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MASTER THESIS

**PROBLEMS OF CRYPTO-ASSETS: CONCEPT, REGULATION FOR
SUPERVISORY PURPOSES, TAXATION**

**KRIPTO TURTO PROBLEMATIKA: SAŲOKA, REGLAMENTAVIMAS
PRIEŽIŪRINIAIS TIKSLAIS, APMOKESTINIMAS**

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ABBREVIATIONS:

FATF - The Financial Action Task Force.

DLT - Distributed ledger technology.

NFT - Non-fungible tokens.

CBDC - Central bank digital currency.

ICO - Initial Coin Offering.

ESMA - European Securities and Markets Authority.

EBA - European Banking Authority.

MiFID II - 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.

MiCA - Proposal for a regulation of the European Parliament and of the Council on Markets in Crypto-assets and amending Directive (EU) 2019/1937.

OECD - Organization for Economic Co-operation and Development.

IMF - International Monetary Fund.

CRS - The Common Reporting Standard (CRS).

CARF - The Crypto-Asset Reporting Framework.

AML - Anti-money laundering

KYC - Know your customer

ABSTRACT AND KEYWORDS

ABSTRACT:

The master thesis presents the key concepts of regulation of the Crypto – Assets, as well as the distinguished technological features and may differences of these assets. This thesis introduces the proposed European Union regulation MiCA, that not only will regulate the Crypto – Assets services providers but as will give clarity and certainty not only to the crypto investors but as well tax authorities. The lack of regulation creates problems not only for the supervisory authorities and Crypto - investors but as well to the tax authorities which have problems regarding the determination of taxable events, valuation, and taxation of crypto – assets transactions. The master thesis as well touches on the topics such as under and over-regulation of Crypto-Assets, covering the topics of investor protection, the and relationship between existing laws and regulation.

Keywords: Crypto Assets, MiCA regulation, taxation of Crypto – Assets, supervisory.

SANTRAUKA:

Magistro baigiamajame darbe pateikiama kripto turto reglamentavimo koncepcija, išskirtiniai technologiniai, kiekvieno tokio turto šioje turto klasėje bruožai. Šis darbas, supažindina skaitytoją su pasiūlytu Europos Sąjungos reglamentu MiCA, kuris ne tik reguliuos paslaugų susijusių su kripto turto, paslaugų teikėjus. Reguliavimo trūkumas kelia problemas net tik priežiūros institucijoms, kripto-investuotojams, bet mokesčių administratoriams, kurie susiduria su problemomis kaip nustatyti, apmokestinimus įvykius, įvertinti kripto turtą mokesčine prasme, ir apmokestinanti transakcijas susijusias su kripto turto. Magistro darbas palies tokias temas koks reguliavimas yra optimalus, kas ji nebūtų nei per griežtas ir per švelnus reguliavimas taip, pat nagrinės investuotojų apsaugos klausimus, ir santykius tarp jau egzistuojančio reguliavimo.

Raktažodžiai: Kripto turtas, MiCA reglamentas, kripto turto apmokestinimas, priežiūra.

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1. INTRODUCTION TO CRYPTO-ASSETS: DEFINITION, USE CASES, AND LEGAL ISSUES

European institutions and Member States have started various initiatives exploring blockchain's potential in the financial sector. However, regulators also perceive that blockchain-based financial activities cannot continue to evolve in a legal vacuum, as they raise serious risks related to consumer/investor protection, market integrity, and financial crimes. Regulators and supervisory authorities are tackling questions on the legal treatment of crypto-assets and looking for strategies to enforce regulation on the businesses emerging around them (Ferrari, V. 2020).

Regulators and policymakers around the globe are continuously evaluating how best to address the specific and sometimes novel issues posed by cryptocurrencies and other crypto-assets. Crypto assets have rapidly evolved from expressions of alternative ideals and systems to well-known assets of interest to non-professional and institutional investors¹ (World Economic Forum, 2021) as well implemented as legal tender, in some countries like El Salvador (Jones, S. and Avela, B., 2021). The EU is still developing its approach to the matter leaving the main responsibility to the Member States (Zetsche, D.A. et al., 2021).

There is currently no internationally agreed standard definition of crypto-assets, although the Financial Action Task Force (furthermore - FATF) defines a virtual asset as a digital representation of value that can be digitally traded or transferred and can be used for payment or investment purposes. Given the lack of a common definition, regulators and international standard-setting bodies tend to use their terminology and definitions (FATF, 2021)

The term crypto or virtual asset is applied for all digital assets which are based on can be distinguished by these features:

- a computer program containing the rules regarding the generation and transfer of this asset;
- a cryptographically secured blockchain database that contains all transactions with units of this asset; and
- an open and decentralized network that operates the database and periodically supplements it according to the rules of the computer program (Schmidt, N, Bernstein, J, Richter, S, & Zarlenga, L (eds) 2020).

Nevertheless, the term crypto asset is commonly used to refer to types of digital financial assets that are based on distributed ledger technology (furthermore - DLT) and cryptography as part of their perceived or inherent value (OECD 2020). The blockchain is the equivalent of a general ledger in an electronic format that, instead of being located at a centralized point, is distributed in identical copies by all the nodes of the network, using special mechanisms so that the information of all of them is a correct copy. The network continuously maintains a state of consensus, automatically verifying each transaction that occurs in a predefined time interval. In each block there is a timestamp and a connection to the previous block, with which it is chained, working as a DLT with a common Distributed Ledger. The general ledger logs all transactions from the time of the creation of the blockchain network, with encryption protection, and each node has a complete copy of all this information (García, Mexía, Pablo, 2020).

The cryptographic base has the capacity to ensure trust in social relations and to do so in an "automatic" way, and in any case as an alternative to trust systems based on human intermediation, that is, based, among others, on legal norms (García, Mexía, Pablo 2020).

The legal status of crypto assets varies significantly among countries. It is sometimes undefined or evolving, which can make characterization and regulation difficult and in turn, can result in different or uncertain tax treatments (García, Mexía, Pablo 2020). In many jurisdictions, the legal status of crypto assets remains controversial (García, Mexía, Pablo 2020).

The crypto-asset ecosystem currently encompasses assets with very diverse underlying technological features (specific cryptographic technologies and electronic sharing protocols), as well as varying governance solutions (private versus open access to the ledger and a variety of consensus algorithms) (García, Mexía, Pablo 2020).

Crypto-assets are a monstrous topic. Right now, they are several hundreds of cryptocurrencies in circulation and there are numerous types of crypto assets from Non-fungible tokens better known as NFTs, to StableCoins, and a Central bank digital currency is currently known as CBDC.

The main purpose of this master thesis is to examine how the crypto-assets should be regulated from the supervisory side to protect the non – professional investors, without negatively impacting the existing market. I will focus on crypto assets as an investment token. In addition to that, I will answer the question, of what kind of problems regarding personal income tax create distinct technological features of the Crypto – Assets, and why existing laws and regulations in the taxation field do not reflect its nature of it. Furthermore,

this paper shows how the European Union implemented measures to evolve from a legal vacuum to a fully controlled and supervised market of crypto assets.

To understand the latitude of the problem, certain tasks should be addressed as follows:

- For the purpose of defining and understanding the concepts of crypto-assets, investment tokens, a distributed ledger technology, cryptography as well, different classes of crypto-assets, and their unique technical features, the legal, economic, and technological academic material was analyzed and summarized;
- For the sake of clarifying, the core peculiarities and nature of the investment token, its features, as well, the legal treatment under EU law, the existing and proposed regulations as well, the recommendations of various international bodies were examined;
- With the intention of identifying the existing legal status of the crypto assets in the context of qualification under the EU Law, the existing laws, were inspected. At the same time was determined, the strengths and weaknesses of the existing capital market regulation and what legal uncertainties non – professional investors, might be facing right now.
- To determine how the implementation of new EU regulation would affect the financial market as well non-professional investors, in the EU and outside the numerous proposals and opinions them was read in order to address the taxation of the crypto assets at this moment, and in the near future
- The analyzed and summarized information of legal and tax treatment of crypto assets, as well the future development of proposed laws are relevant not only in the academic setting but as well to the has practical significance, because, every non-professional intelligent investor (Graham, B. 2003) has to know risk related with its investments, as well to know how to manage the risk, as well protect the assets that already own.

To write this research paper was used several academic writing methods were such as:

- The comparative analysis helped to understand the different regulations and different tax treatments of crypto-assets in the different jurisdictions inside and outside the European Union.
- The legal document analysis was applied to get insight into existing regulations and get a better understanding of the true will of legislators.
- The Descriptive method provides readers with relevant legislation and informs them about relevant facts regarding the Crypto assets.

- The analytical method, that was used, to form the reader's opinion about the fairness of these existing and proposed legal and tax treatment of crypto assets, to the non-professional investors, and security of capital markets.

2. CRYPTO - ASSETS AS INVESTMENT TOKENS

The growth of the ecosystem of digital “tokens” (cryptographically secured digital currencies, assets, or securities built using blockchain technology), has been exponential (Benedetti, H. & Nikbakht, E., 2021). Governments and regulators, have not decided on comprehensive standards for the identification, classification, and analysis of DLT and blockchain-based cryptographic tokens, but from a conceptual and methodological point of view, crypto-assets are commonly conducted under three main categories:

- Utility;
- Payment/ Currency and;
- Investment/ Security token (Ferrari, V., 2020).

The concept of utility tokens aligns with the essence of blockchain technology: pseudonymous actors interacting in a distributed ecosystem designed to promote mutually beneficial behavior with the token acting as an internal currency. Utility tokens can be used on the application to engage in transactions and earn rewards while increasing the value of the network (and therefore the token at resale) due to network effects. Utility tokens have been compared to gambling chips, tradable gift cards, (pre-sold) software licenses, franchise agreements, and more (Crosser, N., 2018). Utility tokens may also provide holders with governance rights in the issuing company, such as the right to vote for updates in the functional structure, and otherwise shape the future of issuing entities. These kinds of tokens often resemble the pre-payment of licensing fees or crowdfunding sales on websites such as Kickstarter. A utility token falling into these schemes is not usually considered traditional security or financial product: its aim is not to create future cash flows but rather to enable the functional use of a blockchain-based ecosystem (Zetsche, D.A. et al., 2021). They can only be used in the issuer’s network or platform to buy products or give digital access to an application or service. Utility tokens come in various structures and designs but can best be described as digital vouchers (Schmidt, N., Bernstein, J., Richter, S., & Zarlenga, L, (eds) 2020).

Payment or Currency tokens are crypto assets that are intended to be used, now or in the future, as a means of payment for acquiring goods or services or as a means of money or value transfer external to the blockchain ecosystem that they are built on any claims. Payment tokens are similar to fiat money, especially in terms of stablecoins, which are typically pegged with fiat money. They tend not to have any intrinsic value on the issuer and only develop the do not give rise to necessary functionality and become accepted as a means of payment over a period of time (Schmidt, N., Bernstein, J., Richter, S., & Zarlenga,

L, (eds) 2020). Currency/payment tokens' in their pure form fulfill the economic criteria of money, which are to serve as a means of exchange, storage of value, and unit of account (Zetsche, D.A. et al., 2021).

Security Tokens are a sub-set of a class of assets referred to as digital assets, virtual assets, crypto assets, digital tokens, and other similar terms. There are no definitive or exhaustive definitions of these terms, but there are many descriptions (The Dubai Financial Services Authority, 2021). Security/financial/investment tokens are tied to an underlying asset and represent fractional ownership of the overall value of the asset, albeit not of the asset itself (for example a firm, real estate, or collectibles). They offer rights to future profits and are typically treated under financial regulatory regimes as financial products, securities, financial instruments, derivatives, or collective investment schemes (Zetsche, D.A. et al., 2021). The investment tokens promise investors future financial benefits and/or rights concerning the project they are attached to. Typically, investment tokens are issued - in exchange for dollars/ euros or other crypto-assets - in the context of Initial Coin Offering (furthermore – ICOs) to raise initial capital for projects. Investors expect a financial benefit from the increase in the market price of the token/share but can also be promised distribution of future company profits (similar to the distribution of dividends) and/ or voting rights (Ferrari V. 2020). Security tokens digitally represent ownership in any asset, such as a piece of a tech startup or a venture capital fund, and can provide investors with various rights to that company or fund. Furthermore, Security tokens provide liquidity to investors, access to compliance features for issuers, and a framework for oversight of the regulator (Kulkarni, R., 2019). Investment tokens such as security tokens bear more similarities to conventional equity-based crowdfunding.

- Security tokens are a token that confers rights and obligations that are:
- the same as those conferred by a share, debenture, or futures contract (Investments);
- substantially similar in nature purpose or effect, to those conferred by Investments (The Dubai Financial Services Authority, 2021);
- Security tokens (equity, debt, or asset-backed tokens) are crypto-assets that resemble financial instruments. Security tokens can represent, for example, membership rights, a share in future company earnings, future cash flows, or interest earnings. In terms of their economic function, these crypto-assets are analogous to equities, bonds, or derivatives. Crypto assets that enable underlying physical assets to be traded on the blockchain also fall within this category (Schmidt, N, Bernstein, J, Richter, S, & Zarlenga, L (eds) 2020).

From the information, provided below, was determined, that the security token owner has similar rights as the traditional investor, that invests in long-established financial products, but because the security and other tokens are not regulated and monitored by the supervisory authorities, the key challenge for the crypto investors is to enforce their rights not only to the issuer of the assets, but as well to third parties, because that kind of transaction is not recognized, and is not binding as regards third parties.

The purposes and use cases distinguish, in an essence technological similar, tokens from each other, and let regulators observe particular differences between them, draw lines and choose appropriate measures which not distort the behaviors of token users. The differences in the uses, intentions, and means, show the need for divergent legislative rules. The investment tokens should approach as investment vehicles, rather than means of payment for goods, or used to engage in transactions in the closed ecosystem.

3. OVERVIEW OF CRYPTO ASSET TYPES

3.1 CRYPTO – CURRENCIES

Cryptocurrencies have been viewed as an alternative to avoiding political interference, war risks, and the damage caused by central bank's policies. Among thousands of cryptocurrencies, Bitcoin is the best known due to the size of its capitalization. Bitcoin, which has the highest market value since 2020, is followed by Ethereum and Ripple, respectively (Necmiye Serap V., 2021). The creation of cryptocurrencies, an alternative medium of exchange, promises to alter the role of intermediaries in financial markets (JOHNSON, K. N., 2021).

Creators of blockchain, the technology that permits the creation of cryptocurrencies, posit that a permissionless or publicly accessible ledger that relies on a network of participants to verify and record data or transactions can replace the various firms and institutions that intermediate financial market transactions (JOHNSON, K. N., 2021). Digital currencies or cryptocurrencies represent something more than the digitization of money. It is a way to reconstruct trust (Haynes, A, & Yeoh, P. 2020) by providing a transparent system based on cryptographic proof. Trust is crucial to financial transactions and payments. Individuals and organizations need assurance that the transactions they make are processed and completed in a fair and safe manner, a requirement that puts financial intermediaries and central banks in the business of trust (Nelms et al. 2018 & Marella, V. et al., 2020). If a user believes that the blockchain better survives malicious attacks because of its decentralized nature, then it is likely that the user perceives this attribute to add to the blockchain's trustworthiness, and, consequently, its value (Thatcher et al. 2011).

There are three key characteristics that set cryptocurrencies apart from fiat currencies and their digital instantiations. First, they have no central authority, second, and perhaps even more importantly, cryptocurrencies draw on blockchain technology (i.e., distributed and consensus-based database with high cryptography and transparency), Third, due to their digital nature cryptocurrencies can be easily used and transferred across international borders.

Cryptocurrencies are a new class of investible instruments and can even be included in individual retirement accounts (Hu, A. S., Parlour, C. A., & Rajan, U. (2019). In less than a decade, the term cryptocurrencies rapidly evolved from a complex term only used by technologists to become a mainstream term because of its wide popularity (Marchant, G., Jain, J., Muse, O., & Chandra, S. 2020).

They all operate on the basis of cryptography which is the practice and study of techniques for secure communication in the presence of third parties employed in multiple places to provide security for the crypto network. It primarily consists of mathematical and computer science algorithms applied to encrypt and decrypt the information and is used in crypto addresses, hash functions, and the blockchain (Haynes, A, & Yeoh, P., 2020),

Different cryptocurrencies have different attributes, and their targeted users and functions are also different. Some cryptocurrency algorithms are open, so that the issuance of cryptocurrency is not completely controlled by individuals or institutions because there is no issuing entity. The transaction process of cryptocurrency needs the approval of each node in the network. If the number of solutions is determined, then the total amount of cryptocurrency is limited, alleviating the inflation problem caused by excess currency issuance, (Cangshu, L., and Shen Y., 2021).

From a financial regulator's perspective, current systems appear to lack features that are critical for sovereign monetary regimes in order to manage and control the financial stability of a country. As cryptocurrencies generally lack an adjustable monetary policy, they cannot respond in the same way to monetary and price stability risks due to shocks to demand cryptocurrency by adjusting the supply (World Economic Forum, 2021).

Cryptocurrencies can be defined as digital items of value that are stored or exchanged on a blockchain. These assets can be currencies, commodities, securities, derivatives on a commodity or security, or other tokenized assets that can be stored on a blockchain. Cryptocurrencies, as an instrument for storing value and facilitating exchange, have also become investable security. But cryptocurrencies are just one category of crypto-assets (Marchant, G., Jain, J., Muse, O., & Chandra, S., 2020).

Challenges and risks specific to crypto-assets and their nature include:

- The price volatility of cryptocurrency constitutes a significant risk to users, as well as merchants accepting cryptocurrencies as a method of payment.
- The absence of depositor protection. Users can lose savings from many sources such as cryptocurrency price drops, exchange fraud, lost private keys, and more.
- The lack of payment protections is due to the irreversibility of transactions.
- Difficulty establishing accountability towards users due to the decentralized management of cryptocurrencies.
- Privacy risks stems from the pseudonymous nature of cryptocurrencies. While pseudonymity hides personally identifiable information, the strings of data representing holders' public key addresses can, with significant effort,

be linked back to identifiers, there by compromising the identity of users and their privacy.

The benefits that receive the individuals and companies that use this asset outweigh all risks combined. Cryptocurrencies alleviate all issues related to transborder payments, and help companies and individuals make, and receive payments, instantly, without any delays, extensive waiting periods, and enormous prices. As well, it lets people in countries where financial systems are not developed access financial services easily and affordably. In addition, the anonymous nature of the transactions, lets individuals avoid intermediaries, especially in the countries where the financial market lacks stability or lacks transparency.

Even though the regulators see cryptocurrencies as an investment vehicle, from the technological side, it more resembles a means of payment, because the system is based on records of transactions.

3.2 STABLECOINS

The first wave of crypto assets has so far failed to provide a reliable and attractive means of payment or store of value. They have suffered from highly volatile prices, limits to scalability, complicated user interfaces, and issues in governance and regulation, among other challenges. Thus, at first, crypto assets have served more as a highly speculative asset class for certain investors and those engaged in illicit activities rather than as a means to make payments (Cœuré B and et al., 2019).

Stablecoins are a relatively new form of payment/exchange token that is typically asset-backed (by physical collateral or crypto-assets) or is in the form of an algorithmic stablecoin (with algorithms being used as a way to stabilize volatility). It is designed to minimize fluctuations in their price against a reference currency or basket of currencies. Some stablecoin initiatives pledge to hold a reserve of State-issued currencies or other assets against which stablecoin holdings can be redeemed or exchanged (European Commission, 2019).

Current projects take one of two forms:

- Custodial stablecoins that rely on trusted institutions to hold reserve assets off-chain. This introduces counterparty risk that cryptocurrencies otherwise solve;
- Non-custodial (or decentralized) stablecoins create on-chain risk transfer markets via complex systems of algorithmic financial contracts backed by volatile crypto-assets (Klages-Mundt, A., & Minca, A. 2019).

Stablecoins can be defined as cryptocurrencies that are pegged to currencies or assets that are (relatively) stable such as the US dollar (Hoang, L.T. & Baur, D.G., 2021). More specifically, none of the stablecoins exhibits zero variance and homoscedasticity consistent with absolute stability, and none of the stablecoins is as stable as the US dollar and the Euro. The ideal digital currency should be able to withstand the drastic fluctuations in the US dollar, oil, and gold, it should have low maintenance costs and high storage value, it should have enough flexibility and appropriate expansibility to adapt to changing regulatory regulations; it should have certain transparency and could be used to protect users' privacy. Stablecoins are designed to meet these needs (Cangshu, L., and Shen, Y. 2021). The results also suggest that the source of this instability of stablecoins is the excess volatility of Bitcoin. More generally, if an asset that is supposed to be stable is strongly connected to an asset that is very volatile, the asset cannot be stable (Hoang, L.T. & Baur, D.G., 2021):

A perfectly stable coin shows no variation and thus exhibits a zero standard deviation of returns (Hoang, L.T. & Baur, D.G., 2021). The paper „How stable are stablecoins?“ published in the journal of The European Journal of Finance analyzed the returns, volatility, and volume of Stablecoins and found that they are neither stable in absolute terms – they are too volatile – nor stable in relative terms – they are too volatile compared with stable benchmarks such as major fiat currencies. However, stablecoins are generally less volatile than Bitcoin at daily frequencies consistent with relative stability. That shocks to stablecoins volatility are persistent and do not disappear quickly inconsistent with (absolute) stability. This kind of stability is not only convenient to the holder’s daily transactions but also conducive to the realization of credit, financing, and other important financial functions in the long run.

Global stablecoins refer to the stablecoins that are widely accepted by residents of various countries, and they are used for daily payment, value transfer, and storage (Cangshu, L. and Shen, Y., 2021).

Stablecoin arrangements are part of an ecosystem comprising multiple interdependent entities with different roles, technologies, and governance structures. Appropriate regulation and accountability require an understanding of the ecosystem as a whole, and how its parts interact. Stablecoin arrangements are expected to meet the same criteria and abide by the same requirements as traditional payment, clearing, and settlement systems – that is, the same activities and the same risks should face the same regulations. Hence, stablecoin developers should work to ensure stablecoin ecosystems are appropriately designed and operate safely and efficiently in accordance with public policy (Cœuré B and et al., 2019).

Stablecoins, if widely adopted, could threaten financial stability and monetary sovereignty and pose risks they can pose to our social and economic life. For example, data-driven models could pose a risk of misuse of personal information for commercial or other purposes, which could jeopardize privacy and competition and harm vulnerable groups. Another concern is that the wide acceptance of stablecoins offered by foreign companies would make European payments dependent on technologies designed and governed elsewhere. This could raise potential issues of traceability in the fight against money laundering, terrorist financing, and tax evasion. It could also make the European payment system unfit to support our Single Market and a single currency and vulnerable to external disruption, such as cyberattacks. Risks would seemingly be mitigated by allowing stablecoin issuers to deposit funds in accounts at the central bank. This would eliminate custody and investment risks for stablecoins and underpin their issuers’ commitment to

redemption at par value into fiat currencies. Also, rigorous liquidity requirements for stablecoin issuers will enable them to withstand liquidity strains and minimize the risks to financial stability (Panetta, F., 2020).

The current stablecoin market is heavily dominated by stablecoins that are backed by the US dollar. 19 of 20 coins that are available to the market are USD-stablecoins, except EURS.

The Stablecoin technology is created to solve the main issue of cryptocurrencies the volatility and provide the investor with more a liquid financial instrument, that preserves the value with less risk than crypto-currencies.

3.3 NON - FUNGIBLE TOKENS

Non-fungible tokens, to the general public better known as the abbreviation – NFTs, have gained renown for their large purchase price, bringing in sometimes millions of dollars to own one (Cornelius, K., 2021). NFTs can be found in the fields of sports, music, art, and other sectors (Blum, L. M., & Foster, B. P. 2021).

An NFT is a cryptographic asset authenticated and exchanged using blockchain technology. Each NFT is unique, unlike fungible tokens such as cryptocurrency, it cannot be directly exchanged (Blum, L. M., & Foster, B. P. 2021). It is called non-fungible since it does not exist in a one-to-one ratio with other assets (such as cryptocurrencies do). Essentially, NFTs make ownership of an asset verifiable and since each asset is unique, each NFT record has a unique value relevant to the value of the asset itself. While NFT applications make use of other cryptocurrencies and are tied to their markets in some respects, they are not currencies themselves, but rather more like records of ownership (Cornelius, K, 2021). NFT is a unit of data stored on a blockchain that certifies a digital asset to be unique and therefore not interchangeable while offering a unique digital certificate of ownership for the NFT (Evans, T. M., 2019).

NFT protocols provide an underlying distributed ledger for records and combine it with transactions that make them exchangeable in a peer-to-peer network (Ante, L. 2021). Blockchain creates a ledger of immutable records that can be coded to and can be tied to assets as a record of ownership (Cornelius, K, 2021). Often, an NFT stands for ownership of something not directly stored on the blockchain—a piece of digital art, for example. The token contains a pointer to find the digital art file and a hash of the file as proof. So a token representing digital art might contain a URL pointing to the art and a hash of the art file (Fairfield, J. 2021). The other, use for NFT's that academics suggest is the storage of ownership of property records, and in that way creating a unified international database for record-keeping.

NFTs blur the line between financial tokens and records of proof (DuPont, Q.2017). Gains or loss in value of one NFT does not imply a gain or loss in the value of any other token (Fairfield, J. 2021). More broadly, an NFT allows establishing the “provenance” of the assigned digital object, offering indisputable answers to such questions as who owns, previously owned, and created the NFT, as well as which of the many copies is the original. Several types of digital objects can be associated with an NFT including photos, videos, and audio. NFTs are now being used to commodify digital objects in different contexts, such as art, gaming, and sports collectibles. Originally NFTs were part of the Ethereum

blockchain but increasingly more blockchains have implemented their own versions of NFTs (Nadini, M. et al., 2021).

NFT's are traded online, often with cryptocurrency, and are generally encoded within smart contracts on a blockchain (Nadini, M. et al., 2021). Smart contracts are self-executing contracts, embedded as a short computer program — that is, code — on the blockchain, which governs the terms of the agreement for a transaction between two or more parties. The contracts control the execution of a transaction, which can be tracked on the blockchain, and are immutable. Thus, smart contracts enable the transactions to be carried out between anonymous parties on the blockchain without the need for a central authority, legal system, or external enforcement mechanism. Different blockchain platforms have various types of smart contracts. Once the smart contracts are uploaded on the blockchain, they can be run by creating a transaction point and imparting the necessary information for it to run (Lewis, A., 2018). The smart contract in the NFT enables the digital creators to receive royalties from the creation, in the event of a transfer of ownership automatically. The dataset by 'sale' events emitted by an NFT contract when it is transacted on a smart contract-based marketplace, indicating that a change of ownership has been recorded on the blockchain, and 'transfer' events indicating that the NFT has been transferred from one address to another (Von Wachter, V., Rude Jensen, J., Regner, F. and Ross, O., 2022).

NFTs can be any type of digital asset. The most common types are collectibles and artworks, objects in virtual worlds, and digitalized characters from sports and other games. An NFT starts with registering ownership of a digital asset on a blockchain, usually on an Ethereum network. This digital asset can then be sold, with changes in ownership and the cryptocurrency payment received registered on the blockchain (Dowling, M., 2022).

The NFT due to its technological features and its nature has a lot of potentials. Right now these NFTs are at the center stage where, where early investors try to observe and find out the use cases of these assets, and how they can be used outside the vehicle to collect royalties on digital art.

4. INVESTOR PROTECTION AS THE REASON FOR CRYPTO REGULATION

The traditional financial theory provides us with the risk-return trade-off principle, which indicates a correlation between risk and return. Risk refers to the probability of losses relative to the investment. No investment is completely risk-free. The higher the risk, the higher are returns. It is important to know that increased risks in the markets, can also affect the stability of the market as a whole. The crypto assets lately generated greater returns than, the capital market. That attracted many non-professional investors who wanted to take advantage of an opportunity to generate a substantial return, in a relatively short time, without understanding the risk.

So, this unregulated market, with the potential of substantial returns, establishes a so-called casino economy within, resulting in an economic environment that encourages investors to take risks expecting large profits (R. Douady et. al. 2017). Rather than as a medium of exchange, crypto and related assets are now primarily used as a vehicle for financial speculation (Kiel Institute for the world economy, 2018). Investors in blockchain assets face momentous volatility as well as a high risk of fraud and theft (Lehmann, M, 2021), as well as the other risks that could not be mitigated by a clever investment strategy.

Ownership of a crypto asset is reflected in a string of numbers on a distributed ledger, which is accessible by both a public key and a private key. The principle of ownership is simple, who has access to the wallet, that person has the ownership of the content of the wallet, and all the rights related to it. Having access to the crypto wallet all time is the most important thing to the crypto investor.

Cryptocurrencies and other crypto assets provide the opportunity for self-custody, where customers do not need to use a custodian to hold or manage their crypto assets. While this provides customers with the maximum ability to express their agency and choice without intermediation, it also introduces significant risk. For example, if a customer loses their private key, they irreversibly lose access to the crypto-assets secured by that private key. As such, most customers opt for custody providers, which act as the holder of the private key maintains the agency to perform a transaction involving the crypto-asset (World Economic Forum, 2021). The right of the holder can be endangered in various circumstances: the private key could be stolen—for example, through a computer hack, it could be deleted, or a third person could claim ownership over the crypto asset—for instance, an alleged heir in the case of succession (Cangshu L., and Shen Y., 2021).

Another important difference compared to traditional custody models is the concept of hot and cold wallets (custodial accounts). Hot wallets are connected to the internet, while cold wallets are kept in an offline environment. As hot wallets are connected to the internet, it is faster and easier to trade or spend cryptocurrency – but they may be more vulnerable to online attacks that could increase the risk of stolen funds (World Economic Forum, 2021).

Crypto-asset service providers that hold crypto-assets belonging to clients or the means of access to such crypto-assets have to make adequate arrangements to safeguard the ownership rights of clients, especially in the event of the crypto-asset service provider's insolvency, and to prevent the use of a client's crypto-assets on own account except with the client's express consent. A custodian has to have proper key management practices in order to safeguard the customer's ability to directly dispose of the crypto-asset, as a fiduciary for the customer, and manage or recover a user's keys if they are lost.

But as in every industry, there are a few bad actors, who do not provide adequate protection for consumers or comply with business practices, and industry standards, and in that way negatively impact the industry and, in that way, create distrust between the crypto-users, and service provider. Insolvency is the situation in which the holder of a crypto asset needs special protection most. Such instances can arise when an intermediary goes bankrupt (Lehmann, M., 2022). If the intermediary becomes bankrupt the recovery of keys becomes complicated, especially regarding client authentication of wallet and authorization of the client. Due to a lack of liquidity requirements is nearly impossible to recover the damages that accrued from the action of the intermediary, especially when there is a lack of other assets.

European Banking authority highlighted various risks to consumers in connection with services provided by crypto-asset trading platforms and custodian wallet providers, inadequate governance arrangements to ensure risks are appropriately managed and mitigated, inadequate advertising rules, potentially leading to misleading marketing/promotions, absent compensation schemes, such as deposit guarantee schemes, investor protection schemes or any other compensation schemes protecting the customers of the entity and inadequate complaints handling and redress procedures (European Banking Authority, 2019).

Is no such thing as an owner or ownership outside a specific national law. If disputes about rights to crypto-assets arise—which is bound to happen sooner or later—then a legal system must be found to buttress any property claim (Lehmann, M., 2021) Crypto - assets

can be issued and traded on websites without any legal entity's incorporation. This creates territoriality issues (Ferrari V., 2021).

Furthermore, regulatory laws toward crypto assets are still in their infancy, and the protection of cryptocurrency holders' rights is still in constant improvement and exploration (Cangshu L., and Shen Y., 2021). ownership over the crypto asset—for instance, an alleged heir in the case of succession.

A crucial question is how the holder can validly transfer crypto assets to another person. The conditions, timing, and effects of such a transfer are of the utmost practical importance (Lehmann, M, 2021). The software protocol never has custody of consumer assets, there are no brokers involved, and prices are determined algorithmically. There is no organization, association, or group of persons that constitutes, maintains, or provides a marketplace or facilities. There is only code (Initiative, S. A., 2022).

These problems cannot be solved by the technology itself but require a legal answer by providing a solution to these issues by affording legal protection to the holder of the crypto asset (Lehmann, M, 2021). Legislators and policymakers are increasingly concerned about the protection of crypto investors, including their property rights (Lehmann, M, 2021). The initial focus should be on the most pressing concerns related to virtual assets including consumer/investor protection—while leaving less immediate risks (for example, financial stability, monetary policy) to a later stage (IMF, 2016).

Growing public interest in Crypto-assets as a type of investment, as well the lack of understanding and public scrutiny regarding the absence of investor protection, broad attention of regulators. The EU regulators were the first to intervene, by creating regulation that will address key issues that face the crypto industry and that will create an equal field for all crypto providers. This intervention into the unregulated industry is a sign of legal recognition from the EU members state's governments, that Crypto as an industry matured and is here to stay.

4.1 RISKS OF OVER-REGULATION AND UNDER-REGULATION

When regulators see the potential for harm rather than the positive potential for innovation and growth, the result can be over-regulation (Goforth, C.R., 2021) and questionable enforcement activities. As Coinbase's Chief Legal Officer, Paul Grewal, put it "bad facts make bad law" (Kehoe, 2022). This means that sometimes policymakers selectively find the facts that prove their agenda rather than make the data-driven decision. For example, the regulators all around the world are amplifying AML and KYC procedures for Crypto services providers, by tightening existing regulations, even though the transactions involving illicit addresses represented just 0.15% of transaction volume in 2021 despite the raw value of illicit transaction volume reaching its highest level ever. (Chainalysis, 2022).

Regulations can function as restrictions for market participants, negatively impacting the market. On the other hand, they may boost the market by strengthening its credibility and stability (Kim, D., Bilgin, M.H. & Ryu, D., 2021) in the crypto-assets market.

This lack of central authority is believed by analysts to be the main reason governments are wary of crypto assets (Haynes, A, & Yeoh, P., 2020). The relationship between institutional uncertainty and crypto-assets is made even more complex by the fact that market valuation, transaction volumes and user bases significantly react to news and announcements about regulatory actions (specifically the legal status of cryptocurrencies) (Haynes, A, & Yeoh, P., 2020).

There is a strong risk that the blockchain will be made subject to diverging legal rules. Similar to the world of intermediated securities, various national laws will need to be consulted to determine the rights and privileges of investors (Lehmann, M., 2021). As Matthias Lehman in the article "National Blockchain Laws as a Threat to Capital Markets Integration" stated that before national legislators and judges once again divide the world through idiosyncratic rules, the private law of crypto-assets should be harmonized to the highest degree possible.

Governmental regulators are straining and often competing to determine which regulatory categories should encompass cryptocurrencies and other crypto assets. Potential candidates include currencies, securities, commodities, or property. Different national governments, and even different agencies within the same national government, have come to inconsistent determinations about which regulatory categories should apply to these products. Moreover, given the differences between crypto assets, some products may fall within one category of regulations, while others may be better placed within a different category (Marchant, G., Jain, J., Muse, O., & Chandra, S., 2020).

The term ‘blockchain’ is not a legal one but was born in the practice of information technology. It is therefore unsurprising that the precise meaning of the term is subject to considerable uncertainty. For this reason, it is particularly interesting to see how the initiatives define this notion and, in accordance with that definition, delineate their scope (Lehmann, M. 2021). Regulators usually lack technical command and the necessary knowledge to understand cryptocurrencies and other blockchain-based crypto-assets. Cryptocurrencies are a digital asset class that does not fit easily into the existing regulatory framework (Sauce L., 2020).

Regulators must regulate how users use blockchain technology and cryptocurrencies, but not the underlying technology and its applications. From a technology development perspective, regulators should neither impede the pace of technological improvement nor discriminate between the alternative directions of technological development to ‘pick winners and losers’ and engender enduring resource misallocation (Sauce, L., 2022).

The variety of national laws and initiatives heralds a new age of legal diversity and fragmentation. As a consequence of the adoption of idiosyncratic rules, conditions for the validity of crypto transfers will differ from one country to another the time of perfection will depend on the governing law; and it will be necessary to identify a legal system to determine the investors’ rights. The blockchain, which was created as a global transfer mechanism, risks being split into multiple national versions, which may not be interoperable or even commensurable (Lehmann, M., 2021).

Crypto assets are, in most cases, "inherently cross-border and cross-jurisdictional. As a result, most issuers of crypto-assets and trading platforms must address multiple legal and regulatory frameworks when attempting to enter the market. Unless some degree of uniformity is sought, the result will be tremendous legal fragmentation around the world. It would become impossible, or at least significantly difficult, to trade on various types of blockchain at the same time. That is because the diverging governing laws will necessarily have an effect on their functioning (Lehmann, M., 2021). In the absence of common rules, these interfaces will not be interoperable amongst each other. The inevitable consequence is a rise in transaction costs. Economically beneficial diversification into multiple crypto assets will be made more difficult. Some national markets will be too small and lack sufficient liquidity for trading, with the result that they eventually may be extinguished altogether. Many jurisdictions have chosen to frame crypto-economy issues in relation to securities and investments (CHIU, I. 2019).

Demertzis and Wolff in the article “The economic potential and risks of crypto assets is a regulatory framework needed” stated that taxation and regulation ‘could prematurely

provide legitimacy to the regulated entity (Demertzis, M. and Wolff, G., 2018.). A premature regulation may have reputational damage and undermine credibility and confidence in the regulator's competence in case of inefficient regulation (Sauce L., 2022).

Over-regulation, such as early-stage costs for licensing requirements, tax burdens or very strict foreign exchange controls, may suffocate innovation efforts. Conversely, there are also risks to taking an under-regulation approach. For instance, failing to address ML, TF, fraud and ransomware risks could lead to significant losses to consumers (as covered in the consumer protection section), businesses and investors, in addition to potential financial stability risks (World Economic Forum, 2021).

The division of the blockchain into different types leads to market fragmentation, increases transaction costs, and reduces the depth and liquidity of markets. Moreover, it exacerbates legal uncertainty and raises the likelihood of disputes about the applicable law and its content. If this development continues, it will lead to a new source of global fragmentation. In the case of the blockchain, this is particularly regrettable, given that the interest of the technology is precisely to overcome national borders and differences (Lehmann, M, 2021). L. Sauce states, that Regulators need to address several key challenges to devise a consistent and efficient regulatory framework to mitigate the risks associated with cryptocurrencies and avoid the move to the 'dark side'.

Cryptocurrencies live in their own digital, nationless realm and can largely function in isolation from existing institutional environments or other infrastructure. As the market continues to evolve, and if more banks and funds engage in cross-country arbitrage, regulation and enforcement in one jurisdiction may lead activity to migrate to others with more lax approaches'. Some regulators doubt whether it is the right time to set regulatory norms and definitions over an immature industry (Demertzis and Wolff, 2018). For instance, inappropriate timing would disincentive, postpone or even prevent innovations, such as second layer technologies to avoid network congestion or scalability issues that would increase the overall efficiency of the blockchain technology and internet altogether. Regulatory bodies must find the appropriate timing and right balance between encouraging the long-term benefits of innovation and the control over various risks for both investors and consumers (Lehmann, M, 2021).

So the proportional regulatory response is eminent to create an even playing field for the crypto-assets market participants, but as well for investors. That kind of balance would let market participants innovate, but will not slow down the growth significantly, overload investors with extensive procedures, that would be detrimental, and encourage "forum shopping".

All countries should work together to develop a coordinated international regulatory response to the growth of crypto-asset markets. Ensure that regulation does not impede legitimate and innovative uses of cryptocurrencies and blockchain technology (Edwards, F. R. et al. 2019). Specifically, the international regulatory framework should provide a level playing field along with the activity and risk spectrum. The IMF believes that Crypto-asset service providers that deliver critical functions should be licensed or authorized. This would include storage, transfer, settlement, and custody of reserves and assets, among others, as with existing rules for financial service providers. Requirements should be tailored to the main use cases of crypto-assets and stablecoins. Authorities should provide clear requirements on regulated financial institutions concerning their exposure to and engagement with crypto (Thomson Reuters, 2022).

4.1 PROPOSED LEGISLATION (PROPOSAL FOR A REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON MARKETS IN CRYPTO-ASSETS, AND AMENDING DIRECTIVE (EU) 2019/1937

In the need to provide appropriate regulatory responses to the emergence of crypto-assets and token offerings, supervisory authorities have faced the problem of finding the legal basis upon which they are allowed to intervene. In this regard, different competent authorities in the EU have applied different definitions of core concepts of EU financial law (Zetzsche, D.A. et al., 2021).

The existing regulation does not reflect the technological development and the changes in investors' mindsets that happen recently. At that time when current regulation was created, the financial market did not come to transformation to decentralization. President Ursula von der Leyen of the European Commission in the mission letter stated that there is a need for a common approach with Member States on cryptocurrencies to ensure we understand how to make the most of the opportunities they create and address the new risks they may pose (Von der Leyen, U., 2019).

To respond to all of these issues, the EU created the framework that both enables markets in crypto-assets as well the wider use of DLT in financial services. European Commission has considered two options for developing a crypto-asset framework for those crypto assets not covered by existing EU legislation. The first option is a so-called “Opt-in” regime for unregulated crypto assets. Under this first option, the regulation takes the position that issuers and service providers that decide to opt-in would benefit from an EU passport to expand their activities across borders. Service providers, which decide not to opt-in, in would remain unregulated or would be subject to national bespoke regimes without being granted the EU passport. The second option, “Full harmonization” would remove the different country-specific regulatory regimes for crypto assets (Scharfman, J. 2022). The European Commission thought that the first option will better be suited for the complex legal regimes of Member states.

A new Regulation on Markets in Crypto-Assets (furthermore - MiCA), as well as a new proposal for a Regulation on a Pilot Regime for Market Infrastructures Based on Distributed Ledger Technology (DLT Infrastructure Regulation), was created. While MiCA deals with crypto-assets the DLT Infrastructure Regulation will introduce a so-called ‘sandbox’ approach for DLT-based market infrastructures, allowing temporary derogations from existing rules to assist regulators’ gaining of experience (Zetzsche, D.A. et al., 2021).

The proposed regulation focuses on three categories of crypto-assets: asset-referenced tokens, e-money tokens and other crypto-assets. In addition, it regulates asset-referenced token issuers, e-money token issuers, and crypto-asset service providers (Broumas, A . & EY Greece, 2021).

Previously, EU member states retained autonomy over national crypto-asset regulations except for anti-money laundering and combating financial terrorism regulation, which was required for all member states. MiCA is promising in that it has introduced crypto formally as an asset class and recognizes its unique nuances of it. The MICA touches on two important points. Firstly, it focuses on the regulation of stablecoins. It will set out rules for authorizations and operating conditions of the crypto–asset service provider in the EU, including regulations on investment advice on these products (Teja, N. 2021).

MiCA article 3 provides for us the definition of crypto-asset which means a digital representation of value or rights that may be transferred and stored electronically, using distributed ledger technology or similar technology. The different paragraph of the same articles states, that a Crypto-asset service provider’ means any person whose occupation or business is the provision of one or more crypto-asset services to third parties on a professional basis. Crypto-asset service under the regulation means any of the services and activities listed below relating to any crypto-asset: the custody and administration of crypto-assets on behalf of third parties, the operation of a trading platform for crypto-assets, the exchange of crypto-assets for fiat currency that is legal tender, the exchange of crypto-assets for other crypto-assets, the execution of orders for crypto-assets on behalf of third parties, placing of crypto-assets, the reception and transmission of orders for crypto-assets on behalf of third parties, providing advice on crypto-assets.

MiCA clarifies that the custody and administration of crypto-assets on behalf of third parties means safekeeping or controlling on behalf of third parties, crypto-assets, or the means of access to such crypto-assets, where applicable in the form of private cryptographic keys. It is important to mention that, MiCA as already proposed does not apply to crypto-assets qualifying as financial instruments, e-money, deposits, and structured deposits or securitized assets. Thus, MiCA applies only to crypto-assets not subject to other EU financial laws (Zetzsche, D.A. et al., 2021). The Commission makes a distinction between crypto-assets that are already covered by EU law (MiFID II, Prospectus Regulation and Market Abuse Regulation) and other crypto-assets. In the Commission’s view, previously unregulated crypto-assets should come under the MiCA Regulation. However, the MiCA Regulation also contains specific rules for ‘stablecoins’ (asset-referenced tokens), even if

they must be classified as electronic money within the meaning of the Electronic Money Directive (Directive 2009/110/EC) (Busch, D., 2022).

Under the proposed Regulation, not only the crypto-asset issuers but also crypto-asset service providers are subject to an authorization requirement and continuous supervision (Busch D., 2022). MiCA clearly states that no issuer of crypto-assets, other than asset-referenced tokens or e-money tokens, have a right in the European Union, offer crypto-assets to the public, or seek admission of such crypto-assets to trading on a trading platform for crypto-assets, unless that issuer is a legal entity, which has drafted a crypto-asset white paper in respect of those crypto-assets that has a detailed description of the issuer and a presentation of the main participants involved in the project's design and development as well, detailed description of the issuer's project, the type of crypto-asset that will be offered to the public or for which admission to trading is sought, the reasons why the crypto-assets will be offered to the public or why admission to trading is sought and the planned use of the fiat currency or other crypto-assets collected via the offer to the public, in addition, a detailed description of the characteristics of the offer to the public, in particular the number of crypto-assets that will be issued or for which admission to trading is sought, the issue price of the crypto-assets and the subscription terms and conditions. As well the detailed description of the rights and obligations attached to the crypto-assets and the procedures and conditions for exercising those rights, information on the underlying technology and standards applied by the issuer of the crypto-assets allowing for the holding, storing and transfer of those crypto-assets, accompanying a detailed description of the risks relating to the issuer of the crypto-assets, the crypto-assets, the offer to the public of the crypto-asset and the implementation of the project, as well the disclosure items specified in Annex I has notified that crypto-asset white paper, has published the crypto-asset white paper, complies with the requirements such as act honestly, fairly and professionally, communicating with the holders of crypto-assets in a fair, clear and not misleading manner, prevent, identify, manage and disclose any conflicts of interest that may arise, maintain all of their systems and security access protocols to appropriate European Union standards.

MiCA imposes obligations on crypto-asset service providers, including the obligation to set up sound and adequate systems and procedures for internal control and risk assessment. To ensure transparency and investor protection, the issuers of crypto-assets are prohibited from misleading market communication and will be required to publish a white paper with all relevant information on the issuer, the project, the use of funds, and the investors' rights, obligations and risks. These safeguards will, ultimately, facilitate the mobilization of more private funds in the digital finance ecosystem and support early-stage

digital innovation by start-ups and small firms, which tend to have difficulty accessing venture capital (Pavlidis, G. 2021).

The exemption to the rules mentioned below exists for those issuers of crypto-assets and those crypto-assets services providers who offer the crypto-assets for free, or the crypto-assets are automatically created through mining as a reward for the maintenance of the DLT or the validation of transactions, as well to the crypto-assets are unique and not fungible with other crypto-assets, the crypto-assets are offered to fewer than 150 natural or legal persons per Member State where such persons are acting on their own account, or over a period of 12 months, the total consideration of an offer to the public of crypto-assets in the Union does not exceed EUR 1 000 000, or the equivalent amount in another currency or in crypto-assets; or as well the offer to the public of the crypto-assets is solely addressed to qualified investors and the crypto-assets can only be held by such qualified investors. Another important aspect of the MiCA regulation is the proposed guidelines for those that intend to be issuers of cryptocurrencies and digital assets to the public. MiCA outlines the following requirements. MiCA draws a distinction between small and medium-sized enterprises, SMEs, and larger size enterprises. According to the MiCA framework, SMEs are considered to be those that intend to offer crypto-assets less than 1,000,000 over a period of 12 months. Large size enterprises (LSEs) would be above this threshold. If a crypto-asset offering qualifies as an LSE offering, then the issuer is required under MiCA to publish a whitepaper. This whitepaper is subject to additional mandatory disclosure requirements (Scharfman, J. 2020).

Especially in relation to tax law, MiCA is complemented by the proposal of the Commission for the eighth update of the Directive on Administrative Cooperation (DAC8), which aims to expand the exchange of information between EU tax authorities, regarding revenues stemming from investments in, or payments with crypto-assets and e-money. With its adoption, the definition of the legal status of crypto-assets in the provisions of MiCA will provide the legal certainty necessary to determine the taxation rules applicable to crypto-assets across member states. Since its provisions have not yet been adopted in their final form, the details of the crypto-assets taxation regime in each jurisdiction will need to be determined after MiCA's enactment (Broumas, A. & EY Greece, 2021).

MiCA's centralized model for placing liability with a single crypto-asset service provider seems incompatible with the modus operandi of DeFi applications, which will therefore need to adapt to the new regulatory model or resort to offshoring. Therefore, the concerns of the DeFi community that MiCA will increase uncertainty for them are legitimate (Pavlidis. G., 2021).

In addition to the registration requirement, MiCA imposes capital requirements, enhanced governance standards – including probity standards for members of issuers’ management bodies – mandatory procedures for handling complaints and the obligation to segregate clients’ assets from a service provider’s assets. Finally, the Regulation introduces strict IT requirements to address security risks, such as hacks and digital heists, which are not a rare occurrence in crypto-markets.

Under the new regulation, crypto-asset custodial services providers require to make adequate arrangements in place to safeguard the rights of clients and prevent the use of clients’ funds, for their accounts. Crypto-asset service providers have to place any client’s funds, with a central bank or a credit institution. Crypto-asset service providers will have to take all necessary steps to ensure that the clients’ funds held with a central bank or a credit institution are held in an account or accounts separately identifiable from any accounts used to hold funds belonging to the crypto-asset service provider. Service providers may themselves, or through a third party, provide payment services related to the crypto-asset service they offer, provided that the crypto-asset service provider itself, or the third party. To ensure the compliance of issuers and service providers with MiCA requirements, national competent authorities need to be designated and exercise supervision, while the European Banking Authority (furthermore - EBA) will supervise market participants in the case of significant asset-referenced tokens. Dual supervision by NCAs and the EBA is also provided in the case of significant e-money tokens for additional requirements (Pavlidis G., 2021).

Currently, there are a few criticisms regarding the current prosal of the MiCA. The main one is that the term Crypto services provider is too broad, and more diffraction is needed to address the vast specter of crypto-related services. As well the crypto market players, express their concerns that the same legal requirements are set up for those who provide crypto investment services, as well for those who offer a solution to use crypto-assets as a means of payments or the Crypto transaction screening or analysis tools.

The European regulatory approach shows us an example of how regulators have fought about regulation from a different points of view, in order to create a functioning market. To ensure the compliance of issuers and service providers with MiCA requirements, national competent authorities need to be designated and exercise supervision, while the European Banking Authority will supervise market participants in the case of significant asset-referenced tokens. Dual supervision by NCAs and the EBA is also provided in the case of significant e-money tokens of traditional requirements. This model of supervision gives an EU-level (Pavlidis, G. 2021).

In general, we see that there is still space for improvement and the actual proposal needs additional specifications and coverage of missing areas, however, taking into account that it's the first proposal of a completely missing area, the quality of the regulation is high (Bočánek, M., 2021).

The MiCA regulation will legitimize the crypto industry and contribute to the mass adoption of Crypto-Assets. Regulatory oversight will stabilize the market, protect the market from bad actors and create protection, and certainty for the crypto-users. The MiCA is just the start and regulators' should be aware of it. The Crypto industry will grow develop, innovate, and find new use cases and create.

This regulation signals the significant shift in the regulator's mindset, that mass adoption of crypto-assets, is inevitable. In the next few years, we will see a wave of legislation around the other world that will mimic the MiCA-provided regulation model.

5. TAXATION OF CRYPTO-ASSETS

This part of the master thesis only focuses on the taxation of transactions related to the crypto assets as investment tokens, from the personal income tax and the capital gains side, that non-professional investor are imposed on.

The market for Crypto-Assets is growing rapidly. This is also affecting tax administrators, which must adapt to the growing role of Crypto - Assets. Several characteristics of Crypto-Assets are likely to pose novel challenges in tax administrations' efforts to ensure taxpayer compliance (OCED, 2022).

The digitalization of the economy, and key developments related to finance, had no significant effect on existing tax rules. Tax rules that are related to crypto-assets at this moment are in the infancy stage of development. The tax rules, that existed before, do not reflect the cross-border nature of the crypto-assets, as well its complexity and logic. The majority of tax authorities did not make specific changes to existing direct tax legislation in relation to crypto-assets (Strauss, H, 2021), although Poland and South Africa are exceptions (Schmidt, N., Et al., 2020).

Tax authorities apply general principles of the tax law to the crypto-assets. However, the tax authorities of a number of countries have issued some administrative guidance on how the general tax laws will apply to crypto assets (Schmidt, N., Et al., 2020). The majority of the guidance that has been issued by tax authorities only addresses the basic principles of cryptocurrencies, such as the definitions, the business models, scope, and tax rates applicable to the different classes of taxpayers and tax types, but important concerns in relation to the nexus of businesses whose main source of income stems from cryptocurrencies and assets also remain unanswered (Strauss, H, 2021).

Many tax authorities decided on the capital gains tax is model as a primary way to tax the residents regarding the transaction-related with Crypto-Assets not exception is Lithuania. Crypto-assets for tax purposes are considered as property, therefore, when incidental income from sales of a Crypto-assets is received, it is taxable the same as other income from sales of the traditional form of assets or other transfer of ownership. In this case, capital gains, the difference between sales and the acquisition price, are taxed.

As well most European countries the tax authorities treat cryptocurrencies and other crypto-assets as property, thus subjecting them to personal income tax treatment and associated reporting requirements. This treatment hinders the use of cryptocurrencies as a method of payment, subjecting them to the calculation and reporting of capital gain/loss on each transaction and hindering the use of cryptocurrencies to facilitate micro-payments,

another promising use for crypto currencies to reach a wide spectrum of potential participants in the financial system (Sixt, E. and Himmer, K, 2019).

The Crypto-Asset market is characterized by a shift away from traditional financial intermediaries, the typical information providers in third-party tax reporting regimes, such as the Common Reporting Standard (CRS), to a new set of intermediaries which only recently became subject to financial regulation and are frequently not subject to tax reporting requirements with respect to their clients. Furthermore, the ability of individuals to hold Crypto-Assets in wallets unaffiliated with any service provider and transfer such Crypto-Assets across jurisdictions poses a risk that Crypto-Assets will be used for illicit activities or to evade tax obligations. Overall, the characteristics of the Crypto-Asset sector have reduced tax administrations' visibility on tax-relevant activities carried out within the sector, increasing the difficulty of verifying whether associated tax liabilities are appropriately reported and assess (OCED, 2022).

The outdated rules, not only make avoiding reporting requirements possible, as well paying the taxes on the crypto-assets extremely difficult for the taxpayer, who enter into complex crypto-transactions, as well a headache for the tax authorities, who tried to cash up with new emerging types of crypto-assets such as NFTs, that structurally are build different from the cryptocurrencies, make it impossible to tax it only using the capital gains principle. As well, the lack of rules related to crypto-assets gives the biggest frustrations for tax lawyers, and advisers, because the crypto sector is a complete lack of legislation or comprehensive guidance from tax authorities. The main challenges identified from a tax administration perspective relate to the definition and scope of cryptocurrencies or crypto-assets, the education of taxpayers to ensure tax compliance, and the identification of non-compliant taxpayers (Strauss, H., 2021).

Recognizing the importance of addressing the above-mentioned tax compliance risks with respect to Crypto-Assets, the OECD is developing the Crypto-Asset Reporting Framework (the "CARF"), designed to ensure the collection and exchange of information on transactions in Crypto-Assets. The CARF consists of three building blocks: the CARF rules and commentary that can be transposed into domestic law to collect information from resident Crypto-Asset intermediaries, as well framework of bilateral or multilateral competent authority agreements or arrangements for the automatic exchange of information collected under the CARF with the jurisdiction(s) of residence of the Crypto-Asset Users, based on relevant tax treaties, tax information exchange agreements, or the Convention on Mutual Administrative Assistance in Tax Matters and technical solutions to support the exchange of information (OCED, 2022).

These rules and commentary of the CARF have been designed around four key building blocks: i) the scope of Crypto-Assets to be covered; ii) the intermediaries subject to data collection and reporting requirements; iii) the transactions subject to reporting as well as the information to be reported in respect of such transactions; and iv) the due diligence procedures to identify Crypto-Asset users and the relevant tax jurisdictions for reporting purposes (OCED, 2022)

The proposed definition of Crypto-Assets under the CARF focuses on the use of cryptographically secured distributed ledger technology, as this is a distinguishing factor underpinning the creation, holding, and transferability of Crypto-Assets. The definition also includes a reference to “similar technology” to ensure it can include new asset classes that emerge in the future and that operate in a functionally similar manner to Crypto-Assets.

The definition of Crypto-Assets thereby targets those assets that can be held and transferred in a decentralized manner, without the intervention of traditional financial intermediaries, including stablecoins, derivatives issued in the form of a Crypto-Asset, and certain non-fungible tokens (OCED, 2022).

The term Relevant Crypto-Assets excludes from reporting requirements two categories of Crypto-Assets that pose limited tax compliance risks. The first category is Closed-Loop Crypto-Assets intended to be redeemed against goods or services within a clearly defined, limited setting. The second category is Central Bank Digital Currencies, representing a claim in Fiat Currency on an issuing Central Bank, or monetary authority, which function similar to money held in a traditional bank account. OCED, 2022).

In addition, at the moment the tax authorities are only interested in taxing transactions, that transfer crypto assets back to fiat, and in that way. As well, the governments do not take advantage of an opportunity to expand the tax revenue, by amending the tax rules and making them compatible with the logic of decentralized finance.

Under these proposed rules Crypto-Asset Service Providers are subjected to the due diligence and reporting requirements, of the four types of transactions: exchanges between Crypto-Assets and Fiat Currencies, exchanges between one or more forms of Crypto-Assets, reportable Retail Payment Transaction, and transfers of Crypto-Assets.

The OECD is now seeking public comments on this proposal, and it aims to present the final version to the G20 summit in October of 2022. Soon we will see a wave of amendments to the existing tax rules around the world which will resemble the OCED proposed rules. But it will be interesting how the industry and non-professional investors would react to this level of interference in key aspects of crypto-assets decentralization and privacy.

5.1 VALUATION OF CRYPTO ASSETS. TAXATION PROBLEMS ARISING FROM NFT'S.

How to categorize crypto-assets and the specific activities involving them for purposes of taxation, as well as decided when the taxable event occurs in the cycle of the crypto-assets, and decide how the crypto-assets and related transactions related are valued from the tax perspective (OECD, 2020). As well as differentiate the rules for the individuals and legal entities and crypto-assets service providers. Depending on the answers to these questions, countries will choose different regulatory approaches and the best ways to deal with the taxation of crypto-assets.

Governments around the world have decided that accumulated wealth becomes taxable income from the moment when that wealth was realized (Davies, D. G.,1986). Many tax authorities decided that the capital gains model of taxation is better suited for the crypto-assets, especially when the tax authorities mainly deal with the taxation related to the disposal of cryptocurrencies to the fiat, or transfer of cryptocurrency from one person to another. Gain or loss, recognizes taxable events, every time that virtual currency is sold or used to purchase goods or services, including other types of virtual currency (Erdmann, C.A., 2021). Crypto-currencies unlike other crypto-assets are the simplest to tax and easiest to determine the value.

In terms of determining value received, the current guidelines from many jurisdictions suggest using the prices that were used to buy and sell as per the exchange where the crypto assets were acquired. Most reputable exchanges will provide a report of the transaction history for each of their clients. This information should have all relevant data such as price, volume, and date/time stamp, thus allowing the investor to calculate gains and losses. The value of crypto assets generally must be determined in the taxpayer's local currency. However, because exchanges are not connected or tied to a standard currency, prices will vary across the exchanges depending on the buy and sell activity on each one. This means that larger exchanges may yield more market-relevant prices (Schmidt, N. et al., 2020).

The newest problem, for the tax authorities, that only a few in the world has addressed is the taxation of non-fungible tokens, which is nothing like cryptocurrencies, and it is difficult to determine value because they cannot be directly exchanged (Blum, L. M., & Foster, B. P. 2021). Most NFTs are likely to be taxable as a form of property. The exact tax rules applicable will depend on the type of property, which may differ by NFTs.

The key question for tax purposes is taxable events and valuation. There is uncertainty regarding whether NFTs or associated digital assets are “collectibles”. Some commentators believe NFTs should be considered a work of art as designated (Hoerner, J, Nelson, B & Holstein, L 2021). Not all NFTs may be considered property and therefore tax treatment may differ. The creation of an NFT might not give rise to a taxable event. First, if an artist “tokenizes” into an NFT a piece of art that he or she has created, the process itself generates wealth because the NFT may be far more valuable than the original art. However, just as when an artist makes a copy of his or her work more valuable by autographing it, the Code does not generally tax such imputed income (Effross et al., 2021). NFTs can be linked to a variety of different assets and represent numerous rights and obligations, making them challenging to classify. Although regulators so far have not provided official guidance about NFTs, it is possible that an NFT could be considered a “commodity”, which defines the term to include several enumerated items and a catch-all for “all other goods and articles” (Doan, A. P. et al. 2021).

NFTs have some similarities with cryptocurrencies in the sense that they too are purchased, sold, and held using blockchain technology. An NFT could be considered a security, however, if it were designed to provide an expectation of profit to the buyer based on the efforts of others and were marketed as such. Depending on the facts and circumstances, NFTs could be considered an “investment contract” (Doan, A. P. et al. 2021). Because of the variety of the uses, and functions of NFT, and its non-comparable nature, the tax authorities have a difficult job, to determine each NFT’s value.

Similar to physical assets such as artwork or other collectibles, NFTs may be considered investment assets or personal use assets. This uncertainty creates the need for additional planning for NFT transactions to ensure that any capital losses generated will not be disallowed. The treatment of losses under the tax code depends on the taxpayer’s status as either an investor or collector. An art investor, for example, purchases artwork solely for the purpose of making a profit on its future sale, whereas a collector purchases the same artwork for personal use and enjoyment, without regard to whether the artwork will ever become a profitable investment. The burden of proof is on the taxpayer to establish an investment motive. Absent an investment or profit motive, NFT losses will be disallowed under the hobby loss rules (Blum, L.M. & Foster, B.P., 2021).

As well, we need to keep in mind, that unlike the crypto-currencies NFT’s, could continue to produce taxable income for the artist and generate taxable income for its new owner. For example, the owner can collect payments from viewers of the NFT; “smart contracts” embedded in the blockchain technology underlying this item can automatically

channel to the creator a specified share of those fees. Similarly, the NFT and its terms could be structured so that the creator receives a portion of the purchase price of each subsequent sale of the NFT. Beyond the obvious consequences (i.e., the fees constitute taxable income to the owner and the creator), there are several other tax issues to consider (Effross et al., 2021).

The nature of NFT, not only makes it difficult to determine value but as well impossible to comply with already existing tax legislation. The unique features of NFT can make it from the collectible to an investment vehicle, or mechanism to receive royalties for the creation of the digital goods. Especially when a consistent definition of NFT does not exist, the tax authorities have a difficult task, to determine the true nature of transactions related to NFTs, on the case by case basis, by applying existing tax principles, that were created for the taxing goods created in the manufacturing economy.

Are there specific difficulties in applying the valuation rules for illiquid tokens, for example, NFTs or other tokens that may not be listed on a marketplace, to identify a fair market value? If so, please provide details of any preferable valuation methods that could be adopted within the CARF.

5.2 TAXABLE EVENTS

The crypto asset by inner essence resembles most of the features of property, and they are treated as such for tax purposes. From the fiscal policy point of view, the governments create the tax rules, that determine the taxable events. The most common definition of a taxable event is any event or occurrence that results in a tax liability. All taxpayers experience taxable events, and taxable events determine the time, from which, the taxpayer, must pay taxes.

The different tax rules determine various taxable events, that vary depending on the nature of the transaction. Not like other types of assets, it does not have clear rules, on what is considered a taxable event, and that makes investors worried and unsure of what actions and transactions could be considered taxable events. Especially, when there are many alternative events, depending not only on the nature of the transaction, but as well type of crypto asset.

Furthermore, Crypto-assets are associated with various “transaction types” or business models which lead to different tax implications. Leading tax authorities have consequently dealt with the tax implications in categories that can be described or summarised as a) investment in cryptocurrencies, b) trade in cryptocurrencies with the intent to generate profits, c) purchase and receipt of cryptocurrencies as a payment method, d) mining of cryptocurrencies and e) enabling the transacting with cryptocurrencies (digital currency trade platforms (Strauss, H., 2021).

From the tax policy point of view, there ARE many taxable events during the cycle of Crypto assets, but the academic literature distinguishes the main two alternative taxable events:

- Creation of Crypto-Assets;
- Disposal of the Crypto-Assets.

The first taxable event in the life of any cryptocurrency is at the time of its creation. Different types of stablecoins have their own creation processes unlike traditional cryptocurrencies, stablecoins are generally not created through an airdrop or mining process (Trivedi, Noopur and Golani, Jitesh, 2021). The NFT creation moment can be considered, as the process of turning a digital file into an NFT, which is called "minting" - which refers to the act of creating a new token on the Ethereum Blockchain. The creation moment for the traditional cryptocurrencies can be considered as begging of the ICO process or mining of a certain currency. But not always the creation of crypto assets can

resolve the monetary compensation. For example, the NFT project at the creation moment can have no inherent value.

Disposal of the crypto assets, as well not always create a taxable moment. Buying crypto assets by itself does not always create a taxable moment. As well the exchange of one cryptocurrency to another really triggers the taxable event. The most common taxable event, that almost every time is considered as it, is an exchange of crypto-assets such as cryptocurrency for fiat currency this is a taxable event. Typically, this kind of disposal is treated under personal income rules. Receiving crypto assets is not considered a gift, and the recipient is not liable for the tax until disposal. The list of the events related to disposal, that could trigger taxable events could be endless.

Because of the nature of the crypto-assets, the taxable event is not always clear. The existing tax policy does not have clear logic and does not clarify what kind of events in the cycle of crypto – assets, would be considered taxable and why. The governments must make it abundantly clear.

CONCLUSIONS

1. The regulators and policymakers all around the world have an extremely difficult task to address the specific and novel issues imposed by crypto assets. The rapid development of the DLT and blockchain technology, and the creation of the new type of digital asset, makes already existing rules outdated, and unable to address this challenge. Due to cross border nature, Crypto-assets, exist in a legal vacuum.
2. Law and regulations that try to address crypto assets are still in their infancy stage, as well lack of understanding of the technology from the investor's side makes it an impossible mission to protect investors' rights. As well the regulators for a long time tough, that Crypto-Assets, are relevant to only a few people like scientists, programmers, and crypto enthusiasts.
3. Regulatory response to the growth of the crypto-asset market should ensure that regulation does not impede legitimate and innovative uses of cryptocurrencies and blockchain technology, as well as let providers find the new use cases.
4. The European Union tries to address these problems mentioned before, by creating new regulation MiCA, that would regulate Crypto-services providers and in that way create some legal certainty in the market, not only for the crypto investors but as well for financial market supervisory and tax authorities; This new regulation makes activity related to crypto-assets supervised, creates safeguards like liquidity for crypto assets services providers, as well the way for the crypto – investors to enforce the rights. MiCA imposes obligations on crypto-asset service providers, including the obligation to set up sound and adequate systems and procedures for internal control and risk assessment, in order to ensure transparency and investor protection.
5. As well MiCA provides key definitions related to the crypto asset which means, unification of rules, in all member states, as well consistent determinations, and legal certainty necessary, for the market participants. MiCA introduces a so-called 'sandbox' approach for DLT-based market infrastructures, allowing to regulate of the market, without diminishing innovation and market liveliness and by letting the technology mature.
6. The majority of tax authorities did not make any changes to tax legislation, to reflect on the taxation of the crypto-assets, and try to apply general principles of the tax law. The administrative guidance does not reflect specific issues that taxpayers who invest in Crypto-assets have. That makes it difficult to determine taxable events, and make a

valuation, for tax purposes, especially when the question is related to the NFTs, because of the technological specificity of this asset.

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SUMMARY:

This master thesis analyses Crypto-assets, and the efforts to regulate them. The regulation that was proposed by the European Union - MiCA, will determine the key responsibilities of Crypto - Asset providers and address the investor protection related to it. In addition, the harmonized rules will create legal certainty to the market participants and create a regulated environment. 'Sandbox' regulatory approach will balance the market, without disparaging of innovation. The common definitions proposed by the MiCA will let governments address novel problems of the taxation of Crypto-Assets.

SANTRAUKA

KRIPTO TURTO PROBLEMATIKA: SĄVOKA, REGLAMENTAVIMAS PRIEŽIŪRINIAIS TIKSLAIS, APMOKESTINIMAS

AGNĖ SMAGURAUŠKAITĖ

Šis magistro darbas analizuoja kriptoturtą ir pastangas jį reguliuoti. Reglamentas, kurį pasiūlė Europos Sąjunga - MiCA, nustatys pagrindines kripto turto paslaugų teikėjų pareigas ir išspręs klausimus susijusių investuotojų apsaugą. Be to, suderintos taisyklės suteiks teisinį tikrumą rinkos dalyviams ir sukurs reguliuojamą rinką. "Smėlio dėžės" reguliavimo metodas subalansuos rinką, nesumažindamas inovacijų. MiCA siūlomos sąvokos leis vyriausybėms kurti reguliavimą susijusį su kriptoturto apmokestinimu ir problematika.