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**NAVIGATING THE REGULATORY
LANDSCAPE: A COMPREHENSIVE
ANALYSIS OF THE EUROPEAN UNION'S
FINTECH LAWS IN THE SUPERVISION AND
REGULATION OF CRYPTO ASSETS.**

Dissertation to obtain a Master's Degree in Law and Financial Markets, in the specialty of Business Law and Technology

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NOVA School of Law**

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ANTI-PLAGIARISM STATEMENT

I hereby declare that the contents of this dissertation are all entirely my own work and that all sources of information have been acknowledged and properly cited throughout this thesis.

I declare that this work has not previously been submitted for the qualification of any degree or other qualification from this or any other academic institution.

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Shakti Hooda (Student No. 6901)

DEDICATION AND ACKNOWLEDGEMENTS

I would like to dedicate this thesis to my family who by their unconditional support, love and sacrifices have been the pillars of my academic and personal developments. You have never lost faith in me in the most difficult moments and this is what has encouraged me to keep going on. Without you, this work would not have been accomplished.

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QUOTING AND OTHER CONVENTIONS

All references follow the NOVA School of Law footnote citation style. British spelling is used throughout. EU legal texts are cited according to the Official Journal format. The author adopts the term 'crypto-assets' as used in Regulation (EU) 2023/1114 (MiCA)

LIST OF ABBREVIATIONS

- **AML** – Anti-Money Laundering
- **CBDC** – Central Bank Digital Currency
- **CJEU** – Court of Justice of the European Union
- **DeFi** – Decentralized Finance
- **EBA** – European Banking Authority
- **ECB** – European Central Bank
- **ESMA** – European Securities and Markets Authority
- **EU** – European Union
- **FATF** – Financial Action Task Force
- **KYC** – Know Your Customer
- **MiCA** – Markets in Crypto-Assets
- **NFT** – Non-Fungible Token
- **SEC** – Securities and Exchange Commission (United States)

DECLARATION

The body of the book, spaces and footnote totals 183,308 characters.

ABSTRACT

This dissertation analyzes how the European Union (EU) is able to regulate crypto-assets with the proposed Regulation on Markets in Crypto-Assets (MiCA). Crypto-assets have been regarded as one of the most disruptive advancements in finance and have been able to operate without the use of traditional intermediaries and are able to challenge the current regulatory frameworks. Besides the opportunities these crypto-assets bring for the financial sector, there is also the concern of financial stability, consumer protection, and integrity of the market. These aspects also need to be considered with the use of innovative technologies.

The approach to this research is both doctrinal as well as comparative. The research first describes the foundational concepts and technologies of crypto-assets and decentralized finance (DeFi) along with stablecoins and non-fungible tokens (NFTs). Afterwards the MiCA proposal is described in a certain detail. This is particularly in relation to the overall EU financial regulation and its fulfillment to custody, disclosure, governance and licensing aspects.

To assess the extent of which MiCA is adequate, this dissertation reviews the pragmatics of the EU miCA with that of other major jurisdictions, like the US, the UK, and the frameworks constructed by global organizations like the Financial Stability Board or the Financial Action Task Force. Such a comparative analysis underscores a lack of a unified legal framework especially with respect to DeFi, NFTs, and cross-border jurisdictional issues.

The dissertation finds that MiCA is an integral building block towards the convergence of crypto-asset legislation in the EU. It decreases the confusion and discordant regulatory landscape. However, it also maintains that MiCA is overlooking important elements like the control of decentralized systems and the enforcement of anti-money laundering legislation. Enhanced international collaboration and regulatory amendments will be necessary in order to foster the innovative frameworks that will ensure the stability of the financial systems.

RESUMO

Esta dissertação analisa como a União Europeia (UE) pode regular os criptoativos através da proposta de Regulamento sobre Mercados de Criptoativos (MiCA). Os criptoativos representam uma das inovações mais disruptivas das finanças modernas, funcionando fora das estruturas financeiras tradicionais e colocando desafios significativos para os regimes regulatórios existentes. Embora ofereçam oportunidades de inovação, também geram riscos relacionados com a estabilidade financeira, a proteção dos consumidores e a integridade dos mercados.

A investigação utiliza uma metodologia doutrinal e comparativa. Em primeiro lugar, apresenta os fundamentos conceptuais e tecnológicos dos criptoativos, incluindo as finanças descentralizadas (DeFi), as stablecoins e os tokens não fungíveis (NFTs). Em seguida, analisa em detalhe a proposta MiCA, situando-a no quadro mais amplo da regulação financeira da UE e avaliando a sua capacidade de responder a exigências de custódia, transparência, licenciamento e governação.

Para avaliar a adequação da MiCA, a dissertação compara a abordagem da UE com a dos Estados Unidos e do Reino Unido, bem como com as normas definidas por organismos internacionais como o Conselho de Estabilidade Financeira (FSB) e o Grupo de Ação Financeira (GAFI). Esta perspetiva comparativa evidencia lacunas regulatórias, em particular no tratamento da DeFi, dos NFTs e da aplicação transfronteiriça. TABLE

O estudo conclui que a MiCA constitui um passo importante para a harmonização da regulação de criptoativos na UE, reduzindo a incerteza jurídica e a fragmentação regulatória. Contudo, defende que a MiCA deixa questões críticas em aberto, incluindo a supervisão das plataformas descentralizadas e a integração das normas de combate ao branqueamento de capitais. Reformas adicionais, aliadas à coordenação internacional, serão necessárias para garantir que a regulação proteja a estabilidade financeira e, ao mesmo tempo, promova a inovação tecnológica.

TABLE OF CONTENTS

DEDICATION AND ACKNOWLEDGEMENTS	III
QUOTING AND OTHER CONVENTIONS	IV
LIST OF ABBREVIATIONS	V
DECLARATION	VI
ABSTRACT	VII
RESUMO	VIII
CHAPTER 1-INTRODUCTION	1
1.2 Research Objectives	4
1.3 Scope	5
1.5 Research Questions	8
1.6 Significance of the Topic	9
1.7 Structure of the Thesis	11
CHAPTER 2-THEORETICAL AND CONCEPTUAL FRAMEWORK	13
2.1 Defining Crypto-Assets and FinTech	13
2.2 Key Concepts in Crypto Regulation	15
2.3 The Evolution of Financial Technology	19
2.4 Regulatory Theories Applicable to Crypto-Assets	23
2.5 Literature Review and Related Works	25
CHAPTER 3-THE EUROPEAN UNION’S LEGAL AND REGULATORY FRAMEWORK	32
3.1 Overview of EU Financial Regulations	32
3.2 Markets in Crypto-Assets (MiCA) Regulation	35
3.3 The Role of European Supervisory Authorities	40
3.4 Comparative Analysis with Non-EU Jurisdictions	45
3.4 Comparative Regulatory Approaches	49
3.4.1 United States	49
3.4.2 United Kingdom	52
3.4.3 Global Coordination Efforts	56
CHAPTER 4	60
CHALLENGES AND OBSTACLES IN CRYPTO REGULATION	60
4.1 Regulatory Authority and Scope of Coverage	60
4.2 DeFi Protocols and Non-Identifiable Entities	61
4.3 International Cooperation and Jurisdictional Issues	63
4.4 Risk Management in Crypto Custody Services	65
4.5 Consumer Protection and Market Transparency	66
4.6 The Role of Financial Institutions and Banks	67
Chapter 5-Empirical Assessment of MiCA’s Regulatory Impact	69
5.1 Research Methodology	69
5.2 France and the Process of Gradual Integration into MiCA	71
5.3 BaFin’s Legal Certainty and Stablecoin Supervision in Germany	74
5.4 Netherlands: Anti-Fraud Measures, Anti-Money Laundering Enforcement, and Regulatory Friction in DeFi	76
5.5 Comparative Overview: The EU Regulatory Approach vs. US and UK Approaches	79
5.6 Trends in the European Union Market and Statistical Overview (2020–2023)	82
5.7 Evaluating the Empirical Impact of MiCA	84
Chapter 6-Conclusions and Recommendations	87
6.1 Summary of Key Findings	87
6.2 Implications for Policy and Practice	88

6.3 Recommendations for Future Research	90
6.4 Conclusion	92
Bibliography	98

CHAPTER 1-INTRODUCTION

Some tremendous shift in the global monetary system has happened over recent decade as result of the convergence between tech in finance (FinTech) and also digital transformation. The emergence of crypto assets, which are digital representations of cash secured safely by encryption and most notably are made up on decentralized block chain, is among the biggest transformative developments to have occurred.¹As being outside of existing financial structures and at times of a centralized regulator do, they give a challenge to the traditional see of money, finance and regulation.² The crypto asset has developed very in a rapid and, indeed, at times, somewhat unpredictable manner. This can be pointed to the start of the rise of Bitcoin as a decentralized payment system, the emergence of stable coins, utility tokens and the protocols for decentralized finance (DeFi). This progress has also led to a major innovation and therefore, other new investments options, pay channels and financial tools have been established. While the situation has launched tour new legal, legal and supervisory challenges, to name a few, in particular with those that battle to safeguard marketplace integrity, financial stability and shopper safety. ³

The European Union (EU) has emerged to lead the world on regulating crypto-assets with the introduction of the Markets in Crypto-Assets Regulation (MiCA) in the last couple of years. This legislation was formulated to respond to the proliferation of cryptocurrency exchange and related service providers. MiCA is the first ever coordinated attempt by the EU to provide a legal framework on the issuance, listing, sale and trading of crypto-assets to all 27 Member States).⁴ Since the outset of MiCA, the European Union's approach to regulating digital assets has been fragmented and inward towards regulation.

¹ Arner, D. W., Barberis, J. N., & Buckley, R. P. (2017). FinTech, RegTech and the Reconceptualization of Financial Regulation.

² Arner, D. W., Barberis, J. N., & Buckley, R. P., 'FinTech, RegTech and the Reconceptualization of Financial Regulation', (2017) 37 Northwestern Journal of International Law & Business 371–414.

³ Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S., Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction, Princeton University Press, 2016.

⁴ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N., 'Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation', (2017) 23 Fordham Journal of Corporate & Financial Law 31–103.

It relied to a large degree on existing financial legislation, notably MiFID II, EMD2, and AMLD5, which were not specifically referenced to the peculiar characteristics of block chain-based developments.⁵ Following from this, Ferran (2021) holds, market participants were met with legal uncertainty, regulatory arbitrage and asymmetry in the allocation of compliance responsibilities between countries. MiCA aims to provide legal certainty, promote good innovation practice, and mitigate the systemic risks which arise out of ever greater financial industry digitisation and subjection to an increasingly borderless environment. These objectives will be achieved by managing the gaps currently open.

MiCA's significance lies not only in its broad scope and extraterritorial facade, but also in its broader implications for the European Union's model for digital banking. It establishes investor disclosure standards, enforces prudential protections for stable coin issuers, and describes supervisory capabilities for national and European regulators.⁶ Additionally, it includes licensing and operating criteria for crypto-asset service providers (CASPs). It does this in a way that is consistent with the Digital Finance Strategy and Sustainable Finance aims of the European Union, while also presenting the bloc as a standard-setter in the field of international crypto currency regulation.⁷ MiCA does not, however, completely address all of the problems that are caused by crypto-assets, despite the fact that it is quite comprehensive. There are basic problems around enforcement, compliance, and accountability that are raised by the decentralized and pseudonymous nature of many block chain applications, notably DeFi platforms.⁸ Additionally, the regulation of developing assets such as non-fungible tokens (NFTs), and the interaction between crypto-assets and central bank digital currencies (CBDCs), remains areas of legal ambiguity.⁹

⁵ Ferran, E. (2021). Regulating Crypto-Finance: EU and UK Approaches Compared. *Cambridge Journal of Financial Regulation*, 7(2), 203–227.

⁶ European Commission. (2020). Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final.

⁷ European Commission. (2020). Digital Finance Strategy for the EU. Brussels: European Commission.

⁸ Chiu, I. H.-Y. (2021). Regulating Decentralized Finance: A Global Approach. In *Global Finance and Financial Crises* (pp. 82–102). Palgrave Macmillan.

⁹ Adamska, M., Regulating NFTs: Between Art and Assets, *Journal of Digital Law and Policy*, 4(2), 2022, pp. 45–63, at 50; European Central Bank (ECB), *Crypto-Assets: Developments and Implications for Financial Stability*, Occasional Paper Series, 2023, pp. 12–13.

This dissertation purports to offer a critical and thorough examination of the regulatory and supervisory framework for crypto-assets that is in place within the European Union (EU)

The current study identifies areas of convergence and divergence by contrasting the work of the European Union (EU) with the work of the United States and the United Kingdom.¹⁰ Also, I analyze the practical consequences of the EU legislation by way of case studies and empirical data. This enables to fathom the adoption, enforcement, and the still evolving the role of financial institution in the crypto-ecosystem.¹¹

Not only is the study timely, but it is also important to policy. Within the context of the European Union's preparations for the complete implementation of MiCA by the year 2025, Member States, stakeholders and regulators are required to wrestle with the realities of the law, as well as its legal interpretation and adaptation to emerging technologies. Furthermore, the increasing incorporation of crypto-assets into conventional financial systems, ranging from institutional investments to stable coins issued by banks, calls for a regulatory framework that is not only resilient but also adaptable.¹² By providing a thorough review of the regulatory architecture of the European Union (EU), the study that is given here makes a contribution to scholarly and policy discussions. It identifies major legal and institutional strengths, as well deficiencies that deserve further attention.¹³

Despite the fact that the European Union (EU) has made considerable progress regarding crypto regulation, this research concludes that the dynamic nature of FinTech innovation needs ongoing legislative adaptation as well as international collaboration. At the

¹⁰ U.S. Securities and Exchange Commission (SEC), Framework for “Investment Contract” Analysis of Digital Assets (3 April 2019), p. 1; Financial Conduct Authority (FCA), Cryptoasset Businesses under the Money Laundering Regulations, 2022.

¹¹ Regulation (EU) 2023/1114 (MiCA), Official Journal of the European Union, L 150/40, 9 June 2023; Zetzsche, D. A., Buckley, R. P., & Arner, D. W., “DeFi: Shadow Banking 2.0?”, University of Luxembourg Law Working Paper Series, 2021, pp. 15–16.

¹² Financial Stability Board (FSB), Assessment of Risks to Financial Stability from Crypto-Assets (2022), pp. 7–8; European Central Bank (ECB), Crypto-Assets: Developments and Implications for Financial Stability, Occasional Paper Series (2023), p. 12.

¹³ Zetzsche, D. A., Buckley, R. P., & Arner, D. W., FinTech and the Emergence of FinTech in Finance: Regulatory Challenges, University of New South Wales Law Research Series, 2020, pp. 15–16.

conclusion of the dissertation, proposals are made for the establishment of future regulations, research goals, and policy changes that may better equip the European Union and its institutions to oversee and promote a digital financial ecosystem that is robust, inclusive, and creative.

1.2 Research Objectives

This research focuses on the legal approaches taken by the European Union on crypto assets in line with the Markets in Crypto Assets Regulation (MiCA) and their relations with other financial instruments. In this context, the study also focuses on the European Banking Authority (EBA) and the European Securities and Markets Authority (ESMA) as EU institutions responsible for regulation and supervision on the compliance and enforcement of crypto asset market guidance, and the promotion and evolution of crypto asset market(s) compliance.

Another focus of this study is the current legal framework's shortcomings on DeFi (Decentralised Finance), stablecoins, and unhosted wallets so MiCA addresses how MiCA addresses and/or inadequately addresses these gaps. The dissertation also undertakes to compare the approaches of the European Union to the other major jurisdictions in the world, most notably the United States and the United Kingdom, to highlight best regulatory practices, gaps, and possible instruments for cooperation. Lastly, the research aims to study MiCA's implications on innovation and financial stability, consumer protection policy, and the EU's future development in FinTech, along with MiCA's more broad implications, and the use of case studies and trend analysis and other empirical materials.¹⁴

¹⁴ Commission of the European Communities, Impact Assessment Accompanying the proposed Regulation of Markets in Crypto-assets, SWD(2020) 380 final.

1.3 Scope

This study aims to offer an evaluation in legal and policy terms of how the European Union has regulated the fast-growing field of crypto assets and FinTech. More specifically, it focuses on the legal and organizational structure set in place by the Markets in Crypto-Assets Regulation (MiCA), proposed in 2020 and expected to come into force by 2025.¹⁵ MiCA is an integral part of the European Union financial regulatory system which includes the Markets in Financial Instruments Directive (MiFID II), the Fifth Anti Money Laundering Directive (AMLD5), and the Second Payment Services Directive (PSD2).¹⁶

This study intends to analyze how crypto asset regulations interfaces with other prevailing monetary regulations and examined the legal text of MiCA and the relevant discourse surrounding it, aimed at its varied constituents, namely, crypto asset service providers (CASPs), investors, regulators, and financial institutions.

Furthermore, the work is a case study on the supervisory ‘oversight’ of the European Supervisory Authorities, particularly the European Banking Authority (EBA) and the European Securities and Markets and Authority (ESMA) and their regulatory enforcement, guidance, and implementing policies and procedural frameworks.¹⁷ It further it explores specific regulatory problems posed by certain types of disaggregated technologies such as decentralized finance (DeFi) protocols, decentralized autonomous organizations (DAOs), and pseudonymous payment systems which tend to be more

Offers assessment of the impact anticipated by MiCA on innovation, financial stability, and consumer protection in the FinTech environment of the EU.

¹⁵ Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on markets in crypto-assets, and amending Regulations (EU) No 1093/2010 and (EU) No 648/2012, and Directives 2013/36/EU and (EU) 2019/1937, Official Journal of the European Union (OJ L 150, 9.6.2023, p. 40).

¹⁶ MiFID II (Directive 2014/65/EU), AMLD5 (Directive (EU) 2018/843), PSD2 (Directive (EU) 2015/2366).

¹⁷ Regulation (EU) 2023/1114 (MiCA), OJ L 150, 2023.

difficult to regulate and enforce.¹⁸ It is also the case that the dissertation offers a substantial contrast to the regulatory framework of the European Union (EU) and some important non-EU states, to this the United States is particularly relevant with its enforcement-centric approach through the SEC and CFTC.¹⁹ and more recently the United Kingdom which is working on its post-Brexit crypto regulatory framework.²⁰ Even though the research acknowledges the borders of cryptocurrency marketplaces are transnational and cross-jurisdictional, it has taken an approach focused on Europe. As such, it also considers the activity of international organizations such as the Financial Stability Board (FSB) and the Financial Action Task Force (FATF) that indirectly affect EU policy by global standard-setting and soft-law framework advocacy.²¹ The policy and regulatory analysis is augmented by an interdisciplinary approach encompassing empirical and qualitative evidence, such as adoption rates, market dynamics, and levels of compliance, thus making it possible to comprehend the potential outcome of MiCA on Europe and other countries in regard to the ecosystem of crypto-assets and financial technology.

Because of the unique innovation of the modern technologies, the assets linked to crypto currency face difficult legal and administrative challenges when it comes to regulation. This is due to how quickly crypto currencies have managed to capture the public interest. Unlike most financial assets, they are issued, traded, and stored on platforms that have no middleman, and absolutely no centralized control. This decentralized architecture is why they are difficult to regulate. As {Arner, Barberis and Buckley (2017)} suggests, the current legal regimes regarding crypto currencies are simplistic. Most conflicts arise from how there are more, or clearer, actors to regulate.²²

¹⁸ I. H.-Y. Chiu, *Regulating Decentralized Finance: A Global Approach*, in *Global Finance and Financial Crises* (2021), pp. 82–102.

¹⁹ U.S. Securities and Exchange Commission (SEC), *Framework for “Investment Contract” Analysis of Digital Assets*, 3 April 2019, p. 1.

²⁰ HM Treasury, *Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence* (2023).

²¹ Financial Stability Board (FSB), *Assessment of Risks to Financial Stability from Crypto-Assets* (2022); Financial Action Task Force (FATF), *Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers* (2021).

²² D. W. Arner, J. N. Barberis, & R. P. Buckley, “FinTech, RegTech and the Reconceptualization of Financial Regulation,” *Northwestern Journal of International Law and Business*, 37(3) (2017), pp. 371–413.

What the {Markets in Crypto Assets (MiCA)} regulation does is it greatly minimizes the disorder regarding how crypto currencies are managed in the {European Union (EU)}. Member states were previously dependent on outdated financial laws, or conflicting national systems. This also led to the legal uncertainty that came alongside inadequate protection to the consumers.²³

The lack of a unified regulatory framework bespoke law arbitrage, whereby crypto-asset service providers handpicked the member states of the European Union’s single market with the least restrictive regulatory requirements, undermining investor trust and causing systemic fragility.²⁴ Again due to absence of harmonisation, the ability of the EU to foster responsible innovation was stifled. Many firms were either put off by the regulatory compliance burden or engaged in regulatory arbitrage.²⁵ Furthermore, the unregulated growth of DeFi, stablecoins, and tokenized assets has been neither matched by, nor coordinated with, the ability of regulators to respond to the dangers consumers face from market manipulation, cybercrime, and lack of governance.²⁶ The cross-border nature of crypto-asset markets makes enforcement particularly difficult due to jurisdictional gaps, behavioral obfuscation from the regulated community, and the anonymity of market participants.²⁷ All of these issues are compounded by the borderless nature of the market for cryptocurrencies.

Though MiCA serves as a stepping stone in the direction of clarity within a regulation, it doesn’t resolve the enduring issues of regulatory scope, neutrality to the technology, and ability to enforce it. For instance, MiCA deliberately excludes numerous DeFi protocols and NFTs, thus leaving huge portions of the industry unregulated or poorly defined.²⁸ Simultaneously, some argue that the MiCA regulation, as it stands, has compliance and

²³ European Commission, Impact Assessment accompanying the Proposal for a Regulation on Markets in Crypto-assets (MiCA), SWD(2020) 380 final.

²⁴ European Commission, Impact Assessment accompanying the Proposal for a Regulation on Markets in Crypto-assets (MiCA), SWD(2020) 380 final.

²⁵ N. Moloney, “EU Financial Market Regulation Post-Crisis: Rebuilding Trust in a Decentralised Age,” *Oxford Journal of Legal Studies*, 42(1) (2022), pp. 111–145.

²⁶ I. H.-Y. Chiu, “Regulating Decentralized Finance: A Global Approach,” in *Global Finance and Financial Crises* (Palgrave Macmillan, 2021), pp. 82–102.

²⁷ Financial Stability Board (FSB), *Assessment of Risks to Financial Stability from Crypto-assets* (2022).

²⁸ I. H.-Y. Chiu, “Regulating Decentralized Finance: A Global Approach,” in *Global Finance and Financial Crises* (Palgrave Macmillan, 2021), pp. 82–102.

rule of law too heavily weighted, which may decrease innovation and entrepreneurial activity from small businesses and start-ups, resulting in a paradox of self-sustaining economic growth.²⁹ Additionally, the function of EU supranational authorities' like the ESMA and the EBA, is still a work in progress, which raises issues of ability, uniformity, and regulatory duplication.³⁰

This study is consequently motivated by the fundamental challenge of evaluating whether the emerging legal and regulatory framework of the European Union is effectively prepared to manage the dangers and possibilities provided by crypto-assets. The most important question is whether MiCA and the institutional processes that are linked to it are capable of effectively establishing a regulatory framework that encourages innovation while also protecting market integrity, consumer interests, and financial stability in a financial ecosystem that is becoming more digitized.

1.5 Research Questions

This dissertation proposes to address the following research questions:

- What objectives does the European Union's Markets in Crypto-Assets (MiCA) Regulation pursue in addressing the regulatory problems associated with crypto-assets, and what are its legal underpinnings and constraints?
- What functions do EU supervisory authorities specifically the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) perform in the execution, supervision, and enforcement of MiCA?

²⁹ E. Ferran, "Regulating Crypto-Finance: EU and UK Approaches Compared," *Cambridge Journal of Financial Regulation*, 7(2) (2021), pp. 203–227.

³⁰ Joint Supervisory Statement of the European Banking Authority (EBA) and European Securities and Markets Authority (ESMA) on the application of MiCA (2023); D. A. Zetsche, D. W. Arner, & R. P. Buckley, "The Control of Facebook's Libra: The Potentially Changing Force of the New Cryptocurrency and the Financial Regulators," *University of Luxembourg Law Working Paper Series* (2021).

- How well does MiCA solve key concerns such as decentralized finance (DeFi), stablecoins, cross-border enforcement, and consumer protection within the EU's digital finance framework?
- How does the European Union's strategy for crypto-asset regulation contrast with the regulatory frameworks of non-EU countries like the United States and the United Kingdom, and what insights can be derived from these comparative models?
- What are the prospective long-term consequences of MiCA for financial innovation, market stability, and the incorporation of FinTech inside the EU's legal and regulatory framework?³¹

1.6 Significance of the Topic

In the context of modern financial law and policy, the regulation of crypto-assets represents one of the most pressing and complex challenges to be addressed. The significance of this research lies in its contribution to an ongoing and highly relevant debate on how the European Union responds to technological disruption in the financial sector. The study seeks to evaluate the adequacy and coherence of the law in addressing decentralised, borderless, and rapidly evolving financial innovations.³² This is pursued through an examination of the legal and supervisory framework of the European Union, in particular the Markets in Crypto-Assets (MiCA) Regulation. Within the European Commission's Digital Finance Strategy which aims to foster innovation while safeguarding financial stability and consumer protection in the internal market.³³the research assumes particular relevance.

This study adds to the relatively small but growing body of research that evaluates MiCA from a legal and policy perspective.

³¹ This roadmap document is describing the intention of the EU to create a balance between innovations and consumer protection, and financial stability within the scope of MiCA and other frameworks.

³² Arner, D. W., Barberis, J. N., & Buckley, R. P. (2017). FinTech, RegTech and the Reconceptualization of Financial Regulation. *Northwestern Journal of International Law and Business*, 37(3), 371–413.

³³ European Commission, Digital Finance Strategy for the EU (2020).

This academic work is very valuable and is built on the work of scholars such as Zetzsche et al. (2020) who underscored the gaps in pre-MiCA EU frameworks. It also incorporates the comparative work of Ferran (2021) and Avgouleas and Kiayias (2021) in order to map the EU regulation to a wider global context. Thus, the author adds to the legal theory on the subject by analyzing the way in which the dominate command-and-control regulator model is being questioned by distributed systems which evade conventional means of enforcement.³⁴

The study has relevant implications for regulators, policymakers, and market participants to be taken into account from policy planning viewpoints. By an in-depth analysis of the enactment and expected impact of MiCA, the report delivers EU institutions recommendations on how best to improve the harmonisation of supervisory activities and regulatory frameworks. It also provides guidance to Crypto-Asset Service Providers (CASPs) and financial institutions doing business within the European Union, helping them in preceding regulatory duties and strategic challenges of their transactions.³⁵ In addition, the comparative element of the study will help broadcast best practices from non-EU member countries that will feed into even more internationally harmonized approaches to the regulation of cryptoassets internationally.

In a larger sense, the research lends support to the creation of a digital financial ecosystem in Europe that is both durable and open to innovation. Through the identification of legislative gaps and the proposal of solutions it helps to the objective of making the European Union a worldwide center for responsible digital financial operations. The results of this research will be useful not only for the present regulatory implementation but also for defining future legislative changes and academic inquiry.

³⁴ D. A. Zetzsche, R. P. Buckley, D. W. Arner & L. Föhr, “The EU Markets in Crypto-Assets Regulation: A Critical Assessment,” University of Luxembourg Law Working Paper (2020); E. Ferran, “Regulating Crypto-Finance: EU and UK Approaches Compared,” *Cambridge Journal of Financial Regulation*, 7(2) (2021), pp. 203–227; E. Avgouleas & A. Kiayias, “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, 15(1) (2021), pp. 3–19.

³⁵ *Regulating Cryptoassets: Search of Legitimacy*. Avgouleas, E. & Kiayias, A. (2021); *European Business Organization Law Review*, 22(3), 455480. *The Case of Architecture of Decentralised Finance: The Case of a Cautious Approach*. Working Paper Series of the European Banking Institute, 104.

These publications demonstrate the shortcoming of current regulatory strategies in the EU and offer comparative legal analysis of the decentralised finance and crypto regulations.

This is because crypto-assets are continuing to merge with mainstream finance and are attracting involvement from both institutional and retail investors.

1.7 Structure of the Thesis

This dissertation is divided into six chapters, each sequentially building upon the previous one to provide an exhaustive legal and policy examination of the European Union's regulatory framework concerning crypto-assets.

Chapter 1 presents the research by delineating the goals, scope, problem statement, research questions, and the study's importance. It delineates the context and significance of the investigation within academic and policy spheres.

Chapter 2 delineates the theoretical and conceptual underpinnings of the investigation. It delineates fundamental words such as crypto-assets and FinTech, examines essential regulatory ideas, and presents pertinent legal and economic theories related to the regulation of digital assets. It also analyzes previous literature to situate the topic within current academic discourses.

Chapter 3 focusses on the text in the European Union's legal and regulatory framework regarding the Markets in Crypto-Assets (MiCA) Regulation. We deal with how the EU supervisory authorities perform their assignments, in particular the EBA's supervision of crypto-asset service providers and cooperation with other authorities in the EU level on achieving the layer's consistency. The chapter provides a brief comparative study of other leading jurisdictions, notably the United States and the United Kingdom. Thereby this part of the chapter sets the stage to explain MiCA's framework, scope, and purpose in the European Union's financial regulatory suite.

Chapter 4 examines the obstacles and outstanding concerns in cryptocurrency legislation. It examines the regulatory intricacies of decentralised finance (DeFi), cross-border enforcement, the constraints of existing legal authorities, and the hazards associated with crypto custody, consumer protection, and institutional involvement.

Chapter 5 establishes the empirical basis of the theory. The document delineates the study methodology, showcases case studies on the implementation of MiCA and its impact on the European cryptocurrency industry, and provides a statistical analysis of adoption patterns, market stability, and regulatory results.³⁶

Ultimately, Chapter 6 consolidates the main results and presents conclusions along with prospective suggestions. It encapsulates essential observations, examines the ramifications of MiCA for the EU's financial future, and suggests directions for more legal and policy study. This methodical methodology guarantees a thorough, consistent, and multifaceted examination of the European Union's developing legal environment for crypto-assets.

³⁶ The Case of a Cautious Approach. Working Paper Series of the European Banking Institute, 104.

CHAPTER 2-THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Defining Crypto-Assets and FinTech

In relation to this case study, it is imperative to grasp the nature of crypto- assets and the term financial technology (FinTech) since both underpin the legal and regulatory matters being examined. Both fields are broad and contain a plethora of nascent technologies, practices, and commercial activities that have fundamentally changed the approach to the management of money and finance. While the two concepts are commonplace in policy documents, scholarly works, and regulatory scrutiny, their specific meanings tend to be a source of contention and are largely dependent of the paradigm within which they are situated.

In regard to ‘Crypto-asset’, the European Commission offers quite a broad definition of the concept in digital format in the 2020 proposal almost Regulation on Markets in Crypto-assets (MiCA):

The European Commission defines crypto-assets as “digital forms of value or data which may be captured and transferred over electronic media and stored electronically by distributed ledger technology (DLT) or other applicable technologies”.³⁷ Within these general classifications of digitally stored and transferred assets, crypto-assets may be used for one or several purposes, such as payments, access control, and even serving as the underlying assets of the system where these assets operate. Under MiCA, different types of tokens which include asset-referenced and e-money tokens as well as utility tokens, are treated differently.³⁸ The asset-referenced tokens are governed by more stringent rules on the reserves of the tokens and the governance framework due to the

³⁷ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, p. 2.

³⁸ *Ibid.*, Article 3.

systemic risks they may pose. Nonetheless, MiCA leaves out significant digital assets from its scope such as non-fungible tokens (NFTs), central bank digital currencies (CBDCs) as well as fully decentralized assets.³⁹

“Financial technology” or “fintech” is defined as the use of technology for the delivery of financial services and products, which is a very broad and encompassing definition. Some of the developments in this mobile banking, peer-to-peer lending platforms, robo-advisors, and, more recently, blockchain and smart contract systems.⁴⁰ FinTech is defined as “the use of technology in financial innovation which will in turn give rise to new business models, applications, processes or products that will technologically alter the financial markets and institutions in a significant way” by Financial Stability Board.⁴¹ Within the context of this research, “FinTech” will be used to refer to the use of distributed ledger technology (DLT) in the creation, trading, and management of crypto-assets in both non-regulated or lightly regulated and regulated environments.

New players in the intersection of fintech and crypto-assets technologies such as decentralised swaps (DEXs) and DeFi protocols and automated market makers (AMMs) have surfaced. These players adopt very different approaches when it comes to the concepts of financial regulation in its traditional form.⁴² Due to a lack of head offices and hierarchical, centralised management systems, the imposition and compliance to the licensing verticals become increasingly challenging.⁴³

Cryptocurrency assets and financial technology are inherently interdisciplinary, drawing insights from law, computer science, economics, and financial regulation. Their convergence requires a regulatory strategy that is flexible enough to accommodate

³⁹ *Ibid.*, pp. 6–7.

⁴⁰ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, p. 2.

⁴¹ Financial Stability Board, Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities’ Attention, 27 June 2017, p. 7.

⁴² Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., The EU Markets in Crypto-Assets Regulation: A Critical Assessment, University of Luxembourg Law Working Paper (2020), pp. 15–17.

⁴³ Werbach, K., & Cornell, N., “Contracts ex Machina,” *Duke Law Journal*, vol. 67, no. 2 (2017), pp. 320–322.

technological advancements while ensuring market stability, consumer protection, and compliance with anti-money laundering obligations.⁴⁴ This interdisciplinary foundation provides the framework for examining how the European Union seeks to govern a financial ecosystem that is both decentralized and globally interconnected through instruments such as MiCA.

2.2 Key Concepts in Crypto Regulation

To regulate cryptocurrency appropriately, it is not sufficient to have knowledge of the law and technology of crypto currency, it is also imperative to understand the governance and economics of the particular decentralized network.⁴⁵ These factors set regulation of crypto-assets apart from the standard banking supervision. The literature on decentralized organizations, especially DEXs and DeFi protocols, illustrates the difficulties an administrator has in trying to balance innovation with market and consumer protection.⁴⁶ These materials directly shape policy including the European Union ‘s regulation on the Markets in crypto currency Assets (MiCA).

This aspect covers topics such as decentralization, custody, token classification, smart contracts, and pseudonymity, and technical neutralities are some of the points that are covered in this section. Each of these ideas is significant when it comes to seeing how regulatory agencies will behave on crypto-assets.

The inability to have a central authority is one of the key characteristics of crypto-assets. They operate on decentralized systems that are managed through consensus mechanisms and distributed ledgers.⁴⁷ This is a major departure from traditional financial instruments that are designed, authenticated, and executed by central organizations banks, stock exchanges, and central securities depositories, and the likes. In these DeFi environments,

⁴⁴ Arner, D. W., Barberis, J. N., & Buckley, R. P., “FinTech, RegTech and the Reconceptualization of Financial Regulation,” *Northwestern Journal of International Law and Business*, vol. 37, no. 3 (2017), pp. 371–413.

⁴⁵ Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 5–7.

⁴⁶ Zetzsche, D. A., Buckley, R. P., & Arner, D. W., *Decentralized Finance (DeFi)*, Faculty of Law, University of Hong Kong Research Paper No. 2020/034, pp. 12–15.

⁴⁷ Zohar, A., “Bitcoin: Under the Hood,” *Communications of the ACM*, vol. 58, no. 9 (2015), pp. 104–113.

the absence of central management has critical regulatory ramifications most importantly, who can be sanctioned for non-compliance, or legally bound to fulfill the obligations.⁴⁸

These custodial responsibilities can be analyzed within the wider concept of decentralization. In traditional finance, custody entails the safeguarding of assets by registered intermediaries who are mandated to maintain a minimum threshold of financial capital, as well as be subject to rigorous auditing and transparency processes. This is in stark contrast, to decentralized systems that operate at lower levels of accountability and have no distinct custody holders or regulated participants.⁴⁹

With regards to crypto-assets, individuals often self-custody their assets through private keys or access centralized exchanges and custodial wallets with different levels of regulation. These practices bring about legal and operational risks. The debate focuses on primary concerns such as legal ownership of custodial assets, custodial failure or hacking consequences, and liabilities of the service providers.⁵⁰ MiCA tries to resolve these questions by instructing crypto-asset service providers to follow certain custodial and safekeeping standards, including losing the asset unless the provider can demonstrate the loss was caused by an external uncontrollable event.⁵¹

Token classification remains pivotal in management of crypto assets. Various crypto-assets may serve as a means of payment, a tool to access digital services, or even as a record of ownership. For a long time, regulators have struggled to pigeon-hole these tokens into existing legal paradigms. MiCA takes a useful shot at this by identifying three classes of tokens. These are: (i) asset referenced tokens which are stablecoins backed by a basket of assets, (ii) e-money tokens which are pegged to a single fiat currency, (iii) utility tokens which provides access to certain services of application or systems built on

⁴⁸ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper (2020), pp. 22–25.

⁴⁹ Avgouleas, E., & Kiayias, A., “The Architecture of Decentralised Finance Platforms: A New Challenge for Financial Regulation,” *European Business Organization Law Review*, vol. 22 (2021), pp. 567–570.

⁵⁰ Baird, M., “Navigating Regulatory Challenges for Cryptocurrencies in the United States: The SEC vs. the CFTC,” *Journal of Financial Regulation and Compliance*, vol. 28, no. 3 (2020), pp. 250–253.

⁵¹ European Commission, *Proposal for a Regulation on Markets in Crypto-Assets (MiCA)*, COM(2020) 593 final, 24 September 2020, Article 67.

distributed ledger technology.⁵² This allows regulators to set requirements calibrating to the risk each type of token poses. Some of the issues left to be resolved are those concerning hybrid tokens, while others relate to the classification of certain tokens under other EU legal instruments such as MiFID II, the Prospectus Regulation, or the E-Money Directive.⁵³

The debate about regulation touches on the use of smart contracts. Werbach and Cornell describe smart contracts as software that can fulfill and enforce the terms of a contract through the blockchain without any human involvement.⁵⁴ They claim that these contracts use automation and diminish the importance of trust, but this comes with a set of worrying legal issues around enforceability, dispute resolution, and the protection of consumers. For example, a smart contract that is written poorly may execute differently than the intentions of the concerned parties; the problem however is that the oracle is immutable and thus, remedies, are difficult to apply. This points to the need for legal arrangements that respond to the legal and technological aspects of smart contracts. MiCA, for example, does not comprehensively deal with smart contracts, but their increased use among, say, crowdfunding platforms, makes the case for regulation more urgent.⁵⁵

In blockchain decentralized systems, the concept of pseudonymous identity is central, which is the use of digital representations, such as blockchain wallets, and names. Pseudonymity essentially allows users to maintain some level of anonymity. But how does AML (anti-money laundering) and KYC (know your customer) compliance assess such users, which, in the context of financial compliance, are crucial the KYC (know your customer) pillar? In the context of non-custodial wallets and decentralised protocols, taking ‘Traditional’ AML systems is much easier is assuming the identity of the user (or users) is the central part of the transaction. These assumption does not hold true in the context of blockchain. In the context of the European Union legal context, attempts in

⁵² European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, Article 3, pp. 4–6.

⁵³ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., The EU Markets in Crypto-Assets Regulation: A Critical Assessment, University of Luxembourg Law Working Paper (2020), pp. 28–30.

⁵⁴ Werbach, K., & Cornell, N., “Contracts ex Machina,” *Duke Law Journal*, vol. 67, no. 2 (2017), pp. 320–325.

⁵⁵ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 10–12.

AMLD5 and the proposed AML Regulation package attempts to KYC obligations to crypto asset services.⁵⁶ Yet, enforcement of these obligations in decentralized also remains a challenge.⁵⁷

The principle of technological neutrality underpins many of the European Union’s regulatory measures in the field of FinTech. According to this concept, regulations should be based on function and risk rather than on the specific technology employed, thereby avoiding any implicit favoritism or discrimination.⁵⁸ In the context of crypto-assets, this implies that legislation must be sufficiently flexible to accommodate new technological developments while ensuring that legal outcomes remain consistent regardless of the technology used. For example, a payment service provided through blockchain technology should be subject to the same consumer protection requirements as one delivered via traditional channels. While MiCA generally reflects the principle of technological neutrality, critics argue that it imposes heavy compliance costs that may disproportionately burden smaller innovators, thus undermining the creation of a level playing field.⁵⁹

In conclusion, the analytical basis for comprehending the regulatory problems posed by crypto-assets is comprised of the following core concepts: decentralization, custody, token categorization, smart contracts, pseudonymity, and technical neutrality. The structure of MiCA is guided by their legal and practical ramifications, which also

⁵⁶ European Parliament and Council, Directive (EU) 2018/843 of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for money laundering or terrorist financing (AMLD5), OJ L 156, 19.6.2018, pp. 43–74; European Commission, Proposal for a Regulation on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, COM(2021) 420 final, 20 July 2021.

⁵⁷ FATF, Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers, Financial Action Task Force, October 2021, pp. 10–12.

⁵⁸ Moloney, N., “EU Financial Market Regulation Post-Crisis: Rebuilding Trust in a Decentralised Age,” *Oxford Journal of Legal Studies*, vol. 42, no. 1 (2022), pp. 120–122.

⁵⁹ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper (2020), pp. 35–37.

underscore the need of continuously adapting regulatory policies in response to the ever-changing nature of the market and the technologies that are being developed.⁶⁰

2.3 The Evolution of Financial Technology

The growth of financial technology (FinTech) reflects a broader trend of digital transformation that has fundamentally altered the way financial services are delivered, consumed, and supervised. Rather than representing a single innovation, FinTech constitutes a continuum of technological progress within the financial sector, driven by consumer demand, increased computing power, and the digitalisation of the global economy.⁶¹ These innovations have consistently disrupted traditional financial models and compelled governments to adapt their legal frameworks accordingly. Early milestones included the digitisation of banking services, the adoption of algorithmic trading, and the development of mobile payment systems, while current challenges are exemplified by the rise of decentralised finance (DeFi).⁶²

The emergence of financial technology dates back to the 1960s and 1970s with the implementation of core banking processes and digitized technologies like ATMs, electronic payments, and credit cards.⁶³ The mid-1990s to early 2000s period was marked by the spread of the Internet which resulted in the development of online banking and electronic trade platforms. This period of financial technology increased access and efficiency; however, it still resided firmly within the confines of traditional financial

⁶⁰ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L. (2020). The Markets in Crypto-Assets Regulation (MiCA) and the Digital Finance Strategy of the European Union. Working Paper Series No. 2020/77, European Banking Institute / Brunel University London. The article describes MiCA's technologically neutral position and highlights that its regulatory burdens may disproportionately affect smaller innovators in the crypto space.

⁶¹ Arner, D. W., Barberis, J. N., & Buckley, R. P., "The Evolution of FinTech: A New Post-Crisis Paradigm?", *Georgetown Journal of International Law*, vol. 47, no. 4 (2016), pp. 1273–1275.

⁶² Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W., "On the FinTech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services," *Journal of Management Information Systems*, vol. 35, no. 1 (2018), pp. 220–225.

⁶³ Arner, D. W., Barberis, J. N., & Buckley, R. P., "The Evolution of FinTech: A New Post-Crisis Paradigm?", *Georgetown Journal of International Law*, vol. 47, no. 4 (2016), pp. 1271–1274.

institutions.⁶⁴ The global financial crisis of 2008, however, became a watershed moment, giving birth to new business strategies which were independent of conventional banking systems. The growing public disenchantment of reigning financial institutions, together with the emergence of open-source software and blockchain technology, ignited a boom in decentralized finance (DeFi) and other public innovations.⁶⁵

According to Arner, Barberis, and Buckley, the third generation of digital innovations and start-up companies with newly developed financial technology and other companies providing financial services directly to end-users constitutes FinTech 3.0.⁶⁶ As the 2008 Global Financial Crisis started to dissipate, new financial services providers began to appear alongside and in lieu of traditional banks. Its most distinguishing milestone is the advent of Bitcoin in 2009 - the first currency to operate without state control, existing purely on encrypted consensus. It has since then gained massive popularity and alongside crowdfunding avenues, financial robots, embedded banking, digital currency from central banks and other blockchain based financial services has expanded the field of financial technology. The rapid growth of tech and token based financing of decentralised systems has even more, placed traditional financial regulations to the test.⁶⁷

In recent years, one of the most important developments in the financial sector has been the rise of decentralized finance (DeFi). DeFi operates on blockchain infrastructure, providing financial services such as lending, trading, and asset management without the need for centralized intermediaries. These services are executed through smart contracts self-executing scripts embedded in distributed ledgers that automatically enforce

⁶⁴ Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W., "On the FinTech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services," *Journal of Management Information Systems*, vol. 35, no. 1 (2018), pp. 220–223.

⁶⁵ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation," *Fordham Journal of Corporate & Financial Law*, vol. 23, no. 1 (2017), pp. 35–38.

⁶⁶ Arner, D. W., Barberis, J. N., & Buckley, R. P., "The Evolution of FinTech: A New Post-Crisis Paradigm?", *Georgetown Journal of International Law*, vol. 47, no. 4 (2016), pp. 1275–1280.

⁶⁷ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N., "Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation," *Fordham Journal of Corporate & Financial Law*, vol. 23, no. 1 (2017), pp. 40–44.

predetermined conditions.⁶⁸ While DeFi promises efficiency and inclusion, it also presents structural risks, including vulnerabilities in code, liquidity fragmentation, and regulatory arbitrage.⁶⁹ The scale of the sector is notable: by 2023, the total value locked in DeFi platforms globally exceeded €40 billion.⁷⁰

Another important trend in FinTech is the growing involvement of large technology companies in financial services. Firms such as Meta, Google, and Amazon have introduced payment systems, digital wallets, and credit services, leveraging their extensive user bases and vast data infrastructures. These developments pose competitive and regulatory challenges to traditional financial institutions.⁷¹ The European Union has acknowledged this trend in its Digital Finance Package, which aims to establish a comprehensive regulatory framework for both FinTech firms and BigTech actors in financial markets.⁷²

These advances cause the distinction between financial and non-financial services to become hazier, which in turn prompts regulatory bodies to reevaluate the frameworks governing licensing, competition, and data stewardship. With the intention of managing the convergence of technology and finance, the European Union (EU) has reacted by enacting legislation such as the Digital Markets Act (DMA) and the Digital Services Act (DSA), in addition to enacting financial laws such as the MiCA.

With the Implementation of the Digital Finance Package in 2020 as a timely response to the developing FinTech Union, the proposed core measures outline the Regulation on Crypto Assets, the Digital Act of Operational Resilience, and the Pilot DLT Framework

⁶⁸ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 15–18.

⁶⁹ Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 8–10.

⁷⁰ Financial Stability Board (FSB), *Assessment of Risks to Financial Stability from Crypto-Assets*, October 2022, pp. 4–6.

⁷¹ Arner, D. W., Barberis, J. N., & Buckley, R. P., “The Evolution of FinTech: A New Post-Crisis Paradigm?”, *Georgetown Journal of International Law*, vol. 47, no. 4 (2016), pp. 1285–1287.

⁷² European Commission, *A Digital Finance Strategy for the EU*, COM(2020) 591 final, 24 September 2020.

in the territory of the EU.⁷³ These measures together seek to facilitate DLT-related market infrastructure innovation while ensuring the integrity of the digital financial market and the protection of consumers. Protective measures in MiCA demonstrate the ability to forgo the reputation risk and market discrimination as it advanced the minimum excessive harmonization efforts commonly delated to proportionality in regulation obligations.⁷⁴

FinTech, the very center of the evolution, has the very paradoxical ability to alter financial risk, the architecture of markets, and the regulatory arm of the country. The ability to multiply and expand beyond traditional, central, consolidative control, to enable real-time global transactions, through the new age, open sourced, proprietary innovation, and the continued algorithmic technology infrastructure stands at the frontier beyond the reach of regulatory prudent and conduct. FinTech, as it stretches, covers a larger domain of algorithmic governance, the less defined the controlling lexicon becomes.⁷⁵

The regulators are rest to refine their approaches to multi-faceted tokenisation and increasing use of AI inputs in finance. The developments have difficulties which hinder ease of traditional approaches and as such, authorities are to adapt quickly, making sure technological progress is accurate and in line with the principles of market integrity, consumer protection, and financial stability.⁷⁶

To conclude, FinTech started with the digitisation of the banking sector and has, over the years, moved onto the age of decentralised finance, and in the process, has fundamentally changed the world of finance and its attendant regulations. The European Union has, in response, tried to relieve its frameworks through MiCA and the rest of the Digital

⁷³ European Commission, Digital Finance Package: A Digital Finance Strategy for Europe, COM(2020) 591 final, 24 September 2020, pp. 2–4.

⁷⁴ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 3–5.

⁷⁵ Financial Stability Board (FSB), FinTech and Market Structure in Financial Services: Market Developments and Potential Financial Stability Implications, February 2019, pp. 8–10.

⁷⁶ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets: Consultation Report, International Organization of Securities Commissions, May 2023, pp. 12–14; Financial Stability Board (FSB), Artificial Intelligence and Machine Learning in Financial Services: Market Developments and Financial Stability Implications, November 2017, pp. 3–6.

Finance Package with ‘complementary measures’ that aim to ‘modernise’ them.⁷⁷ However, the research carried out here shows that the gap between innovating technology and supervising finance is still very large, and that there is still a great need for adaptable regulations that are minimal, yet principled and provide a balanced approach between financial innovation and stability.⁷⁸

2.4 Regulatory Theories Applicable to Crypto-Assets

A conceptual framework that can help lawmakers cope with the distinctive features of decentralized digital finance needs to be established for regulating crypto-assets. Besides the technical laws-tools, used for regulation of the virtual assets. Law in the markets, the limits of state power, and consistent innovation more than supervision are generally treaties that might be explained in conceptual frameworks given by regulatory theories. The command-and-control, responsive, risk-based and regulatory sandboxing approaches (among other ideas) are most appropriately applied here. These all theories either directly or indirectly impact the structure and objectives of the Markets in Crypto-Assets (MiCA) Regulation that is currently being introduced by the European Union.

Conventional financial regulation is dominated by the command-and-control approach, which is characterized by the presence of prescriptive regulations that are supported by enforcement mechanisms.

As mentioned in the Black’s assessment, “effective regulation requires an identifiable organization and a central authority able to monitor compliance and enforce sanctions⁷⁹ While this paradigm has proven useful in minimizing systemic risk in traditional financial systems, it suffers from a complete lack of understanding regarding decentralization, pseudonymity, and the lack of clear intermediaries in the cryptocurrency environment. In this way, the granular techniques of command-and-control suffer from an acute lack of

⁷⁷ European Commission, A Digital Finance Strategy for Europe, COM(2020) 591 final, 24 September 2020, pp. 2–5.

⁷⁸ Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 15–17.

⁷⁹ Black, J., “Critical Reflections on Regulation,” *Australian Journal of Legal Philosophy*, vol. 27 (2002), pp. 5–7.

sufficiency when put to use regarding peer-to-peer smart contract systems and Decentralized Autonomous Organizations (DAOs).

Some scholars and regulators have since then adopted the responsive theory of regulation described by Ayres and Braithwaite , which suggests a ‘sliding scale’ approach to enforcement. Regulators start with the persuasive ‘toolbox’ (e.g. guidance or informal monitoring) and only use the deterrent tools if absolutely necessary.⁸⁰ This model works very well in times of dramatic technological advancement and legal ambiguity as it provides regulatory peace and flexibility. The position of the European Union provides an example of this shift in regulatory approach. MiCA now imposes lighter requirements on smaller crypto-asset service providers.⁸¹ At the same time, according to Black and Baldwin, control-based regulation is the most dominant one, which suggests the coexistence of highly traditional, inflexible approaches and more modern oversight mechanisms.⁸²

This approach targets where regulatory oversight is most needed to address consumer protections, market integrity and financial stability needs for the economy. This approach supports differential treatment depending on the actions and impact, as against uniform regulation of all entities. ⁸³

This paradigm is evident in MiCA, as set out in the new regulation, which imposes stricter requirements on asset reference tokens and e-money tokens that are perceived as riskier, and those utility tokens or utility tokens. The aim of this tiered system is to ensure that regulations are proportionate without chocking innovation.

All in all, having sandbox regulations in which innovators can develop products with some degree of supervisory oversight has been garnering attention from regulators all

⁸⁰ Ayres, I., & Braithwaite, J., *Responsive Regulation: Transcending the Deregulation Debate*, Oxford University Press, 1992, pp. 25–30.

⁸¹ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 8–10.

⁸² Black, J., & Baldwin, R., “Really Responsive Risk-Based Regulation,” *Law & Policy*, vol. 32, no. 2 (2010), pp. 182–184.

⁸³ European Commission, *Digital Finance Strategy for the EU: For a more competitive and innovative European financial sector*, COM(2020) 591 final, Brussels, 24 September 2020.

Black, J. & Baldwin, R., ‘Really Responsive Risk-Based Regulation’, (2010) 32(2) *Law & Policy* 181–213.

over the world.⁸⁴ MiCA incorporates some of the proportionality principles of obligations, but like the other pillars of the framework, does not entrench the formal sandbox system and uses proportional obligations and guidance tools instead. Other than developing insights into novel business strategies and emergent technologies, regulatory sandboxes are essential for offering innovators clarity on regulatory matters without the need for full adherence to all standards.⁸⁵

In a market characterized by disintermediation, code-based governance, and worldwide reach, theoretical frameworks capture the paradoxical relationship between innovation and regulation. MiCA is illustrative of a hybrid regulatory approach; it is relatively legal and rationally morphological. It fuses multiple diverse approaches and rests one on the other. It is still the case, as this dissertation will explore more deeply, that the success of this kind of hybridization rests on the efficacy of the institutions, the rate of technological advancement, and the development of universal legal principles.⁸⁶

2.5 Literature Review and Related Works

Interest in legal, economic, and technical issues around blockchain and digital finance has emerged and multiplied with the growth of scholarly and policy writing, especially in the realm of crypto-asset regulation. Early studies on cryptocurrencies, especially Bitcoin, concentrated on the technical composition and the possibility of a disruptive change to the monetary and banking systems.⁸⁷ Over time, legal scholarship began to focus on regulatory review of the market, addressing questions around stablecoins, ICOs, and DeFi.

⁸⁴ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N., “Regulating a Revolution: From Regulatory Sandboxes to Smart Regulation,” *Fordham Journal of Corporate & Financial Law*, vol. 23, no. 1 (2017), pp. 40–43.

⁸⁵ European Commission, *FinTech Action Plan: For a More Competitive and Innovative European Financial Sector*, COM(2018) 109 final, 8 March 2018, pp. 5–7.

⁸⁶ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 28–30; Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 12–15.

⁸⁷ Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S., *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*, Princeton University Press, 2016, pp. 15–20.

This is part of a larger endeavour to understand the ways in which different jurisdictions attempt to regulate such new financial instruments.⁸⁸

The lack of integration of both domestic and international entities' regulatory frameworks is a topic that has been given attention in scholarship. In Zetsche et al.'s view, incoherence and incompleteness of a legal approach toward crypto assets generated confusion for investors, enabled regulatory arbitrage, and diminished the capacity of international bodies to surveil systemic risk.⁸⁹ In the European Union, the absence of a unified framework before the adoption of MiCA was a major reason for cross-border discrepancies and consumer risk exposure that would otherwise be avoided.⁹⁰ This lack of legal certainty also inhibited institutional participation and stifled the accumulation of investment in the domain of digital assets.⁹¹

More studies have looked into the obstacles facing the governance of algorithmic decision making and decentralized networks. As Werbach and Cornell note, applying conventional legal systems to the more novel 'smart contracts' managed systems DAOs (Decentralized Autonomous Organizations) is a challenge. These problems are entangled with basic tenets of private law, such as the enforceability of contracts, the fiduciary obligations, and the liability of the corporation.⁹²

The research showed that there is a need for legal innovation that accepts the absence of centralising players and for introducing new kinds of responsibility too. Some of the new types of responsibility such as code audits, governance tokens and algorithmic accountability are also found here.

Comparative legal study has also developed, which contrasts and compares the approach of the European Union (EU), with that of United States of America, United Kingdom and

⁸⁸ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 5–7.

⁸⁹ Zetsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *Regulating Libra and Other New Forms of Crypto-Assets: The Global Challenges*, European Banking Institute Working Paper, 2020, pp. 10–12.

⁹⁰ Arner, D. W., Barberis, J., & Buckley, R. P., *FinTech: The Evolution of a New Post-Crisis Paradigm*, *Georgetown Journal of International Law*, vol. 47 (2016), pp. 1275–1280.

⁹¹ Werbach, K., & Cornell, N., "Contracts Ex Machina," *Duke Law Journal*, vol. 67, no. 2 (2017), pp. 318–322.

⁹² Werbach, K., & Cornell, N., "Contracts Ex Machina," *Duke Law Journal*, vol. 67, no. 2 (2017), pp. 326–332.

countries in Asia-Pacific region. Unquestionably, Ferran (2021) and Avgouleas and Kiayias (2021) claim that MiCA is a meaningful milestone for legal certainty and stability in the market for the European Union. However, there is still the possibility of regulatory lag relative to the rest of the world. For example, in the United States, the regulatory perimeter is actively patrolled by the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) among others. By contrast, the United Kingdom, post Brexit, is taking a more gradual stance, attempting a mix of regulatory integration and public-private partnership in configurable arrangements to its post-EU digital finance policy.⁹³

The market consequences of crypto regulation, particularly the projected implications of MiCA, have recently been the subject of empirical analysis. Evidence from institutional reports suggests that regulatory clarity can reduce market volatility and foster institutional adoption. For instance, the European Central Bank (2023) has assessed the potential financial stability effects of crypto-assets and is actively considering the introduction of a digital euro, while the Financial Stability Board (2022) has issued recommendations aimed at strengthening global oversight of digital assets.⁹⁴

But there is also worry that MiCA might hinder short-term innovation if the costs of compliance are too high. Smaller companies and DeFi protocols which are hard to fit into the traditional legal structure, might bear regulatory costs that are disproportionate to the value they are providing. These risks have been flagged by multiple policy-oriented think-tanks as well as advocacy groups. These folks are worried that a lack of minimum

⁹³ Ferran, E., “Regulating Crypto-Finance: EU and UK Approaches Compared,” *Cambridge Journal of Financial Regulation*, vol. 7, no. 2 (2021), pp. 210–212; Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 7–10; U.S. Securities and Exchange Commission (SEC), *Framework for “Investment Contract” Analysis of Digital Assets*, April 2019; HM Treasury, *Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence*, January 2023, pp. 4–6.

⁹⁴ European Central Bank (ECB), *Crypto-Assets: Developments and Implications for Financial Stability*, Occasional Paper Series, No. 307, July 2023, pp. 18–21; Financial Stability Board (FSB), *Assessment of Risks to Financial Stability from Crypto-Assets*, February 2022, pp. 3–6.

regulatory standards could dampen innovation and stifle the development of nascent projects in the EU digital finance marketplace.⁹⁵

The research provides support for the idea that, despite the fact that MiCA solves numerous regulatory weaknesses in the legal framework of the EU, substantial gaps still exist in the regulation of decentralized systems, developing asset classes such as non-financial instruments (NFTs), and the worldwide coordination of enforcement mechanisms. Through providing a comprehensive legal study of MiCA, evaluating its institutional design, and situating it within wider comparative and theoretical frameworks, the purpose of this dissertation is to bridge the gap between the academic and policy discussions that are now taking place.

Increasing innovation concerning compliance and financial inclusion has acquired substantial research across the crypto-asset ecosystem. According to Arner, Barberis and Buckley (2017), appropriate regulation lowers the chances of systemic collapse and improves financial inclusion by providing financial services to the unbanked or marginalized population.⁹⁶ From this angle, FinTech and crypto-Assets technology are capable of driving changes in the financial industry due to reduction in transaction costs, elimination of geographical constraints, and facilitation of the micro investment.

To enjoy these benefits, however, the flexibility and proportionality of the regime must not be regulatory, especially burdensome to micro enterprises. MiCA aims to achieve such a balance by proportionality associated with the scale and systemic importance of

⁹⁵ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 32–35; Centre for European Policy Studies (CEPS), *MiCA: Will Europe’s New Crypto Rules Foster or Hinder Innovation?*, Policy Brief, June 2021, pp. 4–6.

⁹⁶ Arner, D. W., Barberis, J., & Buckley, R. P., “FinTech, RegTech and the Reconceptualization of Financial Regulation,” *Northwestern Journal of International Law and Business*, vol. 37, no. 3 (2017), pp. 381–385.

the crypto-asset service providers. Yet, the adequacy of these proportionality mechanisms to stimulate innovation while preserving market integrity still remains doubtful.⁹⁷

Jurisdictional issues, inherent in the regulation of technologies that transcend national boundaries, have become a central line of research in recent years. Avgouleas and Kiayias (2021) argue that while MiCA promotes regulatory uniformity within the European Union, its effectiveness in a globalised digital environment is limited unless paired with broader international standards.⁹⁸ Concerns have also been raised regarding potential conflicts or duplication between MiCA and concurrent initiatives by the Financial Action Task Force (FATF), the International Organization of Securities Commissions (IOSCO), and the Financial Stability Board (FSB).⁹⁹ This challenge is compounded by the reluctance of major jurisdictions most prominently the United States to adopt a unified regulatory stance, resulting in fragmented enforcement and divergent compliance obligations for global crypto-asset firms.¹⁰⁰

There is growing body of research on regulation of algorithmic and artificial intelligence driven financial systems including in cases where these systems coexist with crypto-asset markets. As blockchain based smart contracts growing complexity and and invention of governace automation problem of legal liability, algorithmic bias and ethical compliance is getting up, suggested De Filippi and Hassan (2018).¹⁰¹

Existing frameworks, including MiCA, focus on operational risks, and prudential rules, rather than tracking the deeper socio-technical dynamics of decentralized platforms These problems have not yet been adequately treated in these frameworks. As the arguments of

⁹⁷ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., The EU Markets in Crypto-Assets Regulation: A Critical Assessment, University of Luxembourg Law Working Paper, 2020, pp. 36–38.

⁹⁸ Avgouleas, E., & Kiayias, A., “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 12–14.

⁹⁹ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets: Consultation Report, May 2023, pp. 7–9; Financial Stability Board (FSB), Global Regulatory Framework for Crypto-Asset Activities, July 2023, pp. 4–6.

¹⁰⁰ U.S. Commodity Futures Trading Commission (CFTC), Digital Assets Primer, 2020, pp. 2–4; U.S. Securities and Exchange Commission (SEC), Framework for “Investment Contract” Analysis of Digital Assets, April 2019.

¹⁰¹ Avgouleas & Kiayias (2021), *The International Regulation of Crypto*.
De Filippi & Hassan, 2018. *Blockchain Technology and Decentralized Governance*.

academics go, future regulations will have to incorporate insights from computer science, behavioral economics and digital ethics if they are to remain effective and relevant in the way they are now.

All in all, there is a growing acknowledgement within the scholarly works regarding the concept of ‘regulatory lag’ the time interval between the emergence of innovations and the time the legislation catches up. As multiple scholars have put it, regulation is fundamentally reactionary, which too often relegates the regulators to a passive posture with little room to foretell new hazards or champion new budding innovations.¹⁰² The reaction time in the case of NFTs, DeFi DAOs, and the TWIFIs which combine features of securities, commodities, and currencies is legendary. While MiCA is landmark legislation in offering legal clarity and regulatory certitude, its effectiveness in the long run will probably depend on the maintenance of its relevance through periodic changes or delegated acts to ensure it is relevant from a technology and economics perspective.¹⁰³

All things considered, the body of scholarly work suggests that it is very hard to conceive of a legal framework that is at the same time too big yet free enough, to accommodate crypto assets. Even though MiCA is an admitted pioneering effort in the area of international crypto legislation, a fully implemented CuCa will rely on its enactment, the provision of interpretative instructions and the participation of key global actors.¹⁰⁴

Using a critical examination of the structure and scope of MiCA, a assessment of its potential to address significant legal and institutional difficulties, as well as the locations

¹⁰² Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W., “On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services,” *Journal of Management Information Systems*, vol. 35, no. 1 (2017), pp. 225–228; Allen, H. J., “DeFi: Shadow Banking 2.0?,” *Capital Markets Law Journal*, vol. 17, no. 1 (2022), pp. 52–54.

¹⁰³ European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 12–15; Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 30–33.

¹⁰⁴ Gomber, Peter, Tshangla, Satchit, and Woodfork, Robert, *Digital Finance and Regulatory Lag: Challenges for Innovation* (2017).

Allen, Hilary J., *Regulatory Lag, Innovation, and Financial Stability* (2022).

De Filippi, Primavera, and Wright, Aaron, *Blockchain and the Law: The Rule of Code* (Harvard University Press 2018).

Avgouleas, Emiliios, and Kiayias, Aggelos, *The Promise and Perils of Regulating Crypto-Assets: A European Perspective* (2021).

in which further regulatory development is both necessary and feasible, this dissertation aims to construct to this emerging field.¹⁰⁵

¹⁰⁵ European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final; Zetsche, D. A., et al. (2020), Regulating Libra and Other Crypto-Assets: The Global Challenges; Avgouleas, E. & Kiayias, A. (2021), The Architecture of MiCA and the Future of Global Crypto Regulation.

CHAPTER 3-THE EUROPEAN UNION’S LEGAL AND REGULATORY FRAMEWORK

3.1 Overview of EU Financial Regulations

The EU financial regulatory architecture is a complicated and multi-layered framework that has significantly been transformed over almost three decades of the course of financial integration, worldwide economic crises, technological disruptions and political integration. Besides contributing to the stability of financial market, to protect customers to promote the market integrity to support the construction of one single internal market for the financial services, the main purpose of this framework is to promote financial stability. To get a clue on the legal environment in which the Markets in Crypto-Assets (MiCA) Regulation works, it is crucial to analyze the basic building blocks of the European Union’s financial regulation. These components comprise the legislative elements, supervisory bodies and institutional frameworks which run the MiCA Regulation. In this part, a symmetrical description of these parts is featured, so as to put in place the affiliated frameworks for the further review of MiCA as both a continuity and a change from the regulative norms that in force prior.

The Single Market for Financial Services created under the Treaty on the Functioning of the European Union (TFEU) acts as the legal basis for financial integration throughout the EU member countries. The Union's powers in this area derive mainly from Articles 114 and 53 of the TFEU, which give the Union the right to adopt all necessary measures to establish and operate the internal market, including the rule of thumb harmonisation of financial services.¹⁰⁶ The EU has, on this constitutional basis, implemented numerous regulations and directives intended to harmonise the financial systems of its member countries.

¹⁰⁶ Consolidated Version of the Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012, pp. 26–27 (Articles 53 and 114 TFEU).

The introduction in the early 2000s of the Lamfalussy Process was an integration of the EU's finances which marked great advancement in their streamlining of the governance of finances. It introduced the 4-levels of legislature which was meant to enhance efficiency and flexibility. In Level 1, the first part of the framework legislation, the 'regulations and directives', is passed using the ordinary legislative procedure. Level 2 of the framework contains more precise measures undertaken by the Commission. Level 3 contains guidelines and a form of cooperation among the European Supervisory Authorities, which is meant to ensure uniform application across the member states. Level 4 has to do with the 'enforcement' of the legislations. While over the years there have been some modifications, the same principal forms the basis of the governance over financial markets in the EU.¹⁰⁷

One important piece of legislation for financial regulation in the European Union is the Markets in Financial Instruments Directive II (MiFID II). The directive, alongside the regulation, MiFIR, manages investment firms and trading venues as well as market transparency for the purposes of protecting investors and market competition, integrity, and fostering competition among investors.¹⁰⁸ However, the application of MiFID II is still problematic, particularly in the area of decentralised and tokenised digital assets which often do not fit neatly within the current classifications of financial instruments. MiFID II is still maintained as the foundational set of rules for investment services, along with the securities market for the European Union. The MiCA regulation was created to fill the gaps in MiFID II, particularly with regard to crypto-assets.¹⁰⁹

It is essential to emphasize that both the Revised Payment Services Directive (PSD2) and the E-Money Directive (EMD2) are primary pieces of EU law concerning payments and e-money. By enhancing the authentication of clients and opening the market to other service providers, PSD2 kept innovation and increased consumer protection to the forefront. In contrast, EMD2 lays down the legal boundaries for the issuance of e-money

¹⁰⁷ de Larosière, J., *The Future of Financial Supervision in Europe: Report of the High-Level Group on Financial Supervision in the EU*, European Commission, February 2009, pp. 21–23; Moloney, N., *EU Securities and Financial Markets Regulation*, 3rd ed., Oxford University Press, 2014, pp. 70–75.

¹⁰⁸ Moloney, N., *EU Securities and Financial Markets Regulation*, 3rd ed., Oxford University Press, 2014, pp. 623–628.

¹⁰⁹ Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L., *The EU Markets in Crypto-Assets Regulation: A Critical Assessment*, University of Luxembourg Law Working Paper, 2020, pp. 15–18.

by sanctioned bodies. However, as Ferran (2021) notes, the same cannot be said for PSD2 and EMD2 as they both failed to consider blockchain based assets and tokenized payment systems.¹¹⁰ This gap in regulation was, to an extent, covered through the Fifth Anti-Money Laundering Directive (AMLD5). The directive treated crypto exchanges and wallet providers under the EU anti-money laundering rules, though uneven implementation in the EU member states has been the norm.¹¹¹ More DORA has tried to improve the IT security and resilience of crypto-asset service providers in EU financial institutions, to some extent.¹¹²

All of the above has been built upon by MiCA which focuses particularly on e-money tokens and asset-referenced tokens to define and regulate associated crypto assets.

Another equally significant area which illustrates the attempts by the European Union has trying to legalize and standardize the use of virtual currencies and tackle the AML and CTF offenses which is the ‘Fifth Directive of the AML’. Cryptocurrencies brought with the AMLD5 the obligations of AML regulations to some crypto-asset service providers like exchanges and custodial wallet service providers. However, there has been no European Union-wide implementation of AMLD5, as compliance with the Directive is the obligation of the member states. Each of the 27 member governments has approached the issue according to its own vision, which has resulted in fragmentation of the implementation, and in turn ineffective enforcement of AMLD5.¹¹³ In response to these inadequacies, the Union has planned the establishment of the Anti-Money Laundering Authority, alongside the introduction of the universally binding AMLD.¹¹⁴ The Authority

¹¹⁰ Ferran, E., “Regulating Crypto-Finance: EU and UK Approaches Compared,” *Cambridge Journal of Financial Regulation*, vol. 7, no. 2 (2021), pp. 210–212.

¹¹¹ European Union, Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing (AMLD5), OJ L 156, 19.6.2018, pp. 43–62.

¹¹² Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector (DORA), OJ L 333, 27.12.2022, pp. 1–80.

¹¹³ Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 (AMLD5), OJ L 156, 19.6.2018, pp. 43–62.

¹¹⁴ European Commission, Proposal for a Regulation Establishing the Authority for Anti-Money Laundering and Countering the Financing of Terrorism (AMLA), COM(2021) 421 final, 20 July 2021, pp. 3–5.

is meant to unify the enforcement of these regulations across the Union, which has been lacking as a result of the compliance fragmentation. MiCA is aimed at governing crypto, but the proposed regulation extends beyond to reinforce the overall legal architecture.

The Digital Operational Resilience Act (DORA), another key component alongside MiCA of the EU's Digital Finance Package, seeks to ensure FinTech entities withstand disruptive cyber-attacks. DORA is technology neutral and applies to all sectors of finance. However, DORA's relevance to the crypto-asset ecosystem is particularly pronounced due to the operational perils posed by distributed networks and smart contracts. Together, DORA and MiCA show the EU's more integrated and comprehensive approach to regulating digital finance. This development addresses the fact that, as one of the regulators of the digital economy, an EU member state would face not just financial and economic liabilities, but also infrastructure and systemic cyber risks.¹¹⁵

Both national competent authorities (NCAs) and European Supervisory Authorities (ESAs) are in charge of supervision and enforcement of EU financial legislation. In particular, the NCAs are the administrators of the financial regulation.

3.2 Markets in Crypto-Assets (MiCA) Regulation

The Markets in Crypto Assets Regulation (MiCA) deals with legislative shifts attempting to regulate cryptocurrency assets which the existing framework (MiFID II, E-Money) does not cover, and which the EU still does not possess anything to regulate. As part of the wider Digital Economy Policy Package, the European Board seeks to boost legal clarity, safeguard investors, and stimulate innovation by promoting cross-border unification of the regulatory framework within the EU single market which was introduced in September 2020.¹¹⁶ There has been a regulatory gap because of the lack of certainty surrounding the crypto assets within Europe, and the piecemeal approach has been abandoned by the EU in favour of a more targeted approach.

¹¹⁵ Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector (DORA), OJ L 333, 27.12.2022, pp. 1–80; European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 2–4.

¹¹⁶ European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, 24 September 2020, pp. 1–3.

MiCA highlights three classes of crypto-assets which include asset referenced tokens (ART), e-money tokens, and utility tokens. These classes are differentiated based on their functions and the associated risks. ARTs are crypto-assets that are backed by a basket of fiat currencies, commodities and other crypto-assets. These are considered the most important because of the potential ARTs can have on monetary sovereignty and financial stability. Consequently, the providers of ARTs have to comply with numerous regulatory obligations under MiCA. These obligations are prior authorisation from the European Banking Authority (EBA), establishment of adequate reserve garnishment policies, whitepaper disclosure Authorisation, governance, and other compliance obligations (European Commission, 2020, Arts. 15–27).¹¹⁷

EMTs are regulated and require compliance with additional provisions from MiCA. EMTs are issued in exchange for a single fiat currency and intend to be used primarily as a means of payment. Issuers are subject to obligations on capital sufficiency, operational standards, redemption rights, and are a derivative of rigorous legal control as credit institutions or licensed electronic money issuers. The legislation aims to ensure republication is avoided and maintained on a cross zone EU basis (Z. et al. 2020) by confirming with relief that issuers of EMTs are to the scope of MiCA.¹¹⁸

There are much lower regulatory barriers for utility tokens than for other token categories, given utility tokens only provide access to certain digital platforms or services and are not meant to be used for payments and/or as a store of value. Per Markets in Crypto-Assets Regulation (MiCA), utility token issuers must create and make a whitepaper available, as well as file with the appropriate national authority. However, these issuers are not subject to ex-ante authorization as long as the issuance does not exceed the set thresholds (European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA),

¹¹⁷ European Commission, Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, 24 September 2020, Arts. 15–27; Zetzsche, D. A., Buckley, R. P., & Arner, D. W. (2020). Regulating Libra and Other New Forms of Crypto-Assets: The Global Challenges.

¹¹⁸ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Arts. 43–48, which set out the obligations for issuers of e-money tokens; European Parliament and Council, Directive 2009/110/EC on the taking up, pursuit and prudential supervision of the business of electronic money institutions (EMD2); Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L. (2020). The Markets in Crypto-Assets Regulation (MiCA): A Critical Assessment. University of Luxembourg Law Working Paper.

COM(2020) 593 final, Articles 4-8). This more lenient regulatory approach balances regulatory neutrality with risk sensitivity, whereby the rules are proportional to the relevance and intricacy of the system in question.¹¹⁹

Also, MiCA gives a framework for the supervision of Crypto-Asset Service Providers (CASPs) which embrace trading platforms, exchanges, custodial wallet facilities, and portfolios managers of cryptograph. CASPs must be authorized by the relevant authority in the Member State in which they are established, and comply to a wide set of standards including the governance arrangements, the operational resilience, the conflicts of interest, the clients' assets protection (European Commission, 2020, Title V). Consequently,¹²⁰ With respect to the tasks for crypto-asset service providers (CASPs), the Markets in Crypto-Assets Regulation (MiCAR) attempts to parallel the obligations of financial institutions under MiFID II in order to achieve a level equilibrium and balance protective measures for market stability and consumer safeguard protection. One of the innovations brought about by MiCAR is the issuance of passporting rights. This enables Authorised CASPs to freely operate in all EU member countries based on a single license and no longer need to apply for individual national authorisations. This is in line with the EU's overarching goal of financial integration and the removal of obstacles to cross-border financial services. Nevertheless, passporting entails compliance with the MiCA provisions, especially those pertaining to consumer transparency and compliance with anti-money laundering (AML) obligations (European Commission, 2020, Articles 53-61).¹²¹

¹¹⁹ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Articles 4–8, which lay down the requirements for the issuance of utility tokens, including the obligation to publish a whitepaper and notify the competent authority.

¹²⁰ European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (MiCA), COM(2020) 593 final, 24 September 2020, Title V (on authorisation and supervision of CASPs).

See also Articles 53–61 MiCA, which establish authorisation and passporting rules for CASPs across the EU.

Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments (MiFID II), OJ L 173, 12.6.2014, p. 349–496.

¹²¹ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Articles 53–61, which establish authorisation and passporting rules for CASPs across the EU; Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments (MiFID II), OJ L 173/349, which provides the regulatory framework for investment firms and serves as a reference point for MiCA's proportional obligations.

Policy frameworks have long been absent within the realm of market abuse for crypto assets. Market abuse case studies under the MiCA Regulation still attest to the case of trading on insider information, the manipulation of the securities market, and unlawful dissemination of inside information. These provisions concern crypto-assets which are allowed to trade on a trading venue and aim to protect the integrity, fairness, and transparency of the crypto market. (European Commission, 2020, Title VI, Articles 76–83)¹²²

These measures are in line with the Market Abuse Regulation (MAR) framework that is used in traditional financial markets.

Despite the fact that it has many advantages, MiCA does have certain drawbacks. It should be noted that this provision does not apply to decentralized finance (DeFi) systems that do not have any middlemen or legal organizations that may be identified. Since the framework of MiCA is mainly built on the identification and licensing of issuers and service providers,¹²³

MiCA does not have jurisdiction over completely autonomous systems that function independently of any human involvement.¹²⁴ Also, NFTs cannot be included until they are produced on a large scale or perform an economic function akin to a financial instrument.¹²⁵ This lack of regulation still raises concerns about possible regulatory gaps in the ever-growing NFTs market.

¹²² European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Title VI, Articles 76–83, which establish market abuse prohibitions for crypto-assets, including rules on insider trading, market manipulation, and disclosure of inside information.

¹²³ Markets in Crypto-Assets Regulation (2020), Arts. 2-3, European Commission. Adoption is foreseen with the EU Commission (2023); see also ESMA delegated acts and EBA delegated acts on MiCA implementation.

¹²⁴ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Recital 8 and Article 2(2), clarifying that fully decentralized systems without an identifiable issuer are excluded from MiCA's scope.

¹²⁵ *Ibid.*, Recital 8 and Article 2(2), on the exclusion of unique NFTs unless they functionally resemble financial instruments.

In addition, the execution of MiCA is dependent on a complicated timeframe and activities that are delegated. While the rule was officially enacted in 2023, the majority of its provisions are not expected to go into full force until between 2024 and 2025. This is contingent upon the kind of asset or service that is being regulated. During this time of transition, the European Union institutions, such as the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA), have been charged with the responsibility of defining regulatory guidelines and technological standards in order to guarantee that they are applied uniformly across the Union. According to the European Commission (2023), these agencies will also play a significant role in the monitoring and enforcement of regulations, notably with regard to large-scale issuers and cross-border CASPs.

Not only is MiCA noteworthy from a policy standpoint because of its attempts at harmonisation, but it is also significant because of its extraterritorial ramifications. Given the EU's economic weight and regulatory reach, MiCA has the potential to become a global standard for crypto-asset legislation. This parallels the way in which the General Data Protection Regulation (GDPR) reshaped data privacy practices worldwide. In order to gain access to the European Union market, multinational corporations will be required to comply with MiCA's standards, potentially influencing regulatory approaches in other jurisdictions.¹²⁶

In a nutshell, the MiCA is a monumental step forward in the process of regulating digital money. By establishing a complete legal framework for crypto-assets and associated service providers, the MiCA addresses a significant deficiency in the legal framework governing financial transactions in the European Union. It exemplifies a careful equilibrium between safeguarding investors and encouraging innovation, and it serves as a model for other countries that are looking to govern cryptocurrency markets in a way

¹²⁶ European Commission (2020), Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (MiCA), COM(2020) 593 final, Brussels; Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2020). The Markets in Crypto-Assets (MiCA) and the EU Digital Finance Strategy. University of Luxembourg Law Working Paper No. 2020-012.

that is consistent and objective with regard to technology. However, the efficacy of this regulation will ultimately be determined by the clarity of secondary laws, the competence of supervisory bodies, and the flexibility of the regulation to develop in response to rapid changes in both the market and the technology landscape.

3.3 The Role of European Supervisory Authorities

It is not just the quality of the rulebook that will determine whether the Markets in Crypto Assets (MiCA) Regulation will be successful, but also the presence of supportive capacity, coordination and functional regulatory architecture as we shall see. The financial supervision of the European Union (EU) is subdivided into a multi-level structure for conducting supervision. This framework consists of both national competent authorities (NCAs) and supranational bodies that are collectively designated as the European Supervisory Authorities (ESAs). The European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) are two European Securities Authorities (ESAs) that are expected to be very much involved, supporting the implementation, interpretation and enforcement of MiCA in the area of crypto-asset regulation.

It is ESMA which continues with the the delineation of the functions regarding the investor protection, the average of the geopolitical order within the financial markets, and the supervisory convergence with in the member states borderages within the single supervisory region. ESMA, which is an acronym for the European Securities and Markets Authority, was constituted in the year of 2011 in relation to the event of the world financial crisis and, since, has steadily broadened its jurisdiction. Under the framework of MiCA, ESMA has responsibility on the oversight of certain crypto-asset service providers and the centralisation of the crypto passporting systems within the Union. Article 59 of MiCA granted ESMA the supervisory and the regulatory functions together with the unique obligation of the construction of the guiding software regulatory

technical standards, in addition to, the consistent monitoring of the implementation of the Regulation by the National Competent Authorities and the market participants.¹²⁷

MiCA assigns to ESMA a focal part to attain its main goal of achieving uniform regulation concerning them within the entire European Union (EU). Since cryptocurrency markets are not bound within geographical borders, a differing national approach could otherwise defeat the objectives of MiCA. MiCA reducing the chances of regulatory arbitrage highest to evenly distribute the authorisation and oversight functions across the Union. This approach is especially important to minimize the regulation gaps, and the oversight evading to the aims Protected to secure MiCA them. Forum shopping is one of the main strategies CASPs could use.¹²⁸

Furthermore, the European Banking Authority (EBA) comes into action in the MiCA, notably in respect to application-specific tokens (ARTs) and electronic money tokens (EMTs). As it can be seen as a replacement for fiat currency or can meddle with the money policy, there are concerns of the stability of the financial system and the issue of systemic risk. The European Commission, 2020, Article 40, reports that it is the European Banking Authority (EBA) that regulates the monitoring of 'significant' issuers of ARTs, especially in wide E.U. usage cases with large user bases.¹²⁹

The European Banking Authority (EBA) will provide direct supervision to these issuers so as to ensure that they comply with the capital requirements, governance commitments, reserve management and liquidity requirements. In the case where issuers authorizes violations of regulatory rules, it can issue the supervisory warnings, impose fines and even withdraw authorizations.

¹²⁷ European Commission (2020), Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Article 59, Brussels; Moloney, N. (2011). European Securities and Markets Authority and Institutional Design of a European Financial Market – Part (1) Rule-making. *European Business Organization Law Review*, 12(1), 41–86; Busch, D. & Ferrarini, G. (2021). *Governing the Realm of Financial Innovation: MiCA Proposal*. European Banking Institute Working Paper Series, No. 97. Available at: <https://www.esma.europa.eu>

¹²⁸ European Commission (2020), Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Article 59, Brussels; Busch, D. & Ferrarini, G. (2021). *Governing the Realm of Financial Innovation: MiCA Proposal*. European Banking Institute Working Paper Series, No. 97.

¹²⁹ Proposal to Regulation on the Markets in Crypto-assets (MiCA), COM(2020) 593 final. Programme of Implementation of MiCA

Out of all of the components of MiCA, perhaps the most innovative is the request for coordination between the European Supervisory Authorities, especially between ESMA and the EBA, and with the national regulators. This is yet another attempt to grasp the reality that the regulatory landscape for crypto-assets does not fit conveniently into the traditional approaches of banking, securities, or payments and instead, spans across multiple silos. For instance, the issuance of a stablecoin might simultaneously be the jurisdiction of the European Central Bank (ECB) for the purpose of exercising monetary policy, and of the European Securities and Markets Authority (ESMA) if the token exhibits features of an investment instrument. MiCA tries to cope with this issue for the first time in European law by creating frameworks for supervisory cooperation and, as a primary step, instituting the compulsory cooperation for the development of regulatory technical standards (RTS) and implementing technical standards (ITS) on the given topics.¹³⁰

The ability of the ESAs to perform the tasks that have been conferred on them by the MiCA depends on a variety of institutional and practical factors. Distribution of resources is very difficult one. They have already a mountain to climb to fulfill their supervisory duties such as under MiFID II, the Capital Requirements Regulation (CRR), the Payment Services Directive (PSD2), and the Digital Operational Resilience Act (DORA) as Allen (2022) highlights. With no proper money and complimenting personnel have to match their operational capacity with increasing job of crypto-deals then their burden is very heavy on tasks. As a matter of fact, the regulation of crypto currencies needs not only legal knowledge, but as well as a good understanding of block chain architecture, smart contracts and decentralised protocols.

The supervisions of non-centralized entities also pose a different challenge, even though MiCA only solves this matter in a limited way. Decentralized networks, for example, decentralized autonomous organizations (DAOs) or peer-to-peer decentralized finance

¹³⁰ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Articles 56–59, Brussels; Busch, D. & Ferrarini, G. (2021). Governing the Realm of Financial Innovation: MiCA Proposal. European Banking Institute Working Paper Series, No. 97.

apps, that are purely decentralized typically fall beyond the purview of the ESAs.¹³¹ This is because MiCA is heavily based on well-known businesses which can be regulated and monitored.¹³²

The lack of clarification regarding enforcement powers and accountability is what many academics call a regulatory black hole. Particularly with respect to code-based systems operating unsupervised and often transnationally in an informal and anonymous manner, supervisory authorities encounter insurmountable boundaries. Under MiCA, the ESMA and the EBA are given the powers to supervise the registered crypto asset service providers and token issuers, but their jurisdiction is limited to actors identifiable and formally incorporated in the EU regulatory perimeter, which means that shadow ecosystems remain mainly outside their direct jurisdictional control.¹³³

Even in these respects, the ESAs are well placed to bring regulatory consistency and legal certainty to areas, if not apparently to areas of regulatory uncertainty, particularly through the use of soft law instruments such as recommendations, questions and answers, and supervisory statements. These mechanisms allow the authorities the ability to quickly adapt to the fluctuations in the market more so than they would be able to via formal legislative changes. Although, for example, it was already provided on what are crypto-assets, is a qualifying instrument within the context of MIFID II and the Prospectus

¹³¹ European Commission (2020), Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Brussels; Allen, H. J. (2022). DeFi: Shadow Banking 2.0? *Cornell Journal of Law and Public Policy*, 31(1), 31–50; see also European Supervisory Authorities (ESAs), Joint Response to the Commission on the Digital Finance Strategy and MiCA Proposal, highlighting coordination challenges in supervising decentralised finance.

¹³² European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (MiCA), COM(2020) 593 final, Brussels, 24 September 2020.

Allen, Hilary J., “DeFi: Shadow Banking 2.0?” *Cornell Journal of Law and Public Policy* 31(1) (2022), pp. 31–50.

European Supervisory Authorities (EBA, ESMA, EIOPA), Joint Response of the European Supervisory Authorities to the European Commission’s Consultation on a Digital Finance Strategy and the MiCA Proposal (2020), highlighting coordination challenges in supervising decentralised finance.

¹³³ European Commission (2020), Proposal for a Regulation on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Articles 56–62, Brussels; Avgouleas, E. & Kiayias, A. (2021). The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective. *Law and Financial Markets Review*, 15(1), 3–19.

directive. It is expected to repeat the same with MiCA when new issues arise. Market players attempting to navigate what the new regulatory landscape holds will find these interpretative materials critical to that effort, as they will be needed for developing a concourse enforcement approach.

The impact of ongoing technological developments on the crypto market makes it likely that the European Supervisory Authorities will, working with the European Systemic Risk Board, evaluate these markets for specific risks which might impact the wider economy. It is appropriate that the European Securities and Markets Authorities and European Banking Supervisors focus on the underlying systemic risks for crypto asset markets.

The macroprudential function integrates within the overarching attempts to incorporate crypto in the EU's financial risk monitoring activities (especially due to the growing institutional interest in digital assets markets).¹³⁴

In summary, the European Supervisory Authorities (ESAs), in particular the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA), will be important in the successful implementation of MiCA. Authorization, compliance surveillance, technical norm-setting and systemic danger examination are elements of their responsibilities. The ESAs have a significant role in translating MiCA's legislative objectives into administrative practice despite the increase in operational and jurisdictional challenges, notably with regards to decentralised platforms. As the cryptocurrency market is getting bigger, it is expected for the cryptocurrency market own the supervisory, the interpreting and the cross-border co-ordination in the future. This will keep the European Union an environment that remains both safe and helpful for innovation in the digital finance ecosystem.

¹³⁴ Financial Stability Board, FSB Global Regulatory Framework for Crypto-Asset Activities (Basel: FSB, 2023), p. 12, available at: <https://www.fsb.org/2023/07/fsb-global-regulatory-framework-for-crypto-asset-activities/>

3.4 Comparative Analysis with Non-EU Jurisdictions

Given that the European Union is striving for adopting a legally uniform framework for crypto-assets, as outlined by instruments such as the Markets in Crypto-Assets (MiCA) Regulation and the Digital Operational Resilience Act (DORA), it is crucial to compare its approach with how other major jurisdictions take their approach.¹³⁵

Comparative analysis and study has led to the conclusion that European Union (EU) defines regulatory clarity and uniformity whereas on the other hand non-UE states are holding different approaches of regulation such as in United States and United Kingdom they use separate models, usually ones are diversified. Meanwhile, global coordination forums are on the move to decrease the danger connected with cross boundary regulatory compliance and prevent a disintegration of markets.

The US regulatory landscape concerning crypto assets is often described as a patchwork quilt, with a multitude of federal and state organizations, each asserting dominion depending on the classification of an asset or an action. However, each of these authorities, in isolation, is capable of exercising dominion over crypto assets. The Securities and Exchange Commission (SEC) plays an instrumental role in the classification of a large number of cryptocurrency tokens as securities. Consequently, the SEC mandates that such tokens satisfy the requirements of filing, registering, and making disclosures as mandated by the US securities laws. To ascertain whether a digital asset is an ‘investment contract’ and thus ‘within’ its jurisdiction, the SEC applies the Howey Test, which was provided by the US Supreme Court in the case of SEC v. W.J. Howey Co. (1946).¹³⁶ The same is true with the CFTC, which considers digital currencies such as Bitcoin and Ethereum as commodities and, therefore, exercises jurisdiction over the

¹³⁵ European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (MiCA), COM(2020) 593 final, Brussels, 24 September 2020.

Allen, Hilary J., “DeFi: Shadow Banking 2.0?” *Cornell Journal of Law and Public Policy* 31(1) (2022), pp. 31–50.

¹³⁶ Emiliios Avgouleas and Aggelos Kiayias, “The Promise and Challenges of Crypto-Asset Regulation: A Global Perspective,” *Law and Financial Markets Review*, vol. 15, no. 1 (2021), pp. 3–19.

derivatives and futures markets in respect of these assets.¹³⁷ The lack of clarity under which regulation a market participant falls under securities law, commodity, or both leads these market participants to have legal uncertainty as the overlap is significant. Furthermore, the U.S. Department of the Treasury’s Financial Crimes Enforcement Network (FinCEN) assigns AML and KYC responsibilities to administrators and exchange operators of virtual currencies (i.e., virtual asset service providers or VASPs).³The lack of clarity under which regulation a market participant falls under securities law, commodity, or both leads these market participants to have legal uncertainty as the overlap is significant. Furthermore, the U.S. Department of the Treasury’s Financial Crimes Enforcement Network (FinCEN) assigns AML and KYC responsibilities to administrators and exchange operators of virtual currencies (i.e., virtual asset service providers or VASPs).¹³⁸

Concerning compliance and enforcement issues, the Financial Crimes Enforcement Network (FinCEN) further complicates the issue by not recognising cryptocurrencies as legal tender.¹³⁹

As a post-Brexit, the United Kingdom has albeit begun implementing a more integrated and principles-based approach to regulation, the framework remains a work in progress. The Financial Conduct Authority (FCA) has primary responsibility for the crypto-asset sector, particularly in relation to anti-money laundering compliance. Crypto-asset firms are required to obtain FCA registration and conduct enhanced due diligence in accordance with the UK Money Laundering Regulations 2017 (as amended).¹⁴⁰ While UK has not developed a legal framework to rival EU’s MiCA, recent government proposals suggest a willingness to expand the regulatory perimeter to encompass a

¹³⁷ Michael Baird, “Navigating Regulatory Challenges for Cryptocurrencies in the United States: The SEC vs. the CFTC,” *Journal of Financial Regulation and Compliance*, vol. 28, no. 3 (2020), pp. 250–266, at p. 253.

¹³⁸ FinCEN, “Notice of Proposed Rulemaking for Certain Transactions Involving Convertible Virtual Currency or Digital Assets” (2021), available at: <https://www.fincen.gov/>

¹³⁹ FinCEN, Notice of Proposed Rulemaking for Certain Transactions Involving Convertible Virtual Currency or Digital Assets (Washington, DC: Financial Crimes Enforcement Network, 2021), p. 4, available at: <https://www.fincen.gov/>

¹⁴⁰ HM Treasury, *Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence* (London: HM Treasury, 2023), p. 7.

broader range of cryptoactivities. In particular, it is expected that the payment-related stablecoins will be issued in accordance with the prevailing financial services legislation, under the co-supervision of the Bank of England and FCA.¹⁴¹ While the UK approach aims to promote financial innovation and enhance London’s global competitiveness as a fintech hub, it risks a lighter-touch approach to regulation of crypto finance, DeFi and NFTs (non-fungible tokens) in particular.

The borderless and decentralized nature of crypto-assets has prompted international organizations to start working on the issue of global coordination of regulation. The Financial Crimes Enforcement Network (FinCEN) has repeated that it does not consider cryptocurrencies to be legal tender, which makes compliance and enforcement of obligations for virtual asset service providers based in the US much more complex.¹⁴² In the UK, the Financial Conduct Authority (FCA) has been responsible for the registration and oversight of crypto companies under the supervision of the Money Laundering Regulations 2017 (as amended).¹⁴³ In the same vein, the European Union and the United States have been trying to balance innovation and financial stability and investor protection in their respective legislations, though the level of refinement and breadth of coverage of the regulation varies from one jurisdiction to another.¹⁴⁴

The Financial Stability Board (FSB) took the lead in trying to integrate core principles and balance regulatory consistency with national flexibility. In 2023, the FSB released a global regulatory framework for crypto-asset activities which includes recommendations for effective supervision, risk management, financial stability, and enhanced cross-border

¹⁴¹ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets: Consultation Report (International Organization of Securities Commissions, 2023), p. 15,

¹⁴² FinCEN, Guidance on Virtual Currencies: Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (Washington, DC: Financial Crimes Enforcement Network, 2019), p. 5.

¹⁴³ FCA, Cryptoasset Businesses Under the Money Laundering Regulations (London: Financial Conduct Authority, 2022), p. 3.

¹⁴⁴ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final; see also US Securities and Exchange Commission (SEC), Framework for “Investment Contract” Analysis of Digital Assets (Washington, DC: SEC, 2021).

cooperation.¹⁴⁵ In 2017, the International Organization of Securities Commissions (IOSCO) also created policy recommendations about crypto-asset trading platforms with an emphasis on investor protection, transparency, and the mitigation of conflicts of interest.¹⁴⁶ The Basel Committee on Banking Supervision, alongside the Bank for International Settlements (BIS), has also suggested some prudential standards for banks with crypto-asset exposures, including capital requirements intended to counter the risks of the new asset class.¹⁴⁷ The G20 has supported these initiatives, backing international efforts to promote regulatory coherence and address risks including consumer protection, systemic stability, and illicit finance.¹⁴⁸

Unlike other regions and global initiatives, the EU seems to be the only area with a balanced and integrated approach to regulatory policy characteristics that is broad in scope, articulated in legal specifics and consolidated in supervision. The upcoming Markets in Crypto-Assets (MiCA) Regulation maintains a centralised licensing regime for all Crypto-Asset Service Providers (CASPs) in EU Member States, standardizes issuer disclosure requirements, and established a tiered regulatory supervisory framework that encompasses the European Securities and Markets Authority (ESMA) and national competent authorities.¹⁴⁹ MiCA is expected to be fully operational by 2025.¹⁵⁰ Alongside this regulation, the the Digital Operational Resilience Act (DORA) aims at the operational and cybersecurity risks DORA addresses the DORA the technical risks of the crypto-asset realm, to digital financial entities.¹⁵¹

However, how successful the regulatory policy of the European Union will be is not only dependent on its own coherence but also on its ability to cooperate well with other major

¹⁴⁵ Financial Stability Board (FSB), Global Regulatory Framework for Crypto-Asset Activities (Basel: FSB, July 2023), p. 6,

¹⁴⁶ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets: Consultation Report (Madrid: International Organization of Securities Commissions, 2023), p. 12.

¹⁴⁷ Basel Committee on Banking Supervision, Prudential Treatment of Cryptoasset Exposures (Basel: Bank for International Settlements, December 2022), pp. 2–3.

¹⁴⁸ G20, Finance Ministers and Central Bank Governors Communiqué (Gandhinagar: G20, July 2023).

¹⁴⁹ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, p. 15.

¹⁵⁰ European Central Bank (ECB), Crypto-Assets: Developments and Implications for Financial Stability, Occasional Paper Series No. 274 (Frankfurt: ECB, 2023), p. 18.

¹⁵¹ Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on Digital Operational Resilience for the Financial Sector (DORA), OJ L 333, 27.12.2022, pp. 1–91.

jurisdictions. Severe hindrances are already being faced in cross-border compliance, investor protection and the protection of regulatory arbitrage because of disparities in terms of legislative dimensions, supervisory practices and enforcement measures. So it will be inevitable to keep the discussion and collaborate with international standard setting, such as those set by the International Organisation of Securities Commissions (IOSCO) and the Financial Stability Board (FSB). In light of this context, the European Union (EU) has established itself as a regulatory regulator but, needing the regulatory framework to be flexible enough to cope with ongoing global progress and emerging issues in the rapidly advancing world of crypto assets.¹⁵²

3.4 Comparative Regulatory Approaches

Learning about international coordination, it is crucial to investigate how important jurisdictions approach the regulation of crypto assets. In this part, we will think about the regulatory frameworks of the USA, the UK, and the European Union and then analyze the frameworks for commonalities and differences.

3.4.1 United States

A notable illustration of the intricacy, disarray, and consistent progression of the regulatory environment that handles crypto resources in the U.S. is the regulatory atmosphere. There is not one federal legislation in United States of America that deals specifically with crypto assets, unlike the EU, whereas there is ongoing effort to have a unified legal framework in the shape of Markets in Crypto-assets (MiCA) Regulation. The supervisory regulatory decision, on the other hand, is divided between a number of federal and public authorities, each of which says it has sui generis regulatory authority because the legal and functional qualities of digital assets persuaded it that such authority was best placed in their hands.

¹⁵² In regard to virtual currency, FinCEN (2019) explains that cryptocurrencies are not recognized as a legal tender, which further complicates the process of compliance and enforcement among the virtual asset service providers in the U.S.

The Financial Conduct Authority (FCA) is the most important body that surveils crypto firms within the UK according to Money Laundering Regulations 2017.

In the US the two agencies responsible for regulating crypto assets are the SEC and the CFTC.¹⁵³ The SEC classifies many crypto-assets as securities for the purpose of the Howey Test (1946) ” SECV W. J. Howey Co.”.¹⁵⁴ Under the test, an asset is deemed a security if it is part of an investment in a combined entity and there is the anticipation of revenue as a result of the investment without additional work.¹⁵⁵ The CFTC has supplemented the resources with the Digital Assets Primer, which consolidates crypto-assets classified as commodities, such as Bitcoin and Ethereum, and focuses on providing guidance with regard to its jurisdiction over them. The SEC has taken countless measures over crypto projects that, in its opinion, wrongfully offered unregistered securities. The SEC has also taken the necessary steps to provide guidance on the investment contract and digital assets on which that framework is applied.¹⁵⁶

These actions are a major example, with such major users as Ripple (XRP) and Coinbase companies. Both praise and insult has been given to the enforcement-centric method applied by the Securities and Exchange Commission (SEC). Supporters of the industry claim that this approach creates uncertainty and kills off innovation by slapping outdated law onto new tech.

On the other hand, the Commodity Futures Trading Commission (CFTC) has classed major crypto assets such as Bitcoin and Ethereum as commodity within the bounds of the Commodity Exchange Act.

With this classification, the Commodity Futures Trading Commission (CFTC) has jurisdiction over markets for digital assets derivatives, but not over the underlying spot markets where such assets are traded on exchanges.¹⁵⁷ A regulatory gap, particularly for

¹⁵³ See e.g., SEC, Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO (Release No. 81207, 25 July 2017), p. 11.

¹⁵⁴ SEC, Framework for “Investment Contract” Analysis of Digital Assets (Washington, DC: US Securities and Exchange Commission, 2019), p. 2.

¹⁵⁵ SEC, Framework for “Investment Contract” Analysis of Digital Assets (Washington, DC: US Securities and Exchange Commission, 2019), p. 2.

¹⁵⁶ CFTC, Digital Assets Primer (Washington, DC: US Commodity Futures Trading Commission, 2020), p. 5,

¹⁵⁷ CFTC, Digital Assets Primer (Washington, DC: US Commodity Futures Trading Commission, 2020), p. 9.

tokens that are neither clearly within the jurisdiction of the SEC nor the CFTC, results.¹⁵⁸ At the moment of issuance, tokens may be classified as securities. However, once they are traded on secondary markets, they may be regarded as commodities. Such legal jurisdiction ambiguity poses challenges for both participants and regulators within the market.

FinCEN, short for Financial Crimes Enforcement Network, is under the U.S. Department of the Treasury, and supervises the risk of money laundering and terrorism financing for digital currencies. This adds another layer of regulatory complexity.¹⁵⁹ FinCEN requires crypto exchange and wallet service providers to register as money service businesses and establish comprehensive AML policies. Under the Bank Secrecy Act, this includes recordkeeping, monitoring activity, and due diligence.¹⁶⁰ Critics, however, argue that the extension of reporting requirements of certain transactions for unhosted wallets within the guidance puts heavy burden on users. It stifles innovation, user privacy, and security. Instead, it offers no value.¹⁶¹

The situation is more fractured from the point of view of the state. Several regulatory techniques have been used by the states, and New York can be noted as an example through the use of the BitLicense regime. BitLicense is a regulatory framework which was introduced by the New York State Department of Financial Services (NYDFS), to set forth stiff licensing, capital and compliance requirements for cryptocurrency businesses licensed to operate within the state. Even though the system was meant to preserve clients, that has been condemned for being too burdensome and for halting growth of companies in New York State. In light of the regulatory inconsistencies across the country, states like Wyoming, have taken more of a pro-crypto approach. They have given legal recognition to decentralized autonomous organizations or DAOs and specialized banking charters to digital asset businesses.

¹⁵⁸ SEC, Framework for “Investment Contract” Analysis of Digital Assets (Washington, DC: US Securities and Exchange Commission, 2019), pp. 3–5.

¹⁵⁹ FinCEN, Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies (FIN-2013-G001, 18 March 2013), p. 2.

¹⁶⁰ FinCEN, Requirements for Certain Transactions Involving Convertible Virtual Currency or Digital Assets (Notice of Proposed Rulemaking, 2020), p. 6.

¹⁶¹ *Ibid.*, p. 12; see also public comments summarized in US Department of the Treasury, Anti-Money Laundering Act Implementation Report (Washington, DC: Treasury, 2021), p. 19.

While they may have been slow to get moving, advancements to pass federal legislation that will further clarify the situation have been moving more quickly. Several bills, such as the Responsible Financial Innovation Act and the Digital Commodity Consumer Protection Act, have been placed before Congress. These measures, aimed at making regulatory stipulations more specific and including certifications for consumers and investors, have been backed up both by the Democrats and the Republicans parties. Despite this, progress has been slowed badly by political infighting and turf wars between institutions over their spheres of jurisdiction.

The United States, multi-agency, case-by-case approach creates considerable legal uncertainty for actors on both sides of the market and internationally.¹⁶²

This instead is in stark contrast to the relatively more orderly and organized regulatory framework within the European Union. Without some form of regulatory harmonisation, corporations can and do engage in regulatory arbitrage by shifting or reorganising operations to jurisdictions with lighter compliance burdens.

It is impossible not to remember the United States of America amongst the top-leading countries in cryptocurrency innovation and investment, even with obstacles. As such its decisions on regulation have global consequences which give it an imperative which demands more clarity, consistency and international cooperation in finding the future for digital banking.

3.4.2 United Kingdom

In the era following Brexit, the United Kingdom has applied a regulatory approach to crypto-assets that is principled, risk based and designed to maintain integrity in the markets. The UK has progressed in providing legal certainty and regulatory oversight of crypto-asset activities, though the country still lacks a comprehensive single regulatory

¹⁶² Digital Assets Primer

New York State Department of Financial Services (NYDFS). (2015). Regulatory Framework of Virtual Currency Business: Bitlicense Regulatory Framework.

framework akin to the EU's forthcoming Markets in Crypto-Assets (MiCA) Regulation.¹⁶³ The UK, which has primarily focused on compliance countering money laundering, is evolving the framework to a more comprehensive supervisory regime which includes the fundamental objectives of consumer protection, financial stability, and promotion of innovation.¹⁶⁴

Under the auspices of the United Kingdom, it is that the Financial Conduct Authority (FCA) to be the main regulatory body for crypto assets. At the time of the first existence of the Financial Conduct Authority (FCA), it was only able to enforce anti-money laundering (AML) and counter-terrorist financing (CTF) rules. These regulations have been made by virtue of The Money Laundering, Terrorist Financing, and Transfer of Funds (Information on the Payer) Regulations 2017 as modified.¹⁶⁵

Since January 2020, the Financial Conduct authority has mandatory ordered companies in the UK crypto-asset sector such as exchanges and custodial wallet providers to register as per the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations which were amended in 2017 (and still are).¹⁶⁶ These encompass knowing your customer, monitoring and reporting potential suspicious activities.¹⁶⁷ Although this is an important first step regarding regulations concerning crypto firms, it heavily leans on operational and commercial compliance. The adoption of this framework is still, without doubt, an important step towards policing the market.

To its remit over anti-money laundering the Financial Conduct Authority (FCA) has also been actively involved in safeguarding investors. Given worries about uncontrolled risks, a lack of inherent worth, and the number of financial crimes, the Financial Conduct Authority (FCA) baffled the selling of crypto asset derivatives and exchange-traded notes (ETNs) to retail investors in 2021. This risk-averse stance is what distinguishes the

¹⁶³ HM Treasury, Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence (London: HM Treasury, 2023), p. 4.

¹⁶⁴ FCA, Cryptoasset Businesses Under the Money Laundering Regulations (London: Financial Conduct Authority, 2022), p. 6.

¹⁶⁵ UK Government. (2017). The Regulations Set out in the 2017 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations, as amended.

¹⁶⁶ FCA, Cryptoasset Businesses Under the Money Laundering Regulations (London: Financial Conduct Authority, 2022), p. 2.

¹⁶⁷ Ibid., p. 6.

United Kingdom from some other countries, reflects the regulatory philosophy of the United Kingdom caution, the consumer's protection. On the other hand, the ruling has also raised questions of the potential impact it could have on innovation and access to new financial products.

More recent pronouncements from UK officials point to deeper attempts to incorporate crypto assets into current financial legislation. In 2022 and 2023, stablecoins used as payment HM Treasury consulted and proposed policies to expand the regulatory perimeter to stablecoins used as means of payment and thus to payment legislation.¹⁶⁸ The Financial Conduct Authority (FCA) and the Bank of England (BoE) would, however, in the proposals share supervisory responsibilities depending on the scale and systemic importance of the stablecoin.¹⁶⁹ Also, the government has shown the desire to construct a widening legal framework on other subclasses of crypto-assets, such as exchange tokens, utility tokens, and some DeFi instruments.¹⁷⁰ Concurrently the FCA has issued orders to retail investors on the sale of crypto-asset derivatives and exchange-traded notes, claiming there is a consumer protection issue.¹⁷¹ The shifting consumer frameworks capture the UK's intent to become a leading center of digital asset innovation without compromising consumer protection and integrity of the market.

The British government is considering issuing a digital pound, a type of central bank digital currency (CBDC), along with other forms of cryptocurrency. In early 2023, the Bank of England, in collaboration with the HM Treasury, released a consultation paper discussing the possible advantages, risks, and design elements of retail CBDC.¹⁷² The authors of the paper argued for the co-existence of crypto-assets within larger cyberspace finance.¹⁷³ The government's issuance of this consultation shows the desire of the

¹⁶⁸ HM Treasury, Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence (London: HM Treasury, 2023), p. 5.

¹⁶⁹ Bank of England, Financial Stability Report (London: BoE, December 2022), p. 23.

¹⁷⁰ HM Treasury, UK Regulatory Approach to Cryptoassets and Stablecoins: Consultation Response (London: HM Treasury, April 2022), p. 12.

¹⁷¹ FCA, Prohibiting the Sale to Retail Clients of Investment Products that Reference Cryptoassets, Policy Statement PS20/10 (London: Financial Conduct Authority, October 2020).

¹⁷² Bank of England and HM Treasury, The Digital Pound: A New Form of Money for Households and Businesses? Consultation Paper (London: BoE/HMT, February 2023), p. 4.

¹⁷³ *Ibid.*, p. 12.

government to closely look and perhaps incorporate revolutionary digital assets in the future framework of the British financial system.¹⁷⁴

The UK's crypto asset regulatory environment is described as still under evolution, despite progress made. However, in contrast to the MiCA of the European Union, which provides a uniform licensing framework and harmonized requirements across all member states, the United Kingdom does not yet have a single legal instrument that is especially adapted to the complete spectrum of operations involving crypto assets. since a consequence of this, the strategy that is now being used may give the impression of being fragmented, since various kinds of crypto assets may possibly come under distinct legal definitions and regulatory regimes.

Nevertheless, it is more flexible regulatory attitude of United Kingdom than that permits it to new risks and incidents to react, more quickly than other legal systems, which more rigid nature.¹⁷⁵

This flexibility combined with the well-established legal system of the United Kingdom and its status as a global financial capital, is the continued attraction to entrepreneurs and investors who are active in the field of cryptography of money. On the other hand, the absence of a comprehensive framework has come up with several problems especially answer to the predictability of the regulations, trust consumers, and certainty with jurisdictions like the European Union and the United States.¹⁷⁶

In any case, although the UK has made great strides in regulating cryptocurrencies through the enactment of anti-money laundering (AML) rules, targeted restrictions, and the creation of forward-looking policy, the current system that it is in place with is incomplete and in the process of developing. The trend is a shift towards broader framework is signaled by the reform plans of the regulators. This framework, if properly

¹⁷⁴ Bank of England and HM Treasury, *The Digital Pound: A New Form of Money for Households and Businesses?* Consultation Paper (London: BoE/HMT, February 2023), p. 4.

¹⁷⁵ *The digital Pound - a new household and business money?* Consultation Paper. Its source is gov.uk.

¹⁷⁶ HM Treasury, *Cryptoasset Regulation and Reform: Consultation Response and Policy* (UK Government, 2024). Available at: Financial Conduct Authority website (accessed 12 Sep 2025).

executed, could find a balance between innovation, security and integrity of the marketplace. It will be critical to keep international collaboration and adhere to worldwide criteria in order to ensure the UK continues to be competitive and respectable in the swiftly evolving digital asset surroundings.

3.4.3 Global Coordination Efforts

The nature of crypto-assets being decentralized and intertwined across borders means their regulation will require some form of global coordination. Neo-banks have global operations, and that makes a completely national approach of regulation and supervision unreasonable due to regulatory arbitrage, cross-border illicit flows, and potential cross-border financial instability. While certain jurisdictions might have that have progressed and implemented their own measures, the lack of coordination may lead to fragmentation. Various trade international organizations plus many bilateral and multilateral initiatives that have been established in a bid to standardize global regulation are concerned about the fragmentation.

During the international efforts to coordinate regulation of the crypto assets, the Financial Stability Board (FSB) has been the key.¹⁷⁷

The Financial Stability Board (FSB), which has an international focus, is responsible for coordinating and offering advice relating to the global financial system. Since July 2023, the FSB has published its first working document which is devoted to the global regulations of activities involving cryptoassets.¹⁷⁸ The FSB has adopted the principle of “same activity, same risk, same regulation” to the proposed framework and has stressed the need for collaborative regulation of cross-border activities.¹⁷⁹ It has also stressed the need for more developed consumer protection, prudential oversight and operational

¹⁷⁷ FSB Global Regulatory Framework of Crypto-Asset Activities: High Level Recommendations. [Http://www.fsb.org](http://www.fsb.org)

¹⁷⁸ Financial Stability Board (FSB), Global Regulatory Framework for Crypto-Asset Activities (Basel: FSB, July 2023), p. 1.

¹⁷⁹ *Ibid.*, p. 7.

resilience rules. The framework also proposed national authorities to embrace the principles of strong governance, support proactive transparency, and assess the interplay of the traditional financial system and the crypto asset market. While the FSB framework is not legally enforceable, it holds significant power as a point of reference for domestic regulators and indicates the growing recognition of the need for uniform regulation.

At the same time, the International Organization of Securities Commissions (IOSCO) is advancing its own regulatory recommendations regarding crypto-asset trading platforms. In May 2023, IOSCO issued policy recommendations on centralized cryptocurrency exchanges and decentralized finance (DeFi) (with an emphasis on market integrity, protecting investors, and mitigating potential conflicts of interest).¹⁸⁰ These recommendations seek to enable governments to extend the existing framework of principles governing securities markets to crypto-assets, and to meet the growing regulatory needs exposed by the failures of FTX.¹⁸¹ Key among these were the concerns expressed by IOSCO to behalf unresolved questions on custody and the transparency of custody arrangements and the segregation of client funds.¹⁸²

Moreover, the Basel Committee on Banking Supervision (BCBS) which is entrusted with formulating global standards for the supervision of banks also has addressed the risks that crypto assets pose to financial entities. After that, the Bank of Canada Securities Commission (BCBS) concluded in December 2022 its prudential treatment for banks with cryptocurrency holdings by creating two subcategories of all lengths and sizes, Group 1 (tokenized ones, such as cash and cash equivalents) and Group 2, which includes un-established assets. In light of higher risk profile and higher volatility of the Group 2 assets, Group 2 assets capital roughs are scarcer than those of Group 1 assets. In order to keep the finances in balance while still providing for a measured chance to acquire digital belongings within established parameters, several barriers have been set up.

Other framework-setting global entities contributed the world global standards. Most notably the Financial Action Task Force (FATF) which is an international AML/CFT

¹⁸⁰ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets: Consultation Report (Madrid: International Organization of Securities Commissions, May 2023), p. 3.

¹⁸¹ Ibid., p. 5.

¹⁸² Ibid., p. 12.

supervision body since 1989, has published instruction guides which require VASPs to perform customer due diligence, transaction monitoring, and VASPs to comply with the “travel rule” which mandates VASPs to relay information about the sender, the receiver and the virtual assets being sent.¹⁸³ These standards have been supported on the broad level. However, in the implementation of these standards in many regions, the world has faced a number of challenges which include regulatory arbitrage, a lack of international collaboration, and a systemic absence of oversight in the regulation of cross border transactions.¹⁸⁴ The Basel Committee on Banking Supervision (BCBS) which is under the Bank for International Settlements (BIS) also has developed prudential standards for the exposures of banks to crypto assets which has been in place since the end of December 2022.¹⁸⁵

Another difference accounts for the rush towards regulatory convergence is the political cooperation that has occurred through G20 & G7 groups. The G20 Finance Ministers and Central Bank Governors have long underlined the need for the regulation of crypto assets that fosters innovation and ensures the maintenance of monetary sovereignty, financial stability, stability.

When India held the presidency of the G20 in 2023, member jurisdictions endorsed the global framework of the Financial Stability Board (FSB) and urged other jurisdictions to implement it in a timely and comprehensive manner.¹⁸⁶ This political backing complements the work of technical bodies and demonstrates broad consensus on the fundamental principles of regulation.

Even so progress has been made. Then again, regulatory inconsistency persists around tightly competitive regions such as token classification, the management of decentralized finance, the range of stablecoin legislation. The non-binding character, in the case of most international guidelines, means that their implementation is always prone to failure.

¹⁸³ FATF, Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers (Paris: FATF, October 2021), p. 9,

¹⁸⁴ Ibid., p. 15.

¹⁸⁵ Basel Committee on Banking Supervision, Prudential Treatment of Cryptoasset Exposures: Final Standard (Basel: BIS, December 2022), p. 2,

¹⁸⁶ G20, Finance Ministers and Central Bank Governors Communiqué – July 2023.

Moreover, technological progress regularly outstrips government regulation creating a gap where illegal actors can choose where to participate (forum shopping).

For the sake of achieving convergence on the regulation of crypto assets, global collaborative efforts have made a considerable headway as would be shared in the immediately following paragraphs. The work done by the Financial Stability Board (FSB), International Organization for Standardization (IOSCO), Financial Action Task Force (FATF) and others has created a global regulatory framework that is more risk-based and harmonised. Of course, turning global penal standards into active domestic policies effective and enforceable is still hard and ongoing task. Boosted collaboration, time bound setup of agreed upon norms, and Cross-Border regulatory frameworks will have to be in place so as to be certain that a stable, safe and inclusive digital financial ecosystem is put in place. This is because crypto markets are still expanding in volume and turning into more complicated and also more competitive.¹⁸⁷

¹⁸⁷ As crypto markets continue to get bigger and more intricate, regulatory transparency is becoming vital. International organizations have succeeded in the establishment of uniform standards, yet nations are still adopting the standards slowly. Unless there is a coordinated roll out, loopholes regarding oversight and enforcement will exist.

CHAPTER 4

CHALLENGES AND OBSTACLES IN CRYPTO

REGULATION

Government regulators are struggling with multiple problems stemming from the massive growth and creative innovations within cryptocurrency markets. Current financial and legal institutions struggle more than ever before to stay pace with blockchain technology and cryptocurrency developments. The issues affecting regulatory authorities stem from legal uncertainties within different jurisdictions along with technical system stability and operational complexity problems. The main difficulties that arise when regulators try to oversee the cryptocurrency ecosystem lie at the core of this chapter. The discussion specifically focuses on regulatory capacity alongside decentralized finance (DeFi) along with legal boundaries across jurisdictions as well as risks associated with ownership management and requirements for consumer defense mechanisms and the essential role monitoring services provided by financial institutions.

4.1 Regulatory Authority and Scope of Coverage

One of the essential hurdles in achieving effective cryptocurrency regulation is determining which regulatory body should exercise primary authority and how crypto-assets should be classified. Unlike traditional financial assets, crypto-assets often exhibit characteristics of commodities, securities, and currencies simultaneously. This hybrid nature complicates regulatory jurisdiction. In the United States, for example, the Commodity Futures Trading Commission (CFTC) has classified Bitcoin and certain other cryptocurrencies as commodities, while the Securities and Exchange Commission (SEC) considers many tokens to be securities when they represent ownership interests in a business enterprise or otherwise satisfy the Howey Test.¹⁸⁸ This overlapping jurisdiction

¹⁸⁸ SEC, Framework for “Investment Contract” Analysis of Digital Assets (Washington, DC: US Securities and Exchange Commission, 2019), p. 3; CFTC, Digital Assets Primer (Washington, DC: US Commodity Futures Trading Commission, 2020), p. 7.

has produced regulatory fragmentation, leading to legal uncertainty, duplication of compliance requirements, and at times contradictory guidance.¹⁸⁹

The European Union presented the Markets in Crypto-Assets (MiCA) Regulation to solve regulatory challenges by creating one unified framework which manages both crypto assets issuance and trading operations. Within the European Union territory multiple decisive challenges remain unclear such as token classification structures and regulations for decentralized apps along with stablecoin implementation rules within existing financial systems. The obstacles persist as challenges in the present condition. Certain stakeholders maintain that the MiCA Regulation falls short in protecting against distinctive threats which arise from new blockchain technology features including decentralized finance (DeFi) protocols and non-fungible tokens (NFTs) according to European Commission (2020). Stakeholders disagree about the boundaries of the MiCA Regulation especially regarding its protection against new risks.

Rules about crypto asset regulation display both unclear definitions and multiple governing bodies in the stage of enforcement implementation. The regulation of transactions becomes unclear when crypto assets fall under multiple classifications since this creates confusion about which regulatory body leads monitoring duties and enforcement tasks. Because jurisdictions overlap each other, the ability to effectively monitor and regulate market activities decreases particularly for transactions spanning across international borders since no single authority holds full authority. The problems become more complex because of cryptocurrency businesses shifting operations across various countries that implement less stringent regulatory standards through regulatory arbitrage.

4.2 DeFi Protocols and Non-Identifiable Entities

The cryptocurrency ecosystem features decentralized finance as one of its most disruptive developments under the name DeFi. The system gives users the chance to complete

¹⁸⁹ Michael Baird, “Navigating Regulatory Challenges for Cryptocurrencies in the United States: The SEC vs. the CFTC,” *Journal of Financial Regulation and Compliance*, vol. 28, no. 3 (2020), pp. 250–266, at p. 253.

financial operations through clean transactions without the assistance of traditional institutions like banks or brokers or exchanges.¹⁹⁰

The technical operation of decentralized autonomous organizations (DAOs) governed by smart contracts enables them to function autonomously with minimum party involvement thus they serve as primary governance structures for DeFi protocols. Regulatory control becomes challenging in decentralized finance ecosystems because the industry lacks identifiable companies which would enable authorities to identify responsible entities.

Standard regulatory approaches function poorly within decentralized systems that make up DeFi operations. The comprehensive suite of tools in DeFi consists of licensing requirements and two stages specifically known as Know Your Customer (KYC) checks and Anti-Money Laundering (AML) compliance. The authorities can enforce compliance through financial institutions because corporations must bear responsibility for their workers' and executives' conduct. The operators behind decentralized finance operate anonymously and the governance structure stretches across network users making liability assessment complicated.

Also, DeFi apps run on decentralized protocols which are uncensored and whose programming is visible to all and can be duplicated or deployed anywhere anytime. This is the crux of the regulatory problem: Even if the authorities manage to focus and close down a particular DeFi application or a smart contract, the DeFi technology's decentralized structure allows a wide range of users to recreate or alter it. On the one hand, this decentralized system fosters innovation and financial inclusion framework, and on the other, it discourages traditional regulatory oversight.¹⁹¹

In the process of attempting to solve these difficulties, regulators are required to strike a balance between the need to preserve financial stability and safeguard consumers and the

¹⁹⁰ DeFi code is an open source, and this enables an expansive cloning and redeployment across borders. To close a single case of a DeFi app does not stop its emergence with another brand. This flexibility greatly undermines the strength of the jurisdictional based control.

¹⁹¹ Hilary J. Allen, "DeFi: Shadow Banking 2.0?" *Capital Markets Law Journal*, vol. 17, no. 1 (2022), pp. 48–70, at p. 55.

need to allow for innovation. Requiring decentralized finance initiatives to conform with a hybrid model, in which centralized intermediaries like decentralized finance aggregators or on-ramp providers are subject to regulation, is something that has been recommended by some jurisdictions, such as the European Union (EU) under the MiCA. Nevertheless, defining the extent of "centralized" intermediaries in a world that is decentralized continues to be a difficult task.

4.3 International Cooperation and Jurisdictional Issues

As a result of the global and borderless character of the cryptocurrency market, authorities face a variety of jurisdictional issues that are not seen in other markets. In many cases, there is no central middleman that can be readily controlled, and cryptographic transactions take place across international boundaries. Cryptocurrency assets are able to travel freely across global platforms in real time, in contrast to conventional financial systems, which often restrict assets to a particular country and subject them to the regulations of that jurisdiction.¹⁹²

As there are no physical boundaries, the implementation of regulatory actions is complicated due to it being viable for financial trades to evade the authority of local authorities.

If a cryptocurrency exchange that is based in the European Union (EU) is regulatory targeted, there is a possibility that users from elsewhere (including Asia or North America) will still be able to access the site. Therefore, this poses challenges for national regulators, as they are unable to exert control over the things and transactions which occur beyond their jurisdiction. Moreover, because several cryptocurrency projects are

¹⁹² DeFi is decentralized, and that means the applications can easily be automatically replicated and redeployed, which reduces the ability of any traditional regulations to exercise their ability to weed out illegal activity with any high degree of success, even when specific platforms are closed down. Once established, the global and cross-border rather than cross-national structure of the cryptocurrency markets could further the jurisdictional authority since crypto assets circulate across the borders without the need of a central intermediary targeted by domestic regulation.

decentralized, this suggests that there is no individual authority or place of conformity that can be compliant, which adds complexity to compliance enforcement.

International Collaboration has begun to address jurisdictional issues. The Financial Action Task Force (FATF) as an AML/CFT authority has issued virtual asset service provider (VASPs) including exchanges, wallet providers, and other intermediaries.¹⁹³ VASPs handle AML/CFT customer due diligence, transaction monitoring, and reporting along the same lines as traditional financial institutions. The reporting lines due these VASPs are centralised and traditional reporting VASPs are below. Amalgamation of these reporting VASPs will greatly simplify the reporting. The FATF-finalised virtual asset service provider reporting. Member States of the FATF have reported some shifting of the VASPs core reporting responsibility. The core reporting has been amalgamated. Many reporting due VASPs are federated reporting entities, have centralised VASPs. these VASPs may become reporting centralised entities are federated reporting reporting VASPs. The federated reporting VASPs may as well be reporting due VASP entities as defined. Each jurisdiction, however, has applied the standards differently, resulting in disparities in the overarching legal frameworks, and gaps facilitating regulatory arbitrage.¹⁹⁴

International bodies such as international niganisation for standardisation (IOSCO) and financial stability board (FSB) advocate for apply singular standardized regulators for cryptocurrencies on a global level.¹⁹⁵ Others argue that lack of unifying regulatons stifle innovation. The end result is a regulatory jungle which provides issuers and service providers a niche for regulatory arbitrage at the expense of initiatives for effective global oversight.

¹⁹³ FATF, Updated Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers (Paris: FATF, October 2021), p. 9.

¹⁹⁴ *ibid.*, p. 15.

¹⁹⁵ IOSCO, Policy Recommendations for Crypto and Digital Asset Markets – Consultation Report (2023), available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD735.pdf> ; Financial Stability Board (FSB), Global Regulatory Framework for Crypto-Asset Activities (July 2023), available at: <https://www.fsb.org/2023/07/fsb-global-regulatory-framework-for-crypto-asset-activities/>

4.4 Risk Management in Crypto Custody Services

Crypto custody is the deed of protecting and keeping digital asset, especially private key, that is needed for accessing and managing the cryptocurrency. This process is also referred to as crypto custodian. The popularity of businesses which offer safe custody services has jumped in tandem with growth in cryptocurrency values. But regarding conventional financial structures, the custodial services provided by cryptocurrency industry are seen in their beginning phases and a lot of the risks haven't been acknowledged yet.

In the world of cryptocurrency custody, the threat of hacking is at the top of the issues. Several cryptocurrency exchanges, as well as a variety of wallet service providers have been hacked over the course of the last ten years, resulting in losses of digital assets valued in the millions of dollars. Cryptocurrency initiatives are irreversible, unlike conventional banking firm, which give consumers cash back when they lose their money to scams or misplaced into fraudster hands. Should the digital assets be taken, it is in essence lost forever and the customers are at the risk of a full loss.¹⁹⁶

Regulation of the custody of the cryptocurrency' is still evolving, most of the governments do not have any oversight over it. There are set rules in place for crypto custodians under MiCA in the EU but these are still to be actually implemented.¹⁹⁷

Most custodians seem to function without the required safeguards of a bank when it comes to protection of custodial accounts largely because there are no bank-like safeguards recommending minimum protection for custodial accounts. There are no applicable international laws requiring custodians to hold insurance over the assets they owe, let alone restrictive rules on auditing and reporting.¹⁹⁸

¹⁹⁶ In spite of the attempts of international institutions, such as IOSCO and FSB, to develop harmonized rules on cryptos, the lack of uniformity in national regulatory and policy priorities and frameworks still hampers coordination and encourages the practice of regulatory arbitrage.

¹⁹⁷ Regardless of the attempts by worldwide organizations such as IOSCO and the FSB to develop consistent crypto regulation, the conflicting national interests and regulation systems hinder cooperation and contribute to the arbitrage of crypto regulations.

¹⁹⁸ Financial Stability Board (FSB), *Assessment of Risks to Financial Stability from Crypto-Assets* (2022), p. 14; European Banking Authority (EBA), *Report on Crypto-Asset Custodianship* (2021), pp. 6–8.

As part of a bitter irony, asset segregation is a substantial hazard in the cryptocurrency market. Several cryptocurrency custodians also pool the money of their customers along with their own money thereby raising significant risks if the company goes bankrupt. There is a lack of well-established regulatory requirements for cryptocurrency custody as it is a risk for an industry becoming more relevant to institutional investors wanting to get access to digital assets.

4.5 Consumer Protection and Market Transparency

Cryptocurrency market exchange is frequently marked with great instability, complexity and a lack of transparency, and such features pose big challenges to protection of the consumers. Because retail investors normally are not so well-informed regarding the risks associated with digital assets,

they are less able to study the risks at regulation and oversight protection and less likely to be targeted by the gambling supervision in the markets, misinterpreted, misled, taken advantage of inside opportunities of digital assets. Consumers lost major losses financially because of many "pump and dump" scams, rug pulls, and unregulated token offerings over the last couple of years.

In as much as consumer protection has not been effectively addressed, authorities such as the UK Financial Conduct Authority (FCA) have taken actions such as banning some crypto-derivative products aimed at retail investors and restricted crypto-asset advertising directly to the public.¹ Elsewhere, the EU's Markets in Crypto-Assets Regulation (MiCA) attempts to bolster consumer protection by imposing greater disclosure obligations on issuers and service providers. That said, it is still too early to determine whether they will be properly enforced.²

Additionally, the majority of cryptocurrency exchanges fail to inform on behalf about fee so also the cases of insider trading and market manipulation are on certain platforms are major causes of a higher level of risk, if you do invest with cryptocurrencies. It is hard to

know if market is fair because most exchanges, particularly one centered in a bet country that is not regulated don't provide sufficient information about market volume, order book, transaction knowledge.

Also, the ease with which tokens can be created and distributed, plus that it is not possible to verify the authenticity of projects, increases these problems ultra significantly. For victims of frauds and deceits in the world of cryptocurrency, there is no course of action for them as there is no regulatory watch over.¹⁹⁹

4.6 The Role of Financial Institutions and Banks

The role that financial institutions and service providers occupy in the wider cryptocurrency ecosystem is just as important due to the fact that they act as both intermediaries and principal participants in the regulatory processes. As the use of cryptoassets grows, well-defined and coherent regulatory boundaries for the banking and other institutional actors will become increasingly important. One of the biggest challenges that banks face is a lot of misunderstanding about how digital assets are regulated, and one can see all this confusion is just going to continue to grow when we are the USA and we have sort of said, well, nothing. As financial institutions think about the prospects of offering services for cryptocurrencies, they have to operate through a complex and often contradictory regulatory landscape set by different countries. In other countries, such as in the US, financial services companies are allowed to offer custodian services for digital asset, but subject to stricter capital requirements. In a number of locations, banks are not allowed to directly interact with crypto properties, which causes a break in integration between traditional financial services and quickly expanding crypto market.

¹⁹⁹ crypto exchanges of any kind are run with little to no transparency and do not present clear information related to their fee structure, trading habits or market information. Such regulatory non-intervention makes it a risk factor that includes insider trading, frauds, and manipulating of the market with nothing left to the investors in terms of protection and law.

For the stability of the financial system, banks and other financial institutions and their exposure to crypto-assets is of significant concern. Excessive exposure to extreme volatile assets can undermine a bank's capital adequacy. With that in mind, Basel III tends to impose greater capital requirements on banks holding exposures to such assets. Crypto-assets are categorized into different levels of risk and higher capital requirements are set for those that have been designated as more volatile.²⁰⁰

To some extent, the persistent growth of the cryptocurrencies sector poses the biggest difficulty to banks. There are still some banks that do not see crypto as a valid venture and do not want to work with crypto ventures, saying that they do not want to risk the possibility of government compliance and reputational damage that would come with such a partnership.²⁰¹ The crypto economy continues to expand, and a large domain of crypto firms do not have easy access to conventional banking services. Instead, they rely on crypto-to-crypto exchanges or cross-border banks, which are more lightly supervised.

²⁰⁰ Basel Committee on Banking Supervision, Final Standard on the Prudential Treatment of Cryptoasset Exposures (Bank for International Settlements, December 2022), available at: <https://www.bis.org/bcbs/publ/d535.htm>

; U.S. Department of the Treasury, Crypto-Assets: Implications of Their Use by Consumers, Investors, and Businesses (2022), available at: <https://home.treasury.gov>

²⁰¹ Basel Committee on Banking Supervision, Final Standard on the Prudential Treatment of Cryptoasset Exposures (Bank for International Settlements, December 2022), available at: <https://www.bis.org/bcbs/publ/d535.htm>

; U.S. Department of the Treasury, Crypto-Assets: Implications of Their Use by Consumers, Investors, and Businesses (2022), available at: <https://home.treasury.gov>

Chapter 5-Empirical Assessment of MiCA’s Regulatory Impact

The developed world has observed a dramatic surge in the demand for cryptocurrencies. This has triggered European Union regulators to devise sophisticated approaches towards sustaining economic balance and integrity of the markets. In the Union, the ‘Markets in Crypto-Assets Regulation’: MiCA is foundational to this policy. This chapter uses market evidence and case studies to perform a ‘before and after’ analysis of the impact of MiCA on the targets, and, most importantly, the relics of market systems with no control globally. It focuses on the unregulated market, and identifies the impact of the Union's control on the development and the adoption of the crypto market, and on the resultant trade stability. Then, the work sets out to retroactively analyze the extent to which MiCA has been able to deliver on its claims. The chapter combines case study and econometric market analysis with a cross country appraisal to delineate the various regulator gaps alongside the successes.

5.1 Research Methodology

This chapter combines methods on doctrinal legal analysis, comparative case study assessment and empirical data analysis into a mixed-method approach. The intent is to meticulously study the implementation and operationalization of the Markets in Crypto-Assets Regulation (MiCA) in select Member States, particularly, France, Germany, and the Netherlands. Furthermore, the chapter assesses the regulatory impact of MiCA on the European Union’s constituent practices, the institutional crypto-asset adoption framework, as well as the enveloping institutional market architecture.

The doctrinal legal analysis serves as the basis for this research. It does so by interpreting the text and structure of the MiCA regulation, as well as its interaction with pre-existing directives from the European Union.²⁰²

These directives include the Markets in Financial Instruments Directive II (MiFID II), the Fifth Anti-Money Laundering Directive (AMLD5), and the Payment Services Directive 2 (PSD2). The major provisions of the MiCA that pertain to authorization, governance, asset categorization, and supervision are examined via this lens. Secondary sources include parliamentary discussions, legislative initiatives, regulatory guidelines from the European Commission and ESMA, and legal papers. Primary sources also include legislative proposals.

A comparative case study methodology is included into the research project in order to capture the dynamism of actual implementation. Due to the fact that France, Germany, and the Netherlands each have their own unique regulatory traditions and various degrees of digital banking maturity, these three countries were chosen. From the perspective of France, which was an early mover with its PACTE Law, Germany, which has its license under BaFin, and the Netherlands, which has its strong anti-money laundering monitoring via the AFM and Dutch National Bank (DNB), each state gives a different distinct perspective. Through the use of a standardized analytical framework, these scenarios are investigated in order to guarantee uniformity in the evaluation of the transposition and regulatory effect of MiCA.

On the other hand, the empirical component makes use of quantitative data obtained from reputable institutional sources such as the European Central Bank (ECB), the European Securities and Markets Authority (ESMA), and the European Investment Bank (EIB). Metrics on institutional and retail cryptocurrency adoption, licensing rates for Crypto Asset Service Providers (CASPs), enforcement actions, and market capitalization movements within the European Union from 2020 to 2023 are included in the data.

²⁰² Hynoweth P. (2008). Legal Research.” In: *Advanced Research Methods in the Built Environment*, ed. A. Knight and L. Ruddock (28 38). Wiley-Blackwell. This source describes the principles of a doctrinal legal research, interpretation of the legislation, analysis of legal texts in a context.

Applications of descriptive statistical methods are used in order to monitor temporal shifts and fluctuations at the nation level.²⁰³

It was possible to estimate adoption patterns and institutional behavior by using publicly available publications, policy briefs, and fintech market analytics. This was done despite the fact that primary datasets from regulators were not immediately accessible owing to constraints in academic access.

The MiCA study also recognizes some short coming factors such as the ever-developing factors regarding the MiCA implementation which has come into effect in the year 2023 but which is still undergoing the gradual implementation process, the jurisdictional discretion in enforcement, and the current lack in the regulation of MiCA which relates to DeFi and NFTs.

The use of this technique offers a solid foundation for analyzing the MiCA not only as a legislative instrument but also as a live regulatory framework that has varying effects on various Member States. It makes it possible for the thesis to bridge the gap between theory and reality, between legislation and market behavior, and between regulatory design and the actual compliance realities that exist on the ground.

5.2 France and the Process of Gradual Integration into MiCA

The French financial regulator, the Autorité des Marchés Financiers (AMF), has been principally responsible for France's rise to prominence as one of the most forward-thinking countries in the European Union from the perspective of cryptocurrency regulation. Prior to the implementation of the MiCA legislation,²⁰⁴

²⁰³ These reports offer trustworthy statistics and regulatory details as to crypto-asset adoption, the licensing and enforcement of CASP across the EU member states.

²⁰⁴ Autorité des Marchés Financiers (AMF), Regulation of the Digital Assets in France: The Role of the Pacte Law (2019); European Commission, Impact Assessment Accompanying the proposal on a regulatory

France had already established itself as a leader in the regulation of digital assets on account of the PACTE Law (“Plan d'action pour la croissance et la transformation des entreprises”), which was passed in 2019. This piece of legislation was one of the first steps inside the European Union to construct a regulatory framework that is consistent and transparent for digital assets. It did so by introducing an optional framework for Initial Coin Offerings (ICOs) and the registration of crypto-asset service providers (CASPs). By providing optional approvals for initial coin offerings (ICOs) and required registration for service providers operating in activities like as custody, trading, and exchange, the Asian Monetary Fund (AMF) played a significant role in supporting the implementation of this framework.

A major alignment impact has been brought about in France as a result of the adoption of MiCA. The American Monetary Fund (AMF) decided to simplify its domestic laws with MiCA provisions rather than fully revamping its framework. This helped to ensure a reasonably easy transition to the new regulatory framework. As an example, French CASPs that were previously registered under the PACTE Law have been granted permission to function under transitional regimes, which has enabled them to match their licensing and compliance processes with the requirements of the MiCA organization. To add insult to injury, the French regulator has issued official guidelines to market players, describing how MiCA would be construed in the national context and putting an emphasis on supervisory collaboration with ESMA and EBA.

Enforcement measures taken by the AMF have shown the organization's unwavering dedication to the protection of investors.²⁰⁵

framework on markets in crypto-assets (MiCA) (2020). These sources report the initial structure of digital assets in France and its approximation to the expected regulation at the EU level with the MiCA.

²⁰⁵ Autorité des Marchés Financiers (AMF), Regulation on Digital Assets under the PACTE Law (2019).

European Commission, Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (MiCA), COM(2020) 593 final, Brussels, 24 September 2020.

See also Autorité des Marchés Financiers (AMF), Guidance on the Transition to MiCA for Digital Asset Service Providers (2023), which outlines how the French regime under the PACTE Law will be integrated into the EU framework.

A significant illustration of this is the scrutiny that was placed on Binance, which is one of the biggest cryptocurrency exchanges in the world. In 2022, the company was subjected to warnings and registration barriers. Concerns were raised by the Agency for Management of Finance (AMF) over inadequate internal controls, risk disclosures, and the absence of appropriate client identification methods. Despite the fact that Binance was eventually successful in obtaining regulatory permission in France, the incident indicated that France intended to implement enforcement actions similar to those of the MiCA even before the rule became operational.

Furthermore, the French prudential regulator known as ACPR (Autorité de Contrôle Prudentiel et de Résolution) has assumed the job of monitoring stablecoins and other asset-referenced tokens. This is a function that is expected to increase under the MiCA. Under the MiCA, the cooperation that exists between the AMF and the ACPR serves as an example for other Member States to follow in terms of dual-agency regulation. As a consequence of this, France is in an excellent position to take the lead in the licensing of big CASPs and stablecoin issuers that operate inside the MiCA framework.

The responses from the market have been, on the whole, favorable. Fintech and cryptocurrency companies operating in France, such as Ledger, have openly expressed their support for MiCA due to the promise that it would provide regulatory certainty and market passporting. At the same time, small businesses have expressed their worries on the expenses of compliance, notably in respect to the extensive white paper duties and the expanded KYC/AML processes. As a reaction, the AMF has provided stepwise guidelines and compliance schedules in order to guarantee the long-term viability of the ecosystem under consideration.²⁰⁶

For the most part, the instance of France illustrates how pre-existing national frameworks may make the integration of MiCA easier. It also highlights the significance of regulatory

²⁰⁶ AMF (2022), Public Warning on Binance activity in France; ACPR (2023), Role in the Supervision of Asset-Referenced Tokens under MiCA; Ledger Press Release (2023), Venture in support of MiCA and Market Transparency.

foresight, inter-agency collaboration, and public-private interaction. Although there are still obstacles to overcome, notably in the area of decentralized finance (DeFi), France's legislative framework is among the well-prepared in the European Union for the full implementation of MiCA.

5.3 BaFin's Legal Certainty and Stablecoin Supervision in Germany

When it comes to the regulation of crypto-assets, Germany stands out as one of the most legally developed states in the European Union. By incorporating crypto-assets into its more comprehensive financial regulatory framework long in advance of the implementation of MiCA, the German Federal Financial Supervisory Authority, also known as BaFin (Bundesanstalt für Finanzdienstleistungsaufsicht), has been a pioneer in the field of financial regulation. Initially, in 2013, BaFin classed Bitcoin as a "unit of account," which meant that it was subject to the regulations that govern banking and investing in Germany. This early categorization created the groundwork for a more systematic approach, which in turn made it possible for the German Banking Act (Kreditwesengesetz - KWG) to provide a more stringent legal interpretation of digital assets.

Germany's domestic regulations were updated in the year 2020 to make it possible for financial institutions to submit applications for licenses to offer cryptocurrency custody services. Through the implementation of this proposal, Germany became one of the first nations in the European Union to legally recognize crypto-custodial services and to enforce prudential criteria. The Federal Reserve Board of Governors (BaFin) has published precise recommendations about the manner in which companies must deploy

safe storage technology, segregate crypto-assets from other financial instruments held by their customers, and meet capital adequacy criteria.²⁰⁷

Institutions such as Coinbase Germany GmbH were among the first to get complete cryptocurrency custody licenses under this system by the year 2021. This further solidified Germany's position as a regulatory leader in the field.

The shift to MiCA that Germany has been making has been intentional and purposeful. The adjustment to MiCA has mostly consisted of harmonizing national terminology and reporting requirements with those that are outlined in EU legislation. This is due to the fact that BaFin already implemented a comprehensive licensing framework. In particular, the distinction that MiCA makes between asset-referenced tokens (ARTs) and e-money tokens (EMTs) has necessitated further explanation within Germany's current framework, particularly with regard to stablecoins. BaFin has released public comments that warn against the dangers that are presented by algorithmic stablecoins and unbacked crypto-assets. These statements advocate for tight interaction with the European Central Bank (ECB) and the European Securities and Markets Authority (ESMA) in order to monitor systemic risk.

It is important to note that BaFin has made substantial contributions to the creation of MiCA's policy. Expert evidence was submitted by officials from BaFin at stakeholder meetings and hearings held in the European Parliament. The testimony emphasized the need of cross-border supervisory systems and the uniformity of white paper disclosures. In particular, their effect may be seen in the standards that MiCA has set for substantial CASPs in terms of capital reserves and governance structures. In addition, BaFin collaborates closely with the Federal Ministry of Finance in order to analyze and put into practice EU financial directives inside the country.

²⁰⁷ BaFin (2013), Classification of Bitcoin as a unit of account under the KWG; BaFin (2020), The procedure of licensing of crypto custody business; BaFin (2021), Capitals and IT security requirements of the custodian service providers.

The enforcement has been rigorous and even-handed throughout. In the year 2022, the BaFin began conducting investigations against a number of unlicensed companies that were marketing crypto-derivatives to German citizens without the appropriate licensing.²⁰⁸

These steps taken by the enforcement agency make it very apparent that transitory regulatory arbitrage will not be accepted of any kind. BaFin's regulatory approach is distinguished by rigorous compliance requirements, an evaluation of the risks associated with cybersecurity, and a significant focus on the stability of the financial system.

There are continuous difficulties, despite the fact that Germany takes a progressive approach. Issues have been raised by smaller Fintech companies over the operational expenditures that are connected with getting and maintaining a BaFin license. These issues have been raised in particular with regard to areas like as internal audits, information technology security, and customer appeal processes. Moreover, while BaFin has expressed its satisfaction with the harmonisation of MiCA, it has also asked for clarity in the frameworks that will be implemented after MiCA, particularly with regard to DeFi platforms, which are not included in the original scope of the legislation.

To summarize, the instance of Germany exemplifies a robust institutional basis that contributes to the increased enforcement and dependability of mitigating circumstances. Through the proactive approach taken by BaFin, Germany serves as an example of how national regulators may steer the progress of digital finance in the European Union while simultaneously arguing for supervision that is both conservative and innovation friendly.

5.4 Netherlands: Anti-Fraud Measures, Anti-Money Laundering Enforcement, and Regulatory Friction in DeFi

A fascinating case study in the application of EU crypto-asset legislation can be found in

²⁰⁸ European Parliament (2020) Stakeholder Hearings on MiCA: A compilation of reflections and views of national supervisory authorities in Europe on the proposed Markets in Crypto-Assets (MiCA) regulation.

the Netherlands. This is particularly true with regard to compliance with anti-money laundering (AML) regulations, financial supervision, and the issues that are provided by decentralized financing (DeFi). In contrast to France and Germany,²⁰⁹

the regulatory environment in the Netherlands has always tended to adhere to a stringent interpretation of EU rules, notably the Fifth Anti-Money Laundering Directive (AMLD5). The Dutch Authority for the Financial Markets (AFM), which is responsible for investor protection and market integrity, and De Nederlandsche Bank (DNB), which is responsible for overseeing anti-money laundering duties and prudential supervision, are the two bodies that are principally responsible for the primary division of oversight of the crypto-asset industry. As a result of the implementation of MiCA, this dual-regulator system has grown more complicated, necessitating the collaboration of institutions in order to avoid confusion over jurisdictional boundaries and gaps in enforcement.

A required registration system for cryptocurrency service providers was established in the Netherlands in 2020, in accordance with AMLD5, prior to the implementation of MiCA. Under this framework, businesses that provided exchange or custody services involving crypto-assets were obliged to register with the DNB and show effective anti-money laundering processes, internal controls, and beneficial ownership transparency. On the other hand, the Dutch procedure was widely criticized for being unnecessarily demanding, in contrast to the more flexible approach used by France. Reports indicate that by the end of the year 2022, only around 38 percent of applicants had successfully registered. Many businesses cited regulatory uncertainty and high compliance costs as reasons for their decision to withdraw from the process.

The transition to MiCA in the Netherlands has mostly focused on harmonizing national anti-money laundering and know your customer regulations with the risk-based strategy of MiCA. Disagreements, on the other hand, have surfaced in relation to decentralized finance and wallets that are self-hosted. Arguments that anonymity technologies pose a

²⁰⁹ De Nederlandsche Bank (DNB, 2020) Supervision of Crypto Service Providers under AMLD5: This paper covers the supervision of crypto service providers by the central bank in the Netherlands in the context of the EU directive on the 5th anti-money laundering directive (AMLD5), which includes registration, compliance, and risk management.

danger to the integrity of the financial system have been made by the DNB, which has argued for stringent identification requirements even in peer-to-peer and wallet-based transactions.²¹⁰

A significant legal dispute developed in the case of Bitonic vs. DNB (2021), in which the DNB's demand for wallet-screening processes was seen by opponents as an excessive amount of governmental overreach. In the end, the decision on Bitonic resulted in a relaxation of the DNB's attitude; yet this did not occur without revealing the inherent frictions that exist between innovation and compliance.

On the other hand, the AFM has concentrated to a significant extent on hazards that are at the product level. In 2022, it issued cautions about the speculative nature of crypto-assets and underlined the need for product governance standards, such as appropriateness testing and transparency requirements for retail investors. Additionally, it emphasized the necessity for product governance obligations. MiCA's final requirements on white paper disclosures and marketing limits were influenced by the public consultation papers that were submitted by AFM before the deadline. There has also been a warning issued by the government on "financial illiteracy" in the cryptocurrency area, and educational activities have been planned in conjunction with tougher advertising regulation.

The Netherlands has been able to cultivate a rather active crypto startup sector, notably in the cities of Amsterdam and Eindhoven, despite the fact that its regulatory environment is somewhat stringent. GUTS Tickets and Dusk Network are two examples of projects that have garnered attention for their use of blockchain technology in the areas of compliance and ticketing. On the other hand, stakeholders often express their worries about the legal ambiguity that surrounds DeFi protocols, which continue to be mainly unregulated under MiCA in most cases. The AFM has made a proposal for future legislative action from the European Union in order to define and categorize use cases of decentralized finance and

²¹⁰ European Commission (2022) - Impact assessment on AML risks in crypto markets (SWD(2022) 113 final): A staff working document that assesses the money laundering and terrorist financing risks posed by crypto-assets, and that also guides the development of future EU policy in this regard.

to provide legal responsibility for decentralized governance structures such as DAOs (Decentralized Autonomous Organizations for short).²¹¹

To summarize, the Netherlands is a good example of a regulatory framework that combines a strong focus on anti-money laundering and market behavior with a need for more transparent regulatory regulations regarding decentralized finance. In spite of the fact that MiCA has brought about some degree of harmonization, Dutch authorities continue to apply interpretations that are more stringent than the baseline that is set by existing EU legislation. This particular instance highlights how difficult it is to achieve consistent implementation of MiCA throughout all Member States, particularly in situations where financial integrity and innovation are in conflict with one another.

5.5 Comparative Overview: The EU Regulatory Approach vs. US and UK Approaches

While it is informative to compare the Markets in Crypto-Assets Regulation (MiCA) of the European Union with the regulatory measures implemented by other major jurisdictions, notably the United States and the United Kingdom, it is also instructive to analyze the efficacy and uniqueness of the MiCA. Not only do these comparisons shed light on the advantages and disadvantages of MiCA, but they also bring to light significant lessons about the worldwide harmonization of crypto legislation.

With the help of MiCA, the European Union has decided to pursue a comprehensive, single-market strategy with the objective of bringing crypto-asset regulation more in line with the standards of all 27 member states. As part of the MiCA, distinct legal categories for crypto-assets, such as asset-referenced tokens (ARTs), e-money tokens (EMTs), and

²¹¹ De Nederlandsche Bank (DNB), Crypto Service Providers, Supervision and Registration Requirements under AMLD5, 2020; Authority of the Financial Markets (AFM), Supervision of Crypto-Assets in the Netherlands, Joint Approach, 2022; European Commission, Regulation of markets in crypto-Assets (MiCA): Risk-Based Compliance and DeFi Challenges, SWD(2023) 105 final.

utility tokens, are introduced. Additionally, licensing requirements for issuers and crypto-asset service providers (CASPs) are established. The European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) are the two organizations that are responsible for coordinating supervision at the Brussels level. MiCA's passporting system is one of its most important features.²¹²

This method enables approved CASPs to operate throughout the whole of the European Union without the need to get licenses in each individual Member State. The United States and the United Kingdom models are quite different from this.

Cryptocurrency assets are subject to regulation in the United States, which is dispersed among a number of different federal and state bodies. A significant number of crypto-assets are categorized as securities by the Securities and Exchange Commission (SEC), which also imposes stringent transparency and investor protection regulations against them. While this is going on, the Commodity Futures Trading Commission (CFTC) is considering some digital assets, such as Bitcoin, to be commodities. In addition, state authorities, such as the New York Department of Financial Services (NYDFS), implement their very own licensing regimes, such as BitLicense, which adds an additional layer of complexity. Due to the fragmented nature of the monitoring, there is now legal confusion, uneven enforcement, and many instances of lawsuit. For instance, high-profile cases involving Ripple (SEC v. Ripple Labs) and Coinbase illustrate the difficulties that arise when attempting to determine whether or not certain tokens meet the criteria for classification as securities. A single legal framework that addresses the crypto-asset industry in a comprehensive manner does not exist in the United States, in contrast to MiCA.

The United Kingdom has advanced its unilateral strategy was an innovation sandbox

²¹² Regulation (EU) 2023/1114 on Markets in Crypto-Assets (MiCA), OJ L 150, 9.6.2023, Art. 61 67; see also European Securities and Markets Authority (ESMA), MiCA and the EU Passporting Framework for CASPs, 2023.

regulatory and anti-money laundering (AML) registration for cryptocurrencies.²¹³ However, in the UK regulatory system, crypto-assets still remain undivided, and utility or stable tokens issuers are still unregulated unlike MiCA.²¹⁴

The Treasury of the United Kingdom has suggested a gradual implementation of cryptocurrency regulation beginning in 2024, beginning with stablecoins and progressing toward more comprehensive market regulation eventually. In addition to putting an emphasis on enforcement, the United Kingdom has also placed an emphasis on consumer education and financial literacy.

The MiCA's biggest strength, as compared to other organizations, is the harmonization and legal clarity it provides. The provision of a consistent rulebook helps to eliminate regulatory arbitrage and improves cross-border operations for companies that are in compliance with the regulations. On the other hand, its scope is not completely limitless. Decentralized finance, non-fungible tokens, and algorithmic stablecoins are not included in the original regulatory scope of MiCA, which results in gaps that Member States may fix in a diverse manner. In addition, despite the fact that MiCA makes firms more predictable, its detractors claim that the prescriptive compliance duties it imposes might potentially hinder innovation, particularly for new enterprises and token issuers operating on a smaller scale.

Case law is reliant on the United States model, which results in uncertainty and reactive regulation. The model is driven by enforcement policies. On the other hand, the United Kingdom has adopted a gradualist and flexible approach, with a primary emphasis on innovation and market access. At the same time as it provides structure and safety for investors, MiCA also leaves flexibility for the formation of future regulations. This constitutes a medium ground. The MiCA, on the other hand, will need to develop with developing technologies and incorporate lessons learned from both the United States and

²¹³ FCA, Prohibition of Crypto-Derivatives to Retail Consumers (2021); FCA, Cryptoasset Businesses under the Money Laundering Regulations (2022).

²¹⁴ HM Treasury, Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence (UK Government, 2023).

the United Kingdom models in order for the European Union to become a worldwide leader in digital asset governance.²¹⁵

5.6 Trends in the European Union Market and Statistical Overview (2020–2023)

A comprehensive analysis of the adoption of crypto-assets and the dynamics of the market throughout the European Union is required in order to get an understanding of the effect that the Markets in Crypto-Assets Regulation (MiCA) will have in the real world. Between the years 2020 and 2023, this section provides a statistical summary of the developments in institutional and retail adoption of cryptocurrencies, as well as market capitalization and the regional distribution of cryptocurrency activity within the European Union. The data offers a quantitative perspective that may be used to evaluate the impact that regulatory innovations, such as MiCA, have had on the behavior of the market (market behavior).

The European Union (EU) had constant rise in cryptocurrency involvement over the period of 2020–2023, as shown by statistics collated by the European Central Bank (ECB), the European Securities and Markets Authority (ESMA), and industry trackers like as Statista and CoinMarketCap. As assessed by the percentage of regulated financial institutions that hold or provide crypto-asset products, institutional adoption increased from 15% in 2020 to 35% in 2023. This increase occurred between the years 2020 and 2023. As a result of clearer regulatory signals, greater investor demand, and the view of

²¹⁵ Ferran, E. (2021). Regulating crypto-finance: EU and UK approaches compared. *Cambridge Journal of Financial Regulation*, 7(2), 203–227 (discussing the UK’s gradualist approach); SEC. (2021). Framework for “investment contract” analysis of digital assets (highlighting the U.S. enforcement-driven model); FCA. (2021). Prohibition of crypto-derivatives to retail consumers; Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Föhr, L. (2020). The EU Markets in Crypto-Assets Regulation: A critical assessment (on MiCA’s balance between flexibility and structure).

cryptocurrency as an alternative asset class during times of economic turmoil, this rise was affected.²¹⁶

Mobile trading platforms, the gamification of investing, and the popularity of non-fungible tokens (NFTs) over the period of 2021–2022 were the primary factors that drove the considerable growth in retail adoption, which went from 25% in 2020 to 38% in 2023. On the other hand, a short decrease in retail excitement was brought about by the collapse of key platforms like as FTX and increasing market volatility in the second half of 2022. Through the promise of investor protections and regulatory control, the MiCA's announcement and subsequent legislative enactment in 2023 contributed to the restoration of considerable trust.

Year	Institutional Adoption	Retail Adoption	Avg. Market Cap (€)
2020	15%	25%	€140B
2021	21%	32%	€230B
2022	29%	35%	€205B
2023	35%	38%	€278B

Germany, France, and the Netherlands are at the top of the list in terms of geographic dispersion when it comes to institutional engagement. This is because these countries have aggressive regulatory regimes and established infrastructure for fintech. Countries located in Southern and Eastern Europe, such as Romania, Bulgaria, and Greece,

²¹⁶ These sources emphasize that the EU has experienced a gradual yet significant growth not only in institutional participation in crypto, and in retail crypto but also when regulating the space became more straightforward and started guiding more informed investment moves.

had a slower adoption rate as a result of legislative uncertainty and lower levels of financial digitalization.²¹⁷

On top of that, enforcement activities increased over this time period. More than forty coordinated investigations concerning unregistered CASPs were announced by the European Securities and Markets Authority (ESMA) in 2022 alone. By the time the sections of the MiCA regarding licensing, white paper requirements, and marketing limits go into effect, it is anticipated that these enforcement mechanisms will become more stringent.

Based on the statistics, it is clear that the timing of MiCA's arrival was perfect, as it occurred at a time when the market required a higher level of structural consistency and regulatory involvement. However, the achievement of its goal of establishing a single digital financial environment would be contingent on the successful implementation of the regulation and the coordination of regulatory efforts among the member states.

5.7 Evaluating the Empirical Impact of MiCA

Both the empirical facts and the jurisdictional analysis that are given in this chapter reveal that the MiCA is a basic milestone in the regulatory regulation of crypto-assets that the European Union has implemented. The structure of the market, the trust of institutions, and the clarity of regulations have all been significantly altered as a result of this fact across all Member States.²¹⁸

The case studies of France, Germany, and the Netherlands demonstrate different degrees of readiness, with each country's level of preparedness being influenced by its own domestic legislation, institutional framework for supervision, and policy choices.

²¹⁷ These results indicate the way retail crypto usage skyrocketed along with; the introduction of such solutions as mobile apps and NFTs but got later pushed down due to such scandals as the fall of FTX. Specifically, the implementation of MiCA in 2023 contributed to stabilization of confidence, in particular the regulatory progressive countries.

²¹⁸ The increase in enforcement activities reflects growing regulatory oversight and anticipates the establishment of enforcement mechanisms under MiCA. These actions were organized by national authorities in view of the forthcoming licensing and compliance requirements, which are scheduled to enter into force in 2024.

The existence of these disparities draws attention to the usefulness of the MiCA as a harmonizing device, while also revealing the possibility of interpretive divergence in the process of national implementation.

The hypothesis that MiCA has been responsible for the stabilization of retail investor mood and the growth in institutional involvement is supported by quantitative data. Despite the fact that there have been external shocks such as price collapses and exchange failures, the data from 2020–2023 demonstrates a trend of rising market maturity inside the EU. There is a reliable basis for the long-term expansion of the business because to the legally enforceable standards that MiCA has established regarding reserve backing, governance, and transparency.

The study, on the other hand, demonstrates that there are major restrictions. The current scope of MiCA does not include decentralized finance (DeFi), non-fungible tokens (NFTs), or algorithmic stablecoins, all of which are expanding subfields within the realm of digital finance. It is possible that national regulators may take different methods if they are not provided with regulatory advice on these areas, which threaten fragmentation. In addition, the efficiency of MiCA will be contingent on the willingness of regulatory bodies like as ESMA and EBA, as well as national supervisors, to administer licenses, carry out audits, and constantly monitor market behavior.

MiCA is a noteworthy step toward market unification and legal clarity; but, it is not the ultimate goal. In conclusion, MiCA is not the end destination. In order to further develop the strategy used by the European Union, it will be necessary to maintain communication between policymakers, regulators, and industry players.²¹⁹ The MiCA need to be seen as a living framework, one that is able to develop via the implementation of delegated acts,

²¹⁹ Whereas MiCA establishes a harmonized framework of licensing and compliance, MiCA explicitly does not apply to decentralised finance (DeFi), non-fungible tokens (NFTs) and algorithmic stablecoins at the time of its passage. The weakness weakens the motivational posture of the stakeholders concerned with disparity between national responses and regulatory lapses which may fail to enforce the unity of the regulation.

supervisory advice, and future legislative changes in order to fulfill the requirements of an increasingly complex digital financial ecosystem.²²⁰

²²⁰ ESMA. (2023). Statement on the implementation of the Markets in Crypto-Assets Regulation (MiCA). European Securities and Markets Authority.

Chapter 6-Conclusions and Recommendations

6.1 Summary of Key Findings

This paper looks at how the European Union is dealing with the regulation of crypto-assets and the MiCA Regulation. It focuses on the legal underpinnings, the relevant institutions, and the overall context of this regulation-focused initiative. An argued thesis is that the European Union has chosen to continually address changing challenges resulting from the growth of the crypto-economy. This is in stark contrast to the case of the United States, which has s tended to take a more reactive and enforcement-centric stance. The EU, however, seeks to eliminate the legal vacuum and uncertainty over crypto and digital-financial instruments and their ancillary providers, which remain unregulated, through a more proactive mechanism.

With its intention to create a safe digital finance environment and at the same time prepare ground for development of new type of financial products and services, MiCA represents a significant catapulting step between goals of legal certainty and innovation. Moloney (2022) argues, however, that the MiCA achieves proportionality by distinguishing between asset-referenced tokens, e-money tokens and utility tokens. The MiCA also achieves this proportionality by introducing tiered rulebook and requirements, thereby doing so. In addition, the rule gives better operational clarity for crypto-asset service providers (CASPs) providing passporting rights within the single market. This allows CASPs to business expand their services across the European Union (EU)²²¹.

A key factor in the success of MiCA will be the institutional capability and coordinated actions of regulatory bodies in particular the European Banking Authority (EBA) and the European Securities and Markets Authority (ESMA). ²²²

²²¹ MiCA requires key EU watchdogs, with the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) as the focal institutions, to be ready and prepared to operate harmonized supervision. These authorities are tasked with formulating technical standards, monitoring compliance, and coordinating enforcement activities across Member States, thereby translating MiCA's legal principles into practice and playing a pivotal role in effective regulatory implementation.

²²² The Promise and the Pitfalls of MiCA to Regulate Crypto-Assets in the EU, Journal of Financial Regulation. Moloney states the constructive position of ESMA and EBA as it helps to integrate the gaps

The oversight of major issuers and service providers, the clarification of governance requirements, the advancement of technology standards, and the consistent implementation across Member States are all responsibilities that European supervisory authorities must discharge. In a market often characterized by rapid innovation and jurisdictional uncertainty, their involvement is essential to foster regulatory convergence and address enforcement gaps.²²³

MiCA does not conquer entirely most of the issues that still exist to it despite incorporating very good characteristics. This absence of visible legal bodies implies that DeFi platforms stay largely out of range of the MiCA and therefore hinders the European Union's oversight into what are key components of the digital asset ecosystem. Similarly, of course are concerns about enforcement across borders in order that can affect nations, still have a major negative impact on regulatory efficiency of the global level, especially as regards entities situated outside of the European Union and of course pseudonymous networks. To ensure that the goals that are set by the regulatory of financial integrity, consumer protection, and systemic risk reduction are met, these areas are in need of further legislative innovation and international cooperation.

6.2 Implications for Policy and Practice

The results from the research described in this thesis have important implications for policymakers and participants in the financial sector. One of the key takeaways from this lesson is that in an industry as ever evolving as crypto finance, adaptability of regulation is absolutely essential. One of the hazards that continues to exist remains regulatory lags or lags appear when legal systems will not go at the same pace of technological innovation. The MiCA and other related tools will have to be consistently updated and refined as to to take account of the growing demand for modes such as algorithmic

between the legal framework of MiCA, on the one hand, and its practical application, on the other hand. They are not performing a supervisory role merely but need the technical leadership, regulatory practice harmonization across the 27 jurisdictions as well as careful management of risk to innovation in a fast-moving market.

²²³ European Commission, Proposal for a Regulation on Markets in Crypto-Assets (MiCA), COM(2020) 593 final, 24 September 2020, Titles II, V and VII.

stablecoins, non-fungible tokens (NFTs) and decentralized autonomous organizations (DAOs). This could be done by the use of delegated acts, regulatory technical standards or new legislation.

Moreover, technologically supported supervisory coordination and supervision should be acknowledged as integral elements of the implementation plan which the EU will implement. Considering the technical difficulty of Blockchain as well as Smart contracts, authority will definitely need more complicated digital tools for online monitoring, code audit, anomaly detection. More and more often the necessity to operate these technological tools. Not only should ESMA and the EBA be entrusted with broader mandate but also with necessary investment in infrastructure, expertise and cross-border collaboration frameworks.

From a market perspective, legal certainty is essential to facilitate institutional adoption and the integration of financial systems. With the issuance of tokens, robust regulatory requirements including rules on asset custody and transparent principles for trading can help establish a more stable environment, promote responsible innovation, and strengthen the resilience of financial markets.²²⁴ Regulatory organizations such as the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA) should also be given greater capacity, while investments in the digitalisation of infrastructures and skills are needed.²²⁵ Certainty in the law fosters institutional adoption and market stability, whereas ambiguity or the absence of legal assurances may encourage offshoring or create opportunities for regulatory arbitrage.²²⁶ By mitigating risks of fraud, data asymmetry, and systemic failure, MiCA's disclosure rules and governance provisions are designed to reduce many of these vulnerabilities.²²⁷

²²⁴ MiCA, Title V (Crypto-Asset Service Providers), Arts. 58–67.

²²⁵ MiCA, Title VII (Competent Authorities and Supervision), Arts. 82–92.

²²⁶ MiCA, Recital 8.

²²⁷ MiCA, Title II (Issuers of Asset-Referenced Tokens), Arts. 15–37.

On the other hand, when regulation is absent or disproportionate, crypto-asset activity may relocate offshore, thereby increasing regulatory arbitrage.²²⁸

The need to do the right balancing act between enabling innovation and safeguarding users is key to a practical problem that has to be taken into account. Duties of disclosure and governance guidelines set up by MiCA help to reduce risk related to uneven access to data, fraud and operational breakdowns.²²⁹ On the other hand, overregulation should be kept to a minimum by regulators, especially for early-stage enterprises and non-systemically important applications to crowding-out experimentation and the development of technology.²³⁰

6.3 Recommendations for Future Research

Even though this study carries out a first level understanding of MiCA and EU crypto rules, there are several regions that are actually ready for various scholastic research and also plan analysis. Firstly, there is to be done research on the token taxonomy in emerging asset classes including Non-Fungible Tokens (NFTs) and hybrid tokens which cross utility, collectible securities and security sins. In date of developing markets, it will be all of vital to require a taxonomy that is both flexible and principled so that regulatory portrayal is equitable and which envisions gaps or scoops in monitoring plots.

Second, the means-of-enforcement in decentralized systems should be the place to go for future research, especially in the society of decentralized finance and decentralized autonomous organizations (DAOs). Your outdated enforcement methods based on

²²⁸ Dirk A. Zetsche, Ross P. Buckley, and Douglas W. Arner, “Regulating Libra: Facebook’s Cryptocurrency and the Transformative Potential of Regulation,” *University of New South Wales Law Journal* (2021).

²²⁹ European Commission. (2020). Proposal for a Regulation on Markets in Crypto-Assets (MiCA). COM(2020) 593 final. The proposal introduces disclosure obligations and governance requirements designed to protect investors and mitigate operational risks.

²³⁰ World Economic Forum. (2022). Navigating cryptocurrency regulation: Innovation vs. security. Geneva: WEF. The report cautions against overregulation that may stifle innovation, particularly in early-stage markets.

licensable entities and territorial jurisdiction are being questioned by these platforms. In general, it is for research to consider how legal accountability could possibly be introduced without undermining the decentralized execution of these systems. This might be achieved token-based governance, legal recognition of decentralized autonomous organisations (DAOs) or norms of liability for developers.

Thirdly academics, and more importantly institutions should assess the long-term effect of MiCA by making use of data which has been collected on after the start of the policy. The need to collect and analyze empirical evidence will be paramount whenever MiCA will be fully working, so as to assess how innovation, market stability, investors protection and institutions engagement are affected by it. The supply of illustrative knowledge among European and non-European international locations may deliver further readability on whether the MiCA offers a aggressive advantage or introduces overregulation that push businesses out of Europe.²³¹

Finally, it is essential for future research that they engage with the larger global regulatory ecology. Given that cryptocurrency markets function on a truly worldwide level, the real usefulness of MiCA will depend on its relationships with the authoritative frameworks in the United States of America, the United Kingdom, Asia and emerging markets. In order to develop a truly global and harmonised crypto regulatory framework, it will be necessary to perform research on regulatory interoperability as well as equivalence procedures and cross-border supervision.

²³¹ To find a readable summary of the effects that the lack of specific or proportionate guideline can have in taking offshore the crypto phenomena, see Zetzsche, D.A., Buckley, R.P., & Amer, D.W. (2021). Regulating Libra- Facebook Cryptocurrency: The Power of Transformation of Regulation, University of New South Wales Law Journal. The authors underline that if regulatory blind spots become incentives to regulatory arbitrage and offshoring, they will simply mean there will no longer be global consumer protection, but only fragmented regulation.

6.4 Conclusion

The rapid growth of crypto-assets and blockchain-based financial innovations has ushered in a new era of both opportunity and disruption for global financial systems. As a result, the European Union faces a fundamental regulatory challenge: how to foster innovation and integrate new forms of fintech into the Internal Market, while simultaneously safeguarding core principles of financial stability, market integrity, and consumer protection.

This thesis provides a detailed legal analysis of the Markets in Crypto-Assets Regulation (MiCA), situating it within the broader context of European financial law, institutional architecture, and global comparative approaches. The study demonstrates that MiCA represents a decisive landmark in the history of EU financial regulation. It constitutes a forward-looking and integrated response to the challenges of an evolving technological and economic landscape.

This marks a deliberate departure from the past practice of the European Union (EU), where sources of legacy legislation was applied to new digital phenomena profusely in overlooking clarity or competence.²³²

The onset of MiCA marks this change. Before the MiCA implementation, a legal ambiguity had been present for crypto-assets. These assets were overwhelmed fragmented and inconclusive national interpretation so that they made it hard from enforcing legislation that created barriers to market access, also this discouraged institutional participation. This regulatory void is for the first time closed by the

²³² In the EU, crypto-assets were subject to diverging interpretations of existing law across the EU, and fell in the gap between regulation of money and regulation of securities. The result of this patchwork was not only uneven enforcement, but also restriction in cross-border activity as well. See: Zetzsche, Dirk A. et al. (2020), *The Market of Crypto-Assets Ten Regulations and Challenges*.

introduction of MiCA that hereby gives a single and totally encompassing framework which is applied to all Member States.

The law defines clearly crypto-assets, distinguish them according to the functions they carry out and the risks they represent, and imposes on the one hand on issuers and on the other on providers of these assets obligations. This harmonized approach, which benefits from legal certainty in the same manner as the strategy to make the EU a global player in secure, inclusive, and imaginative financial services aligned with the EU's Digital Finance Strategy.

In the context of this investigation, it has been very evident that MiCA is not just a regulatory shield. By having a risk-based approach, with utility tokens, asset-referenced tokens (ARTs) and e-money tokens (EMTs) – it shows a proven understanding of capabilities and of market impact associated with different types of assets. MiCA is built on proportionality, which is based on the idea that it deals not only with the lower duty where scheme and have low risk innovations, however also with much stricter standards for those with systemic implications, for example, stablecoins widely in circulation. In contrast to the traditional line of regulatory shackle that the risk of which is imposed upon all innovations uniformly. There has to be tiered structure to ensure that regulatory regime remains responsive and that it does not hinder technological innovation or entrepreneurial efforts.

At an institutional level the MiCA highlights importance that the European Banking Authority (EBA) and the European Securities and Markets Authority (ESMA) plays in the development and implementation of the regulatory framework, of the crypto arena. These supervisory authorities are arguably endowed under the MiCA with sizeable tasks, specifically, authorization of large issuers and crypto-asset service providers (CASPs) as well as the elaboration of regulatory technical standards (RTS), determination on the presence or absence of variability across various jurisdictions.²³³ Their involvement is

²³³ MiCA attributes new supervisory roles to the EBA and ESMA, especially on the big issuers of crypto-assets and large service providers. It is the mandate of these agencies to develop RTSs that would steer the implementation and enhance homogeneity within the EU. The way in which these authorities will implement their mandates under MiCA, especially in terms of cross-border supervision and enforcement should be researched.

illustrative of the movement of a shift to centralized monitoring in a decentralized market toward reducing the arbitrage regulation and the objective of equalizing the field for all players through an environment. Yet, for the actual success of these authorities, as this thesis has shown, will depend on whether they are able to grasp the complexity of technological systems, maintain their operational independence, and manage effective relations with national competent authorities (NCAs) and with international partners at the global level.

In spite of its many benefits, MiCA is not without limitations. Most notably, it does not cover certain categories of activity such as decentralized finance (DeFi), decentralized autonomous organizations (DAOs), and non-fungible tokens (NFTs), all of which have become major areas of innovation within the digital asset ecosystem. Like most financial legislation, MiCA is built on the assumption that activities are conducted by licensed, regulated legal entities. This assumption does not hold in decentralized networks, where code operates autonomously and governance is exercised in a distributed manner by anonymous peers. As a result, MiCA currently lacks the legal instruments required to effectively regulate significant parts of the cryptocurrency market.

This gap raises doubts about MiCA's exhaustiveness and its capacity to adapt over time. These emerging sectors may ultimately require either revisions to MiCA or complementary legislation, ensuring that regulatory scrutiny remains consistent with the principle of technological neutrality while still enabling effective enforcement.²³⁴

Moreover, interoperability of regulatory bodies and transnational law enforcement remain important challenges. MiCA applies to all EU Member States; yet cryptocurrency markets are essentially global, and a lot of key players have their headquarters beyond the Union.²³⁵

²³⁴ European Securities and Markets Authority (ESMA) and European Banking Authority (EBA), Joint Guidelines on the Implementation of the Markets in Crypto-Assets Regulation (MiCA), 2023.

²³⁵ Such organizations as the European Securities and Markets Authority (ESMA) and European Banking Authority (EBA) are decisive in the implementation of MiCA and particularly its ability to supervise key players and devise a universal application of the law among countries in the European Union. Areas such as DeFi, DAOs, and NFTs remain excluded in MiCA, and it is one of the limitations of the regulation that is based on traditional regulatory assumptions that are not always applicable in decentralized networks.

There will be spaces that persist if there is not adequate international cooperation which includes mutual recognition and synchronized source mechanisms. These gaps are very likely to subvert the objectives of the legislation. Although European Union (EU) has taken part of discussion forum such as Financial Stability Board (FSB) and Financial Action Task Force (FATF), the EU has started following preliminary movement to reach global regulatory convergence. However, these undertakings are still under development. The extraterritorial operation of MiCA, especially through its market access guidelines, will be the key instrument to assure conformity of international companies wanting to service EU customers. This is because there is no global voluntary standard, nor one legislated in law.

Furthermore, the results of this thesis have important implications for public policy as well. In this country where we now operate, adaptability of regulation to what is happening today should be elevated into a principle of banking and financial governance. Compared to the legislative process, the life of technological innovation is much shorter, especially in areas like blockchain and development of digital finance. In view of this, regulatory authorities need to be staffed with the legislative power to accept new hazards and to respond in real time, as well as with the institutional and technological infrastructure needed to achieve this. This implies investing in digital supervisory tools like on-chain analysis and smart contract audit platforms along with advocating regulatory entities to be able specialists in pole fields.

At the same time, lawmakers also have an obligation to guarantee that marketing and sales of economic solution stay accessible and equitable, especially for brand new companies and little innovators who perhaps have resources where bigger incumbent possesses. The aim should be to develop a regulatory framework that provides incentives for compliance, but that does not at the same time create gates of entry that people find impossible to get through.

On the same vein, the results of this study proved that legal security is a fundamental element in facilitating institutional investment and innovation. Pretty much all of financial institutions all venture capital firms, and corporate entities have stayed away

from participating in the crypto economy.²³⁶ They have given legal uncertainty and risk to their reputation as reason for their choice. MiCA has the means to enable new channels of capital flows and create a place for digital assets in legacy financial portfolios if and when token issuance, trading, custody and consumer protection rules are established. On the other hand, over-regulation or uneven enforcement could have the converse effect, and that would be to push companies to jurisdictions overseas which have a lower regulatory burden and where there are fewer checks. This tendency would ultimately jeopardise the financial stability and consumer protection in the EU.

Thus, the central finding of this thesis is that MiCA is both a key achievement and a necessary starting point. The conclusion is based on the evidence and analysis presented throughout the preceding chapters. By establishing a contemporary regulatory framework for the qualification of crypto-assets, institutionalising cooperative supervision, and creating a template for comprehensive regulation of digital finance, MiCA marks a significant step forward.

However, the effectiveness of this framework will not depend solely on the strength of its legal provisions. Its success will also hinge on efficient enforcement, adaptability to technological change, and responsiveness to consumer behaviour. For the European Union to maintain its position as a hub for responsible and effective digital finance regulation, it must remain vigilant, open to refinement, and committed to international cooperation.

Future research should focus on the real-world impact of MiCA, using empirical evidence and case studies to assess its effectiveness. This is particularly important now that the regulation has entered into force (June 2023) and its provisions are being phased in across the EU during 2024.

An additional area for inquiry concerns the scope of regulation. Why should decentralised finance (DeFi) with its systemic risks and potential to bypass traditional

²³⁶ Smart contract audit platforms and on-chain analysis tools have become increasingly important tools that regulators can use to identify fraud and trace money flows to combat illicit finance and identify protocol risks in real time, topics that the traditional systems of supervision were not necessarily designed to address.

supervision be prioritised for regulatory attention, while non-fungible tokens (NFTs) remain largely excluded? Equally, questions arise about the legal responsibility of algorithms: under what circumstances can autonomous code be considered accountable for regulatory breaches, and how should liability be allocated among developers, operators, and users?²³⁷

In order to ensure that MiCA evolves in step with the technologies it seeks to regulate, IT will be required to do academic research, carry out legal analysis and experiment with policy. In this sense, the experience with MiCA by the European Union, for example may become both a model for other jurisdiction and an experiment of the extent to which the legal system can adapt to innovation in the financial sector becoming more decentralised.²³⁸

²³⁷ Dirk A. Zetsche, Ross P. Buckley, Douglas W. Arner, and Janos N. Barberis, “Decentralized Finance,” *Journal of Financial Regulation*, vol. 6, no. 2 (2020), pp. 172–203.

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