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GOVERNMENTAL INFLUENCE ON CRYPTO ASSETS IN FINANCE: A CASE STUDY OF GERMAN REGULATORY INITIATIVES

Abstract

We review the case study of Germany with its regulatory initiatives regarding the possible governmental influence on crypto assets in finance. In doing so, we conclude that regulation shows adequate tendencies to foster innovation and adaption of digital assets such as crypto securities or currencies. This can mainly be referred to as creating a legal framework in favor of consumer protection, thereby reducing operational and reputational risks for financial companies which seek to engage in the digital assets business.

KEYWORDS

regulation, crypto assets, digital assets, finance, innovation

SŁOWA KLUCZOWE

regulacja, kryptowaluty, aktywa cyfrowe, finanse, innowacje

1. INTRODUCTION

Crypto assets, also referred to as cryptocurrencies or digital securities, are a type of digital asset that use cryptography to secure and verify transactions and to control the creation of new units. They are based on the distributed ledger technology, thereby using blockchains with decentralized characteristics. Decentralization implies that there is no control by any central authority through operations on a peer-to-peer network. Crypto assets are typically created through a process called mining, in which powerful computers perform complex calculations to validate transactions on the network and generate new units of the currency. Some popular examples of crypto assets include Bitcoin (BTC), Ethereum (ETH), Litecoin (LTC), and Ripple (XRP).¹

Crypto assets are often used as a means of exchange, like traditional currencies, but they can also be used for other purposes such as investments, store of value, and speculative trading. Their value is determined by supply and demand and can be highly volatile due to various factors such as market sentiment, regulatory changes, and technological advancements. Due to its novelty and the complex technology, the financial services industry is currently researching opportunities for new products and services. The future of crypto assets is still uncertain due to the literature base or expert opinions, but there are several factors that suggest that they may have a significant role to play in the financial system in the coming years.²

Firstly, crypto assets offer several advantages over traditional forms of assets, such as their decentralized nature, fast transaction times, low fees, and potential for greater privacy and security. These benefits have already attracted a large and growing user base, including individual investors, merchants, and institutional players. Secondly, the underlying blockchain technology that powers many digital assets has potential applications beyond just financial transactions, such as

¹ R. Houben, A. Snyers, *Crypto-assets. Key developments, regulatory concerns and responses*, Policy Department for Economic, Scientific and Quality of Life Policies Directorate-General for Internal Policies. PE 648.779, 2020, p. 13; H. Stix, *Ownership and purchase intention of crypto-assets: Survey results*, *Empirica*, 48 (1), 2021, pp. 65-99; D. F. Ahelegbey, P. Giudici, F. Mojta-hedi, *Tail risk measurement in Crypto-Asset Markets*, *International Review of Financial Analysis*, 2021, p. 73.

² M. T. Chimienti, U. Kochanska, A. Pinna, *Understanding the crypto-asset phenomenon, its risks and measurement issues*, *Economic Bulletin Articles*, 2019, p. 5.

in supply chain management, voting systems, and decentralized social networks. This has led to a growing interest and investment in blockchain technology by both public and private sector entities.³

However, there are also manifold challenges and risks that may affect the future of crypto assets, such as regulatory uncertainty, the potential for market manipulation, and the risk of fraud and theft. Additionally, the volatility of crypto assets and their susceptibility to speculative bubbles have raised concerns about their long-term stability and utility as a store of value. As of now, the possible chances of crypto assets depend on a range of factors and uncertainties, and their future success will depend on how effectively regulatory measures can address existing challenges.⁴

Regulation in crypto refers to the set of rules and guidelines that govern the use, trade, and issuance of cryptocurrencies and other crypto assets. As crypto assets continue to gain mainstream adoption, governments and regulatory bodies around the world are increasingly taking an interest in regulating the crypto industry to protect consumers, prevent illegal activities such as money laundering and fraud, as well as ensure market stability.⁵

Regulations can take many forms, including licensing requirements for crypto businesses, anti-money laundering and counter-terrorism financing (AML/CTF) measures, consumer protection rules, and taxation policies. Some countries have taken a more permissive approach to crypto regulation, while others have imposed strict rules and even banned certain activities related to crypto assets. General regulation in crypto is a complex and evolving area and can vary greatly from country to country. As the industry continues to grow and mature, it is likely that we will see more comprehensive and consistent regulations emerge to address the unique challenges posed by crypto assets.⁶

In this article, we review the regulatory impact on crypto for the German market, thereby stating the several significant national regulations and elaborating

³ J. G. Dumas, S. Jimenez-Garcès, F. Şoiman, *Blockchain technology and crypto-assets market analysis: vulnerabilities and risk assessment*, 12th International Conference on Complexity, Informatics and Cybernetics, Vol. 1, 2021, pp. 30-37.

⁴ J. G. Dumas, S. Jimenez-Garcès, F. Şoiman, *Blockchain technology and crypto-assets market analysis: vulnerabilities and risk assessment*, 12th International Conference on Complexity, Informatics and Cybernetics, Vol. 1, 2021, pp. 30-37; D. A. Zetzsche, F. Annunziata, D. W. Arner, R. P. Buckley, *The Markets in Crypto-Assets regulation (MiCA) and the EU digital finance strategy*, *Capital Markets Law Journal*, 16(2), 2021, pp. 203-225; A. Ferreira, P. Sandner, *Eu search for regulatory answers to crypto assets and their place in the financial markets' infrastructure*, *Computer Law & Security Review*, Vol. 43, 2021, No. 105632.

⁵ A. Ferreira, P. Sandner, *Eu search for regulatory answers to crypto assets and their place in the financial markets' infrastructure*, *Computer Law & Security Review*, Vol. 43, 2021, No.105632.

⁶ A. Ferreira, P. Sandner, *Eu search for regulatory answers to crypto assets and their place in the financial markets' infrastructure*, *Computer Law & Security Review*, Vol. 43, 2021, No. 105632; S. S. Huang, *Crypto assets regulation in the UK: an assessment of the regulatory effectiveness and consistency*, *Journal of Financial Regulation and Compliance*, 29(3), 2021, pp. 336-351.

specifically on the German Securities Act. Finally, a conclusion on the governmental influence as well as an outlook on the crypto adoption will be provided for the German market.

2. LITERATURE REVIEW ON CRYPTO REGULATION

A literature review is a critical and systematic analysis of the existing literature (books, articles, dissertations, conference proceedings, etc.) on a specific research topic or question. It involves identifying, evaluating, and synthesizing the relevant literature to provide a comprehensive understanding of the topic and to identify gaps, inconsistencies, and areas for further research. The identified sources are then screened and evaluated based on their relevance, quality, and validity. Once the relevant literature has been identified, the next step is to critically analyze and synthesize the information. This involves identifying common themes, patterns, and trends across the literature and assessing the strengths as well as weaknesses of the studies and arguments presented. The final product of a literature review is a comprehensive and well-organized summary of the existing knowledge on the research topic, which can serve as a foundation for further research and as a valuable resource for researchers and practitioners in the field.

In doing so, it can be stated that crypto regulation is still a novelty in the current literature debate. This becomes evident when searching on well-known platforms with keywords such as ‘crypto regulation’ or ‘regulating digital assets’. Most publications focus on international markets other than Germany (e.g., the United States) and will be briefly presented as a summary below.

Bonaparte and Bernile (2023) analyze the prospect of cryptocurrency regulation and how it affects cryptocurrency prices, volatility, and trading, thereby using the Google Trend technique in order to create the Crypto Regulation Sentiment Index (CRSX). The CRSX shall reflect the investors’ attitude towards crypto regulation. Their analysis encompasses over 75% of the crypto market’s daily activity and they conclude that the CRSX has no statistically significant long-term impact on cryptocurrency prices. Moreover, according to the authors, the effects of CRSX on crypto markets largely depend on the coin’s key blockchain characteristics.⁷

Griffith and Clancey-Shang (2023) examine the effects of the 2021 Chinese cryptocurrency ban on several aspects of crypto market quality, namely prices, volatility, and liquidity. The study is of high relevance to assessing the potential impact of governmental influence on crypto adoption, in this case, on cryp-

⁷ Y. Bonaparte, G. Bernile, *A new ‘Wall Street Darling?’ effects of regulation sentiment in cryptocurrency markets*, Finance Research Letters, Vol. 52, 2023, No. 103376.

tocurrencies. The authors find that average crypto prices plunge and liquidity deteriorates, while volatility spikes in response to the announcement of the ban. Moreover, the volatility surge is short-lived, while the fall in crypto values and liquidity persist. According to the authors' research findings, the results are robust across dollar trading volume sorts and remain significant after considering the interconnectedness between the market quality measures in the vector autoregressive framework.⁸

Copstake et al. (2022) constructed daily databases of crypto bans as well as policy statements with regard to the central bank digital currencies (CBDCs) to estimate their effect on crypto trading volumes for an unbalanced panel of 116 countries from November 2016 to December 2021. CBDCs can be regarded as part of digital assets due to the use of DLT. However, based on centralistic aspects of the design of CBDCs, it is currently experiencing a constructive debate on its possible success. The authors find that trading volume falls by up to 55% in the week after the announcement of a ban and by up to 25% after a CBDC-supportive speech by senior central bank officials. For the strictest bans, this reduction persists over the subsequent quarter, driven by a reduction in trading by institutional investors. The results suggest that crypto market participants pay significant attention to government policy on digital assets. The research compares several jurisdictions to draw conclusions. In Germany or Europe, the European Central Bank (ECB) is currently investigating a possible introduction of its digital euro as its very own form of a retail or wholesale CBDC. However, there is no final decision yet which academics could utilize in their current research works.⁹

In contrast to the previous research works, *Ungson and Soorapanth* (2022) examine blockchain technology in ASEAN (Association of Southeast Asian Nations). They discuss the preconditions for blockchain adoption, thereby enabling factors relating to regulatory policies and illustrative cases depicting new blockchain solutions or improvements over current practices. Based on these narratives, the authors present a six-step roadmap, which delineates the need for regulatory clarity, the balance between public versus private policies, and pathways for securing competitive strategies and organizational advantages. Their research underlines the necessity and relevance of regulation for the Asian crypto market.¹⁰

One research focusing on the German regulation is conducted by *Winnowicz et al.* (2022). The research aim of their work was to review current regulatory guidelines for cryptocurrencies in the European area. In doing so, measures were highlighted that identify the illegal use of the new currency. One of the

⁸ T. Griffith, D. Clancey-Shang, *Cryptocurrency regulation and market quality*, Journal of International Financial Markets, Institutions and Money, Vol. 84, 2023, No. 101744.

⁹ A. Copstake, D. Furceri, P. Gonzalez-Dominguez, *Crypto market responses to digital asset policies*, Economics Letters, Vol. 222, 2023, No. 110949.

¹⁰ G. R. Ungson, S. Soorapanth, *The ASEAN blockchain roadmap*, Asia and the Global Economy, Vol. 2(3), 2022, No. 100047.

findings is that the regulations for the interoperability of cryptocurrencies with regulated financial companies must be questioned to derive further insights into the influence on the Bitcoin price. The results show that individual countries such as Germany, Switzerland, and Liechtenstein are more advanced in terms of the regulatory system for cryptocurrencies. If the European countries do not act as a joint entity with the EU financial authorities on the world market, then other countries might take the lead and shape regulatory measures in the future. The authors underline the necessity of regulation by governments to strengthen the possible adoption of crypto and enable consumer or customer protection. However, the study is focused on cryptocurrencies and does not regard digital assets as a whole new asset class.¹¹

As an interim conclusion, the literature review shows the following three key findings:

- Overall low number of publications tackling regulatory aspects of crypto (compared to other established academic disciplines).
- The majority of publications refer to international markets such as the United States or Asian countries.
- There is a consensus that research on regulation must continue with the further development of crypto and new regulatory measures.

The excerpt of journal publications with the focus on crypto regulation proves that the current literature debate is concentrated on international markets other than Germany. However, there are market-specific publications by the German/European government as well as by several national crypto companies, which are operating in Germany and which will be presented in the following section.

2.1. EUROPEAN REGULATORY INITIATIVES

In this section, the European regulation is presented to provide an overview of the regulatory landscape which affects Germany as a competitive crypto market in the global context.

Regulation of markets in crypto assets (MiCA)

MiCA (or MiCAR) stands for Markets in Crypto-Assets Regulation. It is a regulatory framework proposed by the European Commission for regulating crypto assets and related activities in the European Union. The framework aims to establish a harmonized and comprehensive set of rules for crypto assets, including cryptocurrencies, security tokens, and utility tokens, as well as the entities that deal with them, such as exchanges, custodians, and wallet providers. MiCA

¹¹ K. Winnowicz, C-D. Au, D. Stein, *Crypto Regulation within the European Union (1 July 2021)*, <https://ssrn.com/abstract=4194771> or <http://dx.doi.org/10.2139/ssrn.4194771> (accessed: 18 April 2023).

proposes several requirements for crypto asset service providers, such as obtaining authorization from national regulatory authorities, implementing measures to prevent money laundering and terrorist financing, as well as ensuring consumer protection through disclosure requirements and transparency obligations. The proposal also includes a framework for regulating stablecoins, which are cryptocurrencies that are designed to maintain a stable value relative to another asset or currency. Stablecoins have gained popularity in recent years but have raised concerns about their potential impact on financial stability and the effectiveness of monetary policy. MiCA is still in the proposal stage and has not yet been adopted by the European Union. However, if adopted, it could have a significant impact on the crypto asset industry in the EU and on the regulatory landscape for crypto assets globally.¹²

We assess that the possible impact of MiCA is to create fair conditions for competition within the EU, thereby protecting the interests of customers. Governmental interference can help to create trust and liability in dealing with the new asset class of cryptos. Regarding old-established finance companies, the regulation paves the way to enter the new digital market while reducing legal and reputational risks.

DLT Pilot Regime

This regulatory initiative provides a temporary regulatory sandbox for market infrastructures based on DLT. The DLT Pilot Regime intends to identify further potential for the financial services industry. In doing so, regulatory obstacles for competition as well as innovation are to be lowered, considering the associated risks. Moreover, the idea behind this is to offer specific conditions for obtaining a license which would grant the right to operate a DLT market infrastructure. Therefore, the regulation shows a clear definition of possible financial instruments which are tradable in this ‘new digital world’. Thus, the regulators intend to create a temporary ‘regulatory sandbox’ for the trading and settlement processes. The DLT Pilot Regime with its supervisory framework is mainly suitable for, e.g., investment firms, market operators, and central securities depositories (CSD). These companies may apply for a corresponding license to operate multilateral trading systems and securities settlement systems based on DLT.¹³

The following operations require a license under the DLT Pilot Regime:

¹² European Council, *Digital finance: agreement reached on European crypto-assets regulation (MiCA)*, <https://www.consilium.europa.eu/en/press/press-releases/2022/06/30/digital-finance-agreement-reached-on-european-crypto-assets-regulation-mica/> (accessed: 4 April 2023).

¹³ Deloitte, *Das DLT Pilot Regime*, <https://www2.deloitte.com/de/de/pages/audit/articles/dlt-pilot-regime.html> (accessed: 6 April 2023); EUR-Lex, *Vorschlag für eine VERORDNUNG DES EUROPÄISCHEN PARLAMENTS UND DES RATES über eine Pilotregelung für auf der Distributed-Ledger-Technologie basierende Marktinfrastrukturen*, <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A52020PC0594> (accessed: 7 April 2023).

- **Multilateral Trading Facility (DLT MTF)**

DLT MTF stands for ‘multilateral trading system’ according to Section 2 (6) BörsG, which only allows trading in DLT financial instruments and is operated by a market operator or an investment firm. DLT MTF is subject to the requirements that apply to a multilateral trading facility in accordance with Regulation (EU) No. 600/2014 and Directive 2014/65/EU.

- **Securities Settlement System (DLT SS)**

DLT SS is a securities settlement system that allows for the recording and safekeeping of DLT financial instruments and is operated by a central securities depository. A DLT SS is subject to the requirements of Article 2, Paragraph 1, No. 1 of Regulation (EU) No. 909/2014, which apply to a securities settlement system. The requirements in terms of Article 2a of Directive 98/26/EC are that the system ensures the execution of payment and transfer orders, and is not operated by a central counterparty.

- **Multilateral Trading Facility and Securities Settlement Facility (DLT TSS)**

DLT TSS is a multilateral trading facility and a securities settlement system that combines the services provided by a DLT MTF and a DLT SS and is operated by a market operator or investment firm and a CSD.

Overall, we regard the endeavors of the DLT Pilot Regime as a vital opportunity for all market participants to get acquainted with the new technology and its possible implications on existing business operations or financial services. This also specifically implies lessons for governments and regulators to ensure the next iterations of regulations for the finance industry based on DLT.

Digital Finance Forum

Another governmental approach which does not serve as a regulatory initiative is the active communication under the slogan ‘Shaping the Future of Finance’ with players and experts from the financial services industry. The German government jointly defined a ‘roadmap of the Digital Finance Forum, [which] is an important impetus for national and European projects in the digital financial market’.¹⁴ The idea behind this format is to find common grounds and interests to foster innovation within the German market, which benefits both the Government

¹⁴ Federal Ministry of Justice, *Für einen innovativen Finanzstandort Deutschland: Digital Finance Forum beim BMF stellt Roadmap vor* <https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2023/03/2023-03-21-digital-finance-forum-stellt-roadmap-vor.html> (accessed: 10 April 2023).

and the financial industry. In the published roadmap, the following important measures are stated (listed in excerpts):¹⁵

- Analysis of regulatory hurdles for Euro-Stablecoins or creation of a regulatory framework for tokenized euro payment solutions
- Recognizing blockchain as a key technology and considering it accordingly in relevant legislative projects
- Supervisory openness to novelty business models

We conclude that this initiative may provide the foundation for adequate regulatory actions in the future. By interacting with the finance industry, valuable insights may be taken directly from the source, thereby hitting the ‘right nerve’ to foster innovation and research in the field of crypto assets. In addition, it implies a strong signal to customers who are considering cryptos as a possible investment alternative. Interest rates are still low in comparison to historical data and may not be sufficient to ensure real capital preservation.

2.2. CHANCES AND CHALLENGES OF REGULATING ISSUANCE OF DIGITAL SECURITIES IN GERMANY

One specific German regulation, which is regarded as a global novelty in crypto regulation, is the Electronic Securities Act. The draft law was presented in July 2021 and intends to modernize the German securities law with its associated supervisory law. The main content in this draft was the introduction of the new law on electronic securities (also known as ‘eWpG’). With the establishment of digital securities, one of the central building blocks of the federal government’s blockchain strategy and the joint key issue of the BMF and the BMJV on electronic securities is being implemented.¹⁶

The eWpG is required due to the outdated German laws, which stand in contradiction to the possible digitization of securities. When reviewing the current legal situation, financial instruments that are considered securities under civil law must be securitized by utilizing a physical document. The physical document serves as a sort of proof of property transfer and ensures the protection of potential buyers. To ensure the marketability of securities and a legally secure

¹⁵ Federal Ministry of Justice, *Für einen innovativen Finanzstandort Deutschland: Digital Finance Forum beim BMF stellt Roadmap vor*, <https://www.bundesfinanzministerium.de/Content/DE/Pressemitteilungen/Finanzpolitik/2023/03/2023-03-21-digital-finance-forum-stellt-roadmap-vor.html> (accessed: 10 April 2023).

¹⁶ Federal Ministry of Justice, *Gesetz zur Einführung von elektronischen Wertpapieren*, https://www.bmj.de/EN/Home/home_node.html;jsessionid=254BF64E5E82587532EE0A3384ED7263.2_cid289 (accessed: 10 April 2023).

acquisition at the same time, a suitable replacement for the physical document is required, e.g., by an entry in a register based on DLT.¹⁷

According to the current eWpG implementation, issuers can now choose between a traditional or digital process for issuing new securities. The Electronic Securities Act offers the digitization of bearer bonds, which encompasses securities such as bonds of all types or certificates. When choosing the digital path, there is the requirement to approach a crypto registrar, which is a company with a license granted by the BaFin to manage a DLT-based register (*Kryptowertpapierregister*). This register entry substitutes the requirement for a physical document and ultimately enables an end-to-end digital issuance process.

One well-known use case is constituted by the issuance of a digital Siemens bond on the blockchain. ‘Siemens is one of the first companies in Germany to issue a digital bond, in accordance with Germany’s Electronic Securities Act (*Gesetz über elektronische Wertpapiere*, eWpG). Worth 60 million, it has a maturity of one year and is underpinned by a public blockchain’.¹⁸ The example of Siemens demonstrates the ongoing digitization of the traditional securities business. It also serves as a role model for non-finance companies which may research blockchain technology for their own purposes and benefits.

We review the German Electronic Securities Act as a fundamental blueprint which could possibly be adopted on a global scale. It provides legal certainty as well as protection for all the parties involved, thereby reducing the corresponding costs of issuance. Moreover, reduced costs can attract new companies because they can afford to enter the capital markets for financing purposes. The act in its current state does not include the digitization of stocks, but it is expected to be included due to the communication and plans within the Digital Finance Forum.

3. CONCLUSION AND OUTLOOK

In summary, Germany as a case study shows manifold regulatory endeavors with different objectives to approach the complexity as well as the disruptive force of blockchain technology. Although still in its infancy, we review the regulations that refer to the technology as a vital starting point to find common ground with the fast-growing crypto community. By showing the case of Siemens, we chose a suitable example to demonstrate the effectiveness of governmental inter-

¹⁷ Federal Ministry of Justice, *Gesetz zur Einführung von elektronischen Wertpapieren*, https://www.bmj.de/EN/Home/home_node.html;jsessionid=254BF64E5E82587532EE0A3384ED7263.2_cid289 (accessed: 10 April 2023).

¹⁸ Siemens, *Siemens issues first digital bond on blockchain*, <https://press.siemens.com/global/en/pressrelease/siemens-issues-first-digital-bond-blockchain> (accessed: 10 April 2023).

ference in which adequate regulation can foster innovation and pave the way for the new digital world.

We expect the regulatory endeavors to continue and adapt based on new research and insights gathered by the global academic debate as well as by the implementation of regulations. In doing so, the ongoing adoption of crypto assets may gradually rise, thereby challenging the traditional financial world. It remains to be seen to what extent the markets will accept DLT-based operations and processes or, in other words, how much of the traditional world will be successfully disrupted. However, the exemplary regulatory measures presented in this paper demonstrate the influence of governmental interference, thereby continuing the gradual establishment of the new class of crypto assets in traditional finance.

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