



Università
Ca' Foscari
Venezia
Dipartimento
di Economia



With the support of the
Erasmus+ Programme
of the European Union

JEAN MONNET CHAIR

"DIGITALISATION IN EU FINANCIAL STUDIES" - EUDIFIN

THE DAWN OF CRYPTO ASSETS: A COMET OR A NEW UNIVERSE? Threats and Opportunities of the upcoming stars of the financial market

Maria Vittoria Marafatto

MSc Student in Economics: Finance

Ca' Foscari University of Venice

EUDIFIN course: Fintech Regulation and Financial Innovation



EUDIFIN
RESEARCH WORKING PAPER NO. 13
APRIL 2021

NOTICE

The work has been produced by the author in the framework of EUDIFIN's teaching and research activities.

As part of the assessment methods, each EUDIFIN courses require students to engage in a research-oriented assignment. This assignment prompts students to deal with the current political and scholarly debate revolving around the challenges the European Union faces to further integration in the internal financial market. This learning experience rewards those students who demonstrate interest, commitment and dedication, and who are keen to channel this enthusiasm into a "contest" between peers for the best "Research Papers".

The best papers will be published as EUDIFIN Working Paper on the EUDIFIN website of Ca' Foscari University of Venice.

UNIVE.EUDIFIN



Abstract

The aim of this elaborate is to analyse the main features of crypto assets, highlighting both the benefits and drawbacks, paying particular attention to crypto securities. Starting from an overview of these financial instruments, it focuses more specifically on different categories of tokens. Once outlined the classification boundaries, the paper narrows the key opportunities and major threats of the market presented by the literature available on the object. Starting from Security Token Offering, it delineates the steps and the entities involved throughout the life of these new instruments. Towards the end, all the features are compared in order to attempt to understand whether they are going to remain on the market.

Key words: crypto assets, EU Regulation, MiCAR, MiFID

Summary

Introduction.....	5
The essence of Crypto Assets	6
Strengths on the ground	9
The STO and the Crypto Assets Value Chain.....	12
Covered and Visible Threats	15
Are tokens going to be the assets of tomorrow?.....	17
References.....	19

Introduction

The world of tokenization and crypto assets is blooming and gaining traction. Proof of this is the regulatory agitation around these innovative instruments, with the aim of harmonizing and coordinate its regulation. The potential of this new category of assets is theoretically unlimited and ideally any asset can enter the blockchain system. The possibility to overcome obstacles and make the financial industry more accessible, cheaper, more agile, and simpler is triggering investors' minds and wallets¹. However, there are still dark spots and grey areas to be lighted up by regulation and regulators. Delaware and Switzerland have opened the discussion regarding advantages and disadvantages of such processes. Nowadays, the use of such techniques is limited, but its potential applications and revenues sources know no boundaries².

The first player entering the field were crypto currencies, which made their debut in the financial market more than a decade ago, precisely in 2009³. The newest entrants, the equity tokens, have the right credentials to break through traditional market schemes. A wave of new market participants has started in 2018, making crypto assets a valuable alternative to more traditional and established securities, making impossible to ignore this new asset class any longer⁴. The entrance of crypto currencies in the market back in the day has provoked a domino effect for legislative changes and trading innovations. The Blockchain network had faced a constantly growing trend in popularity over the past years and the introduction of digital currencies has established a new way of thought in the financial sectors across the world. The decentralized nature of the structure is perceived as its main peculiarity and surely one of the greatest benefits of these innovative financial products⁵. Other exclusive features of these assets have impacted the latest trend and growth of both

¹ Laurent, P. *et al.*, *The tokenization of assets is disrupting the financial industry. Are you ready?*, Inside magazine issue 19 - Part 02: from a core transformation/technology perspective, Deloitte, 2018, p. 2.

² Ernest Young, *Tokenization of assets - Decentralized Finance. Spot on: Fundraising and Stable coins in Switzerland*, 2020, p. 4 ff.

³ Borsa Italiana, *Bitcoin: cos'è e come funziona*, FTA Online News, 2019.

⁴ Ghosh, A. *et al.*, *Institutionalization of crypto assets. Crypto assets have arrived. Are you ready for Institutionalization?*, KPMG, 2020, p. 4.

⁵ Febrero, P., Pereira, J., *Cryptocurrency Constellations Across the Three-Dimensional Space: Governance Decentralization, Security, and Scalability*, IEEE Transactions on Engineering Management, pp. 3 ff.

the technological industries and the financial markets. Crypto currencies initiated a process of informatization that paved the way to the tokenization of assets, of which company shares tokens are certainly leading the midst.

With the blockchain world expanding increasingly fast, many companies may find more and more convenient to raise capital using digitalised assets instead of traditional ones. The trading process is following a similar path, but the target of the trade is different. In the mainstream market, the buyer, after an order, ends up with a "piece of paper", a receipt, as proof of ownership. Whereas in the blockchain universe the ownership right is stored and proved by a digital representation of the shares, and these tokens are virtually contained in Blockchain hosted accounts⁶.

Before analysing in depth, the specific features and describing the implications in different existing scenarios of this world, that is establishing itself everyday more as the hedge of both the financial and the tech industry, it might be best to picture the topic from a broader perspective in order to understand the true nature behind such processes and understand the euphoria gravitating around them.

The essence of Crypto Assets

A crypto asset can be described as "a digital representation of a value or right which may be transferred and stored electronically using Distributed Ledger Technology (DLT) or similar technology"⁷. Tokens may be essentially grouped into two broad categories: fungible and non-fungible tokens. The former can be exchanged for other assets of the same type and with similar characteristics. Examples of assets of this type are mainstream financial products such as bond, share or currencies. On the other hand, the latter embodies all the assets that are not interchangeable and are unique, such as paintings or real estates. Indeed, two tokens digitally representing distinct art pieces are not interchangeable and cannot be exchanged at equivalency⁸.

⁶ Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020, pp. 5 ff.

⁷ European Commission, (2020), "Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-Assets and amending Directive (EU) 2019/1937 (MiCA)".

⁸ Ernest Young, *Tokenization of assets - Decentralized Finance. Spot on: Fundraising and Stable coins in Switzerland*, 2020, p. 18.

Switzerland has been the frontrunner in crypto-assets legislation, and their official categorization and recognition is usually attributed to Swiss legislation, which basically divided the world of crypto assets in three⁹. As a matter of fact, tokens, as digital assets, can be categorized in three major subgroups, according to their aim and scope. The first category is the so-called currency, or payment, tokens, used both to transfer and store value and also as unit of account. In fact, their value does not depend on any underlying assets. Crypto currencies, such as Bitcoins, belong to this group. The second category is represented by utility tokens. Their objective stands in allowing customers to benefit a good or a service provided by the issuer, and their return is not in monetary or financial terms. An example of this type of digital tokens are prepayment of licence fees. The third and last category of tokens is represented by security tokens. They represent a segment of ownership in the assets considered, therefore their value is inevitably tied to the underlying asset (e.g., a share that represent a fractional ownership right over the company). Following this logic, they function similarly to a traditional share: they simply represent a quota ownership in the assets considered. Differently from the utility tokens, the security ones offer a return in terms of future cash flows¹⁰.

The rise of these new asset classes, considering the fact that they do not fit any conventional asset classes, has brought up the need of specific regulation to cover and discipline these innovative instruments, as well as their exchange and markets. Anti-Money Laundering (AML), Know Your Customer (KYC) regulation and Markets in financial instruments directive (2004/39/EC), the so-called MiFID¹¹ - in force from 31st January 2007 to 2nd January 2018 and replaced by MiFID II (2014/65/EU) on 3rd January 2018, are applicable to the token economy¹². Indeed, the security assets embody all the characteristics of the financial instruments, therefore they belong to the perimeter of legislation of the MiFID. However, an old label has been attached to a new product, as well as a traditional regulatory measure has been applied to non-

⁹ *Ibid*, p. 7.

¹⁰ Zetzsche, D. A. *et al.*, *The Markets in Crypto-Assets Regulation (MICA) and the EU Digital Finance Strategy*, European Banking Institute Working Paper Series, 77, 2020, pp. 5-7.

¹¹ Laurent, P. *et al.*, *The tokenization of assets is disrupting the financial industry. Are you ready?*, *Inside magazine issue 19 - Part 02: from a core transformation/technology perspective*, Deloitte, 2018, p. 6.

¹² Consob, <https://www.consob.it/web/area-pubblica/mifid-2>.

traditional instruments, and this may give rise to some difficulties and doubts in the effectiveness of its implementation¹³.

To overcome the issue of dark spots and uncovered digital financial instruments, the European Commission has planned some additional regulation. The final aim is to create a pan-European legislative system for crypto assets. These new regulations are grouped in the Markets in Crypto Assets (MiCA) Regulation, which at the moment is at the proposal stage, aimed at legislating the grey area outside the MiFID. Indeed, it covers all the instruments that do not fall under the regulatory perimeter of MiFID¹⁴.

To project the evolutionary path of crypto assets, whether they are here to stay or are just a temporary phenomenon, the first step to take is the analysis of the users of these innovative assets to spot the durability and the resilience of their operations. There have been identified at least four categories of users who will assure the survival of the market in the long term. A first segment of libertarians and techno-anarchists can be highlighted. These individuals simply prefer non-government regulated economies for their own political philosophy. For this exact reason, crypto currencies and crypto assets perfectly suit them, considering their decentralized nature. The second class of users, always characterized by government distrust, is represented by people holding crypto assets as a store of value independent from government management, much like hiding piles of cash underneath the mattress. The third category of users is composed by individuals wanting to maintain their anonymity. Leaving aside criminals, dealers, traffickers and other lawbreakers, some people just want to preserve their privacy and their unconventional beliefs, especially if living in authoritarian countries. Finally, there are the technical users, who may find crypto assets as a more convenient and agile way of payment or an attractive way to fund organizations. Adding to these four categories of active users, there are investors and speculators who bet on market fluctuations, trying to exploit arbitrage opportunities for short-, medium- and long-term gains. They are not directly considered as active users due to the mere speculative nature of their goals. We have

¹³ Zetzsche, D. A. *et al.*, *The Markets in Crypto-Assets Regulation (MiCA) and the EU Digital Finance Strategy*, European Banking Institute Working Paper Series, 77, 2020, p. 8.

¹⁴ *Ibid*, p. 10 ff.

left them on the side due to their short-term orientation, with is not consistent with the endurance of the sector in the long run¹⁵.

Strengths on the ground

Among all the assets, the tokenization of securities, both equity and debt, is by far the sector with most imminent potential of growth. Security tokens can be directly issued on the Blockchain, and in this case they constitute a “native” type of token¹⁶. On the other hand, they can be issued via traditional methods and converted into digital form at a later date. Through the tokenization process an “on-chain” asset is created, which embodies all the characteristics and carries all the rights of the asset it is representing. Therefore, the “on-chain” and the “off-chain” assets always communicate and the token acts as store of both value and rights. However, the direct issue on “on chain” systems is easier for bond than for stocks for their very own intrinsic nature. Indeed, for the so-called bearer bonds, i.e., those bonds that do not keep track of ownership, possession grants ownership, even if it ultimately depends on the belonging jurisdiction. On the contrary, when dealing with digital representations of shares we are considering all the rights attached to them. Therefore, they have to be recognized as assets of the company and not just as the mere digital representation of them. This recognition would imply a change in corporate legislation. It is worth to mention that the State of Delaware has formally regulated the process of tokenization of shares, allowing investors to attach the very ownership granted by the stocks to the tokens¹⁷.

This innovative and dynamic procedure could represent a threat to investors and also many industries that are not adjusting fast enough to the new scenario that is currently taking form. This world is growing quickly, and the financial sector cannot

¹⁵ Elliott, D.J., De Lima, L., *Crypto-Assets: Their Future and Regulation*, Oliver Wyman, 2018, pp. 4-5.

¹⁶ Kaousar Nassr, I., *The Tokenisation of Assets and Potential Implications for Financial Markets*, *OECD Highlights - January 2020*, p. 25 ff.

¹⁷ *Ibid*, p. 47 ff.

risk being left behind. Considering these new trends, a question arises: are established players ready to take part in the industry shift?¹⁸

The application of DLTs assets tokenization has two prongs: on one side it entails many benefits and helpful implications that may positively impact all the market participants and attract investors' attention. On the other side, its digital nature and the absence of a uniform legislative code give rise to some concerns.

Among the benefits, particular attention has to be paid to the simplification of the process and the efficiency gains obtained from it. In fact, the transfer of value, given the absence of intermediary figures, results to be significantly faster, cheaper and allows for frictionless transactions¹⁹. Cryptology replaces the third parties in all of the transactions taking place. In this streamline process, central players are smart contracts. These contracts, based on the function "IF X/THEN Y", could potentially automatize corporate operations such as dividend payments or collateral management by further smooth the process. This process of automation may be applicable to the whole life of the security, starting from the issuance, the so-called STO which will be described afterwards²⁰. On this matter, the automation of the issuance process, of the channel of distribution and on their management and the efficiency gain in corporate action may result in a cost reduction for investors and for issuers. Indeed, the automation reduces the administrative burden and the transactions fees, due to the lower number of players and intermediaries²¹.

These assets can be traded on secondary market and thanks to their nature and their embodied characteristics they call for a broader audience of potential buyers and sellers, resulting in an increase in trade volumes. In fact, they can be fragmented, allowing the buyer to purchase just a small piece of the underlying asset. The chance to reduce the committed amount per investor while at the same time enlarging the base of traders provides greater liquidity to the market. Hence, crypto assets benefit from the so-called liquidity premium. Liquidity and accessibility also reduced the

¹⁸ Ernest Young, *Tokenization of assets - Decentralized Finance. Spot on: Fundraising and Stable coins in Switzerland*, 2020, p. 1.

¹⁹ *Ibid*, p. 2 ff.

²⁰ Aquaro, D., *Smart contract: cosa sono (e come funzionano) le clausole su blockchain*, Il Sole 24 Ore, 24/06/2019.

²¹ Laurent, P. *et al.*, *The tokenization of assets is disrupting the financial industry. Are you ready?*, Inside magazine issue 19 - Part 02: from a core transformation/technology perspective, Deloitte, 2018, p. 2.

mandatory investment period due to the possibility of being traded in the secondary market, reducing further illiquid commitments²².

Transparency is another major benefit of asset tokenization. This transparency is mainly attached to transactional data and information of the issuers along with the characteristics of the asset itself. It may benefit both traders and regulators. The procedure of tokenization allows to embed legal rights and responsibilities directly imprinted on the token itself, proving greater transparency during transactions. This information allows the parties involved to know the history and chronology of the assets and its ownership. This transparency, if correctly managed and channelled, may help identifying and preventing illegal trades. In addition, given the fact that the whole process is automated, and the system is managed via smart contracts, a mismatch between the contract and the programmed regulatory restriction would be promptly spotted out and automatically notified to the competent authority²³. It should be highlighted, however, that the quality of the data is a key driver for a successful use of the crypto assets. Indeed, they need to rely on a robust set of information to be recorded and shared to be fully transparent. The lack of quality data may significantly impact the outcome of the transaction²⁴.

From the just mentioned benefits analysis, it is possible to understand that the process of tokenisation of assets could smooth the process of investing in both primary and secondary markets, providing the system with an easier and faster way of wealth transfer. Comparing the two processes, the traditional and the innovative there is a further difference worth to be underlined. The traditional way of raising capital has to follow some strict rules in term of bookkeeping and accounting maintenance, in accordance with stock exchanges regulation. There may be obstacles on the way such as credit scoring of banks that may make them reluctant to grant credit. In this matter, the crypto assets provide investors with a flexible vehicle for raising funds²⁵.

²² *Ibid*, p. 2.

²³ Raskin, M., *The Law and Legality of Smart Contracts*, Georgetown Law Technology Review, 2017, pp. 315 ff.

²⁴ Capiello, C. *et al.*, *Data Quality Control in Blockchain Applications*, Business Process Management: Blockchain and Central and Eastern Europe Forum, 2019, pp 2-3.

²⁵ Mazzorana-Kremer, F., *Blockchain-Based Equity and STOs: Towards a Liquid Market for SME Financing?*, Theoretical Economics Letters, 9, 2019, pp. 2 ff.

The STO and the Crypto Assets Value Chain

The advantages of these new assets are clearly recognised and acknowledged by many players in the market. As previously mentioned, their potential really knows no boundaries. These benefits are intrinsic of their nature and are therefore attached to them throughout their whole life: from issuance to maturity. In this short chapter we will describe the very first step of their life and the different phases they have to come through.

Investors can purchase tokenized stocks via a Security Token Offering, or STO. This process has both similarities and differences with the Initial Coin Offering, or ICO, concerning the crypto currencies. The STO consists in a “digital encryption” which outcome is an asset that embodies all its features and information and represents its market value. The STO is regulated under the MiFID regulation and is performed in accordance with the existing regulations in terms of financial assets. In fact, it follows the same steps of an Initial Public Offering (IPO) of a company²⁶. As for the IPO, one of the central concepts is the prospectus. It is important in terms of transparency and unambiguity of data communication and it contains all the information and features of the asset considered. It has to follow a specific scheme and it has to be endorsed by the National Competent Authority, such as Consob for Italy²⁷. Differently from the white paper in the context of utility tokens. The prospectus and the white paper pursue the same informative objective, but the latter does not follow a rigid formulation and drafting procedure and does not require Authorities’ endorsement²⁸.

Given the stricter regulation regarding STO, they are considered to be safer in terms of fraud risk. Indeed, an investor who is willing to purchase a security issued in the “traditional” way should be as comfortable as purchasing a tokenised security, given the fact that the latter is just a digital representation of the material financial asset and the regulatory regime applied is actually the same. The only relevant difference is the presence of the certificate of ownership in digital form²⁹.

²⁶ Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020, p. 10 ff.

²⁷ *Ibid*, p. 14.

²⁸ Freg, C. *et al.*, *Initial Coin Offerings, Blockchain Technology, and White Paper Disclosures*, 2019, p. 2.

²⁹ Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020, p. 11.

It is speculated that STO are going to be the issuance process of the future, they have all the right credentials and features to reshape the entire issuance process. The use of smart contract allows the security to contain the terms, features and the prospectus embodied in the digital certificate. This last, in turn, is embedded in the security itself. A further advantage is provided by the transparency which make easier the documentation and the compliance with Anti Money Laundering and Know Your Customers usual practices. STO also allows to smooth the monitoring phase of the investment by exchanging information in a clear and transparent way among all players in the field.

In addition to the issuance and the monitoring phases, even the listing process may be improved. As a matter of fact, they may result in a “leaner and meaner” procedure compared to the listing process in other regulated stock markets.

To conclude, the STO may result to be time and cost efficient, in terms of both issuing and compliance processes. In addition, it may increase the number of assets available to investors, it will provide greater liquidity to illiquid assets and it would allow fractional and fragmented ownership. As already stated, all the benefits are incorporated in the process from the very first start.

However, STO is only the first step. Moving further down the line, the entire crypto assets value chain may be segmented in four core stages: the issuance in the primary market, the trade in the secondary market, the port-trade phase, and the asset servicing phase. All these trading stages are respectively divided into additional sub-phases³⁰.

The process starts with the issuance in primary market, the listing, and the admission to trading which is entailed in the STO process previously described. After this very first step that constitute the creation of the asset itself, the value chain includes the CSD, or “Central Securities Depository”. This entity performs three main activities: the settlement service for newly issued securities, the notary service aimed at recording newly entrants in the market via a book-entry system, and a central maintenance service to keep track of all accounts at top tier level³¹.

³⁰ *Ibid*, pp. 18 ff.

³¹ European Central Securities Depositories Association, *The role of CSDs as financial market infrastructures*.

After the first issuance, the crypto asset can be traded. The accessible markets are the regulated market, the Multilateral Trading Facility (MTF) and the Organized Trading Facility (OTF) markets. A regulated market is normally managed by government bodies, which are also entitled to control its regulation. In addition, Governments decide who can enter the market and set the prices. A regulated market can also be managed by industry or labour group, even though, to be fair, this second scenario is rare³². On the other hand, an MTF market is managed by private parties and it conveys multiple traders for buying and selling listed securities³³. If a market does not belong to any of the aforementioned categories, it is an OTF. This type of market allows third parties to interact by means of a contract to trade different financial instrument such as bonds, secured finance products, emissions allowances, and derivatives³⁴.

After the trading phase, there are the clearing and the central Counterparty Clearing houses (CCPs) and the Central Securities Depositories, or CSD, settlement. CCPs plays a central role. They have to manage the credit and liquidity risks and distribute it among the different players in the market. Their managing task is finalized to tackle the rise of new risks that may undermine the market and its stability. On their side there are CSDs, which are entitled of the securities settlement systems. They perform many tasks, among them the most important concerns the registration and preservation of securities, the permission of securities settlement in exchange of cash, the record keeping of the subject and the object of the issue and the maintenance of the track record of the changes in ownership of the securities³⁵.

After the post trading activity, the last phase of asset servicing takes place. It is divided in custody, security lending and collateral management and asset service. The custody phase is managed by a custodian or a custodian bank. They act as real custodians of the financial asset in order to protect them and avoid their stealing and loss. They may keep and hold both physical and digital assets. Given the large amount of money they have in custody and the peculiar task they are performing, they tend to have good reputation and be of a considerable size. Then, there is the

³² European Union Electricity Market Glossary, <https://www.emissions-euets.com/trading-venues/organised-trading-facility-otf>.

³³ Borsa Italiana, <https://www.borsaitaliana.it/borsa/glossario/multilateral-trading-facilities.html>

³⁴ Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020, p. 18.

³⁵ European Central Bank, *Central Counterparty Clearing Houses and Financial Stability*, Financial Stability Review.

lending phase. It consists in lending shares of stocks, commodities, derivatives, and securities to investors. To perform such trading, the investor needs to perfect its borrowing with a collateral as form of protection from default of the counter party. Example of collateral may be cash collateral or certificates of deposits. With this process, the ownership and the title of the security are assigned as well to the borrower. In exchange for this service, a fee and an interest on the loan is paid. The original holders receive a payment for the loaned security. These practices provide liquidity to the market and are a form of additional earning for long run focus investors. In addition, they permit short selling. Finally, the asset servicing. It considers all the activities linked with assets and wealth management.

Covered and Visible Threats

The other fundamental aspect to consider when forecasting the future of this new asset class is the risks attached to them. As crypto assets, they bring along with them the DLT risks. They can be summed up in three major categories: the transparency risk, the risk of hacking, attached to any digital asset, and the operational risk³⁶. The transparency is a double edge sword in this context, on one hand it facilitates the transaction and the monitoring phase, on the other it may give rise to some complications when the data should remain confidential. In fact, an ESMA concerns is about the market abuses that may be facilitated by the transparency³⁷. The risk of hacking is intrinsic to any digital asset. The hacker usually attacks and damage the weaker linked inside the ledger and this will result in an erroneous distribution of data. Strictly linked to the hacking risk, there is the operational risk: both concerns the links inside the ledger. The operational risk deals with errors and bugs implemented through the ledger. This coding error makes the software more vulnerable to hacking attacks and negatively affects its performances³⁸.

In addition to the intrinsic and already described risks attached to the trading of these financial instruments, there is also a regulatory problem that needs to be addressed. As already mentioned, the financial instruments fall under the scope of the MiFID

³⁶ Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020, p. 15.

³⁷ ESMA, <https://www.esma.europa.eu/press-news/esma-news/esma-sees-high-risk-investors-in-non-regulated-crypto-assets#:~:text=The%20ESAs%20remind%20consumers%20that,of%20losing%20all%20their%20money.>

³⁸ McFarland, C. *et al.*, *Blockchain Threat Report*, p. 2 ff.

Regulation. However, there is a taxonomy problem underneath the existing regulation. The existing piece of law has been created to capture the national peculiarities of different financial instruments. According to article 4.1 (44) (c) of MiFID, the “transferable securities” which fall under its control are shares, bonds, and “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”³⁹. This means that even financial instruments, similar to shares and bonds, will fall under the MiFID scope even if they are not grouped in the category of shares or bonds but they are a hybrid of the two and their characteristics depend on the bylaw of the issuing company. With this third category, the MiFID is trying to create a level playing field and capture all the different peculiarities of the different member states. Indeed, every country has its own laws and its own definitions⁴⁰. With the rise of tokens, it has been necessary to categorize them in one of the aforementioned categories and this process gives place to some issues and difficulties for what concerns a uniform and univocal categorization. This happens for two main reasons: the lack of a unique language across Europe and the issue related to the so-called “negotiability”. Considering the former case, a definition provided by a country may be different from the one provided by another member state. For example, as reported by Professor Filippo Nunziata in its seminar “Towards an EU legislation of crypto assets: MiCAR proposal” on 11th March 2021, in France a share cannot be deprived of its voting rights, otherwise it is not considered as share in the financial sense. On the contrary, the Italian regime recognizes shares that do not embody voting. This difference may give rise to some inconsistencies in MiFID application. For what concerns the latter, the negotiability, in fact in order to fall under the scope of MiFID the financial instrument need to be negotiable, otherwise it is regulated by the upcoming MiCA Regulation. Even in this case, the tokenization process may generate some issues. Useful again to clarify such issue is an example presented by Professor Nunziata during the abovementioned seminar. Let us consider a share, clearly recognized as such by the jurisdiction where it has been issued. Let us move a step forward: a token of that share is created. After this second step of tokenization, the

³⁹ Art. 4.1 (44) of DIRECTIVE 2014/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast).

⁴⁰ Nunziata, F., Seminar Towards an EU legislation of crypto assets: MiCAR proposal, 11/03/2021, Venice.

outcome does not necessarily fall under the scope of MiFID. In fact, it depends on whether it is negotiable or not. If the financial product is negotiable, it will be regulated according to the MiFID regulation, otherwise it will fall under the scope of MiCA Regulation. The core problem is that the concept on negotiability is not clearly defined, even if it is an overextending requirement of this piece of law. Once again, the problem of a jeopardized law system arises. Indeed, different countries attribute different definitions to the concept of “negotiability”, creating a major overlapping problem between MiFID and MiCAR areas of application. At this stage, a linking regulation that precisely draw the boundaries is necessary and not accessory⁴¹.

Are tokens going to be the assets of tomorrow?

Once the analysis in terms of advantages and disadvantages has been carried out, it is time to highlight the core characteristics that will support their longevity in the market.

Crypto assets, and in specific crypto securities, needs to overcome some obstacles to remain not only relevant, but allowed in the market. On one hand, an investors' euphoria gravitates around them fuelled by the novelty and the limitless potential of such products. On the other hand, there are major legislative issues that need to be addressed. The creation of a pan-European market will help to change investors mind and allow them to fully exploit their potential. Crypto assets are facing difficulties caused by the lack of availability of regulated secondary market infrastructures to support investors both in the trading and in the post trade phases. Regarding this matter, there are currently many initiatives aimed at facilitating the circulation and the usage of crypto assets as means of payment.

If we discharge the problem of regulatory compliance, the already mentioned benefits and efficiencies make these financial instruments the present stars of the financial sector, and the whole DLT system along with them. Of course, opportunities do not come alone but they go hand in hand with new market entrants. These two factors are the true catalyst of this whole innovative process. In addition, this entire process will truly benefit SME. They are going to have an easier and faster access to

⁴¹ Zetzsche, D. A. et al., The Markets in Crypto-Assets Regulation (MiCA) and the EU Digital Finance Strategy, European Banking Institute Working Paper Series, 77, 2020, pp. 21 ff.

capital, provided also by the introduction or the development of smart contracts inside their company processes. Furthermore, traditional financial markets do not want to be left behind. They are working on new DLT platforms to implement an end-to-end settlement process.

If we change our perspective to the process one, our attention will be focused on "native" security tokens. As already stated, they are issued, traded, and settled directly on the DLT and they are held in an encrypted "digital wallet". This kind of virtual bundling facilitate the flow of information among stakeholders and regulators. Indeed, it facilitate record keeping and safekeeping and provides a virtual box holding all the information regarding the asset in a transparent and truthful way.

Considering these virtual boxes of information, new regulation and new rules should be drafted to ensure a correct record and safekeeping of access keys. In this matter the role of custodians and their growth in future years is essential.

However, the regulatory burden still cannot be ignored. The lack of harmonization and of a pan-European market, both in term of regulation and taxonomy, which at the moment is the greatest obstacle to surmount.

From all perspectives, we are on a verge of a radical shift, a real turning point, and all the answers to the questions we might have depend on what is next.

References

Adhami, S., Giudici, G., *Initial Coin Offerings: Tokens as Innovative Financial Assets*, Blockchain Economics and Financial Market Innovation, Springer, Cham, 2019.

Alpenpartners. *Tokenization of Assets*, Company Insights. <<https://alpenpartners.com/insights/tokenization-of-assets/>>

Aquaro, D., *Smart contract: cosa sono (e come funzionano) le clausole su blockchain*, Il Sole 24 Ore, 24/06/2019. <<https://www.ilsole24ore.com/art/smart-contract-cosa-sono-e-come-funzionano-clausole-blockchain-ACsDo2P>>

Borsa Italiana, *Bitcoin: cos'è e come funziona*, FTA Online News, 2019.

<<https://www.borsaitaliana.it/notizie/sotto-la-lente/bitcoin-172.htm#:~:text=Il%20Bitcoin%20%C3%A8%20una%20moneta,con%20lo%20pseudonimo%20Satoshi%20Nakamoto.&text=Il%20valore%20del%20Bitcoin%20%C3%A8,il%20picco%20dello%20scorso%20novembre>>

Capiello, C. *et al.*, *Data Quality Control in Blockchain Applications*, *Business Process Management: Blockchain and Central and Eastern Europe Forum*, 2019, pp 166-181.

Carson, B., et al., *Blockchain beyond the hype: What is the strategic business value?*, McKinsey Digital, 2018. <<https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value>>

Collet, L. *et al.*, *Are token assets the securities of tomorrow?*, Deloitte, 2020. <<https://www2.deloitte.com/lu/en/pages/technology/articles/are-token-assets-securities-tomorrow.html>>

DIRECTIVE 2014/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (recast)

<<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0065>>

Eliott, D.J., De Lima, L., *Crypto-Assets: Their Future and Regulation*, Oliver Wyman, 2018.

<https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2018/october/Oliver_Wyman_Crypto-assets_Their%20Future%20and%20Regulation.pdf>

Ernest Young, *Tokenization of assets - Decentralized Finance. Spot on: Fundraising and Stable coins in Switzerland*, 2020.

<https://assets.ey.com/content/dam/ey-sites/ey-com/en_ch/topics/blockchain/ey-tokenization-of-assets-broschure-final.pdf>

European Central Bank, *Central Counterparty Clearing Houses and Financial Stability*, Financial Stability Review, 2005.

<https://www.ecb.europa.eu/pub/pdf/fsr/art/ecb.fsrart200512_06.en.pdf?58b5fa9f34b5b4460e84aa5a76ece2f6>

European Central Securities Depositories Association, *The role of CSDs as financial market infrastructures*. <<https://ecsda.eu>>

European Commission, *Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-Assets and amending Directive (EU) 2019/1937 (MiCA)*, 2020.

<https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/200924-presentation-proposal-crypto-assets-markets_en.pdf>

Febrero, P., Pereira, J., *Cryptocurrency Constellations Across the Three-Dimensional Space: Governance Decentralization, Security, and Scalability*, IEEE Transactions on Engineering Management, 2020.

Freg, C. et al., *Initial Coin Offerings, Blockchain Technology, and White Paper Disclosures*, 2019.

Ghosh, et al., *Institutionalization of crypto assets. Crypto assets have arrived. Are you ready for Institutionalization?*, KPMG, 2020.

<<https://assets.kpmg/content/dam/kpmg/us/pdf/2018/11/institutionalization-cryptoassets.pdf>>

Global Legal Research Directorate, *Regulatory Approaches to Crypto assets in Selected Jurisdictions*, The Law Library of Congress, 2019.

<<https://www.loc.gov/law/help/cryptoassets/cryptoasset-regulation.pdf>>

R. Houben, A. Snyers, *Crypto-assets. Key developments, regulatory concerns and responses*, Policy Department for Economic, Scientific and Quality of Life Policies, 2020. <<https://www.europarl.europa.eu/committees/en/supporting-analyses/sa-highlights>>

Joshi, A.P., Han, M., Wang, Y., *A survey on security and privacy issues of blockchain technology*, Mathematical Foundations of Computing, 1/2, 2018, pp. 121-147.

Kaousar Nassr, I., *The Tokenisation of Assets and Potential Implications for Financial Markets*, OECD Highlights - January 2020.

<<https://www.oecd.org/finance/The-Tokenisation-of-Assets-and-Potential-Implications-for-Financial-Markets-HIGHLIGHTS.pdf>>

Laurent, P. et al., *The tokenization of assets is disrupting the financial industry. Are you ready?*, Inside magazine issue 19 - Part 02: from a core transformation/technology perspective, 2018.

<<https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/lu-tokenization-of-assets-disrupting-financial-industry.pdf>>

Fintech: Law and Regulation, edited by J. Madir, Elgar Financial Law and Practising, 2019.

Mazzorana-Kremer, F., *Blockchain-Based Equity and STOs: Towards a Liquid Market for SME Financing?*, *Theoretical Economics Letters*, 9, 2019, pp. 1534-1552.

McFarland, C. *et al.*, *Blockchain Threat Report*, McAfee.

<<https://www.mcafee.com/enterprise/en-us/assets/reports/rp-blockchain-security-risks.pdf>>

Nunziata, F., *Seminar Towards an EU legislation of crypto assets: MiCAR proposal*, 11/03/2021, Venice.

Pantaleo, A., *Crypto-Assets: cosa cambia con la proposta di Regolamento Europeo*, *Il Sole 24 Ore*, 01/10/2020. <<https://www.ilsole24ore.com/art/crypto-assets-cosa-cambia-la-proposta-regolamento-europeo-ADU2J1s>>

Raskin, M., *The Law and Legality of Smart Contracts*, *Georgetown Law Technology Review*, 304, 2017.

Rowena, G., Tsoukalas, G., Netessine, S., *Initial Coin Offerings, Speculation, and Asset Tokenization*, *Management Science*, 2020.

Sunyaev, A., *Token Economy*, *Business and Information System Engineering*, 2021.

Zetsche, D. A., *et al.*, *The Markets in Crypto-Assets Regulation (MICA) and the EU Digital Finance Strategy*, *European Banking Institute Working Paper Series*, 77, 2020.

Web Sites

Borsa Italiana, <https://www.borsaitaliana.it/borsa/glossario/multilateral-trading-facilities.html>

Consob, <https://www.consob.it/web/area-pubblica/mifid-2>.

ESMA, <https://www.esma.europa.eu/press-news/esma-news/esma-sees-high-risk-investors-in-non-regulated-crypto-assets#:~:text=The%20ESAs%20remind%20consumers%20that,of%20losing%20all%20their%20money.>

European Union Electricity Market Glossary, <https://www.emissions-euets.com/trading-venues/organised-trading-facility-otf>.

