance, it would be ideal to use a bright-line token-categorization framework and apply securities legislation accordingly. However, any such bright-line categorization will result in issues similar to those considered above. Therefore, it is better to adopt an approach that focuses on the structure of the token itself, combined with the facts and circumstances surrounding the token sale, on

[112] Florencio Lopez-de-Silanes, 'A Survey of Securities Laws and Enforcement' (World Bank Working Paper 35708, October 2003) 4-13 http://documents.worldbank.org/curated/en/188821468324886075/pdf/357080DP141Sur1cement1200301PUBLIC1.pdf accessed 15 December

a *de-facto* basis. This kind of analysis is complex, which is considered a flaw by some.[113] However, the flaws of a fact and circumstances or effect based approach do not outweigh the error-costs of bright-line categorization - especially in today's network markets.[114] Hence, there is no doubt that financial legislators and judges globally will generally adopt an approach based on fact and circumstances. For such an approach to work, one has to examine the rights that tokens provide to investors. Below, I have listed the most common rights provided by tokens. The rights are listed in an order where the rights that would generally not indicate any issues with securities legislation on top and the rights which are the best indicators of a security are on the bottom end.

- Rights to program, develop or create features for the system
- Rights to access, use, or license the system;
- Rights to discounted fees or increased utility;
- Rights to contribute labor or effort to the system, and potentially be rewarded for it (including consensus facilitation)
- Rights to participate in governance
- voting on changes to the protocol
- voting on deployment of funds
- voting on access to funds for development team
- Rights to future access, use, discounts or licensing of the system
- Rights to sale-back or repayment by the issuing entity
- Rights to dividends, revenues, profits, ownership of assets or liabilities
- Rights to ownership in a legal entity, including general partnership

While the rights provided by the token itself are the most important factor in any analysis whether a token can be considered a security, other aspects may play a role too.. These aspects are especially important for tokens that, in terms of the rights they provide, do not resemble any of the traditional 'archetype' securities, such as stocks or bonds. In other words, they are especially important for utility tokens and hybrid tokens that combine characteristics of payment, utility and security tokens.

Maybe the most practical approach is the one that is often satirically suggested by the more cynical observers of the developments in crypto-fundraising: If it looks like a duck and quacks like a duck, it is probably a duck.[115] To their credit, it is fair to say that anything which results in an expected appreciation of the token's price increases the likelihood of securities laws being applicable across jurisdictions. In fact, it could be argued that a mere evaluation of the motivation (for buying the tokens) of those who participate in token sales may be a relatively accurate way of determining whether a token is a security; if the main motivation for buying a token is its expected returns, it is probably a security. Of course, it would be extremely difficult to ascertain the motivation of the investors, as an inquiry into the average rational investor's mind is near impossible. Moreover, markets - and investors - are not rational - as has become painfully clear by the bubble that occurred in the crypto-space in 2017. Therefore, reliance on the rational motivation of investors when using such a 'primary-motivation' test does not always come to the right conclusion. Such a simple test can also prove faulty in the case of payment tokens. It is reasonably safe to draw the conclusion that the main motivation of

[113] Gregory S. Crespi, 'Does the Chicago School Need to Expand It's Curriculum?' [1997] 22 L. & Soc. Inquiry 149, 154
[114] Mark A. Lemley and David McGowan, 'Legal Implications of Network Economic Effects' [1998] Lemley 86 Cal. L. Rev. 198-199 available at SSRN: https://ssrn.com/abstract=32212
[115] Preston Byrne, 'Thoughts on the SAFT, pt. II: SAFT Harder' (2 October 2017) https://prestonbyrne.com/2017/10/02/thoughts-on-the-saft-pt-ii-saft-harder/ accessed 15 December 2018

most people acquiring Bitcoin is the expected appreciation in price, and not its utility[116] - yet, as will explored below, it is not a security in the jurisdictions explored in this article. As described earlier, token buyers can also be equally motivated by both the utility of the tokens and their investment characteristics, not completely unlike baseball cards, making it difficult to judge what the primary motivation is. Still, as will become clear in the analysis below, the expected appreciation in price does play a large role in the determination of whether securities laws apply in the US..

Other aspects may also play a role in an inquiry as to the legal nature of tokens. First of all, the way tokens are acquired matters. Tokens that are sold to the public in so-called 'pre-sales', where investors can acquire tokens before the actual ICO for a discount, are more likely to be deemed a security than tokens that are sold in an ICO. After all, any argument that a token is bought for utility and not for an expected price appreciation is weakened when there is no actual utility yet. The same reasoning applies to 'non-functional' tokens that are sold during an ICO. Tokens can also be acquired through other distribution mechanisms. For example, one could invest in graphical processing units (GPUs), or application specific integrated circuits (ASICs), to 'mine' tokens, in cases where Proof-of-Work is used as the main consensus mechanism. Tokens could also be acquired through so-called hard-forks. During a hard-fork, a part of a blockchain's community or miners decide to split off from the main chain, usually after disagreement within the community, resulting in two different chains. In the process, all balances from the first chain are preserved on the second chain, which has its own coin. Taking Bitcoin as an example, such hard forks have resulted in the situation where if you have had Bitcoin over the last few years, you would now own an equal amount of Bitcoin Cash, Bitcoin Diamond, Bitcoin Gold, Bitcoin Private and a few smaller cap coins too. Additionally, you would have received tokens from every project that has 'airdropped' tokens for Bitcoin holders. Airdropping is a token distribution model in which one receives a defined amount of tokens for every token of another kind held. Both hard forks and airdrops are very unlikely to fall in the domain of securities legislation as no actual investment into the new token occurs. In a sense, the process of mining should be slightly more likely to fall under securities legislation, as it could be argued that an investment in hardware and electricity leads to the acquisition of coins. As of yet however, coins distributed through mining are generally not deemed to fall under securities legislation.

In most, if not any jurisdiction, the manner in which price appreciation occurs should also be examined. For example, the mere fact that tokens may get lost over time, resulting in price appreciation, is less likely to be a justification for the application of securities regulation than, say, the issuer's fiscal policy. With the issuer's fiscal policy, I refer to any behavior by an issuer that impacts the supply and demand of the token in the secondary market. If a token is designed in such a way that tokens are bought back by the issuer, while no additional tokens are sold after the ICO, there is an expectation that the token's price will appreciate. The same effect is created when tokens which are used in a dApp to pay transactions costs are 'burned' or destroyed in any other way. On the other side of the spectrum, an issuer's fiscal policy might also decrease the likelihood of being categorized as a security. For example, if an issuer continuously buys and sells tokens for a fixed price, thereby creating an 'unlimited token flow'[117], there are generally no issues with regards to securities regulation, as this is closely resembles a casino's poker-chip model in which the value of tokens is kept stable.

Another preliminary observation should be made regarding the existence of a centralized issuer. There are projects which have emerged as a result of independent and/or decentralized efforts from many

[116] Skultétyová (n. 62)
[117] David Siegel, 'The Token Handbook' (13 September 2017) https://hackernoon.com/the-token-handbook-a80244a6aacb accessed 16 December

individuals worldwide. These projects often use mining or airdrops as their main token distribution model. In some projects, the main contributors of projects are fully anonymous. Even if securities legislation would be applicable, it would be an extremely difficult exercise to identify an issuer for the purposes of application of the law. A final aspect that is of importance for the determination of the applicability of securities legislation are the marketing strategies of issuers employed around token sales. If issuers put an emphasis on any expected appreciation of price, then there is a larger possibility of the token sale being a securities offering. However, absence of such marketing and even statements whitepapers that expressly indicate that a token is not a security, as has increasingly become common in practice, do not exclude such a possibility.

Although all the factors mentioned above will likely play a role in an inquiry into the legal nature of a token in most jurisdictions, the most important aspect remains the rights which a token provides to its holder. As indicated in the section IV on token taxonomy above, the market for token issuance is truly heterogeneous. In fact, if there is any conclusion to be drawn from the brief preliminary explorations above, it is that any determination on the applicability of securities legislations should always be based on a *de-facto* analysis of a combination of factors, including the design of the token itself, the structure of the token sale, the rights embodied by the token, the monetary policy and the fiscal policy of the issuer and even the marketing of the token sale by the issuer. The weight that will likely be assigned to these factors vary substantially across jurisdictions. With this in mind, I will try to provide insight into the application of securities laws in the US and the EU to tokens. I will do this by first providing a brief overview of the structure of their securities legislation, before going on to provide an indication as to the aspects that might prove to be of particular importance in determining the likelihood of tokens being deemed securities in the respective jurisdictions examined. Throughout this exercise, I will put special focus on utility tokens and hybrids, as there is substantial legal uncertainty as to their legal qualification.

VI. INITIAL COIN OFFERINGS UNDER US SECURITIES LAWS

The most prominent parts of U.S. securities legislation are the Exchange Act of 1934 and the Securities Act of 1933. The former established the Securities and Exchange Commission (SEC) and focuses mainly on secondary transactions and the regulation of intermediaries, whereas the latter is comprised of legislation being directed towards issuers. The applicability of the, for issuer's, quite onerous provisions found in these acts is for a large part dependent on whether the financial instrument at hand is considered to fall under the definition of 'security' or not. If yes, issuers have to comply with a number of regulatory requirements, such as the approval and registration of a prospectus with the SEC, annual reporting requirements and other disclosure requirements regarding insider trading and other financial fraud. Whether or not tokens fall under the definition of securities will therefore be the main focus of the following analysis.

Congress has always encourage a broad reading of the definition of securities in the US Securities Act of 1933 and Securities Exchange Act of 1934, and long lists of categories are found in the Acts, including stocks, notes, bonds, futures, swaps, participation in profit-sharing agreements, derivatives.[118] If a token closely resembles any of the defined financial instruments, there is no doubt that an ICO will be defined as a sale of securities. Therefore, many security tokens, or hybrid tokens that provide token holders with economic rights such as dividend rights or a right to the ownership of equity, will be caught by these provisions. While the definition in these acts include well-defined

[118] US Securities Act of 1933 § 2(a)(1) and the US Securities Exchange Act of 1934 § 3(a)(10)

instruments, it also includes 'securities' of a more variable character, such as the broad catch-all category of 'investment contracts'. The definition of an investment contract has been defined in the classic *SEC v. Howey Co* case.[119] In its judgment, the U.S Supreme Court decided to put forward a four-pronged test. This so-called '*Howey test'* focuses on the economic reality of any 'contract, transaction or scheme' to determine whether an investment contract is deemed to fall under the definition of securities. The judgment held that at the core of an investment contract "is the presence of an investment in a common venture premised on a reasonable expectation of profits to be derived from the entrepreneurial or managerial efforts of others".[120] As such, a court-applied test emerged that investigates the existence of the four elements of this judgment:

i. A person invests his/her money
ii. in a common enterprise and
iii. is led to expect profits
iv. resulting solely from the efforts of the promoter or a third party.

This definition of investment contracts embodies a "flexible rather than a static principle, one that is capable of adaptation to meet the countless and variable schemes devised by those who seek the use of the money of others on the promise of profits."[121] . In application of this test, "form should be disregarded for substance"[122], and "the emphasis should be on economic realities underlying a transaction, and not on the name appended thereto."[123] As such, the issuance of cryptographic tokens is very likely to be brought in the scope of securities legislation by application of the *Howey* test. Indeed, the SEC has, in its investigative report into the first tokenized investment fund of its kind, the DAO[124], applied this test and subsequently came to the conclusion that the issuance of DAO tokens was indeed an unregistered issuance of securities.[125] However, the SEC does not make law, which is why all eyes are on the first fraudulent token issuance which is expected to result in a jury judgment in January: *USA v. Maksim Zavlavski*. The defendants motion to dismiss, which was largely based on the argument that securities legislation does not apply to ICOs, was recently denied.[126] While a judgment is expected in January, the judge concluded on the motion to dismiss that:'

> *"The question is whether the 'elements of a profit-seeking business venture' are sufficiently alleged in the indictment, such that, if proven at trial, a reasonable jury could conclude that 'investors provide[d] the capital and share[d] in the earnings and profits; [and] the promoters manage[d], control[ed] and operate[d] the enterprise. For present purposes, we conclude that they are. However, the ultimate fact-finder will be required to conduct an independent Howey analysis based on the evidence presented at trial."*[127]

In the following sections, I will therefore analyze each element of the *Howey* test in relation to ICOs and other token sales. A part of the academic community includes the fourth criterion, concerning the 'efforts of others' into the third criterion, which is about the existence of an expectation of profit.

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[119] *Securities and Exchange Commission v. W. J. Howey Co*. [1946] 328 U.S. 293
[120] Ibid 298-299
[121] Ibid 299
[122] *Tcherepnin v. Knight* [1967] 389 U.S. 332, 336
[123] *United Housing Foundation, Inc. v. Forman* [1975] 421 U.S. 837, 849
[124] SEC Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO (25 July, 2017) https://www.sec.gov/litigation/investreport/34-81207.pdf accessed 12 December 2018
[125] Ibid 11 page 11
[126] *United States v. Zaslavskiy* [ongoing] E.D.N.Y. Case 1:17-cr-00647
[127] *Zaslavski*, Order on Motion to Dismiss for Lack of Jurisdiction (September 11 201817 CR 647) (

However, due to the complicated analysis which is required for both of these elements, I will approach them as separate criteria for the purposes of this article.

A. "A PERSON INVESTS HIS/HER MONEY"

The first element of the *Howey* test concerns itself with the existence of an investment of money. This criterion has been widely interpreted in past case-law, and it is clear that any investments in ICOs constitute an investment of money, even though tokens are usually acquired with either Bitcoin or Ethereum. After all, in both *SEC v. Shavers*[128] and *SEC v. Centra Tech*[129], it was specifically held that, for the purposes of this criterion, an investment in Bitcoin or other blockchain-based tokens was held to be equal to an investment of money. In fact, this prong can even by satisfied where there is no investment of money of any kind, but an investment of labor[130], goods, services, promissory notes and other 'exchanges' of value instead.[131] Cryptographic tokens acquired through distribution models such as airdrops or hard-forks on the other hand clearly lack any kind of investment element and will therefore generally not pass this prong. As such, these tokens do not fall under US securities law. However, issuers could potentially exploit this by, over a period of a few months, acquire most of the supply of another token that has been abandoned or has a very low market capitalization for any other reason, to subsequently announce an airdrop on that token. The instant demand for the new token would allow the 'issuer' of the airdropped token to sell their holdings to investors wishing to obtain the new (airdropped) token.

Another interesting question arises when assessing whether mining, done by miners in blockchains with a Proof-of-Work based consensus algorithm, can be considered 'an investment of money' under this prong of the *Howey* test. Considering that the definition of 'investment of money' has been interpreted very broadly in past case law, I am led to believe that the investment in electricity and hardware in return for the tokens that are awarded for the computational work done, could potentially be deemed enough to constitute an investment of money. After all, the ' investment of money' prong of the *Howey* test requires that the investor 'commits his assets to the enterprise in such a manner as to subject himself to financial loss'.[132] This begs the question which prong of the *Howey* test Proof-of-Work-based cryptocurrencies do not pass, as Bitcoin, the archetype cryptocurrency is not a security under US law.[133]

B. "IN A COMMON ENTERPRISE"

Analysis of the second prong of the *Howey* test in relation to ICOs is a slightly more complex exercise. Courts in the United States are in some disarray as to the application of this prong in general, as the term 'common enterprise' has been interpreted using two distinct approaches: the *horizontal* and the *vertical* commonality, with some districts recognizing both and four adhering to one over the other.[134]

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[128] *SEC v. Shavers,* [2013] No. 4:13-CV-416, U.S. Dist. LEXIS 110018, at *4-5
[129] *Centra Tech* (n. 68) 154
[130] As was held in 1973, in *SEC v. Glenn W. Turner Enters* [1973], 474 F.2d 476, 482.
[131] *Uselton v. Commercial Lovelace Motor Freight, Inc.,* [1991] 940 F.2d 564, 574-75 (10th Cir.); see also *Frazier v. Manson* [1980], 484 F. Supp. 449, 452 n.5 (N.D. Tex.)
[132] *SEC vs. Rubera* [2003] 350 F.3d 1084
[133] As was also indicated by SEC Chairman Jay Clayton in a hearing before the House Appropoiations Committee. See Neeraj Agrawal, 'SEC Chairman Clayton: Bitcoin is not a Security' (27 April 2018) https://coincenter.org/link/sec-chairman-clayton-bitcoin-is-not-a-security accessed 16 December 2018
[134] Third, Sixth and Seventh Circuit courts adhere to a test of horizontal commonality. The same applies for the First, Fourth and D.C. Circuits, albeit they have not ruled on vertical commonality yet. The Fifth and Eleventh Circuits adhere to a broad vertical commonality test. The Ninth Circuit accepts both

The definition of what constitutes vertical commonality can, in turn, be interpreted in a broad or narrow sense.

Horizontal commonality is deemed to exist where there are multiple purchasers whose investments are pooled, while everyone shares in the profits and risks - often pro-rata.[135] In the case of token sales, all invested money is usually pooled into the issuing corporation or foundation selling the tokens. These funds are subsequently used to build out the issuer's technology, to market the network being built and to increase use of the token. A token's valuation is therefore dependent on the success of the issuer in accomplishing this. This is especially obvious in the case of token pre-sales, as well as ICOs where the token provides no utility to the buyer at the time of the offering. Everyone shares in the profits and risks of the enterprise. This includes the issuer and its founders, as it is standard practice for the issuing company to both retain tokens for future fundraising and distribute tokens amongst its founders. As such, after the pooling of the invested funds, all investors, issuer and founders usually share in the profits and risks of the enterprise. Therefore, U.S. districts approaching the second prong of the *Howey* test with a 'horizontal commonality test' should have no problems in establishing the existence of a common enterprise.

Districts that adhere to the approach of *vertical* commonality on the other hand, have to engage in a slightly more nuanced analysis. The vertical approach to commonality focuses on the vertical relationship between the investor and the promoter. Case-law has illustrated two distinct approaches towards the establishment of vertical commonality by courts. *Broad* vertical commonality requires that the investor's fortunes are tied to the efficacy of the manager's efforts.[136] *Narrow* vertical commonality requires the same, but adds the additional requirement that the investor's profits are tied to the issuer's profits; meaning that they should rise and fall together.[137]

As an investor's fortune is, in the case of ICOs, usually tied to the efficacy of the managerial efforts of the issuer, any inquiry into the existence of a common enterprise by districts adhering to the doctrine of broad vertical commonality should result in the same conclusion as the ones using horizontal commonality. Complexity arise when examining the existence of a common enterprise by using narrow vertical commonality. The additional requirement that an investor's profits should be tied to the issuer's profits can prove troublesome when the issuer does not make any profit. For example, we can imagine a case where the issuer is a non-profit without any mechanism in place to make profits. In this scenario, it would be difficult, if not impossible, to establish the existence of a common enterprise. In *Long v. Schultz Cattle Co.* it was even held that an arrangement in which a manager is paid a fixed fee lack narrow vertical commonality.[138] For such a scenario to occur, the issuing entity cannot retain any of its tokens during an ICO, nor collect any transaction costs on its platform. Nor can the issuer retain tokens, so there would be no further opportunity to raise more money, except for, perhaps, donations. After all funds are spent, all aspects of the project could be handed over to a decentralized community of

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horizontal and narrow vertical commonality and the Ninth Circuit. Finally, the Second Circuit accepts horizontal commonality and, while having rejected broad vertical commonality, has not ruled on narrow vertical commonality yet. See, e.g., James D. Gordon, 'Defining a Common Enterprise in Investment Contracts' [2012] 72 (1) Ohio St. L.J. 59-94

[135] see, e.g., *See Hocking v. Dubois,* [1988] 839 F.2d 560, 566 (9th Cir.)
SEC v. Infinity Group Co. [2000] 212 F.3d 180, 188 (3d Cir.) (citing various authorities);

[136] see e.g. *SEC v. Unique Fin. Concepts, Inc.* [1999] 196 F.3d at 1199–1200; *Eberhardt v. Waters* [1990] 901 F.2d 1578, 1580–81 (11th Cir.); *SEC v. Continental Commodities Corp.* [1974] 497 F.2d 516 (5th Cir.), *SEC v. Pinckney* [1996] 923 F. Supp. 76, 82 (E.D.N.C.),

[137] see e.g. *SEC v. Glenn W. Turner Enterprises, Inc.*, [1973] 474 F.2d 476, 482 n.7 (9th Cir*); SEC v. SG Ltd.* [2001] 265 F.3d 42, 49 (1st Cir.)

[138] *Long v. Shultz Cattle Co.,* [1989] 881 F.2d 129, 140–41

contributors. In such a case, narrow vertical commonality cannot be deemed to exist, as the developer's profits are all made *during* the ICO, the investor's profits would be determined by the subsequent value appreciation of the token *after* the ICO. Therefore, there would be no direct link between the profits of investors and those of the issuer.[139]

Moreover, although it might sound counter-intuitive, it is possible for a blockchain-based project to be continued without the founding team. A well-designed token model might distribute governance and development to such an extent that the original issuer no longer plays a special role in the future of the project.[140] Can vertical communality be established when an issuer who does not retain tokens no longer has any deciding influence on the way the funds are spent or on the governance and future development of the project once the token is launched? It would seem that in such a situation (which can occur when it concerns a Decentralized Autonomous Organization, or DAO) both narrow and broad vertical commonality could be difficult to establish as the investor's fortunes are not dependent on the efficacy of the manager's efforts.[141]

In some cases, it is not clear who the promoter is in the first place. Just as projects can be developed in a distributed fashion, they can also be launched as such. If a token is issued on its own blockchain through decentralized efforts, involving a large amount of developers, and miners, and distributed through the process of mining, hard forking or airdropping, the question becomes difficult to answer.

Indeed, the degree of decentralization in development, validation and governance of the network is important in any inquiry towards vertical commonality, a point convincingly argued by Coincenter's[142] researchers as follows:

> *"If there are many unaffiliated miners, transaction validations, and businesses on the network then there is, effectively, no singular promoter with which investors could have vertical commonality. All of these participants will have individuated profits and losses based on their unique business models and decoupled from the price of the token held by typical users. If, on the other hand, there is little decentralization in the development and maintenance of an alt-coin network (i.e. all developers are employed by the same for-profit company and/or there are few and highly centralized transaction validators on the network), then there is a stronger case for vertical commonality"*[143]

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[139] This assumes that the profits from the investor are mainly based on developments occurring after the ICO. However, if the profits are mainly based on the utility of the token at the time of the ICO, it could potentially be argued that the profits of the investor are tied to the profits of the issuer (if the funds raised during the ICOs can be deemed profits), as both are arguably reliant on the utility of the token during the ICO. Still, even in such a case, the profits of investors and issuer are not strictly tied in the sense that they raise and fall together, which is required to constitute the existence of narrow vertical commonality.

[140] In the SEC's DAO Report (n. 124) little attention was given to an inquiry into the existence of a common enterprise. This can be explained as investments were pooled together (constituting horizontal commonality) and investors were dependent on the efficacy of the issuer as their voting rights were limited to proposals which were picked by the issuer (broad vertical commonality), while Slock.it also retained DAO tokens themselves (narrow vertical commonality)

[141] This assumes that the profits from the investor are mainly based on developments occurring after the ICO, and not the efficacy of the issuer's efforts in terms of development before issuance.

[142] Coin Center is the leading non-profit research and advocacy center focused on the public policy issues facing cryptocurrency and decentralized computing technologies like Bitcoin and Ethereum. See https://coincenter.org/ accessed 16 December

[143] Peter van Valkeburgh, 'Framework for Securities Regulation of Cryptocurrencies' (Coin Center Report, January 2016) https://coincenter.org/wp-content/uploads/2016/01/SECFramework2.5.pdf accessed 16 December 2018

The challenges presented by the decentralization of blockchain projects are further explored below in the analysis of the fourth prong of the *Howey* test, which requires reliance of investors on 'the efforts of the manager'.

C. "AND IS LED TO EXPECT PROFITS"

The third prong of the *Howey* test is about the existence of an expectation of profits in the eyes of the investors. If there is no way for a contractual relation to result in a return on investment, there is no need for an additional information disclosure burden on an issuer to decrease information asymmetries. After all, the goal of such disclosure is to allow the other party to make an informed decision about his investments. If we cannot speak of an expectation of returns, there is no investment in the first place, and thus no need for securities legislation.

In relation to the issuance of utility tokens, the existence of an expectation of profits is no foregone conclusion. Utility tokens are designed to convey utility to its holders. However, utility tokens are also widely bought for their speculative nature. As mentioned, the *Howey* test is a test of substance not form[144]. Case law has moreover long established that, aside from economic rights, such as the ones we find in the case of investment tokens, *an increased value of the initial investment counts as profits*.[145] It is certainly not impossible to structure a token in such a way as to not violate securities legislation. Indeed, a utility token could be structured as an API-key or the token's supply could, for example, be infinite, while the issuer continuously both sells and buys the tokens for a fixed price. Such a monetary policy closely resembles a casino's 'token'. Moreover, no expectation of profits can be deemed to exist in cases where the tokens resemble a gift-card, which is continuously sold for a fixed price, with a limitless supply.

However, the vast majority of utility tokens we see today have a fixed supply, leaving its price subject to the forces of supply and demand. If, during an ICO, an issuer sells a fixed amount of tokens that provide a certain amount of utility and no more tokens will ever be created, then there is an implied assumption that an increase in demand for the utility accessed with the token leads to an increase in the demand for the token itself - and therefore appreciation of the tokens' valuation.

Although the token market is nowhere near homogeneous, the majority of the token market consists of utility tokens that adopt some variation of this model. After all, the dual-motivation to buy tokens created by this model has considerable benefits to issuers. At the same time, there were high hopes that the utility aspect of the tokens meant that the tokens could not be seen as investment contracts[146], making them a very easy way to raise large amounts of money while avoiding the legal costs usually associated with compliance in terms of securities legislation. Such thinking can indeed be substantiated by case law. In *SEC v. Life Partners,* for example, it was held that *"*For there to be an expectation of profits, the purchaser's motivation must be securing 'a financial return,' not consumption or use."[147] However, as we will see, an analysis of the dual-motivation that incentivizes individuals to buy this particular model of utility tokens and its relation to the third prong of the *Howey* test, is complex.

Let's start simple by considering those utility tokens sold in a pre-sale. During a pre-sale, tokens are sold to investors in anticipation of an ICO, often by use of a Safe Agreement for Future Tokens, or

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[144] *Howey* (n. 119) 298
[145] *SEC v. Edwards* [2004] 540 U.S. 389, 390
[146] See e.g. Coin Center Report (n 143) and Marco Santori, Juan Batiz-Benet and Jesse Clayburgh, 'The SAFT Project: Toward a Compliant Token Sale Framework' (SAFT Whitepaper, 2 October 2017) https://saftproject.com/static/SAFT-Project-Whitepaper.pdf p, 9 accessed 17 December 2018
[147] *SEC v. Life Partners. Inc* [1996] 87 F.3d 536, 547 (D.C. Cir.)

SAFT. As the tokens (and their utility) do not exist yet at the time of the investment, there is no dual-motivation for the transaction. Moreover, people participating in a pre-sale usually get a discount of around 20% in comparison to the people that participate during the actual ICO. As such, we know for a fact that there is an expectation of profits. In *Woolridge Homes, Inc. v. Bronze Tree,* it was held that a purchase agreement, which was entered into before the construction of a resort community, constituted an investment contract.[148] As emphasis was put on the fact that the utility offered by the purchase did not exist, it is safe to conclude that any pre-sales of utility tokens using a SAFT will pass this prong of the *Howey* test. There are also scenarios where a token is sold using an ICO, while the issuer has no working product, protocol or algorithm yet. Such 'non-functional utility tokens' should, despite that no SAFT is used and no discount is given on the tokens, be interpreted in the same fashion as pre-sales. No utility exists, therefore there is no dual-motivation.[149]

The SAFT was originally developed by the industry making the same assumptions as described above. The contract itself would function as a security and issuers would, for their pre-sale, use an exemption under US securities legislation to the obligation to register a prospectus to the SEC, allowing for accredited investors to invest.[150] At the same time, this allowed issuers to raise enough money to scale up their efforts to ensure the success of their ICO. Many of these startups assumed they did not need to file a prospectus for their ICO, as they were now selling tokens that provided utility on their platform, protocol or service. However, the mere fact that investors in an ICO have a dual-motivation to buy tokens does not mean that the ICO doesn't pass the third prong of the *Howey* test. There is quite some case-law on instances where investors were guided by both consumptive and speculative motivations. We will see that, although there is some merit to the thesis that utility tokens are not investment contracts, the case-law substantiating this differs, in fact and circumstances, substantially from the economic reality of token sales.

The first time such a case resulted in a judgment was in *United Housing Foundation, Inc. v. Forman.*[151] In this case, United Housing required tenants of their affordable apartments to buy shares of what United Housing called 'stock' which acted as representations of the requested rooms. After a dispute about a raise in the monthly rental charges, it was argued that the structure used by United Housing constituted a sale of securities. After all, it could be argued that there was an investment element to the motivation of potential tenants. An investigation of facts and circumstances however showed that the purchase of the apartments in question, arguably based on the dual motivation of utility and investment, was in fact not an investment contract. The court held that "when a purchaser is motivated by a desire to use or consume the item purchase (…) the securities laws do not apply".[152] In relation to utility token sales, this precedent is often used to argue that utility tokens are not securities.[153] However, such a conclusion is premature. In *Forman,* apartments and their representative 'stock' were subject to a number of strict resale limitations and did not provide residents with any dividends. In fact, residents were required to offer the apartments and stock back to the seller for a fixed price. The court defined profit here as "capital appreciation" or a "participation in earnings resulting from the use of investors' funds."[154] Due to the resale limitations imposed on tenants, both were not deemed to exist in this case. In the scenario of utility tokens described above however, there are no such limitations on resale. As

[148] *Wooldridge Homes, Inc. v. Bronze Tree, Inc*. [1983] 558 F. Supp. 1085
[149] SAFT Whitepaper (n. 146) p.11
[150] Form D rule 506(c) registration
[151] *United Housing Foundation, Inc. v. Forman* [1975] 421 U.S. 837
[152] Ibid 852
[153] SAFT Whitepaper (n. 146) p. 9
[154] *Forman* (n. 151) 852

such, there is definitely an expectation of capital appreciation, resulting from the very active secondary markets that have emerged around cryptographic tokens.

Since *Forman,* several more 'dual-motivation cases' made it to the US courts. A dual-motivation to enter into a contract was, for example, found in *Teague v. Bakker,* a case where individuals could purchase 'Lifetime Partnerships' from an entity known as PTL. By doing so, they were entitled to a short stay annually in a hotel at a vacation retreat constructed by PTL. However, there was also a profit element resulting from the efforts of a third party. Interestingly, it was held by the court that, because the "promotional materials allow[ed] the reader to infer that the value of the [lifetime partnerships] was enhanced by virtue of the commercial activities of the PTL facilities in catering to patrons paying full price," there was an expectation of profits. In fact, it was deemed that the profit that was expected from this financing product was deemed to outweigh the utility aspects of the lifetime partnerships in the eyes of the investor, and for this reason, it was a security.[155] Indeed, it seems that, where the motivation of an investor consists of both utility and financial aspects, it is instrumental to determine the primary motivation of the investor. In *Rice v. Branigar,* the eleventh circuit concluded that a sale of housing lots did not pass the *Howey* test because purchasers bought them primarily to use them, rather than to derive profits. The court's reasoning was based on the prior *Forman* case, and the believe of the court that "people buy houses and lots in a beach-club development primarily to use them, not to derive profits from the entrepreneurial efforts of the developers."[156] Similarly, concerning investments in aircraft interests, the deciding factor is whether or not the expectation of profits involved, outweigh the expectation that the aircraft interests were being purchased for use solely as a means of transportation.[157] As such, an inquiry into the primary motivation of ICO participants can provide insight into whether a token offering passes the third prong of Howey. Recent research suggests that almost 90% of ICO participants acquires tokens for their investment/speculative purposes, trading purposes or for a combination of both trading and use with an emphasis on trading.[158] As such, it is clear that an expectation of profit exists in the eyes of the ICO participant. Of course, any kind of monetary or fiscal policy from the issuer that leads to a reduced total supply of the token, by means of, for example, burning tokens or promising to buy back tokens at market price, inherently increases the expectation of profits in the eyes of the investor, as a reduce supply should lead to an increase in price of the token.

Aside from the motivation of the investor, the promotional materials from the issuer are of importance for determination of whether there is an expectation of profits in the eyes of the investor under the third prong of the *Howey* test. In *Warfield v. Alanzis,* investors were given the opportunity to participate in charitable giving while being promised financial gain. There was again a dual motivation, but here the court concluded that "consideration of the Foundation's promotional literature, as well as the annuity contracts themselves, demonstrates that the Foundation presented the gift annuity as an opportunity for financial gain." In appeal, the 9th Circuit court of Appeals affirmed that courts conduct an inquiry on basis of what the purchasers were 'led to expect.[159] Indeed, courts have frequently examined the promotional materials associated with an instrument or transaction in determining whether an investment contract is present.[160] In *SEC v. C.M. Joiner Leasing Corp,* it was even held that while "the

[155] *Teague v. Bakker* [2002] 213 F. Supp. 2d 571 (W.D.N.C.), upheld in *Teague II,*
[156] *Rice v. Branigar Organization Inc* [1991] 922 F. 2d 788 (11th Cir.)
[157] *Kenneth P. Krohn,* 'Fractional Ownership and Timeshare Programs: Are They Subject to the Securities Act of 1933 and Securities Exchange Act of 1934?' [1999] 54 (3) TBL 1209
[158] Skultétyová (n. 62)
[159] *Warfield v. Alaniz*, [2009] 569 F.3d 1018 (9th Cir.)
[160] *E.g.* Teague (n.155) at 990; Edwards (n. 145) 392; Rice (n. 156) 790; and *Aldrich v. McCulloch Properties, Inc.,* [1980] 627 F.2d 1036, 1039-40

test rather is what character the instrument is given in commerce by the terms of the offer, the plan of distribution, and the economic inducements held out to the prospect, it "is not inappropriate that promoters' offerings be judged as being what they were represented to be".[161] This suggests that, even if the utility-element of a token clearly outweighs the token's investment element, an expectation of profits can still be deemed to exist based on the promotional strategy and representation of the token by the issuer. Many, if not all, self-proclaimed utility-tokens target their online promotions directly at websites with audiences that mainly consist of retail investors. Often, an expectation of financial gain is also created. This is not to say that a token is much safer from the reach of securities legislation if the whitepaper says that the token is 'definitely not a security', as in such a case, the economic reality of the instrument and the subjective motivation of investors prevails.[162]

A utility token might also be structured as some kind of membership, which allows for usage of the underlying blockchain platform, product or service for a discount. There have been several cases, in which a membership structured product that resembled an investment was found not to pass the *Howey* test. In these cases, the expectation of profits was not found to outweigh the utility, and 'no-action-letters' were written. To attain these no- action-letters however, these memberships were generally made non-transferable or risk-free, which is generally not the case with blockchain-based tokens.[163] In *Wabash Valley* it was held that a portion of the electrical power output of a power plant could give rise to an expectation of profit where the costs of the power was below market value, enhancing the profitability in selling the power to others.[164] As such, if a token structured as a membership that gives discounts to the underlying utility, with a limited supply while being transferable, it is reasonable to assume that the token passes the third prong of the *Howey* test too.

In *Aldrich* v. *McCulloch* it was moreover held that an expectation of profits exists when the issuer represents future development plans in a manner calculated to induce investments in the project, essentially making a contractual promise to carry through development plans to augment the value of the investment.[165] Of importance is whether the issuer makes a 'contractual promise' of continuous development (which logically results in an appreciated valuation).[166] Both the contractual promise of continuous development and investment inducing behavior is present in virtually any ICO. Generally, token issuers will, leading up to their ICO, market their ICO, company and token extensively. These promotional activities comprise publishing and maintaining a website and whitepaper, giving presentations, exploiting booths at blockchain and other industry gatherings, publishing future development roadmaps, initiating new partnerships with other players in the industry and hiring bloggers, youtubers and ICO reviewers or review platforms to review their projects. The future of these projects is always portrayed extremely positively and the activities are generally aimed directly at investors, inducing an expectation of profits.

To conclude this section, we can reasonably draw the following conclusion: the third prong of the *Howey* test is passed by almost any token sale. When the presumed *sole* or *primary* motivation of the average investor is the utility provided by the token, the token sale could not be deemed a sale of securities. This can for example occur when a token has an unlimited supply, a fixed price or resale restrictions in place. Where there is a dual motivation, inquiry should be made into what the primary

[161] *SEC v. Joiner Leasing Corporation* [1943] 320 U.S. 344, 352-353
[162] Any other conclusion would be incompatible with *Howey* (n.113) 298
[163] SEC No-Action Letter, Olohana Golf Club, Inc., SEC No-Action Letter [2003] WL 21831944 (31 July 2003); SEC No-Action Letter Manchester Country Club [1999] WL 301382
[164] *Wabash Valley Power v Public Service Co. of Ind.* [1988] , 678 F. Supp. 757, 767-68
[165] Aldrich (n.160) at 1039; see also *Plaskin v. Bruno* [1993] 838 F. Supp. 658, 667
[166] *McCown v. Heidler* [1975] 527 F.2d at 208-09

motivation is. Considering that, on average, about 90% of ICO participants acquires tokens for their investment/speculative purposes, trading purposes or for a combination of both trading and use with an emphasis on trading, we can conclude with reasonable certainty that the primary subjective motivation of investors is in most cases indeed investment-related.[167] If the subjective motivation of investors is not clear, an expectation of profits will moreover be deemed to exist if any of the following elements in terms of token-design, monetary policy and promotion surrounding the token sale is present:

- The token has no utility at the time of the sale.[168]
- An expectation of profits is induced, directly or indirectly, by the promotional materials of the issuer.[169]
- The promotional materials imply that the value of the token's *utility* may be enhanced by the efforts of the issuer.[170]
- Calculated, investment inducing behavior from the issuer is present, such as direct marketing targeting investors.[171]
- An expectation of profits is induced by the issuer's development activities, fiscal or monetary policy.[172]
- Guarantees or promises regarding the results or outcome of the utility are being made.[173]
- The issuers help with the re-sale of tokens, by, for example, creating their own (decentralized) exchange or liquidity pool/mechanism.[174]
- Profits are realized through a discount on use.[175]

Even if none of these elements are present, a series of SEC action letters might lead to believe that any investment that can be re-sold, whether it be a membership or an asset, can induce an expectation of profits, although the approach taken is from the SEC and should not be seen as binding precedent.[176] As an expectation of profit is more likely to be established where the purchasers are attracted by the prospect of a financial return, in addition to the purchasers' user of the investment asset, there is also a chance that courts would just argue that the entire market for tokens is created to induce investment. In practice, blockchain startups hire specialized ICO advertisers, list their projects on ICO review websites and focus on getting their token traded on exchanges, who in turn also focus on acquiring as many

[167] Skultétyová (n. 62)
[168] Wooldridge Homes (n. 148)
[169] Teague (n. 155), Warfield (n. 159) Edwards (n. 145) Joiner Leasing Corp (n. 161), Rice (n. 156); and Aldrich (n. 160)
[170] Aldrich (n.160), McCown (n.166)
[171] Plaskin (n. 165)
[172] Such mechanism would allow for a reasonable expectation of profit
[173] SEC No-Action Letter Recreation Unlimited [1970-1971 Transfer Binder] Fed.Sec. L. Rep. (CCH) at 80, 443, where the SEC emphasized that the issuer held no guarantees regarding the successful use of the utility-aspect of the investment. In this case, this considered the success in the hunting and trapping of animals on a piece of real-estate.
[174] Any such behaviour would constitute calculated investment inducing behaviour from the issuer. See also SEC No-Action Letter [1970-1971 Transfer Binder] Fed.Sec. L. Rep. (CCH) *Caribbean Beach Club Inc.,* where the SEC granted a no-action letter, emphasizing the importance of circumstances that that the developer did not provide any services with respect to resale of the instruments in this case.
[175] Wabash Valley Power (n. 164)
[176] See SEC No-Action Letter, Great Western Campus Association [1971-1972 Transfer Binder] Fed. Sec. L. Rep. (CCH) 78,386 SEC No-Action Letter, Dellwo, Rudolf & Grant [1972-1973 Transfer Binder] Fed. Sec. L. Rep. (CCH) 78,882, SEC No-Action Letter, Naples Land Yacht Harbor, Inc, SEC No-Action Letter, [1977-1978 Transfer Binder] Fed. Sec. L. Rep. (CCH) 81,368, SEC No-Action Letter Riviera Operating Co, , [1978 Transfer Binder] Fed. Sec. L. Rep. (CCH) 81,569 (Mar. 8 1978),

retail investors as possible. A token can definitely be structured as to not pass the third criterion of the *Howey* test, but the structures we see today will not suffice.

D. "SOLELY FROM THE EFFORTS OF OTHERS"

Having established that an expectation of profits often exists in case of tokens, we have to subsequently show that the investor's profits are derived 'solely from the efforts of others'. A 'possible enhancement in value at resale is not within the Securities Act, where the essential element of reliance on the managerial, operational or developmental efforts of others is not present.'[177] From past case law, it is well settled that the word 'solely' is not to be taken literally.[178] In fact, the term is also interpreted to include 'significant or essential managerial or other efforts necessary to the success of the investment'.[179] In both *Glenn Turner* and in *Aldrich,* the test was whether the efforts made by those other than the investor are the undeniably significant ones; the essential managerial efforts which affect the failure or success of the enterprise.[180] Although courts employ a variety of formulations, the core of the fourth prong of *Howey* is the degree of reliance of the investor on the efforts of others.

Again, we can clearly identify pre-sales and sales of non-functional tokens with fluctional value to pass this prong, as the utility provided by the tokens does not exist yet. Investors therefore fully rely on the efforts of the issuer to finish the development of the blockchain's utility. Matters get more difficult where there is only a degree of reliance upon the issuer for the future direction or value of the blockchain.

The degree of reliance upon 'efforts of others' has traditionally been of particular interest in determining whether an investment contract is present in two commonly occurring agreements: partnerships and franchises. As is the case with decentralized blockchain platforms, there is substantial variance in the degree of control any single party has, including the issuer. Case law has shown that limited partnership interests are presumed to be securities unless the limited partners exercise effective control over the enterprise.[181] General partnership interests on the other hand are clearly not investment contracts as the general partner takes an active part in the managerial efforts of the partnership.[182] One could argue that, depending on the design and governance of a blockchain-based platform, everyone who owns tokens, while running a node, staking or mining tokens, thereby in practice participating in the blockchain's governance or consensus mechanism is a limited partner of sorts, with the issuer being the general partner. However, the question then arises whether such an analogy still applies when a person merely holds tokens and does not participate in any other way. In franchise agreements, the level of investor participation also affects the outcome of the 'efforts of others' prong. If investors do not or barely participate in sales efforts, such arrangements are generally seen as securities.[183] It therefore does not matter how much an investor *can* participate, but how much investors actually *do* in

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[177] Held in *McConathy v Dal Mac Commercial Real Estate, Inc.* [1977] 545 S.W.2d 871 based upon earlier case law, such as *Polk v. Chandler* [1936] 276 Mich. 527, 268 N.W. 732; *Wardowski v. Guardian Trust Co.,* [1933] 262 Mich. 422, 247 N.W. 908 ; *Busch v. Noerenberg* [1938] 278 N.W. 34

[178] *SEC v. The International Mining Exchange, Inc.* [1981] 515 F.Supp 1062, 1067 (D. Colo.); see also *Crowley v. Montgomery Ward & Co.* [1978] 570 F.2d 877 (10th Cir.); *Hector v. Wiens* [1976] 533 F.2d 429, 433 (9th Cir.);

[179] *SEC v. Koscot Interplanetary, Inc.* [1974] 497 F.2d 473 (5th Cir.)

[180] Glenn Turner (n. 130) 478 and Aldrich (n. 160) 1038

[181] Stephen Jung Choi and Adam C. Pritchard, *Securities Regulation Cases and Analysis* (Fourth edition, University Casebook Series 2015) 30

[182] *Williamson v. Tucker* [1981] 645 F.2d 404, 422 (5th Cir.)

[183] *United States v. Herr* [1964] 338 F.2d 607 (7th Cir.)

practice, meaning the amount of actual participation could play a role too when determining the investor's degree of reliance on the efforts of others.

Again, pre-sales and sales of non-functional tokens are the easiest to analyze. We can reasonably safely conclude that investors that acquire utility tokens, which are issued by a central company and do not allow holders to participate in the governance of the blockchain or company, while inducing an expectation of profits, are reliant on the managerial efforts of the issuer to realize these profits for them. After all, the difference in the value of the token between the ICO and the moment of release of the token's utility or function is wholly dependent on the issuer. Such tokens will be seen as investment contracts.

On the other side of the spectrum are ICOs which take place after all development ever to be done on the blockchain has already occurred. In *SEC v. Life Partners, Inc*. the D.C. Circuit Court of Appeal held that the need for securities regulation is greatly diminished where "the value of the promoter's efforts has already been impounded into the promoter's fees or into the purchase price of the investment, and if neither the promoter nor anyone else is expected to make further efforts that will affect the outcome of the investment".[184] If a blockchain's utility is, after an ICO, no longer developed in any way, then the value seems to not be dependent on the managerial efforts of the issuer. However, this decision is criticized broadly and should, according to many not be taken as guidance when determining the status of tokens.[185] In *SEC v. MBC*, a court even held that "while it may be true that the 'solely on the efforts of the promoter or third party'-prong may be more easily satisfied by post-purchase activities, there is no basis for excluding pre-purchase managerial activities from the analysis".[186]

The question remains if a sufficient degree of control for token-holders would preclude the tokens from the possibility of being seen as securities. Theoretically, this is a possibility due to the relevance of the degree of control in both partnership agreements and franchise agreements. When analyzing the possibility hereof in the context of blockchains, the position taken by the SEC in its analysis with regard to 'The DAO', a blockchain-based investment vehicle, provides helpful insight.[187] DAO tokens represented a stake of ownership in a blockchain-based fund, governed by token holders and were therefore, in the token-classification framework above, clearly investment tokens. However, as The DAO's tokens granted rights of governance, which allowed investors to participate in the decision-making of individual investments, the degree of control granted to investors could theoretically result in the situation where the fourth prong of *Howey* would not be satisfied. These investment tokens would therefore not be securities. The SEC rejected this reasoning by giving two distinct arguments. First, the investment opportunities which could be voted on by token holders were first vetted and filtered by a group of individuals which included The DAO's co-founders. Second, the SEC states that DAO token investors were "widely dispersed and limited in their ability to communicate with one another". The degree of dispersion would logically limit the control of any single investor to actually have some impact on the actual direction of the platform, leading to a situation where investors were dependent on the efforts of a third party.

The stance the SEC took in its analysis of The Dao in terms of the importance of the dispersion of investors, differs substantially from the comments made by Mr. Hinman, the SEC's Director of the

[184] Life Partners (n. 147) 547
[185] Wright & Rohr (n. 92) 71, footnote 185
[186] *SEC v. Mutual Benefits Corp., et al* [2005] 408 F.3D 737 (11TH CIR.)
[187] SEC DAO Report (n.124)

Division of Corporate Finance in September 2018 about the legal nature of Ethereum tokens. In his speech, Director Hinman stated that:

> *"If a network on which the token or coin is to function 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. As a network becomes truly decentralized, the ability to identify an issuer or promoter to make the requisite disclosures becomes difficult, and less meaningful."*[188]

To make sense of this seemingly contradictory statement, we should consider that DAO tokens and Ethereum tokens are designed as two very different instruments. Whereas The DAO's tokens clearly represented economic participation in an investment fund, Ethereum is a protocol token that is used to pay for the computational costs incurred when running smart contracts on the Ethereum Virtual Machine. The stance taken by Mr. Hinman can therefore likely not be applied analogously to tokens that cannot be deemed protocol tokens. Still, Mr. Hinman's view makes sense in theory. Why would an investor need information disclosures about a party that no longer has any influence on the investment which is acquired? When an investor no longer relies on the efforts of the issuer, it makes sense to say that the token is no longer an investment contract, as the 'reliance on the efforts of others' part of the *Howey* test is not met. In relation to protocol tokens, this could certainly happen. After all, the value of a protocol is derived from the usage thereof and, in the case of second-generation, from the applications built thereon. Moreover, code for blockchain-based projects is often written, and contributed to, in an open-source fashion, by a multitude of different parties aside from the issuer. Furthermore, blockchain governance can be implemented in a decentralized fashion. It is these decentralized elements which could result in a situation where there is no reliance on the initial issuer of protocol tokens. However, when can we speak of a protocol that is, in Hinman's words, 'sufficiently decentralized'?

In practice, it will be difficult to determine the degree of decentralization needed for investors to no longer meaningfully rely on the issuer of the token. Even for Bitcoin, often regarded as the most decentralized project in the crypto-space, discussions can be had on the actual degree of decentralization in different areas, especially when considering that more than 90% of nodes on the Bitcoin network run the same client codebase.[189] A number of observations can be made with regards to the factors which are of importance for a 'sufficiency-of-decentralization-test'. First, decentralization should be measured on a gradual scale. Moreover, decentralization is not binary, but instead a multidimensional concept that is a function of many factors, each of which has its own gradual scale of decentralization. This is perhaps best exemplified by the first factor which will be examined in this analysis into the variables that should be considered in a possible 'sufficiency-of-decentralization-test': governance.

Blockchain governance is a complex and crucial component of any permissionless blockchain project. After all, blockchain protocols are still in their infancy, with new capabilities being developed over time. New updates can shape the future success of the network, but could also lead to crucial security issues, which could potentially decimate the value of an investors tokens within a few days. As such, when examining whether a protocol is decentralized, it is important to determine the degree of control

[188] William Hinman, 'Digital Asset Transactions: When Howey Met Gary (Plastic)' (*SEC transcribed speech*, 14 June 2018) https://www.sec.gov/news/speech/speech-hinman-061418 accessed 25 December
[189] Data from https://arewedecentralizedyet.com/ accessed 28 December 2018

the issuer has over the future direction of the protocol. To discuss the role of the issuer in a blockchain protocol's governance, it is necessary to have a solid understanding of how blockchain governance takes place. For many blockchains, governance is comprised of a system of checks and balances. An analogy can be drawn with Montesquieu's three branches of government, where governance powers are divided across three branches: the legislative, executive and judicial branch. Although it is by no means a perfect 1:1 analogy, it helps to think of blockchain governance in three branches as well. The 'legislative' branch in blockchain governance is comprised of those parties that can propose updates to the blockchain's codebase. Each blockchain has a core software repository that holds the code for the main implementation of the protocol. Whoever has effective control over that software repository has the power of the legislative branch: the power to propose updates to the protocol. It should be mentioned that anyone can submit code to the software repository. However, only those in control of the software repository can include the code into the repository (by merging pull requests), thereby proposing it to the network. Proposed updates are subsequently implemented by what we will call the 'judicial' branch: the network's nodes. Not only do the nodes check whether new blocks added to the chain are in accordance with the rules of the network, they also implement updates proposed by the legislative branch by updating their software. Only when the network's nodes update their software, an update is implemented. When a subset of nodes does not update their software out of disagreement, a contentious fork takes place, out of which two different chains (with two different codebases) emerge. As such, while the 'legislative' branch can make as many updates (or laws) as they want, the 'judicial' branch can choose not to implement those updates if it finds them to be 'unlawful' or incompatible with their own future vision. In case of a contentious fork, the 'judicial' branch can reject an update, thereby creating its own new jurisdiction. Nodes that participate in the mining or staking process arguably play a more important role than regular full nodes, as the security they provide to the network can provide for more leverage in the public discussion around the implementation of updates.[190] For an inquiry into the issuer's control over the judiciary branch of blockchain governance, one would therefore have to analyze the 'voting power' of the issuer, measured by the amount of nodes controlled, as compared to the total number of nodes and voting power. Special attention should be given to the amount of issuer-controlled mining (i.e. hashpower) in PoW-based systems in relation to the network's total hashpower. In PoS-based systems, additional attention should be given to the amount of tokens staked by the issuer, as compared to the total number of staked tokens. Another factor of relevance here is the degree of dominance of the issuer in terms of client-codebase implementations run by nodes. Finally, the 'executive' branch in blockchain governance is often comprised by the issuer itself, and commonly, an affiliated Foundation that manages the funds raised in case the token was sold through an ICO. This foundation not only reimburses the network's core developers, but additionally forms initial policy recommendations in the form of future roadmaps, focuses on brand awareness and funds parties in the ecosystem as a whole. Such parties can include start-ups that build third-party client implementations, developer tools or applications on top of the protocol. Again, the issuer's control over the executive branch is to be analyzed, as well as its impact on the legislative and judicial branch and its impact on the development and success of the entire ecosystem. For example, if the main success of the network can be ascribed to an issuer-controlled executive branch, it would be difficult to argue that the protocol is decentralized to such a degree that investors no longer rely on the efforts of the issuer.

[190] However, this does not have to be the case, as seen from the block-size wars in Bitcoin, where developers and users on the one hand and miners on the other disagreed over the best way to scale Bitcoin. In this case, the community of users and developers 'won', eventually leading to a contentious hard fork in which a number of miners 'forked off ' from the main chain to create a Bitcoin version that implemented bigger block-sizes: Bitcoin Cash.

Still, there is a last way in which investors can (and do) exercise governance: through the fourth branch of government. This branch is usually understood as comprising the people, press and interest groups. In relation to tokens this is not substantially different. The voice of communities of token-holders that have formed around blockchain projects is of vital importance for blockchain governance. After all, as compared with traditional government, a people's revolt in the blockchain is very easy: investors can just sell their tokens. If the legislative branch and executive branch want to implement an update that is hated by a majority of a project's community, this will therefore be reflected in the price of the token. As the goal of all stakeholders in a token's ecosystem (including the issuer) is to have the token appreciate in value, the community's voice is of real importance. The judicial branch, comprising of nodes, might (in part) opt to not implement an update due to the unpopularity thereof amongst the fourth branch of government. Still, the fourth branches' control is exercised through market forces and applicable on a macro scale. On a micro scale, the single investor does have the ability to completely opt out of his reliance on the issuer at any time by selling his tokens.

An analysis into the decentralization of blockchain governance is complex to say the least. In which ways should governance be in the hands of other parties than the issuer? How much control should the issuer no longer retain? For additional guidance as to the required amount of effective control in the hands of investors (i.e. the amount of required decentralization of governance), we can examine how the concept of control is formulated with regards to the concept of effective control in general partnership interests. Of course, a general partnership interest is not completely similar to token holdings. However, the relevant case law does provide valuable insight into how US courts approach the concept of control. In *Williamson v. Tucker* it was decided that a general partnership interest is presumed not to be an investment contract because of the control exercised by the general partner, therefore constituting a lack of reliance on the efforts of others.[191] However, if a general partner in fact retains little ability to control the profitability of his investment, his partnership is more akin to a limited partnership interest, which is presumed to be an investment contract. Three (non-exhaustive) situations were recognized in which this would be the case, the presence of any of which would render a general partnership interest into a limited partnership interest due to reliance on the efforts of the issuer.

The first scenario is when an agreement among parties leaves so little power in the hands of the partner or venturer that the arrangement in fact distributes power as would a limited partnership. This 'power' can be related to the degree of control exercised by the token issuer across the different branches of blockchain governance as explained above. If the issuer has effective control over the legislative branch but not over the other branches, does this make the token's governance sufficiently decentralized? Or is a lack of control across each of the branches required?

The second scenario painted in *Williamsson* is where the partner or venturer (read: token holder) is so inexperienced and unknowledgeable in business affairs that he is incapable of intelligently exercising his partnership or venture power. This scenario is about the *actual* control exercised by the investor, instead of the potential, theoretical ability to exercise control. It is safe to assume that most token holders are not able to influence the legislative branch. Even though blockchain projects generally allow anyone to develop and propose code to the project's legislative branch, the average investor is not capable hereof. In relation to the judiciary branch, most investors are likely capable of running a node, as this does not require much technical proficiency. As such, the investor is able to participate in the judiciary branch, although the question remains as to whether investors are knowledgeable enough to even have a preference in terms of voting on network upgrades. Of course, blockchain protocols are open-source, and the information required by the investor to intelligently exercise his control in the

[191] Williamson (n. 182) 422

judicial branch is always available. Still, technical ineptness might nevertheless prove too big a barrier for most investors, despite the efforts of many commentators within blockchain communities trying to write informative content which makes decisions on updates as easy as possible to understand. Investors willing to run a node, inform themselves and vote on updates can exercise their control over the judiciary branch, but the amount of investors that actually do so is extremely low.[192] The question remains whether this is enough to state that investors are in a position to intelligently exercise their control. Projects with very active communities that actively try to provide guidance to their token holders and subsequently have higher governance participation rates might have an advantage over communities that don't. Meanwhile, the executive branch generally lies outside of the token holder's reach of control, although exceptions exist.[193]

A third scenario that would indicate the lack of control of investors on the profitability of their investment given in *Williamson* recognizes the situation where the partner or venture (read: investor) is so dependent on some unique entrepreneurial or managerial ability of the promoter or manager that he cannot replace the manager of the enterprise. If the investor is not in a situation where he can potentially replace the issuer, he is reliant on their efforts for his profits. This is where the fourth branch of crypto-governance is relevant. As mentioned, if a large part of a project's community disagrees with, for example, a controversial update to the blockchain's codebase, the fourth branch of blockchain governance can influence the 'judicial branch' to not update their nodes. In doing so, they create a fork of the blockchain, thereby creating a separate network, with a separate code repository, separate node implementation, and, most importantly, a separate token. In other words, the issuer can be replaced in their roles across all branches at the same time. When analyzing the viability of this option, the question becomes whether there is a realistic alternative to the efforts of the issuer.[194] As such, if there are multiple active third-party developer subcommunities within a project, the option to replace the issuer in his roles is far more realistic than when this is not the case.

While the issuer's role in blockchain governance is of crucial importance, and the existence of any of the scenarios in *Williamsson* should be examined, governance is just one factor that should be examined in a possible sufficiency-of-decentralization test. Another factor that should be examined on a stand-alone basis, is the reliance on the executive branch, or the issuer's foundation and funds, for the success of the project. After all, the foundation often plays a major role in terms of brand awareness, the development of the ecosystem in a broader sense and the funding of third-party developers building applications on top of the protocol. If a majority of the biggest applications and use cases built on the protocol have all been funded by the issuer, this could be an indicator of reliance and a lack of 'decentralization'. After all, the investor is then arguably reliant on the foundation for the profitability of his investment. A fork can of course be executed, but if the success of the protocol is largely reliant on the funding efforts of the issuer into applications built by third-party developers, the replacement of the issuer might not be a viable option. As such, the third scenario painted in *Williamson* would be applicable. Other relevant factors might include the advisory positions maintained by issuers within

[192] At the time of writing, there are 8762 nodes on the Ethereum network, while there are almost 57 million unique Ethereum addresses. Of course, not nearly all unique public keys represent unique investors, but even if only 1% of those addresses are unique investors, it would indicate that only 1.5% of investors participate run a node (assuming each node is represents a unique node owner). Data from Etherscan https://etherscan.io/chart/address and Ethernodes https://www.ethernodes.org/network/1, accessed 8 February 2019
compare data from total amount of eth nodes to total estimation of amount of investors
[193] There are some projects that provide investors the ability to decide over the usage of funding by the executive branch, such as Decred and Tezos.
[194] Choi & Pritchard (n. 181) 136

the entire ecosystem and the degree to which the value of tokens is reliant on other efforts by the issuer, such as networking, the organization of the community (e.g. the governance over the major online fora in which the community gathers and the organization of events) and efforts in terms of attracting new businesses to adopt the protocol. If it is realistically not viable for the project to continue without the efforts of the issuer, it will be difficult to argue that the network is decentralized to such a degree that the bar in the sufficiency-of-decentralization-test is met.

In practice, I believe that if there is indeed a possibility that sufficient decentralization might lead to a token not passing the fourth prong of the *Howey* test, there are, barely any tokens in which this is the case, with exception of perhaps a handful of projects,. A token can likely not be sufficiently decentralized during, and the first years after its ICO, as the role of the issuer is crucial to the success of the protocol in the early stages. Only when a project's ecosystem and community grows large enough for the role of the issuer to be of little importance for the development, governance and the success of a token's value; *and* when the issuer can be realistically replaced, a token can be deemed sufficiently decentralized. A token that initially passed the *Howey* test would, at a later date, not pass the test anymore. This would mean that the legal nature of a the token would likely "transform" from a security into a commodity. A quite challenging conception for the way we traditionally think of securities, but one that also been recognized by Brian Quintenz, commissioner of the Commodities and Futures Trading Commission (CFTC):

" [ICOs or tokens] may start their life as a security from a capital-raising perspective but then at some point -- maybe possibly quickly or even immediately -- turn into a commodity."[195]

CONCLUSION

The US has developed an extensive system of Securities Laws over the last 80 years. For investment contracts, or any type of issuance that does not fall under the archetype securities, such as shares and bonds, this has occurred through application of the criteria defined in *Howey*. As we have seen, the *Howey* test proves to be very flexible and capable of dealing with token sales. However flexible this test is, it is clear that many token sales that have occurred to date will pass all four prongs, making them unregistered securities offerings, thereby violating the Securities Act of 1933. All security tokens giving a right to revenues or profits in whatever way, shape or form will be deemed securities and most, if not all, utility tokens too. Those tokens that solely function as a cryptocurrency are far less likely to raise any concerns.

VII. ICOS UNDER EU FINANCIAL LAW

EU securities law consists of a number of regulations and directives. The Prospectus Directive[196], the new Prospectus Regulation[197], the Market Abuse Regulation[198] and the MIFID II[199] form the core

[195] Jerry Brito, 'CFTC commissioner: tokens that start as securities may "transform" into commodities." (20 October 2017) https://coincenter.org/link/cftc-commissioner-tokens-that-start-as-securities-may-transform-into-commodities accessed 16 December 2018

[196] Council Directive 2003/71/EC on the prospectus to be published when securities are offered to the public or admitted to trading, amended by Council Directive 2010/73/EU on the prospectus to be published when securities are offered to the public or admitted to trading OJ L 345

[197] Council Regulation (EU) 2017/1129 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market OJ L 168

[198] Council Regulation (EU) No 596/2014 on market abuse OJ L 173

[199] Council Directive 2014/65/EU on markets in financial instruments OJ L 173

hereof, with the UCITS Directive[200], the AIFMD[201] and EMIR[202] focusing more directly on (collective) investment vehicles, alternative investment funds and derivatives respectively. The different Directives and Regulations of financial markets and securities have seen to substantial harmonization of financial legislation across the EU, although the Directives leave room for differing manners of transposition and implementation of this legislation across the various Member States. Much like the U.S. securities laws, EU financial legislation assigns substantial value to the criterion whether an instrument is considered to fall under the umbrella term of a security, in EU legislation referred to as 'transferable security'. This is especially crucial for the application of the EU Prospectus Directive and, from the 21st of July 2019 on, its Prospectus Regulation. With respect to initial coin offerings, we will therefore analyze whether cryptographic tokens can fall under this definition. Where they do, registration and approval of a Prospectus by one of the Member State's financial markets authority is required. Once such approval is obtained, a single Prospectus can be 'passported' across the EU, covering all Member States.

A. TRANSFERABLE SECURITIES UNDER EU FINANCIAL LAW

The main definition of securities under EU financial law is found in Article 4(1)(44) of MIFID II, which defines 'transferable securities' as *'those classes of securities which are negotiable on the capital market, with the exception of instruments of payment, such as:*

> *a) shares in companies and other securities equivalent to shares in companies, partnerships or other entities, and depositary receipts in respect of shares;*
> *b) bonds or other forms of securitised debt, including depositary receipts in respect of such securities;*
> *c) any other securities giving the right to acquire or sell any such transferable securities or giving rise to a cash settlement determined by reference to transferable securities, currencies, interest rates or yields, commodities or other indices or measures.*

As such, instruments that resemble shares, bonds or options and the like qualify as securities. In practice, many token issuers and their advisors seem to conclude that any tokens which do not resemble any of these instruments, can be sold to investors without an approved prospectus. However, as we will see later, such a conclusion is debatable, as this definition of securities merely provides for a non-exhaustive list of examples of transferable securities - not an exhaustive list of options to choose from. We must also not forget that regulators on the Member State level still have discretion as to the implementation of many laws, including, to an extent, the EU's prospective regime.[203] Each Member State has instituted a separate authority for the supervision of their respective financial markets. These National Competent Authorities (NCAs) enforce the law, provide licenses and give guidance to companies falling in the scope of EU (or national) financial law. As will become clear in the analysis below, the lack of complete harmonization across the EU has led to differing implementations and interpretations of the definition of transferable securities by Member States. Historically, these slight

[200] Council Directive 2009/65/EC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) OJ L 302
[201] Council Directive 2011/61/EU on Alternative Investment Fund Managers OJ L 174
[202] Council Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories Text with EEA relevance OJ L 201
[203] As the EU Prospectus Regulation enters into force (fully) on 21 July 2019, the freedom afforded to Member States is reduced to some degree. However, the definition of transferable securities, which is of crucial importance for the application of the EU Prospectus regime, is included in Article 4(1)(44) MIFID II instead of the Prospectus Regulation, meaning the Member States retain some freedom in the implementation of the definition into their national laws.

differences have never presented a problem. However, for the classification of certain categories of tokens, these slight differences result in differing classifications of a single token in different Member States. The European Securities and Markets Authority undertook a survey of National Competent Authorities (NCAs) of Member States in the summer of 2018, surveying their interpretation and classification of 6 existing tokens.[204] This survey gives substantial insights into the (differing) implementations of the definition of transferable securities in Art. 4(1)(44) MiFID II in the EU's Member States' law in practice. In general, we can distinguish between those Member States that have, for the transplantation of the definition of transferable securities, taken an equivalence-based approach and those that have taken a characteristic-based approach. Still, these distinctive approaches have not resulted in two bright-line classification systems of tokens across Europe, due to widely varying implementation, as will become clear from the analysis below.

B. AN EQUIVALENCE-BASED APPROACH

The definition of transferable securities in Article 4(1)(44) MIFID II gives a number of examples under indents (a), (b) and (c). The choice by the legislator to include specific examples is a clear indication that tokens sold in ICOs which give rights similar to traditional shares, bonds, options or derivatives, are very likely to be classified as a transferable security. Art. 4(1)(44)(a) explicitly includes "shares or *other securities equivalent to shares* in companies, partnerships *or other entities*" [emphasis added].With regards to tokens, this could indicate that even a degree of equivalence of a token's design to shares, in terms of its inherent characteristics, could bring it in the scope of EU financial regulation. The main characteristics of shares are generally understood to be comprised of equity rights, rights to dividends and governance rights. Therefore, any kind of dividend rights, equity-like rights or even rights to share in the revenue of the issuer are a clear indication that a token is classified as a security. Most security or investment tokens do provide investors with such rights, and would lead to the inclusion of these token sales under the umbrella term of transferable securities. Any governance rights relating to the development or business decisions by the issuer would potentially increase the likelihood of being classified a 'other security equivalent to shares' as well. This is in stark contrast with the US, where voting rights could actually be an indicating factor that a token might not be a security, if a 'sufficient decentralization test' were to be adopted. We can also deduce from the MIFID definition of transferable securities that the legal nature of the issuer of the token is of no importance. Whereas difficulties may arise when trying to identify a common enterprise under the US securities regime when a token is issued by a decentralized set of developers or where dividends are accrued and distributed from a decentralized platform that is not owned by any single entity, the wording of 'other entities' might be able to include the tokens issued in such scenarios under the definition of transferable securities. However, the vast majority of tokens does not have any profit accrual mechanism. According to a survey covering all ICOs between 2013 and March 2017, only about 25% of ICOs granted profits based on an investment.[205] The rest, consisting mostly of utility tokens, does not have any such mechanism and they are therefore often considered to fall outside the scope of instruments deemed equivalent to traditional transferable securities by the industry. The mere fact that there might be a possible return on investment from the increased value of a token is not, by itself, enough to consider the token as 'other securities' equivalent to shares.

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[204] European Securities and Markets Authority, 'Advice on Initial Coin Offerings and Crypto-Asset, Annex 1: Legal qualification of crypto-assets – survey to NCAs' (*ESMA Advice, 9 January 2009)* ESMA50-157-1391 [further: ESMA Survey of NCAs]

[205] -- 'Token Rights: Key Considerations in Crypto-Economic Design' (Smith & Crown, 30 March 2017), https://perma.cc/2TDF-V8BW accessed 15 January 2019

An alternative argument could be made that many utility tokens might be deemed to fall under the category of 'other forms of securitized debt' under Art. 4(1)(44), indent (b). While this might sound counterintuitive at first glance, as tokens are virtually never structured to resemble bonds, it is true that a substantial amount of utility tokens confer a right to claim services from the issuer in return for the token. In this sense, the token can be seen as a sort of liability towards the token holder, and it could arguably be deemed a form of securitized debt. Still, it feels counterintuitive to see a token meant for consumption as a form of securitization of services and such utility tokens are in practice often deemed to be excluded from the scope of EU securities legislation. This analysis seems to correspond with statements issued by national securities legislators. Meanwhile, barely any token can be classified as a security under indent (c), as tokens generally do not have any elements usually associated with the derivatives described thereunder.

Considering the difficulties in classifying tokens under the categories set out in indents of Art. 4(1)(44), any Member State that has opted to implement the definition of transferable securities into national law strictly using an equivalence-based approach potentially runs into difficulties with classifying tokens as transferable securities. As the issues that arise in relation to many token sales as set out in Section III of this article are comparable to issues that arise in the realm of securities, this results in a potential 'gap' in the EU securities regime. Only when tokens have sufficient elements to make the token equivalent to ('other categories of') shares or bonds, the token can be 'caught' by their securities regime. However, different NCAs that have implemented the definition of transferable securities using an equivalence-based approach attach differing weight to factors that can be used to establish equivalence to shares or bonds. The results of ESMA Survey of NCAs gives some insight in this regards, as NCAs were asked whether a sample set of 6 tokens could be deemed equivalent to shares or bonds. While the results will be examined in greater detail below, the results show that, for classification under indent (a), the existence of economic rights (e.g. revenue/profit-rights) might prove sufficient to be deemed equivalent to a share in some Member States, while other Member States might additionally require the token to grant decision-making powers or liquidation rights.[206] In terms of classification as (or equivalent to) bonds under indent (b), the Survey showed that the vast majority of NCAs would not classify any of the sample set of tokens as such.[207]

C. A CHARACTERISTICS-BASED APPROACH

The approach taken above is based on an analysis of equivalence of tokens to the traditional examples of securities provided in indents (a), (b) and (c) of Article 44(1)(4) MIFID II. The caveat of this approach is that it completely ignores the fact that, while the examples gives are of great importance for the interpretation of the term, they are not meant as an exhaustive list of all possible securities. In other words, it is possible for instruments to be deemed to be transferable securities without resembling shares, bonds or options. A more characteristics-based approach better entertains this possibility by instead focusing on the defining characteristics of transferable securities. This approach does not look at the examples given in the MiFID definition. It focuses on what is meant to be covered by the definition. After all, the MiFID definition of 'transferable securities' defines them as *'those classes of securities which are negotiable on the capital market,'* before going on to list examples. From this definition we can deduce three different criteria to be met by an instrument to qualify as a transferable security: transferability, negotiability and standardization.

[206] ESMA Survey of NCAs (n. 204) 43-45
[207] Ibid 46

1. Transferability

Transferability requires that a token can be transferred or assigned to another person. This requirement is found in the definition of securities in Art. 2.1 (a) of the Prospectus Regulation, by reference to the MIFID definition of 'transferable securities'. Whether the security is actually traded on a secondary market is not of importance. The mere possibility of transferability is more important. A relevant factor might be whether the type of security is generally traded on the secondary market.[208] Nearly all tokens fulfill this requirement, as blockchain has emerged in order to enable safe and easy transfers of digital representations of value. Of course, the transferability of tokens may be restricted on a contractual basis. The ESMA's Q&A on the Prospectus Regulation however further clarifies that where selling restrictions are made applicable in a specific country or by a lock up agreement between the Company and existing shareholders, the units remain "transferable securities" falling into the scope of the Prospectus Directive.[209] This is further implied by the Prospectus Regulation, which requires information in relation to restrictions on the free transferability of the securities (Annex III, 4.8) and information in relation to lock-up agreements of selling securities holders (Annex III, 7.3) to be included in the issuer's prospectus. While contractual limitations on the transfer of tokens would not suffice to make the token itself non-transferable (as this would solely lead to a breach of contract with the issuer and/or other shareholders), it is actually possible to technologically impose and enforce the non-transferability of tokens in a token's smart contract itself. The question therefore arises whether such non-transferability of tokens would suffice to exclude the token from the grasp of securities legislation. The ESMA gave guidance on this topic by saying that: "*ESMA is aware that some restrictions may be so broad that they result in transforming "transferable securities" into non-transferable securities, falling no longer into the scope of the PD. ESMA will analyse whether the security that is subject to a restriction is transferable or not on a case by case basis."* [210] It seems that where transferability is rendered impossible, any issued instrument escapes the grasp of the requirement to issue an approved prospectus. This would mean that it is possible to raise funds using a non-transferable token that resembles equity, as long as this token is not transferable. This could be used as a loophole by issuers by potentially raising funds while selling a share-like token that is non-transferable. This token could then be made transferable at a future date. One solution to closing this loophole would be to say that the moment where the token is made to be transferable would trigger prospectus requirements at that date, meaning the issuer is able to shift legal compliance with securities legislation to a point in the future where the issuer is more capable of handling the associated legal burden. However, this would go against the whole purpose of securities legislation, as investors are not protected from information asymmetries between them and the issuer at the point of investment. Therefore, it would be more appropriate to say that the tokens have been transferable securities from day one as their transferability has de-facto been implied from the start.[211]

With regards to transferability, the ESMA Survey of NCAs showed that most Member States (20) do not have a legal definition of transferability. Their NCAs in practice equate transferability to negotiability. The survey further showed that there is no common view on the impact of clauses limiting

[208] MJC Somsen and L Bolhuis, 'Groene Serie Toezicht Financiële Markten, art. 1:1 Wft, aant. 181.6' (1 October 2010) http://deeplinking.kluwer.nl/?param=009FE8AD&cpid=WKNL-LTR-Nav2 accessed 15 January 2019

[209] European Securities and Markets Authority (ESMA) 'Questions and Answers, Prospectuses' (ESMA Q&As January 2019) [further: ESMA Q&A]

[210] Ibid. 67

[211] See also Philipp Maume and Mathias Fromberger 'Regulation of Intial Coin Offerings: Reconciling US and EU securities laws' [2018] Chic. J. Int. Law (forthcoming) 31

transferability.[212] None of the tokens in the sample set analyzed by the surveyed NCAs were non-transferable, so no further conclusions can be drawn from the survey for tokens made (temporarily) non-transferable.

2. Negotiability on the capital market

Pursuant to the definition of transferable securities in Art. 4(1)(44) MiFID, transferable securities have to be 'negotiable on the capital market'. When the definition was first implemented in MiFID I[213]In a Q&A about MiFID I, published by the European Commission Services it was moreover indicated that "the essence of the definition of transferable securities in Article 4(18) MiFID is that, as a class, they are negotiable on the capital markets (…)"[214]

Whereas the transferability-criterion is concerned with the question whether a security can be transferred in the first place, negotiability on the capital market can be said to refer to the ease of transferring the security. In its implementing guidelines, the Dutch Authority for Financial Markets has stated that the negotiability requirement is satisfied where the security is *generally* traded on capital markets [emphasis added].[215] While no clear definition of the term capital markets is provided by MiFID, we usually, for traditional securities, examine whether the security is of such a nature that it is capable of being traded on a regulated market or multilateral trading facility.[216] In relation to tokens, we can observe that most tokens are almost directly after issuance admitted to trading on secondary exchanges which may or may not be deemed to fall under the MiFID definition of regulated market or multilateral trading facility (MTF). Eventually, the question whether these 'crypto-exchanges' fall under such definitions is not of much relevance, as unregulated markets should be included in the umbrella term of capital markets for adherence to the spirit of the law.[217] Indeed, the European Commission has interpreted the term 'capital market' to include "all contexts where buying and selling interests in securities meet".[218] As the functionality of crypto-exchanges is almost identical to regular capital markets (being platforms for the trading of securities based on supply and demand, with price discovery occurring through order books), we can conclude that any token which is traded on crypto-exchanges is negotiable.

The ESMA survey of NCAs shows that not a single Member State has a legal definition of 'capital market'. Instead, 23 NCAs interpret capital market as the place where buying and selling interests meet, which corresponds with the European Commission's interpretation.[219] The survey further showed that 18 out of 23 NCAs see 'negotiability on the capital market' as one criterion, rather than assessing 'negotiability' and the 'capital market criterion' as two stand-alone criteria. Meanwhile, as mentioned before, most NCAs in practice equate transferability with negotiability.[220] As such, the criterion of negotiability on the capital market almost seems to be reduced to mere transferability in practice, with no requirement as to whether assets have effectively been transferred or traded. Indeed, a substantial majority of NCAs (21 out of 25) considered the majority of the set of tokens to be negotiable, generally

[212] ESMA Survey of NCAs (n. 204) 21
[213] Council Directive 2004/39/EC on markets in financial instruments OJ L 145, Art. 4(18)
[214] European Commission Services, 'Your questions on MiFID' (European Commission Q&A, 2004) q. 115; note that in MIFID II, the definition of transferable securities is found in Art. 4(44) not changed.
[215] Dutch Authority for Financial Markets, Policy Guideline Transferability [2011]
[216] European Commission, Your questions on MiFID (updated version 2008), Question N° 115.
[217] Victor de Serière', *Asser 2-IV Effectenrecht* [Wolters Kluwer, 2018 edn] 30
[218] European Commission Services, 'Your questions on MiFID' (European Commission Q&A, updated version 2008) 46
[219] ESMA Survey of NCAs (n. 204) point 22
[220] Ibid 21

as they were capable of being traded[221], while most NCAs (18 to 23) considered the sample crypto-assets as negotiable on the 'capital market'.[222] Although one NCA was of the opinion that the promise of negotiability is not sufficient and that there should be evidence of trading, it seems that it is generally not necessary for an instrument to be actually traded on a capital market to fulfil the criterion of negotiability on the capital market.

Interestingly, no less than 12 NCAs that considered a token design to be nonnegotiable, made this qualification because they considered the asset not to be a security. This logic is seemingly backwards, or at least circular, as negotiability is a factor for classification as a transferable security - not the other way around. Coming to the conclusion that an asset is not negotiable, because the asset is not a transferable security could also suggest that these NCAs do not assess negotiability on the capital market on a stand-alone basis.[223]

3. Standardization

A final characteristic of a transferable security is the degree of an instrument's standardization, also referred to as its fungibility. The criterion of standardization originates from the MiFID definition of transferable securities due to the wording 'those *classes* of securities (...) (emphasis added)'. As a general rule of thumb, we can say that only those securities which are interchangeable with other securities of the same issuance, are fungible, and form a class.[224] An instrument is only fungible when issued in multitudes while providing the same rights to equal investors. In other words, standardization is required across instruments to form a class of instruments. An issuance containing different classes of instruments does not result in lack of standardization as long as the different classes of instruments are clearly identifiable.

Of course, almost all issued tokens fulfill this requirement, as without standardization, admittance to capital markets is impossible. In fact, any token that is negotiable (i.e. traded or capable of being traded on a crypto-exchange under a token-specific 'ticker' such as BTC or BTX for bitcoin) is by definition standardized. As such, the standardization requirement could be seen as a sub criterion to negotiability on the capital markets. Indeed, with regards to the criterion of standardization in practice, the ESMA's survey shows that most NCAs do not see standardization as a stand-alone criterion. Only nine NCAs explicitly stated that to form a class, a degree of standardization was required, in the sense that units should share the same characteristics, e.g., have the same nominal value, and/or represent standardized issued units, meaning that the contents/attributes of each security are not individually negotiated with investors, which allows them to be easily traded on a capital market.[225] At the same time however, the NCAs reported a similar interpretation to the term 'classes', namely interchangeability, fungibility or identical, giving the same rights to the same group of investors.[226] The reason why only nine NCAs independently mentioned standardization can likely be explained by the fact that standardization is implied when an instrument is negotiable on a capital market. It could therefore be the case that other NCAs do not require standardization as a stand-alone criterion, as they indeed see it as a sub-criterion to negotiability on the capital market.

[221] Ibid 20
[222] Ibid 22
[223] Ibid 20
[224] Asser (n. 209) 71
[225] ESMA Survey of NCAs (n. 204) 17
[226] Ibid 16

D. A PRINCIPLE-BASED APPROACH

A final approach to analyzing whether tokens qualify as transferable securities is one based on the underlying principles of securities laws. It is important to emphasize that prospectus requirements imposed by the Prospectus Directive aim to 'ensure investor protection and market efficiency'[227]. Recital 3 of the Prospectus Regulation, which will replace the Directive in full by 21 July 2019, further clarifies that 'disclosure of information in cases of offers of securities to the public or admission of securities to trading on a regulated market is vital to protect investors by removing asymmetries of information between them and issuers.'

Recital 8 of MiFID II furthermore states that "It is appropriate to include in the list of financial instruments commodity derivatives and others which are constituted and traded in such a manner as to give rise to regulatory issues comparable to traditional financial instruments." First, it is important to note that inclusion of an instrument in the list of financial instruments found in Annex 1 Section C MiFID II does not result in the application of the Prospectus Directive. Instead, the applicability of the obligation to publish a prospectus is solely dependent on classification of tokens as transferable securities. However, this Recital does take note of the regulatory issues that can arise in relation to new financial instruments. It furthermore implies that similar regulatory issues will result in similar treatment under EU financial law. Again, this logic cannot strictly be applied to transferable securities by analogy. However, transferable securities are at the end of the day a subcategory of financial instruments and the logic entailed in this recital is a prime example of a practical, principle-based approach. If we would apply such an approach to token sales, we would come to the conclusion that tokens often require the application of securities laws. Indeed, as identified in section III of this article, significant information asymmetries exist between token issuers and their investors. Moreover, a majority of tokens trade below their ICO issuance price, hurting ICO investors in the process. Therefore, we have investors that suffer as a result of information asymmetries between issuers and investors - which is exactly what securities legislation aims to minimize. We should therefore be careful with regard to jumping to the conclusion that a certain token is not a transferable security merely because it does not resemble an instrument deemed equivalent to any of the categories set out by the definition of transferable securities in MiFID II.

E. THE EXCLUSION OF INSTRUMENTS OF PAYMENT

A final interesting aspect of the definition of transferable securities in Article 4(1)(44) of MIFID II is the complete exclusion of instruments of payment: when an instrument qualifies as an instrument of payment, it is by definition not a transferable security. The reason for this exclusion is that instruments of payment fall under a related, but separate regime under EU financial law: banking and payment services regulation.[228] While securities regulation is mainly concerned with the integrity of markets and the protection of investors, the oversight of payment instruments is aimed at ensuring the soundness and efficiency of payments made with such instruments.[229] Of course, this begs the question how a line

[227] Prospectus Directive (n. 196) Recital 10
[228] For an overview of Directives and Regulations of EU banking and financial services law, see https://ec.europa.eu/info/law/law-topic/eu-banking-and-financial-services-law_en
[229] European Central Bank, 'Harmonised Oversight Approach and Oversight Standards for Payment Instruments [February 2009] https://www.ecb.europa.eu/pub/pdf/other/harmonisedoversightpaymentinstruments2009en.pdf?5d726b97e5ece0bb35366632d6e828b6 accessed 15 January 2019

is drawn between transferable securities and instruments of payment. While the definition of transferable securities under EU law is not very clear (as exemplified from the analysis above), the Second Market in Financial Instruments Directive gives even less guidance about what constitutes a payment instrument. Of course, it is widely accepted that cash, cards, credit transfers, direct debits, prepaid cards and electronic money are all payment instruments.[230] Electronic money would at first glance bear the most resemblance to cryptocurrencies. It is defined as 'electronically (...) stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions (...) and which is accepted by a natural or legal person other than the electronic money issuer.'[231] The attentive reader will have realized that not even Bitcoin, the 'archetype' cryptocurrency, falls under this definition as there is no central issuer. A type of tokens that would likely be covered by this definition are stable coins. Stable coins issued by a central entity which holds a full reserve of the funds used to acquire the stable coins most definitely fit the above description of e-money. While such fully-backed stable coins most definitely represent a claim on the issuer (who in essence issued the stable coin as a form of receipt of funds for the purpose of making payment transactions), systems as the one employed by the MakerDAO, in which there is no central issuer, are more difficult to fit under the umbrella of e-money.

Still, the term instrument of payment is broader than e-money alone, and it is generally assumed that cryptocurrencies fall outside of the scope of EU securities legislation, due to the exclusion of instruments of payment form the definition of transferable securities. Already in 2015, in the landmark *Hedqvist* case, the Court of Justice of the European Union (CJEU) gave a ruling in relation to the classification of Bitcoin.[232] The CJEU explicitly stated that bitcoin is "neither a security conferring a property right nor a security of a comparable nature".[233] It should be noted that this ruling was made in an analysis for purposes of an exemption under the VAT Directive. The scope of this decision may therefore be limited to the confines of tax law. So far however, we have no other decision to fall back on and there is as yet no reason to assume that 'pure' cryptocurrencies like Bitcoin would be classified as anything else than an instrument of payment for the purposes of application of the EU's securities legislation. At the same time, the difference in field of law is relevant, as the CJEU can adhere to differing interpretations for one and the same term, in relation to different Regulations and Directives. A definition of 'payment instrument' is found in the EU's second Payment Services Directive (PSD2), which defines 'payment instrument' as 'a personalized device(s) and/or set of procedures agreed between the payment service user and the payment service provider and used in order to initiate a payment order.'[234] However, in the field of (pure) cryptocurrencies (i.e. cryptocurrencies with no central issuer, issued solely through staking or mining, without a token sale), this definition is not very relevant, as there is no payment service provider[235]. At the same time, stable coin issuers classifying as a payment service provider could potentially argue that their coins are excluded from MiFID's definition of transferable securities due to classification under PSD2's definition of payment instruments.

A more common sense based approach would suggest that there is no need for information disclosure to gap information asymmetries when it concerns pure cryptocurrencies, as cryptocurrencies in general

[230] See e.g. European Central Bank, 'Payment Instruments' https://www.ecb.europa.eu/paym/pol/activ/instr/html/index.en.html accessed 15 January 2019
[231] Council Directive 2009/110/EC on the taking up, pursuit and prudential supervision of the business of electronic money institutions OJ L 267, Art. 2
[232] Case C-264/14 *Skatteverket v David Hedqvist* [2015]
[233] Ibid. para. 55
[234] Council Directive 2015/2366/EU on payment services in the internal market OJ L 3337 Art. 4(14)
[235] Ibid Art. 4(11)

share far more similarities to cash than to a security. In the ESMA's survey of NCAs, pure payment-tokens were intentionally not included in the sample set of 6 tokens provided to NCAs, possibly suggesting that the ESMA maintains the same view. The questionnaire did question whether NCAs would classify any of the 6 token designs, which included hybrid tokens with payment elements, as instruments of payment. Almost all NCAs (23 to 25) opted to not qualify any of the models as 'instruments of payment'. As such, token issuers creating other models than pure cryptocurrencies or stable coins should not expect to be able to make use of the exclusion of instruments of payment from the definition of transferable securities.

F. TOKENIZED INVESTMENT FUNDS IN THE EU

With regards to tokenized investment funds, such as the DAO, which gives investors a right to share in the profits of the fund, it is clear that there is a substantial degree of similarity to the EU concept of undertakings for collective investment in transferable securities (UCITS): a collective pooling of funds is used by an undertaking to invest, while governance and dividend rights are provided to the investor. Such UCITs are regulated under a special regime found in the Directive 2009/65/EC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (the UCITS Directive) as investors receive dividends and governance rights are provided to the investor. A UCIT is defined as an undertaking with the sole object of collective investment in transferable securities or in other liquid financial assets [...] of capital raised from the public and which operate on the principle of risk-spreading; and with units which are, at the request of holders, repurchased or redeemed, directly or indirectly, out of those undertakings' assets [...].[236] The problem with this classification, in relation to tokenized investment funds, is that tokenized investment funds generally do not allow for the redemption of its units with the issuer or manager of the UCITS. Instead, its units (tokens) are more often traded on secondary markets themselves. Even if we can say that a sale of investment fund tokens on the secondary market can be deemed a 'repurchase' or 'redemption', none of the undertaking's assets are liquidated. As such, the question is raised whether a tokenized investment fund qualifies as a UCIT if there is no possibility for redemption by the investor or repurchase by the issuer. Nevertheless, the ESMA's survey showed that a majority of NCAs (16) qualified case 6, which classifies as an investment fund token under the token framework proposed in this article, as a unit of collective investment undertaking, with 12 NCAs dissenting.[237] No further information was provided as to the reasons why the 12 NCAs did not decide to qualify the case as a UCIT.

If investment fund tokens are not qualified as a UCIT, there is a possibility that they would instead be regulated as Alternative Investment Funds (AIFs) under the Alternative Investment Fund Managers Directive (AIFMD).[238] As defined in Article 4(1)(a) AIFMD, an AIF is 'a collective investment undertakings, including investment compartments thereof, which (i) raise capital from a number of investors, with a view to investing it in accordance with a defined investment policy for the benefit of those investors; and (ii) do not require authorisation pursuant to Article 5 of Directive 2009/65/EC;' With regards to tokenized investment funds, the AIFMD regime applicable to AIFs can be seen as a residual regime for those investment fund tokens that do not qualify as a UCIT. Regrettably, the survey of NCAs did not specifically inquire as to whether NCAs believed case 6 could qualify as an AIF.

[236] UCITS Directive (n. 200) Art. 1(2)
[237] ESMA Survey of NCAs (n. 204) 52
[238] AIFMD (n.201)

G. THE CLASSIFICATION OF TOKENS BY EU MEMBER STATES

Many NCAs have issued warnings to investors over the last few years. The extent of these investor warnings usually goes as far as citing the risks involved in ICOs, warning of the possibility of scams and highlighting weakened investor protection. The legislators in some Member States have however provided more guidance as to the application of EU financial law to token sales. The UK Financial Conduct Authority, for example, issued a fairly 'off-the-shelf' warning to ICO investors.[239] Aside from warning investors about the risk of investing in ICOs, they also stated what must now be obvious to the reader: "Whether an ICO falls within the FCA's regulatory boundaries or not can only be decided case by case." Many other regulatory authorities across the EU have issued similar warnings.[240] The Dutch Authority for Financial Markets (AFM) provided more insight, by stating that:

> *"The scope of the AFM's supervision is determined in the Financial Supervision Act (Wft). The AFM assesses case-by-case on the basis of the definitions in the Wft whether an ICO falls within this. Most ICOs are intentionally structured by the providers in such a way that they do not have any common ground with the Wft and therefore fall outside the supervision of the AFM. Only under certain circumstances, depending on the structuring of the tokens, there may be activities that fall under the Wft. This may be the case if the tokens represent a share in the project or give entitlement to part of the future returns.[241]"*

Gibraltar's Financial Service Commission (GFSC) takes a similar approach by focusing on whether a token is equivalent to shares in a company. The GFSC further states that "more often, tokens serve some cryptocurrency or functional use that is unregulated, such as prepayment for access to a product or service that is to be developed using funds raised in the ICO."[242] While the AFM and the GFSC focus on the equivalence of tokens to traditional securities such as shares, the German Federal Financial Supervisory Authority (BaFin), took a more characteristics-based approach. In essence, BaFin states that tokens may qualify as securities where the tokens can be transferred, and are negotiable on financial or capital markets, represent membership rights or claims (or any comparable rights), are not payment instruments and the holder can be documented in a blockchain or distributed ledger (or similar) technology (no representation by a physical instrument required).[243]

While an analysis of the implementation and interpretation of the definition of transferable securities per EU Member State falls outside of the scope of this article, many conclusions can be drawn from the ESMA's survey across all NCAs. This survey was designed to determine the way in which Member

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[239] United Kingdom Financial Conduct Authority (FCA) 'Consumer warning about the risks of Initial Coin Offerings ('ICOs')' (12 September 2017) https://www.fca.org.uk/news/statements/initial-coin-offerings accessed 18 December 2018

[240] Including the market supervisory authorities of Lithuania, Serbia, Slovenia, Sweden, the Netherlands, Belgium and Germany. For a comprehensive overview of regulatory responses, see Wulf Kaal 'Initial Coin Offerings: The Top 25 Jurisdictions and Their Comparative Regulatory Responses' 2018 CodeX Stanford Journal of Blockchain Law & Policy; available at SSRN: https://ssrn.com/abstract=3117224

[241] Dutch Authority for Financial Markets (AFM) FAQ, 'Why are ICOs outside of the AFM's supervision?' https://www.afm.nl/nl-nl/consumenten/veelgestelde-vragen/ico-crypto/ico-toezicht accessed 18 December 2018

[242] Gibraltar Financial Service Commission (GFSC) 'Statement on Initial Coin Offerings' https://www.fsc.gi/news/statement-on-initial-coin-offerings-250 accessed 18 December 2018

[243] German Federal Financial Supervisory Authority (BaFin) 'Supervisory classification of tokens or cryptocurrencies underlying "initial coin offerings" (ICOs) as financial instruments in the field of securities supervision' (BaFIN Advisory Letter, 28 March 2018) https://www.bafin.de/SharedDocs/Downloads/EN/Merkblatt/WA/dl_hinweisschreiben_einordnung_ICOs_en.pdf?__blob=publicationFile&v=2 accessed 18 December 2018

States have transposed MiFID II into national law, with an emphasis on the interaction between this transposition and token sales. In the survey, a sample set of 6 token models were described, giving each NCA the task to, for each token model, determine whether the authority considered the token to constitute a transferable security. The tokens differed from each other as follows:

#	**Name (Ticker)**	**Token classification**[244]	**Description**
1	FINOM (FIN)	Security token: equity token (form of traditional asset token)	Token gives right to profits, governance rights and a right to a portion of company assets
2	Polybius Bank (PLBT)	Security token: profit-sharing token	Token gives right to profits
3	Crypterium (CRPT)	Security token: security-utility hybrid	Token is used to pay transaction fees when using the issuers services (banking solutions), gives right to discounts for future services and gives a right to revenues
4	PAquarium (PQT)	Security token: security-utility-payment hybrid	Token gives right to profits, voting rights and can be used as means of payment. Holding a certain amount gives membership rights (lifetime entry).
5	Filecoin (FIL)	Utility token:	Token is used as a means of payment for access to protocol's utility (ability to buy unused storage capacity.)
6	AlchemyBite (ALL)	Security token: investment fund token	Token is 'backed' by different crypto-assets, as well as shares in crypto-asset developing companies

The survey showed that a majority of NCAs (14) deemed token 1 to be a share or a security equivalent to shares as referred to in Article. 4.1(44)(a) MiFID II. Tokens 2 and 4 were moreover deemed to be securities equivalent to shares by a significant number of NCAs (nine and eight respectively)[245]. This does not necessarily mean that the other NCAs do not believe the tokens are securities. Instead, they believe the tokens are not securities under an equivalence-based approach. Indeed, some of the NCAs that believe tokens 2 and 4 are not equivalent to shares instead considered them other 'classes of securities' other than those securities listed in the non-exhaustive indents (a), (b) and (c) of Article 4.1.(44) MiFID II. In other words, these NCAs deem tokens 2 and 4 securities based on a (version of a) characteristics-based implementation of the definition of transferable securities in their national laws.[246] Views were divided with regards to (hybrid) tokens 3 and 6. The majority of NCAs did not classify token 3 as a security. As such, it seems that hybrid tokens that give revenues, in combination

[244] Tokens are classified following the token taxonomy proposed in Section IV of this article.
[245] ESMA Survey of NCAs (n. 204) 44
[246] Ibid 48

with utility rights, are not deemed transferable securities in most Member States. In contrast, when a token gives a right to the issuer's profits without having any other utility or payment function (case 2), it will be classified as a transferable security in most Member States. When a security token that gives profit rights does provide other utility (case 4), views are more divided across the EU. With regards to investment fund tokens, most NCAs did not opt to classify case 6 as transferable securities, which can, in part, be explained as nine NCAs instead classified them as Undertakings for Collective Investment in Transferable Securities (UCITS).[247]

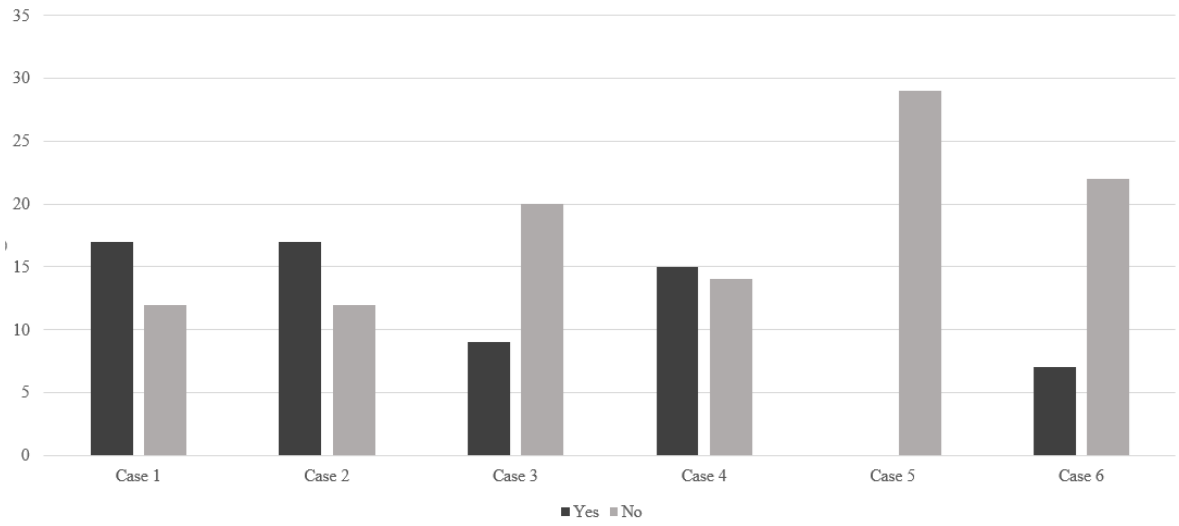

Figure 3: Qualification of sample tokens as transferable securities by NCAs

As becomes clear from the results depicted in figure 3, the survey highlighted that most, but not all, authorities considered security-tokens and some security-utility hybrids and security-payment hybrids to constitute transferable securities. As summarized by the ESMA in its Advisory Paper on Initial Coin Offerings and Crypto-Asset of January 2019:

> *"The existence of attached profit rights, without having necessarily ownership or governance rights attached (crypto-asset case 1 and 2), was considered sufficient for a majority of NCAs to qualify crypto-assets as transferable securities (where such crypto-assets also meet the other conditions to qualify as transferable securities), whether as shares or another type of transferable securities not explicitly listed in Annex C of MiFID II. Those NCAs that disagreed with this view may do so on the basis of a more restrictive transposition of MiFID, e.g. a restrictive list of examples of transferable securities. The responses for crypto-asset case 4 suggested that the financial instrument features may prevail for hybrid types of crypto-assets, although views could vary depending on the exact circumstances (...)."*[248]

Interestingly, not a single Member State legislator labelled case 5, Filecoin, a pure utility token, as a transferable security, as "the rights that they convey seem to be too far away from the financial and

[247] Ibid 19
[248] European Securities and Markets Authority (ESMA) Advice on Initial Coin Offerings and Crypto-Asset (ESMA Advisory Paper, January 2019) ESMA50-157-1391 at 86

monetary structure of a transferable security and/or a financial instrument."[249] As such, one could conclude with relative certainty that pure utility tokens are not caught by EU securities laws. However, upon closer examination such a conclusion might be premature. After all, the survey's results indicate that more than half of the NCAs (17) 'were of the opinion that case 5 is not negotiable on the capital market, the main reason being that the crypto-asset does not qualify as a security.' As pointed out before, this logic seems backwards, or circular at best, as negotiability is a criterion to being classified as a security. It is also contradictory from the statements by 21 out of 25 NCAs that they consider negotiability to occur when a token is capable of being traded. While the Filecoin token will not be live until the Filecoin network launches, its tokens will be tradeable from that point on. As such, they are capable of being traded, and, according to the way the negotiability criterion is interpreted and applied by most NCAs, negotiable. It is possible that Filecoin is not deemed a security by any NCA, as the token does not exist yet. As of yet, investors have only obtained a right to future tokens, using a SAFT, which imposes transfer restrictions. As the tokens don't exist yet, and the right to future tokens cannot be transferred, the future tokens are currently not negotiable. After all, they don't exist yet. This does however raise questions as to whether pure utility type token that are actually live on a mainnet (and traded on exchanges) will also not be classified as a security. However, I am making leaps of logic here, as the ESMA survey report does not provide clarity in any of such matters.

The survey results do further state that 'for case 5 the majority of NCAs (14 against 11) reported that they did not consider the crypto-assets to form a class'[250], which, as explored in the subsection on standardization above, requires units (read: tokens) which are fungible, issued by the same issuer while giving access to the same rights to the same group of investors.[251] As Filecoin satisfies all these criteria, it is not entirely clear why a majority of NCAs considers Filecoin not to form a class. Indeed, the reasons given by NCAs for not classifying Filecoin as a transferable security are confusing. Perhaps the best explanation provided as to why pure utility tokens are not deemed to be transferable securities is that the rights that they convey are simply deemed to be too far away from the financial and monetary structure of a transferable security.[252]

VIII. THE FUTURE OF TOKEN OFFERINGS IN THE US AND THE EU

Innovative technologies inevitably come into contact with the law in one way or the other. When such innovations are complex and potentially disruptive, great complexities can arise in designing a suitable approach in terms of regulatory intervention. Generally in such situations, the law tends to lag behind technical developments, which is perfectly logical. After all, technical innovation is a constant phenomenon. Regulators often have to engage in a complex balancing act, facing tradeoffs between the pursuit of legitimate regulatory goals and their wish to enable innovation to thrive within their jurisdictions. The tension between these interests results in a situation where regulators believe they must opt for either immediate action, such as the banning of all ICOs in states like China and South Korea, or for a wait-and-see approach, which we have seen occur in the EU and US during the early stages of the ICO boom, followed by a more measured approach, after analysis of the developments

[249] ESMA Survey of NCAs (n. 204) 86
[250] Ibid 18
[251] Ibid 16
[252] Ibid 9

that have taken place in the meantime.[253] When choosing for (temporary) inaction, the initial lack of regulatory initiative and guidance allows innovation to run its course and allows industries based thereon to take form organically. Although such temporary legal uncertainty might form a barrier to entry for traditional companies, it allows startups who are willing to assume more risk to innovate, while enabling regulators to subsequently take a more measured approach.

After allowing for the ICO bubble to boom and bust, we are currently seeing an increasing amount of regulatory guidance in those jurisdictions that have adopted a wait-and-see approach. Of course, innovation in terms of distributed ledger technologies and tokens has not come to a halt yet. While legislators are honing in on token sales in their current form, by application of the existing law and regulatory guidance or by drafting legislation, new innovations in terms of token design are emerging. Especially in the field of security tokens, we will likely see many innovative token models emerging. Ideas around programmable equity are extremely interesting from both economic and corporate governance perspectives. When governance rights are built into the functionality of the token, such equity tokens have the potential to bring substantial improvements to participation grades in shareholder meetings. Other interesting new token models can be found when examining non-fungible natively digital assets. Think for example of tokenized real estate or digital assets found in virtual reality worlds. Initial explorations of such use cases can be found in the virtual world of Decentraland, which has sold digital plots of land to investors who can subsequently use their land to build their own virtual houses, businesses or services. Another early proof–of-concept for non-fungible native digital assets is Cryptokitties, a project based on the ERC-721 standard, that allows for digital, collectible cats to be traded and bred. Although, in true internet fashion, the project revolves around kittens, the project has shown the viability of unique, digital assets or collectibles registered on the blockchain. The implications and use-cases hereof are still difficult to oversee, but it is clear that such digital collectibles are a next step in the realization of an 'internet of value'. One can also imagine the existence of autonomous assets on the blockchain. Think for example of an autonomous car that provides taxi services, in which smart contracts in combination with a non-fungible token is used as registration of ownership of the car. Smart contracts could further handle customer payments and even pay for petrol when the car chooses to go to a gas station. Of course, we are not even close to the realization of such a concept, but the example serves to capture future innovations that can be made possible, if enabled by the law. The ownership of an autonomous car (or car fleet), could further be tokenized, allowing revenues to be paid directly to those paying for the car.

Other interesting new ideas in terms of crypto-funding options are the emergence of curation markets and token curated registries, both based on utilization of bonding curves. In short, curved bonding allows participants to stake a token into a communal pool, upon which a new token is minted, priced according to a predetermined function of the outstanding supply of the token, as specified by the underlying smart contract. The price per token is deterministic, based on the outstanding supply of the token, and there is a potentially limitless supply. In other words, the more tokens in circulation, the more expensive it is to mint a token. The amount paid for the token is kept in the smart contract as a community deposit, and a token can be sold back to the smart contract for a price determined by a predetermined function of the outstanding supply of the token. The underlying smart contract therefore acts as a continuous market maker, which is why these bonded-tokens are also sometimes referred to continuous tokens. The application of such models is often mentioned in relation to usage within curation markets and token-curated registries, where the price of a token can represent the quality or

[253] See e.g. Mark Fenwick, Wulf Kaal, Erik Vermeulen, 'Regulation Tomorrow: What Happens When Technology is Faster than the Law?' [2017] 6(3) AUBLR; available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2834531

popularity of an object, post or person.[254] A token-curated registry uses a native token to assign curation rights proportional to the relative token weight of entities holding the token. Incentives reward someone when they curate items that should or should not belong on a list.[255] However, bonded tokens can be used for many different applications. In most of such applications, a person minting (i.e. buying) a token, stakes his money on the quality of whatever it is that the token represents. Another often mentioned application of bonded-tokens is in the realm of intellectual property management.[256]

As with any token, many design options are available. The token could for example give the investor rights to use an application, a right to revenues of the underlying protocol or governance rights. In fact, such continuous token models might be used in token sales in the future. The smart contract used could for example have a selling curve function that is 50% lower than the buying curve. In this case, only 50% of the invested money has to be held by the smart contract, with the rest being distributed to developers. When attaching revenue-rights, it becomes easy to determine the actual value of the token, as data about earnings per token is continuously available. Moreover, the difference between the buying and selling curve disincentivizes active trading, forcing longer term perspectives.[257] As such, a continuous funding model is created, where the amount of funding available in the market will be dependent on the actual performance of the issuer.

Potentially, another new possible token sale design could be the creation of equity-like tokens through a smart contract which only allows more tokens to be sold when certain thresholds or milestones are reached. This way, one could create a smart contract that allows for more tokens to be sold by the issuer when the revenue share is higher than a predetermined percentage of the value of the token itself for a sustained period of time. One could also determine this milestone to be based on other milestones, such as monthly active users. Governance rights could then be attached to allow current token holders further tweak such thresholds when necessary.

In any case, it is clear that innovation in the crypto-space is not coming to a halt any time soon. We will see ICOs 'return' in different forms as new funding models develop over time. As internet-companies become increasingly global, so will the fundraising scene. Eventually, it is up to the regulators worldwide to adopt fitting responses. The analysis as set forth in this article has sought to provide clarity into how current token offerings interact with securities laws in the US and the EU. From this analysis, we can draw a number of conclusions as to the implications for both the regulatory frameworks in these jurisdictions and the compliance strategies adopted by issuers.

A. IMPLICATIONS FOR THE FUTURE OF TOKEN OFFERINGS IN THE U.S.

The ICO wild west days are gone. As outlined in this article, many ICOs in the US likely constitute unregistered securities offerings. Consistent with this conclusion, we have seen increasing amounts of SEC enforcement actions, against for example Paragon Coin, Airfox's Airtokens, Centra Tech and

[254] Mike Goldin, 'Token-Curated Registries 1.0' (Medium, 14 September 2017) https://medium.com/@ilovebagels/token-curated-registries-1-0-61a232f8dac7 accessed 17 January 2019
[255] Yos Riady, 'Bonding Curves Explained' (10 November 2018) https://yos.io/2018/11/10/bonding-curves/ accessed 17 January 2019
[256] Billy Rennekamp, 'Re-Fungible Token (RFT); What happens when a Bonded Token owns an NFT?' (26 February 2018) https://medium.com/@billyrennekamp/re-fungible-token-rft-297003592769 accessed 17 January 2019
[257] Thibauld Favre, 'Introducing Continuous Organizations: Reinventing the financial incentives of organizations using Bonding Curves' (22 October 2018) https://hackernoon.com/introducing-continuous-organizations-22ad9d1f63b7 accessed 17 January 2019

Recoin.[258] A number of class action lawsuits are pending against alleged issuers of unregistered offerings as well, most famously including the class actions against the Tezos Foundation and Tezos' founders, the Breitmans.[259] Many more enforcement actions can be expected, as the SEC created a dedicated Cyber Enforcement Unit in late 2017, which amongst others, would focus on 'violations involving distributed ledger technology (e.g., "blockchain" technology) and initial coin offerings ("ICOs")'.[260] In practice however, it will be very difficult for the SEC to go after all ICOs in which US investors participated, due to the lack of time and resources to go after thousands of issuers. Still, ICO issuers are increasingly using other jurisdictions for their base of issuance. Whereas the US has on average accounts for 14% of all token issuances, the jurisdictions was only used by about 7% of all ICOs occurred in the US in the last quarter of 2019.[261] Indeed, the strict application of the US securities regime is having a large impact on the position of the US in terms of jurisdictional competition for ICO issuers. After all, doing a fully registered offering under US securities laws is costly and burdensome. As such, in practice, token issuers (will) often opt to make use of registrations or exemptions and/or safe harbors under US securities laws. One such exemption that allows issuers to still solicit from the general public is the usage of the Crowdfunding Regulation, which exempts offerings of up to $1,070,000. However, one million is far beneath the average amount raised by successful ICOs, and the regulation further imposes that the issuer goes through a registered funding portal or broker-dealer, while imposing registration using a Form C[262] and ongoing reporting, as well as imposing restrictions on resale of the securities for a period of one year.[263] Issuers could also go for the exemption under Regulation A.[264] This regulation has two offering tiers: Tier 1, for offerings of up to $20 million in a 12-month period; and Tier 2, for offerings of up to $50 million in a 12-month period. The Reg A exemptions should be seen as a form of mini IPO. Tier 1 offerings have to satisfy the Blue Sky investing regulations of each US state in which investors reside (which is extremely burdensome), while Tier 2 instead imposes up-front audits and post-offering report requirements and further limits the amount of money non-accredited investors may invest. For both offerings, one would have to satisfy company eligibility requirements, bad actor disqualification provisions, disclosure and other matters. However, the biggest problem for tokens issuances under Reg A is the expensive legal burden, and time-consuming process, of filing an offering placement memorandum (Form 1-A) with the SEC.[265] Still, for a token issuer wishing to solicit investments from the general public in the U.S., a Tier 2 Reg A offering might prove an appropriate avenue of doing so.

In practice however, most issuers are instead opting to go for an offering under Regulation D, often in combination with Regulation S. There are two safe Harbors under Regulation D, found under Rule 506(b) and Rule 506(c). Both allow for an unlimited number of accredited investors to participate in the offering, with no limit on the total amount of funding raised. The restriction of Reg D offerings to participation by accredited investors is of substantial importance. To qualify as an accredited investor, one's net worth has to exceed $1,000,000, excluding the value of one's primary residence, or have an

[258] For a full list of SEC enforcement actions, see https://www.sec.gov/spotlight/cybersecurity-enforcement-actions
[259] See Tezos Securities Litigation, currently pending (N.D. Cal.) Case No. 3:17-cv-06779.
[260] SEC Press Release, 'SEC Announces Enforcement Initiatives to Combat Cyber-Based Threats and Protect Retail Investors' (25 September 2017) https://www.sec.gov/news/press-release/2017-176 accessed 22 December 2018
[261] ICO Market Analysis (n 9) 19
[262] Form C Under the Securities Act of 1933 https://www.sec.gov/files/formc.pdf accessed 22 December 2018
[263] US Code of Federal Regulations, Title 17, §227
[264] US Code of Federal Regulations, Title 17, §230
[265] Ibid §230.252

income of at least $200,000 a year. Rule 506(b) allows an additional 35 non-accredited (but sophisticated) investors to participate. Rule 506(c) additionally allows the issuer to advertise the offering (online) to the general public, provided that all purchases are accredited. The Rule 506(c) exemption is therefore more popular under token issuers, as an online presence is virtually required for token issuers. Since only accredited investors can participate in Reg D offerings, the disclosure required in these offerings is limited to filing a simple notification called Form D, and no ongoing reporting requirements are imposed, the costs and time required to do a Reg D offering are relatively low. The underlying ratio is that wealthy investors are, on average, more sophisticated and in a better position to bear potential losses, therefore being able to take more risks while needing less investor protection.

Due to its simplicity, many recent token issuers have therefore started using the safe harbor under Rule 506(c) to do token offerings in the US. Indeed, an analysis of the SEC's Electronic Data Gathering, Analysis and Retrieval system (EDGAR), shows an increase of no less than 550% in terms of ICO-related Form-D registrations.[266] While non-accredited US-resident investors cannot participate in these offerings, the additional usage of the exemption under Regulation S lets the issuer allow non-accredited non-US residents investors to participate. A Reg S offering imposes no additional filing requirements, nor does it require a private placement memorandum, and allows the issuer to advertise the offering online, as long as the offering is not directed to US-resident investors. Both Reg D and Reg S offerings however impose strict resale restrictions, depending on the offering at hand.

The usage of Reg D and Reg S offerings excludes non-accredited US investors from participating in token-based economies, due to imposed resale restrictions. Such resale restrictions often make it impossible for investors to make use of the token. After all, the usage of a token often requires the transfer thereof to another party, which is often restricted due to the usage of offering exemptions. When it concerns security-tokens that play no other role than functioning as an investment instrument, this is consistent with the goal of adequate protection of the investor. However, this proves problematic for token issuers that issue a token that, aside from having characteristics classifying their token as a security under the *Howey* test, also functions as a medium of exchange or provides access to the utility of a blockchain protocol or application. For these startups, access to the entire US market is denied. Considering that almost all utility tokens can be classified as a securities in the US, the application of the current US regime has the consequence that utility tokens are practically impossible to function in the US, due to resale restrictions and the inability of the general public to own the tokens. The exemption to this is where the issuer opts for full registration under the US securities regime or a Reg A registration, which, as mentioned before, is not attractive to token issuers due to the legal costs and time-consuming nature thereof.

At the same time, there is something to be said for its strict application of the *Howey* test. Token sales are often directly aimed at raising money from retail investors. Without a doubt, many of these investors have lost substantial amounts of money by buying into the promise of a brighter future, somehow made possible by blockchain. Through strict application of its securities laws, US securities laws ensure that only those capable of bearing losses can invest in tokens. General solicitation of non-accredited investors is only possible under full (or Reg A) registration, both of which require extensive information disclosures. These information disclosure put retail investors in a better position to make informed investment decisions, while imposing liability on the issuer for misleading and incorrect statements therein. At the same time, as described, it forces issuers to self-classify their token as a

[266] Francine McKenna and Katie Marriner, ' ICOs continue to raise money via SEC back door' (January 11 2019) https://www.marketwatch.com/story/icos-continue-to-raise-money-via-sec-back-door-2019-01-11 accessed 6 February 2019

security, which by itself creates positive externalities. Issuers in the US used to stay clear of characteristics that would fit security tokens as they were often under the impression that utility tokens would not be caught by the *Howey* test. Now this assumption is thoroughly disproved by the SEC and the academic community, there is no longer an incentive to stay clear from characteristics of security tokens as issuers are increasingly opting to self-classify their token as a security, which in turn allows for better token models to be developed, as more options in terms of design become available in terms of creative profit or revenue distribution mechanics, or other use of rewards paid in tokens to incentivize certain behavior from token holders. At the same time, the overall quality of startups doing an ICO should go up, as issuers have to either raise money from accredited investors or have to go through extensive disclosure processes, which imposes costs and promotes transparency. In both scenarios, the 'get-rich-quickly' ICO issuers have far less opportunity to successfully raise funds. Moreover, security tokens are, by design, easier to apply existing valuation models to, as they grant investors with actual economic rights, which means tokens are no longer purely subjected to the whims of the market. Another implication of the strict application of the classification of most tokens as securities is that tokens can no longer be randomly promoted by celebrity social media influencers[267] or unregistered broker-dealers.[268]

Although one could argue that the strict application of the *Howey* test to token issuers has its advantages, many token issuers instead opt to not incorporate in the US and move to more ICO-friendly jurisdictions, such as Malta, Gibraltar or Liechtenstein for their offerings. Meanwhile, issuers from other jurisdictions that offer utility tokens to the public have started to exclude US investors from participating altogether. Of course, this is no surprise: US securities laws apply when it concerns US resident investors, regardless of the place of incorporation of the issuer. Without proper registration (or usage of exemptions to the obligation to register sales of securities), no offer of securities can be made to these investors. Therefore, the US is avoided by most recent issuers – even those that have registered with securities authorities in other jurisdictions, as no passporting regimes exists for disclosure documents drafted under securities laws of other jurisdictions.

In short, there is a tradeoff between interests relating to investor protection and interests in terms of allowing token economies to thrive in the US. At the moment, the US approach attaches more weight to the former over the latter. However, some believe that the US approach is too strict, including congressman Warren Davidson and Darren Soto who proposed a Bill named the Token Taxonomy Act in December 2018. The Bill seeks to exclude digital tokens from classification as a security altogether, and defines digital tokens as follows:

> *A Digital Token is:*
>
> *(A) created*
>
> *(i) "in response to the verification or collection of proposed transactions"* -or-
>
> *(ii) "pursuant to rules for the [token's] creation and supply that cannot be altered by a single person or group of persons under common control"* -or-

[267] The SEC has settled cease and decist proceedings against a number of celebrity promoters, such as Floyd Mayweather and DJ Khaled. See SEC Press Release, 'Two Celebrities Charged With Unlawfully Touting Coin Offerings' (29 November 2018) https://www.sec.gov/news/press-release/2018-268 accessed 22 December

[268] See SEC Press Release, 'SEC Charges ICO Superstore and Owners With Operating As Unregistered Broker-Dealers', (11 September 2018) https://www.sec.gov/news/press-release/2018-185 accessed 22 December

> *(iii) "as an initial allocation of [tokens] that will otherwise be created in accordance with" i or ii above;*
>
> *(B) 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;*
>
> *(ii) and after consensus is reached, cannot be materially altered by a single person or group of persons under common control."*
>
> *(C) is capable of being traded or transferred between persons without an intermediate custodian."*
>
> *(D) is not a representation of a financial interest in a company, including an ownership or debt interest or revenue share."*[269]

This Bill would allow any issuer of Digital Tokens to be exempt from securities laws, without much requirements at all – thereby completely 'rebalancing' the scales, allowing token economies to thrive, while conceding a substantial degree of investor protection. Whether the Bill will actually pass in its current form is, in my view, extremely doubtful at best. The safe haven this Bill would create would not only cover cryptocurrencies created through mining but would also include many utility tokens. After all, a utility token is created as an initial allocation of tokens that will be created in response to the collection of proposed transactions, is capable of being traded or transferred between persons without an intermediate custodian and is not a representation of a financial interest in a company. Considering the statements by the SEC and the analysis on the application of the *Howey* test and its related case-law on tokens in this article, I see very little leeway for a bill seeking to exempt all tokens from securities laws, except where they represent a financial interest in a company. US securities laws, and specifically the confines of what determines an investment contract have been shaped through case-law over the last 80 years. Congress has never before made an exemption for an instrument through legislative measures and there is no reason to believe that 'Digital Tokens' would be any different. The securities regime has, since *Howey*, maintained an approach based on the famous 'substance over form'-stance adopted by the court in *Howey*.[270] The creation of a safe haven because of an investment contract's form therefore seems highly unlikely. Meanwhile, the protection of investors is the raison d'être of securities laws. I see no reason why this protection would not extend to investors in the crypto-space just because it concerns instruments in the form of a 'Digital Tokens'. Perhaps SEC Director Clayton best formulated this stance in an interview with CNBC in July 2018: "We are not going to do any violence to the traditional definition of security that has worked for a long time".[271]

B. IMPLICATIONS FOR THE FUTURE OF TOKEN OFFERINGS IN THE EU

The recent survey of Member States financial markets authorities done by the ESMA has shown not a single Member State deems pure utility tokens to be transferable securities. This is in stark contrast with the conclusions from the analysis of US securities laws. While the US is increasingly being avoided by utility token issuers, in terms of both incorporation and offering utility tokens to US resident investors from abroad, the EU's almost *laissez-faire* approach to utility tokens makes the Union

[269] Token Taxonomy Act (proposed) H. R. 7356, §3(b)
[270] Howey (n 123) 298
[271] CNBC Interview, 'SEC Chairman: Cryptocurrencies like bitcoin are not securities' (CNBC, 6 June 2018) https://www.cnbc.com/video/2018/06/06/sec-chairman-cryptocurrencies-like-bitcoin--not-securities.html accessed 15 January 2019

attractive for incorporation by utility token issuers. Moreover, foreign utility token issuers can feel free to keep soliciting EU resident investors online. As such, the European consumer is, in contrast to the US, not excluded from usage of utility tokens.

The EU's regime also proves attractive for offerors of non-fungible tokens, as such tokens cannot be deemed standardized under a characteristics-based approach to the EU definition of transferable securities. At the same time, pure payment tokens will also not classify as transferable securities within the EU, due to the exemption of instruments of payment. In fact, the recent ESMA survey purposely did not even include pure payment tokens.[272] Indeed for all such offers, the EU might be very attractive as a place of incorporation and issuance, due to the legal certainty provided and the non-existent compliance regime, and therefore, the ease of issuance and low legal costs involved.

It should be mentioned however that the definition of transferable securities is found in a EU Directive, which is implemented in varying ways in the different EU Member States. Although far-reaching harmonization in terms of the legal framework of the Union of the full range of investor-oriented activities was envisioned by the EU Parliament and the Council of the EU[273], we can see a divide between those Member States that adopt an equivalence-based approach and those Member States adopting a characteristics-based approach towards the implementation of the definition of transferable securities in their respective legal systems. Those jurisdictions that have implemented an equivalence-based definition in their national legal system are generally attractive for issuers of utility-security hybrids and payment-security hybrids. Those jurisdictions that have instead transposed the definition of transferable securities based on a characteristics-based approach however are not attractive to these same issuers at all, as their token might qualify as a security. Even more so, some NCAs have not clearly adopted a stance yet. As such, the (lack of) harmonization within the EU creates legal uncertainty for these token issuers.

The challenges created by the varying implementations of the definition of transferable securities has been recognized by the European Securities and Market Authority.[274] The ESMA has further noted that:

> *"Member States have or are considering some bespoke rules at the national level for all or a subset of those crypto-assets that do not qualify as MiFID financial instruments. While ESMA understands the intention to bring to the topic both a protective and supportive approach, ESMA is concerned that this does not provide for a level playing field across the EU. ESMA believes that an EU-wide approach is relevant, also considering the cross-border nature of crypto-assets."*[275]

For those issuers wishing to offer hybrid tokens, whether it be security-utility or security-payment hybrids, the lack of harmonization results in legal uncertainty as to the classification of their token. Indeed, classification will differ across EU Member States, imposing a significant barrier for the ease of cross-EU fundraising. Before the emergence of token offerings, the differing implementations of the definition of transferable securities has never proven troublesome, as almost all NCAs have indicated that they never have had to qualify an instrument that does not fall under indents (a), (b) or (c) of Article

[272] ESMA Survey of NCAs (n 204) 5
[273] MiFID II (n 13) Recital 3
[274] ESMA Advisory Paper (n 248) 6
[275] Ibid 9

44(1) of MiFID II.[276] However, the differing implementations of the definition of transferable securities into national law are posing a direct problem in terms of harmonization of the EU securities regime, especially when considering that the legal classification under the definition is pivotal to the application of EU securities law. As such, token sales have highlighted that the freedom provided to EU Member States might have been ill-conceived. It would be preferable for the definition of transferable securities and its implementation in the EU's Member States to be fully harmonized across the EU by, for example, inclusion thereof in the EU Prospectus Regulation instead of MiFID II.

In the meantime, as is the case in the US, issuers might choose to self-classify as a security if they want to raise money throughout the EU. The EU prospectus regime allows issuers to 'passport' a prospectus approved in one Member State to other jurisdictions relatively easily. However, the legal costs associated with the drafting, registration and approval of a prospectus are substantial. As such, those issuers that issue security tokens and those issuers that opt to self-classify as a transferable security to obtain legal certainty assume high legal costs associated with the drafting of a Prospectus. Like in the US, these issuers could also opt to make use of exemptions under the EU Prospectus Directive.[277] All issuances which raise under €1 million in funding are fully exempted from the requirement to publish a Prospectus. Again however, this maximum is substantially lower than the average amount of funding raised through successful token sales. Other possible exemptions can be called upon by only allowing investments of a minimum of €100.000, only offering to 150 people per Member State or only offering to qualified investors. These exemptions are available across all Member States and could therefore be of great use for security token issuers. However, they are problematic for most utility token issuers as the amount of people able to acquire tokens and therefore the amount of people that can access the token's utility is reduced dramatically. A final exemption available under the EU Prospectus Directive is an exemption based on a maximum amount of funding during the fundraise. Each Member State has the freedom to decide on how high this amount can be, as long as it is between €1 and €8 million. They can moreover impose additional requirements that have to be met by issuers. Moreover, compliance with the requirements of this exemption in one Member State cannot be passported to the next. As such, the exemption with the most potential for token issuers is the least harmonized. Still, depending on the maximum amount determined and the compliance requirements imposed by a Member State, this exemption might still be very useful for issuers focusing on adoption within a single Member State. However, if a utility token issuer wanted to focus on one Member State, he might as well pick a Member State where utility tokens are not caught by the implementation of the EU securities regime at all. That said, the 'crowdfunding exemption' (between €1 and €8 million) is still useful for security-utility hybrids focusing on one Member State.

Section III of this article has explained the risks to which investors are exposed. If utility tokens are indeed not captured by the EU securities regime, as suggested by the ESMA survey, it would be recommended for the EU to consider ICO specific legislation, to close information asymmetries between issuers and investors and provide additional protection to investors. Current consumer law is likely not to suffice in this sense, as the risks related to utility token issuances have more in common with risks relating to transferable securities than those relating to regular products and services. Malta, for example, has adopted three DLT specific legislations in order to give regulatory clarity (and legitimacy) to blockchain companies. The EU Member State adopted the Virtual Financial Asset Act, which sets out to regulate any '[...] method of raising funds whereby an issuer is issuing virtual financial

[276] ESMA Survey of NCAs (n 204) 49
[277] Prospectus Directive (n 196) Art. 3(2) and Art. 4. See also Prospectus Regulation (n 12) Art. 1(4) and Art. 3 And Art, which will be applicable from 21 July 2019

assets and is offering them in exchange for funds'.[278] The Act imposes license requirements for ICO issuers, civil liabilities and registration with Malta's Financial Services Authority. More recently, France also introduced a legal framework for ICOs, which introduces a voluntary ICO licensing system for issuers.[279] While there could definitely be discussion on the quality of these legislations, they do fill the regulatory gap that has appeared in terms of the application of the law to ICOs. Of course, a harmonized approach on the level of the EU would be preferable. One possible approach would be to create a harmonized 'light' registration and disclosure regime designed for token offerings that can be used for offerings up to a maximum of €8 million in funding over a period of 12 months. This would fit well under the current system, as the current Prospectus regime allows Member States to create an exemption to the requirement of filing a fully-fledged prospectus for offerings between €1 and €8 million. Such a tailored regulatory regime could be designed to address all the pitfalls and risks that are plaguing crypto investors in the current market. Moreover, it would make the EU extremely attractive for the incorporation by foreign token issuers from the US or other jurisdictions where token sales are plagued by legal uncertainty, disproportionally burdensome requirements or outright bans. Although a vast majority of NCAs is of the opinion that all crypto-assets should be subject to some form of regulation, consensus on to what extent and how this should happen is nonexistent, with the exception of the inclusion of crypto-assets under anti-money laundering laws.[280]

CONCLUSION

Token sales are still a relatively new occurrence in the field of finance. This article has provided an overview of the application of the current securities regimes of the EU and US and the implications thereof for the future of token offerings. For any token issuance, in any jurisdiction, one will have to examine the rights that the specific token grants to investors to make any informed judgment as to whether the token sale will fall under securities laws. Due to the global nature of ICOs, this can become quite an extensive exercise. In the US, analysis of application of the *Howey* test to token sales reveals that nearly all tokens will pass the *Howey* test, with the exception of (pure) payment tokens, resulting in classification of the token as a investment contract, and therefore a security. As such, the majority of all ICOs to date have run afoul of US securities laws by issuing and offering unregistered securities to US investors. While strict application of the *Howey* test will result in the protection of investors, it also results in (i) a decrease in the amount of token offerings based in the US (relative to the total global amount of token issuances) (ii) the exclusion of US investors from participating in token offerings based in other jurisdictions and (iii) increasing amounts of issuers opting to self-classify their tokens as securities. Due to this self-classification, and because the legal costs associated with a full registration under US securities laws proves too burdensome for most issuers, the usage of a Form-D registration has become increasingly popular. While a Form-D registration has proven to be the most attractive exempt offering for token issuers in the US, Reg D offerings completely exclude retail investors and moreover impose transfer restrictions that make the usage of tokens (temporarily) impossible. As such, the strict application of US securities laws has far-reaching consequences, not only for issuers, but also in terms of jurisdictional competition.

[278] VFA (n 7)
[279] Kevin Scanlan, Hubert de Vauplane, 'A New Legislative Framework for ICOs in France' (Kramer Levin, 1 June 2018) https://www.kramerlevin.com/en/perspectives-search/a-new-legislative-framework-for-icos-in-france-Funds-Talk.html accessed 15 January 2019
[280] ESMA Survey of NCAs (n 196) 13

For EU purposes, case by case analysis of tokens is also the rule, based on whether a token can be qualified as a transferable security under the definition of MiFID II Art. 4(1)(44). Due to the freedom granted to Member States in transposing the definition of transferable securities into national law, substantial differences exist in terms of the interpretation of what constitutes a transferable security under the EU securities regime. While these differences have traditionally never presented a problem as it has always been easy to classify offering instruments under the definition of transferable securities, token sales have uncovered the problematic nature of these differences, as a recent ESMA survey in which national markets' authorities were asked to classify a sample set of tokens has shown that (especially hybrid) tokens can be classified differently across EU Member States. In general, we can distinguish between those Member States that have implemented the definition of transferable securities in national law using an equivalence-based approach and those that have done so using a characteristics-based approach. Those jurisdictions adhering to an equivalence-based approach have generally transposed the archetype classes of securities mentioned under indents (a), (b) and (c) of MiFID II Art. 4(1)(44), resulting in difficulties in classifying tokens (that do not resemble shares, bonds or derivatives) as transferable securities. Those jurisdictions adhering to a characteristics-based approach tend to have implemented a broader definition of transferable securities, possibly allowing for the classification of tokens as transferable securities due to their characteristics. While, in general, these characteristics can be defined as the token's ability to be transferable, negotiable and standardized, differences exist across Member States as to the interpretation of these characteristics. As such, despite European efforts in terms of harmonization, a country-by-country analysis is required into the legal classification of the majority of tokens. At the same time however, the ESMA survey of NCAs also highlighted that a certain utility token (design) might not be regulated as transferable securities across the entirety of the EU, thereby escaping the grasp of the EU securities regimes. Still, this conclusion might be premature, as the token in question was not even issued and transferable yet at the time of the survey. While EU legislators should consider implementing or enforcing a single definition (and interpretation) of transferable securities, it is clear that the EU securities regime is likely far more lenient for token issuers than the US regime. EU legislators could moreover consider either (i) a specific regime for regulation of token offerings falling outside of its Prospectus regime to provide further protection to investors, or (ii) inclusion of all token offerings under the scope of the Prospectus regime, while creating a fully harmonized exemption that can be used for ICO issuances (or, more broadly, crowdfunding) under a defined maximum amount of funding, which imposes a 'light' compliance regime which balances the interests of investor protection with the interest of issuers in terms of the imposed legal burden.

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