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Mapping an Investor Protection Framework for the Security Token Offering Market: A Comparative Analysis of UK and German Law*

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相關文獻

Abstract

Embedding securities token offering (STO) within a law and a regulatory framework is critical for its market to develop with investor confidence. The UK's Financial Conduct Authority (FCA) current laws and regulations, which were designed for the initial public offering (IPO) market, are assessed for suitability in an STO market that aims to bring investors closer to issuers and to increase access to finance. UK Company law is then used as a framework to identify risks to investors' economic (cash flow) and political (governance) rights. The analysis provides guidance for developing smart contracts to implement STO and fulfilling investors' rights. Furthermore, a comparative analysis with German law shows that although the risks do not only exist in country-specific capital market or company law regulations, other legal systems have neither sufficiently identified many of the risks nor taken them into account in current legislative projects. Finally, the author examines investor's data rights and argues that they should be recognised as both an economic and a political right. Data dividends should be distributed to security token holders and data governance should ensure that centralised management does not monopolise information to influence token holders' decision making.

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Contents

1. Introduction

This paper investigates the legal and regulatory issues relating to security token offering (STO), a regulated form of Initial Coin Offering (ICO).[1] A security token is a type of crypto-asset which is a cryptographically secured digital representation of contractual rights that uses distributed ledger technology (DLT) and can be transferred, stored or traded electronically.[2] ICO is a digital way of raising funds from the public using a crypto-asset, such as crypto-currency, tokens representing shares in a firm, prepayment vouchers for future services, or in some cases an offer of no discernible value.[3] After issuance, crypto-assets may be resold to others in a secondary market on digital exchanges or other platforms.[4] With these features, ICO has been regarded as a financing mechanism similar to Initial Public Offering (IPO) in which companies or firms issue shares to the investing public.[5] The main advantages over existing financial technologies are interoperability and processing speed.[6]

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1 World Bank and CCAF (2019) Regulating Alternative Finance: Results from a Global Regulator Survey. https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/publications/regulating-alternative-finance/. Accessed 12 Nov 2020.

2 FCA (2017) Distributed Ledger Technology to define potential benefits and challenges of the underlying technology that facilitates ICOs. https://www.fca.org.uk/publication/discussion/dp17-03.pdf. Accessed 12 Nov 2020.

3 OECD (2019) Initial Coin Offerings (ICOs) for SME Financing. www.oecd.org/finance/initial-coin-offerings-for-sme-financing.htm. Accessed 12 Nov 2020.

4 Lennart Ante, Ingo Fiedler (2020) Cheap signals in security token offerings (STOs). Quantitative Finance and Economics 4 (4): 608-639.

5 Securities and Markets Stakeholder Group (2018) Advice to ESMA: Own Initiative Report on Initial Coin Offerings and Crypto-Assets. https://www.esma.europa.eu/sites/default/files/library/esma22-106-1338_smsg_advice_-_report_on_icos_and_crypto-assets.pdf. Accessed 12 Nov 2020.

6 Paul P Momtaz (2021) Security Token. https://ssrn.com/abstract=3865233. Accessed 20 Jun 2021.

Despite burgeoning ICO activities, the ICO space has not received wide and positive support from the UK regulators, and as a result, many ICOs are not conducted in a regulated or organised market that is recognised by the law.[7] One of the reasons for this is that the legal nature of many ICO tokens cannot be securely defined in law,[8] and this causes difficulties in regulating the relationships between the token holders and issuers,[9] and in setting the regulatory parameters for their conduct with respect to ICO activities such as whether a prospectus is required or whether a white paper qualifies as a prospectus.[10] STO is a more legally secured ICO in that the security, which is legally defined, is digitally tokenised and is capable of being offered and issued to investors on the blockchain.[11] The law needs to provide the bedrock on which the STO market can build investor confidence and financial innovation, and thus increase access to the financial market.[12] Consequently, we need to know what benefits STO can bring, for whom such a type of corporate financing could be interesting, what safeguards are in place to ensure the STO market's safety and integrity, and what protection can be given to participants, especially token holders. To this end, we will assess whether the current securities law, which was designed for an IPO, is suitable for an STO, and identify any deficiencies for the STO market.[13]

In corporate governance, we will use current company law framework in the UK and Germany to demonstrate the possible risk of harm to token holders posed by management and other controlling powers. We will also discuss how a STO can give rise to new issues around data economy and data governance. In assessing the benefits and safety in terms of corporate governance, we will propose ways in which the law can maintain token holders' autonomy in negotiating their terms of contracts, can reduce transaction costs, and mitigate other negative features. We will also reassess the monetary value of the tokens and the governance rights of token holders in the context of data economy and propose a new approach to this from the perspective of both securities and company law.

The comparative view is intended in particular to identify further risks of this new corporate

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7 FCA (2019) Customer Warning about the Risks of Initial Coin Offerings. https://www.fca.org.uk/news/statements/initial-coin-offerings. Accessed 12 Nov 2020.

8 UK Jurisdiction Taskforce (2019) Legal Statement on Cryptoassets and Smart Contracts. https://technation.io/about-us/lawtech-panel. Accessed 12 Nov 2020.

9 Dirk Zetzsche et al (2019) The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators. Harvard International Law Journal 63 (3): 267-315.

10 Deng Hui et al (2018) The Regulation of Initial Coin Offerings in China: Problems, Prognoses and Prospectus. European Business Organization Law Review 19: 465-502.

11 FCA (2019) Guidance on Cryptoassets: Feedback and Final Guidance to CP 19/3. https://www.fca.org.uk/publication/policy/ps19-22.pdf. Accessed 12 Nov 2020.

12 Shaanan Cohney et al (2019) Coin-operated capitalism. Columbia Law Review 119 (3): 591-676.

13 Moran Ofir, Ido Sadeh (2020) ICO vs. IPO: Empirical Findings, Information Asymmetry, and the Appropriate Regulatory Framework. Vanderbilt Journal of Transnational Law 53 (2): 525-614.

financing method and to show that many of the problems are not country-specific, but can equally exist beyond national borders. For this reason, both the new German law of June 03, 2021[14] will be presented and the handling of the other problem areas discussed in this paper, such as data protection and investor protection, will be shown. The legal comparison will illustrate how complex and fragmented the market is and how great the danger is that investor protection and transparency will suffer and innovations will be forced back again.

2. User group of an STO

Before a legal assessment is made from a financial market and corporate law perspective, the question should first be clarified for which type of company or project financing by means of an STO could be interesting. While blockchain technology is a secure and transparent way of transferring value on the Internet, it presents many traditional companies with a new technology that is often initially difficult to access, which is why it will be of particular interest to those companies that already have access to this technology, for example, due to their business field.[15] An STO could be used by a decentralized autonomous organization (DAO)[16], which is a vehicle built on blockchain technology for stakeholders who share common goals and values to realize a project. Here, the interaction of the members is controlled by the governance rules stored in the program code. This means that there is no need for an executive body for implementation or a supervisory board as a controlling body of the company, as is the case in German stock corporations, for example. It is thus a "company" that is mapped on the blockchain and which can be expected to be much more likely to raise financing via an STO than via the traditional capital market.

However, once companies have found a way to access this novel technology, an STO could be attractive to a whole range of start-ups and small and medium-sized enterprises (SMEs), which account for a significant share of the global market, because unlike the traditional, strictly regulated capital market, an STO offers some far-reaching advantages, such as less complex barriers to entry.[17] However, raising funds through an STO is not generally limited to companies; it is also conceivable that individuals or associations of individuals could use this financing process.[18]

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14 Law on the introduction of electronic securities from 03 Jun 2021, Bundesgesetzblatt (2021), Part I (29), 1423.

15 Lennart Ante, Ingo Fiedler (2020) Cheap signals in security token offerings (STOs). Quantitative Finance and Economics 4 (4): 608-639.

16 See definition of "DAO" by Aragon, a leading provider of DAO software: https://aragon.org/dao. Accessed 22 July 2021.

17 Lennart Ante, Ingo Fiedler (2020) Cheap signals in security token offerings (STOs). Quantitative Finance and Economics 4 (4): 608-639.

18 Deloitte (2019) Are Token Assets the Securities Tomorrow? https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/technology/lu-token-assets-securities-tomorrow.pdf. Accessed 08 July 2020; broader

3. Recognising a security token as a financial instrument in law

One of the methods of raising capital for e.g. DAOs is through a security token offering. Security tokens, as a type of crypto-asset, represent underlying assets such as shares, bonds (debt), commodities, units of investment and rights to deal in those assets, such as options and futures.[19] If security tokens were treated as securities,[20] it would bring them into the current legal and regulatory framework, and securities law would apply to the whole security trading cycle: issuing, trading, clearing and settlement.[21] The current securities law covers the entire operation of the securities market; it recognizes primary and secondary markets, and divides market players into infrastructure providers, issuers, intermediaries, institutional and retail investors, domestic and foreign participants.[22] Securities law broadly divides into the prudential aspect of regulation with a focus on systemic risk issues, and the conduct aspect with a focus on market integrity, investor protection, consumer protection, and market competitiveness.[23] In the UK, security tokens representing transferable securities or other financial instruments are securities under the EU's Markets in Financial Instruments Directive II (MiFID II).[24]

3.1 Prospectus regime

The FCA has issued a stark warning about the risks of ICOs because of the opaque process of this funding method.[25] Lack of governance and transparency in such an unregulated space affect investors' rights with respect to cash flow, liquidity, and governance. What ICOs do not have, if they are to meet the same level of governance as IPOs are: a prospectus issued for investors to make informed

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definition, see Momtaz, Paul P. (2021) Security Token. https://ssrn.com/abstract=3865233. Accessed 20 Jun 2021; see also Thomas Lambert, Daniel Liebau, Peter Roosenboom (2020) Security Token Offerings. https://ssrn.com/abstract=3634626. Accessed 24 Jun 2021.

19 *Ibid*.

20 Michael Mendelson (2019) From Initial Coin Offerings to Security Tokens: A U.S. Federal Securities Law Analysis. Stanford Technology Law Review 22 (1): 52-94.

21 Randy Priem (2020) Distributed Ledger Technology for Securities Clearing and Settlement: Benefits, Risks, and Regulatory Implications. Financial Innovation 6 (11): 1-25.

22 Baker McKenzie (2016) Global Financial Services Regulatory Guide. https://www.bakermckenzie.com/-/media/files/insight/publications/2016/07/guide_global_fsrguide_2017.pdf?la=en. Accessed 07 July 2020.

23 FCA (2019) Guidance on Cryptoassets. https://www.fca.org.uk/publications/consultation-papers/cp19-3-guidance-cryptoassets. Accessed 12 Nov 2020.

24 The Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (RAO) specifies that types of activities and investments for the purpose of clarifying the scope of the Financial Services and Markets Act 2000 (FSMA).

25 FCA (2017) Warn Consumers about the Risks of ICOs. https://www.fca.org.uk/news/statements/initial-coin-offerings; FCA (2017) Distributed Ledger Technology. https://www.fca.org.uk/publication/ discussion/dp17-03.pdf. Accessed 12 Nov 2020.

judgements about the issuers;[26] intermediaries to help issuers comply with the rules for safeguarding market integrity and safety;[27] and public and private enforcement proceedings available to sanction market participants and to provide redress to investors. Furthermore, there is no market surveillance infrastructure to ensure market integrity or investor protection against insider dealing and market manipulation.[28] For an STO market to develop successfully measures must be in place to avoid it becoming a fraudulent space where criminals can exploit investors through its opaqueness,[29] easy access to unsophisticated consumers, market volatility, and lack of a regulatory and legal enforcement mechanism at domestic and cross-border levels.[30] Hence, to avoid the mistakes learnt from the ICO market, the STO market should not rely on the unregulated, unstandardized, and unverified 'whitepaper' system used in the ICO[31] as a way to show party autonomy, to demonstrate a more economical way to secure transparency, or as a basis for a self-governing mechanism.

STOs have now been brought under the current legal and regulatory framework that applies to IPOs. Section 19 of FSMA 2000 provides that no person may carry on a regulated financial services activity in the UK unless they are authorised or exempt. Section 21 of FSMA 2000 further specifies that a person must not, in the course of business, communicate an invitation or inducement to engage in investment activity. Section 85 of FSMA 2000 also makes it a crime to offer transferable securities to the public in the UK or to request that they be admitted to trading on a regulated market situated or operating in the UK, unless an approved prospectus has been made available to the public before the offer. Hence, an STO is required to comply with the FCA's Handbook's Prospectus Rules, Disclosure and Transparency Rules, and Listing Rules. An STO issuer is required to produce a prospectus that provides the necessary information to enable investors to make an informed judgement. Depending on the market segment that the STO falls into, different rules become relevant on the appointment of financial sponsors to guide the issuers[32]

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26 The Prospectus Directive (PD) [2010] OJ L 327/1.

27 Markets in Financial Instruments Directive (MiFID II) [2014] OJ L 173/349; Alternative Investment Fund Managers and Amending Directives (AIFMD) [2011] OJ L 174/1.

28 FCA (2019) Guidance on Cryptoassets` on 23 January 2019, 13. https://www.fca.org.uk/publications/ consultation-papers/cp19-3-guidance-cryptoassets; The Fourth Anti-Money Laundering Directive [2015] OJ L 141/73.

29 Alexander Torpey, Andrew Solomon (2019) Tokenisation 2019: The Security Token Year Review. https:// www.kingsleynapley.co.uk/insights/blogs/crypto-assets-blog/tokenisation-in-2019-the-security-token-year-in-review. Accessed 12 Nov 2020.

30 FCA (2019) Guidance on Cryptoassets: Consultation Paper CP19/3. https://www.fca.org.uk/publication/ consultation/cp19-03.pdf. Accessed 12 Nov 2020.

31 Paul Sinclair, Aaron Taylor (2018) The English law rights of investors in Initial Coin Offerings. Journal of International Banking and Financial Law 33(4): 214-217.

32 FCA (2020) The Sponsor Regime. https://www.fca.org.uk/markets/primary-markets/sponsor-regime. Accessed 12 Nov 2020.

as well as for accounting,[33] and codes of practice.[34]

3.2 Regulating the Intermediaries

Issuers can also decide the method of offering an STO, which can be by direct subscription without intermediaries, or through intermediaries. It can also target particular types of investor such as professional investors.[35] When an STO aims to access retail investors directly without the involvement of intermediaries,[36] it is similar to a direct listing on the exchange.[37] But if it is not offered directly, an STO would need to rely on financial intermediaries to connect with the investing public. This process can involve institutional investors who gauge investors' interest in the STO through market sounding.[38] A number of rules designed to protect market integrity through a wall-crossing regime apply to institutional investors.[39] Under the Market Abuse Regulation,[40] any investors who are wall-crossed are prohibited from dealing in the securities of the issuer, including their relevant securities (share, debt and other derivatives) currently traded on the regulated markets.[41]

One of the advantages of using STO on the blockchain is pricing transparency during the securities allocation.[42] This provides information necessary for end investors to assess the reasonableness of the price paid for the tokens and the fees charged by their asset managers or broker-

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33 Regulation (EC) 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards.

34 Financial Reporting Council (2018) Corporate Governance Code. https://www.frc.org.uk/getattachment/88bd8c45-50ea-4841-95b0-d2f4f48069a2/2018-UK-Corporate-Governance-Code-FINAL.pdf. Accessed 12 Nov 2020.

35 Partner Vine (2020) LSE's Definition of Professional Investors under MiFID II. https://www.partnervine.com/blog/professional-investors-under-mifid. Accessed 12 Nov 2020.

36 David Donald (2018) From Block Lords to Blockchain: How Securities Dealers Make Markets. Journal of Corporation Law 44: 29-63.

37 Memery Crystal (2018) Direct Listings — A Viable Alternative to the Traditional IPO? https://www.memerycrystal.com/articles/direct-listings-viable-alternative-traditional-ipo/. Accessed 12 Nov 2020.

38 FCA (2020) Market Abuse Regulation. https://www.fca.org.uk/markets/market-abuse/regulation. Accessed 12 Nov 2020.

39 FCA (2015) Asset Management Firms and the Risk of Market Abuse. https://www.fca.org.uk/publications/thematic-reviews/tr15-1-asset-management-firms-and-risk-market-abuse. Accessed 12 Nov 2020.

40 FCA (2020) Market Abuse Regulation. https://www.fca.org.uk/markets/market-abuse/regulation. Accessed 12 Nov 2020; FCA (2020) Market Watch 63: Newsletter on Market Conduct and Transaction Reporting Issues. https://www.fca.org.uk/publication/newsletters/market-watch-63.pdf. Accessed 12 Nov 2020.

41 Norton Rose Fulbright (2016) The Market Abuse Regulation: Key Considerations for UK Listed Issuers. https://www.nortonrosefulbright.com/en-gb/knowledge/publications/8d352a18/the-market-abuse-regulation-key-considerations-for-uk-listed-issuers. Accessed 12 Nov 2020.

42 FCA (2016) Quid pro quo? What factors influence IPO allocations to investors? https://www.fca.org.uk/publication/occasional-papers/occasional-paper-15.pdf. Accessed 12 Nov 2020.

dealers.[43] Whether or not this function of transparency is used depends on the extent to which it reduces market competitiveness and on the willingness of financial intermediaries to underwrite the risks of the sale. It is also unclear if it is necessary to have market-makers in the STO's secondary market to provide liquidity. If the STO's secondary market is to be conducted by the end investors themselves (probably retail investors), broker-dealers may become redundant in this supply chain. There may be a need for asset management to continue using security tokens in their structured investment portfolios and if so, both the EU MiFIDII[44] and AIFMD[45] regimes would apply. Asset management funds would need to deposit security tokens with custodian banks to comply with client-asset segregation rules (CASS).[46] A digital wallet provider or a digital exchange could act as a bank custodian and they would then need FCA registration for the money laundering law and to be authorised to conduct investment activities.[47] If they become significant within the system, they would also need to be approved and regulated by the Prudential Regulation Authority (PRA) of the Bank of England.[48] Since there may be no need for tokens to be cleared centrally, rules under EMIR may not be applicable.[49] Nevertheless, as tokens would be settled on the private blockchain, many provisions under CSDR would still need to be observed and the UK senior manager's regime would apply to key individuals within the asset management firms.[50] Under the FCA's new rules, asset managers are prohibited from offering derivatives of security tokens to retail clients.[51]

3.3 A professional investor market

A separate law and regulation have been designed for the professional investor market which does not provide access to retail investors. As a result, the disclosure requirement can be streamlined as in

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43 Norton Rose Fulbright (2014) MiFID II/MiFIR Series: Transparency and Reporting Obligations. https://www.nortonrosefulbright.com/en/knowledge/publications/abde0e6a/mifid-ii-mifir-series. Accessed 12 Nov 2020.

44 Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments.

45 Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers.

46 FCA Handbook: CASS 7.13: Segregation of Client Money.

47 FCA (2017) The Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer). https://www.fca.org.uk/firms/financial-crime/cryptoassets-aml-ctf-regime. Accessed 12 Nov 2020.

48 Therese Chambers (2020) Unstable Coins: Cryptoassets, Financial Regulation and Preventing Financial Crime in the Emerging Market for Digital Assets. https://www.fca.org.uk/news/speeches/unstable-coins. Accessed 12 Nov 2020.

49 Regulation (EU) No 648/2012 on OTC derivatives, central counterparties and trade repositories

50 Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories; Deloitte (2019) Are token assets the securities of tomorrow? https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/ technology/lu-token-assets-securities-tomorrow.pdf. Accessed 12 Nov 2020.

51 PS20/10: Prohibiting the sale to retail clients of investment products that reference crypto-assets.

the Global Depository Receipts' professional investor market[52] and the London Stock Exchange's Alternative Investment Market (AIM).[53] If AIM is to accommodate an STO market in which only professional investors are allowed to participate, the FCA's listing rules would not apply. Instead, AIM's rules would apply with the London Stock Exchange acting as the UK listing authority.[54] But this would limit the ability of the STO market to reach retail investors?

4. A comparative perspective of the legal framework

The respective national authorities have regulated STO's in many different ways.[55] Although in most countries, STO's are subject to securities regulation if the security tokens issued by the companies can be classified as 'securities',[56] nevertheless, looking at the different national implementations can be helpful in identifying further special risks. Knowing the risks is helpful in assessing what safeguards are needed for investors and how they can be integrated without inhibiting innovation.

Under German law, security tokens have also been classified as tradable securities (§ 2 (1) WpHG[57]), with the consequence that regulatory requirements such as the obligation to publish a prospectus (Art. 6 Regulation (EU) 2017/1129)[58] and various approval requirements (e.g. approval

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52 London Stock Exchange (2020) Depositary Receipts: Guide to Depositary Receipts on London Stock Exchange. https://docs.londonstockexchange.com/sites/default/files/documents/dr-guide.pdf. Accessed 12 Nov 2020.

53 London Stock Exchange Group (2020) Being an AIM. https://www.lseg.com/areas-expertise/our-markets/london-stock-exchange/equities-markets/raising-equity-finance/aim/being. Accessed 12 Nov 2020.

54 London Stock Exchange (2018) AIM Rules for Companies. https://docs.londonstockexchange.com/sites/default/files/documents/aim-rules-for-companies-march-2018.pdf. Accessed 12 Nov 2020.

55 In Europe, regulatory requirements are largely measured by the applicability of the EU's Markets in Financial Instruments Directive II (MiFID II); Aurelio Gurrea-Martinez, Nydia Remolina Leon, The Law and Finance of Initial Coin Offerings (1st Edition, Oxford University Press 2019) 129, 135.

56 Bundesministerium der Finanzen, Merkblatt Zweites Hinweisschreiben zu Prospekt- und Erlaubnispflichten im Zusammenhang mit der Ausgabe so genannter Krypto-Token. https://www.bafin.de/SharedDocs/Downloads/DE/Merkblatt/WA/dl_wa_merkblatt_ICOs.html. Accessed 06 May 2020; Ursula Kleinert, Volker Mayer (2019) Elektronische Wertpapiere und Krypto-Token. Europäische Zeitschrift für Wirtschaftsrecht 20: 857-863; Bundesanstalt für Finanzdienstleistungsaufsicht (18 Sep 2019) Blockchain-Strategie der Bundesregierung 6. https://www.bmwi.de/Redaktion/DE/Publikationen/Digitale-Welt/blockchain-strategie.pdf?__blob=publicationFile&v=10. Accessed 07 May 2020; Fabian Krüger, Michael Lampert (2018), Augen auf bei der Token-Wahl-privatrechtliche und steuerliche Herausforderungen im Rahmen eines Initial Coin Offering. Der Betriebsberater 21: 1154-1160; Aurelio Gurrea-Martinez, Nydia Remolina Leon, The Law and Finance of Initial Coin Offerings (1st Edition, Oxford University Press 2019) 117, 132; Yannick Chatard, Maximilian Man (2019) Initial Coin Offerings und Token-Handel im funktionalen Rechtsvergleich. Neue Zeitschrift für Gesellschaftsrecht 15: 567-574.

57 Wertpapierhandelsgesetz = Securities Trading Act.

58 Regulation (EU) 2017/1129 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC.

requirements under § 32 KWG for banking transactions) apply.[59] This uniform application, at least in principle, results from the implementation of European law.[60] Particularly problematic in German law, however, was the fact that the legal system is characterised by a strict typification and that security tokens must be classified in the already existing categories (physical object or a right).[61] The classification is crucial for how a security token is transferred under German civil law or which rights exist with regard to claims for damages or enforcement possibilities.[62] In addition, according to a long and proven tradition, securities are securitised in certificates, i.e. they are actually recorded in a paper certificate as a real, physical object.[63] The security tokens, which ultimately represent only virtual information stored in an intelligent contract on a blockchain, cannot be classified as objects because the paper certificate is missing. This has so far been a major obstacle to the development of fully digitised capital markets in Germany.[64]

The solution to this problem is the subject of current discussions, which were reflected in a draft law on electronic securities dated December 16, 2020[65], and have now become law in the version dated

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59 Marc Nathmann (2019) Token in der Unternehmensfinanzierung. Zeitschrift für Bank und Kapitalmarktrecht 11: 540-549.

60 E.g. Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on Markets in Financial Instruments Directive 2002/92/EC and Directive 2011/61/EU; Directive 2011/61/EU of the European Parliament and of the Council on Alternative Investment Fund Managers; Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, Central Counterparties and Trade Repositories; Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on Improving Securities Settlement in the European Union and on Central Securities Depositories; Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on Market Abuse (Market Abuse Regulation) and Repealing Directive 2003/6/EU of the European Parliament and of the Council Commission Directives 2003/124/EC, 2003/125/EC and 2004/72/EC.

61 Marc Nathmann (2019) Token in der Unternehmensfinanzierung. Zeitschrift für Bank und Kapitalmarktrecht 11: 540-549.

62 Yannick Chatard, Maximilian Man (2019), Initial Coin Offerings und Token-Handel im funktionalen Rechtsvergleich. Neue Zeitschrift für Gesellschaftsrecht 15: 567-574.

63 Bundesministerium der Finanzen, Bundesministerium der Justiz und für Verbraucherschutz (07 October 2019) Eckpunkte für die regulatorische Behandlung von elektronischen Wertpapieren und Krypto-Token－Digitale Innovationen ermöglichen－Anlegerschutz gewährleisten. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2019-03-07-Eckpunktepapier-Wertpapiere-Krypto-Token/2019-03-07-Eckpunktepapier-regulatorische-Behandlung-elektronische-Wertpapiere-Krypto-Token.pdf?__blob= publicationFile&v=7. Accessed 06 May 2020.

64 Deutsches Aktieninstitut (2020) Stärkung der Unternehmensfinanzierung mit elektronischen Wertpapieren. https://www.dai.de/files/dai_usercontent/dokumente/positionspapiere/200914_Stellungnahme_Elektronische_Wertpapiere_Aktieninstitut.pdf. Accessed 18 Dec 2020.

65 Government draft (2020) Draft law on the introduction of electronic securities. https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/RegE_Einfuehrung_elektr_Wertpapiere.pdf;jsessionid=D8000E0789FA8A6AB3D53704CDB4D3BD.2_cid334?__blob=publicationFile&v=3. Accessed 28 Dec 2020.

June 3, 2021.[66] The new law opens up an additional form of corporate financing by allowing bearer bonds in the form of electronic securities. This law serves as a basis for the legal design of the security tokens into German Law and is necessary in order to ensure the marketability of securities and legally secure acquisition.[67] According to this new law, security tokens are to be recognised as tangible assets on the basis of fiction so that civil law regulations on the transfer of ownership can be applied.[68] The main function of the security (record participation in a company or an obligation) should be ensured by an entry in a digital register instead of a deed.[69] With dematerialisation now, Germany is finally on a par with legal systems such as that of the United Kingdom, where since 1996 it has been possible to store securities in a fully electronic database (CREST[70]).[71] It is indeed the case that exchange trading already takes place today, and thus before the new law, through bookings between (digital) securities accounts, without physical securities being exchanged. However, the legal basis for this electronic trading is still a single physical global certificate, which is held in custody for all investors by Clearstream Banking AG.[72]

Another important move that German Law is taking is the fact that the cryptographic paper

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66 Law on the introduction of electronic securities, Bundesgesetzblatt (2021) Part I Nr. 29, Bonn 09 Jun 2021.

67 Government draft (2020) Draft law on the introduction of electronic securities. https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/RegE_Einfuehrung_elektr_Wertpapiere.pdf;jsessionid=D8000E0789FA8A6AB3D53704CDB4D3BD.2_cid334?__blob=publicationFile&v=3. Accessed 28 Dec 2020.

68 Bundesministerium der Finanzen, Bundesministerium der Justiz und für Verbraucherschutz (07 October 2019) Eckpunkte für die regulatorische Behandlung von elektronischen Wertpapieren und Krypto-Token－Digitale Innovationen ermöglichen－Anlegerschutz gewährleisten3. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2019-03-07-Eckpunktepapier-Wertpapiere-Krypto-Token/2019-03-07-Eckpunktepapier-regulatorische-Behandlung-elektronische-Wertpapiere-Krypto-Token.pdf?__blob=publicationFile&v=7. Accessed 06 May 2020; in that sense: Philipp Koch (2018) Die 'Tokenisierung' von Rechtspositionen als digitale Verbriefung. Zeitschrift f+r Bankrecht und Bankwirtschaft: 359, 363; Ursula Kleinert, Volker Mayer (2019) Elektronische Wertpapiere und Krypto-Token. Europäische Zeitschrift für Wirtschaftsrecht 20: 857-863.

69 Bundesministerium der Finanzen, Bundesministerium der Justiz und für Verbraucherschutz (07 October 2019) Eckpunkte für die regulatorische Behandlung von elektronischen Wertpapieren und Krypto-Token－Digitale Innovationen ermöglichen－Anlegerschutz gewährleisten. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2019-03-07-Eckpunktepapier-Wertpapiere-Krypto-Token/2019-03-07-Eckpunktepapier-regulatorische-Behandlung-elektronische-Wertpapiere-Krypto-Token.pdf?__blob=publicationFile&v=7. Accessed 06 May 2020.

70 Crest is the abbreviation of CREST equity settlement system.

71 Matthias Lehmann (2020) Zeitenwende im Wertpapierrecht. Zeitschrift für Bank und Kapitalmarktrecht 9: 431-438; Statement of the Federal Association of Alternative Investments e.V. (BAI) on 14 Sep 2020, 1. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-bai.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020.

72 Silija Maul, Beck'sches Handbuch der AG (3th Edition, Verlag C.H. BECK München 2018) § 3 Rn. 84 ff.

register can also be maintained by third parties, such as the issuers themselves.[73] This would eliminate the need for intermediaries, whose involvement is very time and cost-intensive.[74] However, as already explained above, with the elimination of intermediaries it must still be ensured that investors are offered protection and security. However, the regulations must be implemented with a sense of proportion, otherwise, these issuers wishing to act as registrars could face (too) great hurdles and the further development of the STO could already be hampered in principle. Although the initiative of the German legislator was generally welcomed as an adaptation of the regulatory framework to technological progress and option for issuers, the concrete form of the new law has met with some criticism.[75] Even if an attempt is made to integrate electronic securities, such as security tokens, into the existing regulatory framework, the high financial and regulatory requirements still structurally exclude young companies and start-ups from the market.[76] Integrity and reliability (including unrestricted availability) are mandatory requirements for the register. Here, a valid security concept and corresponding confidence in the technology used and, in the persons, involved are required. Otherwise —especially if this would entail additional risks for issuers or investors—also established issuers will probably not be able to take advantage of the new opportunities.[77]

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[73] § 7 eWpG.

[74] Marc Nathmann (2019) Token in der Unternehmensfinanzierung. Zeitschrift für Bank und Kapitalmarktrecht 11: 540-549; Wolfgang Weitnauer (2018) Initial Coin Offerings (ICOs): Rechtliche Rahmenbedingungen und regulatorische Grenzen. Zeitschrift für Bank und Kapitalmarktrecht 6: 231, 232, 236.

[75] Statement of the Federal Association of Alternative Investments e.V. (BAI) on 14 Sep 2020, 1. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-bai.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020; Statement of the Blockchain Bundesverband on 14 Sep 2020, 3. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-blockchain.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020; Statement of the Industrie- und Handelskammer on 14 Sep 2020, 1. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-dihk.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020; Statement of the Deutsches Aktieninstitut on 11 Sep 2020, 2. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-da.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020; Susanne Lenz, Markus Joachimsthaler (2021) Das Gesetz über elektronische Wertpapiere—Beginnt jetzt die Zukunft?, Der Betrieb (25): 1384-1389.

[76] Statement of the Blockchain Bundesverband on 14 Sep 2020, 3. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-blockchain.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020.

[77] Statement of the Industrie und Handelskammer on 14 Sep 2020, 1. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-dihk.pdf?__blob=publicationFile&v=1.

All in all, Germany has made a pragmatic advance and contribution to the discussion on the digitisation of securities (law). However, the approach does not go far enough in crucial points to adequately capture electronic assets and cryptographic technologies.[78]

5. Using company law as a framework to identify the risks of STO

Currently, a company using STO to raise equity will be subject to company law. However, subjecting an issuer to current company may be too onerous and defeat the purpose of providing more access to finance, especially for a start-up. There may be a need to establish a special regime. However, the current company law framework is useful for identifying the risks. The major issues arising are: capital maintenance for investor protection, particularly minority shareholders and outside creditors, governance of the organisation such as the decision-making process and the right to obtain redress, re-organisation and dissolution of the organisation, and dispute resolution.[79] Modern company law accommodates various types of companies, from closely-held to publicly-listed companies. Specific regimes have been created within the company law framework to service companies with different objectives and functions.[80] The aim is to ensure, on the one hand, that capital can continue to be aggregated efficiently through the collective effort of promoters, directors, shareholders, employees and creditors, and, on the other hand, that benefits can be shared equitably among them.[81] New methods, processes, and markets, have been developed to facilitate the aggregation of capital, including private placement,[82] direct listing,[83] initial public offering,[84] private equity,[85] and the newly emerged

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Accessed 28 Nov 2020.

78 Matthias Lehmann (2020) Zeitenwende im Wertpapierrecht. Zeitschrift für Bank und Kapitalmarktrecht 9: 431-438.

79 Neal Watson, Beliz McKenzie (2019) Shareholders' Right in Private and Public Companies in the UK (England and Wales) https://uk.practicallaw.thomsonreuters.com/5-613-3685?transitionType=Default&contextData=(sc.Default)&firstPage=true. Accessed 07 July 2020.

80 Harvard Law School Forum on Corporate Governance (2016) Principles of Corporate Governance. https://corpgov.law.harvard.edu/2016/09/08/principles-of-corporate-governance/. Accessed 07 July 2020.

81 Paul Davies (2000) The Board of Directors: Composition, Structure, Duties and Powers (Company Law Reform in OECD Countries: A Comparative Outlook of Current Trends). https://www.oecd.org/daf/ca/corporategovernanceprinciples/1857291.pdf. Accessed 30 Jun 2021.

82 Andrew Baum (2020) The Future of Real Estate Initiative. https://www.sbs.ox.ac.uk/sites/ default/files/2020-01/Tokenisation%20Report.pdf. Accessed 07 July 2020.

83 Ran Ben-Tzur, James Evans (2019) The Rise of Direct Listings: Understanding the Trend, Separating Fact from Fiction. https://ncfacanada.org/the-rise-of-direct-listings-understanding-the-trend-separating-fact-from-fiction/. Accessed 07 July 2020.

84 Ryan Zullo (2020) Can Tokenisation Fix the Secondary IPO Market? https://www.eisneramper.com/tokenization-secondary-ipo-catalyst-0420/. Accessed 07 July 2020.

85 'The Tokenisation of Financial Market Securities－What's Next?', (in Research Report by Greenwich Associates: "Security Tokens: Cryptonite for Stock Certificates" (2019) https://www.r3.com/wp-content/uploads/2019/10/R3.Tokenization.Financial.Market.Securities.Oct2019.pdf. Accessed 07 July 2020.

securities token offering (STO).[86] To ensure that benefits are shared equitably, various mechanisms have been introduced such as minority shareholder protection in closely-held companies, or corporate governance of listed and quoted companies. As well as these mechanisms, the takeover market has been developed as a way to monitor corporate performance rather than as a way to share the benefits of a company, mainly through the sale of the control premium to bidders.[87]

Including security tokens under the company law framework poses a manageable legal risk for uncertainty, but the problem is whether it would defeat the prime purpose of issuing asset tokens,[88] namely to ensure efficient capital aggregation and equitable sharing of benefits. In many STO projects, security tokens are offered on the open market to anyone who can access the internet; issues and purchases do not need the traditional financial intermediaries.[89] However, under the current company law framework, only certain companies can issue securities to the general public,[90] needing, for example, a clean three-year trading record.[91] Furthermore, the corporate governance rules in company law and the Corporate Governance Code place additional requirements on issuers who are often not able to afford the expense of governance services such as legal, compliance and auditing costs.[92] Although 'code-as-law' seems to be able to mitigate some of these costs through automation,[93] many areas would still require human intervention, especially where cognitive judgement is required to interpret rules that are based on policy objectives, or where there are different acts to be balanced against one another.[94] The reason that STO is attractive to legitimate businesses is its ability to reach the entire internet community without infrastructure obstacles or national boundaries.[95] Bringing them

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86 Deloitte (2019) Are Token Assets the Securities of Tomorrow? https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/technology/lu-token-assets-securities-tomorrow.pdf. Accessed 07 July 2020.

87 David Kershaw, Principles of Takeover Regulation (1st Edition, Oxford University Press 2018) 44.

88 Initial Coin Offerings: Issues of Legal Uncertainty Report (2019) https://www.comsuregroup.com/news/initial-coin-offerings-issues-of-legal-uncertainty-report-initial-coin-offerings-30-july-2019/. Accessed 09 July 2020; Ross Buckley et al (2020) TechRisk' 2020. Singapore Journal of Legal Studies 1: 35.

89 Jovan Ilic (2019) Security Token Offerings: What are They, and where are They Going in 2019? https://medium.com/mvp-workshop/security-token-offerings-sto-what-are-they-and-where-are-they-going-in-2019-cc075aea6313. Accessed 07 July 2020.

90 Section 755 of Companies Act 2006 provides that 'a private company limited by shares or limited by guarantee and having a share capital must not; (a) offer to the public any securities of the company, or (b) allot or agree to allot any securities of the company with a view to their being offered to the public.'

91 Listing Rules 6.3.1R, FCA.

92 OECD (2014) Risk Management and Corporate Governance. http://www.oecd.org/daf/ca/risk-management-corporate-governance.pdf. Accessed 07 July 2020.

93 Gabrielle Patrick, Anurag Bana (2017) Rule of Law Versus Rule of Code: A Blockchain-Driven Legal World, (IBA Legal Policy & Research Unit Legal Paper).

94 Smart Contract Alliance (2018) Smart Contracts: Is the Law Ready? https://lowellmilkeninstitute.law.ucla.edu/wp-content/uploads/2018/08/Smart-Contracts-Whitepaper.pdf. Accessed 07 July 2020.

95 Deloitte (2019) Are Token Assets the Securities of Tomorrow? https://www2.deloitte.com/content/dam/

under the current company law framework would compromise this benefit. As an example, the US's Howey test when applied to DAO (an STO project),[96] hinders development in security token finance, and encourages underground STO markets.[97] While many countries have created a specific legal and regulatory regime for STO and have provided trading platforms for the investment community, none has been successful.

5.1 Par value and no-discount rule

Under the UK Companies Act 2006, each share must have a face value, the so-called par value.[98] A share cannot be issued below its face value and cannot be issued at a discount. This no-discount rule is to ensure that both shareholders and creditors are protected as capital providers.[99] The amount raised must be kept in a separate account and be treated as capital in the balance sheet.

In an STO, a token can be issued without a face value and its value is determined purely through negotiation between the parties in the market i.e., the issuer of the tokens and the buyer. The capital raised, whether cash or another type of crypto-currency or crypto-asset, does not need to be put in a special account or to be treated as a non-distributable asset. This substantially reduces the protection offered to shareholders or creditors when a business becomes insolvent and there is no reserve available to investors.[100] Without this protection, any capital raised can also be more easily returned to the investors, thus creating a major risk of asset stripping. As there is no value attached tokens and repurchase can be through a one-to-one negotiation, the repurchase price can be higher than the issuing price, at the expense of other investors. There are jurisdictions, e.g. Delaware in the US, that do not require par value on a share,[101] but in this case, shareholders are protected by stronger statutory claims against boards of directors.[102] As will be discussed later, there are no clear legal claims, procedures, or appropriate forums for token holders to hold the agents of an organisation legally accountable.[103] Par

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Deloitte/lu/Documents/technology/lu-token-assets-securities-tomorrow.pdf. Accessed 07 July 2020.

96 SEC v. W.J. Howey Co., 328 U.S. 293 (1946); Paul P. Momtaz (2021) Security Token. https://ssrn.com/abstract=3865233. Accessed 20 Jun 2021.

97 Lennart Ante, Ingo Fiedler (2019) Cheap Signals in Security Token Offerings (Blockchain Research Lab Working Paper Series No 1). https://www.blockchainresearchlab.org/wp-content/uploads/2019/07/Cheap-Signals-in-Security-Token-Offerings-BRL-Series-No.-1-update3.pdf. Accessed 07 July 2020.

98 Section 540, Chapter 1 of Companies Act 2006.

99 Section 580, Chapter 1 of Companies Act 2006.

100 OECD (2019), Initial Coin Offerings (ICOs) for SME Financing. www.oecd.org/finance/initial-coin-offerings-for-sme-financing.htm. Accessed 12 Nov 2020.

101 James Bonbright (1924) The Danger of Shares Without Par Value. Columbia Law Review 24 (5): 449-468.

102 Peter Atkins et al (2020) Directors' Fiduciary Duties: Back to Delaware Law Basics. https://www.skadden.com/insights/publications/2020/02/directors-fiduciary-duties. Accessed 12 Nov 2020.

103 Nevena Jevremovic (2019) 2018 In Review: Blockchain Technology and Arbitration. Kluwer Arbitration Blog.

value and the no-discount rule reduce the likelihood of management malpractice, reduce agency costs, and provide a benchmark for other safeguards on capital maintenance and investor protection.

5.2 Valid Consideration for the token's issues

The UK Companies Act 2006 also provides detailed rules on the considerations for shares issued by the companies.[104] For public companies, shares must be paid for with cash, while non-cash considerations, such as contract performance, must be evaluated and certified by auditors.[105]

In an STO, the organisation may argue that it is not a public company so the rules on consideration do not apply. It may argue that crypto-currency is a cash consideration, and hence require no further evaluation or certified report by auditors.[106] This increases the risk of fraud, market manipulation, and misrepresentation in an STO. Investors could mistakenly believe that the process is transparent on the blockchain without knowing what is required of the issuers. Since the issuers can continue issuing more tokens on the blockchain, the participants could be misled into believing that the company has adequate assets, based on the capital raised through previous issuances. However, the participants cannot know whether the capital has been returned to the investors or whether the cash paid in with a type of crypto-currency such as Bitcoin (an unstable coin) is of the same value as the consideration requested for the new issuance. This can lead to unfair and unequal treatment among shareholders who should be able to bring a claim based on S 994 of the Unfair Prejudice claim. However, shareholders may encounter several problems in accessing the appropriate forum and its remedies. For the latter, since there is no benchmark provided for the consideration, the buyout right provided by S 996 (2)(e) CA 2006 is not adequate to address losses.

5.3 Allotment of tokens (s 517)

Directors need powers to allot shares when authorised by shareholders at a general meeting. In UK companies, these powers must be renewed every year. In addition to the requirement of shareholder authorisation, directors must use their power of allotment solely for proper purposes.[107]

These property rights mean that shareholders are protected against share dilution that can affect

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http://arbitrationblog.kluwerarbitration.com/2019/01/27/2018-in-review-blockchain-technology-and-arbitration/. Accessed 12 Nov 2020.

104 Section 593-597, Chapter 1 of Companies Act 2006.

105 Section 580-592, Chapter 1 of Companies Act 2006.

106 Cristina Farras, Adria Salmeron (2018) From Barter to Cryptocurrency: A Brief History of Exchange. https://www.caixabankresearch.com/en/economics-markets/monetary-policy/barter-cryptocurrency-brief-history-exchange. Accessed 12 Nov 2020.

107 Bloomsbury Professional (2015) Directors' Duties: Scope of the Proper Purpose Doctrine. https://law.bloomsburyprofessional.com/blog/directors-duties-scope-of-the-proper-purpose-doctrine. Accessed 12 Nov 2020.

their control rights (voting rights and economic right to receiving dividends) and residual rights if the company becomes insolvent. In some cases, company directors may allot shares to friends or family members who will support management moves to introduce measures that harm other existing shareholders, notably by reducing majority shareholders' control in the general meeting, entrenching management's position, or squeezing out minority shareholders. Hence, the power to allot shares must be specifically authorised by the existing shareholders, must be renewed with specifically authorised conditions, and must be exercised for a proper purpose that is subject to court scrutiny.

In an STO, businesses can issue tokens without these restrictions thus removing both the ex ante (shareholder authorisation) and ex post (court scrutiny) protection given to existing token holders. The business can issue tokens to specific persons or groups without existing token holders controlling the amount and timing of the issuance. Furthermore, the management can issue tokens merely to gain more support in the consensus voting structure or to increase the demand for an asset class such as the crypto-currency that is the required consideration for the issuance of the tokens.

5.4 Token buyback

Under the UK Companies Act 2006, companies cannot buy back shares unless authorised to do so by the shareholders through a special resolution of a general meeting.[108]

These regulations make sure that there is no return of capital to shareholders and that companies do not use buyback to manipulate their market share price. There are also a number of safeguards in place against price manipulation and insider dealing in share buybacks that protect issuing companies, investors and the integrity of the market.

In an STO, the business can use buyback to return capital raised to investors. This can amount to unfair treatment of token holders who have not been offered the same chance to realise gains through the pre-emption right and it can also reduce the protection to creditors by decreasing the capital available to them if the business becomes insolvent. A buyback can also send the wrong signal to the market, especially to unsophisticated investors who may believe there is a demand for tokens issued by the business. A buyback programme can even be automated without adequate legal scrutiny on its procedures and purposes and, if its code is inaccessible to network participants, there is a real risk of fraud since funds raised by a new issuance can be used to buy back tokens of a previous issuance at no consideration or a much reduced one.

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[108] Section 658-659, Chapter 1 of Companies Act 2006.

5.5 Pre-emption right (s 561)

A further protection mechanism for existing shareholders is contained in Section 561 of the UK Companies Act 2006.

Before a company may allocate new shares, it must first offer shares on the same or more favourable terms to each shareholder who holds ordinary shares in the company, in an equivalent proportion to the shares already held in the company. Without such a right, shareholders' effective shareholding in the company would be reduced by the issue of the new shares. The intention is to protect existing shareholders against dilution of their holdings.[109] Irrespective of any dilution of the asset substance, a capital increase can also reduce the chance of making a profit if the new shares do not lead to an increase in profit, and a profit that is the same or only slightly higher is distributed among more shareholders. This right gives existing shareholders priority in benefitting from the company's IPO through any subsequent sale in the secondary market to realise gains. Without such a right, investors would be less willing to take the initial risk involved in the early stages of the business. In addition, investors would have no ex ante protection against a deliberate dilution of their control right in the company by the management.

In an STO, existing tokens do not have such a right to purchase newly issued tokens, either to take advantage of any demand for tokens in the secondary market, or against a potential abuse of power by the management. However, the pre-emption right can increase the cost of finance, particularly when a company needs immediate finance to take up a business opportunity, and also that its application can be time-consuming and costly. This increases the investment costs and risks to the initial token holders. Hence, under UK law there is new guidance on how such a right can be disapplied for public companies, along with restrictions on the frequency of disapplication and the number of new tokens that can be issued.

Do the benefits of disapplying a pre-emption right in an STO outweigh any additional costs and risks to existing token holders that the right may incur?[110] A pre-emption right enhances business transparency and empowers token holders to scrutinise and challenge the rationale of the issuance, and to take advantage of it, if outside investors benefitted at the expense of existing shareholders. For this reason, a right of first refusal should also apply to an STO and this benefit would be lost if the right were to be disapplied. However, it would be possible to integrate pre-emption rights into a smart contract which could speed up the current procedure since it would not be necessary to contact all the

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[109] Amal Abu Awwad (2013) Shareholders' Preemptive Rights in Listed and Closely Held Corporations and Shareholders' Protection Methods. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2739375. Accessed 12 Nov 2020.

[110] *Ibid*.

existing shareholders within a time limit. This would make offering pre-emption rights to existing shareholders more efficient, cheaper and less time-consuming.

5.6 Voting rights

One of the most important protection mechanisms for shareholders is their voting right because it involves them in important corporate decisions.[111] These rights significantly affect the value of the shares issued as well as the value of the company and its corporate governance rating. A block of controlling shares is worth more than the aggregate of the fractional minority shares. When there is a transfer of corporate control, the purchaser needs, usually through negotiation, to pay for a control premium, rather than for the aggregate value of the number of shares based on the current market price of each share. This explains why bidders in a takeover incrementally purchase shares in the target in order to reduce the cost of the purchase.

However, in an STO, voting rights may not be attached to the tokens, and if they are attached, they can be modified after issuance, with the knowledge and agreement of the token holders. It can happen that the 'white paper' did not clearly state what voting rights can be exercised for, for example authorising a derivative claim, or how the rights are to be exercised, and whether a quorum is required. The lack of rules poses a major risk to investors who can mistakenly believe that they have the same level of the protection in an STO as they do under current company law, and that the business they have invested in operates under the normal corporate governance framework. Token holders may not have the proper forum to challenge management decisions or the validity of decisions taken by consensus. Even if it is assumed that voting rights would be automated according to a pre-determined code,[112] there is also the possibility of faults in the design of the code and this means that token holders may wish to challenge the validity of decisions reached under the consensus rules.

5.7 Removal of management

The removal of directors is a corporate governance tool designed to ensure shareholder democracy and investor protection in a corporate business by giving shareholders the means to remove the management. The UK Companies Act 2006 provides a statutory regime through which shareholders can remove their board of directors.[113] For listed companies, further protection is given

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[111] As a right of membership, the right to vote forms an ancillary component of the membership and cannot be separated from it, Karsten Heider, Münchner Kommentar zum Aktienrecht (45th Edition, Verlag C.H. BECK München 2019) § 12 Rn. 6.

[112] Karen Yeung (2019) Regulation by Blockchain: The Emerging Battle for Supremacy between the Code of Law and Code as Law. Modern Law Review 82 (2). https://doi.org/10.1111/1468-2230.12399. Accessed 12 Nov 2020.

[113] Section 168 of Companies Act 2006.

to shareholders by the requirement that the appointment of directors must be renewed annually.[114] This increases board accountability and reduces the agency costs incurred by mismanagement, board malpractice, or illegal behaviour by the board.

An STO needs clear rules on how its management can be held accountable and can be replaced. While some STO organisations emphasize a democratic and autonomous mechanism of governance,[115] exactly how their management will be brought to account or replaced remains unclear. Hence, the claim that the autonomous mechanism of governance is value-enhancing is in reality a regulatory vacuum. Without an effective mechanism to enable removal of those who act as agents of the token holders, there is a high risk of incurring agency costs by the organisation. The only option then left to token holders is the exit right—selling their tokens in the network. In the less transparent market of the blockchain network and without the support of trustworthy financial intermediaries to discover the price of the tokens, there might not be ready buyers who will offer a fair price to the token holders. Token holders may find themselves selling to the management and those in control at a value substantially below what they originally paid, either because the value of the organisation has gone down or, worse, through fraud.

5.8 Derivative action (ss 260-264)

Derivative action is a procedural regime provided by the UK Companies Act 2006 to empower shareholders, particularly non-controlling shareholders, to hold the board to account and to obtain redress for the company through judicial assistance.[116] Shareholders can bring a derivative claim for breach of duties against the board of directors or against a third party implicated in the breach, or both.[117] However, in order to do so, shareholders must pass a resolution at a general meeting or make a claim on the basis that there is a fraud on the minority if a general resolution of a shareholder meeting cannot be secured.

In an STO, since there is no clear structure for initiating such an action, minority token holders are at grave risk of investment loss because judicial assistance is not available to them to hold the board to account and obtain redresses such as compensation, account of profits, and other injunctive reliefs.

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[114] Neal Watson, Beliz McKenzie (2019) Shareholders' Right in Private and Public Companies in the UK (England and Wales). https://uk.practicallaw.thomsonreuters.com/5-613-3685?transitionType=Default&contextData=(sc.Default)&firstPage=true. Accessed 12 Nov 2020.

[115] Robbie Morrison, Matasha Mazey, Stephen Wingreen (2020) The DAO Controversy: The Case for a New Species of Corporate Governance? https://doi.org/10.3389/fbloc.2020.00025. Accessed 12 Nov 2020.

[116] Section 260 of Companies Act 2006.

[117] Carsten A Paul (2010) Derivative Actions under English and German Corporate Law—Shareholder Participation between the Tension Filled Areas of Corporate Governance and Malicious Shareholder Interference. European Company and Financial Law Review 7: 81-87.

There might not even be a legal person on whose behalf the token holders can bring claims against the board of directors. Whereas a shareholder resolution is one of the pre-requisites to initiating a claim under the Companies Act 2006, there is no forum for STO token holders to discuss and pass a resolution to bring such a claim. Even if this might have been pre-determined in the STO programme under the code-as-law, token holders may not have the knowledge or know-how to initiate it on the blockchain network or networks. The accountability of the board relies solely on the market as a monitoring mechanism. This gives opportunities for the board to extract rent for themselves through misuse of business opportunities or insider dealing at the expense of investors.

5.9 Insider dealing

Company directors have constant contact with price-sensitive information that is not disclosed to investors or the public, and they can profit from trading in the company's securities using such information.[118] For this reason, insider dealing is deemed a criminal offence under UK law as it harms both the company and the market. It is also immoral to engage in insider dealing behaviour such as dealing, encouraging others to deal, and disclosing insider information without authority. There are also compliance requirements in place to prevent management from misusing corporate information for its own benefit in an IPO, a share buyback,[119] a takeover or a merger.[120]

In an STO, there is a greater risk that the management or insiders can profit from price sensitive information that is not known to other investors or the public. Unless dealing in tokens with inside information is made a criminal offence, and unless systems and controls to prevent such an offence are introduced, the STO market will be tainted.[121] To increase the level of market integrity and investor confidence, it is imperative that insider dealing is eliminated from STO markets.[122] However, in the decentralised business structure proposed in an STO, it would be difficult to implement traditional systems and controls that have been designed for a centralised organisational system. It would also be difficult to identify a non-public inside source within a de-centralised/distributed organisation.

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[118] Nick Gibbon et al (2017) Corporate Governance and Directors' Duties in the UK. https://www.dacbeachcroft.com/media/902386/uk_corporate-governance-and-directors-duties_3-597-4626.pdf. Accessed 12 Nov 2020.

[119] Haw In-Mu et al (2015) Insider Trading Restrictions and Share Repurchase Decisions: International Evidence. http://www.fmaconferences.org/Orlando/Papers/Insider_trading_and_repurchase.pdf. Accessed 12 Nov 2020.

[120] Anup Agrawal, Tareque Nasser (2012) Insider Trading in Takeover Targets. Journal of Corporate Finance 18: 598-625.

[121] Dirk Zetzsche et al (2017) The Distributed Liability of Distributed Ledgers: Legal Risks of Blockchain. University of Illinois Law Review 2017-2018.

[122] John Anderson (2018) Insider Trading and the Myth of Market Confidence. Washington University Journal of Law and Policy 56: 1-16.

6. Legal comparison with German company law

German law has so far only considered security token offerings from a financial market law perspective.[123] Similar to UK law, there are also a number of provisions in German law that serve to protect investors and for which it is necessary to consider whether these should not also apply to an STO. Under German law, as under UK law, the shares issued must be of a minimum amount. At the time of the initial issue, this minimum amount is 1 Euro according to § 8 (2) AktG.[124] When new shares are issued as part of a capital increase, it is prohibited to issue the new shares below the nominal value of the old shares (sub-par issue). Also, under German law, the authority to allot shares must be expressly approved by the existing shareholders and must be exercised for a proper purpose. § 71 AktG provides an exhaustive list of the reasons for which the acquisition of own shares may be considered, e.g. if the acquisition is necessary to prevent serious and imminent harm to the company.[125] A further protection mechanism is found in § 186 AktG. German company law stipulates that each shareholder is entitled to as many voting rights as his share in the company.[126] An exception to this rule can only be excluded in whole or in part on the basis of a corresponding resolution of the general meeting and only under strict formal and material conditions (§ 186 (3), (4)).[127]

German law also provides for the possibility of taking action against the company's corporate bodies. If, for example, the management board and supervisory board refuse to assert claims of the company arising from the formation or management of the company against the members of the management board and supervisory board, the shareholders' meeting can adopt a binding resolution to this effect with a simple majority of votes (§ 147(1) AktG). In contrast to UK law, German law has a fixed quorum from which shareholders can assert claims for damages. In accordance with § 148 AktG, shareholders whose shares together amount to 1% of the share capital or a proportionate amount of 100,000 euros can assert this claim in court.[128] German law, like UK law, also generally prohibits trading in insider securities. In particular, insider information (prohibition of transactions), the passing on or making available of insider information (prohibition of disclosure) and the recommendation or invitation to buy or sell insider securities are prohibited.[129]

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123 David Saive (2019) Einführung elektronischer Wertpapiere. Zeitschrift für Rechtspolitik 219-222.

124 Aktiengesetz = German Stock Corporation Act

125 Jürgen Oechsler, Münchner Kommentar zum Aktienrecht (45th Edition, Verlag C.H.BECK München 2019) § 71 Rn. 22.

126 Walter Bayer, Münchner Kommentar zum Aktienrecht (45th Edition, Verlag C.H.BECK München 2019) § 19 Rn. 5.

127 Marc Hermanns, in: Henssler/Strohn, Gesellschaftsrecht (4th Edition, Verlag C.H. BECK München 2019) § 186 Rn. 7.

128 Michael Arnold, Münchner Kommentar zum Aktienrecht (4th Edition, Verlag C.H.BECK München 2018) § 147 Rn. 33; Richard Rachlitz, Hans Christoph Grigoleit, Aktiengesetz (2th Edition, Verlag C.H.BECK München 2020) § 186 Rn. 65.

129 The regulations for this can be found in the German Securities Trading Act.

A look at German law shows that the various protective mechanisms are nationally different in a few points, but are similar in structure and aim to prevent the abusive outflow of capital, to encourage management to act (also) in the interest of investors and to hold them accountable for misconduct. So far, however, the German legislator has made no attempt to apply the existing protection mechanisms under company law to token holders. A closer examination of the technical possibilities of the blockchain and the associated integration of protection mechanisms under company law has perhaps also not taken place because the initial thinking was only from the point of view of financial market law and the new law on the introduction of an electronic share should be technology-neutral and not reduced to the blockchain.[130] Only the classification of a DAO under corporate law has been addressed sporadically in the literature, with questions focusing primarily on whether it can be classified in one of the existing types of partnerships or corporations.[131]

7. Shareholder transparency and Data Protection

Transparency of shareholder ownership aims to combat money laundering,[132] and can be achieved more effectively in an STO market that relies on a private or hybrid blockchain. With distributed ledger technology, shareholder ownership data can be recorded, allowing those with permission to access the information. The information is both current (almost real-time) and historical, and is immutable once input into the system. Even if it is not tamper-proof, it is tamper-evident. This enhances compliance with anti-money laundering law that requires companies to maintain a register of information about persons with significant control (PSC)[133]—i.e. who owns 25% of the shares or votes[134]—or who can exercise real and actual control in the company.[135] In addition to fulfilling this legal requirement, the blockchain and smart contract technology can also facilitate effective e-

[130] Government draft (2020) Draft law on the introduction of electronic securities. https://www.bmjv.de/SharedDocs/Gesetzgebungsverfahren/Dokumente/RegE_Einfuehrung_elektr_Wertpapiere.pdf;jsessionid=D8000E0789FA8A6AB3D53704CDB4D3BD.2_cid334?__blob=publicationFile&v=3. Accessed 28 Dec 2020.

[131] Georg Langenheld, Christian Haagen (2021) Decentralized Autonomous Organizations — verbandsrechtliche Einordnung und Gestaltungsmöglichkeiten. Neue Zeitschrift für Gesellschaftsrecht 17: 724-729.

[132] Transparency International UK (2019) Beneficial ownership transparency. https://www.wiltonpark.org.uk/wp-content/uploads/WP1654-Beneficial-Ownership-Transparency.pdf. Accessed 12 Nov 2020; Department for Business Innovation & Skills, Transparency & Trust: Enhancing the transparency of UK Company ownership and increasing trust in UK business (Government response, April 2014); Department for Business Innovation & Skills, Transparency & Trust: Enhancing the transparency of UK Company ownership and increasing trust in UK business (Government response, April 2014).

[133] Section 21A of Companies Act 2006.

[134] PCS schedule 1A Part 1 and 2, Companies Act 2006.

[135] PCS schedule 1A Part 1 and 2, Companies Act 2006; S 790K, Companies Act 2006.

voting.[136] This enables a company to collect information on investors' voting patterns on issues such as the election and re-election of directors, directors' remuneration, issuance of new security tokens, approval of dividends to be distributed, or the acquisition and sale of major businesses assets.[137] Investors' behaviour on corporate governance issues will also be evident and this can reveal whether institutional investors are fulfilling their stewardship obligations to clients,[138] or if they are consistent in their commitment to corporate governance. Such information can be important for existing and future investors when deciding to purchase tokens, exercise their governance rights, or deciding to exit the company.

Personal information stored on the blockchain, be it personal or behavioural data, can be of value to data companies, public authorities, researchers, market competitors, tech companies, and the issuing companies' management. Although personal data should belong to the data subject according to General Data Protection Regulation (GDPR)[139] which gives data subjects a number of rights in relation to their data, securities law and company law have not yet systemically recognised the data right of investors. For instance, platform providers can process data to provide further algorithm-based products and services which might be discriminatory to investors,[140] prejudicial to STO issuers, or damaging to market integrity. Even though there are FCA rules regulating algorithm trading,[141] the current laws do not address the issues of Big Data which aggregates different types of personal information. Trading data used to develop algorithms often does not give rise to personal data protection issues because the current member-based trading and intermediated securities market structure enables privacy protection.[142] In a disintermediated STO market, data becomes not only an asset in itself[143] but its protection is relevant to investors' political and governance rights. Investors, as

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136 Nord Spencer (2019) Blockchain Plumbing: A Potential Solution for Shareholder Voting. U Pa J Bus L 29: 706-710; Section 333 of Companies Act 2006.

137 Donald Pierce (2019) Protecting the Voice of Retail Investors: Implementation of a Blockchain Proxy Voting Platform (2018-2019). Rutgers Bus LJ 14:1, 9.

138 David Yermack (2017) Corporate Governance and Blockchains. Review of Finance 21(1): 7, 23.

139 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

140 Article 21 of Charter of Fundamental Rights.

141 Article 17 of MiFID II; FCA (2018) Algorithmic Trading Compliance in Wholesale Markets. https://www.fca.org.uk/publication/multi-firm-reviews/algorithmic-trading-compliance-wholesale-markets.pdf. Accessed 09 Jun 2020.

142 Thomas Keijser, Charles Mooney (2019) Intermediated Securities Holding Systems Revisited: A View Through the Prism of Transparency. In Intermediation and Beyond (L Gullifer & J Payne eds., Hart Publishing, 2019, Forthcoming)., U of Penn, Inst for Law & Econ Research Paper No. 19-13. https://ssrn.com/abstract=3376873. Accessed 12 Nov 2020; Parliament and Council Directive (EU) 2017/828 of 17 May 2017 amending Directive 2007/36/EC as regards the encouragement of long-term shareholder engagement [2017] OJ L 132.

143 World Economic Forum (2011) Personal Data: The Emergence of a New Asset Class https://iapp.org/

data subjects, should be able to decide who can control and process their data, and how. In law, the company, as a legal person, can hold investors' data. But, it may only do so with the consent of the investors and only process the data for legitimate purposes. It may not use data to gain profits or other benefits without the investors' consent. Internally, the management cannot use the data to manipulate the voting process and should not disclose information about individual shareholders' voting behaviour to majority shareholders without their consent.[144] If the management gives advice to specific shareholders based on their past corporate governance activities, e.g. voting behaviour, they would owe a number of fiduciary duties to them such as the duty to act in their best interest, the duty to avoid conflicts of interest, and the duty to act in good faith.[145] By using their data, the management also owes a duty to exercise reasonable care, skill and diligence.[146] How should such duties be translated into law for the protection of token holders in the STO market? Investor's data should be treated as an economic right (like a dividend) if the company benefits from the dataset (making profits or reducing cost). And in addition, the governance code for STO issuers should specifically include investors' data-based governance rights.

The component of data protection has also not yet been substantially discussed in Germany in connection with blockchain-based corporate financing.[147] The new law includes considerations only occasionally of data protection law in relation to the processing of personal data upon registration.[148] In particular, the requirements formulated in the new law do not do justice to the new technology. In order to maintain the defined requirements for data protection, decentralised, pseudonymised register management on the blockchain is not sufficient. Rather, a cryptographic register guide requires several locations where information is stored.[149] The integration of different storage locations makes register

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media/pdf/knowledge_center/WEF_ITTC_PersonalDataNewAsset_Report_2011.pdf. Accessed 12 Nov. 2020; Jack Martin (2020) AI-Blockchain Platform Creates Digital Assets from Personal Data (July 17, 2020) https://cointelegraph.com/news/ai-blockchain-platform-creates-digital-assets-from-personal-data. Accessed 12 Nov 2020.

144 Article 6 (1) (a) of GDPR.

145 Bernard Black (2001) The Principal Fiduciary Duty of Boards of Directors. Presentation at Third Asian Roundtable on Corporate Governance. http://www.oecd.org/corporate/ca/corporategovernanceprinciples/1872746.pdf. Accessed 12 Nov 2020.

146 ICO (2017) Guide to the General Data Protection Regulation. https://ico.org.uk/media/for-organisations/guide-to-the-general-data-protection-regulation-gdpr-1-0.pdf. Accessed 12 Nov 2020.

147 One of the few to comment on this Thilo Kuntz (2019) Digitale Kommunikation mit Aktionären und Investoren. Zeitschrift für das gesamte Handelsrecht und Wirtschaftsrecht 183: 190-253.

148 E.g. § 14 (2) eWpG.

149 Statement of the Bundesverband der Wertpapierfirmen e.V. on 14 Sep 2020, 3. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-bwf.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020.

management unnecessarily complex and costly. Possible efficiency gains through the use of blockchain-based, decentralised register guidance is not realised in this way.[150] In addition, problems also arise from the application of the GDPR.[151] For one, Big Data scenarios—i.e., the extremely fast processing of extremely large amounts of heterogeneous data using various complex algorithms—are not excluded from the scope of data subject rights from the outset.[152] Another difficulty results from the fact that personal data may not be stored permanently. This becomes relevant in all cases in which a shareholder leaves the company, but data about him/her is stored in the blockchain.[153] It is also problematic that all current entries can be viewed by all members of a blockchain. This is not only difficult for investors from a data protection perspective, but also for the companies themselves, which do not want to indirectly provide their competitors with material that can be used to evaluate their investment and business strategies.[154] So far, from the German point of view, the solutions consist of, on the one hand, completely pseudonymising the data and only granting full read access to the company, but not to the shareholders.

Similar to what has been shown for UK law, the opportunities that automated data collection and analysis could offer have also been recognised in Germany.[155] So far, this has been discussed in particular in the context of social media. By collecting data and linking it to social media, investors can be identified, for example, and publicly forwarded messages, such as retweets, can also be evaluated, providing the basis for a much more customised investor relations strategy.[156]

In German law, there is also a broad consensus that data can have a certain economic value, also in the context of company law.[157] However, there is as yet no tangible material concept of data in law.

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[150] Statement of the Bundesverband der Wertpapierfirmen e.V. on 14 Sep 2020, 5. https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Gesetzesvorhaben/Abteilungen/Abteilung_VII/19_Legislaturperiode/2020-08-11-einfuehrung-elektronische-wertpapiere/Stellungnahme-bwf.pdf?__blob=publicationFile&v=1. Accessed 28 Nov 2020.

[151] In terms of digitisation of the Annual General Meeting: Dirk Zetzsche (2019) Corporate Technologies—Zur Digitalisierung im Aktienrecht. Die Aktiengesellschaft 1-2: 1-14.

[152] Enrico Peuker, in: Sydow, Europäische Datenschutzgrundverordnung (2th Edition, Nomos Verlag 2018) Art. 17 Rn. 37.

[153] Thilo Kuntz (2019) Digitale Kommunikation mit Aktionären und Investoren. Zeitschrift für das gesamte Handelsrecht und Wirtschaftsrecht 183: 190, 200.

[154] Thilo Kuntz, (2019) Digitale Kommunikation mit Aktionären und Investoren. Zeitschrift für das gesamte Handelsrecht und Wirtschaftsrecht 183: 190, 209 f.

[155] Thilo Kuntz, (2019) Digitale Kommunikation mit Aktionären und Investoren. Zeitschrift für das gesamte Handelsrecht und Wirtschaftsrecht 183: 190, 209 f.

[156] Thilo Kuntz, (2019) Digitale Kommunikation mit Aktionären und Investoren. Zeitschrift für das gesamte Handelsrecht und Wirtschaftsrecht 183: 190, 210 f.

[157] Nico Schur (2020) Die Lizenzierung von Daten—Der Datenhandel auf Grundlage von vertraglichen Zugangs- und Nutzungsrechten als rechtspolitische Perspektive. Zeitschrift für Gewerblichen Rechtsschutz und Urheberrecht 11: 1142-1152.

The concept of data ownership, which means that the exclusive power of disposal over data is assigned to a person, has so far been controversial.[158] There is agreement at least to the extent that the commercial marketing right of information data requires a legal framework.[159]

8. Recommendation

Although Germany has set itself the goal of enabling digital innovation while ensuring investor protection, this goal is far from being achieved, as the new law does not go far enough in many areas to adequately cover electronic assets and cryptographic technologies. A comparative look at the implementation in German law nevertheless brings some important advances for the present study. For example, it becomes apparent that the risks do not only exist in country-specific regulations under capital market law, although this is where the first approach to regulation is sought. However, many of the risks that arise with regard to company law, for example, have neither been sufficiently recognised nor taken into account in current legislative proposals. For example, under both UK and German law there is a need to address the abusive outflow of capital or the possibility of holding management accountable for misconduct. Moreover, a look at the handling of data also reveals some uncertainties in German law. There is still a lack of a legally effective possibility to market the data, e.g. of investors so that the person concerned can also draw the economic benefit that the data indisputably have. Against the background of these findings from the comparative law analysis, the following recommendations can be drawn.

8.1 Protection of the new market space

As discussed, the current securities law can be made to apply to the STO market by extending the scope of 'security' to include security tokens. And if so, securities market laws that were designed to protect investors and to ensure market integrity must also be made applicable to the STO market. The Prospectus regime and the continuing disclosure obligations, that are designed to address asymmetric information should also apply to the STO market. As security tokens are recognised as security under both UK and EU laws, there is no major difficulty in applying market conduct rules to the STO market but the question is whether bringing STO into a regulatory framework that has been designed for an intermediated securities market and which relies on financial intermediaries to perform the market

[158] Jürgen Kühling, Florian Sackmann (2020) Irrweg „Dateneigentum"－Neue Großkonzepte als Hemmnis für die Nutzung und Kommerzialisierung von Daten. Zeitschrift für Datenschutz 1: 24-30; Karl-Heinz Fezer (2017) Ein originäres Immaterialgüterrecht sui generis an verhaltensgenerierten Informationsdaten der Bürger, Zeitschrift für Datenschutz 3: 99-105.

[159] Karl-Heinz Fezer (2017) Ein originäres Immaterialgüterrecht sui generis an verhaltensgenerierten Informationsdaten der Bürger. Zeitschrift für Datenschutz 3: 99-105.

gatekeeping role, would still serve the objective of access to finance that the STO market wishes to achieve. A look at the new German law has shown that it has not yet been possible to establish a sufficiently balanced system that strikes the right balance between investor protection and the benefits of innovation.[160]

Financial intermediaries provide advice on the processes of the IPO, recommend the price of the securities issued after exercises such as 'market sounding', and are involved in the wholesale underwriting and retail broker-dealing markets. Because the structure of the current securities law has been shaped by this intermediated market space, the law emphasises the function of intermediaries as market gatekeepers for liquidity, safety, integrity, and functionality. In addition to regulating issuers, the conduct of intermediaries is the focus of regulation through detailed rules in MiFID II,[161] AIFMD,[162] EMIR,[163]CSDR,[164] and MAR.[165] These rules are necessary to protect clients' interests as well as the interest of the market intermediaries. The cost of compliance with these rules makes it less likely for smaller businesses to be able to access the investing public. While the disclosure regime is aimed at protecting end investors, the involvement of financial intermediaries in the wholesale market means that some costs would fall on them. Whether the disclosure regime should be aimed at protecting end investors or issuers, or at covering the costs of financial intermediaries, needs to be investigated further. But, for an STO on the blockchain aiming at accessing the investing public directly, the current securities markets law and regulation are inappropriate. Current law is adequate to protect the investing public, but an unintended consequence of the cost of compliance, is to hinder financial inclusion to issuers and the investing public. Start-up companies do not have the means to go through the IPO process, and the majority of the investing public (retail investors) cannot afford shares in the IPO. STO issuers should comply with a disclosure regime in order to address the asymmetric information problem, but they should do so through a specific enabling regime that allows them access to a public who can invest with confidence. This does not imply that no intermediary could act as a trusted third party to facilitate the processes and provide safeguards because trusted third parties are able to provide

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[160] Ulf Heppekausen (2020) Blockchain, Wertpapierprospektrecht und das übrige Aufsichtsrecht. Zeitschrift für Bank und Kapitalmarktrecht 1: 10-12.

[161] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on Markets in Financial Instruments Directive 2002/92/EC and Directive 2011/61/EU.

[162] Directive 2011/61/EU of the European Parliament and of the Council on Alternative Investment Fund Managers.

[163] Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, Central Counterparties and Trade Repositories.

[164] Regulation (EU) No 909/2014 of the European parliament and of the Council of 23 July 2014 on Improving Securities Settlement in the European Union and on Central Securities Depositories.

[165] Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on Market Abuse (Market Abuse Regulation) and Repealing Directive 2003/6/EU of the European Parliament and of the Council Commission Directives 2003/124/EC, 2003/125/EC and 2004/72/EC.

a more streamlined process using the available technologies such as smart contract, blockchain, algorithms analytics, and automation in order to reduce transaction costs. Market supervision could also be included using technology to guard against market manipulation.

The new German law provides for exactly this possibility to issue shares on the financial market without intermediaries. However, the crypto securities registries must be supervised by the Federal Financial Supervisory Authority (BaFin) and are subject to numerous regulations that can hardly be fulfilled with the currently existing blockchains.[166] Therefore, according to the current legal situation, there can only be one strongly regulated, standardised database. Whether this fulfils the actual purpose of the law, which is to enable digital innovation while ensuring investor protection, seems questionable.[167]

8.2 Governance right

Current company law protects investors against potential risks to their economic (monetary) and political rights, and security token holders need to be given equivalent protection if the STO market is to develop successfully. Regulators and policymakers could think about adopting various responses traditionally existing in corporate governance (e.g. preventing capital outflow, disclosures, securing participation rights, etc.). In devising such protection, we need to be clear about the purpose of these legal interventions. Is it to provide an organisational structure that reduces the time of negotiation between token holders and management? Is it to provide a structure that encourages innovation so that the STO market can compete with more traditional markets? Is it to reduce the negative way other stakeholders can be affected by dealings in the STO market? Is it to create a power balance within organisations and associations to reflect a political ethos? Or do we see STO issuers as state sanctioned entities, carrying with them a wider state responsibility? The answers to these questions must be agreed upon if the law is to provide the default position for parties to develop their own structure and to stipulate what laws should be mandatory, and what enforcement mechanisms and consequential remedies to breaches of the laws are suitable for protecting token holders' interests. The analysis given here suggests that current company law should not apply to STO entities, even though a company wishing to issue tokenised securities on the blockchain may find it easy to do so in terms of compliance. The technology available should make compliance more cost-effective and should have a transformative effect on the legal model. Corporate law scholars have been debating the legal nature of corporations and shares, and STO provides us with an opportunity to think anew about connecting with the disconnected and the excluded. This is reminiscent of the time when the corporate limited liability

[166] Matthias Lehmann (2020) Zeitenwende im Wertpapierrecht. Zeitschrift für Bank und Kapitalmarktrecht 9: 431-438.
[167] Matthias Lehmann (2020) Zeitenwende im Wertpapierrecht. Zeitschrift für Bank und Kapitalmarktrecht 9: 431-438.

principle was introduced into the UK, enabling capital to be amassed in a way that broke the trade monopoly of the land-owning class. The fourth industrial revolution that we are now experiencing allows new types of entities to re-create capital and distribute wealth in a way that competes with multinational companies who use mergers and acquisitions to drive out market competition. Is it desirable to see merger and acquisition activities in the STO market similar to those that modern company law has been facilitating? This forces us to re-think the relationship between token holders and the issuing entity. Should token holders be the legal owners of the entity and should the management owe direct duties to them? What is the process for dissolving the entity? There is also the opportunity to make the issuing entity a nexus of contract, bringing excluded stakeholders such as the employees, consumers, and interested community stakeholders into the network.

STOs are not local, and this is a major advantage in increasing the pool of investors.[168] However, in order to maintain international participation, uniform standards should apply as to which investor protection measures are relevant and should be taken into account in an STO. The detailed requirements and access to an STO should remain country-specific in order to maintain regulatory competition. Overall, it is necessary to find answers to the changing roles or tasks of traditional participants and to define new role specifications. German law has taken this first step from the perspective of financial market law, but with regard to investor protection from the perspective of company law, there are currently no signs of any efforts to make further progress. In order to make an STO attractive for all parties involved in the future, the development of digital innovation must be made possible while guaranteeing complete investor protection.

8.3 New value and governance right

Traditionally, data protection law stands outside capital market regulation and company law. Capital market law focuses on investor protection, market integrity, and market safety to ensure market confidence, while company law focuses on economic rights (liquidity right, credit right and dividend right) and political rights (right to vote, right to information, and right to redress). Data protection law relates to an individual investor's personal information and the issuers' responsibility with respect to information about investors and former investors. Personal information is not to be treated as a company asset and is protected by the duty of confidentiality that is owed by a company to individual investors. Software has been developed that identifies beneficial shareholders in a company using publicly available data. This can help achieve the objective of transparency about shareholder

[168] Mikk Maal, Security Token Offerings (STO) VS Initial Public Offerings (IPO) (Comister Global, 11 December 2018). https://medium.com/comistar/security-token-offerings-sto-vs-initial-public-offerings-ipo-6a8885ee721a. Accessed 28 Sep. 2020.

ownership and is able to combat money laundering. STO on the blockchain can make such data readily available not only to companies, but also to other participants such as token holders in the same entity or to third parties. However, although personal data is an asset belonging to individuals, when aggregated impersonally it can create valuable Big Data. Individual identity information and behavioural data can be useful for developing analytics that allows an issuing entity or management to target particular kinds of people in order to raise capital, to understand their voting behaviour, and to know when they are likely to exit an organisation or project. This means that data rendition, data surplus, surveillance capitalism and behavioural manipulation constitute risks in the STO market. Yet, the current capital markets law and company law do not focus on data issues because, under the current intermediated financial market structure, personal data rests with the intermediaries at different layers. Issuing companies do not necessarily have full knowledge of the identity of their shareholders, while intermediaries, such as trust banks or asset managers, often hold securities (shares) as legal owners on behalf of their immediate clients who, in turn, may also hold securities as an intermediary for their clients. Hence, data is not considered as an asset and an investor's data is not included within investor protection in securities market law. Since a personal data right is not attached to a share as recognised by company law, investors cannot take dividends derived from it. It is also conceivable that voting information could be used to analyse investor behaviour and to provide proxy advisory services. If so, misuse of that data can amount to an interference with the investors' governance right. This is an area that company law needs to address. Even the German legislator has not yet addressed these fundamental issues. At least occasionally, it recognises data protection problems in connection with blockchain-based corporate finance. However, these efforts are increasingly limited to clarifying responsibility under data protection law and imposing a parallel system of legal requirements on the functioning of blockchain that does not do justice to the technical specifics.[169]

9. Conclusion

The article discusses the importance of embedding security tokens in the law in order to provide investor confidence in STO. However, current law and regulation should not apply to the STO market if it is to achieve its intended purpose of increasing access to finance. An STO is not an IPO on a smaller scale. To have a transformative effect, the STO market needs to emphasise its decentralised and disintermediated market structure that distinguishes it from the IPO market. Despite this, the current law and regulation regime for IPOs remains a useful tool to examine the market structure, to identify market risks involved and the ways in which those risks can be mitigated. Company law helps to

[169] Matthias Lehmann (2020) Zeitenwende im Wertpapierrecht. Zeitschrift für Bank und Kapitalmarktrecht 9: 431-438.

identify risks to investors' economic and political rights, and the discussion of UK company law given here provides benchmarks for the development of smart contracts in STOs. This is not only important for UK law. It has been shown that Germany is somewhat ahead and has taken the first important steps towards a financial system that takes advantage of blockchain technology. However, the full potential has not yet been exploited and there are still a number of unanswered questions. As shown, there is also a need to catch up under German law with regard to investor rights and the handling of data in an STO. The interplay between the STO market and decentralized associations should be further explored, as both the new type of corporate finance and the corporate structure mapped on the blockchain with a DAO are outside the regulated realm and the legal implications—when the two collide—are still largely unresolved.[170] Now, at the German, but especially at the European level, it is a matter of creating the appropriate legal conditions for this new innovation, especially across jurisdictions. The legal comparison has thus clearly shown that although individual regulations exist under both UK and German law, no satisfactory solutions and implementations have yet been found. In particular, the fact that crypto issuers are constantly evolving providers and that they are dealing with novel business models poses difficulties. Therefore, a "one-size-fits-all" solution will not be appropriate to meet the individual needs of businesses and their innovative developments.[171] Finally, an investor's data right should be recognised as both an economic and a political right in the emerging STO market. Data dividends should be distributed to security token holders and data governance should consider the power aspect of the decision-making process. Centralised management should no longer be allowed to monopolise information.♣

[170] Georg Langenheld, Christian Haagen (2021) Decentralized Autonomous Organizations — verbandsrechtliche Einordnung und Gestaltungsmöglichkeiten. Neue Zeitschrift für Gesellschaftsrecht 17: 724-729.

[171] Alexander Wellerdt (2021) FinTech Regulierung—Wie werden innovative Geschäftsmodelle beaufsichtigt? WM 24: 1171-1177.