BI Norwegian Business School - campus Oslo

GRA 19703

Master Thesis

Thesis Master of Science

Regulation of Cryptocurrency: An Analysis of the Proposed Markets in Crypto-Assets Regulation Emphasizing on the Issuer of Stablecoin

Navn:	Beate Adelaida Nøkleholm, Gina Vangen Kviseth

Start:	15.01.2021 09.00
Finish:	01.07.2021 12.00

Master Thesis

Regulation of Cryptocurrency: An Analysis of the Proposed Markets in Crypto-Assets Regulation Emphasizing on the Issuer of Stablecoin

by
Beate Adelaida Nøkleholm
Gina Vangen Kviseth

Supervisor:
Siv Staubo, Ph.D.

Program:
Master of Science in Business and Law

Examination code:
GRA1970 - Master Thesis

Oslo, June 30, 2021

Table of Content

Acknowledgements

This master thesis marks the end of two amazing years at BI Norwegian Business School, and was finalized on June 30th, 2021. Writing this thesis has been a challenging, but very exciting process. We both have educated ourselves in the field of crypto which has been quite interesting and instructive. We are grateful to our supervisor Siv Staubo for her guidance and support. We also want to recognize Professor Eivind Furuseth for his support along the way. Their advice and counseling have been of great value to us. Additionally, we also want to acknowledge the librarians at BI Norwegian Business School, campus Oslo, for their assistance and help on short notice.

Thank you,

Beate Adelaida Nøkleholm
Gina Vangen Kviseth

.

Abstract

The master thesis analyzes the proposed Markets in Crypto-Assets Regulation published by the EU in September 2020. We provide explanations of the term 'stablecoin', its use as legal tender, as well as issuers and providers of stablecoin. We analyzed particular parts of the draft to how the proposal could impact issuers and providers of stablecoin. Additionally, we have looked at its overall objectives and addressed if it is understandable to the players in the crypto market. As of today, several types of crypto assets are not regulated.

Our main findings are that the proposal fails to acknowledge the meaning of decentralization in the crypto market, along with provisions that may create legal uncertainty. Further, there are overlapping and technology-oriented definitions making it difficult to classify the different stablecoins. Therefore, it is challenging for the proposed regulation to achieve its overall objectives of legal certainty, investor protection, and to create one harmonized crypto market.

List of Abbreviations

CASP - Crypto- Asset Service Provider

CBDC - Central Bank Digital Currency

DeFi - Decentralized Finance

DLT - Distributed Ledger Technology

EBA - European Banking Authority

ECB - European Central Bank

EEA - European Economic Area

EFTA - European Free Trade Association

ESMA - European Securities and Markets Authority

EU - European Union

EUR - Euro

GDPR - General Data Protection Regulation

KYC - Know-Your-Customer

MiCA - Markets in Crypto-Assets Regulation

NBX - Norwegian Block Exchange

Para - Paragraph

USD - United States dollar

USDT - Tether

XMR - Monero

1. Introduction

Since the world was first introduced to Bitcoin in 2009, other cryptocurrencies have evolved, and one of these is stablecoins. Stablecoin is backed by an outside asset that makes the value and price maintain to be stable, making it less volatile. The type of outside asset will differ, therefore there exist various kinds of stablecoins. It can be pegged either to an asset or a basket of national currencies for instance USD or EUR, other cryptocurrencies, or physical assets such as gold. To what extent the stablecoin is stable, will depend on the stability of the backed assets and the related risks (Dogan, 2021). Furthermore, stablecoin as a legal tender may solve current issues in the traditional money market e.g. inflation, interest rates, and provide payment services to societies with a weak banking system. There are advantages related to greater privacy and lower transaction costs as there is no need for an intermediary (Fantacci & Gobbi, 2021). Tether and DAI are examples of existing stablecoins and both can be used as payment means but their degree of decentralization differs. Tether is issued by Tether Limited, whilst DAI is issued by the decentralized organization MakerDAO. From the beginning of cryptocurrencies, several trading platforms such as Bitfinex, Binance, and Kraken that offer purchasing, sales, and exchange to and from different cryptocurrencies, have evolved. All of these components within the growing crypto market are not regulated by any uniform law.

The proposed Market in Crypto-Assets Regulation, hereby called MiCA, is the first step towards the regulation of the crypto market and is believed to enter into force in 2024 (*Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-Assets, and Amending Directive (EU) 2019/1937*, 2020). The proposal is a part of the Digital Finance Package that the European Commission published on the 24th of September 2020, that will transform the European economy in the coming years. The package attempts to improve the competitiveness of the Fintech sector and technologies, as well as support the EU's ambition for a recovery that embraces the digital transition and turns Europe into a global digital player (Werner Vermaak, 2020). MiCA aims to create legal certainty and one harmonized crypto market, in addition to regulating the use and issuers of stablecoins to prevent

adverse consequences, simultaneously, promote innovation. The EU's character is both supranational and intergovernmental, meaning that the EU is supranational for the states that are a part of the agreement, concurrently, intergovernmental as it gives the member states the opportunity to influence the formulation and adoption of legislation. Every action taken by the EU is established on treaties that have been democratically accepted by its members (*Types of EU Law*, n.d.). Treaties are binding agreements between the EU member states and are perceived as primary law. These set out the EU objectives, rules for EU institutions, decision-making, and the relationship within the EU. Conversely, the legislation that comes from principles and objectives of the treaties is known as secondary law. The secondary law consists of regulations, directives, decisions, recommendations, and opinions. Regulations are legal acts applied automatically and uniformly throughout the EU member states as soon as they enter into force (*Applying EU Law*, n.d.). Whereas, directives will have to be implemented through national legislation, and therefore does not have a direct effect.

So, for instance, how will the proposed MiCA affect Norway? It is first when the EU has made its decisions, that the EEA Committee can decide to incorporate the new EU legislation into the EEA Agreement. For the EFTA/EEA states, the EEA committee must first make a decision to incorporate the new EU legislation into the EEA Agreement, before they can implement it into e.g. Norwegian law through legislative -or regulatory decisions. Due to the principle of uniform development of the regulations in the EEA, an EU legal act must in principle be implemented and enter into force simultaneously throughout the EEA (Regjeringen, 2014). Thus, MiCA, according to our opinion most likely, will be part of the EEA agreement. However, the member states have 18 months to implement the regulation after it has entered into force cf. article 126. The regulation has a retroactive effect in those 18 months. There is no retroactive effect for the EEA and EFTA states, e.g. Norway as the EU has no direct effect in these states. The EU law will not be addressed further.

The crypto market has evolved over the past years, and several components within this field can be difficult for legislators to comprehend. Since the field of crypto surrounds decentralization and is not organized the traditional way compared to

listed firms in the stock markets, finding a suitable regulation might be difficult. Furthermore, there might be a need for a framework that considers the rapid development in the crypto market. It can be challenging to regulate issuers, stablecoins, and users within a market that is constantly using new and advanced technology. Currently, there is no regulation that captures the use and issuers of stablecoins, thus existing issuers and holders of stablecoin are not protected by any law or regulation. It might be costly for businesses within the current crypto market to adjust their operation to accomplish the requirements set by MiCA.

This brings us to our research question:

> **"How will the proposed Markets in Crypto-Assets Regulation impact the issuers of stablecoins?"**

In June 2019, Facebook announced that they will issue their own stablecoin, Diem, formerly known as Libra (*White Paper | Diem Association*, n.d.). They wanted to link their coin to a basket of fiat currencies, with the USD as the main supporting currency, and the remaining currencies consisting of Euro, Yen, Pound, and Singapore Dollar. Due to Facebook's large, global customer base, the use of their coin as payment could constitute a threat to the financial stability and monetary policies on a global basis. Compared to the money market that is subject to a strict legal framework, both nationally and globally, with high demands to banks and other financial institutions, stablecoin as legal tender does not provide any requirements of stablecoins' issuers. There are advantages with stablecoins such as faster and more efficient retail payments across borders as well as its potential to improve financial access in emerging countries, but also risks and challenges with the legal aspect that needs to be further investigated before it can be used as means of payment (Bullmann et al., 2019). Risks associated with stablecoins are fraud, white-collar crime, and anti-money laundering, and terrorist financing. As these risks could have been interesting to research further, it will just be briefly introduced in section 5. Moreover, challenges related to the absence of a legal framework e.g. financial stability, monetary policy, and investor protection will be further discussed (Kriwoluzky & Kim, 2020).

1.1 Motivation for Our Thesis

Our motivation for writing a master thesis concerning the regulation of stablecoin is that we find its potential interesting, and we wanted to do further research in the field of crypto. In our examination of this topic, we found that, despite all the attention of stablecoins, there was no master thesis', as far as we know, of MiCA regarding the potential effect this regulation might have on existing stablecoins' issuers and related participants. The reason why we are focusing on stablecoins is that they are applicable to be used as legal tender. Moreover, as a means of payment for services, goods, and cross-border transactions. There are assumptions that MiCA was an emergency brake for Facebook's attempt to enter the crypto market, which might have caused incomplete legal provisions that have been questioned and criticized (INATBA, 2021). Even though the legislative framework does not enter into force until 2024, MiCA gives insight into rules that might impact a new and innovative market, thereby identifying and discussing articles can give indications for the extent to which the regulation will impact issuers of stablecoins.

2. Research Structure and Method

2.1 Research Structure

The analysis is focused on the proposed legislation, Markets in Crypto-Assets Regulation for the crypto asset 'stablecoin'. The main reason for this is that stablecoin is one of the crypto assets that are less volatile, therefore can be used in payment transactions. This study tries to offer a more realistic approach to the use of stablecoins and to what extent stablecoins are regulated in MiCA by examining particular parts of the draft surrounding issuers and service providers of stablecoins.

The timeframe of the paper is represented by collected data from September 2020 till June 2021. As MiCA has not entered into force, major changes to the proposal will most likely appear, therefore this paper will not reflect the forthcoming legislative framework precisely. The study does not go beyond the explicit purpose nor has the aim to state how a law *should be*.

2.2 Research Methodology

In order to answer the research question, the methodological approach involves an analysis of the proposal. Firstly, the paper provides a background of cryptocurrencies, stablecoins and the money market. Secondly, the research analyzes MiCA with the judicial method to identify and discuss relevant articles in MiCA, mainly regarding stablecoin definition, issuers' and Crypto-Asset Service Providers' (CASPs') requirements. In this section, the thesis discusses and illustrates the provisions and activities from the existing crypto market to demonstrate current practices in the field. The data collected is used to draw a conclusion that will exhibit the overall usefulness of the proposal. In the final part, the paper will introduce trends and future aspects of cryptocurrencies e.g. projects of Bitcoin, stablecoin in the gaming industry, and governments that forbid crypto assets.

The research uses reports published by the EU and reports available at the official EU website, additionally opinions and reports from the industry regarding the proposal and the effect on stablecoins. Information related to stablecoins, issuers, and trading platforms has been collected from public websites along with published articles. However, it is necessary to take into account that some relevant information is not in the public domain nor published at the time of this paper. It has to be clear that the study and its result are based and heavily rely on the EU documents published from September 2020 till June 2021. Nevertheless, this could appear as a limitation but the paper focuses on the EU's proposal and how it can be interpreted in the light of the actual use of stablecoins today. Furthermore, the study seeks to only provide a factual overview of the proposal's consequences related to issuers of stablecoins and does not itself seek to make specific recommendations for further action. Therefore, the data at disposal is sufficient to reach this purpose for analysis of the proposed regulation.

In conclusion, the methodology is designed to assess to what extent MiCA impacts the issuers of stablecoins requirement for clear regulation and innovation. It is believed that MiCA will generate innovation and efficiency, simultaneously protecting consumers and investors of stablecoins, along with ensuring market integrity.

3. Background

3.1 What is Cryptocurrency?

To understand the development of stablecoins, the evolution of cryptocurrencies is necessary. Cryptocurrency was an outcome of the financial crisis in 2008/2009 and in order to save the world's financial systems, the world's leading central bank, American Federal Reserve Bank, performed unprecedented and resolute actions. Their reactions required the usage of non-standard monetary policy tools, together with termed quantitative easing (Poskart, 2020). They started printing and introducing to the world's monetary system enormous amounts of new money, and later on, this policy was continued by other central banks. There were concerns regarding the growing inflation across the world's economy, and investors' confidence in banks, market regulators, and the global financial system weakened. This resulted in the first digital currency, Bitcoin, being created (Poskart, 2020).

Table 1 provides an overview between fiat money and cryptocurrencies

Fiat Money	**Cryptocurrencies**
Physical medium of exchange	Digital medium of exchange
Issued by a Government	Produced by computers
Centralized. Issued and controlled by laws and banks	Decentralized. Not controlled by the governments or any entity
Unlimited supply. Governments can print as needed	Limited supply. Each cryptocurrency has a set of maximum supply
Value determined by markets & regulations	Value determined by supply & demand

(Imperium Entrepreneurs, n.d.)

One definition of cryptocurrency by the European Central Bank is "a type of unregulated, digital money, which is issued and usually controlled by its developers, and used and accepted among the members of a specific virtual community" (European Central Bank, 2012, p. 13). Whereas, a more recent

definition provided by the European Banking Authority is “a type of private financial asset that depends primarily on cryptography and distributed ledger technology as part of their perceived or inherent value” (European Banking Authority, 2019). By doing a comparison of these definitions, illustrates how the crypto market has evolved over the past years, thus, it can be challenging to identify an appropriate definition of a phenomenon that changes rapidly.

An essential part of cryptocurrency and the crypto market is blockchain technology, which was first introduced by the appearance of Bitcoin in 2009. Blockchain technology is a specific type of database that collects information together in groups that hold sets of information without being controlled by a single, central source or a single person (Hertig, 2021). This is a type of data structure used in the distributed ledger. Distributed ledger technology (DLT) refers to a novel and fast-evolving approach to recording and sharing data across multiple data stores (Natarajan et al., 2017). One of the advantages of decentralized finance (DeFi), compared to centralized systems, is that human gatekeepers can limit the speed and sophistication of transactions while offering users less direct control over their money (Hertig, 2021). Decentralized finance is financial applications often built on top of the Ethereum blockchain. These applications use smart contracts to create protocols that reproduce existing financial services in a greater open, interoperable, and transparent manner (Schär, 2021). Smart contracts are self-executing contracts where the terms of the agreement are written in codes and stored on a blockchain-based platform that offers security, permanence, and immutability (Lipton & Levi, 2018).

DeFi has no single entity that has control nor relies on intermediaries. Smart contracts may create an immutable and highly interoperable financial system with unprecedented transparency, equivalent access rights, and less need for custodians, central clearinghouses, or escrow services (Schär, 2021). For instance, when you pay for a pizza at a restaurant using a credit card, a financial institution sits between you and the business, monitoring the transaction, retaining authority to stop or pause the transaction and also record it in its private ledger. With cryptocurrencies such as stablecoins, those institutions are excised as the payment involves the sender and the receiver, thereby not requiring a payment terminal or a

bank. The same applies to other financial applications such as loans, insurance, and derivatives which are also under the control of big companies. Therefore, as stablecoin systems strive through network effects, it is unlikely that it will be restricted for its own sake, but because of regulatory and legal constraints (Hertig, 2021).

3.2 What is Stablecoin?

Stablecoin is a type of cryptocurrency whose value is backed by an outside asset, such as the USD or gold, to stabilize the price. There are three types of stablecoin: fiat-collateralized, crypto-collateralized, and non-collateralized (Dogan, 2021). Alternatively, one can distinguish stablecoins into four categories: fiat-backed, commodity-backed, cryptocurrency-backed, and seigniorage-style/non-collateralized backed (Anwar, 2018). The simplest version is fiat-collateralized where every stablecoin is in the specified currency. An example is Tether that is pegged 1:1 ratio to USD. The advantages are that this type is fairly stable and it is easy to understand the underlying mechanisms. Since fiat-backed stablecoins are pegged to a currency, they have the government backing them up. However, major drawbacks related to fiat-backed stablecoins are that they are structured as centralized systems and therefore are exposed to the same risks as fiat money. In addition to trusting them blindly as well as it is backed with fiat money, they must comply with the rules and regulations existing in the money market (Anwar, 2018).

Crypto-collateralized stablecoin is backed by other cryptocurrencies, e.i. the collateral is other cryptocurrencies. For instance, DAI is running on the Ethereum blockchain and is backed by collateral on the MakerDAO platform. This version is also called algorithmic stablecoin or cryptocurrency-backed stablecoin. Usually, the coins are backed up by a mix of different cryptocurrencies which prevents any volatility risks. Holders of crypto-collateralized stablecoins use smart contracts and later on create a fixed ratio of stablecoins (Anwar, 2018). The benefits of these types of coins are a more decentralized system characterized by higher efficiency, and more transparency as all transactions are recorded on the ledger system. However, these stablecoins are unstable, therefore more volatile than

other types of stablecoins, as well as too complex and depend on many factors (Anwar, 2018).

The non-collateralized or seigniorage-style has another design and is not backed by any collateral, but works the same way as fiat currencies. This means that the stablecoin is governed by a sovereign, exemplified as the Central Bank in a country (Dogan, 2021). This stablecoin is fully decentralized, uses no backup assets, and is more stable than the other abovementioned stablecoins. Nevertheless, non-collateralized stablecoin consists of a complex process.

Furthermore, the fourth type is commodity-backed stablecoin which is backed up by e.g. gas or gold. The benefits of this stablecoin are that the investor holds real assets in a digital form, the commodities value does not fluctuate significantly, and offers liquidity. Even though this type brings advantages, it has too many authorities such as vendors and custodians which makes it more similar to a centralized system (Anwar, 2018).

The biggest challenge of stablecoins is trustworthiness as the issuers must provide enough liquidity while keeping their books properly balanced to ensure market confidence in their stablecoin. The value of the stablecoin must be equivalent to the value of the backed asset which makes the coin stable. Conversely, in blockchain, trust is a prerequisite in decentralized platforms as it is not controlled by one single entity and perceives every user as equal in the network (Bartel, 2019). The overall benefit that stablecoins offer is that they do not require trust in an intermediary institution, e.g. banks, to do transactions. People living in countries where financial stability and monetary policy are weak can be left out of the banking system. Stablecoin may resolve this issue and make it possible for anyone to receive and send payments, which can include more of the society in the financial system. Additionally, one can use stablecoins in smart contracts in cases of regular transactions e.g. loans' terms, subscription, rent, and wage payment where the payer can organize a simple smart contract and transfer the stablecoins upon maturity (G7 Working Group on Stablecoins, 2019).

A brief overview of different cryptocurrencies is presented in Table 1.2 below, as well as whether MiCA captures these cryptocurrencies. Explanations of other cryptocurrencies will not be discussed further.

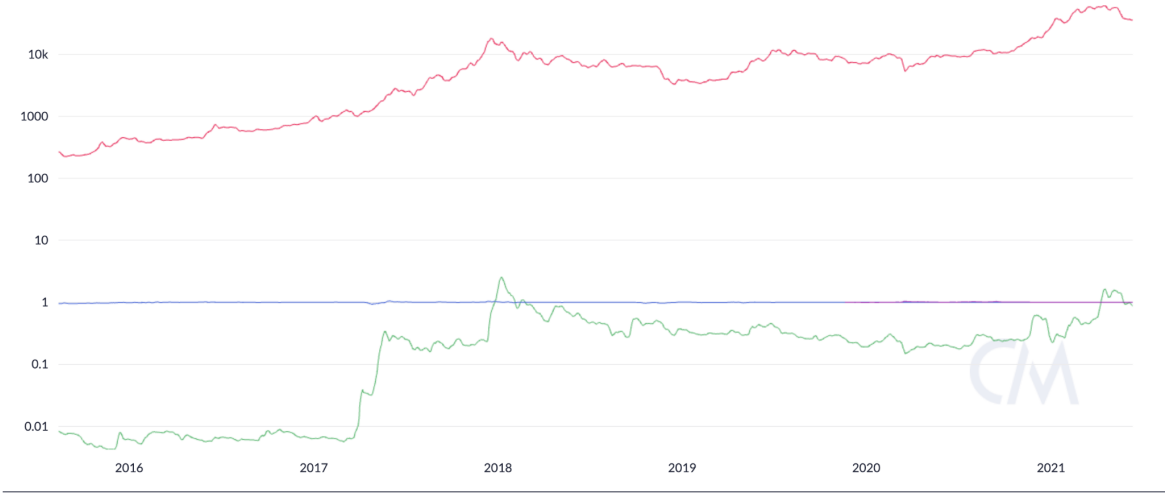
Table 2

	Brief overview	**Subject to MiCA**
Bitcoin	Launched in 2009 and is the first and leading decentralized store of value crypto assets. Uses a peer-to-peer electronic cash system without a central authority and intermediary (e.g., banks). No one owns the Bitcoin network, and everyone can take a part of it (*Bitcoin - Open Source P2P Money*, n.d.).	Since no legal person issues Bitcoin, it is unclear how MiCA affects Bitcoin. Uncertain if Bitcoin might be interpreted as financial instrument, cf. The Securities Trading Act § 2-2. However, the German Banking Act concluded in March 2021 that Bitcoin was a financial instrument (*Guidance Notice – Guidelines Concerning the Statutory Definition of Crypto Custody Business (Section 1 (1a) Sentence 2 No. 6 of the German Banking Act (Kreditwesengesetz – KWG)*, n.d.).
Tether	Issued by Tether Limited in 2014 and is the most known stablecoin. Tether is pegged 1:1 ratio to USD and backed by reserves of traditional currency, cash equivalents, loans and other assets (*About Us | Tether*, 2017).	Interpret as significant e-money token, cf. Article 50 (Decrypting the Proposed EU Regulation on Markets in Crypto-Assets, 2021), as well as asset referenced token cf. Article 39 no. 1 (Tukun, 2021).
DAI	An algorithmic stablecoin issued by the decentralized organization MakerDAO in 2017. It pursues a pegged 1:1 ratio with the US Dollar (Staff, 2021). Operates by the use of smart contracts. This stablecoin is not anticipated as a legal tender, but primarily used as means of borrowing and lending without the need of a third party.	Interpret as asset-referenced token cf. Article 39 (*Decrypting the Proposed EU Regulation on Markets in Crypto-Assets*, 2021).

Monero	Launched in 2014 with an objective to allow anonymous transactions to take place privately, along with fast and inexpensive payments without fear of censorship (*Pris, diagrammer, markedsverdi og andre mål for Monero (XMR)*, n.d.). Monero, is designed to be used as a means of exchange but does not have underlying asset, claim or liability which makes it subject to high price volatility ("New European Legislation for Crypto-Assets," 2020).	Due to MiCA's requirements of issuers and details CASPs need to have before allowing the crypto-asset trade on their platform, Monero is prevented from operating in line with MiCA.

Stablecoin is the type of cryptocurrency with less volatility than its peers, which can be observed in Graph 1.1 below. Volatility is a measure of how much the price of a financial asset varies over time (*(3.51%) Bitcoin Volatility Index - Charts vs Dollar & More*, n.d., p. 5). As mentioned, the stability is maintained by backing the coin to other currencies such as US dollars, physical goods like gold, other cryptocurrencies, or to the supply and demands of stablecoins by the means of algorithms (Li & Shen, 2021). The use of stablecoin has increased significantly over the past years. For instance, Tether's issuance increased during 2017 from ten million dollars to over two billion, and in December 2020 was the third-largest cryptocurrency in the matter with a market capitalization of 19.7 billion dollars (Ante et al., 2020).

Graph 1 represents the cryptocurrencies' relation towards each other as of June 2021



(*Coin Metrics' Network Data Charts*, n.d.)

Red line = Bitcoin Blue = Tether Purple = DAI Green = Monero

The graph shows the relation between stablecoins and crypto assets. One can observe how volatile Bitcoin and Monero have been over the years compared to the two stablecoins, Tether and DAI. The value of Tether and DAI tends to remain very close to 1 USD and are on the same line, whereas Bitcoin has fluctuated between 621 USD and 58 000 USD and Monero between 0.01 USD and 2.55 USD. Thus, stablecoin could be more attractive as legal tender.

3.3 The Money Market

Traditionally, payments and other types of transactions have been through the money market which is an essential element in the financial system. To have an efficient and well-functioning financial system is a prerequisite to avoid a financial crisis, such as the one back in 2008 (Myklebust, 2011). Regulation that provides financial stability, efficiency, and functioning markets is necessary. As money and cash are accepted means of payment, they will be a value measure, therefore, means of preserving value (Norges Bank, n.d.). The main considerations of MiCA are the protection of consumers and investors, trust, and market integrity. If the users of the financial system do not trust the market players or institutions, the financial system might collapse. To prevent this

outcome, stablecoins as a legal tender will possess the same features as money, therefore requiring a legal framework that restricts negative effects on the financial system, especially if it becomes global stablecoins that have a large network of users for example like Facebook's Diem.

Cryptocurrencies attempt to resolve complications in the traditional money market such as being more stable than fiat money due to the inflation and interest rate. Fiat money requires that the citizens or users have confidence in the government's decision of what money is. The access to cash has declined, households and firms are in danger of no longer having access to risk-free central bank money (Cœuré et al., 2020). Additionally, there are no transaction costs because of no intermediaries, and transactions are just between the involved parties (Bartel, 2019). However, in the trading platforms transaction costs may occur. As mentioned in section 1, fiat money may be unstable as it is influenced by inflation and interest rates, along with that people have to rely on government and central banks' ability to implement reasonable decisions and measures in the money market.

Despite the favorable consequences with stablecoins, one cannot ignore the fact that there are regulatory, legal, and oversight risks and challenges associated with stablecoins. Legal uncertainty is a critical challenge because of sound governance, money laundering, terrorist financing, and the absence of investor and consumer protection (G7 Working Group on Stablecoins, 2019). The consideration of investor protection is highly appreciated and necessary to ensure that users in the crypto market are aware of the risks related to the crypto asset. Furthermore, there is a risk related to the safety of the integrity of payments, cybersecurity, market integrity, tax compliance, and GDPR (G7 Working Group on Stablecoins, 2019). Compared to the traditional money market with strict regulation and the responsibility of central banks and actors in the capital markets, private entities that issue global stablecoins might have diverse interests of their own. For instance, issuers may use the obtained information about users' payment and purchase trends, to upscaling and expanding their business. Regarding global stablecoins, the issuers' security of IT systems and exposure may have critical consequences of a cyber-attack or other defeats that threaten users' privacy.

Similarly, these operational risks in the case of global stablecoin's issuer will have an effect on monetary policy and financial stability. Market integrity is mandatory to ensure that users pay correct prices in the primary and secondary market of crypto assets, as well as transparency and fair competition between market players (G7 Working Group on Stablecoins, 2019).

The absence of a united regulation might cause national restrictions and laws that can be crucial to reverse due to disparity between different legislative frameworks. Nevertheless, distinctive member states and countries might perceive and interpret the regulation differently without a clear and adequate framework, as well as the meaning of stablecoins. Sweden has developed their own Central Bank Digital Currency (CBDC), E-krona, since 2017 and started testing it in 2020, thereby, recognizing the stablecoin's potential (Kriwoluzky & Kim, 2020). Whereas, other countries have imposed restrictions and abandoned crypto assets activities such as Iran, Bolivia, and North Macedonia (Chakraborty, 2021). Therefore, a sufficient regulation that prevents adverse consequences and provides understandable guidelines is greatly desired for a market that has evolved significantly over the past years.

4. Analysis of MiCA

The proposed Markets in Crypto Assets Regulation has four broad objectives. Firstly, it aims to provide legal certainty for crypto assets that are not covered by the current EU financial services legislation. The second objective is to establish uniform rules for CASPs and issuers at the EU level. Thirdly, it intends to replace existing national frameworks applicable to crypto assets not covered by existing legislation. The last objective is to establish specific rules for stablecoins, including when these are categorized as e-money. The purpose of the regulation is to ensure that the EU embraces the digital revolution and drives with innovative firms within Europe, simultaneously, making benefits of digital finance available to consumers and businesses in Europe. By analyzing MiCA one may identify and discuss findings that imply whether these four objectives are achieved and if the purpose is accomplished. This analysis takes a prerequisite that examples of stablecoin, issuers, and trading platforms not registered in the EU will still be impacted by MiCA due to their current large cross-borders trading and activities.

This is because holders and users of cryptocurrencies are living all over the world, and the demand for cryptocurrencies might remain. Therefore, getting access to the EU market will be beneficial for the existing providers and issuers, thus to comply with MiCA is necessary (XReg Consulting Ltd, 2020).

Some classes of crypto assets are defined as financial instruments or e-money under Markets in Financial Instruments Directive (MiFID) and Electronic Money Directive (EMD). These types are out of the scope of MiCA as well as crypto assets covered as financial instruments by 2nd Markets in Financial Instruments Directive (MiFID II) (Werner Vermaak, 2020). To determine whether the crypto asset is applicable under this directive relies on the content of the instrument and not the technology to issue it. These topics will not be addressed further.

4.1 Definition of Stablecoin

Article 3 no. 1 defines and categorizes three types of tokens where the asset-referenced tokens and electronic money token can be perceived as stablecoins. The former is defined in article 3 no. 1 point 3 as a "*type of crypto-asset that purports to maintain a stable value by referring to the value of several fiat currencies that are legal tender, one or several commodities or one or several crypto-assets, or a combination of such assets*". Stablecoins can be pegged to fiat currency such as USD, or another cryptocurrency. Electronic money token is defined as "*a type of crypto-asset the main purpose of which is to be used as a means of exchange and that purports to maintain stable value by referring to the value of a fiat currency that is legal tender",* cf. article 3 no. 1 point 4. This describes a stablecoin as a means of exchange because it *maintains stable value by referring to the value of a fiat currency that is a legal tender* which can be a coin pegged to USD. Both asset-referenced tokens and e-money tokens can be categorized as fiat-backed stablecoin, whilst the former can also be classified as crypto-collateralized stablecoin and commodity-backed stablecoin.

The third type of crypto asset is utility token and is defined as "*a type of crypto-asset which intended to provide digital access to a good or service, available on DLT, and is only accepted by the issuer of that token",* cf. article 3 no. 1 point 5. The provision of utility tokens describes the use of the token and not the

underlying technology as opposed to the two former categories. MiCA's three categories of crypto assets are overlapping definitions because the proposal tries to capture other types of crypto assets that are not asset-referenced tokens and e-money tokens but still fall under the umbrella term of crypto assets (INATBA, 2021). Having overlapping definitions might increase ambiguity and legal uncertainty, additionally, diminish the advantages of a proper token categorization. These categories might be misleading on this matter and can allow one to have a utility token that is at the same time an asset-referenced token. If a token bears more than one feature of various categories, it will create ambiguities and lead to different interpretations. If the regulation allows different interpretations of crypto assets, it will go against the EU's ambitions to create one harmonized crypto market.

The definitions of asset-referenced tokens and e-money tokens will cover the purpose of a stablecoin as a legal tender and the underlying technology that makes the coin continue to be stable. However, there are several definitions of stablecoins. According to Mykyta Sokolov stablecoin is defined as a crypto asset that has relatively stable value and the price is often pegged to a basket of an asset or fiat money such as USD or gold (Sokolov, 2020). By the Financial Stability Board (FSB) stablecoins are defined as crypto assets that are designed to maintain a stable value relative to a specified asset, or a pool or basket of assets (*Addressing the Regulatory, Supervisory and Oversight Challenges Raised by "Global Stablecoin" Arrangements*, 2020). Sokolov (2020) explains that FSB's definition does not exclude algorithmic stablecoin nor restrict stablecoins to assets representing a claim.

Furthermore, the European Central Bank (ECB) has given the definition: "Stablecoins are defined as digital units of value that are not a form of any specific currency (or basket thereof) but rely on a set of stabilization tools which are supposed to minimize fluctuations of their price in such currency(ies)" (Bullmann et al., 2019, p. 3). This is a broader definition that is technology-neutral and distinguishes between new forms of money and commercial money. Additionally, this definition emphasizes the stabilization mechanism to reduce volatility. Moreover, the definition specifies that stablecoins have a market price

of their own. The stablecoins aim to stabilize major currencies directly in the crypto market, where the prices are intrinsically volatile due to the absence of any responsible issuer and the broader economy. The Bank for International Settlement expresses that "stablecoins have many of the features of crypto-assets but seek to stabilize the price of the "coin" by linking its value to that of a pool of assets" (G7 Working Group on Stablecoins, 2019, p. ii). In this definition, the word "link" can be interpreted as a similarity between the stablecoin and the "linked" asset, when actually both need to be understood as independent assets. As there are various stablecoins already existing and these above-mentioned definitions may not be proper in every case, it can indicate that these definitions are not sufficient enough.

In MiCA's explanatory memorandum it is emphasized that e-money tokens and asset-referenced tokens are stablecoins, even though the wording in the article does not use the term 'stablecoin'. The definitions given by MiCA might be too technology-oriented as well as too broad. The proposal does not indicate that crypto assets are aligned with their rights, obligations, or value, but rather defined by the underlying technology (INATBA, 2021). If this is the case, MiCA does not identify the tokens' usage, which allows interpretations. By giving broad definitions, the provisions will apply to a larger portion of crypto assets, as it may preserve uncertainty and go against the purpose of the regulation. Notwithstanding, narrow definitions bring certainty at the cost of efficiency and complexity. The crypto market has evolved significantly, thereby there is a need for a regulation that corresponds with the development and recognizes the various types of crypto assets. Could it be that MiCA attempts to allow just certain types of stablecoins, thus shaping the forthcoming crypto market? Since this is a new and in many situations unfamiliar market, a legislative framework that can capture peculiar circumstances and provide guidelines is important. As these definitions given by MiCA are technology-oriented instead of providing clear instructions on the usage of stablecoins, the interpretation might be confusing rather than helpful. If the framework actually creates more legal uncertainty, the regulation fails to meet its objectives of establishing uniform rules for issuers and providers of crypto assets. As both users, issuers, and providers have operated within this field for a decade, the market might work better without any legislation?

Another perception is who bears the investment risk of stablecoins. The investment risk will depend on the design of the stablecoin, which implies that the underlying technology might be a factor that requires regulation to provide investors' protection. If the stablecoin's design cannot ensure fixed value, the value of the stablecoin will fluctuate collectively with the value of the backed assets. In these situations, users of the stablecoin will carry all the risk in contrast to situations where the design guarantees fixed value which implies that the issuer bears the risk (Li & Shen, 2021). Therefore, the underlying technology of a token can be important and require appropriate categorization. Based on the wording in the article and statements in working papers published by the EU, the proposal does not consider the investment risk in such matters. However, whether these categories in MiCA are sufficient to determine who holds the investment risk and if this is an element of matter, is difficult to clarify. Moreover, investment risk is a factor in both the stock- and capital market that is included in prices and how risk-taking an investor is, and cannot be prevented in a regulation, hence why should MiCA try to remove all risk?

Newly established issuers' categorization of their stablecoin may highly depend on how they interpret article 3. The categorization relies on the issuers' capability to understand and comply with MiCA, which again will affect the number of requirements they need to fulfill. Could an issuer design their stablecoin to fit with a category that has fewer restrictions and requirements? Does a newly founded private entity have the legal knowledge obligated to comply with MiCA? Lack of financing can hinder start-up firms to get resources to comprehend and comply with the regulation thus categorizing their stablecoin incorrectly. To avoid violating the law, start-up companies are subject to significant and unexpected costs. A possible outcome of the proposal could be that start-ups or modest firms withdraw themselves from the crypto market, hence, prevent innovation and promote that merely big tech firms can operate in the market.

Tech firms can reach a certain scale due to their large customer base at the time of issuance. For example, Facebook with a customer base of approximately 3 billion will reach a significant number of potential users at the time of the Diem issuance

(White Paper | Diem Association, n.d.). If several of their customers use Diem as a means of exchange, Facebook will reach a remarkable scale. Could this result in Facebook becoming a monopolist in the crypto market? To have one large player in the field generates "exit costs" that will make it harder for users to change payment platforms and for newly established issuers to enter the playing field (Brunnermeier et al., 2019).

Furthermore, issuers might try to circumvent the regulations by creating stablecoins with technology that is not captured in MiCA, or technology that is too complicated to determine the category of the stablecoin. Nevertheless, at the beginning of MiCA, it is stated in para. 16 that small and medium-sized enterprises and start-ups should not be subject to excessive administrative burdens. If the issuers' offer of stablecoins to the public does not exceed an adequate aggregate threshold over a period of 12 months, the issuers should be exempted from the obligation to publish a whitepaper, cf. para. 16. However, consumer protection must be sufficient, thus, in cases where there are offers to the public that involve business-consumer relations, criteria of information remain. Investor and consumer protection is one of the main issues the EU wants MiCA to provide. Even though the positive aspects of stablecoin as a legal tender e.g. efficient payments and no transaction costs, the self-interests of private entities should be managed by regulation. Large tech firms might use their transaction data to monitor customers' purchases, tastes, and tendencies to optimize their own business (Kriwoluzky & Kim, 2020). Perhaps, consumer protection might not be that necessary as the investors operating within this field should obtain knowledge about DeFi, DLT, and the risks that come along? Cryptocurrencies are not yet an everyday activity where the public is involved, thus the focus on protection might not be that required after all.

Tether could be interpreted by MiCA as an e-money token because its value refers to the value of a fiat currency, USD, that is legal tender, in addition to being a means of exchange. As explained in section 3.2, Tether is defined as a fiat-collateralized stablecoin. However, according to Tether's official website, Tether "enables businesses – including exchanges, wallets, payment processors, financial services and ATMs – to easily use fiat-backed tokens on blockchains"

(*About Us | Tether*, 2017). In fact, Tether is used in more than one type of crypto asset service, including financial services, which are not a subject in MiCA's definitions. The definition states that the main purpose of the crypto asset is to be used as a means of exchange. Tether has several purposes and it will rely on the stablecoin's holder if Tether is being used as legal tender. Whether Tether can be used as a means of exchange, will depend on the payment receiver as well as the purpose of the usage of Tether. This is because the payment receiver, e.g. a store, needs to have in place payment systems that accept Tether as means of exchange. As an example, Tether can be used to pay for trips and stays at the website Travala.com (NOWPayments.io, 2020). Travala is the world's leading blockchain-based travel booking platform (Travala, n.d.). By knowing this, Tether can be defined as both asset-referenced token and electronic money token, depending on what one uses Tether for, and the coin has added several features.

However, stated by a law firm in central and eastern Europe, Tether is classified as a significant e-money token where more requirements need to be met, cf. article 50 (*Decrypting the Proposed EU Regulation on Markets in Crypto-Assets*, 2021). Article 50 states that e-money tokens can be classified as *significant e-money tokens* if criteria referred to in article 39 no.1 in accordance with article 39 no. 6 where at least three of those criteria are met. By being classified as a 'significant' asset-referenced token or 'significant' e-money token entails specific additional obligations for issuers in accordance with article 41. These include among other things, implementing and maintaining policies for sound and effective risk management and liquidity management, cf. article 41.

As mentioned above, article 39 no. 1 classifies *significant asset-referenced tokens* as specified in accordance with paragraph 6 and where at least three of the following criteria are met. These criteria involve the size of the issuers' customer base, the value of the market capitalization, the amount and value of the transaction, as well as the size of the issuers' reserve of assets. Additionally, whether the activities of the issuer occur significantly across borders and the interconnectedness with the financial system. In para. 6 there are further specified criteria considering the minimum amounts, such as that the customer base should not be lower than 2 million, the market capitalization and size of reserve assets

should not be lower than EUR 1 billion, additionally, the number and value of transactions per day should not be lower than 500 000 transactions or EUR 100 million per day.

The last criterion is that the asset-referenced token has to be involved in at least seven different countries. In other words, significant asset-referenced tokens and significant e-money tokens are defined to have more impact across borders, the value of transactions is higher, along with a large customer base, and thus could be referred to as global stablecoins. Therefore, there are more restrictive requirements to protect financial stability due to the significant asset-referenced tokens globally effect. As a result of Tether's impact, it is not unreasonable to classify it as a significant e-money token. However, are these restrictive requirements enough to prevent global stablecoins from adversely affecting financial stability? The specific additional obligations in article 41 address the operational factors the issuer should maintain regarding liquidity, policies, and risk management. However, are those additional obligations proportionate to what MiCA aims to regulate?

Another law firm has classified Tether as an asset-referenced token without the requirements of a significant asset-reference token, cf. article 39 no.1 (Tukun, 2021). There are not provided explanations why Tether is defined as an asset-referenced token. However, the blog post describes an asset-referenced token as a stablecoin that is pegged to several fiat money, whilst an e-money token is a stablecoin that is pegged to just one fiat money. Perhaps this justification is incomplete? Tether remains stable because it is pegged to the USD, thus the categorization may be incorrect to just base their argument on these conditions without considering any other articles of this matter.

By looking at how the legal professionals currently interpret the definitions differently, the proposal confuses and creates legal uncertainty, which is one of MiCA's main objectives to prevent. A known stablecoin with various features can be challenging to categorize in one of those three definitions. Arguably, a large tech firm has the ability to readjust in accordance with the law and judicial precedent, in contrast to newly established firms. Besides, the highly tech-oriented

definitions can create these different interpretations as one has to have knowledge about every aspect of the stablecoin and their underlying technology, although their use can vary.

4.2 Issuer of Stablecoin

As mentioned earlier, stablecoin as a legal tender will be defined as either asset-referenced tokens or e-money tokens. MiCA presents issuers' obligations and requirements for asset-referenced tokens in articles 15 till 42, whereas e-money tokens are presented in articles 43 till 52. A crypto asset issuer is defined in article 3 no.1 point 6 as "*a legal person who offers to the public any type of crypto-assets or seeks the admission of such crypto-assets to a trading platform for crypto-assets".* A legal person, according to Cambridge Dictionary, is a company that has full legal rights and responsibilities according to the law (Cambridge Dictionary, n.d.). An issuer of stablecoin will by this definition be the legal person who offers stablecoins to the public.

A question in this matter is who the 'legal person' is because issuers can operate anonymously, thus, be difficult to identify. As mentioned in section 3.1, in DeFi, the systems are not controlled by a single, central source or managed by a 'legal person' (*About Us | Tether*, 2017). Decentralized projects such as MakerDAO and Monero, the legal person, become hard to determine. The developer of Bitcoin went under the pseudonym Satoshi Nakamoto and who's real identity has never been revealed (Badari & Chaudhury, 2021). In contrast, Tether announces its management on their website and the issuer is Tether Limited making it easier to identify a legal person. Thus, how can decentralized firms adhere to the requirements set by MiCA? Legislators may have challenges finding a suitable reference point regarding decentralized projects and their structure to decide who bears the obligation (INATBA, 2021). Can a possibility be that the EU wants to remove or forbid fully decentralized issuers and stablecoins?

However, the EU has expressed that they want to establish a comprehensive framework that enables the uptake of DLT and crypto assets in the financial sector (The European Commission, 2020b). Moreover, they emphasize the advantages of DLT because it avoids the downside faced by central storage systems of

representing a single point of potential failure (The European Commission, 2020a). The European Commission's working document (2020a) explains the features of cryptography, hence, the EU is aware of the anonymity related to DeFi. Nevertheless, they establish provisions that do not consider anonymity in DeFi in a more reasonable way. Furthermore, the EU's objective to harmonize the crypto market indicates that they want it to operate aligned with the traditional money market, but does the missing understanding of decentralization indicate that they favor one of the markets?

According to article 15, issuers of asset-referenced tokens need to be established in the EU and be authorized by the competent authority of their home member state to be able to offer their tokens to the public and to trading on platforms. There are two exceptions when the average outstanding amount does not exceed EUR 5 000 000 or the equivalent amount in another currency over a period of 12 months, or when the public offer is solely addressed to qualified investors and the tokens can only be held by qualified investors, cf. article 15 no. 3 point a and b. The same applies to issuers that offer e-money tokens to qualified investors, do not need authorization, cf. article 43 no. 2 point a, or if the outstanding amount of e-money tokens does not exceed EUR 5 000 000, cf. article 43 no. 2 point b. In other words, professional investors do not need additional protection by the law in the same way as consumers. Furthermore, the authorization granted by the competent authority shall be valid for the entire EU enabling European businesses to have full access to the internal market, thereby enhancing one harmonized market.

In article 16 surrounding what the application for authorization shall contain, there should be a legal opinion that the asset-referenced tokens do not qualify as financial instruments, electronic money, deposits, or structured deposits, cf. no. 2 point d. The legal opinion depends on law firms and professionals who are familiar with the issuers' stablecoins. This will probably differ in accordance with the underlying technology that determines the categorization of crypto assets, as well as the relation to other regulations. An illustration that shows the challenges of classification as mentioned in section 4.1 are two law firms that categorized Tether differently. Thereby, what will the requirement of legal opinion achieve? It

can be costly for issuers to find law firms that are competent in this field, besides obtaining legal experience, which might come with years of handling cases. One might perceive these provisions as an attempt to regulate the crypto market similar to the stock market. These legal provisions lack openness for decentralized solutions and do not reflect the technological development within this field. As discussed earlier, the provisions should perhaps focus less on the classification and more on the actual use.

Issuers of asset-referenced tokens are obligated to prepare and publish a whitepaper that satisfies the requirements in article 17, and the approval of a national competent authority is required. The whitepaper sets out rules to ensure consumer protection, for example by providing a detailed description of the issuer's governance arrangements, counting description of role, responsibilities, and accountability, in addition to having a description of the reserve of assets, custody arrangements for the reserve assets, and detailed information on the nature and enforceability of rights. E-money tokens issuers are required to be authorized, as well as comply with requirements applying to electronic money institutions, and publish a whitepaper, cf. article 46. The whitepaper must explain the issuer, project, participants, rights, and obligations, along with information on the underlying technology, and risks associated with the issuer, cf. article 46 no. 2. Furthermore, an e-money token that is referenced to EU currencies shall be deemed to be offered to the public in the Union, cf. article 43 no. 1 point c.

There are more requirements surrounding authorization and whitepapers regarding asset-referenced tokens than the requirements of e-money tokens. This might be related to the fact that issuers of e-money tokens are required to be authorized as a credit institution or as an electronic money institution, cf. article 43 no. 1 point a, in accordance with the E-money Directive article 2 no. 1. The latter article defines electronic money institutions as a legal person that has been granted authorization to issue electronic money (Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the Taking up, Pursuit and Prudential Supervision of the Business of Electronic Money Institutions Amending Directives 2005/60/EC and 2006/48/EC and Repealing Directive 2000/46/EC (Text with EEA Relevance), 2009).

For instance, Tether has published a 20-pages whitepaper that provides detailed information about for example the technology stack and processes, main applications, and future innovations (*TetherWhitePaper.Pdf*, n.d.). If the given whitepaper is not complete, fair or providing misleading information, the holder of asset-referenced tokens may claim damages from the issuer of asset-referenced tokens or its management for damage caused to the holder due to that infringement cf. article 22 no. 1. Therefore, issuers' legal understanding of the whitepaper is essential to avoid compensation claims. The question is therefore whether the information provided in the whitepaper is sufficient enough to help investors make their investment decisions. Furthermore, in the light of MiCA, Tether cannot be interpreted as an e-money token because Tether Limited is not authorized as a credit institution nor an electronic money institution, cf. article 43 no.1.

Moreover, article 23 presents obligations for all issuers of asset-referenced tokens hereby acting honestly, fairly, and professionally in the best interest of the holders of asset-referenced tokens. This article promotes trustworthiness towards the issuer which can attract new holders of the stablecoin because of these obligations. Compared to a market without any legislation and requirements, articles 17, 22, and 23 ensure integrity and reliability. In addition to creating market integrity, these articles contribute to reaching the EU's purpose to have one harmonized crypto market alongside the traditional market. Existing issuers might experience increased demand due to the fact they have to comply with provisions that encourage honesty. A consequence of the absence of market integrity is that investors do not want to invest in the market, hence, remove themselves from the market.

Furthermore, article 26 promotes issuers' trustworthiness by requiring disclosure of the number of asset-referenced tokens in circulation and the value and the composition of the reserve assets, together with complaint handling procedure, cf. article 27. This provision states that issuers shall establish and maintain effective and transparent procedures for prompt, fair, and consistent handling of complaints received from their holders. In this matter, the EBA and ESMA shall produce

technical standards to specify the requirements, templates, and procedures for complaint handling, cf. article 27 point 5. This will be important due to the absence of industry standards and practice in this field, and to improve investor protection. Compared to the capital markets that have established maximum issuance amounts and investor thresholds that enhance investor protection, the crypto market that is perceived to be riskier and more unpredictable does not have any similar restrictions (INATBA, 2021). This might indicate that the obligations might not be comprehensive enough because MiCA does not have such guidelines. However, is it necessary to have equivalent guidelines when the business structure in the two markets is dissimilar?

Another element that could enhance the integrity of the crypto market is that MiCA requires that the issuer of asset-referenced tokens maintains and implements effective policies and procedures to prevent, identify, manage and disclose conflicts of interest, and lists the parties, cf. article 28. One of the groups that the issuer needs to identify the conflicts of interest in, is the holders of asset-referenced tokens, cf. article 28 no. 1 point e. An inconvenience surrounding this may be decentralized organizations where the holders' interests and identities are complicated to determine. When trading platforms provide crypto wallets to handle, use and hold crypto assets, the identification in consonance with the know-your-customer principle, could be hard to determine for an issuer. As a result, some issuers might not be capable of actually knowing who their holders are, therefore, violating the article. However, Tether states on its website that users have to go through KYC forms, and an approval process is obligatory to issue and redeem USDT (*FAQs | Tether*, 2015). The issuer expresses that Tether wants to be transparent and comply with government regulation, consequently prohibiting transactions from persons or entities related to certain high-risk jurisdictions. The countries Cuba, North Korea, Iran, Pakistan, Singapore, Syria, Venezuela, and Crimea prohibit their people from using Tether's platform. Additionally, they forbid serving individuals and organizations from the United States. Therefore, issuance or redeeming services are not available for these users (*FAQs | Tether*, 2015). For instance, Bitcoin has to conduct the KYC Protocol and users need to provide a valid identity document (Wijaya, n.d.). For that reason, it is easier for Bitcoin to address the owner's real identity. This might indicate that

some issuers have the opportunity to identify their users and comply with article 28.

In contrast, Monero is one of the cryptocurrencies that cater for more anonymous financial transactions, hence, implements several privacy-preserving cryptographic primitives into their protocols (Wijaya, n.d., p. iii). Monero can be used as payment, and both receiver and sender are anonymous. Most likely, the issuer of Monero would have difficulties complying with Article 28, especially because five of the assumed developers decided to remain anonymous (*Pris, diagrammer, markedsverdi og andre mål for Monero (XMR)*, n.d.). Although Monero is not a stablecoin, its application is a means of exchange, thereby, captured by MiCA if it desires to operate within the EU or cooperate with member states. This is an illustration of how complex and anonymous a cryptocurrency can be compared to Bitcoin and Tether that have decided to have transparent procedures. Thus, better chances to be compliant with MiCA.

Issuers' requirements in MiCA attempt to solve and prevent challenges and risks, but allegedly the legislators fail to comprehend how decentralized organizations work. As a result, MiCA is not able to capture fully decentralized issuers of stablecoins, hence, there will still exist tokens and issuers that are not regulated and investors who are not protected by the law. Moreover, this can threaten fair competition in the crypto market and MiCA's objectives are not accomplished.

4.3 Crypto-Asset Service Provider

Crypto-asset service providers are defined in MiCA in article 3. no.1 point 8 as *"any person whose occupation or business is the provision of the one or more crypto-asset services to third parties on a professional basis".* The applicable activities and services are listed in article 3 no. 1 point 9. These are the custody and administration, execution, reception, and transmission of orders for crypto assets on behalf of third parties. Additionally, the operation of trading, exchange of crypto assets for fiat money and for other crypto assets, along with placing crypto assets on behalf of third parties and providing advice. As of now, there has not been any regulation of the abovementioned activities and services, however, it has been sought in the crypto market.

The service of providing advice on crypto assets, cf. article 3 no. 1 point 9 letter h, could be interpreted quite broadly. For instance, this provision involves non-financial types of advice associated with crypto assets, in particular legal advice or tax advisory services (INATBA, 2021). However, article 3 no. 1 point 17 specifies advice as an offering, giving, or agreeing to personalized or specific recommendations to a third party, either at the third party's request or on the initiative of CASP providing the advice, concerning the acquisition or the sale of one or more crypto assets, or the use of crypto asset services. The specification does not exclude or include non-financial service or providers, but determine that it is advice in the sale and use of crypto assets. As stated earlier in the analysis, issuers may need legal assistance to comprehend MiCA, based on this, could legal professionals potentially be defined as CASPs according to MiCA? If this were to be the case, legal professionals are required to comply with aligned responsibilities. This broad definition of providing advice can be burdensome for several institutions, along with unreasonable accountability beyond the legal professionals' control.

In recent years, the number of trading platforms has evolved in line with the development in the crypto market. Trading platforms will be considered as CASP according to MiCA article 3 no. 1 point 9. Examples of acknowledged trading platforms are Binance, Bitfinex, and Kraken. Article 53 states that crypto asset services shall only be provided by legal persons that have registered office in the EU and that have been authorized as crypto services providers by national competent authorities, cf. article 55. All of the mentioned trading platforms are registered in Asia, the United States, or as the CEO of Binance stated that since Bitcoin does not have any headquarters, Binance has no headquarters either (*Where Is Binance Headquarters?* n.d.). Previously, the headquarter of Binance was located in Malta. Bitfinex has headquarters in Hong Kong (*Bitfinex Corporate Headquarters, Office Locations and Addresses | Craft.Co*, n.d.). Whereas, Kraken has headquarters in San Francisco (*Kraken Company Profile - Office Locations, Competitors, Revenue, Financials, Employees, Key People, Subsidiaries | Craft.Co*, n.d.). Binance's CEO has a point surrounding DeFi and the new era where firms are not traditionally organized. Thus, why should

businesses use resources on maintaining a headquarter, when they could use resources to e.g. enhance their technology? MiCA attempts to place the liability on CASPs which creates an incompatibility with DeFi (INATBA, 2021). The proposed regulation requires that CASPs have fixed governance and management of crypto assets which is not consistent with how DeFi works.

Article 54 surrounds the application for authorization and necessitates that CASPs shall describe the firm, activities, governance arrangements, proof of knowledge and skills internal the company, in addition to the internal control mechanism, risk assessment, and their IT systems. Furthermore, the competent authorities assess whether the application is complete or not, cf. article 55, and have the force to withdraw the authorization on occasions listed in article 56. The occasions are when CASPs have not used their authorization within 18 months after the approval, expressly renounced their authorization, have not provided any of the services specified in article 3 no. 1, or no longer fulfill the conditions for the approval of authorization. The last withdrawal reason is when CASPs do not comply with the rules given by MiCA or with the anti-money laundering regulation, cf. article 56. These aftereffects of passivity or change of operations might cause impractical and immoral service providers to be removed from the market. As a result, the market might be perceived as certain and predictable by investors, thereby achieving the objectives of MiCA. However, to what extent can withdrawal of an authorization provide consequences for a trading platform that existed for several years? Investors may want to trade regardless of whether the service provider is in conflict with the national competent authorities.

ESMA shall establish a register of CASP that will be publicly available and be updated on regular basis, cf. article 57. This register shall contain the name, legal entity identifier, and the branches of CASPs, as well as physical address, website, and information about the competent authority that approved the authorization, cf. article no. 2. The requirement about physical address can be a challenge for trading platforms, e.g. Binance that does not recognize the need for a headquarter. A traditional way of acting as a company is by giving business information about the activities, shareholders, and physical address. However, this approach may be difficult to accomplish in the crypto market due to technological development.

Until MiCA enters into force, trading platforms and other CASPs may have evolved further and established their own business practices. The requirements set out in MiCA could prevent innovation and modernization, and simultaneously fail to keep pace with the development in the market.

Article 58 addresses cases regarding activities and services across borders and which information to be submitted to the competent authority. This is information related to which member states they intend to provide services to, the start-up date, and a list of all the activities that are not captured by MiCA. For example, Bitfinex, is available for all clients except clients from Bangladesh, Bolivia, Ecuador, and Kyrgyzstan, along with clients from the United States due to challenging regulations (FX Empire Editorial Board, n.d.). If this trading platform wants to obtain authorization in agreement with MiCA it has to be registered in an EU member state, besides providing a list of all countries that can use their trading platform. In a way, these provisions try to shape the firms, defined as CASP, to be more convenient instead of comprehending the current practice in the crypto market. MiCA has laid down rules for trading platforms, cf. article 68 concerning due diligence, defining exclusion categories, establishing policies, fees, and setting proportionate criteria for participation in the trading activities. These obligations might be too overwhelming to achieve and generate costs for CASPs, which in turn leads to a playing field with only the greatest participants. Thus, it may result in higher barriers to entry into the market.

CASPs are obligated to act honestly, fairly and professionally in the best interest of clients and information to clients, cf. article 59. This can contribute to an increased number of clients in the crypto-asset market and a higher degree of trust in CASPs. CASPs need to provide fair, clear, and not misleading information, particularly in marketing, which is important for new clients without knowledge about crypto assets, in addition to strengthening investor protection. It might be uncomplicated for CASPs to warn and identify risks associated with issuers' crypto assets due to the published whitepaper. The rules in MiCA initiate that all of the relevant details about the crypto assets are presented in the whitepaper, and compared to the current unregulated market, making it easy for CASPs, holders of crypto assets, and competent authorities to get an overview. Although, these

commitments and responsibilities might generate directly and indirectly expenses for the involved participants in the market.

CASPs are responsible for keeping records of all crypto asset services, orders, and transactions undertaken by them, cf. article 61 point 8. Obtaining documentation makes it easier to report suspicion of market abuse to competent authorities. This provision helps to avoid and prevent illegal activities by making CASP responsible for activities within their operation such as trading, custody, and exchange. Thereby, support financial stability and hinder the opportunity of criminal activities. However, will this be the most efficient way to control and prevent criminal actions in a currently unregulated market? Moreover, how will this actually function in practice? As discussed in sections 4.1 and 4.2, it may be complicated to identify users and investors to fulfill this obligation due to the decentralization of issuers and stablecoins. Might the significance of the responsibility be too overwhelming for CASPS to carry out? Regarding blockchain technology, some of its features are reliability, traceability, data immutability, and smart contracts given to raise a trustless atmosphere with less requirement for intermediaries (Kouhizadeh et al., 2021). To require CASPs to have an overview of this can be conflicting with how actors within the crypto market operate. From being a part of an unregulated market that promotes no third-party involvement to being defined as a CASP with various obligations, requirements, and responsibilities because of authorization to operate within the EU, can be comprehensive.

Complaint handling procedure, cf. article 64, is a requirement that will probably improve investor protection and confidence in the market. CASPs shall establish and maintain effective and transparent procedures for the prompt, fair, and consistent handling of complaints received from clients, cf. article 64. They are obligated to investigate all complaints in a fair manner, communicate the outcome to their clients, and keep records of all received complaints. Clients shall file complaints free of charge and receive the result within a reasonable period of time. To demand these services and procedures might increase the reliability of the CASP, thus, increase their customer base. However, it is reasonable to believe that several outcomes are beyond their control, and rather connected to the crypto

asset instead of to the CASPs. If a situation occurs and CASPs need to put all their resources to handle complaints surrounding DeFi related issuers or crypto assets, it might not be accurate for them to handle. Although, complaints regarding their operation, marketing, and advice may be more suitable to address.

CASPs shall prevent, identify, manage and disclose conflict of interest, cf. article 65. CASPs must manage potential conflict of interests between themselves and their clients, or between one and another client, cf. article 65 no. 1 point c. Equally important, CASPs shall disclose to their clients and potential clients the general nature and sources of conflicts of interest and the steps taken to mitigate them, cf. article 65 no. 2. As discussed in section 4.2 regarding conflicts of interest procedures surrounding issuers, several of the same challenges occur for CASPs. How can a trading platform for decentralized organizations identify and prevent conflicts of interest? One can interpret article 65 that the term 'clients' includes issuers, investors, users, and consumers. In contrast to the capital market where banks, financial institutions, and other players in the market have to comply with various laws, MiCA attempts to capture all components of the crypto market in one.

Tether Limited as an issuer implemented KYC, and CASPs can use the published whitepaper and already given details of Tether to evaluate the conflicts of interests. Nevertheless, there are issuers that do not have these details in order, and therefore might be rejected to participate in the trading platform. This can be beneficial in terms of questionable issuers, but also prevent innovation of modernized firms and issuers by forcing them to organize their activities in a certain way. It is reasonable to assume that the overwhelming approval for regulating CASPs arises from negative incidents, fraud, and illicit activities of a few CASPs, which caused damage to the crypto market's reputation and prevented proper investors from entering the market (INATBA, 2021).

The crypto market has been a subject of criminal actions due to the anonymity, absence of framework, and knowledge about diverse crypto assets. These articles in MiCA hinder these outcomes and are highly sought, even though they might have the potential to prevent innovation and further development.

4.4 Main Findings

By having analyzed the respective parts associated with our research question, there are both advantages and challenges in the current version of MiCA. The overall benefit from this regulation is the trust in issuers and CASPs that have performed for years without any legislation. Probably a regulation that promotes the protection of customers, users, and investors creates greater demands for crypto assets than before. Issuers and CASPs need to establish acceptable routines, policies, and awareness of risks in their activities to comply with MiCA. This can generate a market and community that builds more transparent and user-friendly products and services to the public. Additionally, by having a harmonized framework within the EU, MiCA enables European businesses to have full access to the internal market and hopefully when it enters into force will create legal certainty and equalize the playing field for the market participants.

Whereas, as of now, MiCA fails to comprehend the existing players in the crypto market due to decentralization, anonymity, and costs related to modifications caused by the regulation. Both the significant compliance costs and whitepaper requirements may hinder further development rather than bolster it. Several of the articles, especially Article 27 that demands the identification of holders of tokens which can be a challenge for some issuers. Another inconsistent provision is Article 3 no. 1 point 3 and 4 which are overlapping definitions and categorizes the underlying technology of the stablecoin instead of the usage. This focus can create legal uncertainty across nations and allow interpretations of how the technology should be perceived, hence not only how stablecoins function. Furthermore, it is critical that this proposal captures only issuers that are ‘legal persons’. One outcome might be that few issuers want to readjust their operation, thereby, not comply with MiCA, or another outcome can be that MiCA prevents innovation and advantages of stablecoins will be hindered.

Table 3 presents a brief overview of the main findings in MiCA

Advantages
Authorization to operate in the EU
Trustworthiness and market integrity
Improved consumer and investor protection
Promotes procedures and policies
Initiates whitepaper as a source of relevant information
Making issuers and CASPs responsible for activities within their operations
Challenges
Overlapping, technology-oriented definitions of tokens, ambiguity, legal uncertainty, and various interpretations
Expenses related to understand and comply with MiCA can create barriers to entry
Requirements of legal opinion if issuing asset-referenced tokens
E-money tokens only issued by credit- or electronic money institutions
No considerations of the meaning and operations of DeFi
Providing advice as a CASP is broad, considering law firms/tax firms will be subject to the regulation
Making issuers and CASPs responsible for activities and operations beyond their control

One of the advantages is that the regulation requires that both issuers and CASPs be authorized before offering the public any service or stablecoins. This contributes to removing suspicious actors from the market and advancing branch standards. The provisions in MiCA build trustworthiness and market integrity by regulating how issuers operate, internal requirements as procedures and policies along with providing relevant information regarding the terms of publishing a whitepaper.

For over ten years, issuers have not been asked to provide any information about their crypto assets, as a result, investors' decision basis might be incomplete and risky. By setting, guidelines could engage more investors, users, and issuers to invest in the crypto market. If the pricing of the crypto asset is correct and there is no asymmetric information in the market, investors and users want to participate in the value created within this market which will enhance the innovation. If global stablecoins will be an accepted means of exchange, all requirements for the issuers must be set and accomplished. The essential point is to prevent financial stability, the money market, and the monetary policy from being threatened by the crypto market.

A result of MiCA is that it makes issuers and CASPs responsible for activities within their operation. Existing issuers might need to consider if their stablecoin is user-friendly in another matter than before, as well as the importance of being perceived as an honest and transparent issuer of stablecoins. The same goes for CASPs that could be third parties to purchases and sale of crypto asset, advisory, exchange platform, and placing of crypto assets. By making these service providers more aware of who they accept as clients, which information they need to obtain, and observe the consequences of their activities, will strengthen the crypto market. In other words, there will be several levels of supervision that can help actors within the market to remove and identify doubtful market participants and hinder fraud, resulting in respectable and fair playing fields. At present, CASPs can allow any issuer to offer their stablecoin without considering the associated risks.

Notwithstanding the benefits of MiCA, there are numerous challenges that the proposal has not resolved nor appropriately addressed the critical components within the crypto market. Overlapping and technology-oriented definitions of tokens were three categories assumed to capture the whole crypto market, which might only cause confusion. As illustrated in Table 1.2, there are different crypto assets and what distinguishes the coins varies. To focus on the underlying technology may not be applicable in this case as crypto assets can offer several services in addition to containing more than one feature, therefore it would be useful to regulate the use and not the technology.

As exemplified in section 4.1 the definitions can be interpreted differently across borders without any precedents or further instructions. Since the degree of requirements depend on which categorization one classifies the stablecoin, legal uncertainty is highly undesirable. If an issuer can choose to classify their stablecoin incorrectly by paying a legal professional to agree to the categorization in the case of an asset-referenced token, this results in further criminal actions and the point of the framework is gone. Considering how unfamiliar this concept is, law firms that have knowledge and experience with crypto assets will be an essential part in the development of how these three categories will be interpreted. By recognizing these technology-oriented definitions, issuers can specifically create stablecoins that appear to obtain desired features to circumvent the rules. With these definitions, how can one argue that the firm tried to circumvent the legislation or that they misunderstood the content of Article 3?

Furthermore, there are expenses related to comprehending and complying with MiCA which might create barriers to entry. To avoid being forbidden to operate and offering stablecoins or services, the provisions in MiCA need to be achieved. To categorize, conduct and publish a whitepaper and obtain knowledge about the requirements will be costly. The direct and indirect costs might impact a modest tech firm more than a larger firm. As mentioned above, para. 16, start-up companies should not be subject to these expenses and by fulfilling requirements of threshold over a period of 12 months, can offer their stablecoin without publishing a whitepaper. If the most common way for investors to get relevant information of risks and details about the crypto assets is through the whitepaper, this exception will be in disfavor for start-up companies. Likewise, if the administrative expenses related to the whitepaper prevent start-up firms from entering the market.

Moreover, MiCA demands that only issuers that are authorized to operate as credit institutions or electronic money institutions can issue e-money tokens. If issuers must be a credit institution to be allowed to issue e-money tokens, they have to comply with several other regulations in addition to MiCA, making it harder to circumvent the law. Thus, no stablecoin can be categorized as an e-money token

unless the issuer is authorized as a credit- or electronic money institution. Various credit facilities can be interested in entering the crypto market due to the opportunities, in contrast to big tech firms that may only want to operate in the crypto market due to comprehensive requirements in other markets.

Decentralization is a fundamental feature in the crypto market and the wording in different articles in MiCA lacks the recognition of this. Both issuers and service providers must be initiated by a legal person which in decentralized organizations or stablecoins, are impossible to determine. An aftereffect might be that issuers or stablecoins of decentralized arrangements are not captured by MiCA, and continue to exist without any legislative framework, hence no investor protection. A second result might be that further development within this field will be impeded, thus preventing innovation. Both outcomes harm the crypto market and its potential including facilitating an alternative market. Equally important, issuers and CASPs are responsible for activities and clientele beyond their control, as MiCA does not acknowledge the characteristics of decentralization. Because MiCA neglects decentralization's features, many issuers and CASPs might choose to not comply with MiCA and keep operating in an alternative market.

5. Trends and the Future of Cryptocurrencies

Cryptocurrencies and crypto applications continue to evolve, mature, and expand in ways no one could predict back in 2009 when Bitcoin was first introduced to the world. The broader cryptocurrency market nears USD 2 trillion, which is up almost three-fold since the beginning of last year (Bambrough, 2021). This shows that there is great interest in the crypto market and that people have faith in it as they choose to invest their money.

From the graph below, one can see that the Bitcoin price has increased almost 1,000 % over the last 12 months, climbing to approximately USD 60,000 per Bitcoin and making the cryptocurrency a USD 1 trillion asset. On the other hand, one can also see that there have been some downs, illustrating the volatility of Bitcoin (Bambrough, 2021).

Graph 2 shows the development of Bitcoin prices of 2020/2021

(Bambrough, 2021).

Recently, the president of El Salvador announced that he wants to send proposed legislation to the congress that would make Bitcoin legal tender in the nation (The Associated Press Staff, 2021). By accomplishing this, El Salvador will be the world's first sovereign nation to adopt Bitcoin as a legal tender. Their president sees the potential in Bitcoin as a means to generate jobs and help provide financial inclusion to thousands outside the formal economy and in the medium. There are approximately 70 % of the population in El Salvador who do not have access to a bank account and work in the informal economy (The Associated Press Staff, 2021). This illustrates how cryptocurrency with modern financial infrastructure like Bitcoin technology can make improvements in countries without adequate financial stability and financial inclusion.

Furthermore, another example where the use of cryptocurrency, especially stablecoins, is seen further explored, is in the gaming industry. The gaming industry is estimated to engage 4 billion players by 2023 with consumer expenditures expected to grow to USD 196 billion by 2022 (Koffman, 2020). As gaming and virtual sports are not tied to a city or regions like physical sports, it

creates certain execution challenges which stablecoins with blockchain technology can improve. For example, in a Fortnite esports tournament from 2019, the Epic Games had challenges with global payments through traditional channels. The Epic Games did not pay as promised to the winners as they have had trouble with certifying that the players had actually participated in the game. There was a weak organization of the payments and questions surrounding if the players had used the right payment information to Epic. Furthermore, the problem could also lie with the players who might not have gone through the right channels to claim their winnings (Russo, 2019). Blockchain technology can streamline this process. As stablecoins can provide seamless borderless payment for a global network of participants, it is not surprising that the encouragement for stablecoins in the gaming industry is massive. Zytara is one of the latest fintech companies and is looking to address gaming payments by using stablecoins. The company will launch its own stablecoin, ZUSD, to create its own banking platform and payment network. In the fall of 2020, Microsoft and Ernst & Young got together to use a blockchain-based platform to enable Microsoft XBOX gaming partners, artists, and content creators to track and manage payments and royalty contracts. By expanding Microsoft's blockchain-based solution for gaming, the processing time will be reduced by 99 %, with 100 % almost real-time calculation of royalties using digital contracts across game development partners (Koffman, 2020).

However, the gaming industry is a target for cybercriminals and especially for money laundering. A reason for this is anonymity. One can draw lines to cryptocurrency and stablecoins on this matter, which could have been an interesting thesis to research further. In online video games, the players enter their credit card information into the system when purchasing clothes and weapons. Criminals can then steal credit card information and perform money laundering activities through these accounts. Cybercriminals often log into the accounts without a two-factor authentication and use the stolen credit card information to purchase in-app money. Thereby, the purchases of in-game materials and currency in the online marketplace can then be sold at a lower price. Even though the game owners are aware of these events, they might not be able to prevent being a subject of these criminal actions (Sangit, 2020). Therefore, it will be interesting to

see if stablecoins as legal tender can increase the payment efficiency in the gaming industry, as well as how it can affect the criminal activities that occur.

Further, as a result of the growth and development, as well as the risks associated with cryptocurrency, many leading central banks are working together on launching their own cryptocurrency, namely Central Bank Digital Currency (CBDC). CBDC is central bank-issued digital money denominated in the national unit of account, and it represents a liability of the central bank (Bank for International Settlement, 2021). In other words, the CBDC will be the digital representation of the state's fiat currency. Nevertheless, CBDC differs from cryptocurrencies like Bitcoin and stablecoin in that it is centralized and regulated by the monetary authority in the country. A CBDC will be influenced by the same factors as fiat currency because it is backed by the national currency. Stablecoins will not be a subject of inflation and interest rates affected by a single country's factors or government as explained in section 3.3. With stablecoin, there are peer-to-peer transactions eliminating central intermediaries and associated transaction costs from a bank. This is more efficient without any third party and provides more privacy.

In the fall of 2020, the Bahamas launched the world's first official CBDC, named the Sand Dollar. They want to advance more inclusive access to regulated payments and other financial services for underprivileged communities and socio-economic groups besides decreasing service delivery costs and increase transactional efficiency for financial services across the nation (CoinGeek, 2020). Once again, this emphasizes how cryptocurrency can strengthen the financial stability in lower economic classes, making it easier for people to get access to and be included in the financial system along with the increased efficiency.

This demonstrates the immense interest and demand for cryptocurrency and stablecoins as means of payments, as businesses are pursuing faster, lower-cost, irreversible payments and settlements. However, by observing the analysis above, the EU has a great job ahead of them to be able to prepare a legislative framework that creates legal certainty and simultaneously is compatible with the actual use of stablecoins. Establishing official legislation is a major obstacle for stablecoins to

be accepted as legal tender. When Facebook's coin Diem launches and offers it to the approximately 3 billion of Facebook's users, it is reasonable to believe that this will be the first step towards everyday use for the public (Statista, 2021). Until now, the use of cryptocurrencies has required knowledge about the market, to avoid losing money due to the volatility and risks (Dogan, 2021). If this is a success, it is understandable that consumers want to use cryptocurrencies if this is less expensive than fiat money. Norwegian Airlines' founder has created Norwegian Block Exchange (NBX) that allows customers to buy airline tickets with bitcoin (Paulsen, 2020). Furthermore, by trading cryptocurrency on their NBX platform, one earns CashPoints to buy airline tickets, seat reservations, or other rebooking services provided by Norwegian Airlines.

Despite the above-mentioned beliefs and positive usage of cryptocurrencies, there have been concerns regarding how much energy Bitcoin mining uses. Bitcoin consumes around 110 Terawatt Hours per year, i.e. 0.55 % of the global electricity production (Carter, 2021). If one considers Bitcoin to be a device for money laundering or fraud, the amount of energy is irresponsible. Nonetheless, if one accepts that Bitcoin can be used as a tool to avoid monetary restraint, inflation or capital controls, the energy consumed is not wasteful. Energy is used in mining which is an intensely competitive business. According to Cambridge Bitcoin Electricity Consumption Index, the annual carbon footprint amount of energy in Argentina is approximately equivalent to Bitcoin's consumption of energy (Aratani, 2021).

What the future holds for cryptocurrency is still unknown, as the proponents see infinite potential whereas the critics see nothing but risks. Professor Joseph A. Grundfest, a former commissioner of the Securities and Exchange Commission and expert on financial systems, from Stanford Law School, has expressed what he believes is the future of cryptocurrencies. He addresses that although users claim that cryptocurrencies' financial platforms are trustless systems, it is not adequate because the systems rely on the underlying infrastructure powering cryptocurrencies (Stanford Online, n.d.). Most of the infrastructures are located in China, therefore, the Chinese government could, in theory, make changes that affect the fundamental state of cryptocurrencies. Furthermore, he believes that

Facebook's stablecoin is deeply flawed as he does not see that introducing another cryptocurrency as a solution for minimizing payment transactions, as well as Facebook's attempt to circumvent the traditional banking system. Instead, he believes that Facebook could be better off by creating its own bank that could be a financial institution for its users. Moreover, he states that stablecoins work similar to how the USD used to be on the gold standard. Therefore, stablecoin just recreates a system that already exists (Stanford Online, n.d.).

"Cryptocurrencies could be damned if they do get government acceptance, and damned if they don't"(Constable, 2021). Governments might ban crypto, and as mentioned in section 3.3, some countries have already done it. Furthermore, India has stated that it will propose a law that bans cryptocurrencies, fining anyone who trades in the country or even is a holder of digital assets (Constable, 2021). However, India does not forbid CBDC and may want its own digital rupee (Stein, 2021). In contrast, the United States requires that all citizens and residents disclose their cryptocurrency ownership. Furthermore, Turkey's central bank bans cryptocurrency payments based on the absence of regulation and a central authority for cryptocurrencies, in addition to investment risks (Stein, 2021). Nigeria has forbidden banks and financial institutions to provide on and off-ramp for crypto services since 2017. Whilst, Bolivia and Ecuador have banned crypto since 2014 for the protection of investors and domestic currency, whereas in Nepal one can be put in jail as the country banned crypto in 2017 (Stein, 2021). Although criminal actions will continue, cryptocurrencies may make it easier to circumvent the rules. Subsequently, a number of governments prefer that the citizens and residents use domestic currency (Constable, 2021).

Notwithstanding, the trend observed today, with the expansion and interest in cryptocurrencies, the crypto market will continue to evolve, creating new solutions, and making life easier for society in the years to come.

6. Conclusion

After examining how the proposed Markets in Crypto-Assets Regulation might impact issuers of stablecoins, various effects are discovered. One of the findings was that fully decentralized issuers are not a subject of MiCA because of the requirement to be a legal person. The stablecoin DAI presented in section 3.2 is exemplifying this issue. MiCA neglects the use and existing activities in decentralized stablecoin, therefore it does not comprehend all relevant elements within the crypto market. Issuers with decentralized characteristics may be forced to adjust their operation in accordance with MiCA to get access to the internal market. Consequences of this might entail costs regarding legal assistance, compliance, and operational requirements. Alternatively, these issuers might choose to not comply and participate in the EU's crypto market due to the extensive costs generated from obligations, and legal professionals.

Furthermore, issuers are mandated to classify their stablecoin into two overlapping, technology-oriented definitions to determine which demands they need to satisfy. The definitions, as illustrated in section 4.1, are overlapping and focus heavily on the underlying technology of the stablecoin instead of the stablecoins' obligations, rights or value. The categorization depends on the issuers' understanding of MiCA and financing to get legal professionals' guidance, and firms without capital to accomplish this may be forced to leave the market. As a result, entry barriers appear and it might be that only the largest companies will remain in the market. Furthermore, the broad definitions create legal uncertainty for issuers and confuses the market participants rather than providing guidelines to operate in the market. A stablecoin can have several features which MiCA does not consider, as well as how the issuers should classify tokens of this matter.

Nevertheless, issuers may experience increased demand for stablecoins as MiCA improves investor protection and confidence in the crypto market. Issuers are obligated to publish a whitepaper that contains relevant information and details about risks associated with stablecoin, which might create more predictability and safety for stablecoin users than what is the case today. MiCA makes issuers

responsible for activities within their operation, simultaneously generates more awareness of issuers' inherent risk by demanding risk management, policies and routines, which can encourage more transparency and user-friendly products and services. Issuers may utilize the benefits of the regulation to attract more customers by being more trusted and transparent.

However, MiCA fails to meet its objectives when it comes to providing legal certainty and uniform rules for all players in the field. Crypto market participants have operated for a decade without any regulation, and therefore it is possible that legislation might impede innovation and expansion. Regardless of this, when MiCA enters into force, it will most likely be a transition for all involved parties.

7. Bibliography

(3.51%) Bitcoin Volatility Index—Charts vs Dollar & More. (n.d.). Retrieved April 17, 2021, from https://www.buybitcoinworldwide.com/volatility-index/

About us | Tether. (2017, December 6). https://tether.to/about-us/

Addressing the regulatory, supervisory and oversight challenges raised by "global stablecoin" arrangements: Consultative document. (2020, April 14). https://www.fsb.org/2020/04/addressing-the-regulatory-supervisory-and-oversight-challenges-raised-by-global-stablecoin-arrangements-consultative-document/

Ante, L., Fiedler, I., & Strehle, E. (2020). The influence of stablecoin issuances on cryptocurrency markets. *Finance Research Letters*, 101867. https://doi.org/10.1016/j.frl.2020.101867

Anwar, H. (2018, December 23). What is Stablecoin? Everything You Must Need To Know! *101 Blockchains*. https://101blockchains.com/stablecoins/

Applying EU law. (n.d.). [Text]. European Commission - European Commission. Retrieved April 7, 2021, from https://ec.europa.eu/info/law/law-making-process/applying-eu-law_en

Aratani, L. (2021, February 27). Electricity needed to mine bitcoin is more than used by "entire countries." *The Guardian*. http://www.theguardian.com/technology/2021/feb/27/bitcoin-mining-electricity-use-environmental-impact

Badari, A., & Chaudhury, A. (2021). An Overview of Bitcoin and Ethereum White-Papers, Forks, and Prices. *Forks, and Prices (April 26, 2021)*.

Bambrough, B. (2021, March 31). *Billionaire Investor George Soros' Fund*

Reveals Bitcoin 'Inflection Point' Bet As Crypto Market Cap Nears $2 Trillion. Forbes. https://www.forbes.com/sites/billybambrough/2021/03/31/billionaire-investor-george-soros-fund-reveals-bitcoin-inflection-point-bet-as-crypto-market-price-nears-2-trillion/

Bank for Interntional Settlement. (2021). *Ready, steady, go? Results of the third BIS survey on central bank digital currency*. https://www.bis.org/publ/bppdf/bispap114.pdf

Bartel, G. (2019, September 7). *What's the Point of a Stablecoin? (A Simple Explanation)*. Grant Bartel. https://www.grantbartel.com/blog/what-is-the-point-of-a-stablecoin/

Bitcoin—Open source P2P money. (n.d.). Retrieved June 7, 2021, from https://bitcoin.org/en/

Bitfinex Corporate Headquarters, Office Locations and Addresses | Craft.co. (n.d.). Retrieved June 5, 2021, from https://craft.co/bitfinex

Brunnermeier, M. K., James, H., & Landau, J.-P. (2019). *The digitalization of money*. National Bureau of Economic Research.

Bullmann, D., Klemm, J., & Pinna, A. (2019). In search for stability in crypto-assets: Are stablecoins the solution? *ECB Occasional Paper*, *230*.

Cambridge Dictionary. (n.d.). *Legal person*. Cambridge Business English Dictionary. Retrieved April 23, 2021, from https://dictionary.cambridge.org/dictionary/english/legal-person

Carter, N. (2021, May 5). How Much Energy Does Bitcoin Actually Consume? *Harvard Business Review*. https://hbr.org/2021/05/how-much-energy-does-bitcoin-actually-consume

Chakraborty, M. (2021, May 28). *Cryptocurrencies are Banned and Considered*

Illegal in these Countries. https://www.analyticsinsight.net/cryptocurrencies-are-banned-and-considered-illegal-in-these-countries/

Cœuré, B., Cunliffe, J., Bank für Internationalen Zahlungsausgleich, Bank of Canada, Europäische Zentralbank, Nihon Ginkō, Sveriges Riksbank, Schweizerische Nationalbank, Bank of England, Federal Reserve System, & Board of Governors. (2020). *Central bank digital currencies: Foundational principles and core features report no. 1 in a series of collaborations from a group of central banks*. https://www.bis.org/publ/othp33.pdf

Coin Metrics' Network Data Charts. (n.d.). Coin Metrics' Network Data Charts. Retrieved May 16, 2021, from https://charts.coinmetrics.io/network-data/

CoinGeek. (2020, October 28). Bahamas launches Sand Dollar, the world's first official CBDC. *CoinGeek*. https://coingeek.com/bahamas-launches-sand-dollar-the-worlds-first-official-cbdc/

Constable, S. (2021, April 26). *Two Nightmare Scenarios For Bitcoin*. Forbes. https://www.forbes.com/sites/simonconstable/2021/04/26/two-nightmare-scenarios-for-bitcoin/

Decrypting the proposed EU Regulation on Markets in Crypto-Assets. (2021, April 15). Bpv GRIGORESCU STEFANICA. https://www.bpv-grigorescu.com/publications/decrypting-the-proposed-eu-regulation-on-markets-in-crypto-assets/

Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC (Text with EEA

relevance), 32009L0110, CONSIL, EP, OJ L 267 (2009). http://data.europa.eu/eli/dir/2009/110/oj/eng

Dogan, T. (2021, June 9). *Everything you need to know about Stablecoins and how they work*. https://flexiple.com/blog/what-are-stablecoins-and-how-do-they-work/

European Banking Authority. (2019, January 9). EBA reports on crypto-assets. *European Banking Authority*. https://www.eba.europa.eu/eba-reports-on-crypto-assets

European Central Bank. (2012). *Virtual currency schemes*. European Central Bank.

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Markets in Crypto-assets, and amending Directive (EU) 2019/1937, European Commission (2020) (testimony of European Commission). https://eur-lex.europa.eu/resource.html?uri=cellar:f69f89bb-fe54-11ea-b44f-01aa75ed71a1.0001.02/DOC_1&format=PDF

Fantacci, L., & Gobbi, L. (2021). Stablecoins, Central Bank Digital Currencies and US Dollar Hegemony. *Accounting, Economics, and Law: A Convivium*. https://doi.org/10.1515/ael-2020-0053

FAQs | Tether. (2015, April 24). https://tether.to/faqs/

FX Empire Editorial Board. (n.d.). *BITFINEX Review 2021—Accepted Countries, Payment Methods, Coins & User Reviews*. Retrieved June 5, 2021, from https://www.fxempire.com/crypto/exchange/bitfinex/review

G7 Working Group on Stablecoins. (2019). *Investigating the Impact of Global Stablecoins*.

Guidance notice – guidelines concerning the statutory definition of crypto custody business (section 1 (1a) sentence 2 no. 6 of the German Banking Act

(Kreditwesengesetz – KWG). (n.d.). BaFin. Retrieved June 9, 2021, from https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Merkblatt/mb_200302_kryptoverwahrgeschaeft_en.html

Hertig, A. (2021, December 17). *What Is DeFi? - CoinDesk*. https://www.coindesk.com/what-is-defi

Imperium Entrepreneurs. (n.d.). *Cryptocurrency*. IMPERIUM INSPIRING ENTREPRENEURS. Retrieved June 18, 2021, from http://www.imperiumentrepreneurs.co.uk/cryptocurrency.html

INATBA. (2021). *Blockchain Ecosystems Response to MiCA Regulation Proposal*. https://inatba.org/wp-content/uploads/2021/03/2021-02-Blockchain-Ecosystems-Response-to-MiCA-Regulation-Proposal-Final.pdf

Koffman, T. (2020, December 28). *Stablecoins And The Future Of Gaming*. Forbes. https://www.forbes.com/sites/tatianakoffman/2021/12/28/stablecoins-and-the-future-of-gaming/

Kouhizadeh, M., Saberi, S., & Sarkis, J. (2021). Blockchain technology and the sustainable supply chain: Theoretically exploring adoption barriers. *International Journal of Production Economics*, *231*, 107831. https://doi.org/10.1016/j.ijpe.2020.107831

Kraken Company Profile—Office Locations, Competitors, Revenue, Financials, Employees, Key People, Subsidiaries | Craft.co. (n.d.). Retrieved June 5, 2021, from https://craft.co/kraken

Kriwoluzky, A., & Kim, C. H. (2020). Public or Private? The Future of Money. *AA. VV.(a Cura Di), The Future of Money, European Parliament's Committee on Economic and Monetary Affairs, Https://Www. Europarl.*

Europa. Eu/RegData/Etudes/STUD/2019/642364/IPOL_STU (2019) 642364_ EN. Pdf, Ultimo Accesso, *20*.

Li, C., & Shen, Y. (2021). The potential impacts and risks of global stablecoins. *China Economic Journal*, 1–13. https://doi.org/10.1080/17538963.2021.1872167

Lipton, A., & Levi, S. (2018, May 26). An Introduction to Smart Contracts and Their Potential and Inherent Limitations. *The Harvard Law School Forum on Corporate Governance*. https://corpgov.law.harvard.edu/2018/05/26/an-introduction-to-smart-contracts-and-their-potential-and-inherent-limitations/

Myklebust, T. (2011). *Innføring i finansmarkedsrett*. Fagbokforlaget.

Natarajan, H., Krause, S., & Gradstein, H. (2017). *Distributed ledger technology and blockchain*. World Bank.

New European legislation for crypto-assets. (2020, December 1). *HKV Law Firm*. https://www.hkv.sk/en/new-european-legislation-for-crypto-assets/

Norges Bank. (n.d.). *Det norske finansielle system—En oversikt*. Retrieved May 16, 2021, from https://www.norges-bank.no/contentassets/d8039ff2c8a9438c9400132c46c241e1/dnfs_2018.pdf

NOWPayments.io. (2020, December 29). *Who accepts Tether payments? Find companies to pay in USDT!* https://nowpayments.io/blog/businesses-accepting-tether

Paulsen, R. (2020, August 25). NBX lar kundene tjene cashpoints for å trade. *Kryptografen.no*. https://kryptografen.no/2020/08/25/nbx-lar-kundene-tjene-cashpoints-for-a-trade/

Poskart, R. (2020). Cryptocurrencies in the Light of Money Definitions. *European*

Research Studies Journal, *23*(Special 2), 905–915.

Pris, diagrammer, markedsverdi og andre mål for Monero (XMR). (n.d.). CoinMarketCap. Retrieved June 4, 2021, from https://coinmarketcap.com/no/currencies/monero/

Regjeringen. (2014). *Slik blir EØS-regelverk til*. regjeringen.no. https://www.regjeringen.no/no/tema/europapolitikk/eos1/eos-regelverk/id686837/

Russo, J. (2019, June 11). *Epic Games has allegedly failed to pay prize money for major tournaments*. Fortnite Tracker. http://fortnitetracker.com/article/443/epic-games-has-allegedly-failed-to-pay-prize

Sangit, V. (2020, April 17). Video Games is trending method of Money Laundering. *RegtechTimes*. https://www.regtechtimes.com/video-games-money-laundering/

Schär, F. (2021). Decentralized finance: On blockchain-and smart contract-based financial markets. *FRB of St. Louis Review*.

Sokolov, M. (2020). Are Libra, Tether, MakerDAO and Paxos Issuing E-Money? Analysis of 9 Stablecoin Types Under the EU and UK E-Money Frameworks. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3746250

Staff, C. (2021, April 6). *What Is DAI Coin? An Algorithmic Stablecoin*. Gemini. https://www.gemini.com/cryptopedia/dai-stablecoin-what-is-dai-token, https://www.gemini.com/cryptopedia/dai-stablecoin-what-is-dai-token

Stanford Online. (n.d.). *What Does the Future Hold for Cryptocurrency? | Stanford Online*. Retrieved June 29, 2021, from https://online.stanford.edu/future-for-cryptocurrency

Statista. (2021, May 21). *Facebook MAU worldwide 2020*. Statista. https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/

Stein, L. (2021, January 22). *These Countries Banned Cryptocurrencies, Here's Why*. https://finance.yahoo.com/news/countries-banned-cryptocurrencies-why-210500613.html

TetherWhitePaper.pdf. (n.d.). Retrieved May 30, 2021, from https://tether.to/wp-content/uploads/2016/06/TetherWhitePaper.pdf

The Associated Press Staff. (2021, June 6). *El Salvador president wants Bitcoin as legal tender*. CTVNews. https://www.ctvnews.ca/sci-tech/el-salvador-president-wants-bitcoin-as-legal-tender-1.5458374

The European Commission. (2020a). *COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets and amending Directive (EU) 2019/1937* (SWD/2020/380 final). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0380&from=EN

The European Commission. (2020b). *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on a Digital Finance Strategy for the EU* (COM/2020/591 final). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0591&from=EN

Travala. (n.d.). *About us*. Travala.Com. Retrieved April 23, 2021, from https://www.travala.com/about-us, http://www.travala.com/about-us

Tukun, E. (2021, May 21). *Nå vil EU regulere markedene for crypto assets*.

https://blogg.pwc.no/finansbloggen/naa-vil-eu-regulere-markedene-for-crypto-assets

Types of EU law. (n.d.). [Text]. European Commission - European Commission. Retrieved April 7, 2021, from https://ec.europa.eu/info/law/law-making-process/types-eu-law_en

Werner Vermaak. (2020). *MiCA: A Guide to the EU's Proposed Markets in Crypto-Assets Regulation—Sygna*. https://www.sygna.io/blog/what-is-mica-markets-in-crypto-assets-eu-regulation-guide/

Where is Binance headquarters? See Changpeng Zhao's response. (n.d.). Retrieved June 5, 2021, from https://www.cryptopolitan.com/where-is-binance-headquarters-zhaos-response/

White Paper | Diem Association. (n.d.). Retrieved May 15, 2021, from https://www.diem.com/en-us/white-paper/

Wijaya, D. A. (n.d.). *Anonymity in Cryptocurrency* [PhD Thesis]. Monash University.

XReg Consulting Ltd. (2020). *MiCA explained: The EU crypto-asset law*. https://uploads-ssl.webflow.com/5df7642ffbd9264804671001/5f7b3b3116ebd4add01abd32_XReg%20EU%20MiCA%20explained%20-issue%201-1.1a%20-FINAL.pdf