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ORIGINAL ARTICLE

Crypto-asset regulatory landscape: a comparative analysis of the crypto-asset regulation in the UK and Germany

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Abstract

The purpose of this research paper is to compare and analyse how crypto-assets are regulated in the UK and Germany. The aim is to understand and highlight the approaches taken by these two countries in terms of regulating crypto-assets and to explore the potential impact that their regulatory frameworks could have on the market for these crypto-assets. The research employs a doctrinal research design to examine the crypto-asset regulatory regimes in the UK and Germany. A comprehensive review of existing literature, official regulatory documents and relevant legal frameworks is conducted to understand the core components of each country's crypto-asset regulations. The findings of this study reveal divergences in the regulatory approaches of the UK and Germany towards crypto-assets. While the UK has embraced a principles-based regulatory framework, fostering innovation and industry growth, Germany has adopted a more prescriptive and cautious approach, focusing on investor protection and market stability. The research identifies that the UK's flexible approach has attracted a flourishing crypto-asset ecosystem, while Germany's conservative stance has offered greater investor confidence. However, certain regulatory gaps and challenges persist in both jurisdictions, such as ambiguities in classification and tax treatment, requiring further attention.

Keywords Blockchain · Distributed ledger technology · Crypto-assets · Regulation · UK · Germany

Introduction

In today's financial environment, "crypto-asset" denotes a digital or virtual asset that leverages encryption technology to protect and authenticate transactions and manage ownership changes. Blockchain or distributed ledger technologies serve as the underlying framework for the decentralization and immutability of crypto-assets. Crypto-assets stand out due to their cryptographic characteristics, which offer exceptional security and confidence without the requirement for conventional intermediaries like banks or financial organizations (Alaassar et al. 2023). These crypto methods facilitate safe Peer-to-Peer (P2P) exchanges and protect the authenticity of the underpinning blockchain or decentralized ledger.

From simple stores of value to sophisticated smart contract platforms, crypto-assets offer a multifaceted array of features. While Bitcoin (BTC) and Ethereum (ETH) are prominent cryptocurrencies, others serve diverse roles, including acting as utility tokens or security tokens. Decentralized applications enable utility tokens to unlock access to services or goods for users. In comparison, security tokens operate similarly to conventional financial securities by representing ownership stakes in tangible assets. Therefore, these tokens offer investors a novel means of investing (Allen et al. 2022; Ariesmansyah 2022). Crypto-assets have ushered in a new era for finance, with both exciting prospects and daunting challenges. By leveraging technology, they have simplified global commerce, broadened financial inclusiveness and created new investment avenues. Certain crypto-assets' programmability paved the way for innovative automated agreements. For example, smart contracts can execute themselves with minimal human oversight.

The dynamic nature of the crypto space has led to worries regarding compliance and protection. Globally, governments and regulators are facing the task of overseeing these resources carefully. Investor protection and halting unlawful activities like fraud, money laundering (ML) and terrorist financing (TF) is a pressing challenge (Baiod et al. 2021). Moreover, the relatively nascent and highly speculative

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nature of some crypto-assets has resulted in significant price volatility, sparking debates over their long-term viability and suitability as stable stores of value or mediums of exchange.

The paper focuses on the regulatory frameworks of Germany and the UK. The two countries have recently adopted and/or implemented regulatory approaches for regulating cryptocurrencies. However, while the regulatory frameworks for the two countries share many similarities, they are heterogeneous. This is consistent with a recent study by the Cambridge Centre for Alternative Finance (Cambridge CAF) which showed that involved reviewing various regulations of cryptocurrency in different countries found heterogeneity as well as lack of clarity on regulatory frameworks related crypto-assets in different jurisdictions (Cambridge CAF 2019). Germany has adopted an absolutely proactive approach in regulating cryptocurrencies and passed law in 2020 that mandates all cryptocurrency exchanges taking place in Germany acquire a license from the Federal Financial Supervisory Authority (BaFin) (Armata 2023). This means that Germany's regulatory framework is technology neutral. On the other hand, the UK government has no plans to design a special set of regulations for crypto-assets. Rather, it stated that it would regulate some crypto-assets by classifying them as "specified investments", which are already regulated assets according to current regulations (Ross and Cavill 2023). This means that the UK regulatory framework is principle-based. In its consultation, the UK stated that it would be guided by "same risk, same regulatory outcome" principle in the course of establishing the regulatory framework for crypto-assets (HM Treasury 2023). Whereas the principle-based approach is applauded for fostering innovation and technology, a technology-neutral approach may pose barriers for entrepreneurs.

After passing the bill to regulate and recognize crypto as regulated financial activity in June 2023, the market of crypto-assets has grown significantly. Based on raw cryptocurrency transaction volume, the UK has become the world's third-largest economy after the USA and India (Vardai 2023). Before the regulatory changes in 2022, the revenue obtained from cryptocurrencies in the UK averaged $0.89 billion. After regulatory changes, the revenue from crypto-assets market in the UK grew to $1.94 billion. It is projected that the revenue in the UK's crypto currencies market would reach $2.53 in by the close of 2024. This represents a 30.1% change in revenue (Statista 2023). A report by Chainalysis shows that the UK ranked 14 in 2023 in terms of overall adoption index globally (Chainalysis 2023). In 2021, before regulatory changes, the country ranked 21 in terms of adoption index globally (de Best 2023). Germany also experienced a surge in the adoption of crypto-assets following the adoption of its regulatory framework in 2020. However, the growth in crypto-assets adoption is lower than that of the UK. According to a bi-annual poll conducted by Ding, a top fintech business, Germany's cryptocurrency adoption was 8% by 2021. This was far lower than the global average, which was at 14% by late 2021 (Ngari 2023).

Research methodology

The researcher adopted a qualitative approach involving doctrinal research (as defined by Mann 2017) to compare and explore the frameworks for crypto-assets in both the UK and Germany. This approach allowed a thorough examination of the regulations in each country including their strengths, weaknesses, similarities and differences. To gather data the researcher reviewed legal documents such as statutes, regulations, guidelines, official reports and policy papers related to crypto-asset regulation in the UK and Germany. Collected data were thematically analysed to identify recurring themes, patterns and key regulatory elements. To ensure the accuracy and dependability of the findings a triangulation method was employed, incorporating data sources such as documents and case studies. This analysis aided in understanding the factors that influence crypto-asset regulations in each country. However, as the crypto industry is constantly changing, the regulatory environments in both countries may evolve during the research process. Some recent developments might not be fully captured.

Importance of crypto-asset regulation

Regulations surrounding crypto-assets hold importance in the world especially considering the recent rapid growth and development of these assets. These regulations serve purposes aiming to tackle risks and obstacles associated with crypto-assets. At the time, they also strive to create a transparent market environment, for all participants involved. Firstly, crypto-asset regulation is instrumental in mitigating systemic risks and safeguarding financial stability. This is consistent with van der Linden and Shiraz (2023) who identify four goals that Regulation on Markets in Crypto-Assets (MiCA Regulation) alongside other legislative frameworks aims to accomplish. According to the authors, the first goal is to offer legal certainty. In this respect, to grow crypto-asset markets, a solid legal framework is required that vividly outlines the rules that apply to all crypto-assets that are not covered by present financial legislations. The second goal entails establishing a legal framework that is not only safe but also proportionate, one that encourages innovation and fair competition (van der Linden and Shiraz 2023). The third objective of having a legal framework is to put in place sufficient levels of consumer and investor protection with the aim of getting rid of the risks that crypto-assets may pose to the internal market. The fourth objective is to achieve market

stability (van der Linden and Shiraz 2023). In regard to this, the European Commission stated that stablecoins have the potential to be widely accepted and lead to systemic risks (European Commission 2020).

The decentralized nature of crypto-assets and their borderless nature can amplify the potential impact of market fluctuations, leading to heightened volatility and potential contagion effects in the broader financial system (Baker et al. 2023). Appropriate regulation can help monitor and manage these risks, establishing mechanisms to prevent market manipulations, fraud and the abuse of crypto-assets for illicit activities such as ML and TF.

Furthermore, it is crucial to establish frameworks that aim to safeguard investors from harm. Given the limited investor protections and oversight in the market, compared to traditional financial markets, individuals face significant risks such as cyber theft, scams and fraudulent schemes. To address these concerns, it becomes imperative for authorities to implement regulations that promote transparency during offerings strengthen disclosure requirements and enforce robust cybersecurity measures to protect user's assets and personal information. In its recently finalized global regulatory framework for crypto-asset activities, the Financial Stability Board (FSB) recommended high level regulation, oversight and supervision of crypto-asset activities and markets. The framework is founded on the principle of "same activity, same risk, same regulation" and provides a solid foundation for ensuring that stablecoin and crypto-asset activities are subject to continuous and thorough regulation that is proportionate to the risks they pose while also encouraging responsible innovations that may be brought about by technological advancement (FSB 2023). Existing literature notes that the nature of cryptocurrencies makes difficult to distinguish financial and technological risks (Dumas et al. 2021). Because the exchange rate between a cryptocurrency and a fiat currency is governed by supply and demand, it is very volatile and unpredictable (Woebbeking 2021). This makes "investing" in cryptocurrencies a risky business, fuelling calls for regulations to safeguard people from deceptive ads and scams.

Besides, regulatory oversight fosters investor confidence and market trust. As crypto-assets continue to gain mainstream attention, attracting institutional investors and retail participants, establishing clear rules and guidelines can reduce uncertainty and foster confidence in the market. A well-regulated crypto-asset ecosystem can attract greater institutional interest, leading to increased liquidity and more mature and stable markets (Bellavitis et al. 2021).

Another critical aspect of crypto-asset regulation is the prevention of illicit financial activities. Cryptocurrencies' pseudonymous nature can facilitate illicit transactions, raising concerns for law enforcement and financial intelligence units. Regulators can effectively fight against the misuse of crypto-assets by implementing measures that prevent ML and TF, which is crucial for maintaining the integrity of the system.

In addition, regulatory frameworks play a role in promoting innovation and responsible growth within the crypto-asset industry. Clear guidelines can provide entrepreneurs, start-ups and established companies with a conducive environment for creating innovative applications and services. A balanced approach to regulation can foster a competitive marketplace while safeguarding against excessive risk-taking and speculative behaviour.

Nevertheless, it is essential to strike a delicate balance in crafting crypto-asset regulations. Overly burdensome or restrictive measures could stifle innovation and deter legitimate businesses from participating in the sector (Bellucci et al. 2022). Striking the right balance between regulation and innovation is crucial for nurturing the potential benefits that blockchain technology and crypto-assets can bring to various industries.

In today's ever-evolving global financial landscape, crypto-assets have gained remarkable popularity and significance. Understanding how various jurisdictions handle their regulation has become crucial. This analysis delves into the regulatory approaches of the UK and Germany, aiming to unveil similarities, differences, strengths and areas for potential improvement in their frameworks. Ultimately, the study provides valuable insights into the effectiveness and adaptability of crypto-asset regulation in these two prominent European markets.

Regulatory frameworks

The UK

Overview of the UK's approach to crypto-asset regulation

Amidst the dynamic world of crypto-assets, the UK tried to distinguish itself as an innovator in tackling their complexities by creating a robust regulatory structure. The UK's regulatory framework for crypto-assets necessitates cooperation among government entities, financial watchdogs and industry participants (Bellucci et al. 2022). Each crypto-asset's distinct traits and intended function determine how they are regulated in the UK. The Financial Conduct Authority (FCA) has taken a prominent position in defining the categorization of crypto-assets and the level of regulatory supervision needed. The UK strongly focuses on tackling illegal activities within the crypto-asset sphere. Parties involved in crypto-asset-related pursuits are required to abide by AML and CFT rules. Crypto-asset firms must be registered with the FCA, which includes following rigorous customer due diligence (CDD) processes (Blandin et al.

2019). These measures aim to minimize the risk of unlawful activities such as ML and TF. The UK's proactive stance in this domain aligns with global efforts to strengthen the integrity of the financial system and prevent the illicit use of crypto-assets.

Protecting investors is a pivotal aspect of the UK's approach to crypto-asset regulation. The FCA consistently works towards enhancing transparency and promoting fair practices within the sector. Crypto companies are obligated to share information, making sure that investors have all the details about the risks involved in their investments (FCA 2023a, 2023b). Moreover, the FCA has the power to step in swiftly if there's suspected harm to investors and take actions to enforce compliance.

Acknowledging the importance of fostering innovation in the crypto-asset space, the UK has established a regulatory sandbox (FCA 2022). This initiative allows crypto-asset firms to test new products and services in a controlled environment, exempt from certain regulatory requirements. The sandbox provides a safe space for businesses to experiment and refine their offerings while closely engaging with regulators to address potential risks and compliance challenges (FCA 2022).

The taxation of crypto-assets in the UK is well defined and thorough. Both individuals and businesses involved in crypto-related activities are required to meet tax obligations. For individuals, this includes Capital Gains Tax (CGT), while companies are subject to Corporation Tax (Bollaert et al. 2021). To provide clarity and promote compliance in tax reporting, the HM Revenue & Customs (HMRC) has released precise guidelines. These efforts contribute significantly to establishing crypto-assets as assets and integrating them into financial practices.

Classification of crypto-assets under UK law

The UK's regulatory landscape for crypto-assets has evolved significantly to accommodate the growing popularity of crypto currencies and tokens. To foster a clear understanding and provide sufficient investor protection, the UK has classified crypto-assets into three main categories: exchange tokens, security tokens and utility tokens (Draganidis 2023). Each classification holds distinct characteristics and regulatory considerations, enabling stakeholders to navigate the crypto-asset space with greater clarity and confidence.

Cryptocurrencies are classified as exchange tokens. These tokens are primarily designed to be used as a means of conducting transactions and holding value. Known examples of exchange tokens include BTC and ETH.

Security tokens represent the second category of crypto-assets in the UK. Unlike exchange tokens, these tokens are classified as securities, as they derive their value from underlying assets or investment contracts (Ferreira and Sandner 2021). Security tokens can symbolize values, like ownership rights, equity shares, debt obligations or even profit sharing in a company or project. Because of this, they are governed by the regulations pertaining securities. The issuance and trading of security tokens must adhere to compliance requirements, such as providing prospectus disclosures and obtaining authorization from the FCA.

The third category of crypto-assets in the UK comprises utility tokens. These tokens serve as access keys or units of account within a specific digital ecosystem or platform. Unlike security tokens, utility tokens do not possess inherent investment characteristics, and their primary purpose is to provide access to services or functionalities within a decentralized network. For instance, some utility tokens enable users to access features, obtain discounts or pay for services on blockchain-based platforms. Since they do not fall under the definition of securities, utility tokens generally have less stringent regulatory requirements in comparison with security tokens (Garanina et al. 2022). The UK's classification of crypto-assets aims to strike a balance between promoting innovation protecting investors and maintaining stability. The FCA plays a central role in overseeing and enforcing regulations in the crypto-asset market. However, regulating this fast-paced and ever-evolving space poses challenges for regulators as they need to adapt their frameworks to address emerging risks and technologies.

Registration and licensing requirements

For crypto-asset businesses to operate legally, they are required to register with the FCA. Registration is mandatory for any activities involving the exchange or conversion of cryptocurrencies, encompassing the facilitation of buying, selling and trading these crypto-assets (Gundur et al. 2021).

The services offered by a crypto-asset company may dictate additional licensing requirements beyond the initial registration process. Companies involved in safeguarding or managing cryptocurrencies should secure additional approvals from regulatory bodies. This enhanced monitoring is intended to foster investor confidence in the crypto-asset environment, which is vital to its long-term viability. A thorough assessment of the registration and licensing process for crypto-asset businesses involves evaluating their compliance with AML and CTF standards. The FCA meticulously evaluates the efficacy of an organization's rules and processes. This involves identifying and avoiding economic crimes, as well as protocols for client diligence (Huang 2021). In addition to AML and CFT compliance, crypto companies need to adhere to other applicable laws, such as data security legislation and buyer safeguard rules. These regulations ensure that personal and financial information of users is handled with utmost security as this provides them with adequate protection against potential risks associated with crypto-asset

transactions. Operators who disregard registration or licensing regulations risk facing legal ramifications. The possible consequences range from modest fines to severe sanctions, such as business halting. It is therefore crucial for crypto-asset businesses to stay informed about the ever-changing regulatory landscape and to maintain a robust compliance framework. To operate responsibly and lawfully in the UK market, considering the rapidly evolving nature of the crypto industry, businesses in this sector must continuously monitor updates from the FCA and other regulatory authorities. By doing so, they can ensure ongoing compliance with the evolving regulations. Seeking legal and professional advice can also be instrumental in navigating the complexities of the registration and licensing process, thus allowing businesses to meet the requisite regulatory standards effectively. By adhering to these requirements, crypto-asset businesses contribute to the overall stability and legitimacy of the crypto market, fostering a conducive environment for both businesses and investors in the UK.

AML and CFT regulations

The foundations of AML and CFT laws can be traced back to the 1980s, with groups like FATF being set up to battle ML and related financial offenses (Tiwari et al. 2020). In the UK, the Proceeds of Crime Act 2002 (PoCA) and the Money Laundering Regulations (MLR) functions as the primary legislation controlling AML responsibilities for financial services providers in the UK (Preller 2008). The original designs were meant for conventional FIAT transactions, but the transition to the digital era necessitated their modification for application in the crypto-asset market. In response to the rapid expansion of crypto-assets and the concomitant transformation of the global financial landscape in recent times, the UK adjusted its AML and CFT framework to encompass crypto-related operations. These regulations mandate that crypto-asset companies must conduct CDD procedures. This involves verifying the identities of their users and assessing the risk of potential illicit activities (Kim 2023).

Despite the UK's concerted efforts to incorporate AML and CFT regulations into the crypto-asset sector, several challenges persist. Notably, the pseudonymous nature of many cryptocurrencies presents difficulties in ascertaining the true identity of users engaged in transactions (Kostoula 2023). Furthermore, the global and decentralized nature of crypto-asset exchanges can result in discrepancies in regulatory enforcement across jurisdictions. Overcoming such challenges may require enhanced international cooperation to achieve more comprehensive results in combating financial crime.

The effectiveness of AML and CFT regulations in the crypto-asset industry is constantly under scrutiny. The related regulatory measures have contributed to improving transparency and reporting standards. Since crypto-asset technologies are always evolving, regulatory frameworks need to adapt. It is important to strike a balance between encouraging innovation and stopping illegal activities to ensure the long-term existence of the crypto-asset market in the UK (Kutera 2022). Additionally, exploring technologies, like advanced analytics, has the potential to make AML compliance more efficient and to streamline investigations. While the UK's approach on crypto-asset regulation emphasizes investor protection and market stability, there are varying perspectives on its effectiveness and implications.

Germany

Overview of Germany's approach to crypto-asset regulation

Germany has adopted a tech-agnostic approach. This means recognizing that the regulatory treatment of crypto-assets should be tailored to specific situations instead of employing a uniform approach (Ferreira and Sandner 2021). Distinct categories of crypto-assets are recognized, with corresponding regulatory frameworks adapted to suit each one. Payment tokens are commonly recognized as a form of "currency". Others, like security tokens, are under tighter legal restrictions, e.g. if security tokens are sold to private investors, companies need a securities prospectus, which must be approved by BaFin.

However, Germany has demonstrated a cautious yet supportive approach towards decentralized finance (DeFi). While acknowledging the transformative potential of DeFi, regulators have emphasized the need to ensure compliance with existing laws and to address concerns related to investor protection and financial stability.

In the future, Germany's approach to regulating crypto-assets is expected to remain responsive to the evolving technology landscape and global advancements. The country aims to find an equilibrium between embracing the benefits of blockchain and crypto-assets while also ensuring financial stability and safeguarding the interests of investors. As the market for crypto-assets continues to develop Germany is likely to engage in discussions with industry experts and partners to establish a strong and efficient regulatory framework for this emerging sector (Ferreira and Sandner 2021).

Classification of crypto-assets under German law

To address the regulatory challenges presented by crypto-assets, German authorities have taken steps to establish a comprehensive legal framework. In Germany, most crypto-assets are regulated as financial instruments. The dynamic and evolving nature of these crypto-assets has led authorities and legal scholars to grapple with the

appropriate categorization and regulatory framework. In essence, crypto-assets in Germany can be grouped into three main categories:

Payment tokens (cryptocurrencies), like BTC and ETH, are seen as a type of currency. They are commonly used for transactions and investments being acknowledged as a form of payment. Those tokens do not constitute securities according to the meaning of the Securities Prospectus Act (Wertpapierprospektgesetz—WpPG) or investments according to the meaning of the Investment Act (Vermögensanlagegesetz—VermAnlG) in principle, but they are financial instruments under the Banking Act (Kreditwesengesetz—KWG) (BaFin 2023). Additionally, they are not considered legal tender and no value-added tax (VAT) is imposed when used for payments (IHK Munich 2023).

Security tokens might be categorized as financial instruments according to the German Securities Trading Act (Gesetz über den Wertpapierhandel—WpHG) (BaFin 2023). These tokens typically represent ownership rights or other financial interests in an underlying asset, such as company shares or debt securities. Consequently, they are subject to specific regulations, including prospectus requirements, custody regulations and measures to protect investors (Quamara and Singh 2022). In addition, there are some special forms such as Kryptowertpapiere (crypto securities) according to the German Electronic Securities Act (Gesetz zur Einführung elektronischer Wertpapiere—eWpG) and Kryptofundanteile (crypto fund units) according to the German Regulation on Crypto Fund Units (Verordnung über Kryptofondsanteile—KryptoFAV) existing (BaFin 2022).

Other crypto-assets are categorized as electronic money (E-Money) under the German Payment Services Supervision Act (Zahlungsdiensteaufsichtsgesetz—ZAG). This classification applies when a token represents a claim against the issuer that can be used for payment transactions and is issued against the receipt of funds. To safeguard users' interests and ensure financial stability, E-Money is subject to certain prudential requirements, including capital and liquidity rules.

Classifying crypto-assets under German law is not always straightforward, as the legal status of individual tokens depends on their specific features and functionalities. Sometimes, hybrid forms of crypto-assets blur the lines between these categories, leading to further complexities in their treatment.

Additionally, the German government has been actively participating in discussions, at the European Union level to establish regulations for crypto-assets across all member states. The goal is to foster investor protection, ensure market integrity and maintain financial stability while promoting innovation and technological advancements in the crypto-asset space.

Registration and licensing requirements

In Germany, companies providing crypto-asset services must acquire licenses and follow operational regulations, which are designed to protect investors, maintain financial stability and comply with measures against ML and TF. These regulations demonstrate the country's dedication to creating a transparent environment for the growing crypto-asset industry while minimizing risks related to crypto-assets.

BaFin oversees the licensing process for crypto-asset service providers in Germany, acting as the competent authority for financial regulation. Under the updated regulatory framework, providers offering services related to crypto-assets, such as cryptocurrency exchange platforms, wallet services and custody solutions, must seek authorization from BaFin before commencing operations. This authorization process ensures that only legitimate and trustworthy providers are permitted to engage in crypto-asset-related activities, safeguarding investors from fraudulent practices (Renduchintala et al. 2022).

To acquire the required license, providers must have their company's headquarters located within the EU. Furthermore, sufficient capital must also be available, and liquidity must be proven. Besides, a detailed business plan must be submitted, as well as the organizational structure and a detailed description of the planned internal control procedures (BaFin 2020).

In addition, companies need to show their capability to meet AML and CFT obligations. This involves setting up procedures to verify investor identities through know your customer (KYC) protocols, as well as implementing advanced systems for monitoring transactions to detect and report any suspicious activities (BaFin 2020). By following these regulations, providers of crypto-asset services play a significant role in preventing illegal financial activities and ML thus strengthening the integrity of the overall financial system.

Furthermore, crypto-asset service providers are not only required to obtain licenses but are also expected to uphold stringent IT-/cybersecurity measures. These measures aim to safeguard both their platforms and the assets of their investors against cyber threats. Maintaining the confidentiality, integrity and availability of information is of high importance in an industry where crypto-assets can be vulnerable to cyberattacks (BaFin 2020).

In addition to security measures, crypto-asset service providers must adopt adequate risk management practices. This involves embracing transparent and sound business models that minimize operational risks and regularly conducting risk assessments to identify potential vulnerabilities (BaFin 2020). Proactive risk management helps service providers to mitigate the impact of unforeseen events and promotes market stability.

Germany has accentuated safeguarding the interests of investors making it mandatory for crypto-asset service providers to offer precise information regarding the risks involved in crypto investments. This requirement allows investors to make informed choices and protects them from financial risks caused by deceitful practices. To foster accountability and transparency, crypto-asset service providers are required to maintain comprehensive records of transactions and financial activities. This meticulous record-keeping is essential for regulatory oversight and audit purposes, enabling authorities to monitor compliance with established regulations.

AML and CFT regulations

The German Criminal Code (Strafgesetzbuch—StGB), the Code of Criminal Procedures (Strafprozessordnung—StPO), the Money Laundering Act (Geldwäschegesetz—GWG) and the supplementary legislation are the basis of the AML legislation. Being an EU member state, German law is influenced by EU standards and regulations for AML and CFT (Meyer et al. 2022). In 2020, the implementation of the 5th AMLD extended the reach of AML and CFT regulations to include providers of crypto-asset services (Racetin et al. 2022). This introduced KYC procedures and mandatory reporting obligations to the industry (Renduchintala et al. 2022).

There is an emphasis on enforcing regulations to ensure that the crypto-asset industry adheres to strict AML and CFT practices. These regulations aim to prevent activities such as ML, TF and other illegal actions that may be associated with crypto-assets.

CDD protocols are an indispensable element of AML guidelines for German crypto-asset firms. To adhere to the new requirements, virtual asset service providers (VASP) must obtain and examine identification documents from their clients, and the sources of their funds. Furthermore, these firms need to monitor and file any suspicious transactions with the German Financial Investigation Unit (Zentralstelle für Finanztransaktionsuntersuchungen—FIU). This obligation holds great significance in detecting and preventing unlawful transactions involving crypto currencies. These enterprises must adopt strict documentation methods to fulfil legal obligations. All relevant data points are duly documented, enabling effective reviews and sample testing as required. However, regulatory requirements for crypto-based ventures in Germany are subject to continuous change. Therefore, these entities must stay up-to-date with the latest AML and CFT requirements and any changes in the regulatory framework that may impact their operations. In particular, EU regulations such as the Markets in Crypto-Assets Regulation (MiCAR) and the amendment of the Transfer of Funds Regulation (ToFR) will have a significant impact on the regulatory frameworks within the EU member states thus also on Germany.

Comparison

The domain of crypto-assets witnesses remarkable distinctions in regulatory scope and definition between the UK and Germany. In the UK, crypto-assets fall under the purview of the FCA and are categorized as specified investments. This classification encompasses various crypto-asset types, including security tokens, utility tokens and cryptocurrencies (payment tokens) like BTC and ETH. Such a systematic approach provides much-needed clarity and enables effective oversight (Özelli 2021).

Conversely, Germany adopts a technology-neutral standpoint, defining crypto-assets mostly as financial instruments governed by the German Banking Act. While this broad coverage facilitates comprehensive regulation of diverse crypto-assets, it also introduces challenges in differentiating between crypto-assets and traditional financial instruments, potentially giving rise to ambiguity.

Licensing and registration requirements

Divergent paths are evident in the licensing and registration requirements of crypto-asset businesses in the UK and Germany. In the UK, entities like exchanges and custodian wallet providers must only register with the FCA to adhere to AML regulations. Additionally, the registration process is relatively straightforward, paving the way for swifter market entry (Tello-Gamarra et al. 2022).

In contrast, Germany necessitates crypto-asset businesses to obtain a license from the BaFin to operate legally. The licensing process entails rigorous adherence to various regulatory requirements, prioritizing the fight against ML and investor protection. This more demanding approach may discourage smaller businesses from entering the market due to the associated costs and complexities.

AML and CFT regulations

Effectively combating ML and TF represents a paramount concern within the crypto-asset industry. In the UK, AML and CFT measures are woven into the registration process under the MLR. The FCA meticulously monitors crypto-asset businesses to ensure their adherence to these vital regulations, fostering a safe environment for all stakeholders.

Germany addresses AML and CFT concerns through its strict licensing process for crypto-asset businesses. BaFin meticulously assesses and enforces robust AML and CFT protocols among licensed entities. However, the comprehensive requirements may pose challenges for small and

innovative crypto-asset start-ups to comply with such regulations (També Bearpark 2022).

Taxation

Diverse approaches to the taxation of crypto-assets are evident in both countries. In the UK, HM Revenue and Customs (HMRC) provide clear guidelines on crypto-asset taxation, considering them as taxable assets subject to capital gains tax. This clarity simplifies the reporting process for taxpayers and therefore promotes compliance. In contrast, Germany treats the sale of cryptocurrencies private sales transactions for tax purposes if the earnings exceed Euro 600 per year or if they have been sold prior 1 year of holding (see Sect. 23 of the German Income Tax Act (Einkommensteuergetz—EstG), for example. It must be noted that a lot is happening in the field of crypto-assets taxation in Germany at the moment. Nevertheless, discrepancies and ambiguities in the German tax code remain, posing challenges in accurate reporting and potentially fostering tax evasion (Zainutdinova 2023).

Investor protection

The safeguarding of investors is of paramount importance in any regulatory framework concerning crypto-assets. In the UK, the FCA diligently enforces rules to protect investors from fraudulent activities, market manipulation and misleading information. Additionally, the FCA's regulatory sandbox fosters responsible innovation by allowing businesses to experiment with the latest crypto-asset solutions within a controlled environment.

Germany, on the other hand, emphasizes investor protection through BaFin's stringent regulations. Striving to minimize risks for private investors, Germany has implemented strict rules on advertising and disclosure requirements to prevent scams and fraudulent schemes. Nevertheless, the highly administrative nature of the German regulatory system may impede swift responses to emerging challenges.

Conclusion

In conclusion, the UK and Germany have laid the groundwork for comprehensive regulatory frameworks concerning crypto-assets, each boasting its own set of merits and challenges. The UK's categorization system and user-friendly registration process foster innovation and market participation. Conversely, Germany's technology-neutral approach and rigorous licensing requirements prioritize investor protection but may pose barriers for smaller enterprises. As the crypto-asset industry continues its evolution, both countries must remain vigilant in adapting their regulations to address emerging challenges while nurturing innovation. Collaborative efforts and harmonization of regulations on an international level could play a pivotal role in establishing a global framework that balances innovation, investor protection and financial stability. Ultimately, an optimal regulatory landscape should encourage responsible growth and instil confidence in the crypto-asset industry.

Declarations

Conflict of interest No conflict of interest is existing.

References

Alaassar, A., A.L. Mention, and T.H. Aas. 2023. Facilitating innovation in FinTech: a review and research agenda. *Review of Managerial Science* 17 (1): 33–66.

Allen, J.G., Wells, H. and Mauer, M., 2022. Crypto-assets in Private Law: Emerging Trends and Open Questions from the First 10 Years. *SMU Centre for AI & Data Governance Research Paper*, (06).

Ariesmansyah, A., 2022. Creativity to innovation: What lesson learned from digital transformation in financial accountability in government practices? *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *4*(4): 14061–14072.

Armata, R., 2023. Cryptocurrency in Germany: Is it regulated and safe? Idnow. Available at: https://www.idnow.io/blog/cryptocurrency-germany-regulations/#:~:text=On%20a%20national%20level%2C%20although,related%20to%20securities%20and%20investments (Accessed: 11 January 2024).

Baiod, W., J. Light, and A. Mahanti. 2021. Blockchain technology and its applications across multiple domains: A survey. *Journal of International Technology and Information Management* 29 (4): 78–119.

Baker, H.K., Benedetti, H., Nikbakht, E. and Smith, S.S. eds., 2023. *The Emerald Handbook on Crypto-assets: Investment Opportunities and Challenges*. Emerald Publishing Limited.

Bellavitis, C., C. Fisch, and J. Wiklund. 2021. A comprehensive review of the global development of initial coin offerings (ICOs) and their regulation. *Journal of Business Venturing Insights* 15: e00213.

Bellucci, M., D. Cesa Bianchi, and G. Manetti. 2022. Blockchain in accounting practice and research: systematic literature review. *Meditari Accountancy Research* 30 (7): 121–146.

Blandin, A., Cloots, A.S., Hussain, H., Rauchs, M., Saleuddin, R., Allen, J.G., Zhang, B.Z. and Cloud, K., 2019. Global crypto-asset regulatory landscape study. *University of Cambridge Faculty of Law Research Paper*, (23).

Bollaert, H., F. Lopez-de-Silanes, and A. Schwienbacher. 2021. Fintech and access to finance. *Journal of Corporate Finance* 68: 101941.

Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) 2023. *Zweites Hinweisschreiben zu Prospekt- und Erlaubnispflichten im Zusammenhang mit der Ausgabe sogenannter Krypto-Token*, available at: https://www.bafin.de/SharedDocs/Downloads/DE/Merkblatt/WA/dl_wa_merkblatt_ICOs.pdf?__blob=publicationFile&v=1

Bundesanstalt für Finanzdiestleistungsaufsicht (BaFin), 2022. *Krypto-token.* Available at: https://www.bafin.de/DE/Aufsicht/FinTech/Geschaeftsmodelle/DLT_Blockchain_Krypto/Kryptotoken/Kryptotoken_node.html

Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), 2020. *Hinweise zum Erlaubnisantrag für das Kryptoverwahrgeschäft.* Available at: https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Merkblatt/BA/mb_Hinweise_zum_Erlaubnisantrag_fuer_das_Kryptoverwahrgeschaeft.html;jsessionid=A4C6EF3A91661D7A10A671AA3A8ECE6E.2_cid502?nn=13733456

Cambridge Center for Alternative Finance, 2019. Global crypto-asset regulatory landscape study. University of Cambridge.

Chainalysis, 2023. The 2023 global crypto adoption index: Central & southern Asia are leading the way in grassroots crypto adoption. Chainalysis. Available at: https://www.chainalysis.com/blog/2023-global-crypto-adoption-index/ (Accessed: 10 January 2024).

de Best, R., 2023. Crypto Adoption Index ranking of the United Kingdom (UK) from 2020 to 2023, by metric. Statista. Available at: https://www.statista.com/statistics/1362086/cryptocurrency-adoption-index-uk/ (Accessed: 11 January 2024).

Ding, 2021. Global survey reveals that cryptocurrency adoption penetration is at 14%. Available at: https://www.banklesstimes.com/cryptocurrency/crypto-adoption-stats-in-germany-data-shows-surging-interest-especially-among-institutional-investors/ (Accessed: 11 January 2024).

Draganidis, S. 2023. Jurisdictional arbitrage: combatting an inevitable by-product of crypto-asset regulation. *Journal of Financial Regulation and Compliance* 31 (2): 170–185.

Dumas, J.G., Jimenez-Garcès, S. and Șoiman, F., 2021, March. Blockchain technology and crypto-assets market analysis: vulnerabilities and risk assessment. In 12th International Conference on Complexity, Informatics and Cybernetics (Vol. 1, pp. 30-37).

European Commission., 2020. Proposal for a Regulation of the European Parliament and the Council on Markets in Cryptoassets, and amending Directive (EU) 2019/1937. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593 (Accessed: 11 January 2024).

Ferreira, A., and P. Sandner. 2021. Eu search for regulatory answers to crypto-assets and their place in the financial markets' infrastructure. *Computer Law & Security Review* 43: 105632.

Financial Conduct Authority (FCA), 2022. *Regulatory Sandbox*. Available at: https://www.fca.org.uk/firms/innovation/regulatory-sandbox

Financial Conduct Authority (FCA), 2023a. *FCA introduces tough new rules for marketing cryptoassets.* Available at: https://www.fca.org.uk/news/press-releases/fca-introduces-tough-new-rules-marketing-cryptoassets

Financial Conduct Authority (FCA), 2023b. *Regulation of Digital Assets in the UK.* Available at: https://www.fca.org.uk/news/speeches/regulation-digital-assets-uk

Financial Stability Board (FSB), 2023. FSB global regulatory framework for crypto-asset activities: Umbrella public note to accompany final framework. Financial Stability Board. Available at: https://www.fsb.org/wp-content/uploads/P170723-1.pdf (Accessed 14 January 2024).

Garanina, T., M. Ranta, and J. Dumay. 2022. Blockchain in accounting research: current trends and emerging topics. *Accounting, Auditing & Accountability Journal* 35 (7): 1507–1533.

Gundur, R.V., Levi, M., Topalli, V., Ouellet, M., Stolyarova, M., Chang, L.Y.C. and Mejía, D.D., 2021. Evaluating criminal transactional methods in cyberspace as understood in an international context.

Huang, S.S. 2021. Crypto-assets regulation in the UK: an assessment of the regulatory effectiveness and consistency. *Journal of Financial Regulation and Compliance* 29 (3): 336–351.

Industrie und Handelskammer Muenchen und Oberbayern (IHK), 2023. Blockchain - Besteuerung von Kryptowährungen [online]. Available at: https://www.ihk-muenchen.de/de/Service/Recht-und-Steuern/Blockchain-Kryptow%C3%A4hrung/#:~:text=UStG%20umsatzsteuerfrei%20ist.-,Entgelt%20und%20Umsatzsteuer,somit%20f%C3%BCr%20Umsatzsteuerzwecke%20nicht%20steuerbar.

Kim, S.J. ed., 2023. *Fintech, Pandemic, and the Financial System: Challenges and Opportunities*. Emerald Publishing Limited.

Kostoula, T., 2023. Valuation of crypto-assets in EU insolvency: Challenges and prospects. *International Insolvency Review*.

Kutera, M. 2022. Cryptocurrencies as a subject of financial fraud. *Journal of Entrepreneurship, Management and Innovation* 18 (4): 45–77.

Mann, T. 2017. Australian Law Dictionary 3 Oxford University Press Oxford

Meyer, E., Welpe, I.M. and Sandner, P.G. 2022. Decentralized finance—A systematic literature review and research directions. ECIS.

Ngari, S. (2023). Cryptocurrency adoption statistics in the UK. Available at https://www.banklesstimes.com/uk/buy-cryptocurrency/crypto-adoption. Accessed on 10 Jan 2024.

Özelli, T. 2021. The financial and conceptual foundations of intangible asset manager capitalism. *Journal of Ekonomi* 3 (1): 29–100.

Preller, S.F. 2008. Comparing AML legislation of the UK, Switzerland and Germany. *Journal of Money Laundering Control* 11 (3): 234–250.

Quamara, S., and A.K. Singh. 2022. A systematic survey on security concerns in cryptocurrencies: State-of-the-art and perspectives. *Computers & Security* 113: 102548.

Racetin, I., J. KilićPamuković, M. Zrinjski, and M. Peko. 2022. Blockchain-based land management for sustainable development. *Sustainability* 14 (17): 10649.

Renduchintala, T., H. Alfauri, Z. Yang, R.D. Pietro, and R. Jain. 2022. A survey of blockchain applications in the fintech sector. *Journal of Open Innovation: Technology, Market, and Complexity* 8 (4): 185.

Ross H. and Cavill, J., 2023. UK to legislate for crypto-asset regulatory regime. Available at: https://www.pinsentmasons.com/out-law/news/uk-legislate-cryptoasset-regulatory-regime (Accessed: 9 January 2024).

Statista, 2023. Cryptocurrencies—United Kingdom. Available at: https://www.statista.com/outlook/dmo/fintech/digital-assets/cryptocurrencies/united-kingdom (Accessed: 12 January 2024).

També Bearpark, N., 2022. Introduction to Anti-Money Laundering. *Deconstructing Money Laundering Risk: De-risking, the Risk-based Approach and Risk Communication*, pp.1–43.

Tello-Gamarra, J., D. Campos-Teixeira, A.A. Longaray, J. Reis, and M. Hernani-Merino. 2022. Fintechs and Institutions: A Systematic Literature Review and Future Research Agenda. *Journal of Theoretical and Applied Electronic Commerce Research* 17 (2): 722–750.

Tiwari, M., A. Gepp, and K. Kumar. 2020. A review of money laundering literature: the state of research in key areas. *Pacific Accounting Review* 32 (2): 271–303.

Treasury, H. M. 2023. Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence. Available at: https://assets.publishing.service.gov.uk/media/653bd1a180884d0013f71cca/Future_financial_services_regulatory_regime_for_cryptoassets_RESPONSE.pdf (Accessed: 12 January 2024).

van der Linden, T., and T. Shirazi. 2023. Markets in crypto-assets regulation: Does it provide legal certainty and increase adoption of crypto-assets?. *Financial Innovation* 9 (1): 22.

Vardai, Z., 2023. UK emerges as world's third-largest economy in terms of crypto transaction volume: Chainalysis. Forkast. Available at: https://forkast.news/uk-emerges-worlds-third-largest-economy-crypto-transaction-volume-chainalysis/#:~:text=The%20U.K.%20is%20also%20listed,Chainalysis'%20Global%20Crypto%20Adoption%20Index.&text=The%20United%20Kingdom%20is%20the,on%2Dchain%20intelligence%20firm%20Chainalysis. (Accessed: 12 January 2024).

Woebbeking, F. 2021. Cryptocurrency volatility markets. *Digital Finance* 3 (3–4): 273–298.

Zainutdinova, E. 2023. Models of legal regulation of digital rights and digital currency turnover. *Legal Issues in the Digital Age* 4 (1): 93–122.

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