

**Exploring Cryptocurrency Legislation within the Framework of International Law. Is
cryptocurrency out of reach of Law?**

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Master's Thesis

Advanced International Law and Technology

University of Turku

Faculty of Law

2024

Abstract

University of Turku

Faculty of Law

Juho Sotarauta; Exploring Cryptocurrency Legislation within the Framework of International Law. Is cryptocurrency out of reach of Law?

Master's thesis,

International Law

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Cryptocurrencies, a digital form of currency has emerged as a highly troublesome, at least when thinking about state legislation and legislation regarding international law, force in the global landscape regarding finance. Cryptocurrency is decentralized by nature and borderless transactions enabled by it challenge traditional legal frameworks, particularly within the context of international law. This master thesis investigates the complexities surrounding the regulation of cryptocurrencies from an international law perspective, analysing the challenges and opportunities inherent in this evolving field.

This thesis examines the evolving landscape of cryptocurrency legislation within the context of international law, highlighting the significant legal challenges and opportunities that arise from the decentralized and borderless nature of digital currencies. Cryptocurrencies, spearheaded by Bitcoin, have disrupted traditional financial systems and regulatory frameworks, necessitating a reevaluation of existing legislation and the development of new regulatory approaches. This study looks into the characteristics of cryptocurrencies, such as decentralization, immutability, and transparency, and evaluates how these traits challenge traditional legal frameworks and also investigates the notion of Code is Law and Lex Cryptographia and “alegality” of crypto. Research is mainly approached from *de lege lata* viewpoint.

The research analyses the role of international legal bodies, including the Financial Action Task Force (FATF) and the International Monetary Fund (IMF), in shaping global cryptocurrency regulation. It also explores jurisdictional ambiguities, the diversity of regulatory approaches, and the implications of technological advancements on legal structures. Emphasis is placed on the necessity for international cooperation and harmonization to address regulatory arbitrage and ensure a stable global financial environment.

Through a comparative analysis of regulatory frameworks in various jurisdictions and application of private international law relating to matter of cryptocurrencies, jurisdiction including the United States and the European Union, this thesis identifies emerging trends and best practices that could inform a cohesive international regulatory strategy. The study concludes by proposing pathways for effective regulation that balance the need for innovation with the imperatives of security, stability, and investor protection. This thesis aims to contribute to the scholarly discourse on financial regulation by offering insights into the complex interplay between law, technology, and international relations in the era of digital currencies. This work recommends that policymakers prioritize the development of technology-aware regulations that reflect the unique attributes of cryptocurrencies. Furthermore, it is important for international bodies and national governments to work collaboratively to establish consistent regulatory standards and enforcement mechanisms. While the path to a good international cryptocurrency regulation is challenging, it also offers great opportunities for legal innovation and international cooperation

Tiivistelmä

Turun Yliopisto

Oikeustieteellinen tiedekunta

Juho Sotarauta; Exploring Cryptocurrency Legislation within the Framework of International Law. Is cryptocurrency out of reach of Law?

Pro gradu -tutkielma

Kansainvälinen oikeus

Turun yliopiston laatujärjestelmän mukaisesti tämän julkaisun alkuperäisyys on tarkastettu Turnitin Originality Check -järjestelmällä.

Kryptovaluutat, digitaalinen valuutan muoto, on noussut erittäin hankalaksi, ainakin valtion lainsäädäntöä ja kansainvälistä oikeutta koskevaa lainsäädäntöä ajatellen, voimavaraksi globaalissa maisemassa rahoituksen suhteen. Kryptovaluutat ovat luonteeltaan hajautettuja ja tämän mahdollistamat valtioiden rajat ylittävät transaktiot haastavat perinteiset oikeudelliset puitteet erityisesti kansainvälisen oikeuden puitteissa. Tämä tutkimus tutkii kryptovaluuttojen sääntelyyn liittyviä monimutkaisia tekijöitä kansainvälisen oikeuden näkökulmasta ja analysoi tämän kehittyvän alan haasteita ja mahdollisuuksia liittyen kryptovaluuttoihin.

Tässä työssä tarkastellaan kryptovaluuttalainsäädännön kehitystä kansainvälisen oikeuden kontekstissa ja tuodaan esiin merkittäviä oikeudellisia haasteita ja mahdollisuuksia, jotka syntyvät digitaalisten valuuttojen hajautetusta ja valtioiden rajat ylittävästä luonteesta johtuen. Bitcoinin johtamat kryptovaluutat ovat häirinneet perinteisiä rahoitusjärjestelmiä ja sääntelypuitteita, mikä on edellyttänyt nykyisen lainsäädännön uudelleenarviointia ja uusien sääntelymenetelmien kehittämistä. Tässä tutkimuksessa tarkastellaan kryptovaluuttojen ominaisuuksia, kuten hajauttamista, muuttumattomuutta ja läpinäkyvyyttä, ja arvioidaan, kuinka nämä ominaisuudet haastavat perinteiset oikeudelliset puitteet, ja tutkii myös käsitettä ”Code is Law” tai ”koodi on laki” ja Lex Cryptographia. Tutkimusta lähestytään pääasiassa de lege lata -näkökulmasta.

Tutkimuksessa analysoidaan kansainvälisten oikeuselinten, mukaan lukien Financial Action Task Force (FATF) ja Kansainvälinen valuuttarahasto (IMF) roolia globaalien kryptovaluuttasääntelyn muokkaamisessa. Se tutkii myös lainkäyttövallan epäselvyyksiä, sääntelymenetelmien monimuotoisuutta ja teknologisen kehityksen vaikutuksia oikeudellisiin rakenteisiin. Painopiste on kansainvälisen yhteistyön ja harmonisoinnin välttämättömyydellä sääntelyn katvealueiden ratkaisemiseksi ja vakaan globaalien rahoitusympäristön varmistamiseksi.

Vertailevan analyysin avulla eri lainkäyttöalueiden sääntelypuitteita ja kryptovaluuttoja koskevan kansainvälisen yksityisoikeuden soveltamista, lainkäyttöalueita mukaan lukien Yhdysvallat ja Euroopan unioni, tämä tutkimus tunnistaa nousevia trendejä ja parhaita käytäntöjä, jotka voivat toimia yhtenäisen kansainvälisen sääntelystrategian perustana. Tutkimus päättyy ehdottamalla tehokkaan sääntelyn polkuja, jotka tasapainottavat innovaatioiden tarpeen turvallisuuden, vakauden ja sijoittajansuojan tarpeiden kanssa. Tämän tutkimuksen tavoitteena on edistää rahoitusalan sääntelyä koskevaa tieteellistä diskurssia tarjoamalla näkemyksiä lain, teknologian ja kansainvälisten suhteiden monimutkaisesta vuorovaikutuksesta digitaalisten valuuttojen aikakaudella. Tämä tutkimus suosittelee, että päättäjät asettavat etusijalle teknologiatietoisten säännösten kehittämisen, jotka heijastavat kryptovaluuttojen ainutlaatuisia ominaisuuksia. Lisäksi on tärkeää, että kansainväliset elimet ja kansalliset hallitukset tekevät yhteistyötä yhtenäisten sääntelystandardien ja täytäntöönpanomekanismien luomiseksi. Vaikka tie hyvään kansainväliseen kryptovaluuttasääntelyyn on haastava, se tarjoaa myös suuria mahdollisuuksia oikeudelliseen innovaatioon ja kansainväliseen yhteistyöhön.

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SEC v. W. J. Howey Co., 328 U.S. 293 (1946)

Abbreviations:

Financial Action Task Force (FATF)

International Monetary Fund (IMF)

decentralized finance (DeFi)

Initial coin offerings (ICOs)

anti-money laundering (AML)

Financial Stability Board (FSB)

Countering the Financing of Terrorism (CFT)

Securities Exchange Commission SEC

International Organization for Standardization (ISO)

International Chamber of Commerce (ICC)

The EU Markets in Crypto-assets Act, (MICA)

Commodity Futures Trading Commission (CFTC)

Virtual asset service providers (VASPs)

Basel Committee on Banking Supervision (BCBS)

Crypto-Assets Task Force of the European Central Bank (ECB)

Financial Services and Markets Act (FSMA)

UK Financial Conduct Authority (FCA)

Non-fungible tokens (NFTs)

Private international law (PIL)

Public key infrastructure (PKI)

Counter-Terrorist Financing (CTF)

Theory and methodology

Method used in this paper is legal dogmatic method applying both the *de lege lata* - which means examining the law from the perspective of the law in force – and *de lege ferenda*, search possible solutions for the future regulatory governance and search the proper balance between law and technology, but also public and private governance in accordance with the findings of this paper. Method used is mainly *positivism*, summarizes a range of theories that focus upon describing the law as it is, backed up by effective sanctions, with reference to formal criteria, independently of moral or ethical considerations¹. Approach is Comparative with main question at hand being how cryptocurrencies are regulated in international and somewhat national level. This paper does not necessarily compare how does national legislation complies with international rules but how are the framework created by who and how it impacts and shapes international framework. Does different actors and nations bring unity or is the approach splintered between national interests.

International law and international relations. Interdisciplinary Research in International Law (IR/IL) is a deliberate approach aiming to integrate the insights of international relations theory into the framework of international law, focusing on the behaviour of various international actors. The latest wave of IR/IL scholarship endeavours to incorporate recent advancements and trends in international relations theory, a field still in its infancy. This scholarship yields diverse outcomes, including examinations of compliance, assessments of the stability and efficacy of international institutions, and explorations of how models of state behaviour influence the substance and scope of international regulations.²

Law and economics. In its domestic context, law and economics has emerged as a highly influential and enduring framework. It comprises both a descriptive aspect, which aims to elucidate existing legal principles by portraying them as the most economically efficient outcomes, and a normative aspect, which assesses proposed alterations to the law and advocates for those that optimize wealth. Game theory and public choice theory are frequently incorporated within the domain of law and economics. In the international sphere, this approach has started to engage with matters pertaining to commerce and the environment.³

¹ Annie-Marie Slaughter & Steven R. Ratner, Appraising the Methods of International Law: A Prospectus for Readers, 93 AM. J. INT'L L. 291 (1999). THE AMERICAN JOURNAL OF INTERNATIONAL LAW THE METHOD IS THE MESSAGE

² Annie-Marie Slaughter & Steven R. Ratner, Appraising the Methods of International Law: A Prospectus for Readers, 93 AM. J. INT'L L. 291 (1999). THE AMERICAN JOURNAL OF INTERNATIONAL LAW THE METHOD IS THE MESSAGE

³ Annie-Marie Slaughter & Steven R. Ratner, Appraising the Methods of International Law: A Prospectus for Readers, 93 AM. J. INT'L L. 291 (1999). THE AMERICAN JOURNAL OF INTERNATIONAL LAW THE METHOD IS THE MESSAGE

Research questions and theory comes down to: How do the decentralized and borderless characteristics of cryptocurrencies challenge traditional legal frameworks within the context of international law and is cryptocurrencies outside of the law as stipulated by some via the phrase “code is law”? What are the opportunities and challenges for effective cryptocurrency regulation within the framework of international law, and what recommendations can be made to enhance legislation.

1. Introduction

The rise of cryptocurrencies has reshaped the landscape of global finance, challenging conventional understandings of currency and financial intermediation. Satoshi Nakamoto's seminal paper, "Bitcoin: A Peer-to-Peer Electronic Cash System" (2008), introduced Bitcoin as the pioneering cryptocurrency, marking the beginning of a great transformation in the financial realm. This transformation has been fuelled by advancements in blockchain technology.⁴ The emergence of Bitcoin paved way for varied forms of cryptocurrencies each having its peculiar features that could not have been initialized had it not been introduced. For example, Ethereum which was launched by Vitalik Buterin in 2015 changed how people operate or do business with digital currency on blockchain by allowing for smart contracts to be developed within it- such an innovation led into creation DeFi protocols, which offer a wide range of financial services without traditional intermediaries, such as lending, borrowing, and asset trading.

The impact of cryptocurrencies on global finance has been quite large, transcending geographical boundaries and disrupting traditional financial systems. Cryptocurrencies facilitate borderless transactions, enabling individuals and businesses to transfer value seamlessly across the globe. Moreover, cryptocurrencies have one could say, democratized access to financial services, particularly in regions with limited banking infrastructure, by providing alternative means of storing and transferring wealth. Cryptocurrencies have also stimulated much innovation in the financial sector, fostering development of business models and investment opportunities. Initial coin offerings (ICOs) and tokenization have allowed startups and projects to raise capital through digital asset offerings, transforming the way capital is raised and allocated in the digital economy⁵. However, alongside the opportunities presented by cryptocurrencies, significant challenges remain, especially in the realm of regulation and investor protection. The decentralized and pseudonymous nature of cryptocurrencies has raised concerns about market integrity, investor fraud, and financial stability. Moreover, the anonymity afforded by cryptocurrencies has made them attractive to illicit actors engaged in money laundering, terrorist financing, and many other illicit activities⁶.

⁴ Bitcoin: A Peer-to-Peer Electronic Cash System, Satoshi Nakamoto, 2008

⁵ Bonneau et al., 2015, SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies

⁶ FATF Annual Report 2019-2020

It is important to understand the regulation of cryptocurrency in the context of international law as cryptocurrencies are global and have implications for the global financial security. they cross borders Digital currencies thus make jurisdictions irrelevant in terms of transacting business exchanges. This makes it necessary for regulation policies to be harmonized to avoid possible regulatory arbitrage situations in any eventuality while at the same time ensuring effective control over every transaction made using these coins⁷. The need for a common ground on cryptocurrency regulation in a world where there are no clear boundaries and blockchain technology's decentralized nature is widely accepted today by global community. This way, even though an individual country may ban or prohibit their citizens from dealing with bitcoins or other digital assets, such restrictions will not affect transfers between persons located across other countries.⁸Satoshi Nakamoto's Bitcoin whitepaper in 2008 introduced the decentralized ledger system, revolutionizing financial transactions and challenging conventional regulatory paradigms.

Determining the right jurisdiction for the regulation of cryptocurrency transactions becomes difficult as cryptocurrencies do not have physical presence neither are they governed by any single entity. Consequently, there is regulatory arbitrage as some entities select countries with favourable regulations or low monitoring levels⁹. The need for international cooperation becomes important to address regulatory gaps, to effectively combat financial crimes such as money laundering and terrorist financing and ensure market integrity. Collaborative efforts among policymakers, regulators, and law enforcement agencies are vital to harmonize regulatory approaches, mitigate systemic risks, and promote investor protection.¹⁰ It is important that regulatory agencies work together to tackle the challenges presented by globalisation in the crypto ecosystem, as seen in the guidance on virtual assets by Financial Action Task Force (FATF) and the research on digital currencies by International Monetary Fund (IMF).¹¹. For policymakers and regulators to develop regulatory frameworks capable of addressing the dynamic nature of cryptocurrencies, they need to understand the implications of global interconnectedness and ensure that such frameworks are agile and adaptive while upholding the principles of transparency, integrity, and financial stability.

It is most important to deal with the possibility that harmful factors may take place due to cryptocurrencies, in the regulatory environment which is seen as serious because these virtual assets change the financial paradigms traditionalists adore and expose new weaknesses. Cryptocurrencies are challenging to regulate because they combine local operations with global operations while ensuring

⁷ Financial Stability Board. "Crypto-asset markets: Potential channels for future financial stability implications." Financial Stability Board, 2018.

⁸ Nakamoto, 2008

⁹ Bonneau et al., 2015, SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies

¹⁰ Financial Action Task Force, 2019

¹¹ International Monetary Fund, 2019

no power is concentrated within any area. In order to secure the economy and customers' savings, it is very crucial to comprehend and address these dangers before they affect us all. The world's policy makers have outlined various pathways through which digital currencies could bring down the finance system showing that we have entered digital age' characterized by globalization and new technologies. These include price swings; lack of security measures¹².

Market disruptions erode investor confidence and market price instability leads from speculative trading, resulting in market volatility, thereby propagating systemic risk contagion. One stop solution for preventing the spread of systemic risks includes a blend of methods and techniques implemented with a high level of completeness in relation to market conditions. This system will involve monitoring all cryptocurrency transactions made within it through enhanced market surveillance mechanisms which can also be used for detecting manipulation schemes among other things while ensuring that there is transparency of that particular market. It is important that we use risk-oriented approach towards regulating digital money since different currencies are associated with different issues therefore those responsible should developed responsive rules for particular virtual coin risks thus achieving balance between them¹³.

Preventing financial crime relating to cryptocurrencies represents an important challenge for regulatory authorities and law enforcement agencies worldwide. The decentralized and pseudonymous nature of cryptocurrencies creates an environment that is ripe for illicit activities, including money laundering, terrorist financing, fraud, and other financial crimes. Effectively addressing these risks demands a multifaceted approach that integrates regulatory oversight, technological solutions, and international cooperation. The Financial Action Task Force (FATF) has underscored the importance of implementing a risk-based approach to combatting money laundering and terrorist financing in the context of virtual assets and cryptocurrencies¹⁴. Regulatory frameworks must be adaptable and responsive to the evolving nature of financial crime in the digital era. Enhanced customer due diligence requirements, transaction monitoring mechanisms, and suspicious activity reporting protocols are essential components of an effective anti-money laundering (AML) regime.

To help improve the integrity of cryptocurrencies exchanges as well as other virtual asset service providers must play a crucial role in ensuring that we do not witness any financial crimes by putting in place strong KYC (Know Your Customer) and AML (Anti-Money Laundering) procedures. They can reduce risks associated with illicit transfer of funds therefore making sure that individuals and companies involved in this business operate free from fraud. Blockchain analytics tools among other

¹² Financial Stability Board, 2018

¹³ FATF Annual Report 2020-2021

¹⁴ Financial Action Task Force (FATF). "Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers." FATF, 2019.

technological advancements have come up with efficient methods used for monitoring transactions in digital currencies hence detecting financial crime activities¹⁵.

Ensuring market confidence in cryptocurrencies is important for building up trust among investors, attracting more participants as well as maintaining the survival of digital asset markets in the long-term. Cryptocurrency markets are very unstable with no set rules and regulations and there is a lot of worry about security and investor protection. Dealing with these crises and developing trust will need a wholistic approach which includes regulatory clarity, transparency, investor education, as well as market integrity measures. Certainty of the Financial Markets through regulation is key in Improving Market Confidence among the players and Clear and consistent regulatory frameworks promote certainties and uncertainties in the market are effectively managed.¹⁶.

Transparency is another cornerstone of promoting market confidence in cryptocurrencies. Enhanced disclosure requirements, fair trading practices, and accurate reporting mechanisms help investors make informed decisions and assess the risks associated with cryptocurrency investments. Transparent market data and pricing information contribute to price discovery and market efficiency, bolstering investor confidence and liquidity¹⁷. Educational resources, outreach programs, and awareness campaigns help raise awareness about the risks and opportunities associated with cryptocurrencies, encourage responsible investing practices, and promote financial literacy among market participants¹⁸. Market integrity measures, like surveillance mechanisms, enforcement actions, and anti-fraud initiatives, are important for maintaining fair efficient markets. Proactive monitoring of market manipulation, insider trading, and fraudulent activities helps to preserve investor confidence and deter illicit behaviour. Strong enforcement actions against bad actors sends a clear message that regulatory authorities are committed to upholding market integrity and protecting investor interests¹⁹.

Cryptocurrency users are vulnerable to many different risks, including hacking, theft, and scams. International regulations can help protect consumer interests by establishing minimum standards for security, transparency, and disclosure in cryptocurrency transactions²⁰. Consumer security is one of the most important issues that build trust and confidence leading to sustainable growth in the digital asset market. Because cryptocurrencies are dispersed and largely hidden, there are risks faced by consumers that differ from the risks faced by other participants.

¹⁵ European Securities and Markets Authority, 2019

¹⁶ European Securities and Markets Authority, 2019

¹⁷ Bonneau et al., 2015

¹⁸ European Central Bank, 2012

¹⁹ Financial Stability Board, 2018

²⁰ BIS Committee on Payments and Market Infrastructures, 2020

Regulatory oversight has an important role in protecting consumer interests by establishing clear standards, enforcing compliance, and holding market participants accountable. Regulatory frameworks which address consumer protection concerns like anti-fraud measures, disclosure requirements, and custody safeguards, help mitigate risks and enhance consumer confidence in cryptocurrency²¹. Consumer education initiatives are a great tool for empowering individuals with the knowledge and skills needed to make informed decisions about investments²². Cryptocurrency exchanges and wallet providers must implement working and good security practices to protect against hacking, theft, and unauthorized access. Additionally, ongoing monitoring and risk assessment help identify emerging threats and vulnerabilities, enabling proactive mitigation measures²³. Dispute resolution mechanisms play a vital role in addressing consumer grievances and resolving disputes in a fair, efficient, and transparent manner. Access to effective dispute resolution mechanisms, such as mediation, arbitration, and ombudsman services, helps protect consumer rights, uphold market integrity, and foster trust in the cryptocurrency ecosystem.²⁴

1.1 Characteristics of Cryptocurrencies

Traditional currencies are different from cryptocurrencies due to some basic features shown by the latter when compared to the other traditional currencies or financial assets. A crucial characteristic of this is decentralization, which ensures that all transactions are conducted without any intermediaries such as banks or governments acting as facilitators. Thus, the creation or making use of cryptocurrencies is based on Satoshi Nakamoto's "Bitcoin: A Peer-to-Peer Electronic Cash System" (2008) that introduced decentralization idea in design of cryptocurrency.²⁵ Immutability is yet another equally significant attribute. It means that transactions saved to a blockchain have no chance of being altered or deleted once they have been authorized. This lastingness helps maintain transaction logs intact and lowers opportunities for fraud. Melanie Swan explains in her book "Blockchain: Blueprint for a New Economy" (2015), that the transparency and trust in cryptocurrency transactions are boosted by immutability.²⁶

Transactions conducted using cryptocurrencies are transparent and publicly verifiable on the blockchain. Anyone can access transaction history and account balances, promoting accountability and trust in the system. Andreas M. Antonopoulos, in his book "Mastering Bitcoin: Unlocking Digital Cryptocurrencies"²⁷, emphasizes the importance of transparency in cryptocurrency transactions²⁸.

²¹ European Parliament. "Cryptoassets: Legal and Monetary Aspects." European Parliament, 2018

²² Bonneau, Joseph, et al. "SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies." IEEE Symposium on Security and Privacy, 2015.

²³ Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." Bitcoin.org, 2008.

²⁴ European Securities and Markets Authority. "Advice: Initial Coin Offerings and Crypto-Assets." ESMA, 2019.

²⁵ Satoshi Nakamoto. "Bitcoin: A Peer-to-Peer Electronic Cash System." Bitcoin.org, 2008

²⁶ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015

²⁷ Antonopoulos, Andreas M. "Mastering Bitcoin: Unlocking Digital Cryptocurrencies." O'Reilly Media, 2014

²⁸ Antonopoulos, Andreas M. "Mastering Bitcoin: Unlocking Digital Cryptocurrencies." O'Reilly Media, 2014

Transactions are visible, but no one knows who is making them. This is to say that users operate as alphanumeric codes rather than human names which offers some privacy even though things remain above board. Such levels of anonymity in payment processing make it possible not to reveal names publicly when on the same time authenticating them. Also, digital monies use mathematical formulas to safeguard transactions against hacking techniques thus safeguarding people's money from thefts or scams in cybernetics world. In addition, digital assets can only be claimed when their rightful owners disclose possession documents after being transferred electronically over long distances without any direct contact with them through encryptions based on public-private key systems where needed restricting access only to those persons who have obtained requisite information from lawful sources otherwise termed trustless systems according to Satoshi.

Blockchain technology is defined by the De Filippi as “a distributed, shared, encrypted database that serves as an irreversible and incorruptible public repository of information”²⁹. Distributed meaning that the database is distributed as it is not physically hosted in a certain location. Such data is transformed in to blocks when they reach a certain size, and they are chained together. This results into a transparent datastore that stores every action in it that is visible to all. Another core “characteristic of the system lies in the fact that information is entered by a wide variety of different users, when a user interacts with the data, the data must first be validated by one of the nodes” upheld by different users³⁰. Thereafter, in order to be permanently recorded on the database, majority of the other nodes “must confirm that the said validation occurred in accordance with clearly defined pre-agreed rules, that is in accordance with the blockchain protocol which establishes what data can be recorded (and what characteristics the data must have). This is referred to as a “consensus protocol” because the rules enable the various nodes to reach agreement as to which blocks should be added to the chain”³¹.

The initial blockchains linked to cryptocurrencies were designed as open-access platforms that allowed anyone to add new data, to download the complete database, and to verify new blocks.³² This system addresses the need for cash transactions in a "trustless environment"³³, where participants do not know or trust each other, eliminating the need for a centralized third-party intermediary. This gives rise to the slogans "in code we trust" or "in crypto we trust." These phrases suggest that in networks

²⁹ P. De Filippi and A. Wright, *Decentralized Blockchain Technology and the Rise of Lex Cryptographia*, 2015

³⁰ *European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2*, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

³¹ *European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2*, pp. 37-43

³² S. Nakamoto, *Bitcoin: A Peer-To Peer Electronic Cash System*

³³ *Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam, 2022*

like Bitcoin, where users are mutually unknown, each participant relies on the miners to adhere to the Bitcoin consensus protocol, thereby sustaining the system.³⁴

2. International Legal Framework

Cryptocurrency regulation in the international legal sphere is multifaceted and ever-changing because it includes different international actors and standards who try to stabilize the market and safeguard investments. There has been a call by Financial Stability Board (FSB) and International Monetary Fund (IMF) for consistent and comprehensive global standards on how to regulate crypto assets worldwide. Consumer protection in crypto markets is still an area requiring better regulation. Only one-third of the countries studied have implemented rules to protect consumers in the crypto market, highlighting a significant gap in regulatory frameworks³⁵.

The Atlantic Council³⁶ has been tracking the rapid changes in cryptocurrency regulation, noting that nearly three-quarters of the countries surveyed are revising their crypto regulatory frameworks. These changes are in response to the growing recognition of the crypto market's impact on the global financial system and the need to address various challenges, including legal and market conduct risks³⁷. Lastly, the Bank for International Settlements (BIS)³⁸ has examined how regulatory news affects cryptocurrency markets. They found that news related to stricter Anti-Money Laundering (AML) standards and regulation of crypto-related infrastructure often leads to negative market reactions.

There are diverse regulatory frameworks that have been designed by different nations to control cryptocurrencies coupled with other related ventures. The regulations are different in terms of the areas they govern and their mechanisms for doing this which incorporate taxation issues, anti-money laundering measures and safeguards against scams targeting investors. This for instance involves the United States where such frameworks have been established under the watch of bodies like SEC (Securities Exchange Commission) as well as CFTC (Commodity Futures Trading Commission); it applies just as much to Japan, Switzerland and Singapore among others.

Existing international agreements and organizations help in moulding the legal landscape although there's lack of a single global agreement dedicated to cryptocurrencies. For example, Financial Action Task Force (FATF) establishes global standards for Anti-Money Laundering (AML) and Countering the Financing of Terrorism (CFT) measures that numerous nations embed in their domestic laws³⁹.

³⁴ A. Walch, In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains, in P. Hacker et al. (eds.), *Regulating Blockchain. Techno-Social and Legal Challenges*, Oxford, OUP, 2019, 58 ss.

³⁵ <https://www.atlanticcouncil.org/blogs/econographics/three-challenges-in-cryptocurrency-regulation/>

³⁶ <https://www.atlanticcouncil.org>

³⁷ <https://www.atlanticcouncil.org>

³⁸ <https://www.bis.org/index.htm>

³⁹ FATF, Annual Report 2020

The enforcement of traditional legal frameworks faces challenges since cryptocurrencies operate beyond nations borders. International collaboration is therefore needed when it comes to regulating these assets as they easily transcend geographical boundaries⁴⁰.

The emergence of these common standards and best practices is gathering momentum as the cryptocurrency space transmutes. International organizations like the International Organization for Standardization (ISO) and the International Chamber of Commerce (ICC) are now looking into blockchain as well as digital assets standards that might be important for establishing an international legal framework in the long term. The EU Markets in Crypto-assets Act, commonly referred to as MiCA, was enacted in June 2023 and is set to be implemented progressively until December 2024. MiCA characterizes crypto assets as digital representations of values or rights that can be stored and transferred electronically using digital ledger technology (DLT).⁴¹ The regulation is integrated into a broader EU digital finance strategy, which includes a supplementary regulation for a DLT pilot regime. This regime sets up a framework to facilitate the trading and settlement of transactions that involve financial instruments in the form of crypto assets.⁴²

The effective culmination of the MiCA decree is in congruence with the European Commission's objective to boost the sector of electronic finance and strengthen the bloc's strategic self-sufficiency in monetary matters. This is consistent with the broader objectives of The Capital Markets Union (CMU) of the EU's action plan which is meant to deepen financial integration among its members ; MiCA specifically targets stablecoins which are a type of crypto-asset meant to maintain a constant value in comparison with official currencies such as The US dollar, Euro, British pound or Japanese Yen, or against an assortment of currencies and value. By reducing the fluctuations in prices, stablecoins act as an alternative mode of transaction especially in global transactions that is less volatile.

The new EU law is aimed at protecting buyers, investors and the entire financial sector from this uncertainty by integrating previously divergent regulatory guidelines to create a stable and predictable regulatory environment which will accommodate more crypto asset traders to issue towards operations

⁴⁰ FATF Annual Report 2019

⁴¹ The MiCA defines DLT as 'a type of technology that support the distributed recording of encrypted data'. Blockchain is a type of DLT made of chains of blocks, where each block contains a pool of transactions. The Bank for International Settlements specifies that DLT refers to the 'protocols and supporting infrastructure that allow computers in different locations to propose and validate transactions and update records in a synchronised way across a network'. (From Non-EU countries' regulations on crypto-assets and their potential implications for the EU)

⁴² The pilot regime follows the 'sandbox' approach that allows for temporary derogations from some specific requirements. Regulatory sandboxes are defined as 'concrete frameworks which, by providing a structured context for experimentation, enable where appropriate in a real-world environment the testing of innovative technologies, products, services or approaches – at the moment especially in the context of digitalisation – for a limited time and in a limited part of a sector or area under regulatory supervision ensuring that appropriate safeguards are in place'. The pilot regime was launched in March 2023. (From Non-EU countries' regulations on crypto-assets and their potential implications for the EU)

within the European Union as reflected herein at the legislative proposal on a framework for regulation of crypto assets in blockchains and distributed ledger technologies. According to MiCA regulations, the biggest number of companies involved in creating stablecoins will need legal establishment in European Union as legal entities to be able to carry out their activities. Among other requirements, such issuers are supposed to prepare a white paper on cryptocurrency asset which describes features and provides information about how it works leading to its approval by the regulatory body. Also, the ESMA report specifies that creators of Electronic Money Tokens have same duties in accordance with Article 2(1) from e-Money Directive 2009/110⁴³. Moreover, MiCA can distinguish between different asset-referenced tokens (ARTs) identifying ‘important’ ones that are supervised by the European Banking Authority (EBA), and all other ARTs. In relation to management of crypto-assets, MiCA has come up with more stringent regulations regarding how they should be managed although details on these regulations are not yet available because they are being developed by ESMA as well as EBA.⁴⁴

The Howey test, established in 1946 in the US as a legal criterion for a Supreme court decision⁴⁵, is what determines whether an instrument qualifies as an ‘investment contract’⁴⁶ and therefore also under the Securities Act of 1933. This test was first used in an Initial Coin Offering (ICO) 2017. The main regulator in this joint occurs to be the Securities and Exchange Commission (SEC). In 2019, however, the SEC introduced an analysis framework for ‘investment contracts’⁴⁷ among digital assets, which enables one to establish if a digital asset is exactly a security. There are mixed opinions when it comes to the classification of Ether as initially one would have thought it was a security and later, we saw that it was considered as a commodity. This is because some are of the opinion that there is no way Ethereum would have been classified as anything else but a security because that is exactly what it is. Despite this however, there have been some conflicting views on Ether by US regulators; currently, while it comes to Earn interest on such tokens, any potential gains from such investments are subject to some regulations which may cause SEC to intervene. Thus, whether digital assets are securities or not remains a controversial issue in the United States with ongoing arguments between regulators.

It has been the case that the lack of a unified federal crypto-assets regulatory framework resulted in far-reaching divergences in the regulatory approaches of individual states, thereby leading to fragmentation of the US crypto-assets market. This was the case in 2015 when New York introduced the concept of ‘BitLicense’ whose implementation required all cryptocurrency exchanges operating in

⁴³ 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

⁴⁴ The regulatory technical standards will be designed by EBA and ESMA and implemented with implementing acts.

⁴⁵ SEC v. W.J. Howey Co., 328 U.S. 293 (1946) (“Howey”).

⁴⁶ Non-EU countries' regulations on crypto-assets and their potential implications for the EU, 2023

⁴⁷ <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>

New York to submit extensive operational information to the New York State Department of Financial Services and enforce 'know-your-customer' norms as measures against money laundering. This rule prompted numerous firms exiting the state due to onerous compliance costs and decreased levels of anonymity, both of which were perceived as disincentives for start-ups working on cryptos.

Wyoming, on the other hand, has strategically placed itself as a hospitable state for crypto activities by giving lawsuits that favour growth of bitcoin-related industries through acknowledging "DAOs" as LLCs and permitting bucks to use blockchain services. Furthermore, numerous states' policy sandboxes have been rolled out to enable licensed corporations test crypto-currency enterprises under relaxed bylaw within an individual portfolio. In this context, however, legal approaches taken by individual states are expected to be highly fragmented.⁴⁸

The March 2022 Executive Order issued by President Biden on Ensuring Responsible Development of Digital Assets⁴⁹ indicated that the Biden administration was prioritizing the regulation of crypto assets. The order outlined policy goals and initiated several inter-agency studies on topics such as the promotion of financial inclusion through digital assets, the potential of a central bank digital currency, and the implications for cybersecurity and anti-money laundering related to digital assets. Since the order, key milestones in terms of ensuring money stability and protecting investors have been set by the White House. Moreover, the administration intends to enlarge regulatory mandate and avoid misunderstanding of customers' stakes used by cryptocurrency exchanges, take into account the environmental side effects of certain crypto-currencies energy consumption events and this was after a lot of crypto related theft had occurred in a short time period, increase cybersecurity measures.

It has been difficult to pass comprehensive crypto-asset laws in Congress. According to the US Treasury, stablecoins represent a class of payment mechanisms that can be improved but require proper regulation. In September 2022, a bipartisan concept paper recommended banning the issuance of tokens without prior approval by an insured depository institution's subsidiary or a licensed non-bank entity, requiring such issuers to keep reserve assets including short-term government bills.

The Lummis-Gillibrand Responsible Financial Innovation Act⁵⁰ is another non-partisan bill which was presented in 2022 at the US Senate. The aim of this bill was to take off control over digital assets especially stablecoins from the Securities and Exchange Commission (SEC) to the Commodity Futures Trading Commission (CFTC) by changing the 1936 Commodity Exchange Act. As a result, there would be a better legal position for digital assets and special regulations would be enforced towards stablecoin creators although this was addressed in a minor way and gave the states freedom

⁴⁸ Non-EU countries' regulations on crypto-assets and their potential implications for the EU, 2023

⁴⁹ <https://www.whitehouse.gov/briefing-room/presidential-actions/2022/03/09/executive-order-on-ensuring-responsible-development-of-digital-assets/>

⁵⁰ <https://www.congress.gov/bill/117th-congress/senate-bill/4356/text>

like they would create regulatory sandboxes and be less strict. In June 2023, a draft bill from Republican members of the House of Representatives proposed clarifying the regulatory responsibilities between the SEC and CFTC, using the Howey test as a basis to ensure that highly decentralized crypto assets are regulated under clear guidelines. This legislative activity reflects ongoing efforts to establish a more defined and effective regulatory framework for digital assets in the U.S.⁵¹

2.1 Institutions shaping the landscape

Financial Stability Board (FSB) is a body of the Central Banks and financial supervisors which monitors and assesses the risk to financial stability. FSB monitors and assesses risks of crypto assets⁵². Other institution is the International Monetary Fund (IMF), which is an international organization that promotes international monetary cooperation and financial stability.⁵³ The Financial Action Task Force⁵⁴ Policies are international regulations to prevent money laundering as well as cutting of funds that aid terrorists. Countries are given a direction on how they can come with rules in their systems that are helpful in fighting against money laundering by terrorists using the above recommendations. These principles are basically 40 comprising of different things like legislations legal framework, operational measures, regulations for financial institutions and others dealing with non-financial businesses. FATF has guidelines that are issued to interpret and make clear how these principles can be applied.

One of the key areas where the FATF has provided guidance⁵⁵ relevant to cryptocurrency regulation is in the realm of virtual assets and virtual asset service providers (VASPs). The FATF issued guidance on virtual assets and VASPs in 2019, which requires member countries to regulate cryptocurrency-related activities and ensure compliance with AML/CFT measures. This manual is designed to cover the dangers linked to cryptocurrencies, which may involve using them in acts of terrorism financing or money laundering. In addition, FATF conducts regular assessments of how its direction has been carried out in other states through combined inspections and examinations on the AML/CFT schemes within a member nation. A state that fails to adopt the recommendations of FATF may incur several penalties including pariah status within FATF's AML/CFT-risked areas having serious economic as

⁵¹ Non-EU countries' regulations on crypto-assets and their potential implications for the EU, 2023

⁵² Comparative Analysis of Regulatory Approach and Management Practice for Digital Crypto-Currency and the Role of IFIs in Developing Global Regulations, Junaid Butt, Journal of Accounting and Management, ISSN 2284-9459, Jam Vol 13. NO 3. 2023

⁵³ Comparative Analysis of Regulatory Approach and Management Practice for Digital Crypto-Currency and the Role of IFIs in Developing Global Regulations, Junaid Butt, Journal of Accounting and Management, ISSN 2284-9459, Jam Vol 13. NO 3. 2023

⁵⁴ Financial Action Task Force (FATF). "International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation." FATF, 2012

⁵⁵ Financial Action Task Force (FATF). "Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers." FATF, 2019.

well as reputational repercussions. The Basel Committee on Banking Supervision (BCBS) provides guidance on the prudential regulation and supervision of banks, aiming to enhance the stability and integrity of the global banking system. In response to the emergence of cryptocurrencies and their potential implications for banks and financial institutions, the BCBS has issued guidance on the prudential treatment of crypto assets.⁵⁶

The BCBS's guidance outlines principles for bank treatment of exposure to crypto-assets and risks associated with this. This guidance helps banks comprehend and control crypto-assets related risks using their risk management models. It highlights that in risk management practices robustness is key due diligence, risk assessment and adequacy of capital. Besides, unique features like volatility, challenges in terms of operation and safety as well as potential usage in criminal activities such as financing terrorism are highlighted in BCBS's guidance on crypto assets. It underscores the need for banks to assess and mitigate these risks effectively, taking into account factors such as the nature of the crypto assets, the legal and regulatory environment, and the quality of the custodial services used. In addition, prudence in valuing and applying conservative capital charges to account for risk naturally occurring with crypto assets. BCBS's guidance aims to promote risk management practices that are sound while at the same time strengthening banks' capacity to withstand losses that arise from their crypto-asset related exposures. It is meant to provide extra direction on how they should deal with these new types of assets besides other regulatory frameworks in place.⁵⁷

2.2 Domestic financial systems

As cryptocurrencies are borderless in nature regulations vary across different countries greatly especially regarding anti money laundering (AML) and counter-terrorism financing (CFT), protecting consumers and taxation. Many countries have implemented variety of different rules and regulations for crypto currencies. The regulatory landscape in the United States is marked by a multifaceted approach encompassing diverse regulatory bodies and different legal interpretations. The U.S. Securities and Exchange Commission (SEC) is active in the cryptocurrency space at the federal level. The SEC perceives a lot of cryptocurrencies, mainly those that result from Initial Coin Offerings (ICOs), as securities. Therefore, they fall under the broad regulatory framework aimed at protecting investors, as well as guaranteeing the integrity of the market and improved capitalization. The SEC affected its approach most prominently in the crackdown on several ICOs for violation of the federal laws on securities.⁵⁸ On the other hand, the Commodity Futures Trading Commission (CFTC) treats Bitcoin and other significant digital currencies as commodities hence subjecting them to alternative regulatory guidelines. This differentiation in categorization by these two federal agencies underlines

⁵⁶ Basel Committee on Banking Supervision (BCBS). "Prudential Treatment of Crypto-assets." BCBS, 2019

⁵⁷ Basel Committee on Banking Supervision (BCBS). "Prudential Treatment of Crypto-assets." BCBS, 2019

⁵⁸ [SEC - Statement on Cryptocurrencies and Initial Coin Offerings, 2017](<https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>)

how difficult it can be to come up with a single unified approach for regulating such a newly established and fast-changing asset class. On the state level, the regulatory field gets even more detailed. Every state is at liberty to come up with its regulations regarding digital money. (E.g., BitLicense; New York State’s own licensing scheme meant only for companies operating within its boundaries).

Introduced by the New York State Department of Financial Services, the 'BitLicense' sets stringent rules for cryptocurrency-related businesses operating within the state⁵⁹. Critics argue that this regulation stifles innovation because it has such high barriers for entry while also leading some cryptocurrency companies out of state entirely to avoid them. This ‘dual level’ system; which includes both nation-wide (federal) laws and regional ones is both clear and confusing at times; depending on perspective. Additionally, “while different states struggle to establish their own rules, it may be challenging for crypto-asset business to work on wide scale.

The regulatory landscape of cryptocurrencies in Europe is different and this is exemplified by an approach aimed at unifying various things and essentially becoming one. In this sense, the regulatory structure that governs cryptocurrencies within the European Union is the focus of this chapter as it looks at existing statutes, legal drafts and proposals that determine the EU’s position on regulating cryptocurrencies. The harmonization principle adopted in the European Union is useful to member countries in relation to virtual currencies, for instance any law or treaty or directive or regulation on virtual currency directly impacts on all EU members.⁶⁰ MiCA remains to be the key Legislation governing the European crypto space. MiCA is designed to come up with the most complete legal framework for cryptographic assets, including tokenized assets and electronic money tokens. Its architecture aims at promoting uniform standards for all crypto-asset issuers, service providers, and custodian of crypto-assets. To bring about a single protected environment for cryptographic assets, MiCA intends to nurture fair play, disclosure, and securities of investors⁶¹. “The European Commission also conducted a Study on Blockchains, in which legal certainty and regulatory clarity were identified as key catalysts for blockchain development while also being identified as key barriers to adoption”⁶².

⁵⁹ NYDFS - BitLicense Frequently Asked Questions]

(https://www.dfs.ny.gov/apps_and_licensing/virtual_currency_businesses/bitlicense_faqs

⁶⁰ NV Algemene Transport- en Expeditie Onderneming van Gend & Loos v Netherlands Inland Revenue Administration [1963] European Court of Justice Case 26-62

⁶¹ European Commission, 2020

⁶² Markets in crypto-assets regulation: Does it provide legal certainty and increase adoption of crypto-assets? Tina van der Linden & Tina Shirazi, 2023

“Cryptocurrencies can function as a means of exchange and are therefore sometimes referred to as exchange tokens”⁶³. They have capabilities to be disruptive to the financial sector⁶⁴. In response to retail banking clients’ and institutional investors’ interest in cryptocurrencies in recent years⁶⁵, customers may now hold these currencies from financial institutions that appreciate high risks, and by investing in their own balance sheets large institutions have followed them. Nevertheless, wealthy customers traditionally preferred cryptocurrencies but institutional adoption has been slowed by dangers among them (including the challenge of issuing cryptocurrencies). It has been mentioned in books that separating financial risks from technological ones is hard because of the kind of cryptocurrencies.⁶⁶.

The financial stability issue arises in non-EU states since global financial institutions cannot deal with high price volatility or potential losses following crypto-asset markets shocks. The necessity of regulatory convergence between major jurisdictions is underlined by the interrelated nature of international finance markets, the likelihood of regulatory arbitrage as well as specific decentralized features related to some crypto assets. In her position as EU commissioner, Mairead McGuinness underscores the significance of this interconnectivity through calling upon non-European countries to set out similar guidelines like those followed within Europe.⁶⁷

A 2020 paper by the Crypto-Assets Task Force of the European Central Bank (ECB)⁶⁸ discussed the risks associated with stablecoins if they were to become widely used as a payment method. If the stablecoin system were not fragile, then it would not have been able to create some financial stability risks of various types like fall in liquidity owing to numerous aspects. It further noted that the interbank crisis during that year may come into play again given the recent developments at such markets around crypto assets. It also added that national borrowings are also bound to be highly affected because most of these digital currencies happen to be supported by short duration state obligations something that could cause significant price swings in them. Consequently, banks may find themselves grappling with this kind issue more especially regarding customer confidence questions that tend jeopardize their ability forestall these things from going wrong or even recover once they have gone haywire.

Recent studies have found empirical evidence of volatility spillovers from stablecoins to traditional markets, including one published in the academic journal "Economic Letters." The study pointed out

⁶³ Markets in crypto-assets regulation: Does it provide legal certainty and increase adoption of crypto-assets? Tina van der Linden & Tina Shirazi, 2023

⁶⁴ Sebastião et al. 2021; Fang et al. 2022

⁶⁵ Wintermeyer 2021, Forbes

⁶⁶ Dumas et al. 2021

⁶⁷ Non-EU countries' regulations on crypto-assets and their potential implications for the EU, 2023

⁶⁸ The ECB Internal Crypto-Assets Task Force (ICA-TF) was established in 2018 with a mandate to deepen the analysis around virtual currencies and crypto-assets.

the contagion effects from stablecoins like Tether to other markets which necessitate improved disclosures and liquidity controls for lessening unforeseen swings in the markets as crypto-asset markets grow larger. Another sector of interest is the International Monetary Fund (IMF) that indicated that crypto and equity markets were becoming more closely connected thereby showing connections between different crypto-asset markets.

In 2016, the United Kingdom launched a regulatory sandbox for FinTech under the oversight of the Financial Conduct Authority (FCA)⁶⁹. In this sandbox, companies can try out new financial products and services in a realistic setting where they are bought by real consumers. At the same time, England's bank is looking ahead with the Future of Finance project whose goal includes observing new activities services technologies concerning finance so as to anticipate possible developments during the nearest decade. The United Kingdom's regulatory framework was further expanded as it enacted the Financial Services and Markets Act (FSMA) in June 2023. This act will revise the FSMA 2000 by enhancing its provisions and replacing previous EU rules on much stronger terms. It also incorporates fresh parts which mainly concern rules for controlling crypto assets as they change their forms.⁷⁰

During Rishi Sunak's tenure as Chancellor of the Exchequer in 2022, he was the first to propose that the UK should become the center of the world for cryptocurrencies⁷¹, a vision that the present government has unequivocally endorsed. This vision subsequently shaped the drafting of fresh laws that would promote the growth and development of the stablecoins industry. Its motto is that risks are the same and so are their regulatory results for crypto assets just like any other financial instrument. In April 2022, the government outlined its strategy to position the UK as a "global hub" for crypto-asset technology and investment, recognizing stablecoins as legitimate payment methods. Sunak advocated for robust regulation to provide firms with the confidence necessary for long-term investment and innovation. A May 2023 report made by the House of Commons Treasury Committee expressed worries about future yet unspecified benefits of crypto-asset industry regarding Government strategy, advising a go-slow approach. In utilization of public funds on the crypto-asset industry, the committee felt that caution needs to be applied suggesting that gambling should not be any less controlled than unsecured crypto-asset undertakings. Despite these reservations, the overall political climate in the UK appears favourable towards legislation that supports the burgeoning crypto-asset sector.

In contrast to the EU's comprehensive regulatory framework of the Markets Regulation (MiCA) for crypto assets, the UK adopted the origins of the Financial Services Markets Act (FSMA)⁷². The FSMA

⁶⁹ The FCA regulates financial services firms and financial markets in the UK. It was created in 2013 taking over from the Financial Services Authority (FSA).

⁷⁰ Non-EU countries' regulations on crypto-assets and their potential implications for the EU, 2023

⁷¹ <https://www.gov.uk/government/news/government-sets-out-plan-to-make-uk-a-global-cryptoasset-technology-hub>

⁷² <https://www.legislation.gov.uk/ukpga/2000/8/contents>

places the management of these fixed incomes under the authority of the Financial Conduct Commission, the Bank of England, the Prudential Regulation Authority and the Payment Services Regulator, according to HM Treasury This regulatory focus sets the approach is it working to create a stable and successful environment for home token crypto assets in the UK economy.

The UK Financial Conduct Authority (FCA), which is primarily responsible for ensuring that crypto asset firms follow anti-money laundering and anti-terrorism laws, has called for increased regulatory powers over crypto assets This comes amid criticism from FinTech founders that the FCA's approval of its license is too slow. This slowdown has reportedly undermined confidence in the UK's ambitions to become a global leader in the crypto asset sector. Four out of five firms that sought to list with the FCA have withdrawn their applications and moved offshore, according to a Financial Times report on a UK-based crypto-asset research group Situation, which shows that the reduction in regulatory influence exemplifies the complexity of the commercial problems facing UK regulators as they seek to position the country as a hub for global crypto-asset growth. In defence against claims of being adverse to crypto-assets, the FCA has highlighted its support for the sector, noting that by April 2023, it had assisted more than 800 firms and significantly reduced its backlog of authorization requests for crypto-asset companies. The FCA also emphasized the UK's enhanced regulatory flexibility since its departure from the EU, suggesting that this could foster a more conducive environment for crypto-asset innovation and growth within the country.

3. Challenges to International Law

Challenges to international law stem from the decentralized and transnational nature of cryptocurrencies, which often transcend traditional legal frameworks and jurisdictional boundaries. Cryptocurrencies operate in a global environment with no clear boundaries, making it challenging to determine which jurisdiction's laws and regulations apply to various cryptocurrency-related activities. This ambiguity can create regulatory gaps and conflicts, hindering effective enforcement and regulatory harmonization⁷³. The combination of confusion as to which laws apply to them, and the fact that they exist outside any particular nation makes it hard for governments to control digital cash. When it comes to traditional money systems, legal structures are mostly based on control within a country, but this doesn't apply when it comes to digital currencies since they're operating in an international sphere thereby complicating issues of identifying the right law enforcement body or degree; banking or any other field insofar as cryptocurrencies are concerned.

The reason why there is this confusion is because while using cryptocurrency one can operate within different regions at the same time where consumers or organizations belong to various nations too. On the other hand, cryptocurrencies have decentralized networks like blockchain ones meaning each user

⁷³ European Parliament. "Cryptoassets: Legal and Monetary Aspects." European Parliament, 2018

has his own small piece of it all around Blockchains are the means through which transactions are carried out in this kind of trade; be they between individuals located at different parts of world or even among states themselves through their banks or other institutions of authority For example if we look at an exchange for digital money that is situated in one place but it processes deals of its clients located in different countries one by one, it becomes difficult to determine which laws should govern its activities, confidentiality rights of users and adherence to state regulation.

Inconsistencies and conflicts occur because different countries have different rules on cryptocurrencies when it comes to lawfulness and regulation. This may result in regulatory vacuums as well as difficulties in enforcing laws since it is not always clear who should enforce them. Dishonest people can use the difference between countries' rules to involve themselves in criminal activities like hacking finance systems, drug trafficking through illegal means, and using terrorist methods for financing themselves by capitalizing on regulatory disparities as well as countries law enforcement capacities. In addition to that, the unclearness of areas of jurisdiction in the world is further confused by the lack of common international standards as different nations may take separate paths in regulating virtual money. As a consequence, this regulatory disarray makes it hard for different jurisdictions to work together on this issue while also leading to difficulty in creating reliable policies governing the operations of cryptocurrencies globally. To overcome the vagueness surrounding crypto regulation requires cooperation among administrations, global institutions and those involved in this industry.

Different countries have adopted diverse regulatory approaches to cryptocurrencies, ranging from outright bans to comprehensive regulatory frameworks. Regulatory divergence not only complicates compliance for cryptocurrency businesses operating across borders but also raises concerns about regulatory arbitrage and market fragmentation⁷⁴. The issue of dissimilar regulatory measures always poses a huge problem as regards crypto regulation since countries and districts use varying approaches towards handling crypto matters. Cryptocurrencies are not subject to any particular area; thus, they do not fall under the conventional schemes or rules that make it easier to monitor transactions taking place within a given jurisdiction. Consequently, these factors make work difficult for businesspeople who are in these field raising worries concerning regulatory arbitrage together with market fragmentation.

Cryptocurrencies are deregulated in ways that differ from one country to another, mirroring variations in terms of law, economy, and politics. In some places they are accepted and there are proper rules and laws in place to regulate it to make sure uncertainty among business players is avoided. Japan and

⁷⁴ Financial Stability Board. "Crypto-asset markets: Potential channels for future financial stability implications." Financial Stability Board, 2018

Switzerland, for instance, chose to come up with laws which would govern exchanges where crypto currency is traded and at the same time safeguarding investors' interests.⁷⁵ Conversely, other jurisdictions have adopted more restrictive approaches, imposing bans or stringent regulations on cryptocurrency activities. China, for instance, has imposed bans on cryptocurrency trading and initial coin offerings (ICOs), citing concerns about financial stability and investor⁷⁶

Businesses face problems due to differing regulations because of existing different regulations and the requirement to fulfil them accordingly. The non-cooperation among the regulatory bodies may affect market entry, inhibit innovation, or slow down the evolution of worldwide interconnected digital currency mega system. Also, the practice of regulatory arbitrage (i.e., taking advantage of discrepancies in regulatory frameworks between different jurisdictions to attain competitive advantage) could weaken the effect of such regulations and interfere with investor rights. Businesses may seek to establish operations in jurisdictions with lax regulatory oversight to circumvent stricter regulatory regimes elsewhere, posing risks to market integrity and stability.

Efforts to address regulatory divergence and promote regulatory harmonization are ongoing, although at a gradual pace. International organizations, such as the Financial Stability Board (FSB) and the G20, have called for greater cooperation and coordination among regulators to address regulatory gaps and mitigate risks associated with cryptocurrencies⁷⁷. Cryptocurrencies are built on complex technological foundations, including blockchain and cryptographic algorithms, which may not align neatly with existing legal concepts and frameworks. Understanding the technical nuances of cryptocurrencies is essential for lawmakers and regulators to develop effective and forward-thinking regulatory responses.⁷⁸

The technological complexity surrounding cryptocurrencies presents a multifaceted challenge for regulators, policymakers, and legal experts alike. Cryptocurrencies, built upon intricate cryptographic principles and decentralized blockchain networks, introduce novel concepts that often diverge from traditional legal frameworks. The decentralized nature of blockchain technology, the foundation of most cryptocurrencies, disrupts conventional notions of centralized authority and control. Satoshi Nakamoto's whitepaper on Bitcoin introduced the concept of a decentralized peer-to-peer electronic cash system, which forms the basis for many cryptocurrencies today⁷⁹.

⁷⁵ Financial Stability Board. "Crypto-asset markets: Potential channels for future financial stability implications." Financial Stability Board, 2018

⁷⁶ Reuters. "China to Ban Initial Coin Offerings." Reuters, 2017.

⁷⁷ Group of Twenty (G20). "G20 Leaders' Declaration: Building Consensus for Fair and Sustainable Development." G20, 2018.

⁷⁸ Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." Bitcoin.org, 2008

⁷⁹ Nakamoto, Satoshi. "Bitcoin: A Peer-to-Peer Electronic Cash System." Bitcoin.org, 2008

A decentralized ledger system called blockchain facilitates transactions in cryptocurrencies through a chain of blocks that are linked together. This makes the records unchangeable which ultimately fosters honesty as well as safety hence immunity against manipulation. Nevertheless, this feature makes it difficult for some of the traditional legal ideas to apply therein including those regarding liability, ownership, and jurisdiction; given how decentralized and distributed they are.⁸⁰ Again, to ensure safety for cash flow protection and privacy towards different users, cryptocurrencies have to depend on cryptographic algorithms. Users can safely transact and verify their selves over public-private key cryptography; despite the fact they do not have to depend on the third party. On the other hand, non-technical stakeholders find difficulties when it comes to understanding and regulating efficiently the complex cryptographic mechanisms supporting cryptocurrencies.⁸¹

Another layer of difficulty has been introduced to the cryptocurrency ecosystem by smart contracts which are self-executing contracts where the terms are directly written into code. Automated and trustless transactions are made possible through these contracts which reduce the dependence on middlemen as well as simplify the entire process. Nevertheless, there are new obstacles in the form of legal interpretation and enforcement of smart contract obligations because they are based on programming languages and not human language.⁸² Interdisciplinary collaboration and a nuanced understanding of legal and technical considerations are necessary in order to address the technological complexity of cryptocurrencies. Regulators and policymakers have to deal with complex issues such as data privacy, security, interoperability and consumer protection within the digital era. The cryptocurrency landscape is dynamic as well as it's rapidly changing which poses continuous challenges for regulators and policymakers. In the midst of an era characterized by new technologies emerging every day; banks come up with fresh products or markets create new tendencies which bring up unknown risks calling for quick moves in terms of regulation.⁸³

A constantly changing and developing field of crypto currency demonstrates numerous arising challenges and potential risks which must be carefully monitored by government authorities, politicians, and business players. Since the latter grows on, the dangers which have never been met before appearing due to trends, technologies and transformations on the market. One of them is the spread of innovative types of financial fraud prosecuted through the knowledge about crypto currencies. The use of pseudonyms in cryptocurrency trading, together with blockchain network's borderless and decentralized peculiarities, tends to encourage dubious practices like money laundering terrorism funding and cybercrime. The fact that criminals or individuals with malevolent intents

⁸⁰ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015.

⁸¹ Antonopoulos, Andreas M. "Mastering Bitcoin: Unlocking Digital Cryptocurrencies." O'Reilly Media, 2014

⁸² Szabo, Nick. "Smart Contracts: Building Blocks for Digital Markets." 1997.

⁸³ Bonneau, Joseph, et al. "SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies." IEEE Symposium on Security and Privacy, 2015

always make use of these aspects in crypto cryptosystems to hide their trails in transactions and avoid being arrested through conventional methods.⁸⁴

Besides, there are new digital assets, financial products, and investment schemes whose adequate comprehension and regulation is still a question mark due to the rapid innovation as well as experimentation in the cryptocurrency field. In relation to investor protection, market integrity and systemic risk, Initial coin offerings (ICOs), decentralized finance (DeFi) platforms, and non-fungible tokens (NFTs) pose special regulatory challenges. It is important for regulators and policy makers to move quickly and evaluate the dangers connected with such trends so that they come up with necessary regulatory domains that would protect the investments made by individuals seeking to remain financially sound⁸⁵.

Another rising concern derives from the meeting point of cryptocurrencies with usual financial systems and establishments. With the upsurge in recognition given to cryptocurrencies and their broad-based inclusion in an economy, they become closer integrated with conventional banking systems, payment networks in addition to other forms of capital markets. This merging results in intricate matters connected to cross-border transactions; systemic interconnections on the one hand while some are centered on regulatory compliance norms on the other. Innovativeness should be encouraged at the same time as regulators must also keep integrity as well as stability within the financial sector in check⁸⁶.

Uncertainty and instability in the cryptocurrency markets are also being driven by regulatory changes and geopolitical tensions, which add to the volatility in these markets. Regulatory changes, enforcement actions, and geopolitical events can affect market sentiment, liquidity, and investor confidence. Consequently, compliance with changing legal requirements for market participants remains a substantial maze amidst regulatory uncertainty and risk based on geopolitics.⁸⁷ Enforcing regulatory requirements and ensuring compliance in the cryptocurrency space can be challenging due to the pseudonymous and decentralized nature of cryptocurrencies. Identifying bad actors, investigating illicit activities, and recovering assets in cases of fraud or misconduct present significant enforcement hurdles for law enforcement agencies and regulatory authorities.⁸⁸

Because blockchain technology is decentralized and pseudonymous, this makes enforcement and compliance processes regarding cryptos to be hard. Even though cryptos promote transparency and

⁸⁴ Bonneau, Joseph, et al. "SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies." IEEE Symposium on Security and Privacy, 2015

⁸⁵ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015

⁸⁶ European Parliament. "Cryptoassets: Legal and Monetary Aspects." European Parliament, 2018

⁸⁷ Financial Stability Board. "Crypto-asset markets: Potential channels for future financial stability implications." Financial Stability Board, 2018.

⁸⁸ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015

safety, they bring challenges in regard to obeying law by regulators; one very remarkable point for this is the pseudonymous nature of crypto transactions when it comes to enforcement efforts. Unlike traditional financial systems where individuals are easily identifiable through account information, cryptocurrency transactions are pseudonymous, with users represented by cryptographic addresses. This anonymity complicates efforts to trace and identify parties involved in illicit activities such as money laundering, fraud, and terrorist financing⁸⁹

Blockchains have a decentralized nature, where transactions are registered and verified by many nodes and not by a single server bearer. The advantage of decentralizing saves it from risks, but it also makes it difficult to monitor and regulate because there is no central information source in the system. There is also the issue of financial institutions whose operations are highly regulated. They follow closely both AML and KYC regulations but have no authority to arrest or seize assets within decentralized systems. Moreover, transnational enforcement is made difficult by the worldwide range covered in trading cryptocurrencies. Coordination and cooperation among international law enforcement agencies are essential to address cross-border criminal activities and ensure compliance with regulatory requirements⁹⁰.

In order to tackle these challenges, regulators and law enforcement bodies are researching groundbreaking methods that can help them strengthen compliance and enforcement in the field of cryptocurrency, such as the use of sophisticated analysis techniques like deep statistical analysis and blockchain tracing software.⁹¹ Furthermore, regulatory authorities are working to enhance collaboration and information sharing among domestic and international agencies to combat financial crime and protect investors. Initiatives such as the Financial Action Task Force (FATF) provide a framework for countries to coordinate AML/CFT efforts and promote global regulatory standards for cryptocurrencies⁹².

3.1. Regulatory Challenges; Is Crypto out of laws reach

Sindress in his work *Is Bitcoin out of Reach for Private International Law?*⁹³, notes authors⁹⁴ that thinks that relationships regarding the use of bitcoin is regulated by their own rules, which are and

⁸⁹ Bonneau, Joseph, et al. "SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies." IEEE Symposium on Security and Privacy, 2015.

⁹⁰ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015.

⁹¹ Bonneau, Joseph, et al. "SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies." IEEE Symposium on Security and Privacy, 2015.

⁹² Financial Action Task Force (FATF). "Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers." FATF, 2019

⁹³ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

⁹⁴ Sindress notes in 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.; Primavera De Filippi and Aaron Wright, *Blockchain and the Law – The Rule*

would be distinct and autonomous from State laws. Private international law's (PIL) role is to determine the applicable State law to a given problem.⁹⁵ One version blockchain technology in which Bitcoin relies on forms a self-regulated system, rendering the application of state law reluctant. One rather famous viewpoint: Code is Law⁹⁶. Meaning the blockchain would have its own rules separate from state rules. Bonomi, Lehmann and Shaheezha notes this to be ill-conceived⁹⁷. They argue that it is based on erroneous assumption that blockchain functions in regards of its own legal rules. This confusion arises from the mistaken conflation of two fundamentally different types of rules: "technical rules on one side, and legal rules on the other."⁹⁸

Differentiation between these rule categories are different by the contrast emphasized by legal scholars like Hans Kelsen, regarding the distinction between natural laws and legal principles.⁹⁹ "Like laws of nature and technological rules are based on a causation relationship between hypothesis and consequence"¹⁰⁰. Sindres gives two kinds of rules that can be subsumed under the formula "if A is, then B is."¹⁰¹ Sindres further notes that; The outcomes prescribed by laws of nature or technical regulations are expected to inevitably occur when the corresponding hypotheses arise: these norms depict a fact, an essence; they do not aim to dictate what should be in a particular situation, in essence, a normative imperative.¹⁰²

It appears that the outcomes stipulated in such rules fail to materialize. Consequently, these rules should be regarded as invalid. "Contrary to laws of nature and to technical rules, rules of law create a relationship of the type "if A is," then "B shall be -or shall not be."¹⁰³ There is not only a difference in nature between technical rules and legal rules, but also in their intended audiences. Technical rules are

of Code (Harvard University Press 2018); Simon de Charentenay, "Blockchain et droit: Code is deeply Law" (2017) 39 *Gazette du Palais*, 15.

⁹⁵ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

⁹⁶ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

⁹⁷ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

⁹⁸ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

⁹⁹ Hans Kelsen, *Théorie pure du droit* (Dalloz 1962) translation of the second edition by Charles Eisenmann, Dalloz (LGDJ 1999), 105 et seq. and Hans Kelsen, "Aperçu d'une théorie générale de l'Etat" (1926) *Revue de Droit Public* 561, 562 et seq.; see also René Capitant, *Introduction à l'étude de l'illicite: L'impératif juridique* (Dalloz 1928), 1–5.

¹⁰⁰ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁰¹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁰² Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006

¹⁰³ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

specifically aimed at objects and the technologies they govern. Sindres gives example of technical rules that govern how a laundry machine operates apply directly to the laundry machine itself, and those that regulate the functioning of blockchain technology apply to the blockchain. This technology is not meant to be transformed into a legal category¹⁰⁴. On the other hand, legal rules are designed to govern human behaviour, targeting legal subjects—whether individuals or organizations—and the relationships among them. Therefore, the popular phrase "Code is Law" is fundamentally incorrect and misleading, as code does not equate to law.¹⁰⁵

3.2. Lex cryptographica

Some scholars argue that¹⁰⁶, cryptocurrencies or crypto in general are not subject to any state laws, but rather to rules rising from a legal order called the "lex cryptographica."¹⁰⁷ Sindres although notes that "the existence of legal order of lex cryptographica is doubtful and indifferent to issues at hand".¹⁰⁸. There is no distinction between the challenges posed by the so-called lex cryptographica and the complexities presented by other entities that, within a broad and inclusive understanding of law, can be considered as legal systems beyond the state.¹⁰⁹

Meaning that state order anyways asserts power and submit to set of rules set by them, even if any social group has its own set of rules and own ways of making decisions. Similarly, legal relationships formed on the blockchain, although potentially governed by a legal framework known as lex cryptographica, does not cut out the possibility of intervention by state legal systems, which can implement their own rules and sanctions. A notable example is the case involving members of a Decentralized Autonomous Organization (DAO). In this instance, through a voting process, it was decided that a member who had obtained a significant amount of cryptocurrency by exploiting a flaw in the blockchain's governing code should return the funds. Although this case may represent a type of self-regulation and an emerging lex cryptographica, it wouldn't prevent state legal systems from stepping in and making the final decision. Should any involved parties have brought the issue to court, the state could have either overturned the DAO's decision—similar to how courts can overturn

¹⁰⁴ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁰⁵ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006

¹⁰⁶ Sindres in *Is Bitcoin out of Reach for Private International Law?* In: *Blockchain and Private International Law notes*; Primavera De Filippi and Aaron Wright, *Blockchain and the Law – The Rule of Code* (Harvard University Press 2018); Simon de Charentenay, "Blockchain et droit: Code is deeply Law" (2017) 39 *Gazette du Palais*, 15.

¹⁰⁷ Filippi and Wright (n 3).

¹⁰⁸ ¹⁰⁸ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁰⁹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

decisions made by a company's shareholders—or upheld the decision, possibly ordering the return of the funds based on principles like tort or unjust enrichment¹¹⁰.

The assertion of a purported legal framework within the *lex cryptographica* doesn't serve as a real justification for states legal systems to disengage from this domain. Instead, they can leverage their judicial and legal mechanisms to assert unparalleled regulatory authority over various transactions involving bitcoins. Furthermore, by doing so, the scope attributed to the *lex cryptographica*, seen as a collection of non-state regulations, would be considerably limited.¹¹¹ State courts are not the one to admit the choice of a non-State law to govern a contract¹¹². The Rome I Regulation¹¹³ allows parties to “incorporate by reference into their contract a non-State body of law”.¹¹⁴ In cases where law that is not from any state is chosen, it functions not as a *lex contractus* (law of the contract) but rather as a set of contractual terms. This distinction is crucial because when State courts are presented with contracts governed by non-State laws, they must still determine which State law applies to assess the contract's validity and binding nature. Therefore, if *lex cryptographica* is recognized as a relevant non-State legal framework, it does not relieve State courts of the duty to determine the applicable State law via their own set of rules.

Despite notions of "Code is Law" and the emergence of *lex cryptographica*, there is no justification for the retreat of State laws from governing relationships that involve the use of cryptocurrencies like Bitcoin. Relationships of this nature remain under the jurisdiction of State laws, and private international law (PIL), which primarily determines the applicable State law, continues to play an essential role. However, some scholars have pointed out several challenges which they argue would make the application of PIL impractical in these scenarios. These challenges highlight the complexity and potential limitations of applying traditional legal frameworks to the evolving landscape of digital transactions.

3.3. Implementation of Private International Law

Challenges to international private law and its implementation regarding relationship involving usage of bitcoin are well known as they result from the impossibility to situate the usage to a certain physical

¹¹⁰ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹¹¹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹¹² Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹¹³ Regulation (EC) No 593/2008 of 17 June 2008 on the law applicable to contractual obligations (Rome I), [2008] OJ L177/6 (“Rome I Regulation”).

¹¹⁴ “This Regulation does not preclude parties from incorporating by reference into their contract a non-State body of law or an international convention.”

place and to the parties being not known.¹¹⁵ Difficulties regarding assets not easily located from a locational viewpoint are nothing new¹¹⁶. Even before the internet and all contracts concluded their contracts have been done via telephone long before internet, as they are also agreement of wills and so cannot be tied to particular country and its legislation¹¹⁷. Sindress gives two main reasons private international laws ability to adapt to these situations with no clear localisation in a set specific location.¹¹⁸

Firstly, Sindress notes that rules of private international law does not rely to localise the legal relationship they govern, giving the parties the freedom to choose the applicable law at hand.¹¹⁹ ¹²⁰ Private international law can utilize rules which, are “based on objective criteria, do not designate the country with the closest links to the matter. In Civil Law countries, the main rule of jurisdiction is based on the actor sequitur forum rei principle meaning it allows the claimant to sue the defendant before the courts of the country where the latter is domiciled.”¹²¹

Secondly Sindress notes that whereas the rules of private international law tries and seeks to identify the legal system and the country with the closest ties to the mattes. The connecting factors it relies on do not aim to achieve precise solutions but are instead rooted in subjective preferences devoid of any scientific basis. According to Regulation Brussels I bis, issues concerning contracts are therefore, unless specified otherwise, linked to the location where the obligation forming the basis of the claim is fulfilled.¹²² “Rome I Regulation provides that, in the absence of choice, contracts are, governed by the law of the country of habitual residence of the party required to effect the characteristic performance of the contract.”¹²³,¹²⁴

¹¹⁵ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹¹⁶ Olivier Cachard, *La régulation internationale du marché électronique (LGDJ 2002)*, preface by Philippe Fouchard.

¹¹⁷ Henri Batiffol, *Les conflits de lois en matière de contrats* (Paris: Recueil Sirey 1938), 36; see also Pierre Mayer, «La délocalisation du contrat» in *La relativité du contrat, Travaux de l’Association Henri Capitant (LGDJ 2000)*, 123.

¹¹⁸ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹¹⁹ Regulation (EU) No 1215/2012 of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (recast), [2012] OJ L351/1, art. 25 (“Brussels I bis Regulation”)

¹²⁰, Rome I Regulation (n 14), art. 3; Regulation (EC) No 864/2007 of 11 July 2007 on the law applicable to non-contractual obligations (Rome II), [2007] OJ L199/40, art. 14 (“Rome II Regulation”).

¹²¹ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹²² Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹²³ Rome I Regulation (n 14), art. 4

¹²⁴ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

Faced “with this issue under the Brussels I Regulation, the European Court of Justice adopted a flexible approach, stipulating that the "harmful event" within the scope of then-Article 5.3 (now Article 7(2) Brussels I bis) occurs in the Member State where the publisher of the content is established, in the Member State where the victim's center of interests is located, and in every Member State where the online content is or has been accessible.”¹²⁵ ¹²⁶

This approach, involving the simultaneous application of laws from multiple countries to the same event, undoubtedly carries a fictional element. A similar observation applies to the implementation of the *lex rei sitae* (the law of the place where the property is located) concerning movable assets like ships. In these cases, ships are governed by the laws of the flag state under which they are registered. This principle provides a coherent legal framework for addressing issues related to the ship, despite its capacity to traverse different jurisdictions. This consistency is particularly crucial for ensuring uniform legal standards regarding ownership, registration, and safety compliance for vessels navigating international waters or aircraft subject to the laws of their registration state.¹²⁷ All these examples given by Sindres¹²⁸ demonstrate that PIL rules frequently rely on flexible solutions rooted in fiction when determining the countries with which a particular relationship holds the strongest connections.

Most real issue regarding cryptocurrencies comes from the pseudonymity of the parties. Under the Rome I Regulation¹²⁹, if parties to a contract have not chosen a governing law, the contract is subject of the law of the country where the other party is to do the obligated contractual obligations of the contract has their habitual residence. if it cannot be identified which party is supposed to provide the characteristic performance, then this conflict-of-laws rule cannot be applied. This creates a scenario where the determination of applicable law can become complex, especially in cases where the parties' roles are not clear or are interchangeable.¹³⁰

The challenge of pseudonymity complicates the application of Private International Law (PIL) rules, yet the pseudonymity of blockchain participants doesn't warrant the exclusion of these rules from this domain. Pseudonymity is merely another instance of an issue inherent in law, characterized by

¹²⁵ ECJ *eDate advertising GmbH v. X and Société MGN LIMITED* (Joined Cases C-509/09 and C-161/10) [2011] ECR I-10269; ECJ *Bolagsupplysningen OÜ, Ingrid IIsjan v. Svensk Handel AB* (Case C-194/16) [2017] ECLI:EU:C:2017:766.

¹²⁶ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹²⁷ Convention on the International Recognition of Rights in Aircraft signed at Geneva on 19 June 1948; see also Court of Cassation, Civil Chamber 1, 11 October 1988, 86–15.516, *Bull. Civ. I*, 288 *Revue critique de droit international privé* 1991.86, note M. Rémond-Gouilloud.

¹²⁸ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹²⁹ Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I)

¹³⁰ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

practical hurdles, particularly concerning proof, which legal rules often encounter. However, this issue shouldn't serve as an excuse to abandon the application of legal rules; these rules, which prescribe a normative behaviour, have never claimed to be entirely foolproof.¹³¹ Moreover, the notion of repealing certain rules due to practical implementation difficulties is perilous, as it might incentivize their targets to erect more obstacles to their enforcement, hoping for their abolition. Ultimately, there are no substantial objections to applying PIL rules to legal transactions involving bitcoins.¹³²

3.4. Private international law and Bitcoin. Bitcoin currency or asset?

Sindres notes that applying PIL to legal connections regarding bitcoins does not imply the identification and usage of singular law which should and could govern the blockchain generally speaking.¹³³ Meaning that the blockchain is not a legal category in and of itself¹³⁴. The blockchain serves as a technological platform that facilitates various legal relationships, each falling into distinct legal categories from the perspective of private international law (PIL). This challenge is not significantly different from that posed by the Internet.

As an assets Bitcoin is an intangible movable property which can be related to many of the same operations as any intangible property. From the viewpoint of private international law these mentioned situations do not raise specific issues. Sale of Bitcoin can be seen as a sale agreement and is subject, “assuming the contract falls inside the scope of the Brussels I bis Regulation, are found in Articles 4, 7(1)(a)¹³⁵ as well as Articles 25 or 26 in case the parties have agreed on the jurisdiction. Sale of bitcoins would, under the Rome I Regulation, be governed by the law chosen by the parties at hand.”¹³⁶ In the absence of a choice, meaning valid choice, applied law would be either the law of the country where the seller has his habitual residence or the law of the market, in case the bitcoins are sold through a multilateral system within the meaning of Article 4.1 h.¹³⁷¹³⁸

Donation of bitcoins adheres to the private international law (PIL) rules that govern donation agreements, while transactions involving the exchange of bitcoins for other assets are governed by the

¹³¹Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006.

¹³² Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006

¹³³ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006.

¹³⁴ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006.

¹³⁵ The option laid down in Article 7.1 b) of the Brussels I bis Regulation (n 18) is not applicable to a sale of bitcoin, since it only covers sales of goods

¹³⁶ Rome I Regulation (n 14), art. 3

¹³⁷ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006.

¹³⁸ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', Blockchain and Private International Law, pp. 81–100. doi:10.1163/9789004514850_006.

PIL rules applicable to exchange contracts. Additionally, it is important to highlight that if a dispute arises, it may be governed by specific PIL rules related to consumer contracts, as outlined in the Brussels I bis Regulation. Furthermore, disputes concerning the ownership of bitcoins, like when they involve a transfer of ownership via contractual means, fall under the jurisdiction of the *lex contractus*, the law chosen to govern the contract,¹³⁹ and should otherwise be subject to the *lex rei sitae*, meaning the law where the property is situated¹⁴⁰

Sindress in his work gives example of dispute arising between two parties regarding and international sale of bitcoin.¹⁴¹ If the dispute falls within the scope of the Brussels I bis Regulation, jurisdiction may be based on multiple grounds. Consequently, disputes can be resolved through a prorogation of jurisdiction, where the key consideration is the validity and effectiveness of this prorogation under Articles 25 or 26 of the Regulation. This holds true irrespective of whether the transaction involves bitcoins. These articles specifically govern the agreement between parties to designate an agreed-upon court to handle their disputes, ensuring the prorogation is recognized and enforceable across jurisdictions covered by the Regulation. If the parties do not choose a court for whatever reasons, jurisdiction can result from Article 4¹⁴², “which designates the courts of the country where the defendant is domiciled, or Article 7(1)(a), which, allows the claimant to sue the defendant in the court of the place of performance of the obligation that gave rise to the claim.”¹⁴³

Article 4 presents challenges, particularly in determining the domicile of the defendant, which hinges on knowing the defendant's identity. Typically, if a claimant files a claim, they should know whom they are suing, evidenced by the fact they have served the defendant with a summons. However, the defendant may contest ownership of the public and private keys linked to the transaction in question. In such instances, the court can authorize investigative actions as per its national laws, and the claimant can also attempt to prove who owns the cryptographic keys. Additionally, shifting the burden of proof to compel the defendant to prove they do not own the keys is a possible approach. Further complications may arise if the claimant opts for the route described in Article 7(1)(a), as this requires pinpointing the location where the obligation at the heart of the claim was fulfilled—a challenging

¹³⁹Sindress in *Is Bitcoin out of Reach for Private International Law?* In: *Blockchain and Private International Law* Author: David Sindres notes; In favour of the application of the *lex contractus*, see Cass. Civ. 1re 21 July 1987, *Revue critique de Droit international privé* 1988.699, note J Héron ; *Dalloz* 1988.345, obs. B. Audit. see also Mayer, Heuzé, and Rémy (n 30), 681.

¹⁴⁰ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁴¹ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁴² Subject to this Regulation, persons domiciled in a Member State shall, whatever their nationality, be sued in the courts of that Member State

¹⁴³ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

task with obligations executed on the blockchain. Nonetheless, the European Court of Justice has offered a solution under Article 5(1) of the Brussels Convention, which remains applicable under Article 7(1)(a) of the Brussels I bis Regulation. This solution involves determining the place of obligation performance according to the law governing that obligation, thereby facilitating the resolution of such issues¹⁴⁴, this typically aligns with the law governing the contract itself. If the Rome I Regulation applies to the contract, the applicable law would be the one agreed upon by the parties, or in the absence of such agreement, the law of the country where the party responsible for the characteristic performance of the contract habitually resides. If this party is the claimant, their identity would consequently be disclosed.

On the other hand, if the defendant is the party required to perform the characteristic aspect of the contract and their identity is obscured by cryptographic keys, this situation can present the same challenges as those mentioned earlier. A related scenario might involve a dispute over the ownership of a specific amount of bitcoins. Under the Brussels I bis Regulation, such a case could be brought before a court designated by the parties as per Articles 25 or 26, or in a court in the country where the defendant is domiciled, as stipulated in Article 4. The issue of the defendant's pseudonymity, similar to the one highlighted under Article 4, may reoccur. Regarding the applicable law, it would generally be the *lex rei sitae*—the law of the location of the property. However, given the challenge of physically locating bitcoins, a practical approach might be to assign a fictional location to them, similar to the approach taken for other types of property like ships and aircraft, which are also not tied to a specific geographic location.¹⁴⁵

Bitcoins could be localized at the seat of the company providing the wallet where they are stored¹⁴⁶. This localization approach demonstrates how private international law (PIL) rules can be adapted to address the unique circumstances arising from Bitcoin and other cryptocurrencies as crypto assets. While these assets present challenges in being physically located, the adaptability of PIL rules helps address these issues. The challenges are not unique to blockchain operations or bitcoin transactions but are seen in various contexts where digital assets are involved. The pseudonymity of parties in transactions presents significant challenges, complicating the application of PIL rules more acutely. These issues primarily concern evidence and the factual aspects of cases, although they are not unique to PIL. Courts often employ specific methods to address such challenges when it becomes necessary to uncover identities or related secrets. Furthermore, Bitcoin serves not only as an asset but also functions as a currency, which introduces specific complications within PIL. These issues may require

¹⁴⁴ See ECJ *Industrie Tessili Italiana Como v. Dunlop AG* (Case 12/76) [1976] ECR 1976-01473.

¹⁴⁵ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁴⁶ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

distinct considerations and adaptations in legal frameworks to ensure that the complexities of digital currencies are adequately managed within the scope of international law.

When it comes to its legal standing as both a unit of account and a means of payment, it is currently open for debate whether Bitcoin will become a success story against conventional national monies.” Bitcoin is postulated as challenging typical sovereign money forms such as Dollar bills.¹⁴⁷ The answer to whether Bitcoin can be classified as a true document or payment currency under private international law (PIL) does not lie directly within PIL itself. Instead, PIL's role is to determine which substantive legal rules are applicable to resolve this issue. The first step in this process is to decide under which legal category Bitcoin falls from the perspective of international law. The reluctance of some state laws to recognize cryptocurrencies, including Bitcoin, as a form of currency does not necessarily preclude such a characterization under PIL. Indeed, the legal categories in PIL are not as rigidly defined as Bartin might suggest.¹⁴⁸

Figuring out if Bitcoin can really be considered a legal currency or just a document under international law isn't as straightforward as it might seem. This isn't something international law decides on its own. Instead, its job is to figure out which specific laws apply to answer this question. The first thing to do is to decide where Bitcoin fits in from the perspective of international law. Even though some countries are hesitant to accept Bitcoin and other cryptocurrencies as real money, this doesn't automatically mean they can't be seen as such under international law. After all, the legal categories in international law aren't as fixed and unchangeable as some might think.¹⁴⁹

As private international law serves as a “meta-law” is the reason why its legal categories are much more broader than in substantive law¹⁵⁰. Its primary function isn't to define the rights and obligations of parties directly but to determine which laws govern these rights and obligations. Therefore, PIL must exhibit a degree of flexibility and open-mindedness. This adaptability is essential for effectively navigating the legal and cultural diversity encountered in international contexts, making it a crucial condition for PIL's successful application.¹⁵¹

¹⁴⁷ see in the French literature Edmond de la Marnierre, *Monnaie de compte et monnaie de paiement* (1951), 169

¹⁴⁸ See esp. Étienne Bartin, «De l'impossibilité d'arriver à la suppression définitive des conflits de lois» (1897) 24 *Journal Dr. Int'l Prive & Juris. Comparee*, 225, 466, and 720

¹⁴⁹ See for instance, Court of Cassation, Civil Chamber 1, of 3 January 1980, 78–13.762, *Bull. Civ. I*, no. 4, *Revue Critique de droit international privé* 1980.331, note H. Batiffol; *Journal du Droit International* 1980.327, note M. Simon-Depitre, D. 1980.549, note E. PoissonDrocourt, *GAJDIP* (5th edn, Dalloz 2006), no. 61. (From Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006)

¹⁵⁰ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁵¹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

While flexibility is a hallmark of private international law (PIL), it does have boundaries. It should not extend to accepting characterizations that are clearly inadequate. For example, it was incorrect to categorize registered partnerships as marriages when they were initially established, given they were intended as alternatives for those unable or unwilling to marry. Similarly, labelling Bitcoin within the framework of PIL should not be seen as such an error. Bitcoin is designed to compete with traditional state currencies by mimicking their core functions, positioning itself as a different form of currency. Although Bitcoin represents a new kind of currency, touted for being more efficient and secure than traditional currencies, it fundamentally remains a currency in the context of PIL¹⁵². Therefore, it would be logical to classify Bitcoin as a currency within the scope of private international law (PIL), unless the relevant factors for this classification are clearly unsuitable for Bitcoin. To assess this, we must distinguish between two specific categories: “document currency” and “payment currency.”¹⁵³

Document currency is used to establish the monetary value of an obligation. In PIL, it is typically subject to the law that governs the obligation it helps quantify. Since such obligations often arise from contracts, the applicable law is the *lex contractus*. Therefore, it is the law governing the contract that determines whether parties in an international sale or service agreement can utilize Bitcoin to establish the value of goods sold or services provided. Alongside conflict-of-law regulations, certain national legislations have integrated international substantive norms for selecting the currency of the document. For instance, the French Private International Law (PIL) system has seen the Cour de cassation tackle this issue in the notable “*Messageries maritimes case*”¹⁵⁴ upheld a “gold clause” stipulated in an international loan agreement, thereby paving the way to the freedom of choice of the document currency by parties to international contracts.”¹⁵⁵

In situations in which French law, or the law of a different state with a similar international substantive rule, applies to a contract, it is worth questioning whether the freedom to choose the document currency extends to cryptocurrencies like Bitcoin. Additionally, if parties can include gold clauses in their contracts, which allow creditors to be paid in gold or its equivalent, there should be no reason to restrict them from choosing a cryptocurrency like Bitcoin, which positions itself not just as an asset but also as money.¹⁵⁶ There is uncertainty whether to choose the *lex contractus* or the law of the country where the payment is to occur. If the latter option is chosen, as seen in Swiss PIL, the decision

¹⁵² Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁵³ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁵⁴¹⁵⁴ Civ. 21 June 1950 (n 49) Chapter 4 Is Bitcoin out of Reach for Private International Law? In: *Blockchain and Private International Law* Author: David Sindres Pages: 81–100

¹⁵⁵ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁵⁶ Sindres, D. (2023) ‘Is bitcoin out of reach for private international law?’, *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

could vary,¹⁵⁷ and maybe also under French PIL¹⁵⁸ Implementing payment in bitcoins presents two main challenges. The first arises from the difficulty in identifying the place of payment. Since bitcoin transactions do not involve the physical delivery of funds or the wiring of money to a bank account, pinpointing the location of payment is particularly tricky. To address this issue, one viable approach can be to define where the payment took place based on the law governing the obligation for which the payment is being made. This method leverages the legal framework attached to the underlying transaction to determine the location specifics of the payment.

This law could stipulate that payment must be made at the creditor's home location or at the debtor's home location.¹⁵⁹ Additionally, it might allow the parties to select the place of payment themselves. In cases where no specific location is chosen, the law typically offers a supplementary rule: payment should be made at either the debtor's or the creditor's domicile, depending on the regulation.¹⁶⁰ The second challenge involves specific regulations in state laws that restrict or outright prohibit payments in foreign currencies. Example by Sindres, under French law, Article 1343-3 of the Civil Code specifies that "payment of monetary obligations in France must be made in euros." However, this article also allows for exceptions, stating that "payment may be made in another currency if the obligation arises from a transaction of an international character or from a foreign judgment." Moreover, the article permits parties to "agree that payment should be made in a foreign currency if it is to be effected between persons acting in the course of business or a profession, and where the use of a foreign currency is commonly accepted for the transaction in question."¹⁶¹

Assuming this provision is invoked based on requirement that the payment occurs in France according to the law governing the obligation, the implication would be that a payment in bitcoins would be prohibited, as it must be conducted in euros. However, the question arises: could a payment where bitcoins are used also be prohibited within the context of an international transaction as defined by Article 1343-3 of the Civil Code? It depends on whether Bitcoin is acknowledged as currency within this legal framework. It's crucial to recognize that Bitcoin being categorized as a currency from a

¹⁵⁷ Article 147, para. 3 of the Swiss Federal Act on Private International Law (PILA) provides that "[t]he law of the state in which payment must be made determines the currency in which the payment must be effected." Swiss Federal Act on Private International Law (PILA) of 18 December 1987, RS 291

¹⁵⁸ Mayer, Heuzé, and Rémy (n 30), 797.

¹⁵⁹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁶⁰ Article 1343-4 of the French Civil Code provides that "Unless legislation, the contract or the court otherwise provide, the place of satisfaction of a monetary obligation is the domicile of the creditor."

¹⁶¹ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

Private International Law (PIL) perspective doesn't automatically entail it will be treated similarly under substantive law; these two classifications can indeed diverge.¹⁶²

In situations where the law does not provide clear guidance, it falls for courts of the jurisdiction to determine whether Bitcoin qualifies as currency under the provisions of Article 1343-3 of the Civil Code¹⁶³. It is important to note that in making such determinations, courts are not obligated to follow the generally hostile attitude that central banks may have towards recognizing Bitcoin as a currency.¹⁶⁴ However, it is crucial to clarify what is at stake with such a characterization: it solely concerns the debtor's ability to unilaterally mandate a payment in bitcoins to the creditor.¹⁶⁵ Assuming French law is applicable, an agreement to make payments in Bitcoin would likely be valid if Bitcoin were classified as a "foreign currency" under Article 1343-3 of the Civil Code.¹⁶⁶

While this provision does set limits on the parties' freedom to decide on payments in a foreign currency—such agreements are only valid between professionals and when the foreign currency is accepted for the specific type of transaction—these limitations generally apply to domestic transactions. In contrast, for international transactions, the parties' freedom to choose the payment currency is more broadly supported. Article 1343-3, in allowing the debtor to mandate payments in a foreign currency to the creditor in international transactions, implies that parties should similarly have the freedom to agree to such terms. Essentially, if the law permits more complex arrangements (like imposing a foreign currency), it should certainly allow for simpler agreements (like mutually agreeing on a currency) in these contexts.

Now if Bitcoin would not be classified as a "foreign currency" under Article 1343-3 of the French Civil Code, it wouldn't necessarily mean that an agreement to use Bitcoin as the payment currency would be unlawful under French law.¹⁶⁷ As mentioned earlier, Bitcoin's nature as both a cryptocurrency and a crypto asset offers alternative legal interpretations. If Bitcoin cannot be classified strictly as currency under the applicable substantive law, it could potentially be considered as an asset. In such cases, a contract stipulating that payments for obligations be made in Bitcoin could be viewed

¹⁶² On the necessity to operate a double characterisation, first at the stage of the implementation of the conflict-of-laws rules, and second, within the body of substantive rules designated by the conflict-of-laws rules of the forum, see Mayer, Heuzé, and Rémy (n 30), 163.

¹⁶³ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁶⁴ *Contra Audit* (n 1), 683. The author advocates that, insofar as neither the French central bank nor the European Central Bank have accepted considering cryptocurrencies as currencies, the reference to "other currencies" found in Article 1343-3 cannot be interpreted as encompassing cryptocurrencies.

¹⁶⁵ Also, *Audit* (n 1), 683.

¹⁶⁶ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁶⁷ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

either as an exchange contract—where Bitcoin is traded for property—or as a service contract, where Bitcoin serves as compensation for services rendered. Unless the law governing the payment, whether through the relevant conflict-of-laws rule or as an internationally mandatory rule ("loi de police")¹⁶⁸, explicitly forbids using Bitcoin as payment method, such agreements should not be deemed unlawful. This flexibility in classification allows for the lawful use of Bitcoin in contractual agreements, even if it does not meet the strict definition of a currency.

4. Regulatory Approaches

First regulation tried to tie the new instruments to realm of traditional financial regulation was the US securities and exchange commission (SEC) Howey test developed in 1946¹⁶⁹. In its DAO Report, the SEC used the Howey test to assess whether a contract should be considered an 'investment contract' under the Securities Exchange Act of 1934. The Howey test identifies an investment contract by four criteria: (1) an investment of money, (2) involvement in a common enterprise, (3) a reasonable expectation of profits, and (4) profits derived from the efforts of a promoter or third party. Following this, the European Union similarly explored whether cryptocurrencies qualify as 'transferable securities.'¹⁷⁰

Global uncertainty in integrating cryptocurrencies to existing financial and legal frameworks is emphasized by differing regulatory responses in different jurisdictions. Development of a separate regulatory system for cryptocurrencies and stablecoins has been pioneered by the European Union. On 31 May 2023, the European Parliamentary Assembly passed into law the EU's 'Market in Crypto Assets' (MiCA) Regulation. MiCA is aimed at digital tokens that are neither cryptocurrencies nor stablecoins which are not considered 'financial instruments' within the meaning of EU legislation.

MiCA marks the first EU wide regulatory environment specifically for crypto assets to be established. While taking lessons from the existing rules and guidelines guiding the trade of traditional securities, MiCA has extended these laws to the digital currency market as well. It covers a wider range of these such as stablecoins whose worth is kept steady by being tied against usual cash's values or any other items that represent value permanence; utility tokens that allow users access to certain products or services or asset-referenced tokens that look forward to maintaining a constant price through being pegged on several currencies amongst others. By embracing such a wide range of crypto assets, MiCA

¹⁶⁸ Sindres, D. (2023) 'Is bitcoin out of reach for private international law?', *Blockchain and Private International Law*, pp. 81–100. doi:10.1163/9789004514850_006.

¹⁶⁹ SEC v. W. J. Howey Co., 328 U.S. 293 (1946).

¹⁷⁰ Jacob Goldsmith, *The IMF Must Must Develop Best Practices Before Government-Backed Cryptocurrencies Destabilize the International Monetary System*, 20202

aims to bridge regulatory gaps and create a safer trading and investment environment for consumers and investors within the crypto market.¹⁷¹

One of the fundamental goals of MiCA is to secure individuals participating in the crypto-assets market. Thus, issuers of such assets and companies offering services to the crypt-currency community must make transparent full disclosures about what risks are incurred while investing in digital money. These instructions are targeted at reducing crime as well as manipulation of finances within different sectors like stocks which lead more into opening up the markets so that informed decisions can be made by various consumers themselves. Moreover, all EU-based Crypto Asset Service Providers (CASPs) including exchanges wallets custodians etcetera shall require the authorization under MiCA before operating. This licensing requirement compels CASPs to adhere to strict standards related to operational conduct, governance, and financial robustness. The overarching aim is to foster a reliable and stable crypto market environment across the European Union.

MiCA requires strict rules for stablecoin creation and usage because they greatly affect money stability and especially those termed ‘significant’ for their high market values or economic might. Based on this classification, there are set regulations which require increased capitalization, operation modes and a strong governance system for them to curb system-wide risk factor and protect the general financial setup from them. Moreover, it aligns itself with the EU’s prevailing directives relating to money laundering as well as terrorism funding prevention through similar demands placed on players (CASPs: crypto-asset service providers). This includes conducting due diligence on customers, continuously monitoring transactions, and reporting any suspicious activities. The aim is to prevent the exploitation of the crypto market for illegal activities, ensuring a secure and compliant trading environment.¹⁷²

The EU is actively at work on creating a specific regulatory framework for crypto finance using MiCA to govern present international regulations. This method enables a custom-made handling of the unique chances and risks cryptocurrencies as well as stablecoins entail in so far as regulatory compliances and overall supervisions are concern. The design of this model makes it invulnerable from old age by being able to change alongside the whole cryptosystem thus generating dynamic regulations.¹⁷³ In contrast, the United Kingdom is taking a more gradual approach to regulating crypto and stablecoins through its Financial Services and Markets Bill (FSMB), a pivotal piece of post-Brexit

¹⁷¹ COMPARATIVE CRYPTOCURRENCIES AND STABLECOINS REGULATION: A FRAMEWORK FOR A FUNCTIONAL COMPARATIVE ANALYSIS, Edoardo D. Martino Amsterdam Law School Legal Studies Research Paper No. 2023-26,

¹⁷² COMPARATIVE CRYPTOCURRENCIES AND STABLECOINS REGULATION: A FRAMEWORK FOR A FUNCTIONAL COMPARATIVE ANALYSIS, Edoardo D. Martino Amsterdam Law School Legal Studies Research Paper No. 2023-26,

¹⁷³ COMPARATIVE CRYPTOCURRENCIES AND STABLECOINS REGULATION: A FRAMEWORK FOR A FUNCTIONAL COMPARATIVE ANALYSIS, Edoardo D. Martino Amsterdam Law School Legal Studies Research Paper No. 2023-26,

legislation. Approved by the House of Commons in October 2022 and currently pending final approval by the House of Lords, the FSMB integrates stablecoins within the existing legislative framework for regulating payment systems. It also grants the Treasury extensive regulatory powers over cryptocurrencies, offering a more integrated but flexible regulatory stance compared to the EU's specialized system. This staged approach reflects a different strategy in managing the emerging digital finance landscape, potentially streamlining integration with existing financial regulations while still accommodating the unique characteristics of crypto assets.¹⁷⁴

When compared with MiCA from EU, the regulatory approach of United Kingdom has advantages in terms of ease of design and implementation where it gets integrated into existing regulatory framework instead of having to establish a new one. This will not only simplify the whole process but also guarantee that financial instruments that are based on blockchain technology are treated equally as traditional ones, hence promoting fair competition. The UK should impose the regulations applied to cryptocurrencies similar to all the other monetary assets while no discrimination is to take place. This is according to a speech given by Andrew Griffith, Economic Secretary to the Treasury, during which he had actually emphasized that instead of prioritizing these currencies there was need for their proper regulation by coming up with a means of controlling them for the very first time. According to Prime Minister, Rishi Sunak, who wants Britain to be an international crypto hub, this technique complies with his policy preference for loose but more adaptive rules. Under a “wait and see” approach, HM Treasury has wide Regulatory Authority to help facilitate Innovation & Experimentation in this sector.¹⁷⁵

However, while this approach promotes flexibility and innovation, it may also present challenges in adequately addressing the unique risks associated with cryptocurrencies, both from regulatory and supervisory standpoints. The adaptability of this method might lag in response to the rapid developments and potential vulnerabilities in the crypto market, possibly leaving significant risks unmanaged. The third case of strategy formulation found in America in relation to cryptocurrencies can be used to depict the absence of one unified guideline at the national level. As of now, America doesn't have regulations that are encompassing enough which are designed for these new entrants into finance like crypto currencies/ stablecoin's with respect to regulation addressing them. However; despite numerous trials, parliamentarians always vote against such laws be it universal or industry-specific because they never satisfy all stakeholders who demand different conditions for said protection against fraud or other malpractices regardless their individuality anyone's interest groups involved either directly within legislation-making process itself or even indirectly when public opinion

¹⁷⁴ Article 21 FSMB

¹⁷⁵ COMPARATIVE CRYPTOCURRENCIES AND STABLECOINS REGULATION: A FRAMEWORK FOR A FUNCTIONAL COMPARATIVE ANALYSIS, Edoardo D. Martino Amsterdam Law School Legal Studies Research Paper No. 2023-26,

starts taking into account certain viewpoints only expressed by experts earlier than politicians themselves will admit it on their part meaning instantaneously interpreting related statutes followed if not shared along among members involved inclusive overseeing like enforcement one might say whether legislation based on agreements reached would make sense where majority stakeholder agrees but minority are opposed also consider make similar decision provided their own interests dovetail backbone website

These groups have been actively implementing current financial regulations on crypto assets, mostly resorting to enforcement as a way of establishing precedents when it comes to categorizing the various types of digital coins. Although it ensures some form of control from the authorities, this system leads to a situation where there is no uniformity in terms of what is expected under a particular legal framework which could come from legislation.¹⁷⁶ Even with no central federal regulatory approach to crypto currencies in place across the United States, individual states have come up with their ideas on how best to govern them. Such undertakings have been diverse, and a few are already trying out for the position of crypto-friendly states hoping that they will draw businesses related to this form of tender. Generally speaking, there has been an increased tendency towards creating an enabling atmosphere for digital money in different parts of America as evidenced by the distinct disparities in approaches to regulation at state level; such moves indicate wider behavioural patterns concerning regulations between different regions.

The most dramatic way of bringing cryptocurrencies to a national economy is through the world as legal tender predominantly done by two states; El Salvador and Central African Republic where bitcoin is their official currency. El Salvador has been more active with its 'Bitcoin Law' requiring all government institutions and private firms which operate within its jurisdiction to accept bitcoins as remuneration whereas on the other hand Central African Republic has formally recognized Bitcoin. Another unique thing about this country is that it has established Chivo; an officially backed digital wallet that facilitates day to day transactions using Bitcoin and this has been seen as being quite significant so far.¹⁷⁷

El Salvador's motivations for adopting Bitcoin as legal tender were manifold. By making crypto wallets accessible to the unbanked, the government aimed to promote financial inclusion. Moreover, El Salvador doesn't have its money and uses the U.S. Dollar as its currency hence the adoption of bitcoin could be viewed as an attempt to recapture some control over their money supply through having a monetary sovereignty. Yet, the high volatility of these currencies especially after the

¹⁷⁶ Chris Brummer, Yesha Yadav and David T Zaring, 'Regulation by Enforcement' [2023] University of Southern California Law Review,

¹⁷⁷ COMPARATIVE CRYPTOCURRENCIES AND STABLECOINS REGULATION: A FRAMEWORK FOR A FUNCTIONAL COMPARATIVE ANALYSIS, Edoardo D. Martino Amsterdam Law School Legal Studies Research Paper No. 2023-26,

significant decrease in 2022 posed a real challenge for this aspiration. The other extreme regulatory approach lies in banning all kinds of activities related to cryptocurrencies thereby denying them legal tender status with respect to any country.

A number of countries have enacted certain kind of prohibition, among which, the one by China is the most remarkable and effective. Initially, in 2017, it did towards ICOs (Initial Coin Offerings), cryptocurrency mining, and trading in some major cryptocurrencies like Bitcoin and Ether. During the subsequent year following that in 2018, Chinese authorities extended the measure to all exchanges located offshore thereby intending to have crypto trade completely done away with within its boundaries. Nevertheless, as strict as they may seem according to laws enacted elsewhere, carrying out such prohibitions has been not as tough as expected. For example, Hangzhou Internet Court in China considered Bitcoin is virtual property under the ‘General Civil Law’ in 2019 acknowledging that digital currencies have value, are scarce, and can be disposed of and hence are a kind of property. To confirm viewpoint further, Shanghai No.1 Intermediate People’s Court stated that Bitcoin was a type of property which should be protected by Chinese legal system in 2020 year. Moreover, research indicates that the adoption of crypto assets in China remains high, suggesting that the bans have been either ineffective or not rigorously enforced. This discrepancy highlights the complex relationship between regulatory intentions and actual outcomes in the context of rapidly evolving digital finance landscapes.

4.1 Paths differ

Within the European Union, cryptocurrencies fall under the wider category of crypto assets, digital representations of value or rights that can be transferred and stored electronically through distributed ledger technology. The ‘crypto asset white paper’ stands out as a pivotal part of the regulatory architecture. In this regime, whoever wishes to issue out a cryptocurrency does not need to seek approval from any regulatory body prior to doing so. But rather, they are supposed to produce a white paper that will serve as notification to the competent authority and be afterward published on their sites. This document must clearly outline the features of the crypto asset, including technical details, associated risks, and the rights of holders. Only after the white paper has been notified to the authority and made public can the cryptocurrency be considered for listing on a crypto trading platform. This approach by MiCA emphasizes regulation based on the activities associated with cryptocurrencies and additionally mandates entity-based regulation for critical intermediaries, primarily the crypto trading platforms.

These platforms are tasked with ensuring that they do not list any cryptocurrencies whose white papers have not been properly published. In line with their operational rules, they are also supposed to look at the dependability and quality of the cryptocurrencies they deal with. This involves exercising caution and having in place a number of fair and just procedural safeguards that guarantee organized

trading. Such a comprehensive regulatory approach is expected to promote transparency and accountability as far as operations of crypto assets are concerned hence protecting investors and ensuring market integrity.¹⁷⁸ MiCA is focusing on investor protection in a regulatory framework that embraces disclosure obligations and conduct rules. A cornerstone of this setup is the whitepaper. It acts as a layman's prospectus which helps in investor choices. On this document, the issuer must provide a comprehensive explanation of the crypto project, the main people in it, as well as rights and responsibilities regarding the digital currency and inherent risks thereof. These transparency requirements are reinforced by specific conduct rules for issuers of crypto assets. Issuers are expected to operate honestly, fairly, and professionally; to communicate clearly and without misleading; to identify, manage, and disclose any potential conflicts of interest; and to maintain their systems and security protocols to high standards.¹⁷⁹

The regulatory architecture is designed to ensure that these disclosure duties are effectively enforced. Supervisory authorities are empowered to monitor compliance actively and can suspend trading or require crypto trading platforms (the gatekeepers) to do so if an issuer significantly breaches the regulations. This robust oversight mechanism aims to uphold market integrity and protect investor interests within the crypto market environment.¹⁸⁰ Compared to the European Union's approach with MiCA, the UK's Financial Services and Markets Bill (FSMB) demonstrates less emphasis on protective measures in its primary regulations. The main focus of the FSMB is on determining the regulatory scope, specifically assessing whether a crypto asset qualifies for use in settling payment obligations. When crypto assets meet these criteria, they are classified as payment services and are regulated under the Electronic Money Regulations and Payment Services Regulations. This approach highlights a more targeted regulatory perspective, concentrating on the functional use of crypto assets within the financial system rather than a broad-based protective stance.¹⁸¹

The 'other' crypto assets, in the UK, are described as digitally secured representations of value or contractual rights which may be traded, stored or transferred electronically and make use of technology for record keeping or storing data. As outlined in Section 4 of the discussion, the HM Treasury holds substantial and pivotal regulatory authority. This power includes the ability to alter the definition of what constitutes a crypto asset through regulations. This capability allows the Treasury to either broaden or narrow the regulatory scope as necessary, adapting to the evolving landscape of cryptocurrencies and ensuring that the regulatory framework remains relevant and effective.¹⁸²

¹⁷⁸ Article 58

¹⁷⁹ Article 82(1)(t) and Article 82(1)(q) and (r) MiCA

¹⁸⁰ Article 82(1)(t) and Article 82(1)(q) and (r) MiCA

¹⁸¹ Article 21 FSMB

¹⁸² Article 65(4)(b) FSMB

The primary objective of this regulatory flexibility is to avoid aggressive marketing tactics thereby protecting novice and trusting investors. In relation to the broader concept of financial promotions cryptocurrency could fall under ‘specified activities’ defined under the Financial Services and Markets Act 2000 as ‘financial instruments, financial products or financial investments. According to this characterization, it will be possible for structured regulation that will allow them be treated in a way that mirrors other significant financial transactions thereby safeguarding the interests of investors while ensuring market integrity is maintained.¹⁸³ The HM Treasury utilizes regulatory actions to place crypto assets in the category of ‘financial instruments, financial products, and financial investments’. Due to this arrangement, the Treasury is given wide discretion in regulation making enabling it to change the existing legislation against the backdrop of arrivals in the market or emerging threats. It is this high degree of flexibility which allows for precise responses depending on the peculiarities and resultant risks emanating from crypto assets.¹⁸⁴

Stablecoins are a type of crypto asset designed to maintain a stable value by being pegged to a specific asset or a combination of assets¹⁸⁵. These assets can include fiat currencies like the US dollar or the euro, commodities like gold, or a basket of various assets. The purpose of this peg is to combine the flexibility and efficiency of cryptocurrency transactions with the stability of traditional financial assets, thereby reducing the volatility typically associated with cryptocurrencies like Bitcoin and Ethereum.¹⁸⁶ Stablecoins are generally divided into two main categories based on the nature of their reserve assets. The first category includes stablecoins backed primarily by fiat currencies, government bonds, and other highly liquid money market instruments. These stablecoins function similarly to tokenized electronic money and generally pose minimal risk. As such, they are almost universally regulated in a manner akin to electronic money.

The second category comprises stablecoins backed by a more diverse range of assets. This allows for more significant qualitative asset transformation, which in turn introduces greater stability risks. Due to these complexities, the regulatory frameworks for this category tend to be more varied and intricate. This discussion will primarily focus on this second category of stablecoins. In the European Union, the Markets in Crypto Assets (MiCA) framework addresses these more complex stablecoins by classifying them as 'Asset Referenced Tokens' (ART). ARTs are defined as crypto assets that aim to maintain a stable value by referencing a combination of different assets, which may include multiple fiat currencies, one or several commodities, one or several crypto-assets, or any combination of such

¹⁸³ Article 71K (7) FSMA 2000,

¹⁸⁴ 6 Article 8 FSMB

¹⁸⁵ Digital Assets and SEC Regulation Updated June 23, 2021, Eva Su, <https://crsreports.congress.gov/product/pdf/R/R46208>

¹⁸⁶ Financial Stability Board (FSB) (n 17) 5

assets.¹⁸⁷ This classification under MiCA reflects an attempt to provide a regulatory structure that acknowledges and addresses the unique risks posed by stablecoins with diverse asset backing.¹⁸⁸

The primary regulatory mechanism for Asset Referenced Tokens (ART) under the MiCA framework is the authorization process, which is conducted by the competent authority. For an ART issuer to be authorized, they must submit a comprehensive application package. This includes the crypto asset white paper, which details the ART's structure and purpose, along with additional documentation that demonstrates the operational resilience of the ART project. Importantly, these documents must also verify that the main participants involved in the project meet the necessary 'fit and proper' qualifications.

In the event that the managing team does not meet the 'fit and proper' criteria, the competent authority will not grant authorization. If the issuer fails to meet or is likely not to meet the applicable regulatory requirements, permission may be denied. The business model of the applicant issuer is one of the most significant considerations during the authorization process. Any potential threat to financial stability, influence on the transmission of monetary policy or endangering monetary sovereignty arising from its business model will lead to non-issuance of an authorization by this regulatory body. Strict criteria only allow for the operation of ARTs with a minimal risk profile and prudent governance in the wider financial system.¹⁸⁹

The regulatory requirements for Asset Referenced Tokens (ART) are more rigorous than those for general crypto assets, particularly regarding the obligations of issuers. This includes enhanced rules on transparency and business conduct to ensure greater accountability and ethical standards. ART issuers are required to put in place robust governance practices that encompass the management of reserve assets to ensure their adequacy and stability, effective systems for identifying and managing conflicts of interest, and stringent procedures for transaction validation to maintain the integrity and security of operations. These measures are designed to mitigate risks and enhance the safety and stability of Asset Referenced Tokens.¹⁹⁰ The most critical and distinctive regulatory mechanism for Asset Referenced Tokens (ART) involves substantive restrictions on the business model of ART issuers, particularly concerning the management of reserve assets and the conditions of redemption. First and foremost, ART issuers are required to maintain own funds equivalent to 2% of the average amount of reserve assets held, with this requirement increasing to 3% for ARTs classified as significant. These own funds

¹⁸⁷ Proprietary Rights in Digital Assets and the Conflict of Laws, Christiane Wendehorst, 2023

¹⁸⁸ Article 3(3) MiCA.

¹⁸⁹ Article 19 MiCA

¹⁹⁰ Article 30 MiCA; see article 28 Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms [2013] OJ L 176/1, hereinafter CRR

must meet the same quality standards as Common Equity Tier 1 capital required in banking. This requirement ensures that ART issuers maintain a sufficient equity buffer to absorb losses.

Furthermore, MiCA imposes specific regulations on the management of reserve assets and the procedures for token withdrawal or redemption, aiming to curtail risks associated with maturity and liquidity transformation. On the asset side, issuers must always hold a reserve that is equal to the total amount of issued tokens. Additionally, the management body of the issuer is tasked with ensuring the effective and prudent management of these reserve assets, ensuring stability and reliability in the operations of ARTs.¹⁹¹ Issuers of Asset Referenced Tokens (ART) are required to ensure that any creation or destruction of tokens is directly matched by a corresponding increase or decrease in the reserve of assets. This balance must be carefully managed to prevent any negative market impacts on the reserve assets. To ensure stability, ART issuers are permitted to invest reserve assets only in instruments classified as 'High Quality Liquid Assets' under banking regulations.¹⁹² On the liability side, holders of ARTs are entitled to general liquidity rights, meaning the issuer must always provide the option for token redemption. This requirement ensures that token holders can convert their digital assets into traditional currency or other forms of value under any circumstances. These regulatory provisions are underpinned by robust supervisory powers, mirroring those used in banking supervision. This includes the authority to implement supervisory measures to maintain oversight and ensure compliance, reflecting the serious regulatory approach taken to manage the risks associated with ARTs¹⁹³

Finally, in the realm of crisis management, issuers of Asset Referenced Tokens (ART) are required to draft and continuously update a 'living will.' This plan contains predetermined measures that activate in response to a sudden deterioration in the issuer's financial condition. It's crucial that this plan outlines clear conditions and procedures to ensure that recovery actions can be implemented promptly. The recovery strategy should include a comprehensive array of options to stabilize the issuer's operations. These options may include imposing a liquidity fee on redemptions, setting a cap on the maximum amount redeemable per day, and, if necessary, the option to suspend redemptions altogether. These measures are designed to give ART issuers the tools they need to manage crises effectively and protect both their financial stability and the interests of token holders.¹⁹⁴ The European approach to regulating stablecoins primarily addresses concerns around the promise of value stability, a significant issue for entities that lack deposit insurance and fiscal support. This strategy, while not flawless, aligns with the regulatory objectives outlined earlier in the discussion. It focuses on ensuring that stablecoins maintain their value and do not introduce excessive volatility or risk to the financial system.

¹⁹¹ Article 32 MiCA

¹⁹² 4 Article 34 MiCA

¹⁹³ Article 112 MiCA.

¹⁹⁴ Article 41a(1) MiCA

In contrast, the UK's regulatory framework diverges significantly from this approach, treating stablecoins primarily as a component of the payments system. As discussed previously, the Financial Services and Markets Bill (FSMB) categorizes digital settlement assets (stablecoins) as crypto assets that fulfil payment obligations. Consequently, the regulatory framework is shaped around this function. Specifically, Article 21 of the FSMB extends the regulatory regime applicable to payment services to include Digital Settlement Assets (DSA). This focus reflects a different set of priorities, emphasizing the facilitation of transactions and the integration of stablecoins into the payment systems infrastructure rather than solely focusing on the stability of their value.¹⁹⁵

This means that issuers of stablecoins that fall under the defined scope in the UK will be required to obtain a license as an 'Electronic Money Institution' (EMI), as specified in the Electronic Money Regulations 2011. This licensing process ensures that stablecoin issuers meet certain regulatory standards and operate within the financial oversight framework, aligning their operations with those of traditional payment service providers and electronic money institutions.¹⁹⁶ One does not obtain a license by just applying for it but by lodging an application with FCA after which he/she submits a well-documented business plan showing what exactly they want to do concerning electronic money issuance. The document should provide information regarding major functions expected from such business entities as its creator(s) envisage(s), including specifics on modes through which monies may circulate between people or organisations who use the facility developed by him/her vs those who do not; amount or number of transactions permissible by anyone who holds such accounts; etc. This helps FCA understand if he/she has squared their shoulders for a start-up within existing payment system decrees along with e-money rules.¹⁹⁷

To comply with the regulations, the issuer should have a good administration system, proper internal controls, and complete risk mitigation mechanisms. Moreover, there should be very foolproof measures that would go a long way towards curbing any form of money laundering within the institution. This way, people who use their services will have their interests well taken care of as well as ensure top security of money within the company in accordance with set standards.¹⁹⁸ Fit and proper requirements for relevant participants also apply¹⁹⁹. In terms of prudential regulation, EMIs must at all times comply with minimum capital regulation of 2% average outstanding e-money²⁰⁰. Moreover, EMIs must segregate the client's funds.²⁰¹ The FCA generally has oversight and enforcement power

¹⁹⁵ See Schedule 6 of the FSMB for the specific amendments needed to the Part V of the Banking Act 2009 and to the Financial Services (Banking Reform) Act 2013.

¹⁹⁶ 9 Electronic Money Regulation 2011, hereinafter EMR.

¹⁹⁷ 0 Schedule 1, EMR 2011

¹⁹⁸ Reg 6(5) and (7), paras 5 and 6 of Schedule 1, EMR.

¹⁹⁹ 2 Reg. 6(6)(b), para 9 of Schedule 1, EMR

²⁰⁰ Reg. 19 EMR

²⁰¹ Reg. 20 EMR

over e-money, issuers of in-scope stablecoins will also be supervised by the FCA. The specific supervision regime is yet to be established by the Treasury.²⁰² Issuers that are deemed systemic will become subject to the supervision of the Bank of England if deemed systemic.²⁰³

Electronic money is regulated under the FCA. Thus, FCA will regulate stable coin issuers. The Treasury is yet to come up with specific regulatory principles for these issuers. On the other hand, in case those stable coin issuers who are supposed to be systemic i.e., the impact of their likely malfunctioning has the potential of causing serious damages to the financial system; the BoE would regulate them. The latter does not apply to all stablecoins but only those that have widespread use in an economy as well as among customers across borders and within countries which are deemed systemically important. The HM Treasury has been empowered by the Financial Services and Markets Bill to take regulatory measures on insolvency arrangements made for payment systems that have Digital Settlement Assets (DSA). These new rules are meant to enable it to customize the traditional model bankruptcy laws to cater for likely cases of economic distress or collapse in such systems vis á vis DSAs, thus providing for crisis prevention mechanisms as well as enhancing security within the entire domain of finance. This way they promote peace of mind among the citizen while utilizing stablecoins or other digital assets during transaction periods that include such as payment systems.²⁰⁴

HM Treasury has initiated a public consultation to explore the extension of the 'Special Administration Regime'—currently applicable to Central Counterparties—to Digital Settlement Assets (DSAs). This proposal aims to establish a structured resolution regime for stablecoins that find themselves in financial distress. This approach is more comprehensive compared to the European MiCA framework, which primarily relies on early intervention measures modelled after the Money Market Funds Regulation. The potential extension would provide a more detailed and possibly more robust framework for managing crises in stablecoin operations, ensuring a systematic approach to resolve issues and stabilize the system in scenarios of financial instability.

This ambiguity in regulatory scope is not coincidental but appears to align deliberately with the UK's 'staged' regulatory strategy. The Financial Services and Markets Bill (FSMB) endows HM Treasury with substantial powers to redefine the regulatory scope of Digital Settlement Assets (DSAs) and, even more broadly, to amend primary legislation to establish a tailored regime for DSAs. In practice, this could mean that stablecoin issuers involved in significant qualitative asset transformation might be exempt from the stricter Electronic Money Institution regulation, falling instead under a lighter regime applicable to general crypto assets. This marked difference between the EU and UK approaches to stablecoin regulation can also be seen as largely influenced by the post-Brexit regulatory competition.

²⁰² 5 See Art 22(13) FSMB.

²⁰³ Schedule 6 to the FSMB, Part 1, 11 and 20.

²⁰⁴ See Article 22 FSMB.

The FSMB, viewed as a key piece of post-Brexit legislation, underscores the UK's strategic shift to potentially foster a more lenient regulatory environment to stimulate innovation and attract crypto-related activities, setting it apart from EU standards.²⁰⁵

5. Blockchain and Regulatory Compliance

5.1. Alegality of cryptocurrency

The unique characteristics of blockchain-based systems have prompted key figures in the field to label such technologies as "alegal." This concept, first popularized by Gavin Wood in 2014 (Co-Founder of Ethereum), posits that decentralized blockchain systems operate somewhat like natural forces—existing outside traditional legal frameworks, neither adhering to nor contravening them directly^{206, 207}. This perspective asserts not that these platforms are inherently challenging to regulate, but that they exist in a realm that does not neatly align with established legal categories²⁰⁸.

This notion of alegality transcends the simple binary of legal versus illegal. It suggests that blockchain platforms operate in spaces between or outside conventional legal boundaries, often because they do not rely on centralized mechanisms or involve tangible assets, rendering them less susceptible to traditional forms of legal control²⁰⁹. The academic discourse around alegality, further explored by scholars like Hans Lindahl, reflects broader philosophical discussions about how laws intersect with societal norms and technological innovation. Lindahl suggests that legal orders constitute a form of "institutionalised and authoritatively mediated collective action,"²¹⁰ underpinned by a network of formal and informal rules that govern societal interactions.²¹¹ These legal frameworks are inherently limited by boundaries—temporal, spatial, material, and subjective—that define their scope and applicability²¹². For instance, legal systems are temporally bound by the enactment times of laws, which should not retroactively affect actions. Spatially, they are confined to the jurisdictions within which they were established. Materially, they are limited to the rights and obligations they can enforce.

²⁰⁵ Christy Ann Petit and Thorsten Beck, 'Recent Trends in UK Financial Sector Regulation and Possible Implications for the EU, Including Its Approach to Equivalence' (European Parliament 2023).

²⁰⁶ ETHEREUM: A SECURE DECENTRALISED GENERALISED TRANSACTION LEDGER BERLIN VERSION beacbfd – 2022-10-24 DR. GAVIN WOOD FOUNDER, ETHEREUM & PARITY GAVIN@PARITY.IO

²⁰⁷ Lustig, C. (2019). Intersecting imaginaries: Visions of decentralized autonomous systems. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW), pp. 1–27. <https://doi.org/10.1145/3359312>

²⁰⁸ Atzori, M. (2015). Blockchain technology and decentralized governance: Is the state still necessary? Available at SSRN 2709713. <https://dx.doi.org/10.2139/ssrn.2709713>

²⁰⁹ Miller, R. (2019). Continuing challenges to international law and order from evolving technologies such as blockchain. *Hirao School of Management Review*, 9, 41–52.

²¹⁰ Tuori, K. Excluding Inclusion. *Jus Cogens* 1, 187–198 (2019).

²¹¹ Lindahl, H. (2018). *Authority and the globalisation of inclusion and exclusion*. Cambridge University Press

²¹² Lindahl, H. (2013b). We and cyberlaw: The spatial unity of constitutional orders. *Indiana Journal of Global Legal Studies*, 20(2), 697–730. <https://www.repository.law.indiana.edu/ijgls/vol20/iss2/7>

Subjectively, they apply to entities recognized under the law, each with varying rights and protections.²¹³

Alegality challenges these boundaries by introducing actions or entities that do not fit neatly into these predefined limits, often requiring legal systems to adapt or reformulate their boundaries in response. This adaptation can sometimes lead to significant legal and political changes, reflecting the dynamic interplay between emerging technologies and established legal frameworks²¹⁴; ²¹⁵Understanding alegality in the context of blockchain technologies involves recognizing the ways in which these technologies challenge traditional legal norms and suggest the possibility of alternative legalities that exist beyond current legal recognition²¹⁶

To examine the alegality of blockchain-based systems, it's important to consider how these technologies challenge existing legal frameworks and potentially expose their limitations. Blockchain's capacity to facilitate transactions and interactions beyond conventional legal controls highlights fault lines in traditional legal systems. This dynamic is evidenced by initiatives like Bitcoin, which introduced a decentralized financial system previously unanticipated by regulatory frameworks, thus questioning the authority of central financial institutions and the nature of money as a legal tender ²¹⁷, ²¹⁸

The launch of Bitcoin by Satoshi Nakamoto was not just a technical innovation but a foundational act that established a new form of monetary system, which inherently challenges the legal and financial oversight by questioning the sole issuance of currency by central banks. This kind of systemic challenge is also reflected in various blockchain applications that operate under the veil of pseudonymity, complicating enforcement of legal norms and regulations related to financial transactions and property rights (²¹⁹; ²²⁰). For instance, the use of blockchain in areas like property transactions can lead to situations where traditional legal mechanisms, such as those used to enforce

²¹³ Lindahl, H. (2010). A-Legality: Postnationalism and the Question of Legal Boundaries. *The Modern Law Review*, 73(1), 30–56.

²¹⁴ Lindahl, H. (2013a). *A-legality*. Oxford University Press

²¹⁵ Lindahl, H. (2018). *Authority and the globalisation of inclusion and exclusion*. Cambridge University Press.

²¹⁶ Hamzić, V. (2017). Alegality: Outside and beyond the legal logic of late capitalism. In H. Brabazon (Ed.), *Neoliberal legality: Understanding the role of law in the neoliberal project* (pp. 190–209). Routledge.

²¹⁷ De Filippi, P., Mannan, M., & Reijers, W. (2020). Blockchain as a confidence machine: The problem of trust and challenges of governance. *Technology in Society*, 62, 101284. <https://www.coindesk.com/markets/2018/02/28/no-blockchain-is-an-island/>

²¹⁸ De Filippi, P., Mannan, M., & Reijers, W. (2020). Blockchain as a confidence machine: The problem of trust and challenges of governance. *Technology in Society*, 62, 101284. <https://www.coindesk.com/markets/2018/02/28/no-blockchain-is-an-island/>

²¹⁹ De Filippi, P., Mannan, M., & Reijers, W. (2020). Blockchain as a confidence machine: The problem of trust and challenges of governance. *Technology in Society*, 62, 101284. <https://www.coindesk.com/markets/2018/02/28/no-blockchain-is-an-island/>

²²⁰ Trautman, L. J. (2014). Virtual currencies; bitcoin & what now after liberty reserve, silk road, and Mt. Gox? *Richmond Journal of Law and Technology*, 20(4), 1–108. <https://scholarship.richmond.edu/jolt/vol20/iss4/3>

property rights, are unable to effectively engage with the blockchain's decentralized and anonymous nature. This mismatch reveals substantial gaps—fault lines—in how legal frameworks conceive of ownership and control, highlighting the difficulties in applying existing legal principles to new technologies that do not inherently adhere to these principles²²¹; ²²²

A notable illustration of blockchain's alegality is the case of the DAO, a decentralized autonomous organization on the Ethereum blockchain. This project raised significant funds through a smart contract but was later exploited due to vulnerabilities in its code, leading to a major loss of funds. This incident sparked debates within the community regarding the legal nature of the act—whether it was theft, given that the actions were technically in line with the code's permissions, challenging traditional notions of legality and the enforcement capabilities of legal systems in the digital age (²²³,²²⁴).

This situation underscored the complex interplay between the immutable nature of blockchain transactions and the need for legal systems to adapt to manage and integrate these technologies without stifling their potential. It shows that while blockchain operates in a manner that might be seen as alegal—existing in the interstices of traditional legal frameworks—it is still susceptible to governance through collective decision-making, such as the decision to hard fork the Ethereum blockchain to mitigate the effects of the DAO exploit (²²⁵,²²⁶). These examples highlight the critical need for the legal system to evolve to accommodate and effectively govern new technologies like blockchain. This evolution might involve redefining the boundaries of legal jurisdiction, developing new categories of legal definitions, and exploring innovative regulatory frameworks, such as regulatory sandboxes, which allow for real-time adaptation and testing of legal norms with technological developments²²⁷. Thus, blockchain technology not only tests the limits of current legal frameworks but also serves as a catalyst for legal innovation and reform.

²²¹ De Filippi, P. (2016). The interplay between decentralization and privacy: The case of blockchain technologies. *Journal of Peer Production*, 7, 0–18. <https://ssrn.com/abstract=2852689>

²²² Finck, M. (2019). Blockchains and the right to be forgotten. In N. Aggarwal, H. Eidenmüller, L. Enriques, J. Payne, & K. van Zwielen (Eds.), *Autonomous systems and the law* (pp. 87–90). C.H. Beck and Nomos.

²²³ Kaal, W. A. (2017). Blockchain innovation for private investment funds. U of St. Thomas (Minnesota) Legal Studies Research Paper No. 17–21. <https://dx.doi.org/10.2139/ssrn.2998033>

²²⁴ Mehar, M. I., Shier, C. L., Giambattista, A., Gong, E., Fletcher, G., Sanayhie, R., Kim, H. M., & Laskowski, M. (2019). Understanding a revolutionary and flawed grand experiment in blockchain: The DAO attack. *Journal of Cases on Information Technology (JCIT)*, 21(1), 19–32. <https://www.igi-global.com/article/understanding-a-revolutionary-and-flawed-grand-experiment-in-blockchain/216950>.

²²⁵ Voshmgir, S. (2017). Disrupting governance with blockchains and smart contracts. *Strategic Change*, 26(5), 499–509. <https://doi.org/10.1002/jsc.2150>.

²²⁶ Reijers, W., Wuisman, I., Mannan, M., De Filippi, P., Wray, C., Rae-Looi, V., Velez, A. C., & Orgad, L. (2021). Now the code runs itself: On-Chain and Off-Chain Governance of Blockchain Technologies. *Topoi*, 40, 821–831. <https://doi.org/10.1007/s11245-018-9626-5>.

²²⁷ Dimitropoulos, G. (2020). The law of blockchain. *Washington Law Review*, 95(3), 1117–1192. <https://digitalcommons.law.uw.edu/wlr/vol95/iss3/3>

Policymakers have two primary strategies for addressing the legal aspects of blockchain technology: they can either broaden existing laws to incorporate activities that should be legally regulated, or they can limit legal oversight to exclude certain activities, thereby allowing them to occur without standard legal constraints. This process of exclusion effectively transforms legal activities into extralegal ones²²⁸. In practice, despite blockchain's resistance to conventional regulation, it does not operate in isolation. The aftermath of events like The DAO attack highlights that blockchain systems are part of a larger, interconnected system that includes a variety of stakeholders, all subject to some form of legal control.²²⁹ This interconnectedness means that while direct regulation of blockchain activities might be challenging, indirect regulation through associated entities like intermediaries is still feasible²³⁰

Regulatory strategies could include enforcing existing laws on intermediaries such as cryptocurrency exchanges and custodial wallet providers, which are crucial nodes within blockchain networks. These entities often have to comply with know-your-customer (KYC) and anti-money laundering (AML) regulations, making them leverage points for regulatory oversight (Koens & Poll, 2018). However, this approach can centralize control within the network, potentially undermining the decentralized nature of blockchain.

A novel regulatory approach discussed in the literature involves the use of "regulatory sandboxes." These are controlled environments where new technologies can be tested with temporary relaxations of regulatory requirements. This approach not only allows for experimentation and adaptation within the sector but also helps policymakers understand and craft more effective and appropriate regulations that address the unique characteristics of blockchain technologies without stifling innovation.²³¹ Furthermore, concepts like "functional equivalence" and "regulatory equivalence" have been proposed as frameworks to integrate blockchain operations within legal frameworks without substantial disruption. These concepts suggest adapting legal standards to accommodate the functionalities of new technologies like blockchain, potentially allowing for their inclusion within existing legal frameworks by demonstrating that they meet the intended goals of the law, albeit through different means.²³²

Blockchain's immutability means that once a transaction or any event is recorded on the chain, it cannot be changed or removed from it. This ensures the integrity of the data and builds trust among users. Immutability is achieved through cryptographic hash functions and consensus mechanisms, ensuring that altering recorded data would require enormous computational power, making it

²²⁸ De Filippi, P. (2018, February 28). No blockchain is an Island, in CoinDesk.

²²⁹ Bohme, R., Christin, N., Edelman, B., & Moore, T. (2015). Bitcoin: Economics, technology, and governance. *Journal of Economic Perspectives*, 29(2), 213–238. <https://doi.org/10.1257/jep.29.2.213>.

²³⁰ De Filippi, P., & Wright, A. (2018). *Blockchain and the law: The rule of code*. Harvard University Press. <https://hal.archives-ouvertes.fr/hal-02046787/document>.

²³¹ Mangano, R. (2018). Blockchain securities, insolvency law and the sandbox approach. *European Business Organization Law Review*, 19(4), 715–735. <https://doi.org/10.1007/s40804-018-0123-5>.

²³² De Filippi, P. (2018, February 28). No blockchain is an Island, in CoinDesk.

practically infeasible. Immutability in blockchain refers to the ledger's ability to remain unaltered and indelible, ensuring that data cannot be changed once it has been recorded. This property is crucial for building trust and integrity in the data recorded on the blockchain. Immutability is achieved through cryptographic hashing, where each block in the chain contains a hash of the previous block, securely linking them together. Cryptographic hashes like SHA-256²³³ are used to secure each block, producing a unique digital signature that cannot be reverse-engineered to reveal the original data. This process underpins the immutability and trust in the blockchain, as altering any data would invalidate the hash signatures of subsequent blocks.

It is a fact that a supervisory system for regulated activities established by public authorities who are the only ones to manage such activity has its limitations and the arguments over this issue have been recently raised. This has also given rise to the search of different more interactive ways.²³⁴

Additionally, within a binary system where one-party controls and another is controlled, many issues can arise like one party controlling all the data. Similar problems may arise when well-structured self-monitoring and reporting mechanisms are used and data that is reported by any regulated entity are verified by third parties.²³⁵ Over the past few decades, the growing demands for reporting mandated by both international and domestic regulatory structures have led to significant challenges for both regulated entities and supervisory bodies. Regulated entities are compelled to establish effective means for gathering, structuring, and transmitting pertinent data, while supervisory authorities are tasked with enhancing their systems to handle and process the vast volume of data they receive. Additionally, they must devise reliable mechanisms to verify the accuracy of this data.²³⁶

While the near-total automation of numerous reporting procedures has significantly mitigated the potential for false or erroneous declarations, technological advancements haven't eradicated the necessity for ongoing scrutiny by public authorities to verify the formal accuracy and precision of the data provided by businesses. Similarly, concerning automatic data transmission systems, it remains crucial for public authorities to ensure that they haven't been tampered with or compromised.²³⁷ Given

²³³ It's a cryptographic hash function that produces a 256-bit (32-byte) hash value, typically represented as a hexadecimal number. SHA-256 is widely used in various cryptographic applications, including blockchain technology, where it's employed as part of the hashing process for creating secure and immutable data structures.

²³⁴ D.A. Farber, *Triangulating the Future of Reinvention: Three Emerging Models of Environmental Protection*, in *University of Illinois Law Review*, vol. 61,

²³⁵ *European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2*, pp. 37-43, *Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model*, Allena, Miriam

²³⁶ *European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2*, pp. 37-43, *Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model*, Allena, Miriam 2022

²³⁷ *European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2*, pp. 37-43, *Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model*, Allena, Miriam 2022

this context, the blockchain's strength lies precisely in its ability to facilitate the verification of the time of recording and the formal completeness of data in what I'll describe as a "distributed" manner²³⁸. In this setup, users of the blockchain ledger directly attest to the completion of specific operations. The so-called "reflexive approaches to regulation" posit that self-assessment by regulated entities can cultivate a culture of self-accountability, contrasting with conventional regulatory models that rely on establishing authoritative limits and public agencies' oversight of compliance. These approaches are linked with a specific timestamp.

in Blockchain Technology and Regulatory Compliance Miriam Allena²³⁹ gives example of to “consider for instance the duty of a business to report certain data to the authorities: in order for them to be registered on the blockchain.”²⁴⁰ This information would need to be validated by multiple computers within the network. These computers must collectively confirm, by majority agreement, that the business has officially met all the requirements of a particular law, including the submission of all necessary data and documentation. Thus, any computer on the network (such as relevant public authorities, competing businesses, or the general public, depending on the permissioned blockchain setup) could check the formal validity of the entered data. Furthermore, recording this data "on chain" would serve as proof that it had been provided before the relevant deadline.²⁴¹

This scenario leads to several significant consequences. First, blockchain technology enables a diverse array of participants to be directly involved in the creation of public databases. Importantly, data that hasn't been verified cannot be recorded on the distributed ledger, which means that the data made available are "secure" from the moment of their creation, having been validated for their formal parameters by potentially a large number of entities. Within this framework, the traditional distinctions between the controlling administration, the entities under scrutiny, and the general public begin to dissolve. This shift creates room for all parties to actively participate in data verification on a truly peer-to-peer basis, subject to previously mentioned limitations.²⁴²

²³⁸ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

²³⁹ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

²⁴⁰ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

²⁴¹ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

²⁴² European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

Secondly, it becomes evident that a business regularly interacting with a distributed ledger, potentially monitored by a broad network of operators would be naturally encouraged to enhance its own self-monitoring and reporting practices. This improvement would stem from the awareness that compliance with at least the formal regulatory requirements must be timely and is subject to continuous, widespread oversight²⁴³. Consequently, a business could no longer depend on potential oversights by public regulators, limitations in their resources, or, in more severe cases, fraudulent collusion with them. Any deviation from the regulatory norms would become immediately apparent to a diverse and extensive audience.

Moreover, these participants in the distributed ledger system might have strong incentives to engage in oversight activities. For instance, a competing business, a consumer association, or residents in areas affected by the emissions of a particularly polluting industry would be particularly motivated to monitor compliance. Given the high likelihood of being discovered, businesses would have a vested interest in preventing instances of noncompliance by implementing robust internal controls.²⁴⁴ From this perspective, blockchain technology could effectively provide "teeth" to enhance the efficacy of self-monitoring and reporting practices, which are already mandated in many sectors. Businesses are aware that any negative performance—whether it's a breach of formal reporting obligations or a failure to comply in a timely manner—could be immediately visible to the general public, assuming the blockchain is designed to allow such transparency. This visibility could significantly impact a business's reputation and influence consumer choices, especially in areas where there is heightened sensitivity such as environmental compliance or data protection.

Consequently, a business may opt to align its practices more closely with regulatory standards to enhance its ability to fulfil the social demands and expectations of consumers. Furthermore, under this framework, it's even plausible to consider that complete adherence to particular regulatory mandates, as verified by the blockchain system, could serve as a form of decentralized certification system. This system would primarily validate compliance with formal aspects of sectorial regulations. Specifically, the receipt and maintenance of this certification would require full and timely compliance with reporting obligations, as documented by the blockchain system. This approach addresses one of the main limitations of private certification: the potential conflict of interest. Private certifiers, being funded by the entities they regulate—who often choose their certifiers—are not always seen as reliable

²⁴³ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

²⁴⁴ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

or transparent. In contrast, blockchain provides a decentralized certification system that could be managed and verified by the public at large, enhancing perceptions of security and reliability.

The implementation of a widescale scrutiny system like the one described would significantly enhance the transparency and reliability of information submitted to public authorities and lay the groundwork for more effective substantive controls on the accuracy of the data submitted. It's likely that, through formal checks for data completeness and timeliness²⁴⁵, the system would enable stakeholders to access necessary information to prompt public authorities to conduct in-depth accuracy checks.²⁴⁶ This blockchain-based control system could dramatically increase oversight of both formal and substantive compliance by entities regulated under public law. Additionally, from a systemic perspective, the "dispersed verification" of data facilitated by blockchain transcends traditional "command and control" frameworks and market mechanisms. Instead, it introduces an entirely novel approach where dynamic societal forces are directly involved not only in executing functions traditionally managed by public agencies but also in reshaping some traditional market mechanisms in innovative and potentially more effective ways. This model fosters a participatory and transparent regulatory environment that leverages the strengths of decentralized technology to ensure compliance and engage community stakeholders in regulatory processes.

Blockchain technology does not eliminate the need of public authorities but allows for a redefinition of their function in verifying data submitted by regulated entities and recording it in public databases. This is achieved through a multi-nodal approach that mitigates risks like corruption, maladministration, and regulatory capture.²⁴⁷ By distributing verification across multiple nodes—which can include a mix of public and private entities—the system inherently reduces the likelihood of any single point of failure or bias. Furthermore, the collaborative exercise of control between public and private sectors addresses the shortcomings of private-only oversight. Private operators often face conflicts of interest due to their own commercial goals, which can compromise their reliability. By involving both public and private entities in the verification process, blockchain creates a balanced approach that leverages the strengths of both while compensating for their weaknesses. This "third way" approach presents a novel solution between traditional "state failure" and "market failure." It allows for a cooperative system where both public and private bodies work together to ensure that

²⁴⁵ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

²⁴⁶ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

²⁴⁷ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43 Blockchain technology and regulatory compliance: towards a cooperative supervisory model Allena, Miriam 2022

data, at least in formal terms, is reliable and promptly available. This method enhances trust, transparency, and efficiency, facilitating better regulatory compliance and public accountability.²⁴⁸

5.2. International Cooperation and Harmonization

Digital currencies run on decentralized networks, particularly blockchain technology, which do not conceptually care for geographical boundaries. This runs into problems where one country is trying to control actions that might have started or ended outside its border. In addition, unstable value of these virtual currencies reflects the fact they can also be used for illegal purposes like washing dirty money and facilitating terrorism, therefore making it necessary for an all-encompassing global regulation that benefits all. For the successful, cross-border operation of cryptocurrencies, it is important to set universal standards. This implies that the world needs an integrated way to regulate them. International institutions such as FATF (the Financial Action Task Force) are very significant here because they are involved in setting such regulation. FATF was created by G7 countries mainly for fighting against money laundering, but it now looks into ways through which digital tokens and those individuals or organizations offering services in relation to them can be controlled.

The key role in handling these problems has been played by leading world institutions, which are all involved in terms of the supervision of international finances. FATF (Financial Action Task Force) emerges as the organization that has spearheaded efforts geared towards coming up with global standards aimed at combating terrorism as well as money laundering. Within cross-border territories, these standards are inclusive on cryptocurrencies so as to foster uniformity with regard to their regulation. This measure contributes greatly towards making the universe a better place where financial crimes are less attractive.

FATF standards significantly matter since they serve as a barometer that countries can use to structure their local regulatory systems. These rules have been devised in order to avert unlawful activities which include laundering money and financing terror operations using cryptos. It's also worth noting that related updates are made by FATF now and then so as to fit the current state of digital assets. One example is introduction of Virtual Asset Service Providers (VASPs) by FATF that impose on them similar regulatory standards like those found in conventional financial institutions i.e., identification of clients, keeping financial transactions records and reporting suspicious transactions.²⁴⁹ By setting these global standards, the FATF facilitates a unified approach, ensuring that countries implement robust and consistent regulations for cryptocurrencies. This reduces the risk of regulatory arbitrage, where entities

²⁴⁸ European Review of Digital Administration & Law - Erdal 2021, Volume 2, Issue 2, pp. 37-43, Blockchain Technology and Regulatory Compliance: Towards a Cooperative Supervisory Model, Allena, Miriam 2022

²⁴⁹ <https://www.imf.org/en/Publications/fandd/issues/2022/09/Regulating-crypto-Narain-Moretti>

might exploit differences in regulations between countries. It also helps in creating a level playing field for all participants in the cryptocurrency market.

While the FATF does not force countries to do so, all its members are supposed to follow its global standards and incorporate them into their domestic legal systems. A peer-review process that measures how well various countries fight against money laundering and terrorist financing helps watch over adherence to these rules. Thus, there is no coercive mechanism since in the long run adherence would lead to convergence enhancing inter-national cooperation as well as bolstering global financial system's soundness against crypto currencies risks. Facilitating dialogue and cooperation is a crucial function of international organizations in the context of cryptocurrency regulation. Institutions like the International Monetary Fund (IMF), the World Bank, and regional groups play a vital role in this process.

The IMF gets involved with nations to comprehend the consequences of the financial sector; cryptocurrencies included. Its role is that of discussing ways of tackling issues related to policy and offering a platform for sharing knowledge among member states. National regulatory frameworks are informed by the organization's routine publications and research papers on e-money and e-assets thereby aiding in coming up with a harmonized approach worldwide. For example, helping countries to make informed decisions concerning cryptocurrencies economic and regulatory matters is an area where the IMF specializes on making sure that policies are put in place to enhance creativity while at the same time ensuring stability in the monetary sector. The International Monetary Fund (IMF) plays a crucial role by providing financial surveillance and economic analysis to safely integrate cryptocurrencies into the global economic system. The IMF focuses on ensuring that this integration does not threaten global financial stability, advising countries on managing the macroeconomic implications of digital currencies, such as their effects on exchange rates, capital flows, and monetary policies.^{250 251}

The main aim of the World Bank is to facilitate dialogue and cooperation through carrying out research and giving technical assistance to its member countries. This is done by assisting these countries in understanding and grappling with the regulatory, economic, and technical issues that may arise as a result of digital currencies. The World Bank also works together with other global institutions in coming up with detailed advice on how best to regulate digital finance specifically focusing on cryptocurrencies. Regional forums such as the European Union (EU) create spaces for discussions and partnerships in areas such as harmonization of digital currency regulations among its members. Similarly, global forums like the G20 have addressed issues related to cryptocurrencies,

²⁵⁰ <https://www.imf.org/en/Blogs/Articles/2023/07/18/crypto-needs-comprehensive-policies-to-protect-economies-and-investors>

²⁵¹ <https://www.imf.org/en/News/Articles/2023/02/23/pr2351-imf-executive-board-discusses-elements-of-effective-policies-for-crypto-assets>

advocating for international cooperation to tackle challenges such as money laundering and financial terrorism.

5.3. Opportunities for Effective Regulation

Regulation can introduce measures to protect consumers from fraudulent schemes, scams, and theft prevalent in the cryptocurrency space. Through regulatory requirements such as disclosure obligations, investor education programs, and dispute resolution mechanisms, consumers can be empowered to make informed decisions and safeguard their interests (European Parliament, 2018). Enhanced consumer protection in cryptocurrency regulation is a critical area of focus to safeguard investors and maintain market integrity. The Markets in Crypto Assets Regulation (MiCA) by the European Union serves as a prominent example of such regulatory efforts. MiCA introduces a comprehensive framework aiming to protect consumers by enforcing strict transparency and disclosure requirements, thereby reducing fraud and other malpractices in the crypto market²⁵².

Stablecoin and Token Regulation, it imposes requirements on asset-referenced tokens and electronic money tokens, including capital requirements and governance structures, to ensure their stability and protect the financial system²⁵³. Anti-Money Laundering (AML) and Counter-Terrorist Financing (CTF) Compliance: Crypto asset service providers must adhere to AML/CTF regulations, improving the market's resistance to illicit activities²⁵⁴. Transparency and Disclosure: There are mandated disclosures and advertising rules to ensure that consumers receive clear and accurate information about crypto products and services²⁵⁵.

However, the regulatory landscape is not without its challenges. Critics argue that MiCA could stifle innovation by imposing stringent regulations that may be difficult for smaller startups to meet. Additionally, while MiCA focuses on traditional crypto assets, it does not currently cover newer sectors like decentralized finance (DeFi) and non-fungible tokens (NFTs), which could lead to regulatory gaps²⁵⁶. Beyond Europe, the broader global scenario reflects varied approaches to crypto consumer protection. Issues like extreme price volatility, fraudulent schemes, and cyber risks pose significant challenges to consumer safety. The lack of comprehensive regulatory frameworks in many regions leaves consumers vulnerable to these risks, highlighting the need for enhanced consumer protection measures such as fund safeguarding rules, transparent disclosures, and effective redress mechanisms²⁵⁷.

²⁵² Binance Academy, <https://academy.binance.com/en/articles/what-is-mica-markets-in-crypto-assets-regulation>

²⁵³ <https://academy.binance.com/en/articles/what-is-mica-markets-in-crypto-assets-regulation>

²⁵⁴ <https://academy.binance.com/en/articles/what-is-mica-markets-in-crypto-assets-regulation>

²⁵⁵ <https://academy.binance.com/en/articles/what-is-mica-markets-in-crypto-assets-regulation>

²⁵⁶ <https://noah.com/blog/mica-regulations-what-does-it-mean/>

²⁵⁷ <https://www.cgap.org/blog/crypto-consumer-protection-why-wait-and-see-is-no-longer-option>

Regulation can and should promote market integrity and transparency by establishing rules governing cryptocurrency exchanges, trading platforms, and market participants. Requirements such as licensing, registration, and ongoing compliance obligations can help deter market manipulation, insider trading, and other forms of misconduct, fostering trust and confidence in the cryptocurrency market²⁵⁸.

Effective regulation can mitigate risks associated with cryptocurrencies. Regulatory measures such as capital requirements, liquidity standards, and stress testing can enhance the resilience of the financial system and reduce the likelihood of disruptive events triggered by cryptocurrency market fluctuations²⁵⁹.

Regulation can provide clarity and certainty for entrepreneurs, investors, and innovators operating in the cryptocurrency space, fostering innovation and competition. By establishing clear rules of the road and creating a level playing field for market participants, regulation can encourage investment in new technologies, business models, and services that drive growth and innovation (Nikkei Asian Review).

Integration with Traditional Financial Systems: Regulation can facilitate the integration of cryptocurrencies into traditional financial systems, enabling greater interoperability and synergy between digital assets and fiat currencies. Regulatory frameworks that address issues such as custody, settlement, and interoperability can pave the way for the mainstream adoption of cryptocurrencies and contribute to the evolution of the broader financial ecosystem.²⁶⁰

Regulation can promote global regulatory harmonization by aligning standards, principles, and best practices across jurisdictions. Through international cooperation and coordination, regulators can work together to develop common standards and regulatory approaches that enhance consistency, reduce regulatory arbitrage, and promote a level playing field for market. The regulation of cryptocurrencies presents a complex landscape, with opportunities and challenges that governments and regulatory bodies must navigate. Effective regulation is crucial for ensuring market integrity, protecting consumers, fostering innovation, and maintaining financial stability. The U.S. Treasury Department has taken significant steps to combat cryptocurrency-enabled cybercrimes, illustrating a proactive regulatory approach. By imposing sanctions on virtual currency exchanges linked to criminal activities, the Treasury aims to disrupt the financial networks of cybercriminals and reduce illicit transactions. This action highlights the necessity for continuous monitoring and updating of sanctions to effectively combat cybercrime in the cryptocurrency space.

Globally, the legal and regulatory environment for cryptocurrencies is evolving. While some countries like El Salvador have embraced cryptocurrencies by making Bitcoin legal tender, others are still shaping their regulatory frameworks. The Atlantic Council's Cryptocurrency Regulation Tracker

²⁵⁸ Swan, Melanie. "Blockchain: Blueprint for a New Economy." O'Reilly Media, 2015

²⁵⁹ Financial Stability Board, 2018

²⁶⁰ Financial Stability Board, 2018

shows that while 60% of G20 member countries have legalized cryptocurrency transactions, there is still a considerable variance in how countries regulate cryptocurrencies, especially regarding consumer protection and AML/CFT measures. The International Monetary Fund (IMF) emphasizes the need for comprehensive regulation in the crypto ecosystem to address concerns such as market failures, systemic risks, and the protection of clients. The volatile nature of the crypto market and its rapid growth and retreat cycles necessitate robust regulatory frameworks to ensure market stability and protect investors (IMF).

Not firstly to have a competent future regulatory framework, an international standards should be made that pretty much same to all nations. Especially EU and UK can lead the way in this as they have experience in such national level legislation. Benson et al, notes that attention should be shown to developing concepts for regulating defi finance and smart contracts.²⁶¹ As Defi is anonymous for regulators it is a headache to legislate, as it is decentralized, its users do not interact with any centralized institutions which are easier to monitor. Regarding smart contracts and the ease to launder money trough them, need to develop a set of approaches to regulate the transactions going trough the Defi platform. Benson in his study gives out two proposals: Firstly, to set a minimum amount for a transaction made which would be inspected.²⁶² Secondly, he suggests for a creation of registry in which the businesses would need to register.²⁶³ Now these proposals would work yes, if and if all the actors in the field would abide by them and all the possible nations would have similar legislation. Defi especially is prone to work from nations with more relaxed legislation regarding business and crypto in general.

6. Conclusion

Cryptocurrencies challenge traditional legal frameworks primarily due to their decentralized nature. This thesis has shown that the absence of a central authority in cryptocurrency networks complicates the application of existing legal and regulatory norms. The transnational operations of cryptocurrencies transcend conventional jurisdictional boundaries, leading to significant challenges in establishing clear and effective regulatory oversight. Jurisdictional ambiguity remains one of the most daunting issues, as pinpointed in the analysis, because it complicates the determination of applicable legal frameworks and hinders the enforcement of regulations across different countries.

²⁶¹ Benson, V. et al. (2024) 'Harmonising cryptocurrency regulation in Europe: Opportunities for preventing illicit transactions', *European Journal of Law and Economics* [Preprint]. doi:10.1007/s10657-024-09797-w.

²⁶² Benson, V. et al. (2024) 'Harmonising cryptocurrency regulation in Europe: Opportunities for preventing illicit transactions', *European Journal of Law and Economics* [Preprint]. doi:10.1007/s10657-024-09797-w.

²⁶³ Benson, V. et al. (2024) 'Harmonising cryptocurrency regulation in Europe: Opportunities for preventing illicit transactions', *European Journal of Law and Economics* [Preprint]. doi:10.1007/s10657-024-09797-w.

From comprehensive frameworks in the European Union to more fragmented approaches in the United States, the lack of uniformity in regulatory strategies has fostered an environment ripe for regulatory arbitrage, where entities might choose to operate in jurisdictions with more lenient regulations to evade stricter oversight. This divergence not only undermines the effectiveness of regulatory measures but also poses risks to financial stability and market integrity globally. The enforcement of laws and regulations concerning cryptocurrencies is fraught with difficulties due to the anonymity and pseudonymity afforded by blockchain technology. This thesis detailed how the decentralized and digital-only presence of cryptocurrencies removes the physical traceability of assets, complicating efforts by law enforcement agencies to track and manage illegal activities such as money laundering and fraud. Moreover, the cross-border nature of cryptocurrencies demands unprecedented levels of international cooperation to ensure compliance and enforcement, which currently remains in its nascent stages.

Despite these challenges, there is significant opportunities for progress in cryptocurrency regulation. The potential for international harmonization of cryptocurrency laws stands out as a beacon of hope for regulators. Instruments and frameworks like the Financial Action Task Force's guidelines and the European Union's Markets in Crypto-Assets Regulation (MiCA) provide foundational steps towards establishing a coherent global regime. This study advocates for stronger international cooperation and the development of shared regulatory frameworks to combat the challenges posed by the global nature of cryptocurrencies.

Looking ahead, the evolution of cryptocurrency regulation should focus on three main areas: enhancing the adaptability of laws to keep pace with technological changes, increasing international collaboration to close regulatory gaps, and fostering innovation while ensuring financial stability and protection for all stakeholders involved. As this thesis suggests, the integration of technological insights into legal frameworks, along with a proactive approach to international dialogue and cooperation, will be crucial for the effective governance of cryptocurrencies. Mica can make the EU legislation in member states better but needs more work in NFTs and Defi as noted by Benson in his work.²⁶⁴ Coherency in legislation is important due to the borderless nature of cryptocurrencies. Most countries either have complex or no legislation governing cryptocurrencies and as global level regulation is a mess of every country own interest at hand leads to more risk in wrong doings. Classification is important especially in this relatively new financial instrument, precision is important as law is precise matter and vagueness can lead much for interpretation which in turn lead to exploitation of rules.

²⁶⁴ Benson, V. et al. (2024) 'Harmonising cryptocurrency regulation in Europe: Opportunities for preventing illicit transactions', *European Journal of Law and Economics* [Preprint]. doi:10.1007/s10657-024-09797-w.

This work recommends that policymakers prioritize the development of technology-aware regulations that reflect the unique attributes of cryptocurrencies. Furthermore, it is important for international bodies and national governments to work collaboratively to establish consistent regulatory standards and enforcement mechanisms. While the path to a good international cryptocurrency regulation is challenging, it also offers great opportunities for legal innovation and international cooperation. By embracing a harmonized regulatory approach and fostering global dialogue, the international community can enhance the stability, transparency, and integrity of the financial system in the digital age. As cryptocurrencies continue to evolve, so too must the legal frameworks and international policies to ensure they can effectively address the complexities of this burgeoning and disruptive technology field.